

## **ENGINEERING EXHIBIT**

### **Application for Post-Transition Digital Television Station Construction Permit**

prepared for

#### **Los Angeles Television Station KCAL LLC**

KCAL-DT Los Angeles, CA

Facility ID 21422

Ch. 9 8 kW 977 m

*Los Angeles Television Station KCAL LLC (“KCAL”)* is the licensee of television station KCAL-TV, analog Channel 9 and digital Channel 43, Los Angeles, CA. *KCAL* herein proposes construction of the KCAL-DT post-transition digital facility on Channel 9. This channel was established in Appendix B of the Seventh Report and Order in MB Docket 87-278.

The instant proposal specifies an effective radiated power (“ERP”) of 8 kW at 977 meters antenna height above average terrain (“HAAT”). The proposed coverage contour extends beyond that of the Appendix B parameters of 12 kW ERP and 951 meters HAAT. The Appendix B facility contour location falls well short of much of the KCAL-TV analog Channel 9 Grade B contour area. Further, the Appendix B facility incorporates a theoretical directional antenna pattern as carried over from the current digital Channel 43 operation which is in turn impacted by non-uniform terrain and the differences in the F(50,50) and F(50,90) propagation curves.

The proposed digital Channel 9 operation will employ the existing antenna system employed by the analog Channel 9 KCAL-TV facility.<sup>1</sup> The antenna is a circularly polarized RCA model TCL-12A(S). The antenna employs 2.0 degrees of electrical beam tilt and 1.5 degree of mechanical beamtilt at an azimuth of 225 degrees True. Without consideration of the mechanical beamtilt, the antenna is non-directional in the horizontal plane. The introduction of mechanical beamtilt creates an azimuthal pattern that is directional at the radio horizon. **Figure 1** depicts the resulting horizontal

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<sup>1</sup> The antenna HAAT was recalculated for the instant proposal using USGS 3 arc-second terrain data.

plane relative field pattern<sup>2</sup> (with mechanical beamtilt), as determined towards the radio horizon along each azimuth per the Commission's policies.

**Table 1** presents a tabulation of the horizontal plane relative field pattern, to supplement the relative field data within the Form 301 Section III-D "Tech Box" (item 10e). **Table 1** includes pertinent terrain elevation data and provides the derivation of the relative field pattern towards the radio horizon. Digitized USGS 3 arc-second terrain data was employed. **Figure 2** graphically presents the theoretical vertical plane (elevation) pattern for the antenna system. Along each azimuth (considering the mechanical beamtilt), radiation at any angle above horizontal elevations does not exceed the maximum radiation realized at horizontal or below.

The antenna is top-mounted on an existing antenna supporting structure, having FCC Antenna Structure Registration ("ASR") number 1007719. No change to the overall structure height and no tower work are required to carry out this proposal.

A map is supplied as **Figure 3**, which depicts the standard predicted coverage contours. This map includes the location of Los Angeles, KCAL-DT'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 43 dBμ contour.

The proposed KCAL-DT facility's predicted service population provides a 100.1 percent match of the Appendix B facility, as detailed in the table below.

<b>Post-Transition Population Summary</b>		
Population Summary (2000 Census) OET Bulletin 69 method	Appendix B	Proposed
Within Noise Limited Contour	15,969,627	15,946,004
Not affected by terrain losses	15,446,164	15,458,379
Lost to all interference	6,646	3,552
Net DTV Service	<b>15,439,518</b>	<b>15,454,827</b>
Match of Appendix B	---	<b>100.10%</b>

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<sup>2</sup> These patterns are supplied in terms of relative field. In recent years, FCC Staff have not required pattern data in dBk format however such patterns are available upon request.

## **Freeze Waiver Request**

A waiver of the Commission's August 3, 2004 "freeze" concerning expansion in service area<sup>3</sup> is requested. The proposal complies with the criteria for a freeze waiver request outlined in the Report and Order in the Third Periodic Review.<sup>4</sup> KCAL-DT will change channel for post-transition operation and will utilize its existing analog antenna.

The map attached as **Figure 4** supplies a comparison of the 36 dBμ digital service contour corresponding to the proposed KCAL-DT facility and the Appendix B parameters. As shown thereon, the amount of contour extension does not exceed five miles at any azimuth.

Absent the waiver, the KCAL-DT ERP would have to be reduced to 3.0 kW to avoid a contour extension. At this power level, the resulting DTV service contour would not cover 595,257 persons within an area of 11,515 sq. km that are presently within the KCAL-TV analog Grade B contour. The potential loss area is depicted in **Figure 4A**.

A detailed interference study per OET Bulletin 69<sup>5</sup> shows that the proposal complies with the 0.5 percent limit of new interference caused to other stations' Appendix B facilities, as summarized on the following page. Protection requirements towards authorized Class A stations are also satisfied.

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<sup>3</sup>Public Notice "Freeze on the Filing of Certain TV and DTV Requests for Allotment or Service Area Changes," DA 04-2446, released August 3, 2004.

<sup>4</sup>*Third Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, MB Docket No. 07-91, FCC 07-228, released December 31, 2007.

<sup>5</sup>FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. A standard cell size of 2 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

**Post-Transition Interference Analysis Summary**

Ch	Call Sign	State/City Facility ID	Power (kW) HAAT (m)	Dist (km) Bear (°T)	Appendix B	New Interference	
					Baseline Population (2000 Census)	From Proposal Population	Percent
8	KFMB-DT	CA SAN DIEGO 42122	14.9 226	171.8 153.6	3,087,018	0	0.00%
9	KEYY-DT	CA EL CENTRO 51208	19.5 414	327.3 112.6	--- no interference caused ---		
9	KVVU-DT	NV HENDERSON 35870	86 385	341.8 53.7	--- no interference caused ---		
10	KERO-DT	CA BAKERSFIELD 40878	4.6 1128	144.4 340.7	--- no interference caused ---		
10	KGTV-DT	CA SAN DIEGO 40876	11 205	171.7 153.6	--- no interference caused ---		

**Other Allocation Considerations**

The nearest FCC monitoring station is 511 km distant at Livermore, CA. 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). There are no AM stations within 3.2 kilometers of the site, based on information contained within the Commission’s database. The site location is within the Mexican coordination zone (207 km to the Mexico border), thus further international coordination may be necessary beyond that to establish Appendix B parameters.

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

The proposal will involve use of an existing transmitting antenna. The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. No tower construction or change in structure height is proposed. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission’s rules.

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. The transmitting location is on Mount Wilson overlooking the Los Angeles metropolitan area. There are numerous other transmitting facilities at this site area situated on various antenna supporting structures, each within a fenced compound with RF exposure warning signs. *KCAL* participates in a radiofrequency ("RF") electromagnetic field exposure safety program, along with other broadcasters and FCC licensees that utilize the Mount Wilson site area. Based on OET-65 equation (10), and assuming 20% antenna relative field in downward elevations, the calculated power density attributable to the proposed facility at locations near the transmitter site at a height of two meters above ground level is  $0.66 \mu\text{W}/\text{cm}^2$ , which is 0.3 percent of the "uncontrolled / general public" maximum permissible 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.

For completeness, following construction of the proposed facility, *KCAL* will conduct RF exposure measurements (and/or detailed calculations) to evaluate the level of RF exposure resulting from the *KCAL*-DT 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 Commission's exposure limits. Such abatement procedures may involve the restriction of access to certain areas and/or facility modifications to reduce RF levels. It is expected that the RF levels attributable *KCAL*-DT at the proposed 8 kW ERP on Channel 9 will be less than the current analog 141 kW ERP Channel 9 operation which uses the same antenna and will cease operation.

Considering the post-construction measurement and an appropriate abatement program, the general public and workers will not be exposed to RF levels attributable to the proposal in excess of the Commission's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, authorized personnel will be trained and/or supervised as necessary for access to any "controlled" areas. *KCAL* 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.

## **Certification**

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.

Joseph M. Davis, P.E.  
April 10, 2008

**Chesapeake RF Consultants, LLC**  
11993 Kahns Road  
Manassas, VA 20112  
703-650-9600

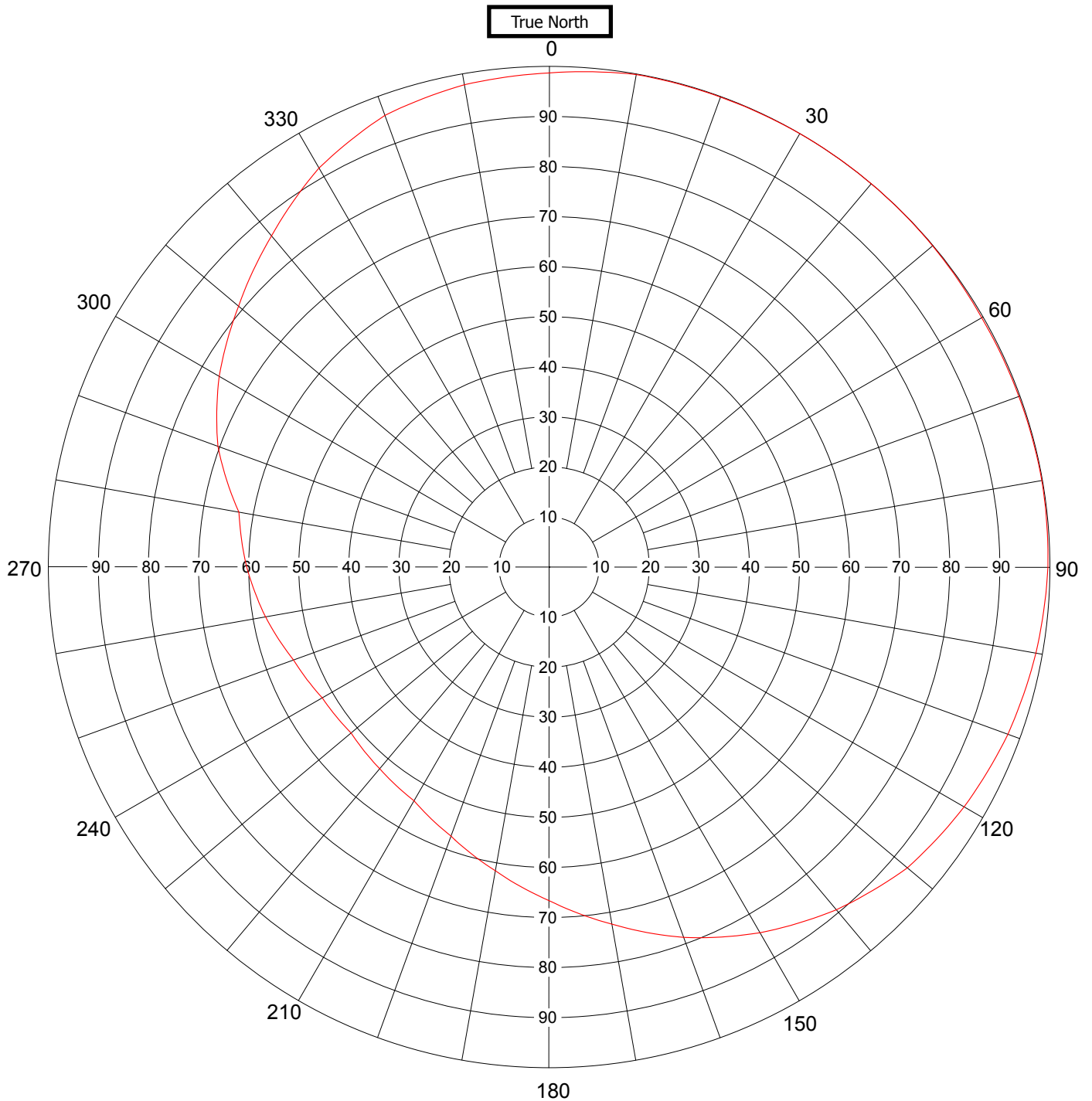
### List of Attachments

Figure 1	Antenna Horizontal Plane Pattern
Figure 2	Antenna Vertical Plane (Elevation) Pattern
Table 1	Antenna Pattern and Elevation Data
Figure 3	Proposed Coverage Contours
Figure 4	Coverage Contour Comparison
Figure 4A	Potential Loss Area Without Waiver
Form 301	Saved Version of Engineering Sections from FCC Form at Time of Upload

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**Figure 1**  
**Antenna Horizontal Plane Pattern**  
**Towards Radio Horizon**  
**Considering Mechanical Beamtilt**  
**(1.5 Degrees at 225 Degrees True)**

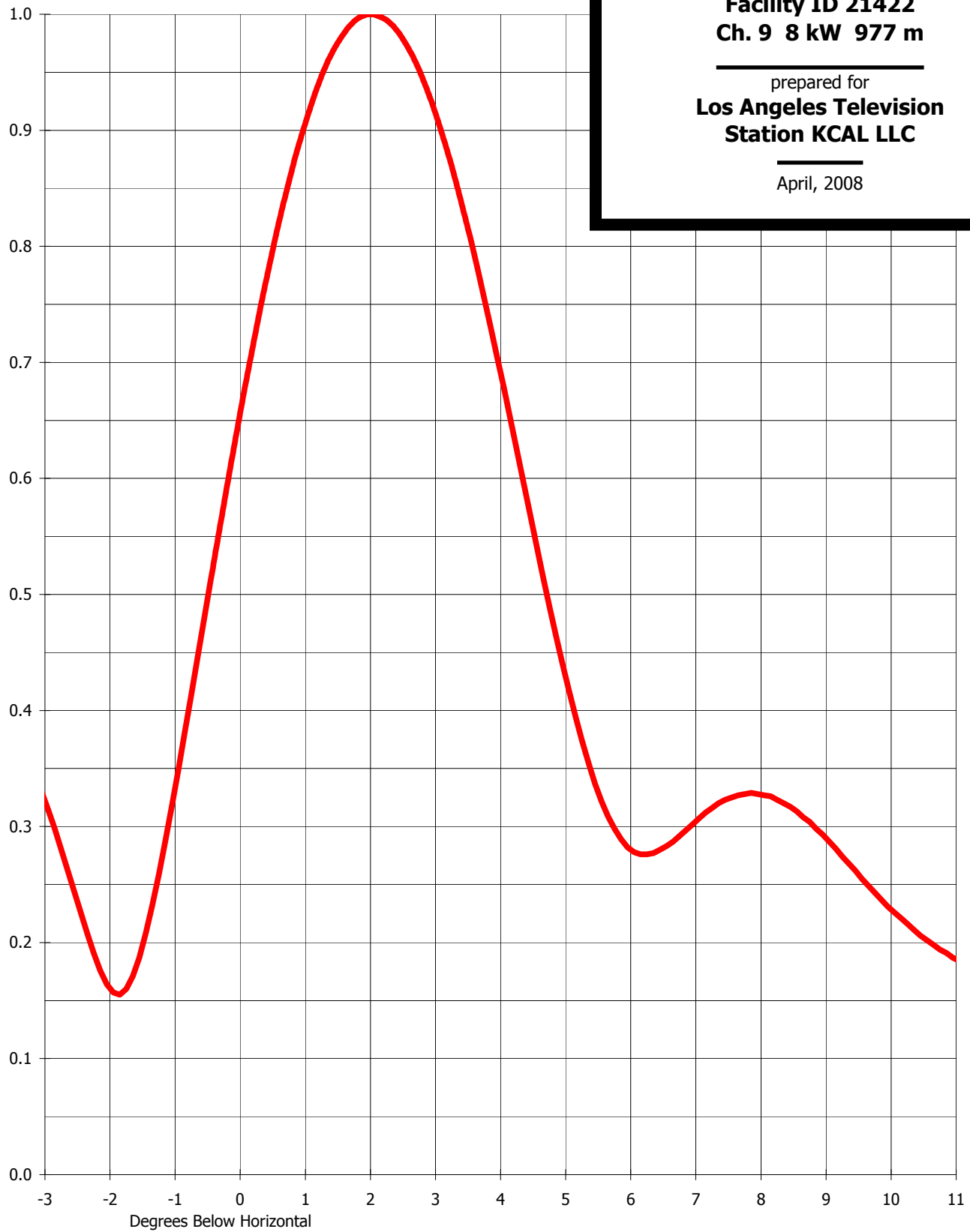
**AZIMUTH PATTERN - RELATIVE FIELD**



**Figure 2**  
**Antenna Vertical Plane**  
**(Elevation) Pattern**  
**KCAL-DT Los Angeles, CA**  
**Facility ID 21422**  
**Ch. 9 8 kW 977 m**

prepared for  
**Los Angeles Television**  
**Station KCAL LLC**

April, 2008





**Table 1**  
**Antenna Pattern and Elevation Data**  
prepared for  
**KCAL-DT Los Angeles Television Station KCAL LLC**

Azimuth (°T)	Average Elevation (meters)	Effective Height (meters)	FCC Depression Angle (°) (degrees)	Mechanical Tilt (degrees)	Effective Tilt (degrees)	Net Relative Field <sup>1</sup> At Radio Horizon (Vertical Plane Field at °)
0	1425.4	444.6	0.58	-1.06	0.94	0.987
5	1311.6	558.4	0.65	-1.15	0.85	0.996
10	1313.4	556.6	0.65	-1.23	0.77	0.999
15	1419.7	450.3	0.59	-1.30	0.70	0.999
20	1480.5	389.5	0.55	-1.36	0.64	0.999
25	1517.2	352.8	0.52	-1.41	0.59	0.999
30	1508.0	362.0	0.53	-1.45	0.55	1.000
35	1510.1	359.9	0.53	-1.48	0.52	1.000
40	1455.2	414.8	0.56	-1.49	0.51	1.000
45	1444.8	425.2	0.57	-1.50	0.50	1.000
50	1407.8	462.2	0.60	-1.49	0.51	0.999
55	1289.8	580.2	0.67	-1.48	0.52	0.998
60	1156.3	713.7	0.74	-1.45	0.55	0.997
65	1078.3	791.7	0.78	-1.41	0.59	0.997
70	1046.1	823.9	0.80	-1.36	0.64	0.998
75	915.6	954.4	0.86	-1.30	0.70	0.998
80	831.1	1038.9	0.89	-1.23	0.77	0.999
85	913.1	956.9	0.86	-1.15	0.85	1.000
90	1147.0	723.0	0.74	-1.06	0.94	0.996
95	1151.3	718.7	0.74	-0.96	1.04	0.991
100	1060.9	809.1	0.79	-0.86	1.14	0.987
105	932.5	937.5	0.85	-0.75	1.25	0.983
110	908.9	961.1	0.86	-0.63	1.37	0.975
115	849.0	1021.0	0.89	-0.51	1.49	0.964
120	711.7	1158.3	0.94	-0.39	1.61	0.957
125	589.0	1281.0	0.99	-0.26	1.74	0.947
130	486.3	1383.7	1.03	-0.13	1.87	0.934
135	431.8	1438.2	1.05	0.00	2.00	0.915
140	394.9	1475.1	1.06	0.13	2.13	0.893
145	373.6	1496.4	1.07	0.26	2.26	0.869
150	337.7	1532.3	1.08	0.39	2.39	0.843
155	299.0	1571.0	1.10	0.51	2.51	0.817
160	295.4	1574.6	1.10	0.63	2.63	0.787
165	312.6	1557.4	1.09	0.75	2.75	0.755
170	313.6	1556.4	1.09	0.86	2.86	0.724
175	314.5	1555.5	1.09	0.96	2.96	0.692
180	302.6	1567.4	1.10	1.06	3.06	0.666
185	297.4	1572.6	1.10	1.15	3.15	0.638
190	294.8	1575.2	1.10	1.23	3.23	0.616
195	302.1	1567.9	1.10	1.30	3.30	0.591

<sup>1</sup> Depicted in **Figure 1** and reported in FCC Form 301 Tech Box

**Table 1**  
**KCAL-DT**  
**Los Angeles Television Station KCAL LLC**  
 (page 2 of 2)

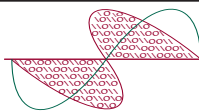


Azimuth (°T)	Average Elevation (meters)	Effective Height (meters)	FCC Depression Angle (°) (degrees)	Mechanical Tilt (degrees)	Effective Tilt (degrees)	Net Relative Field <sup>1</sup> At Radio Horizon (Vertical Plane Field at °)
200	309.6	1560.4	1.09	1.36	3.36	0.572
205	311.7	1558.3	1.09	1.41	3.41	0.556
210	325.2	1544.8	1.09	1.45	3.45	0.539
215	340.7	1529.3	1.08	1.48	3.48	0.530
220	331.2	1538.8	1.09	1.49	3.49	0.526
225	352.2	1517.8	1.08	1.50	3.50	0.520
230	398.6	1471.4	1.06	1.49	3.49	0.516
235	458.7	1411.3	1.04	1.48	3.48	0.516
240	487.3	1382.7	1.03	1.45	3.45	0.523
245	519.1	1350.9	1.02	1.41	3.41	0.530
250	548.5	1321.5	1.01	1.36	3.36	0.543
255	579.1	1290.9	1.00	1.30	3.30	0.559
260	638.1	1231.9	0.97	1.23	3.23	0.575
265	712.6	1157.4	0.94	1.15	3.15	0.591
270	823.0	1047.0	0.90	1.06	3.06	0.604
275	961.2	908.8	0.84	0.96	2.96	0.616
280	1083.3	786.7	0.78	0.86	2.86	0.629
285	1068.6	801.4	0.78	0.75	2.75	0.666
290	1036.7	833.3	0.80	0.63	2.63	0.704
295	1108.2	761.8	0.76	0.51	2.51	0.730
300	1127.7	742.3	0.75	0.39	2.39	0.761
305	1222.9	647.1	0.70	0.26	2.26	0.781
310	1258.1	611.9	0.69	0.13	2.13	0.810
315	1217.8	652.2	0.71	0.00	2.00	0.845
320	1320.0	550.0	0.65	-0.13	1.87	0.863
325	1319.8	550.2	0.65	-0.26	1.74	0.889
330	1232.8	637.2	0.70	-0.39	1.61	0.920
335	1232.2	637.8	0.70	-0.51	1.49	0.941
340	1194.8	675.2	0.72	-0.63	1.37	0.960
345	1234.6	635.4	0.70	-0.75	1.25	0.970
350	1271.4	598.6	0.68	-0.86	1.14	0.978
355	1345.2	524.8	0.63	-0.96	1.04	0.983

Radiation Center Height AMSL	1870.0	m		
Cardinal Radial Average Terrain AMSL	893.1	m		
Radiation Center Height AAT	976.9	m		
Effective Radiated Power (AVG)	9.0	kW	9.54	dBk

#### Beamtilt details

Omni antenna with electrical and mechanical beamtilt, producing directional pattern at radio horizon  
 2.0 degrees electrical tilt and 1.5 degree mechanical tilt at 225° True  
 $\text{Effective Tilt} = (\text{Electrical Tilt})^\circ + [(\text{Maximum Mechanical Tilt})\text{Cos}\phi]^\circ = (2.0)^\circ + (1.5 * \text{Cos}(225\text{-Azimuth}))^\circ$   
 Where  $\phi = 0^\circ$  at azimuth towards mechanical tilt

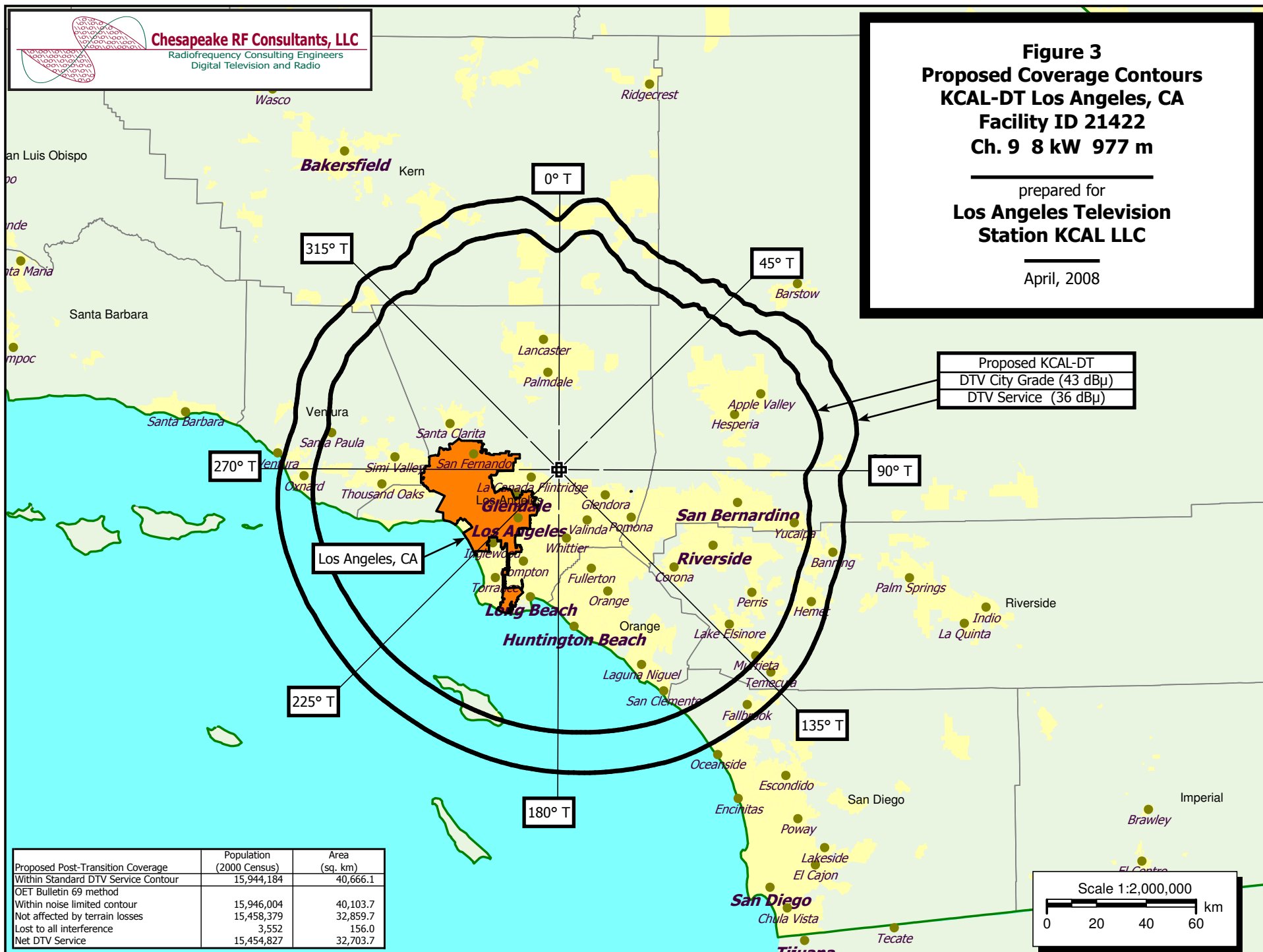


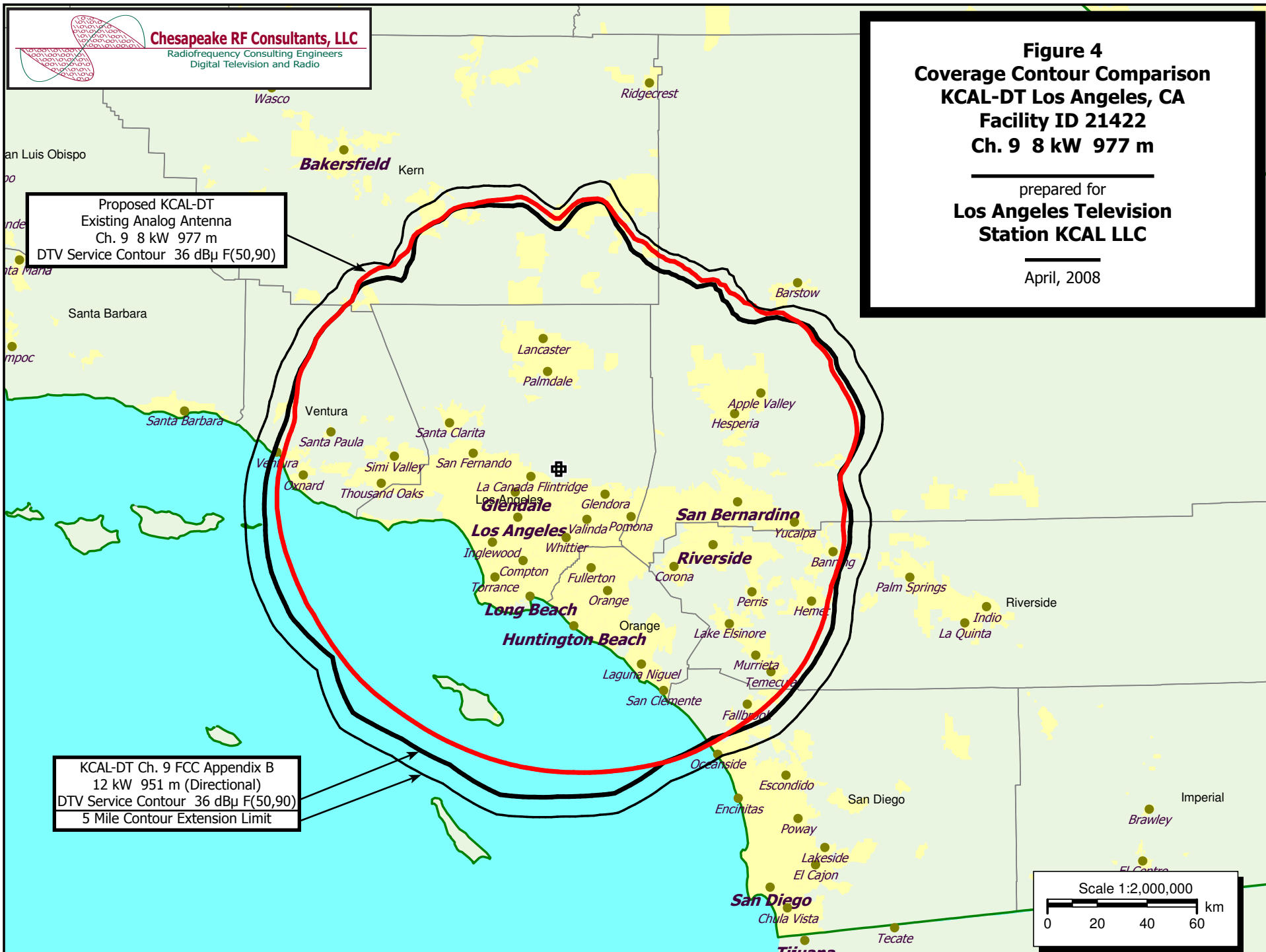
**Chesapeake RF Consultants, LLC**  
Radiofrequency Consulting Engineers  
Digital Television and Radio

**Figure 3**  
**Proposed Coverage Contours**  
**KCAL-DT Los Angeles, CA**  
**Facility ID 21422**  
**Ch. 9 8 kW 977 m**

prepared for  
**Los Angeles Television**  
**Station KCAL LLC**

April, 2008







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

**Figure 4A**  
**Potential Loss Area Without Waiver**  
**KCAL-DT Los Angeles, CA**  
**Facility ID 21422**  
**Ch. 9 8 kW 977 m**

prepared for  
**Los Angeles Television**  
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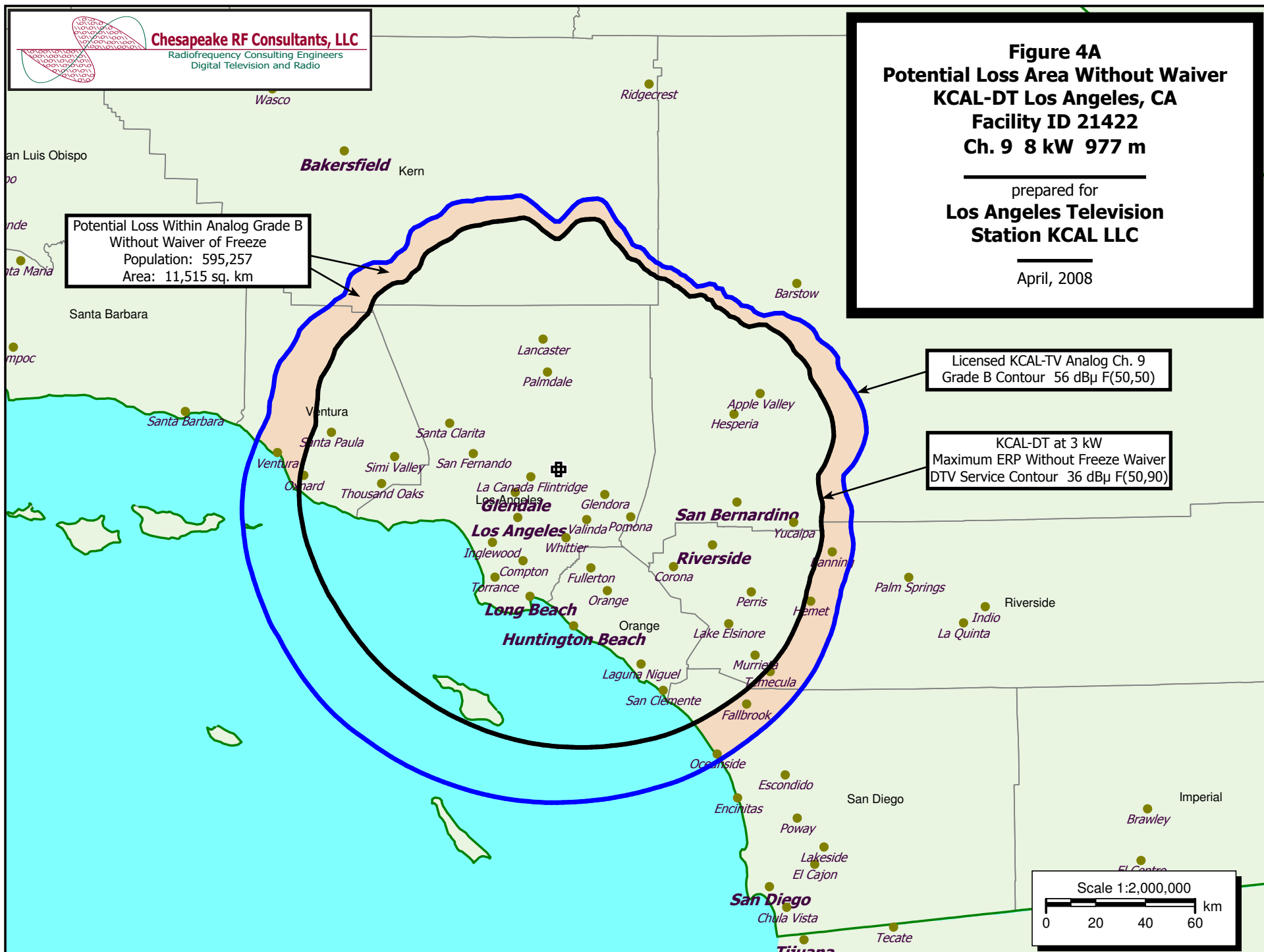
April, 2008

Potential Loss Within Analog Grade B  
Without Waiver of Freeze  
Population: 595,257  
Area: 11,515 sq. km

Licensed KCAL-TV Analog Ch. 9  
Grade B Contour 56 dBμ F(50,50)

KCAL-DT at 3 kW  
Maximum ERP Without Freeze Waiver  
DTV Service Contour 36 dBμ F(50,90)

Scale 1:2,000,000  
0 20 40 60 km



**SECTION III-D - DTV Engineering****Complete Questions 1-5, and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.**

**Pre-Transition Certification Checklist:** An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction permit application to change pre-transition facilities. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

**Post-Transition Expedited Processing.** An application concerning a post-transition channel must complete questions 1(a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed within 45 days of the effective date of Section 73.616 of the rules adopted in the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91.

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:

(a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622.	<input checked="" type="radio"/> Yes <input type="radio"/> No
(b) It will operate a pre-transition facility from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input type="radio"/> No
(c) It will operate a pre-transition facility with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input type="radio"/> No
(d) It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B").	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
(e) It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B.	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. Applicant must <b>submit the Exhibit</b> called for in Item 13.	<input checked="" type="radio"/> Yes <input type="radio"/> No
3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community.	<input checked="" type="radio"/> Yes <input type="radio"/> No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable.	<input checked="" type="radio"/> Yes <input type="radio"/> No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect 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.	<input checked="" type="radio"/> Yes <input type="radio"/> No

**SECTION III-D - DTV Engineering****TECHNICAL SPECIFICATIONS**

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

**TECH BOX**

1.	Channel Number:  DTV 9 Analog TV, if any 9
2.	Zone: <input type="radio"/> I <input checked="" type="radio"/> II <input type="radio"/> III
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 34 Minutes 13 Seconds 38 <input checked="" type="radio"/> North <input type="radio"/> South  Longitude: Degrees 118 Minutes 04 Seconds 00 <input checked="" type="radio"/> West <input type="radio"/> East
4.	Antenna Structure Registration Number: 1007719 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA
5.	Antenna Location Site Elevation Above Mean Sea Level: 1741 meters
6.	Overall Tower Height Above Ground Level: 141.4 meters
7.	Height of Radiation Center Above Ground Level: 129 meters
8.	Height of Radiation Center Above Average Terrain : 977 meters

9.	Maximum Effective Radiated Power (average power):	8 kW																																																																																																	
10.	<div>Antenna Specifications:</div> <div>a. Manufacturer RCA    Model TCL-12A(S)</div> <div>b. Electrical Beam Tilt: 2 degrees    <input type="checkbox"/> Not Applicable</div> <div>c. Mechanical Beam Tilt: 1.5 degrees toward azimuth 225 degrees True    <input type="checkbox"/> Not Applicable Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). <span style="float: right;">[Exhibit 42]</span></div> <div>d. Polarization: <input type="radio"/> Horizontal    <input checked="" type="radio"/> Circular    <input type="radio"/> Elliptical</div> <div>e. Directional Antenna Relative Field Values:    <input type="checkbox"/> Not applicable (Nondirectional)</div> <div>[For a composite directional (not off-the-shelf) antenna, press the following button to fill in the relative field values subform.] [Relative Field Values]</div> <div style="text-align: center; padding: 10px;"><b>10e. Directional Antenna Relative Field Values</b> [Fill in this subform for a composite directional (not off-the-shelf) antenna, only.]</div> <div style="border: 1px solid black; padding: 5px;"><div>e. Directional Antenna Relative Field Values:</div><div>Rotation (Degrees): <input checked="" type="checkbox"/> No Rotation</div><table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"><thead><tr><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th></tr></thead><tbody><tr><td>0</td><td>0.987</td><td>10</td><td>0.999</td><td>20</td><td>0.999</td><td>30</td><td>1</td><td>40</td><td>1</td><td>50</td><td>0.999</td></tr><tr><td>60</td><td>0.997</td><td>70</td><td>0.998</td><td>80</td><td>0.999</td><td>90</td><td>0.996</td><td>100</td><td>0.987</td><td>110</td><td>0.975</td></tr><tr><td>120</td><td>0.957</td><td>130</td><td>0.934</td><td>140</td><td>0.893</td><td>150</td><td>0.843</td><td>160</td><td>0.787</td><td>170</td><td>0.724</td></tr><tr><td>180</td><td>0.666</td><td>190</td><td>0.616</td><td>200</td><td>0.572</td><td>210</td><td>0.539</td><td>220</td><td>0.526</td><td>230</td><td>0.516</td></tr><tr><td>240</td><td>0.523</td><td>250</td><td>0.543</td><td>260</td><td>0.575</td><td>270</td><td>0.604</td><td>280</td><td>0.629</td><td>290</td><td>0.704</td></tr><tr><td>300</td><td>0.761</td><td>310</td><td>0.81</td><td>320</td><td>0.863</td><td>330</td><td>0.92</td><td>340</td><td>0.96</td><td>350</td><td>0.978</td></tr><tr><td colspan="2">Additional Azimuths</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table><div style="text-align: center; color: blue; margin-top: 5px;"><a href="#">Relative Field Polar Plot</a></div></div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"><div>If a directional antenna is proposed, the requirements of 47 C.F.R. Sections 73.625(c) must be satisfied. <b>Exhibit required.</b> <span style="float: right;">[Exhibit 43]</span></div></div>		Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	0	0.987	10	0.999	20	0.999	30	1	40	1	50	0.999	60	0.997	70	0.998	80	0.999	90	0.996	100	0.987	110	0.975	120	0.957	130	0.934	140	0.893	150	0.843	160	0.787	170	0.724	180	0.666	190	0.616	200	0.572	210	0.539	220	0.526	230	0.516	240	0.523	250	0.543	260	0.575	270	0.604	280	0.629	290	0.704	300	0.761	310	0.81	320	0.863	330	0.92	340	0.96	350	0.978	Additional Azimuths												
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11.	Does the proposed facility satisfy the pre-transition interference protection provisions of 47 C.F.R. Section 73.623(a) (Applicable only if <b>Certification Checklist</b> Items 1(a), (b), or (c) are answered "No.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616?  If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.	<input checked="" type="radio"/> Yes <input type="radio"/> No  [Exhibit 44]																																																																																																	
12.	If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if <b>Certification Checklist</b> item 3 is answered "No.")	[Exhibit 45]																																																																																																	
13.	<b>Environmental Protection Act. Submit in an Exhibit</b> the following: If <b>Certification Checklist</b> Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.  By checking "Yes" to <b>Certification Checklist</b> Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.  If <b>Certification Checklist</b> Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R Section 1.1311.	[Exhibit 46]																																																																																																	
<b>PREPARERS CERTIFICATION ON SECTION III MUST BE COMPLETED AND SIGNED.</b>																																																																																																			

**SECTION III - PREPARER'S CERTIFICATION**

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JOSEPH M. DAVIS, P.E.	Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature	Date 4/10/2008	
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 11993 KAHNS ROAD		
City MANASSAS	State or Country (if foreign address) VA	Zip Code 20112 -
Telephone Number (include area code) 7036509600	E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

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Any specified rotation has already been applied to the plotted pattern.

Field strength values shown on a rotated pattern may differ from the listed values because intermediate azimuths are interpolated between entered azimuths.

