

RIO BRAVO ENTERTAINMENT, LLC
FM Translator K260BC
Henly, TX
PROPOSED: CH262FT, 100.3 MHz, 0.070 kW, 149.5m HAAT

ENGINEERING STATEMENT

This engineering statement was prepared for Rio Bravo Entertainment, LLC, licensee of FM translator K260BC in support of a minor change application to change frequency from 99.9 MHz to 100.3 Mhz with 0.070 kW ERP (main lobe) and change community of license to Henly, TX. This translator will be co-located at tower #1218246 with a three-bay Kathrein-Scala 3XCA5-FM/CP/RM/50N Yagi array antenna 110 meters above ground level.

ALLOCATION CONSIDERATIONS

Figure 1 is a portion of a USGS topographic map depicting the location of the proposed K260BC site. Figure 2A is an allocation map showing contours of K260BC-proposed and contours of allocation interest. Figure 2B shows the licensed and proposed K260BC 60 dBu contour overlap, as well as the 68 dBu of KASE-FM auxiliary (#2).

As shown in Figure 2A, none of the allocation contours of this proposal cause prohibitive overlap. While this translator is within the 60 dBu service contour of KASE-FM, it is noted that the KASE-FM (Auxiliary #2) 68 dBu contour, worst case, falls over the site and hence the K260BC 108 dBu contour shall not cause interference. Since a three-bay antenna is proposed at 110 meters AGL and considering the vertical plane pattern of the antenna, the 108 dBu contour will not reach ground level nor any building occupied by people. Hence no interference will be caused to KASE-FM.

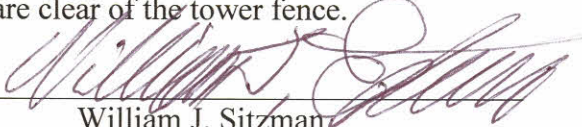
Figure 3A is a polar plot and tabulation of the horizontal pattern of the Kathrein-Scala 3XCA5-FM/CP/RM/50N Yagi array antenna, while Figure 3B, Pages 1 to 3, is a tabulation and graph of the vertical pattern.

ENVIRONMENTAL CONSIDERATIONS

This was addressed in OET Bulletin #65, released August 1, 1997. Table B on Page 67 of the document depicts the ANSI/IEEE protection requirements. The maximum permissible exposure for uncontrolled environments in the 30 to 300 MHz band is a power density of 0.2 milliwatts per centimeter squared (mw/cm^2). As a worst-case, power density is studied at points 2 meters above ground level contiguous to the FM translator tower and if not excessive at that elevation, it would certainly not be excessive below that elevation where the general public may have access.

Since this FM translator operates at 0.070 kW ERP with a 3-bay FM antenna 110 meters above ground level, the greatest radiofrequency power density 2 meters above ground level is defined by the field elevation pattern of the Kathrein-Scala antenna and produces a maximum power density of 0.000044 mw/cm² at that elevation. This is 0.022% of the 0.2 mw/cm² limit for an uncontrolled environment. There are appropriate RF warning signs on the tower fence. Should maintenance personnel need access to the tower, the FM translator facility will either reduce power or cease operation until workers are clear of the tower fence.

June 20, 2010



William J. Sitzman
Consulting Radio Engineer

FIGURE 1

Proposed Antenna Site:
N 30-11-45 W 98-13-52

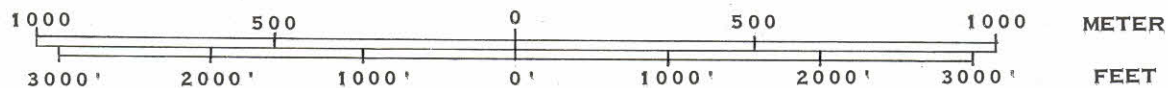
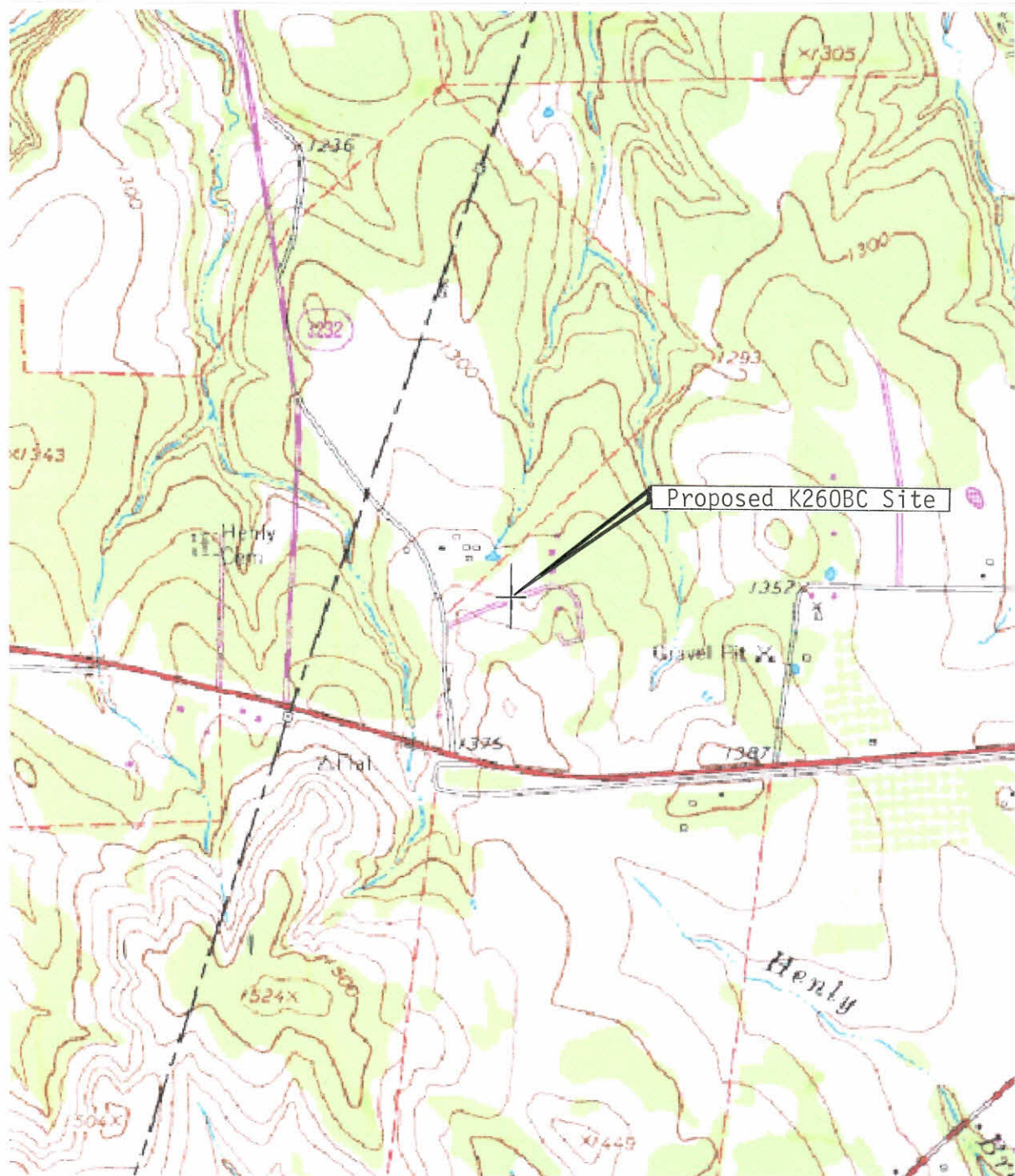
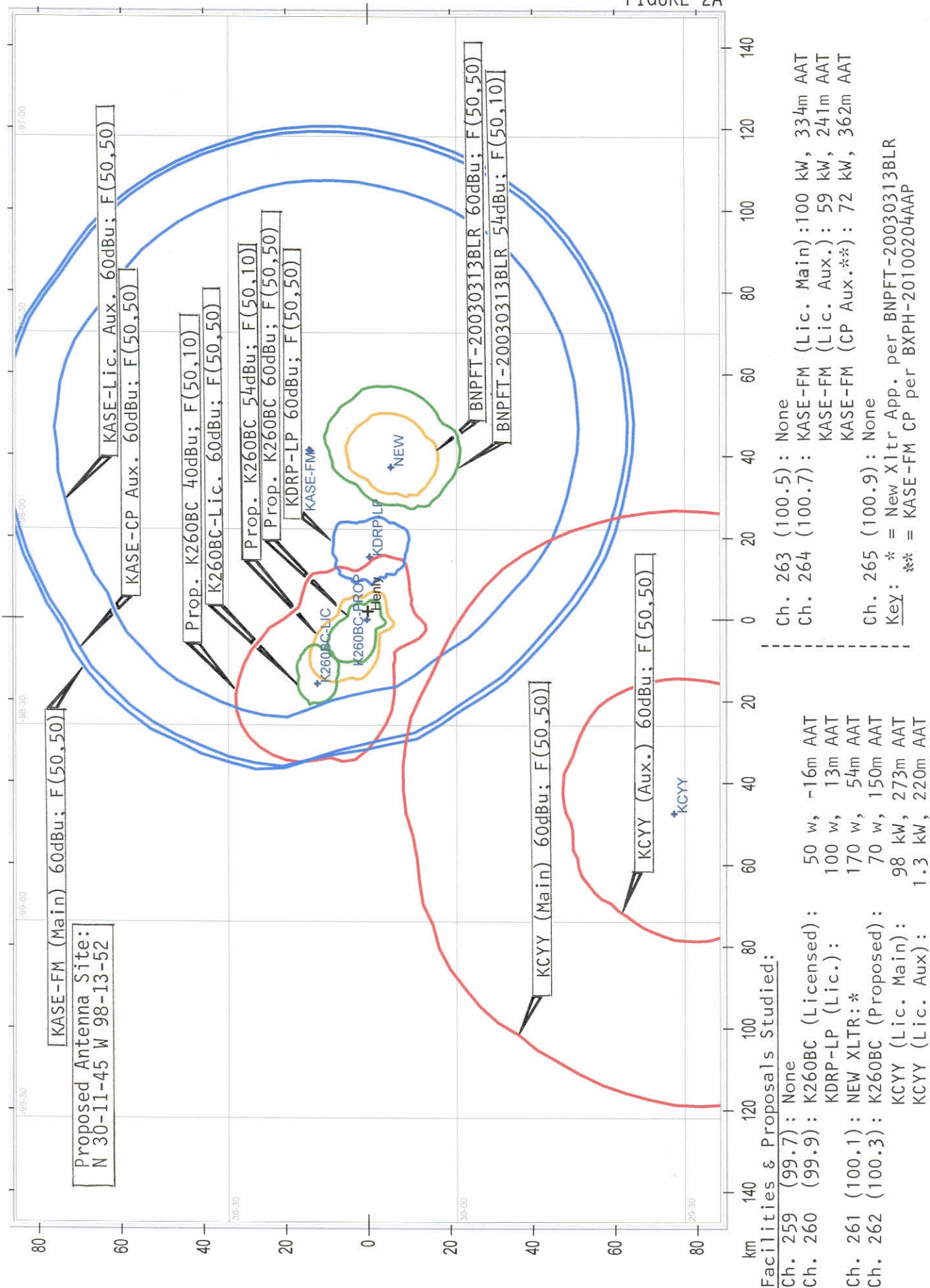


FIGURE 2A



K260BC Ch262 (100.3 MHz) Detailed Allocation Map

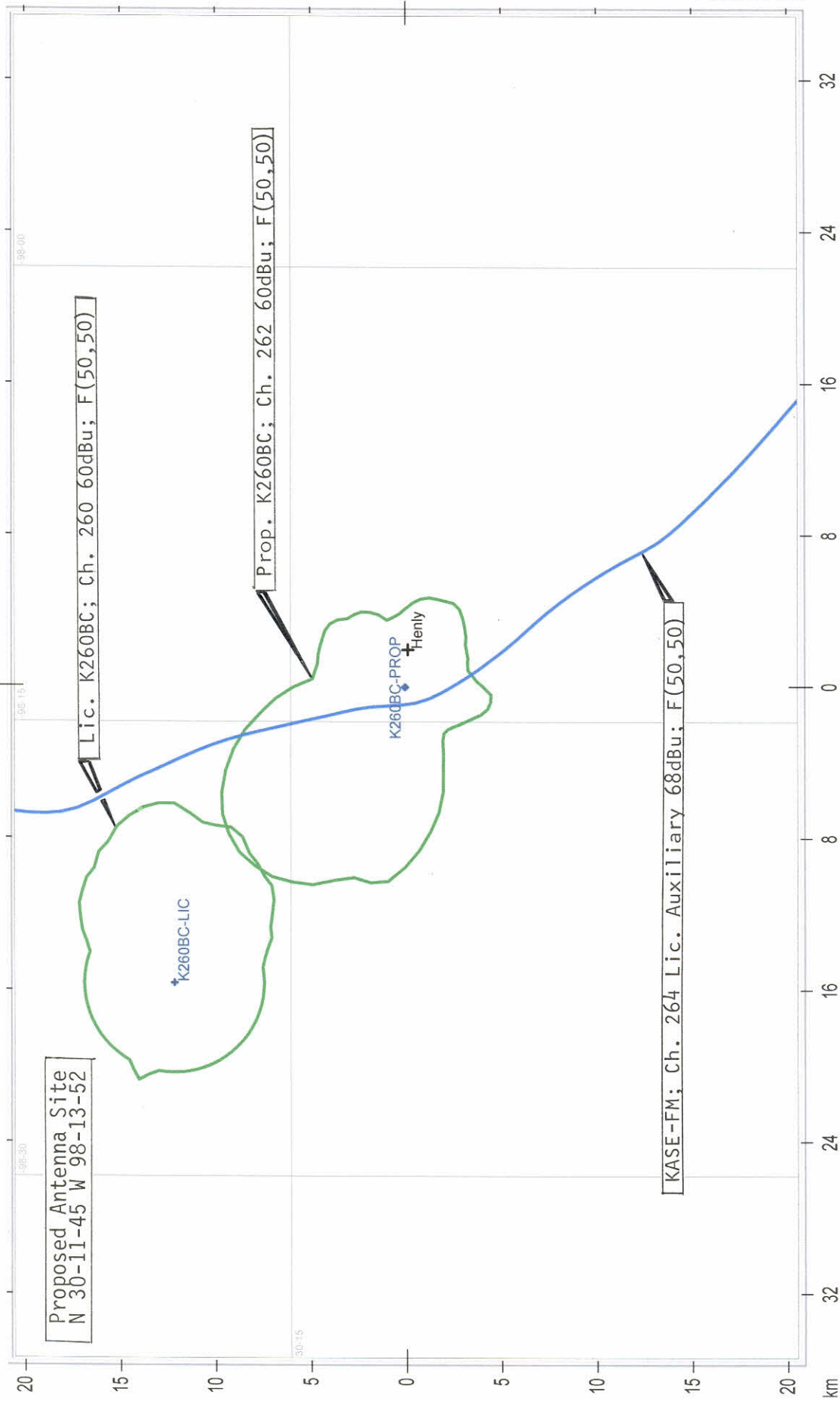
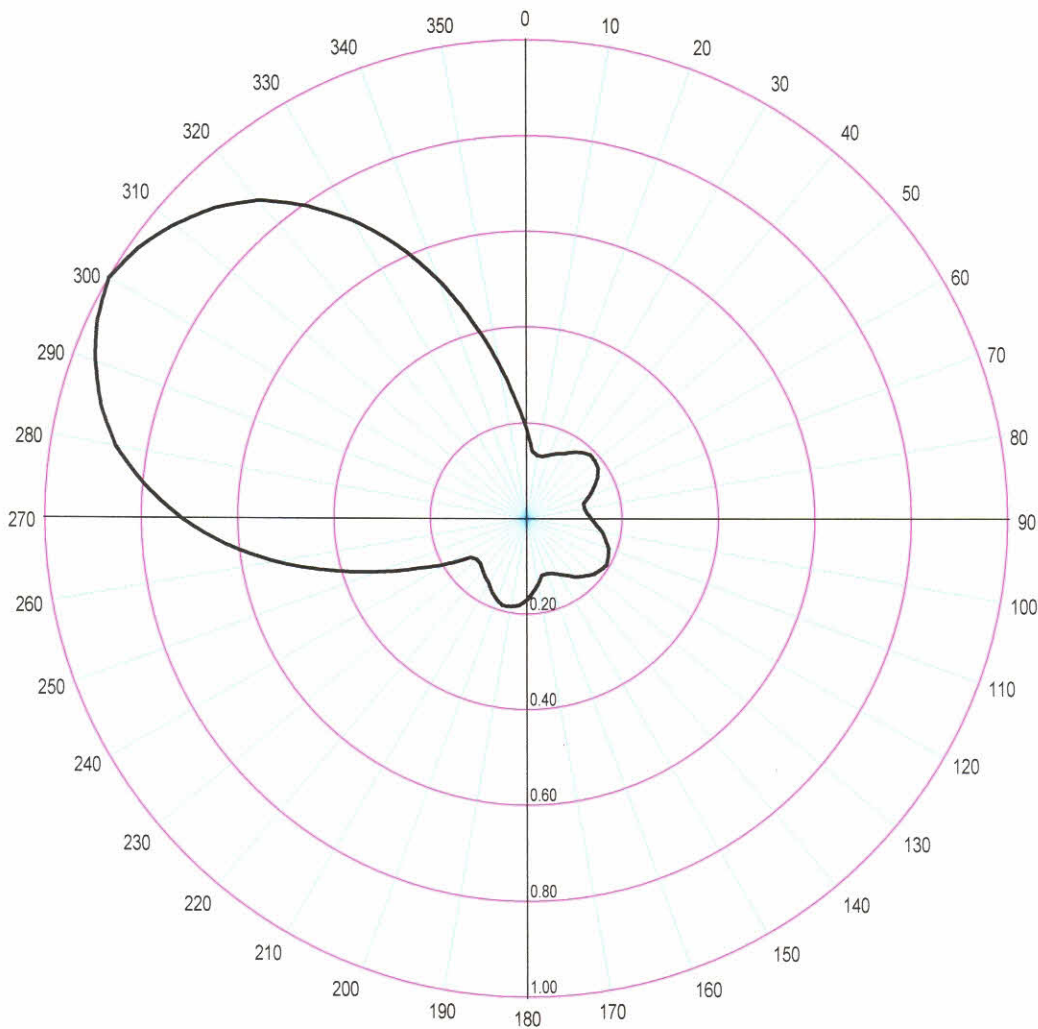


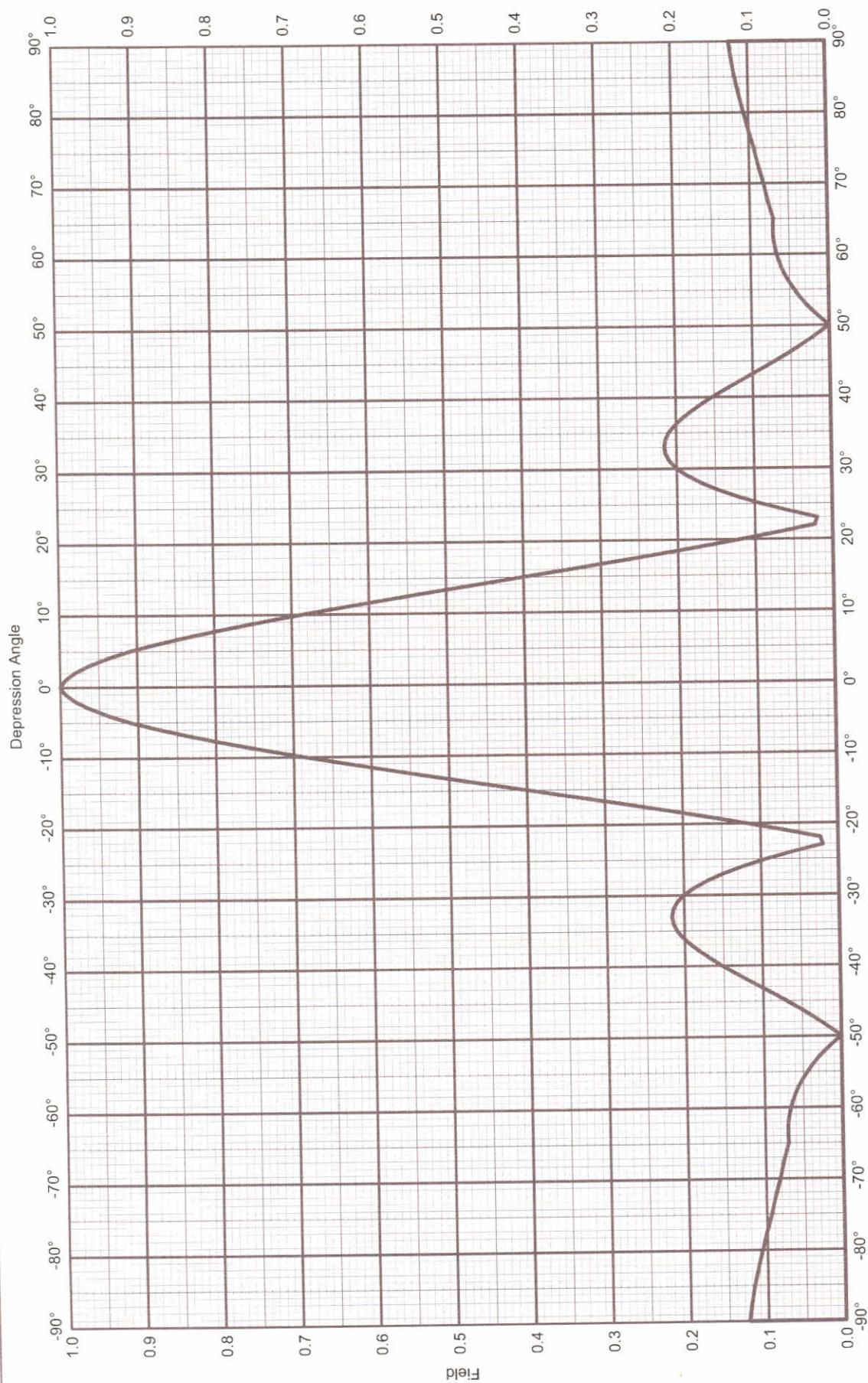
FIGURE 2B

As shown, the proposed K260BC (Ch. 262; 100.3 MHz.) protected 60dBu F(50,50) contour includes a portion of the 60dBu F(50,50) service area of the licensed K260BC (Ch. 260; 99.9 MHz.). Also as shown, the 68dBu; F(50,50) service contour of the licensed Auxiliary facility of second-adjacent station KASE-FM, Austin, TX (per BLH-19940407KD) provides the most restrictive protection requirement for the proposed K260BC (on Channel 262) in relation to KASE main or auxiliary facilities. This protection requirement is addressed in the Engineering Statement.



Kathrein-Scala 3XCA5-FM/CP/RM/50N Yagi array oriented 300°T

Azim	Rel.FS	ERP [W]	dBk	Azim	Rel.FS	ERP [W]	dBk	Azim	Rel.FS	ERP [W]	dBk	Azim	Rel.FS	ERP [W]	dBk
0.0	0.190	2.527	-25.974	90.0	0.135	1.276	-28.942	180.0	0.171	2.047	-26.889	270.0	0.718	36.087	-14.427
5.0	0.142	1.411	-28.503	95.0	0.145	1.472	-28.322	185.0	0.183	2.344	-26.300	275.0	0.796	44.353	-13.531
10.0	0.134	1.257	-29.007	100.0	0.160	1.792	-27.467	190.0	0.187	2.448	-26.112	280.0	0.866	52.497	-12.799
15.0	0.135	1.276	-28.942	105.0	0.170	2.023	-26.940	195.0	0.189	2.500	-26.020	285.0	0.915	58.606	-12.321
20.0	0.142	1.411	-28.503	110.0	0.182	2.319	-26.348	200.0	0.181	2.293	-26.395	290.0	0.952	63.441	-11.976
25.0	0.150	1.575	-28.027	115.0	0.188	2.474	-26.066	205.0	0.170	2.023	-26.940	295.0	0.982	67.503	-11.707
30.0	0.157	1.725	-27.631	120.0	0.193	2.607	-25.838	210.0	0.157	1.725	-27.631	300.0	1.000	70.000	-11.549
35.0	0.170	2.023	-26.940	125.0	0.188	2.474	-26.066	215.0	0.150	1.575	-28.027	305.0	0.982	67.503	-11.707
40.0	0.181	2.293	-26.395	130.0	0.182	2.319	-26.348	220.0	0.142	1.411	-28.503	310.0	0.952	63.441	-11.976
45.0	0.189	2.500	-26.020	135.0	0.170	2.023	-26.940	225.0	0.135	1.276	-28.942	315.0	0.915	58.606	-12.321
50.0	0.187	2.448	-26.112	140.0	0.160	1.792	-27.467	230.0	0.134	1.257	-29.007	320.0	0.866	52.497	-12.799
55.0	0.183	2.344	-26.300	145.0	0.145	1.472	-28.322	235.0	0.142	1.411	-28.503	325.0	0.796	44.353	-13.531
60.0	0.171	2.047	-26.889	150.0	0.135	1.276	-28.942	240.0	0.190	2.527	-25.974	330.0	0.718	36.087	-14.427
65.0	0.155	1.682	-27.742	155.0	0.127	1.129	-29.473	245.0	0.247	4.271	-23.695	335.0	0.628	27.607	-15.590
70.0	0.140	1.372	-28.626	160.0	0.123	1.059	-29.751	250.0	0.329	7.577	-21.205	340.0	0.528	19.515	-17.096
75.0	0.123	1.059	-29.751	165.0	0.123	1.059	-29.751	255.0	0.423	12.525	-19.022	345.0	0.423	12.525	-19.022
80.0	0.123	1.059	-29.751	170.0	0.140	1.372	-28.626	260.0	0.528	19.515	-17.096	350.0	0.329	7.577	-21.205
85.0	0.127	1.129	-29.473	175.0	0.155	1.682	-27.742	265.0	0.628	27.607	-15.590	355.0	0.247	4.271	-23.695



Circular Polarization
Vertical stacked 0.87 wavelength
Vertical plane Pattern
3xCA5-FM/CP/RM Yagi array

Three CA5-FM/CP/RM/50N Yagi antennas
Oriented at 0 degrees
Frequency: 100.3 MHz
Gain: 9.9 dBd (x 9.8)

**KATHREIN**
SCALA DIVISION
Post Office Box 4580
Medford, OR 97501 (USA)
Phone: (541) 779-6500
Fax: (541) 779-3991
<http://www.kathrein-scala.com>



Three CA5-FM/CP/RM/50N Yagi antennas

Oriented at 0 degrees

Frequency: 100.3 MHz

Gain: 9.9 dBd (x 9.8)

Circular Polarization

Vertical stacked 0.87 wavelength

Vertical plane Pattern

3xCA5-FM/CP/RM Yagi array

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
-90	0.124	-18.12	-8.22	0.15	-45	0.070	-23.05	-13.15	0.05
-89	0.123	-18.20	-8.30	0.15	-44	0.087	-21.24	-11.34	0.07
-88	0.122	-18.30	-8.40	0.14	-43	0.103	-19.72	-9.82	0.10
-87	0.120	-18.40	-8.50	0.14	-42	0.120	-18.42	-8.52	0.14
-86	0.119	-18.52	-8.62	0.14	-41	0.136	-17.31	-7.41	0.18
-85	0.117	-18.64	-8.74	0.13	-40	0.152	-16.36	-6.46	0.23
-84	0.115	-18.79	-8.89	0.13	-39	0.167	-15.57	-5.67	0.27
-83	0.113	-18.95	-9.05	0.12	-38	0.180	-14.89	-4.99	0.32
-82	0.111	-19.12	-9.22	0.12	-37	0.192	-14.34	-4.44	0.36
-81	0.108	-19.30	-9.40	0.11	-36	0.202	-13.90	-4.00	0.40
-80	0.106	-19.50	-9.60	0.11	-35	0.209	-13.58	-3.68	0.43
-79	0.104	-19.69	-9.79	0.10	-34	0.214	-13.40	-3.50	0.45
-78	0.101	-19.89	-9.99	0.10	-33	0.215	-13.33	-3.43	0.45
-77	0.099	-20.11	-10.21	0.10	-32	0.214	-13.40	-3.50	0.45
-76	0.096	-20.34	-10.44	0.09	-31	0.209	-13.60	-3.70	0.43
-75	0.093	-20.59	-10.69	0.09	-30	0.200	-13.98	-4.08	0.39
-74	0.091	-20.79	-10.89	0.08	-29	0.187	-14.58	-4.68	0.34
-73	0.089	-21.01	-11.11	0.08	-28	0.169	-15.42	-5.52	0.28
-72	0.087	-21.24	-11.34	0.07	-27	0.148	-16.60	-6.70	0.21
-71	0.084	-21.50	-11.60	0.07	-26	0.122	-18.26	-8.36	0.15
-70	0.081	-21.78	-11.88	0.06	-25	0.092	-20.70	-10.80	0.08
-69	0.080	-21.98	-12.08	0.06	-24	0.058	-24.75	-14.85	0.03
-68	0.078	-22.21	-12.31	0.06	-23	0.019	-34.21	-24.31	0.00
-67	0.075	-22.48	-12.58	0.06	-22	0.023	-32.81	-22.91	0.01
-66	0.073	-22.78	-12.88	0.05	-21	0.069	-23.22	-13.32	0.05
-65	0.070	-23.12	-13.22	0.05	-20	0.119	-18.51	-8.61	0.14
-64	0.071	-23.03	-13.13	0.05	-19	0.171	-15.35	-5.45	0.29
-63	0.071	-23.03	-13.13	0.05	-18	0.225	-12.94	-3.04	0.50
-62	0.070	-23.12	-13.22	0.05	-17	0.282	-10.99	-1.09	0.78
-61	0.068	-23.31	-13.41	0.05	-16	0.340	-9.36	0.54	1.13
-60	0.066	-23.60	-13.70	0.04	-15	0.400	-7.97	1.93	1.56
-59	0.063	-23.94	-14.04	0.04	-14	0.459	-6.77	3.13	2.05
-58	0.060	-24.43	-14.53	0.04	-13	0.517	-5.73	4.17	2.61
-57	0.056	-25.10	-15.20	0.03	-12	0.575	-4.80	5.10	3.23
-56	0.050	-25.98	-16.08	0.02	-11	0.632	-3.98	5.92	3.91
-55	0.044	-27.14	-17.24	0.02	-10	0.687	-3.26	6.64	4.61
-54	0.038	-28.51	-18.61	0.01	-9	0.739	-2.63	7.27	5.33
-53	0.030	-30.50	-20.60	0.01	-8	0.787	-2.08	7.82	6.05
-52	0.021	-33.58	-23.68	0.00	-7	0.832	-1.60	8.30	6.76
-51	0.011	-39.27	-29.37	0.00	-6	0.873	-1.18	8.72	7.45
-50	0.010	-40.00	-30.10	0.00	-5	0.909	-0.82	9.08	8.08
-49	0.012	-38.06	-28.16	0.00	-4	0.939	-0.55	9.35	8.61
-48	0.026	-31.78	-21.88	0.01	-3	0.963	-0.33	9.57	9.05
-47	0.040	-27.97	-18.07	0.02	-2	0.981	-0.17	9.73	9.40
-46	0.055	-25.21	-15.31	0.03	-1	0.993	-0.06	9.84	9.64
					0	1.000	0.00	9.90	9.77



Three CA5-FM/CP/RM/50N Yagi antennas

Oriented at 0 degrees

Frequency: 100.3 MHz

Gain: 9.9 dBd (x 9.8)

Circular Polarization

Vertical stacked 0.87 wavelength

Vertical plane Pattern

3xCA5-FM/CP/RM Yagi array

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
0	1.000	0.00	9.90	9.77	45	0.070	-23.05	-13.15	0.05
1	0.993	-0.06	9.84	9.64	46	0.055	-25.21	-15.31	0.03
2	0.981	-0.17	9.73	9.40	47	0.040	-27.97	-18.07	0.02
3	0.963	-0.33	9.57	9.05	48	0.026	-31.78	-21.88	0.01
4	0.939	-0.55	9.35	8.61	49	0.013	-38.06	-28.16	0.00
5	0.909	-0.82	9.08	8.08	50	0.010	-40.00	-30.10	0.00
6	0.873	-1.18	8.72	7.45	51	0.011	-39.27	-29.37	0.00
7	0.832	-1.60	8.30	6.77	52	0.021	-33.58	-23.68	0.00
8	0.787	-2.08	7.82	6.05	53	0.030	-30.50	-20.60	0.01
9	0.739	-2.63	7.27	5.33	54	0.038	-28.51	-18.61	0.01
10	0.687	-3.26	6.64	4.61	55	0.044	-27.14	-17.24	0.02
11	0.632	-3.98	5.92	3.91	56	0.050	-25.98	-16.08	0.02
12	0.575	-4.80	5.10	3.23	57	0.056	-25.10	-15.20	0.03
13	0.517	-5.73	4.17	2.62	58	0.060	-24.44	-14.54	0.04
14	0.459	-6.77	3.13	2.05	59	0.063	-23.95	-14.05	0.04
15	0.400	-7.97	1.93	1.56	60	0.066	-23.60	-13.70	0.04
16	0.340	-9.36	0.54	1.13	61	0.068	-23.31	-13.41	0.05
17	0.282	-10.99	-1.09	0.78	62	0.070	-23.12	-13.22	0.05
18	0.225	-12.94	-3.04	0.50	63	0.071	-23.03	-13.13	0.05
19	0.171	-15.35	-5.45	0.29	64	0.071	-23.03	-13.13	0.05
20	0.119	-18.51	-8.61	0.14	65	0.070	-23.12	-13.22	0.05
21	0.069	-23.22	-13.32	0.05	66	0.073	-22.78	-12.88	0.05
22	0.023	-32.80	-22.90	0.01	67	0.075	-22.48	-12.58	0.06
23	0.019	-34.22	-24.32	0.00	68	0.078	-22.21	-12.31	0.06
24	0.058	-24.75	-14.85	0.03	69	0.080	-21.98	-12.08	0.06
25	0.092	-20.70	-10.80	0.08	70	0.081	-21.78	-11.88	0.06
26	0.122	-18.26	-8.36	0.15	71	0.084	-21.50	-11.60	0.07
27	0.148	-16.60	-6.70	0.21	72	0.087	-21.24	-11.34	0.07
28	0.169	-15.42	-5.52	0.28	73	0.089	-21.01	-11.11	0.08
29	0.187	-14.58	-4.68	0.34	74	0.091	-20.79	-10.89	0.08
30	0.200	-13.98	-4.08	0.39	75	0.093	-20.59	-10.69	0.09
31	0.209	-13.60	-3.70	0.43	76	0.096	-20.34	-10.44	0.09
32	0.214	-13.40	-3.50	0.45	77	0.099	-20.11	-10.21	0.10
33	0.215	-13.33	-3.43	0.45	78	0.101	-19.89	-9.99	0.10
34	0.214	-13.40	-3.50	0.45	79	0.104	-19.69	-9.79	0.10
35	0.209	-13.58	-3.68	0.43	80	0.106	-19.50	-9.60	0.11
36	0.202	-13.90	-4.00	0.40	81	0.108	-19.30	-9.40	0.11
37	0.192	-14.34	-4.44	0.36	82	0.111	-19.12	-9.22	0.12
38	0.180	-14.89	-4.99	0.32	83	0.113	-18.95	-9.05	0.12
39	0.167	-15.57	-5.67	0.27	84	0.115	-18.79	-8.89	0.13
40	0.152	-16.36	-6.46	0.23	85	0.117	-18.64	-8.74	0.13
41	0.136	-17.31	-7.41	0.18	86	0.119	-18.52	-8.62	0.14
42	0.120	-18.42	-8.52	0.14	87	0.120	-18.40	-8.50	0.14
43	0.103	-19.72	-9.82	0.10	88	0.122	-18.30	-8.40	0.14
44	0.087	-21.24	-11.34	0.07	89	0.123	-18.20	-8.30	0.15
					90	0.124	-18.12	-8.22	0.15