



## ENGINEERING EXHIBIT

### **Incentive Auction Channel Reassignment**

#### **Application for Digital Television Station Construction Permit**

prepared for

##### **KRCA License LLC**

KETD(DT) Castle Rock, CO  
Facility ID 37101  
Ch. 15 56 kW 315 m

*KRCA License LLC (“KRCA”)* is the licensee of digital television station KETD(DT), Channel 45, Facility ID 37101, Castle Rock, CO. *KRCA* herein proposes construction of the KETD post-auction facility on Channel 15. Reassignment of KETD from Channel 45 to Channel 15 was specified in the *Incentive Auction Closing and Channel Reassignment Public Notice* (“CCRPN”, DA 17-317, released April 13, 2017).

The proposed Channel 15 operation will employ a new antenna system to be side-mounted on the same supporting pole in lieu of the existing Channel 45 antenna at Mount Morrison, a mountaintop transmitting location. The overall height is 11.6 meters AGL. The structure does not have or require an Antenna Structure Registration Number, since its overall height is less than 60 meters and (according to the FCC’s “TOWAIR”) there are no known landing areas within 8 km of the site.

The proposed antenna is an elliptically polarized directional Dielectric model TLP-12/VP Custom (30 percent vertical polarization). *KRCA* proposes to operate KETD with an effective radiated power (“ERP”) of 56 kW at 315 meters antenna height above average terrain (“HAAT”). The maximum horizontally polarized ERP is 56 kW and the maximum vertically polarized ERP is 16.8 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 Castle Rock, KETD'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 dB $\mu$  contour.

The proposed noise limited service contour ("NLSC") extends beyond that of the *CCRPN* parameters of 52.8 kW ERP and 320 meters HAAT.<sup>1</sup> The proposal complies with §73.3700(b)(ii) as described in the following.

KETD's reassignment facility experiences a loss of interference-free coverage area within the NLSC when compared to that of its baseline<sup>2</sup> pre-auction facility. Detailed analysis shows that an area of 127.9 square kilometers having a population of 6,963 persons which received interference-free service from the baseline KETD facility does not receive interference-free service from the reassignment parameters. A map is supplied as Figure 4 which shows the interference-free results for the *CCRPN* parameters and the baseline interference-free individual cells that are lost at reassignment. Therefore, KETD qualifies under §73.3700(b)(ii)(A) for a contour extension due the loss of interference-free coverage area resulting from the new channel assignment.

Interference study per FCC OET Bulletin 69<sup>3</sup> 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 reassessments 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.

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<sup>1</sup>There is no change in antenna height above ground or above mean sea level. The proposed KETD antenna HAAT is recalculated to be 314.8 meters, based on FCC 30 meter terrain data developed by OET.

<sup>2</sup>"Final Digital Television Baseline Coverage Area And Population Served Information Related To Incentive Auction Repacking," DA 15-1296, Public Notice, Released November 12, 2015.

<sup>3</sup>FCC 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 FCCs implementation of TVStudy show excellent correlation.

The amount of NLSC extension does not exceed one percent in any direction. Figure 5 supplies a coverage contour comparison of the proposed KETD 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 KETD facility's terrain-limited population provides a 100.2 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	3,098,889	3,106,487
Not affected by terrain losses	3,070,692	3,077,844
Match of Reassignment	---	<b>100.23%</b>

The proposed site is located 49.6 km from the Table Mountain Radio Receiving Zone in Boulder County, Colorado. The proposal's F(50,10) signal level at Table Mountain will be less than the threshold 30 mV/m cited in §73.1030(b), based on the FCC propagation curves (see Figure 6).

The nearest FCC monitoring station is 594 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. There are no authorized AM stations within 3 kilometers of the site. The site location is beyond the border areas requiring international coordination.

#### **Human Exposure to Radiofrequency Electromagnetic Field (Environmental)**

The proposed transmitting location is along the Mount Morrison mountain ridge at a developed communications site area containing numerous other transmitting facilities. According to the applicant, access to the Mount Morrison communications facilities is restricted

and the site is considered to be a “controlled” area. Access to the site is restricted with warning signs near the site and at the locked gate 2 miles distant at the entrance of the only access road. Further, steep terrain serves to discourage and restrict casual access.

*KRCA* participates in a radiofrequency (“RF”) electromagnetic field exposure safety program along with other broadcasters and FCC licensees that utilize the Mount Morrison antenna site area. Following construction, *KRCA* shall conduct RF exposure measurements to evaluate the level of RF exposure resulting from the KETD facility. As necessary, based on these results and considering all emitters, appropriate exposure abatement procedures will be established and followed in order to comply with the FCC’s exposure limits. Such abatement procedures may involve the restriction of access to certain areas and/or facility modifications to reduce RF levels. 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.

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. This exhibit is limited to the evaluation of exposure to RF electromagnetic field.

*List of Attachments*

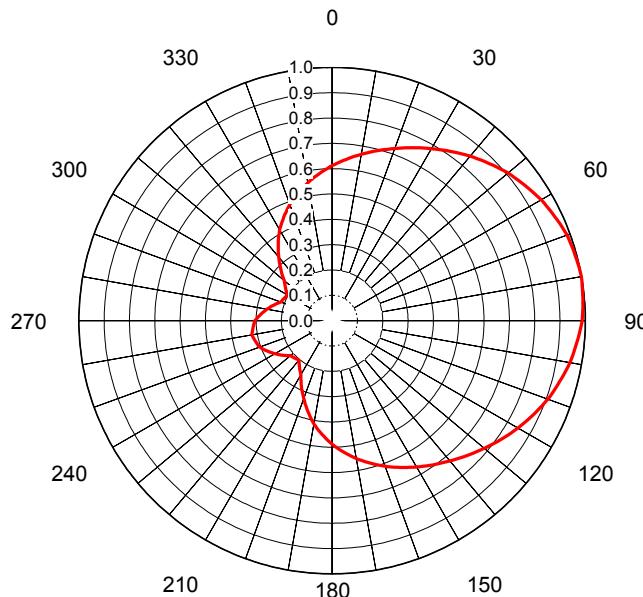
- Figure 1, 1A Antenna Azimuthal Pattern
- Figure 2 Antenna Elevation Pattern
- Figure 3 Proposed Coverage Contours
- Figure 4 Reassignment Service Loss
- Figure 5 Proposed Contour Expansion
- Figure 6 Contour to Table Mountain RRZ
- Table 1 OET Bulletin 69 Interference Study
- Form 2100 Saved Version of Engineering Sections from FCC Form at Time of Upload

**Chesapeake RF Consultants, LLC**

Joseph M. Davis, P.E.  
207 Old Dominion Road

June 22, 2017  
Yorktown, VA 23692

703-650-9600



### AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. C-70620-1  
 Date 12-May-17  
 Call Letters KETD  
 Channel 15  
 Frequency 479 MHz  
 Antenna Type TLP-12/VP Custom  
 Gain 2.55 (4.07dB)  
 Calculated

Deg	Value																		
0	0.612	36	0.822	72	0.990	108	0.916	144	0.701	180	0.488	216	0.220	252	0.308	288	0.224	324	0.362
1	0.618	37	0.829	73	0.992	109	0.912	145	0.695	181	0.481	217	0.216	253	0.310	289	0.220	325	0.370
2	0.623	38	0.835	74	0.993	110	0.907	146	0.689	182	0.473	218	0.212	254	0.312	290	0.215	326	0.379
3	0.628	39	0.842	75	0.994	111	0.901	147	0.684	183	0.466	219	0.207	255	0.313	291	0.214	327	0.388
4	0.634	40	0.848	76	0.995	112	0.895	148	0.678	184	0.458	220	0.203	256	0.315	292	0.213	328	0.397
5	0.640	41	0.854	77	0.996	113	0.889	149	0.673	185	0.451	221	0.204	257	0.317	293	0.211	329	0.405
6	0.645	42	0.860	78	0.998	114	0.883	150	0.667	186	0.444	222	0.205	258	0.319	294	0.210	330	0.414
7	0.650	43	0.866	79	0.999	115	0.877	151	0.661	187	0.436	223	0.207	259	0.320	295	0.209	331	0.421
8	0.656	44	0.872	80	1.000	116	0.872	152	0.656	188	0.429	224	0.208	260	0.322	296	0.208	332	0.429
9	0.661	45	0.877	81	0.999	117	0.866	153	0.650	189	0.421	225	0.209	261	0.320	297	0.207	333	0.436
10	0.667	46	0.883	82	0.998	118	0.860	154	0.645	190	0.414	226	0.210	262	0.319	298	0.205	334	0.444
11	0.673	47	0.889	83	0.996	119	0.854	155	0.640	191	0.405	227	0.211	263	0.317	299	0.204	335	0.451
12	0.678	48	0.895	84	0.995	120	0.848	156	0.634	192	0.397	228	0.213	264	0.315	300	0.203	336	0.458
13	0.684	49	0.901	85	0.994	121	0.842	157	0.628	193	0.388	229	0.214	265	0.313	301	0.207	337	0.466
14	0.689	50	0.907	86	0.993	122	0.835	158	0.623	194	0.379	230	0.215	266	0.312	302	0.212	338	0.473
15	0.695	51	0.912	87	0.992	123	0.829	159	0.618	195	0.370	231	0.220	267	0.310	303	0.216	339	0.481
16	0.701	52	0.916	88	0.990	124	0.822	160	0.612	196	0.362	232	0.224	268	0.308	304	0.220	340	0.488
17	0.706	53	0.921	89	0.989	125	0.816	161	0.606	197	0.353	233	0.229	269	0.307	305	0.225	341	0.495
18	0.712	54	0.926	90	0.988	126	0.810	162	0.600	198	0.344	234	0.233	270	0.305	306	0.229	342	0.501
19	0.717	55	0.930	91	0.985	127	0.803	163	0.594	199	0.336	235	0.238	271	0.301	307	0.233	343	0.507
20	0.723	56	0.935	92	0.981	128	0.797	164	0.588	200	0.327	236	0.243	272	0.296	308	0.237	344	0.514
21	0.729	57	0.940	93	0.978	129	0.790	165	0.582	201	0.319	237	0.247	273	0.292	309	0.242	345	0.521
22	0.735	58	0.945	94	0.974	130	0.784	166	0.577	202	0.311	238	0.252	274	0.287	310	0.246	346	0.527
23	0.741	59	0.949	95	0.971	131	0.778	167	0.571	203	0.303	239	0.256	275	0.283	311	0.254	347	0.534
24	0.747	60	0.954	96	0.968	132	0.772	168	0.565	204	0.295	240	0.261	276	0.279	312	0.262	348	0.540
25	0.753	61	0.957	97	0.964	133	0.766	169	0.559	205	0.287	241	0.265	277	0.274	313	0.270	349	0.547
26	0.760	62	0.961	98	0.961	134	0.760	170	0.553	206	0.278	242	0.270	278	0.270	314	0.278	350	0.553
27	0.766	63	0.964	99	0.957	135	0.753	171	0.547	207	0.270	243	0.274	279	0.265	315	0.287	351	0.559
28	0.772	64	0.968	100	0.954	136	0.747	172	0.540	208	0.262	244	0.279	280	0.261	316	0.295	352	0.565
29	0.778	65	0.971	101	0.949	137	0.741	173	0.534	209	0.254	245	0.283	281	0.256	317	0.303	353	0.571
30	0.784	66	0.974	102	0.945	138	0.735	174	0.527	210	0.246	246	0.287	282	0.252	318	0.311	354	0.577
31	0.790	67	0.978	103	0.940	139	0.729	175	0.521	211	0.242	247	0.292	283	0.247	319	0.319	355	0.582
32	0.797	68	0.981	104	0.935	140	0.723	176	0.514	212	0.237	248	0.296	284	0.243	320	0.327	356	0.588
33	0.803	69	0.985	105	0.930	141	0.717	177	0.507	213	0.233	249	0.301	285	0.238	321	0.336	357	0.594
34	0.810	70	0.988	106	0.926	142	0.712	178	0.501	214	0.229	250	0.305	286	0.233	322	0.344	358	0.600
35	0.816	71	0.989	107	0.921	143	0.706	179	0.495	215	0.225	251	0.307	287	0.229	323	0.353	359	0.606

**Figure 1**  
**Antenna Azimuthal Pattern**  
**Horizontal Polarization**  
**KETD(DT) Castle Rock, CO**  
**Facility ID 37101**  
**Ch. 15 56 kW 315 m**

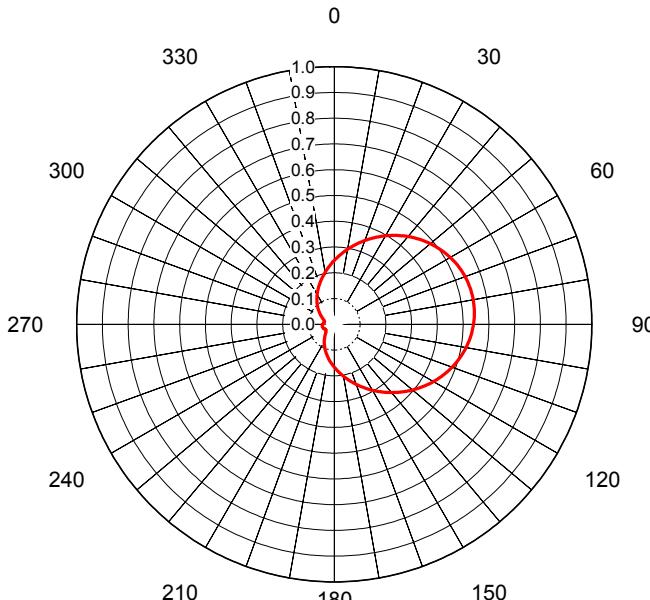
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prepared for  
**KRCA License LLC**



June, 2017

# Dielectric®



## AZIMUTH PATTERN Vertical Polarization

In Free Space

Proposal No. C-70620-1  
 Date 12-May-17  
 Call Letters KETD  
 Channel 15  
 Frequency 479 MHz  
 Antenna Type TLP-12/VP Custom  
 Gain 3.2 (5.06dB)  
 Calculated

Deg	Value																		
0	0.248	36	0.426	72	0.543	108	0.494	144	0.326	180	0.166	216	0.063	252	0.046	288	0.040	324	0.115
1	0.252	37	0.431	73	0.544	109	0.490	145	0.320	181	0.163	217	0.061	253	0.046	289	0.041	325	0.118
2	0.257	38	0.435	74	0.545	110	0.487	146	0.315	182	0.159	218	0.059	254	0.046	290	0.042	326	0.121
3	0.262	39	0.440	75	0.546	111	0.483	147	0.310	183	0.156	219	0.057	255	0.047	291	0.043	327	0.124
4	0.266	40	0.445	76	0.547	112	0.479	148	0.305	184	0.152	220	0.055	256	0.047	292	0.043	328	0.127
5	0.271	41	0.449	77	0.547	113	0.475	149	0.300	185	0.149	221	0.054	257	0.047	293	0.045	329	0.130
6	0.276	42	0.454	78	0.547	114	0.471	150	0.295	186	0.146	222	0.052	258	0.047	294	0.046	330	0.133
7	0.281	43	0.458	79	0.548	115	0.467	151	0.291	187	0.143	223	0.050	259	0.047	295	0.047	331	0.136
8	0.286	44	0.462	80	0.548	116	0.462	152	0.286	188	0.139	224	0.049	260	0.047	296	0.049	332	0.139
9	0.291	45	0.467	81	0.548	117	0.458	153	0.281	189	0.136	225	0.047	261	0.047	297	0.050	333	0.143
10	0.295	46	0.471	82	0.547	118	0.454	154	0.276	190	0.133	226	0.046	262	0.047	298	0.052	334	0.146
11	0.300	47	0.475	83	0.547	119	0.449	155	0.271	191	0.130	227	0.045	263	0.047	299	0.054	335	0.149
12	0.305	48	0.479	84	0.547	120	0.445	156	0.266	192	0.127	228	0.043	264	0.047	300	0.055	336	0.152
13	0.310	49	0.483	85	0.546	121	0.440	157	0.262	193	0.124	229	0.043	265	0.047	301	0.057	337	0.156
14	0.315	50	0.487	86	0.545	122	0.435	158	0.257	194	0.121	230	0.042	266	0.046	302	0.059	338	0.159
15	0.320	51	0.490	87	0.544	123	0.431	159	0.252	195	0.118	231	0.041	267	0.046	303	0.061	339	0.163
16	0.326	52	0.494	88	0.543	124	0.426	160	0.248	196	0.115	232	0.040	268	0.046	304	0.063	340	0.166
17	0.331	53	0.498	89	0.542	125	0.421	161	0.243	197	0.112	233	0.040	269	0.045	305	0.066	341	0.170
18	0.336	54	0.501	90	0.540	126	0.416	162	0.239	198	0.109	234	0.040	270	0.045	306	0.068	342	0.174
19	0.341	55	0.504	91	0.539	127	0.411	163	0.234	199	0.106	235	0.039	271	0.044	307	0.070	343	0.177
20	0.346	56	0.508	92	0.537	128	0.407	164	0.230	200	0.104	236	0.039	272	0.044	308	0.073	344	0.181
21	0.351	57	0.511	93	0.536	129	0.402	165	0.225	201	0.101	237	0.039	273	0.043	309	0.075	345	0.185
22	0.356	58	0.514	94	0.534	130	0.397	166	0.221	202	0.098	238	0.040	274	0.043	310	0.077	346	0.189
23	0.361	59	0.517	95	0.532	131	0.392	167	0.217	203	0.095	239	0.040	275	0.042	311	0.080	347	0.193
24	0.366	60	0.520	96	0.529	132	0.387	168	0.213	204	0.093	240	0.040	276	0.042	312	0.082	348	0.196
25	0.371	61	0.522	97	0.527	133	0.382	169	0.209	205	0.090	241	0.040	277	0.041	313	0.085	349	0.200
26	0.377	62	0.525	98	0.525	134	0.377	170	0.205	206	0.087	242	0.041	278	0.041	314	0.087	350	0.205
27	0.382	63	0.527	99	0.522	135	0.371	171	0.200	207	0.085	243	0.041	279	0.040	315	0.090	351	0.209
28	0.387	64	0.529	100	0.520	136	0.366	172	0.196	208	0.082	244	0.042	280	0.040	316	0.093	352	0.213
29	0.392	65	0.532	101	0.517	137	0.361	173	0.193	209	0.080	245	0.042	281	0.040	317	0.095	353	0.217
30	0.397	66	0.534	102	0.514	138	0.356	174	0.189	210	0.077	246	0.043	282	0.040	318	0.098	354	0.221
31	0.402	67	0.536	103	0.511	139	0.351	175	0.185	211	0.075	247	0.043	283	0.039	319	0.101	355	0.225
32	0.407	68	0.537	104	0.508	140	0.346	176	0.181	212	0.073	248	0.044	284	0.039	320	0.104	356	0.230
33	0.411	69	0.539	105	0.504	141	0.341	177	0.177	213	0.070	249	0.044	285	0.039	321	0.106	357	0.234
34	0.416	70	0.540	106	0.501	142	0.336	178	0.174	214	0.068	250	0.045	286	0.040	322	0.109	358	0.239
35	0.421	71	0.542	107	0.498	143	0.331	179	0.170	215	0.066	251	0.045	287	0.040	323	0.112	359	0.243

**Figure 1A**  
**Antenna Azimuthal Pattern**  
**Vertical Polarization**  
**KETD(DT) Castle Rock, CO**  
**Facility ID 37101**  
**Ch. 15 56 kW 315 m**

prepared for  
**KRCA License LLC**

June, 2017



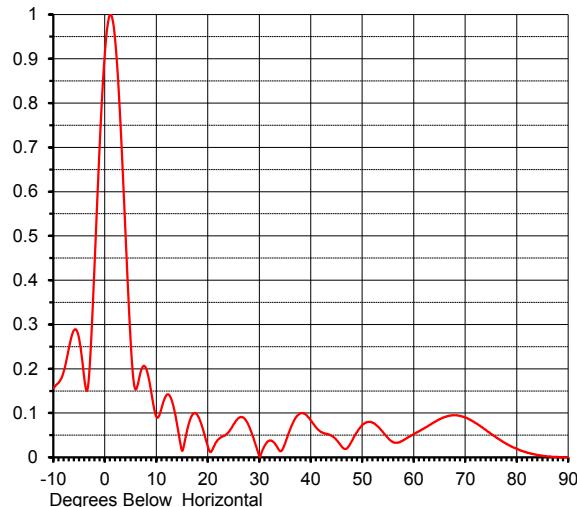
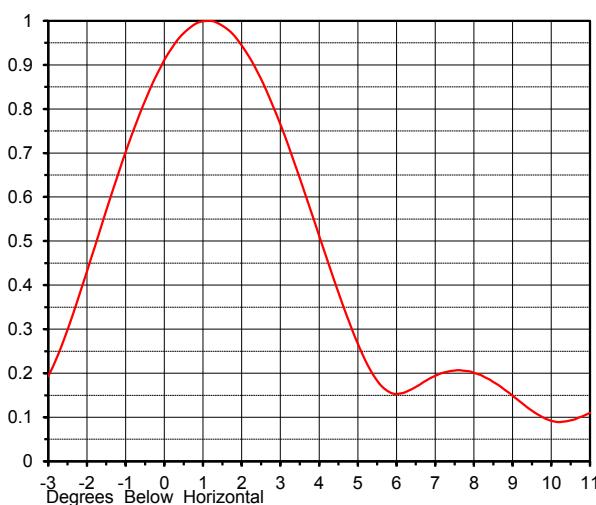
## ELEVATION PATTERN

Proposal No. **C-70620-1**  
 Date **12-May-17**  
 Call Letters **KETD**  
 Channel **15**  
 Frequency **479 MHz**  
 Antenna Type **TLP-12/VP Custom**

RMS Directivity at Main Lobe  
 RMS Directivity at Horizontal

**12.5 ( 10.97 dB )**  
**10.7 ( 10.29 dB )**  
**Calculated**

Beam Tilt **1.00 deg**  
 Pattern Number **12L125100**



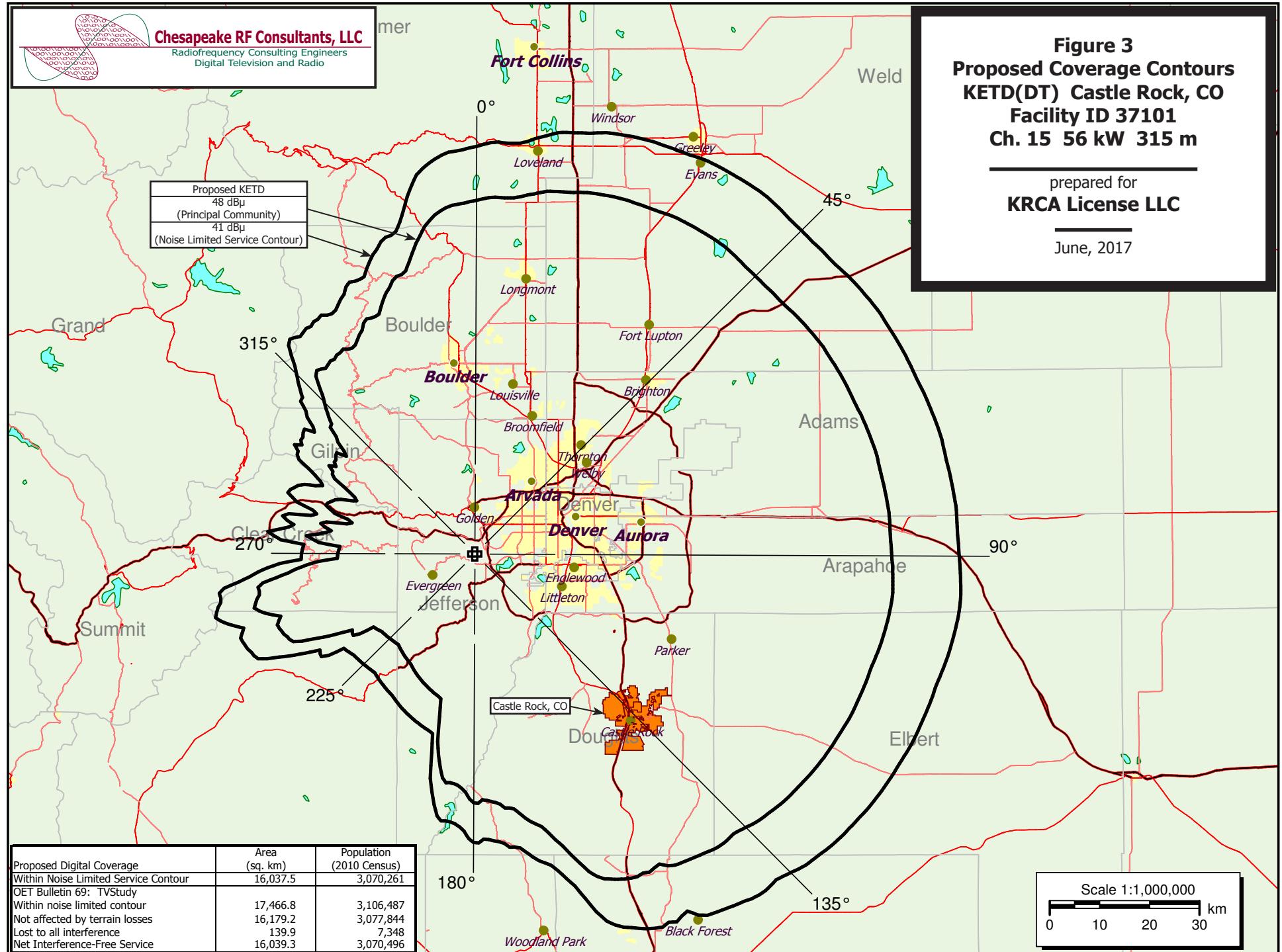
Angle	Field								
-10.0	0.156	10.0	0.090	30.0	0.000	50.0	0.074	70.0	0.090
-9.0	0.170	11.0	0.114	31.0	0.027	51.0	0.080	71.0	0.084
-8.0	0.197	12.0	0.142	32.0	0.038	52.0	0.078	72.0	0.077
-7.0	0.250	13.0	0.125	33.0	0.030	53.0	0.069	73.0	0.069
-6.0	0.288	14.0	0.070	34.0	0.014	54.0	0.056	74.0	0.061
-5.0	0.262	15.0	0.015	35.0	0.034	55.0	0.042	75.0	0.052
-4.0	0.171	16.0	0.066	36.0	0.066	56.0	0.034	76.0	0.044
-3.0	0.211	17.0	0.097	37.0	0.090	57.0	0.034	77.0	0.037
-2.0	0.459	18.0	0.093	38.0	0.100	58.0	0.039	78.0	0.030
-1.0	0.727	19.0	0.062	39.0	0.096	59.0	0.046	79.0	0.024
0.0	0.926	20.0	0.021	40.0	0.082	60.0	0.053	80.0	0.019
1.0	1.000	21.0	0.022	41.0	0.067	61.0	0.059	81.0	0.014
2.0	0.931	22.0	0.041	42.0	0.057	62.0	0.066	82.0	0.010
3.0	0.742	23.0	0.048	43.0	0.053	63.0	0.073	83.0	0.008
4.0	0.486	24.0	0.058	44.0	0.048	64.0	0.080	84.0	0.005
5.0	0.247	25.0	0.076	45.0	0.038	65.0	0.086	85.0	0.003
6.0	0.154	26.0	0.089	46.0	0.023	66.0	0.091	86.0	0.002
7.0	0.198	27.0	0.088	47.0	0.021	67.0	0.094	87.0	0.001
8.0	0.198	28.0	0.068	48.0	0.039	68.0	0.095	88.0	0.000
9.0	0.142	29.0	0.035	49.0	0.059	69.0	0.093	89.0	0.000
						90.0	0.000		

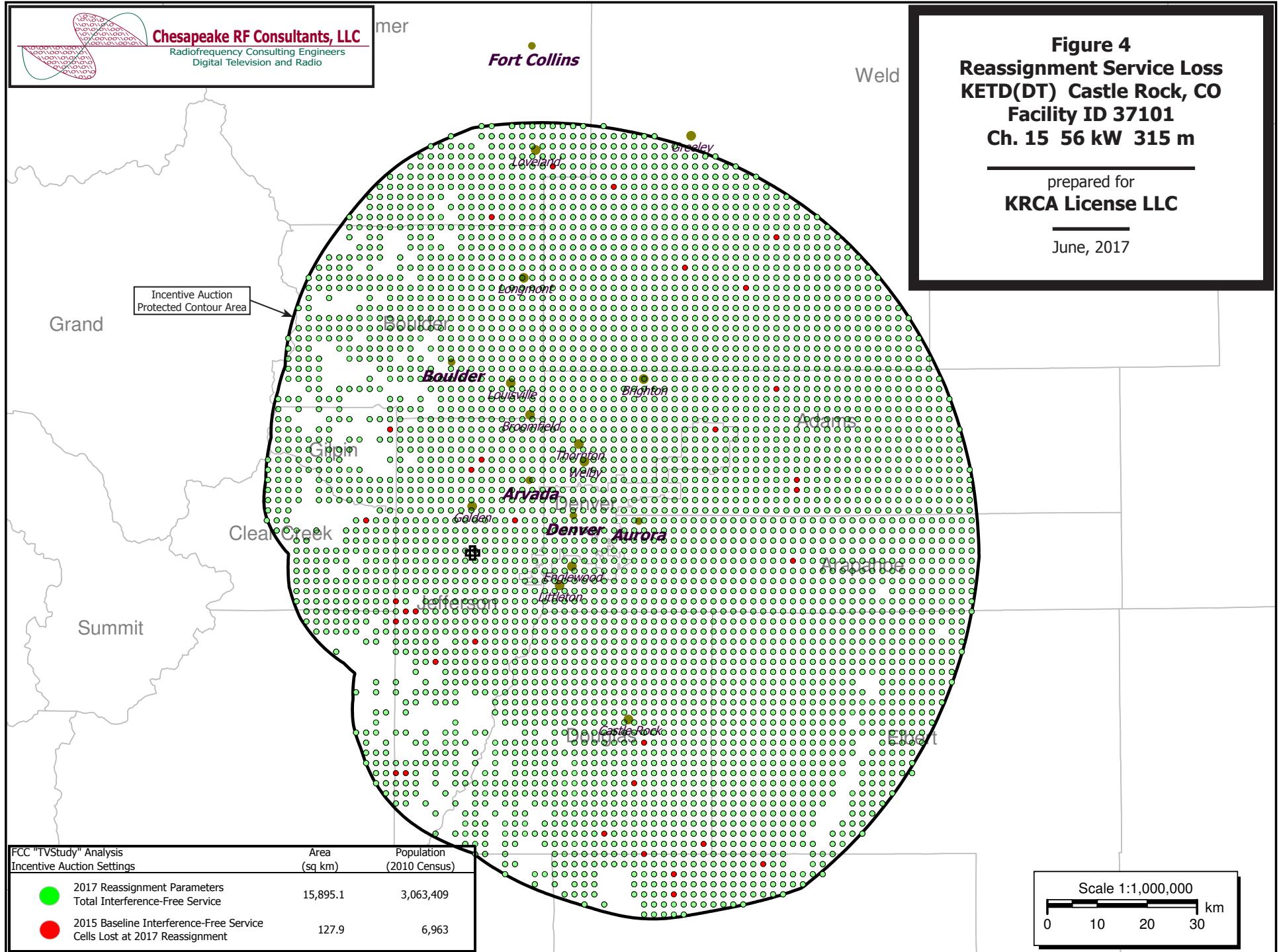
**Figure 2**  
**Antenna Elevation Pattern**  
**KETD(DT) Castle Rock, CO**  
**Facility ID 37101**  
**Ch. 15 56 kW 315 m**

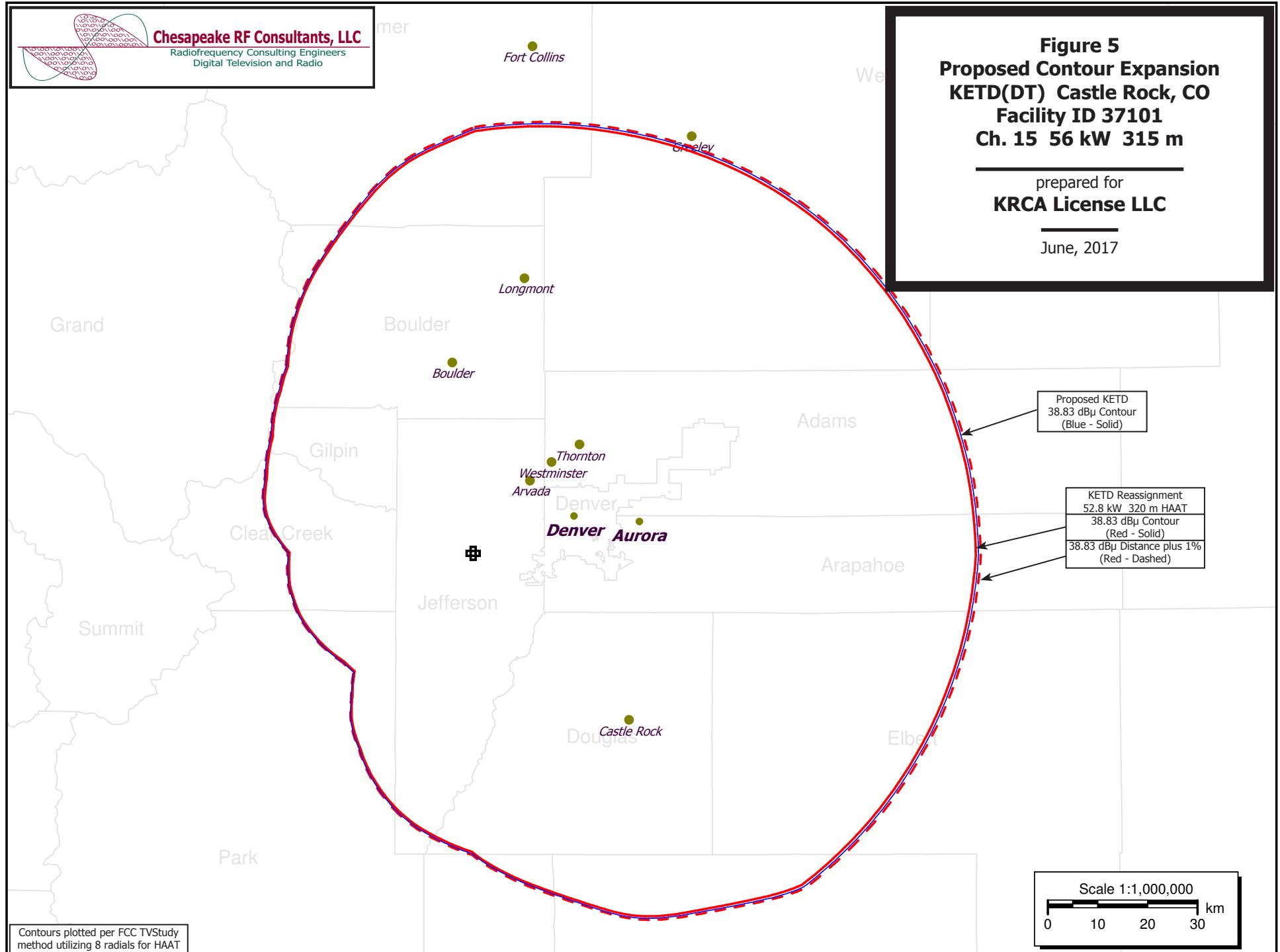
prepared for  
**KRCA License LLC**

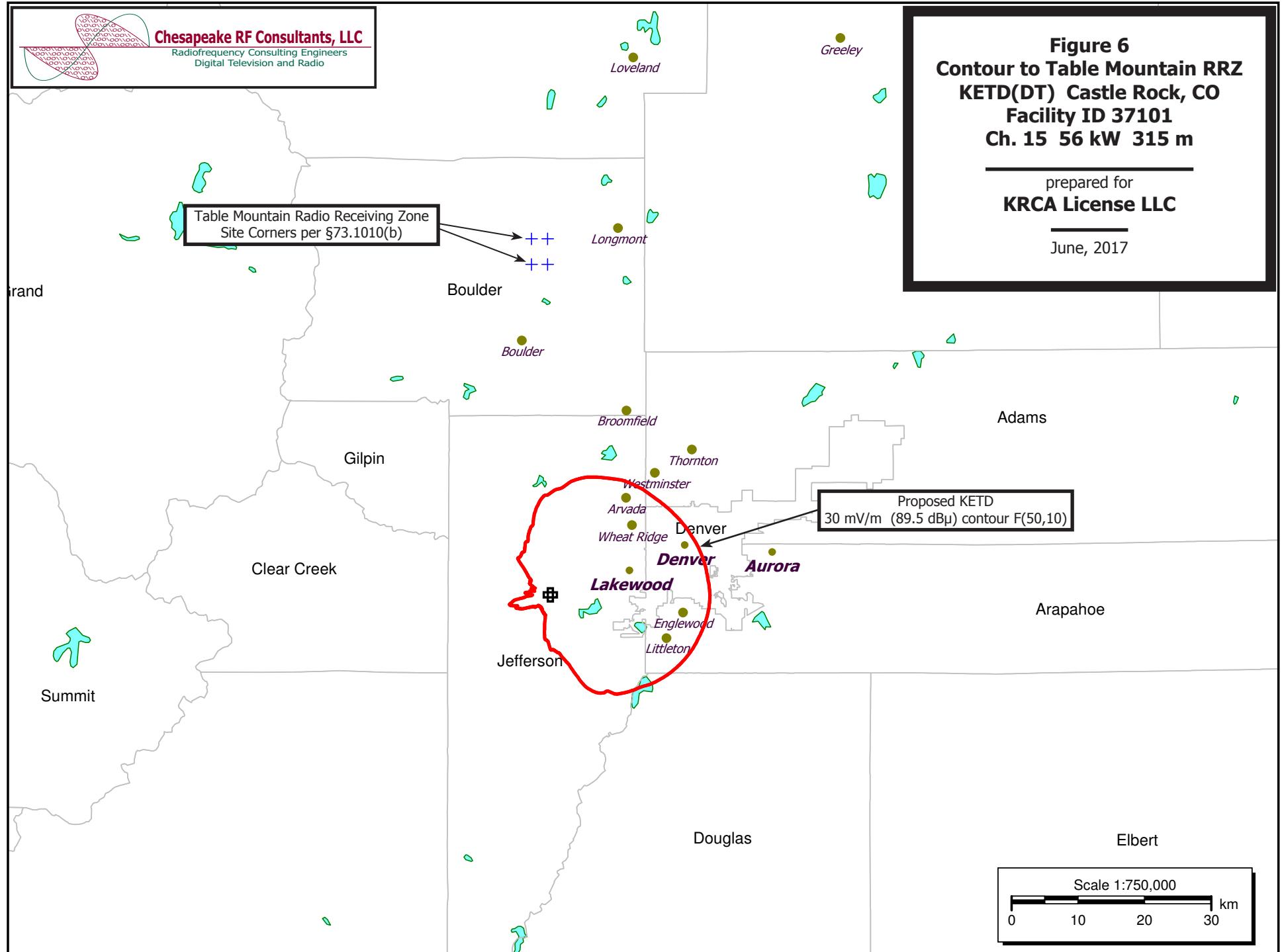
June, 2017











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



tvstudy v2.2.2  
Database: localhost, Study: KETD PROP 56KW, Model: Longley-Rice  
Start: 2017.06.22 20:10:51

Study created: 2017.06.22 20:10:46

Study build station data: LMS TV 2017-06-21 LMSTV

Proposal: KETD D15 DT APP CASTLE ROCK, CO  
File number: KETD PROP 56KW  
Facility ID: 37101  
Station data: User record  
Record ID: 575  
Country: U.S.

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
KCEC	D14	DT	BL	DENVER, CO	DTVBL24514	7.0 km
KREZ-TV	D15	DT	LIC	DURANGO, CO	BLCDT20030324ADD	355.1
KFQX	D15	DT	LIC	GRAND JUNCTION, CO	BLCDT20061020ACO	310.5
KQDK-CD	D16	DC	BL	DENVER, CO	DTVBL29455	29.5

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D15  
Latitude: 39 40 17.00 N (NAD83)  
Longitude: 105 13 8.00 W  
Height AMSL: 2358.1 m  
HAAT: 314.8 m  
Peak ERP: 56.0 kW  
Antenna: KETD TLP-12 20170512 0.0 deg

38.8 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	21.0 kW	492.8 m	85.0 km
45.0	43.1	577.0	96.0
90.0	54.7	647.0	101.0
135.0	31.8	583.0	93.8
180.0	13.3	152.0	59.7
225.0	2.45	-16.7	33.7
270.0	5.21	14.9	36.9
315.0	4.60	125.5	52.9

Database HAAT does not agree with computed HAAT  
Database HAAT: 315 m Computed HAAT: 322 m

Proposal service area is within baseline plus 1.0%  
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 1036.8 km

Distance to Mexican border: 884.6 km

Conditions at FCC monitoring station: Grand Island NE  
Bearing: 74.2 degrees Distance: 592.0 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 356.6 degrees Distance: 49.7 km  
ERP: 19.6 kW Field strength: 84.7 dBu, 17.1 mV/m

No land mobile station failures found

Study cell size: 2.00 km  
Profile point spacing: 1.00 km

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



Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

-----  
Interference to DTVBL24514 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KCEC	D14	DT	BL	DENVER, CO	DTVBL24514	
Undesireds:	KETD	D15	DT	BL	CASTLE ROCK, CO	DTVBL37101	7.0 km
	KETD	D15	DT	APP	CASTLE ROCK, CO	KETD PROP 56KW	7.0
	KGWC-TV	D14	DT	LIC	CASPER, WY	BLCDT20090225AAL	347.3
Service area					Terrain-limited	IX-free, before	
22227.1	3,269,134	20541.6			3,237,207	20477.9	3,234,484
Undesired					Total IX	Unique IX, before	
KETD D15 DT BL		63.7			2,723	63.7	2,723
KETD D15 DT APP		63.7			2,723		63.7
							2,723
						IX-free, after	
						20477.9	3,234,484
						Percent New IX	
						0.00	0.00

-----  
Interference to BLCDT20030324ADD LIC, scenario 1  
Proposal causes no interference.

-----  
Interference to BLCDT20061020ACO LIC, scenario 1  
Proposal causes no interference.

-----  
Interference to DTVBL29455 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KQDK-CD	D16	DC	BL	DENVER, CO	DTVBL29455	
Undesireds:	KETD	D15	DT	BL	CASTLE ROCK, CO	DTVBL37101	29.5 km
	KETD	D15	DT	APP	CASTLE ROCK, CO	KETD PROP 56KW	29.5
	KPJR-TV	D17	DT	BL	GREELEY, CO	DTVBL166510	47.2
Service area					Terrain-limited	IX-free, before	
1833.9	2,046,134	1793.5			2,008,942	1640.1	1,982,186
Undesired					Total IX	Unique IX, before	
KETD D15 DT BL		48.4			4,116	4.0	168
KETD D15 DT APP		44.4			2,185		4.0
KPJR-TV D17 DT BL		149.5			26,588	105.0	22,640
						109.0	24,571
						IX-free, after	
						1640.1	1,982,186
						Percent New IX	
						0.00	0.00

-----  
Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KETD	D15	DT	APP	CASTLE ROCK, CO	KETD PROP 56KW	
Undesireds:	KCEC	D14	DT	BL	DENVER, CO	DTVBL24514	7.0 km
	KFQX	D15	DT	LIC	GRAND JUNCTION, CO	BLCDT20061020ACO	310.5
	KQDK-CD	D16	DC	BL	DENVER, CO	DTVBL29455	29.5
Service area					Terrain-limited	IX-free	
17466.8	3,106,487	16179.2			3,077,844	16039.3	3,070,496
Undesired					Total IX	Unique IX	
KCEC D14 DT BL		139.9			7,348	139.9	7,348
						Prcnt Unique IX	
						0.86	0.24

Channel and Facility Information	Section	Question	Response
Proposed Community of License	Facility ID	37101	
	State	Colorado	
	City	CASTLE ROCK	
	DTV Channel	15	
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?	No	
	ASR Number		
Coordinates (NAD83)	Latitude	39° 40' 17.0" N+	
	Longitude	105° 13' 08.0" W-	
	Structure Type	POLE-Pole used only to mount an antenna	
	Overall Structure Height	11.6 meters	
	Support Structure Height	11.6 meters	
	Ground Elevation (AMSL)	2343 meters	
Antenna Data	Height of Radiation Center Above Ground Level	8 meters	
	Height of Radiation Center Above Average Terrain	314.5 meters	
	Height of Radiation Center Above Mean Sea Level	2351 meters	
	Effective Radiated Power	56 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	TLP-12/VP Custom
		Rotation	0 degrees
		Electrical Beam Tilt	1.0
		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 <sub>A</sub> (Authorized Value)						
0	0.612	90	0.988	180	0.488	270	0.305
10	0.667	100	0.954	190	0.414	280	0.261
20	0.723	110	0.907	200	0.327	290	0.215
30	0.784	120	0.848	210	0.246	300	0.203
40	0.848	130	0.784	220	0.203	310	0.246
50	0.907	140	0.723	230	0.215	320	0.327
60	0.954	150	0.667	240	0.261	330	0.414
70	0.988	160	0.612	250	0.305	340	0.488
80	1.000	170	0.553	260	0.322	350	0.553

#### Additional Azimuths

Degree	V <sub>A</sub>
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<b>Construction Permit Certifications</b>	<b>Section</b>	<b>Question</b>	<b>Response</b>
	<b>Post-Incentive Auction Expedited Processing</b>	<p>It will operate on the DTV channel for this station as established in the post-incentive auction channel reassignment public notice.</p> <p>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.</p> <p>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.</p> <p>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.</p>	Yes  No  Yes  Yes
	<b>Environmental Effect</b>	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
	<b>Broadcast Facility</b>	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