

ENGINEERING EXHIBIT

Incentive Auction Channel Reassignment

Application for Digital Television Station Construction Permit

prepared for

Gray Television Licensee, LLC

KKTV(DT) Colorado Springs, CO

Facility ID 35037

Ch. 26 355 kW 719 m

Gray Television Licensee, LLC (“Gray”) is the licensee of digital television station KKTV(DT), Channel 49, Facility ID 35037, Colorado Springs, CO. *Gray* herein proposes construction of the KKTV post-auction facility on Channel 26. Reassignment of KKTV from Channel 49 to Channel 26 was specified in the *Incentive Auction Closing and Channel Reassignment Public Notice (“CCRPN”, DA 17-317, released April 13, 2017)*.

The proposed Channel 26 operation will employ a new antenna system to be top-mounted on the KKTV tower in lieu of the existing Channel 49 antenna. The tower structure corresponds to FCC Antenna Structure Registration number 1024861, having an overall structure height above ground of 107.6 meters. The antenna replacement will result in a reduction in the structure’s overall height by 2.1 meters to 105.5 meters above ground level. Following construction, the FAA will be notified of the reduction in height and the FCC ASR will be modified accordingly.

The proposed antenna is an elliptically polarized directional Dielectric model TFU-17JETT/VP-R C170 (25 percent vertical polarization). *Gray* proposes to operate KKTV with an effective radiated power (“ERP”) of 355 kW at 719 meters antenna height above average terrain (“HAAT”). The maximum horizontally polarized ERP is 355 kW and the maximum vertically polarized ERP is 58.75 kW. The vertically polarized component will not exceed the horizontally polarized component at any azimuth. The directional antenna’s azimuthal patterns are depicted

in Figures 1 and 1A for horizontal and vertical polarization, respectively. The antenna's elevation pattern is depicted in Figure 2.

A map is supplied as Figure 3 which depicts the standard predicted coverage contours. This map includes the location of Colorado Springs, KKTV's principal community. As demonstrated thereon, the proposed facility complies with §73.625(a)(1) as the entire principal community will be encompassed by the 48 dBμ contour.

The proposed noise limited service contour ("NLSC") extends beyond that of the *CCRPN* parameters of 350 kW ERP and 724 meters HAAT.¹ The proposal complies with §73.3700(b)(ii) as described in the following.

The *CCRPN* facility specifies the directional antenna pattern corresponding to KKTV's licensed Channel 49 facility. The antenna manufacturer cannot provide the exact pattern on the new channel due to the change in frequency and corresponding mechanical limitations of antenna construction. The directional pattern proposed herein replicates the reassignment pattern as closely as possible. The proposal results in a slightly larger coverage contour in some directions in an attempt to achieve the *CCRPN* coverage contour. Therefore, KKTV qualifies under §73.3700(b)(ii)(A) for a contour extension due to the loss of coverage area resulting from the new channel assignment.

Interference study per FCC OET Bulletin 69² shows that the proposal complies with the 0.5 percent limit of new interference caused to pertinent nearby post-auction full service and Class A television stations and reassignments as required by §73.616. The interference study output report is provided as Table 1. This satisfies §73.3700(b)(ii)(C) for the proposed NLSC extension.

¹The antenna radiation center height above ground is increased by 0.8 meter. The proposed KKTV antenna HAAT is recalculated to be 719.1 meters, based on FCC 30 meter terrain data developed by OET.

²FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). This analysis employed the FCC's current "TVStudy" software with the default application processing template settings, 2 km cell size, and 1 km terrain increment. Comparisons of various results of this computer program (run on a Mac processor) to the FCC's implementation of TVStudy show excellent correlation.

The amount of NLSC extension does not exceed one percent in any direction. Figure 4 supplies a coverage contour comparison of the proposed KKTV facility to the reassignment facility's contour and a one percent extension distance of the reassignment facility's contour. Here, the contour level is adjusted with the dipole factor to match FCC application processing. Table 1's results also demonstrate that the proposed contour is within the baseline contour plus one percent. Therefore the proposed contour extension complies with §73.3700(b)(ii)(B).

The proposed KKTV facility's terrain-limited population provides a 100.1 percent match of the *CCRPN* baseline facility, as detailed in the following table. The OET Bulletin 69 report summary in Table 1 also concludes that the proposed service area population is more than 95 percent of the baseline population.

Terrain Limited Population - Match of Reassignment

Population Summary (2010 Census) OET Bulletin 69: TVStudy	Reassignment Parameters	Proposed
Within Noise Limited Contour	2,795,275	2,795,871
Not affected by terrain losses	2,385,402	2,388,292
Match of Reassignment	---	100.12%

The proposed 355 kW ERP exceeds the maximum permitted by §73.622(f)(8)(i) for the proposed antenna HAAT of 719 meters. Section 73.622(f)(5) permits the maximum ERP to be exceeded in order to provide the same geographic coverage area as the largest station within the same market. As demonstrated in Figure 5, the total area within the proposed KKTV NLSC is 36,859 square kilometers, which does not exceed the NLSC area of KTSC(DT) (40,061 sq. km, Ch. 8, Pueblo CO, BLEDT-20090612AAM). Thus, the 355 kW ERP specified herein is in compliance with §73.622(f)(5) of the FCC's Rules.

The nearest FCC monitoring station is 602 km distant at Grand Island, NE. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with "quiet" zones specified in §73.1030(a) and (b). The site location is beyond the border areas requiring international coordination. There are no authorized AM stations within 3 kilometers of the site.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 10 percent antenna relative field in downward elevations (pattern data shows less than 10 percent relative field at angles 25 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is $15.9 \mu\text{W}/\text{cm}^2$, which is 4.4 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

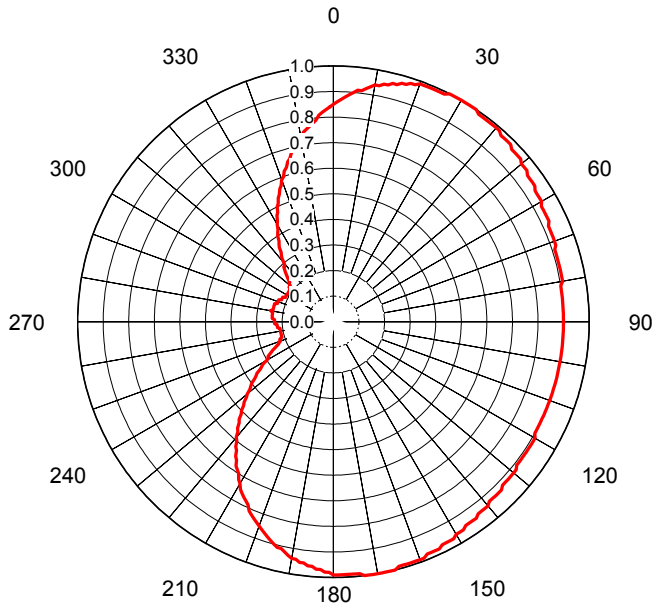
The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines. This exhibit is limited to the evaluation of exposure to RF electromagnetic field. No increase in structure height is proposed.

List of Attachments

Figure 1, 1A	Antenna Azimuthal Pattern
Figure 2	Antenna Elevation Pattern
Figure 3	Proposed Coverage Contours
Figure 4	Proposed Contour Expansion
Figure 5	Maximum ERP per §73.622(f)
Table 1	OET Bulletin 69 Interference Study
Form 2100	Saved Version of Engineering Sections from FCC Form at Time of Upload

Chesapeake RF Consultants, LLC

Joseph M. Davis, P.E.	July 1, 2017	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600



AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-70432-1**
 Date **12-Mar-17**
 Call Letters **KKTV**
 Channel **26**
 Frequency **545 MHz**
 Antenna Type **TFU-17JTT/VP-R C170**
 Gain **1.7 (2.32dB)**
Calculated

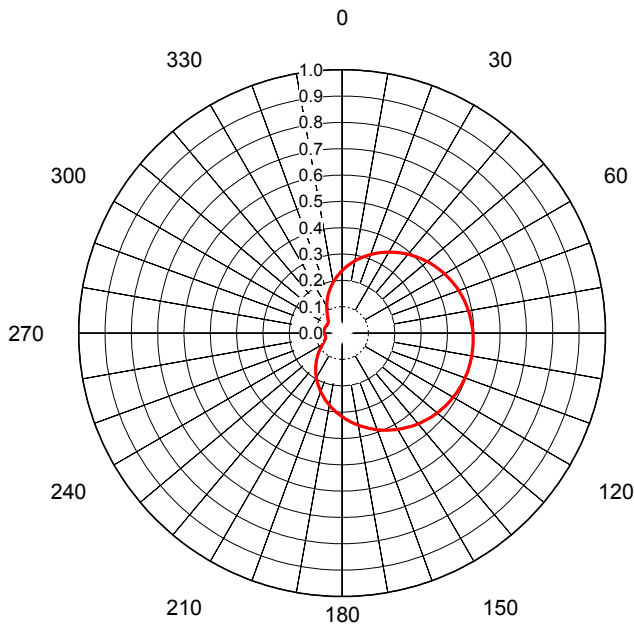
Drawing # **0**

0	0.850	36	0.990	72	0.910	108	0.900	144	0.950	180	0.990	216	0.650	252	0.220	288	0.230	324	0.360
1	0.860	37	0.990	73	0.910	109	0.900	145	0.950	181	0.980	217	0.630	253	0.210	289	0.230	325	0.370
2	0.870	38	0.990	74	0.910	110	0.900	146	0.950	182	0.980	218	0.620	254	0.210	290	0.230	326	0.380
3	0.880	39	0.990	75	0.910	111	0.900	147	0.950	183	0.970	219	0.600	255	0.210	291	0.230	327	0.400
4	0.890	40	0.990	76	0.910	112	0.900	148	0.960	184	0.970	220	0.590	256	0.210	292	0.230	328	0.410
5	0.900	41	0.990	77	0.910	113	0.900	149	0.960	185	0.960	221	0.570	257	0.210	293	0.220	329	0.420
6	0.910	42	0.980	78	0.910	114	0.900	150	0.960	186	0.960	222	0.560	258	0.210	294	0.220	330	0.440
7	0.910	43	0.980	79	0.910	115	0.900	151	0.970	187	0.950	223	0.540	259	0.210	295	0.220	331	0.450
8	0.920	44	0.980	80	0.910	116	0.900	152	0.970	188	0.950	224	0.530	260	0.210	296	0.220	332	0.470
9	0.930	45	0.980	81	0.900	117	0.900	153	0.970	189	0.940	225	0.510	261	0.210	297	0.210	333	0.480
10	0.940	46	0.970	82	0.900	118	0.900	154	0.970	190	0.940	226	0.500	262	0.210	298	0.210	334	0.500
11	0.940	47	0.970	83	0.900	119	0.900	155	0.980	191	0.930	227	0.480	263	0.210	299	0.210	335	0.510
12	0.950	48	0.970	84	0.900	120	0.910	156	0.980	192	0.920	228	0.470	264	0.220	300	0.210	336	0.530
13	0.950	49	0.970	85	0.900	121	0.910	157	0.980	193	0.910	229	0.450	265	0.220	301	0.210	337	0.540
14	0.960	50	0.960	86	0.900	122	0.910	158	0.980	194	0.910	230	0.440	266	0.220	302	0.210	338	0.560
15	0.960	51	0.960	87	0.900	123	0.910	159	0.990	195	0.900	231	0.420	267	0.220	303	0.210	339	0.570
16	0.970	52	0.960	88	0.900	124	0.910	160	0.990	196	0.890	232	0.410	268	0.230	304	0.210	340	0.590
17	0.970	53	0.950	89	0.900	125	0.910	161	0.990	197	0.880	233	0.400	269	0.230	305	0.210	341	0.600
18	0.980	54	0.950	90	0.900	126	0.910	162	0.990	198	0.870	234	0.380	270	0.230	306	0.210	342	0.620
19	0.980	55	0.950	91	0.900	127	0.910	163	0.990	199	0.860	235	0.370	271	0.230	307	0.210	343	0.630
20	0.990	56	0.950	92	0.900	128	0.910	164	0.990	200	0.850	236	0.360	272	0.230	308	0.220	344	0.650
21	0.990	57	0.940	93	0.900	129	0.920	165	0.990	201	0.840	237	0.340	273	0.240	309	0.220	345	0.660
22	0.990	58	0.940	94	0.900	130	0.920	166	1.000	202	0.830	238	0.330	274	0.240	310	0.220	346	0.680
23	0.990	59	0.940	95	0.900	131	0.920	167	1.000	203	0.820	239	0.320	275	0.240	311	0.230	347	0.690
24	0.990	60	0.940	96	0.900	132	0.920	168	1.000	204	0.810	240	0.300	276	0.240	312	0.230	348	0.700
25	0.990	61	0.930	97	0.900	133	0.920	169	1.000	205	0.790	241	0.290	277	0.240	313	0.240	349	0.720
26	0.990	62	0.930	98	0.900	134	0.920	170	1.000	206	0.780	242	0.290	278	0.240	314	0.250	350	0.730
27	1.000	63	0.930	99	0.900	135	0.930	171	1.000	207	0.770	243	0.280	279	0.240	315	0.260	351	0.750
28	1.000	64	0.930	100	0.900	136	0.930	172	1.000	208	0.760	244	0.270	280	0.250	316	0.270	352	0.760
29	1.000	65	0.930	101	0.900	137	0.930	173	1.000	209	0.750	245	0.260	281	0.240	317	0.280	353	0.770
30	1.000	66	0.920	102	0.900	138	0.930	174	0.990	210	0.730	246	0.250	282	0.240	318	0.290	354	0.780
31	1.000	67	0.920	103	0.900	139	0.930	175	0.990	211	0.720	247	0.240	283	0.240	319	0.290	355	0.790
32	1.000	68	0.920	104	0.900	140	0.940	176	0.990	212	0.700	248	0.230	284	0.240	320	0.300	356	0.810
33	1.000	69	0.920	105	0.900	141	0.940	177	0.990	213	0.690	249	0.230	285	0.240	321	0.320	357	0.820
34	1.000	70	0.920	106	0.900	142	0.940	178	0.990	214	0.680	250	0.220	286	0.240	322	0.330	358	0.830
35	0.990	71	0.920	107	0.900	143	0.940	179	0.990	215	0.660	251	0.220	287	0.240	323	0.340	359	0.840

Figure 1
Antenna Azimuthal Pattern
Horizontal Polarization
KKTV(DT) Colorado Springs, CO
Facility ID 35037
Ch. 26 355 kW 719 m

prepared for
Gray Television Licensee, LLC

July, 2017



AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-70432-1**
 Date **12-Mar-17**
 Call Letters **KKTV**
 Channel **26**
 Frequency **545 MHz**
 Antenna Type **TFU-17JTT/VP-R C170**
 Gain **2.47 (3.92dB)**
Calculated

Drawing # **C170V D26**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.237	36	0.377	72	0.475	108	0.498	144	0.439	180	0.317	216	0.170	252	0.066	288	0.068
1	0.241	37	0.380	73	0.477	109	0.497	145	0.436	181	0.313	217	0.166	253	0.066	289	0.068
2	0.245	38	0.383	74	0.479	110	0.497	146	0.434	182	0.310	218	0.162	254	0.065	290	0.067
3	0.249	39	0.387	75	0.480	111	0.496	147	0.431	183	0.306	219	0.158	255	0.065	291	0.067
4	0.253	40	0.390	76	0.482	112	0.495	148	0.428	184	0.302	220	0.154	256	0.064	292	0.067
5	0.258	41	0.394	77	0.483	113	0.495	149	0.425	185	0.298	221	0.150	257	0.064	293	0.066
6	0.262	42	0.397	78	0.485	114	0.494	150	0.422	186	0.294	222	0.146	258	0.064	294	0.066
7	0.266	43	0.400	79	0.486	115	0.493	151	0.419	187	0.290	223	0.142	259	0.064	295	0.066
8	0.270	44	0.404	80	0.487	116	0.492	152	0.416	188	0.286	224	0.138	260	0.064	296	0.065
9	0.274	45	0.407	81	0.489	117	0.491	153	0.413	189	0.282	225	0.135	261	0.064	297	0.065
10	0.278	46	0.410	82	0.490	118	0.490	154	0.410	190	0.278	226	0.131	262	0.065	298	0.065
11	0.282	47	0.413	83	0.491	119	0.489	155	0.407	191	0.274	227	0.127	263	0.065	299	0.064
12	0.286	48	0.416	84	0.492	120	0.487	156	0.404	192	0.270	228	0.123	264	0.065	300	0.064
13	0.290	49	0.419	85	0.493	121	0.486	157	0.400	193	0.266	229	0.120	265	0.066	301	0.064
14	0.294	50	0.422	86	0.494	122	0.485	158	0.397	194	0.262	230	0.116	266	0.066	302	0.064
15	0.298	51	0.425	87	0.495	123	0.483	159	0.394	195	0.258	231	0.113	267	0.066	303	0.064
16	0.302	52	0.428	88	0.495	124	0.482	160	0.390	196	0.253	232	0.109	268	0.067	304	0.064
17	0.306	53	0.431	89	0.496	125	0.480	161	0.387	197	0.249	233	0.106	269	0.067	305	0.065
18	0.310	54	0.434	90	0.497	126	0.479	162	0.383	198	0.245	234	0.103	270	0.067	306	0.065
19	0.313	55	0.436	91	0.497	127	0.477	163	0.380	199	0.241	235	0.100	271	0.068	307	0.066
20	0.317	56	0.439	92	0.498	128	0.475	164	0.377	200	0.237	236	0.097	272	0.068	308	0.066
21	0.321	57	0.442	93	0.498	129	0.473	165	0.373	201	0.233	237	0.094	273	0.068	309	0.067
22	0.325	58	0.444	94	0.499	130	0.471	166	0.369	202	0.229	238	0.091	274	0.069	310	0.068
23	0.329	59	0.447	95	0.499	131	0.470	167	0.366	203	0.224	239	0.088	275	0.069	311	0.069
24	0.333	60	0.450	96	0.499	132	0.468	168	0.362	204	0.220	240	0.086	276	0.069	312	0.070
25	0.336	61	0.452	97	0.500	133	0.465	169	0.359	205	0.216	241	0.083	277	0.069	313	0.072
26	0.340	62	0.454	98	0.500	134	0.463	170	0.355	206	0.212	242	0.081	278	0.069	314	0.073
27	0.344	63	0.457	99	0.500	135	0.461	171	0.351	207	0.208	243	0.079	279	0.069	315	0.075
28	0.348	64	0.459	100	0.500	136	0.459	172	0.348	208	0.203	244	0.077	280	0.069	316	0.077
29	0.351	65	0.461	101	0.500	137	0.457	173	0.344	209	0.199	245	0.075	281	0.069	317	0.079
30	0.355	66	0.463	102	0.500	138	0.454	174	0.340	210	0.195	246	0.073	282	0.069	318	0.081
31	0.359	67	0.465	103	0.500	139	0.452	175	0.336	211	0.191	247	0.072	283	0.069	319	0.083
32	0.362	68	0.468	104	0.499	140	0.450	176	0.333	212	0.187	248	0.070	284	0.069	320	0.086
33	0.366	69	0.470	105	0.499	141	0.447	177	0.329	213	0.183	249	0.069	285	0.069	321	0.088
34	0.369	70	0.471	106	0.499	142	0.444	178	0.325	214	0.179	250	0.068	286	0.069	322	0.091
35	0.373	71	0.473	107	0.498	143	0.442	179	0.321	215	0.174	251	0.067	287	0.068	323	0.094



Figure 1A
Antenna Azimuthal Pattern
Vertical Polarization
KKTV(DT) Colorado Springs, CO
Facility ID 35037
Ch. 26 355 kW 719 m

prepared for
Gray Television Licensee, LLC

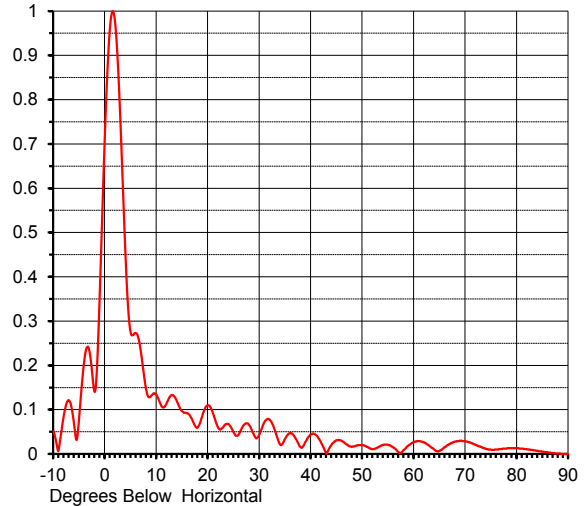
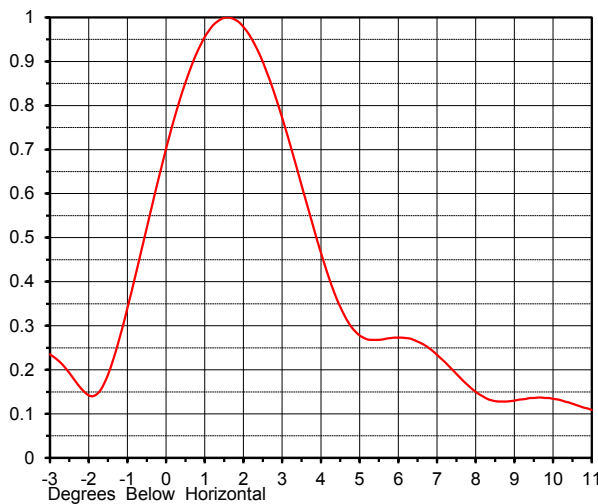
July, 2017

ELEVATION PATTERN

Proposal No. **C-70432-1**
 Date **12-Mar-17**
 Call Letters **KKTV**
 Channel **26**
 Frequency **545 MHz**
 Antenna Type **TFU-17JTT/VP-R C170**

RMS Directivity at Main Lobe **16.5 (12.17 dB)**
 RMS Directivity at Horizontal **8.1 (9.08 dB)**
Calculated

Beam Tilt **1.50 deg**
 Drawing Number **17N165150**

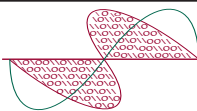


Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.051	10.0	0.133	30.0	0.045	50.0	0.020	70.0	0.028
-9.0	0.011	11.0	0.107	31.0	0.073	51.0	0.015	71.0	0.025
-8.0	0.088	12.0	0.116	32.0	0.077	52.0	0.011	72.0	0.020
-7.0	0.121	13.0	0.133	33.0	0.052	53.0	0.015	73.0	0.016
-6.0	0.064	14.0	0.117	34.0	0.021	54.0	0.020	74.0	0.011
-5.0	0.088	15.0	0.096	35.0	0.035	55.0	0.020	75.0	0.009
-4.0	0.215	16.0	0.092	36.0	0.047	56.0	0.014	76.0	0.010
-3.0	0.229	17.0	0.075	37.0	0.035	57.0	0.004	77.0	0.011
-2.0	0.140	18.0	0.060	38.0	0.015	58.0	0.009	78.0	0.012
-1.0	0.375	19.0	0.091	39.0	0.029	59.0	0.020	79.0	0.013
0.0	0.735	20.0	0.110	40.0	0.044	60.0	0.027	80.0	0.013
1.0	0.969	21.0	0.090	41.0	0.042	61.0	0.029	81.0	0.012
2.0	0.967	22.0	0.058	42.0	0.024	62.0	0.026	82.0	0.010
3.0	0.743	23.0	0.062	43.0	0.000	63.0	0.018	83.0	0.009
4.0	0.438	24.0	0.067	44.0	0.021	64.0	0.009	84.0	0.007
5.0	0.273	25.0	0.048	45.0	0.031	65.0	0.007	85.0	0.005
6.0	0.273	26.0	0.045	46.0	0.029	66.0	0.016	86.0	0.003
7.0	0.226	27.0	0.066	47.0	0.021	67.0	0.023	87.0	0.002
8.0	0.144	28.0	0.065	48.0	0.016	68.0	0.028	88.0	0.001
9.0	0.132	29.0	0.041	49.0	0.019	69.0	0.030	89.0	0.000
								90.0	0.000

Figure 2
Antenna Elevation Pattern
KKTV(DT) Colorado Springs, CO
Facility ID 35037
Ch. 26 355 kW 719 m

prepared for
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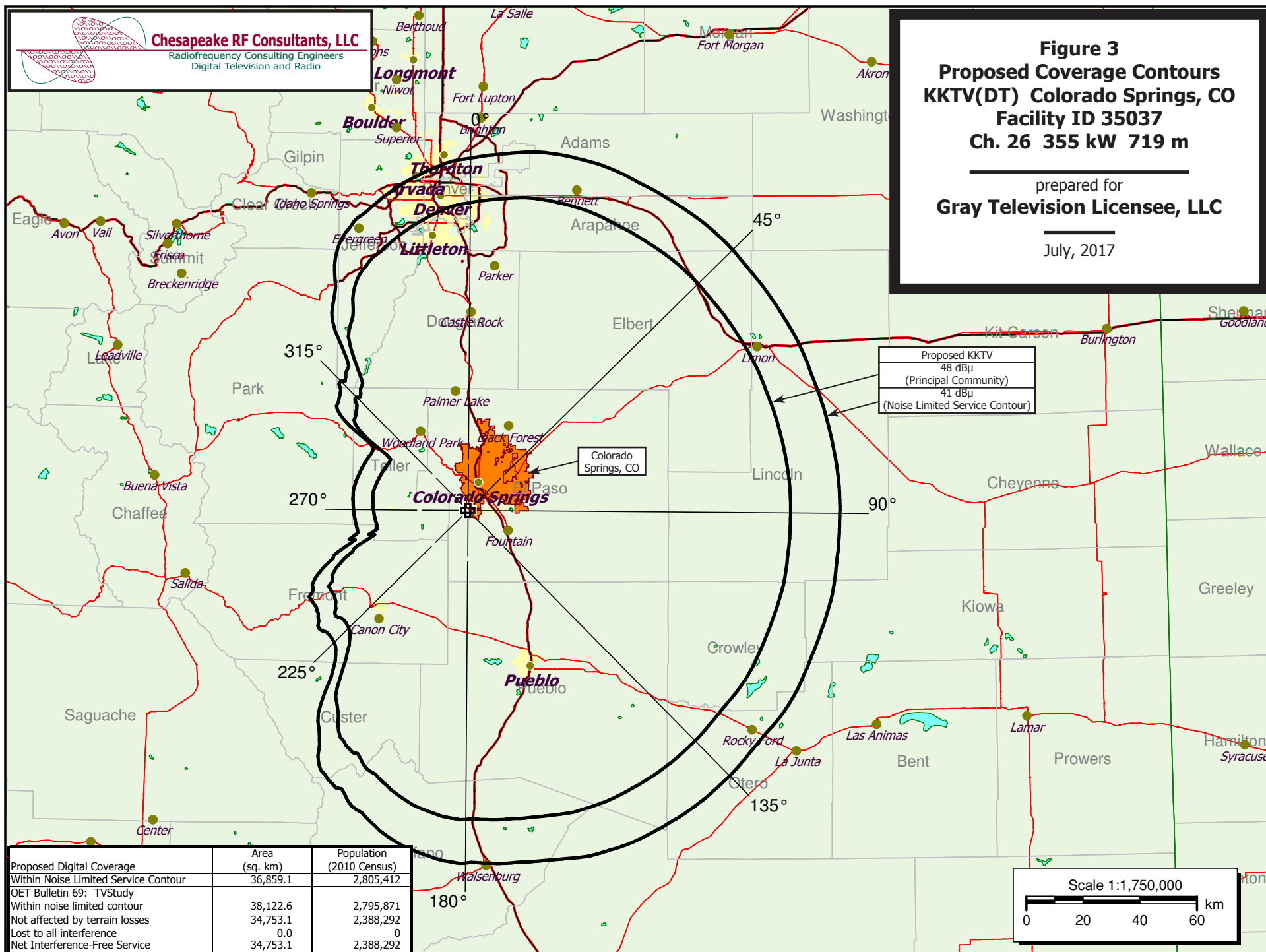


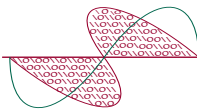
Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 3
Proposed Coverage Contours
KKTV(DT) Colorado Springs, CO
Facility ID 35037
Ch. 26 355 kW 719 m

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Gray Television Licensee, LLC

July, 2017



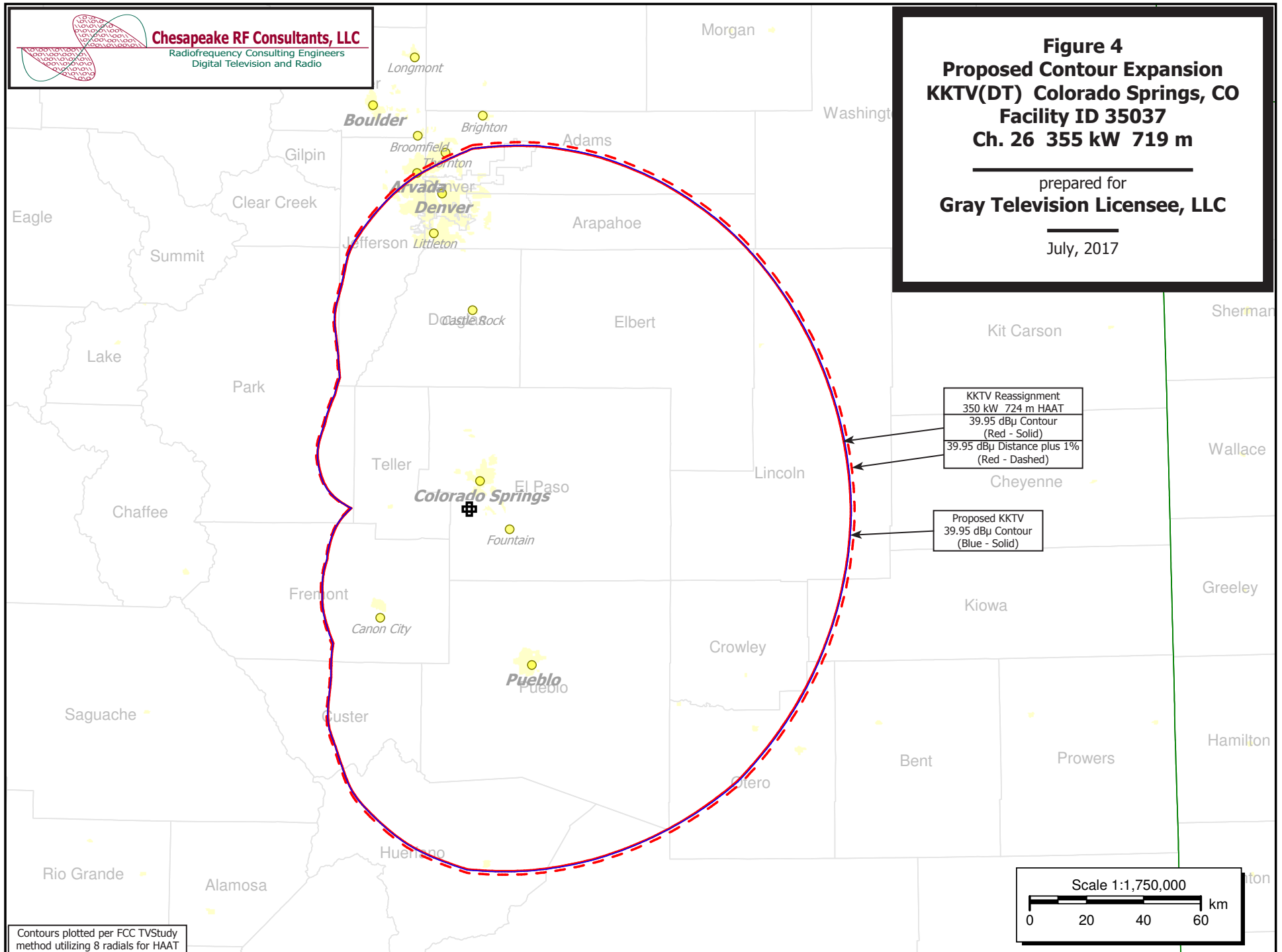


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 4
Proposed Contour Expansion
KKTV(DT) Colorado Springs, CO
Facility ID 35037
Ch. 26 355 kW 719 m

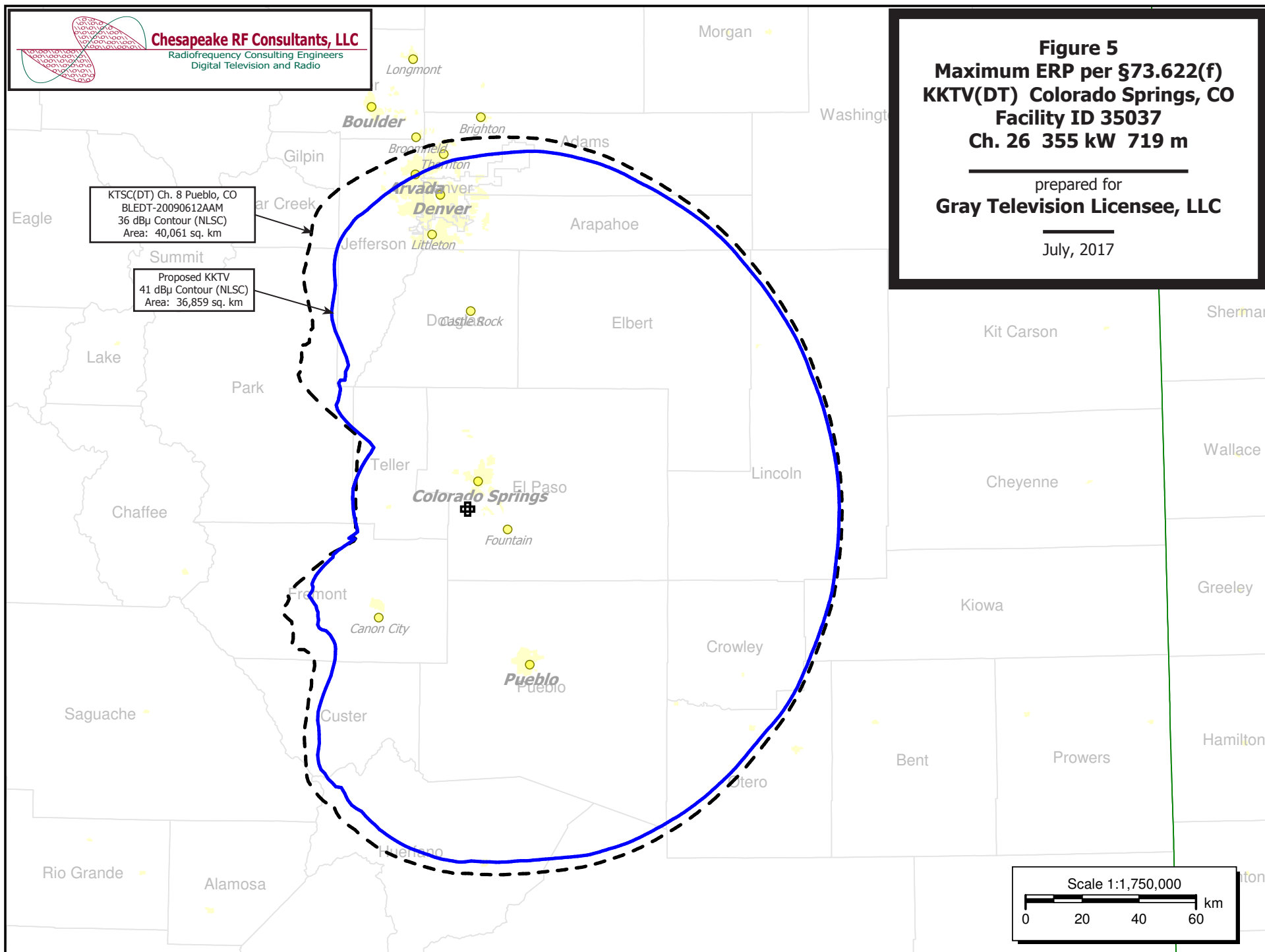
prepared for
Gray Television Licensee, LLC

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Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio



KTSC(DT) Ch. 8 Pueblo, CO
BLEDT-20090612AAM
36 dBu Contour (NLSC)
Area: 40,061 sq. km

Proposed KKTV
41 dBu Contour (NLSC)
Area: 36,859 sq. km

Figure 5
Maximum ERP per §73.622(f)
KKTV(DT) Colorado Springs, CO
Facility ID 35037
Ch. 26 355 kW 719 m

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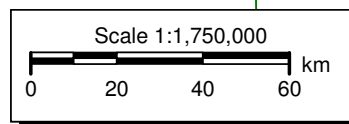


Table 1 KKTV OET Bulletin 69 Interference Study
(page 1 of 2)



tvstudy v2.2.2

Database: localhost, Study: KKTV PROP_355KW, Model: Longley-Rice
Start: 2017.07.01 09:33:25

Study created: 2017.07.01 09:33:21

Study build station data: LMS TV 2017-06-30 LMSTV

Proposal: KKTV D26 DT APP COLORADO SPRINGS, CO
File number: KKTV PROP_355KW
Facility ID: 35037
Station data: User record
Record ID: 712
Country: U.S.
Zone: II

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KVSN-DT	D25	DT	BL	PUEBLO, CO	DTVBL166331	0.1 km
KOB	D26	DT	LIC	ALBUQUERQUE, NM	BLCDT20051003BQP	417.2
KLWY	D27	DT	LIC	CHEYENNE, WY	BLCDT20090227AAD	256.2

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D26
Latitude: 38 44 42.00 N (NAD83)
Longitude: 104 51 45.00 W
Height AMSL: 2975.8 m
HAAT: 719.1 m
Peak ERP: 355 kW
Antenna: TFU-17JTT C170 20170626 0.0 deg

40.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	256 kW	1036.5 m	126.3 km
45.0	337	1137.1	133.4
90.0	288	1194.8	133.5
135.0	307	1179.8	133.8
180.0	348	940.3	126.5
225.0	94.2	146.0	67.4
270.0	18.8	-83.3	41.3
315.0	24.0	201.3	64.8

ERP exceeds maximum

ERP: 355 kW ERP maximum: 239 kW

Proposal service area is within baseline plus 1.0%

Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 1139.7 km

Distance to Mexican border: 788.3 km

Conditions at FCC monitoring station: Grand Island NE

Bearing: 64.2 degrees Distance: 599.9 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 347.7 degrees Distance: 156.3 km

ERP: 173 kW Field strength: 23.5 dBu, 0.0 mV/m

Study cell size: 2.00 km

Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

Table 1 KKTV OET Bulletin 69 Interference Study
(page 2 of 2)



Interference to DTVBL166331 BL, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KVSN-DT	D25	DT	BL	PUEBLO, CO	DTVBL166331	
Undesireds:	KKTV	D26	DT	BL	COLORADO SPRINGS, CO	DTVBL35037	0.1 km
	KKTV	D26	DT	APP	COLORADO SPRINGS, CO	KKTV PROP_355KW	0.1
	KRDO-TV	D24	DT	LIC	COLORADO SPRINGS, CO	BLCDDT20060329AAW	0.1
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX
	34374.2	2,722,698	31456.2	2,330,507	31352.4	2,330,228	31356.4 2,330,228 -0.01 0.00
Undesired				Total IX	Unique IX, before	Unique IX, after	
KKTV D26 DT BL		95.8		279	87.9	244	
KKTV D26 DT APP		91.8		279		83.9	244
KRDO-TV D24 DT LIC		15.9		35	8.0	0	8.0 0

Interference to BLCDDT20051003BQP LIC, scenario 1
Proposal causes no interference.

Interference to BLCDDT20090227AAD LIC, scenario 1
Proposal causes no interference.

Interference to BLCDDT20090227AAD LIC, scenario 2
Proposal causes no interference.

Interference to proposal, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KKTV	D26	DT	APP	COLORADO SPRINGS, CO	KKTV PROP_355KW	
Undesireds:	KVSN-DT	D25	DT	BL	PUEBLO, CO	DTVBL166331	0.1 km
	Service area		Terrain-limited		IX-free	Percent IX	
	38122.6	2,795,871	34753.1	2,388,292	34753.1	2,388,292	0.00 0.00

Channel and Facility Information

Section	Question	Response
Proposed Community of License	Facility ID	35037
	State	Colorado
	City	COLORADO SPRINGS
	DTV Channel	26
Facility Type	Facility Type	Commercial
	Station Type	Main
Zone	Zone	2

Antenna Location Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	Yes
	ASR Number	1024861
Coordinates (NAD83)	Latitude	38° 44' 42.0" N+
	Longitude	104° 51' 45.0" W-
	Structure Type	TOWER-A free standing or guyed struct
	Overall Structure Height	107.6 meters
	Support Structure Height	91.4 meters
	Ground Elevation (AMSL)	2877.3 meters
Antenna Data	Height of Radiation Center Above Ground Level	98.5 meters
	Height of Radiation Center Above Average Terrain	719.1 meters
	Height of Radiation Center Above Mean Sea Level	2975.8 meters
	Effective Radiated Power	355 kW

Antenna
Technical Data

Section	Question	Response
Antenna Type	Antenna Type	Directional Custom
	Do you have an Antenna ID?	No
	Antenna ID	
Antenna Manufacturer and Model	Manufacturer:	DIE
	Model	TFU-17JTT/VP-R C170
	Rotation	0 degrees
	Electrical Beam Tilt	1.50
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Elliptical
DTV and DTS: Elevation Pattern	Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?	No
	Uploaded file for elevation antenna (or radiation) pattern data	

Directional Antenna Relative Field Values (Pre-rotated Pattern)

Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)
0	0.850	90	0.900	180	0.990	270	0.230
10	0.940	100	0.900	190	0.940	280	0.250
20	0.990	110	0.900	200	0.850	290	0.230
30	1.000	120	0.910	210	0.730	300	0.210
40	0.990	130	0.920	220	0.590	310	0.220
50	0.960	140	0.940	230	0.440	320	0.300
60	0.940	150	0.960	240	0.300	330	0.440
70	0.920	160	0.990	250	0.220	340	0.590
80	0.910	170	1.000	260	0.210	350	0.730

Additional Azimuths

Degree	V _A
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Construction
Permit
Certifications

Section	Question	Response
Post-Incentive Auction Expedited Processing	It will operate on the DTV channel for this station as established in the post-incentive auction channel reassignment public notice.	Yes
	It will operate post-incentive auction facilities that do not expand the noise-limited service contour in any direction beyond that established by the post-incentive auction channel reassignment public notice.	No
	It will operate post-incentive auction facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the post-incentive auction channel reassignment public notice.	Yes
	The antenna structure to be used by this facility has been registered by the Commission and will not require re-registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely affect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.	Yes
Environmental Effect	Would a Commission grant of Authorization for this location be an action which may have a significant environmental effect? (See Section 1.1306 of 47 C.F.R.)	No
Broadcast Facility	The proposed facility complies with the applicable engineering standards and assignment requirements of 47 C. F.R. Sections 73.616, 73.622(i), 73.623(e), 73.625, 73.1030, and 73.1125.	Yes