

ENGINEERING EXHIBIT

Application for Modification of Construction Permit

prepared for

Ramar Communications, Inc.

New (FM) Idalou, TX

Facility ID 88795

Ch. 299C3 (107.7 MHz) 6 kW 207 m

Ramar Communications, Inc. (“*Ramar*”) is the permittee of a new FM commercial radio station, Facility ID 88795, Channel 299C3, Idalou, TX (callsign not yet assigned). The Construction Permit (“CP”, BPH-19971016MJ) authorizes operation with 10.5 kW effective radiated power (“ERP”) with a nondirectional antenna having a height above average terrain (“HAAT”) of 154 meters.

Ramar herein seeks to modify the CP to increase the antenna height by 53 meters to 207 meters HAAT while commensurately decreasing the ERP to 6 kW. This ERP / HAAT combination represents a maximum Class C3 facility. No change is proposed to the transmitter site location.

The proposed Channel 299C3 antenna will be side-mounted on an existing antenna supporting structure, having FCC Antenna Structure Registration number 1248244. This tower structure is currently employed by various authorized FM radio and television facilities. No change in overall structure height is proposed.

Principal Community Coverage

A coverage contour map is supplied as Figure 1, showing that the principal community of Idalou is not entirely encompassed by the 70 dB μ coverage contour when plotted per standard FCC curves as specified in §73.313(c)-(d). The principal community is encompassed by the 70 dB μ contour when determined with a supplemental method as discussed in the following.

Section 73.313(e) permits the use of a supplemental method of coverage prediction when the intervening terrain departs widely from the average. For the case at hand, the principal community is located within an arc contained by radials 42° to 47° True from the proposed transmitter site.

The supplemental method of determining the 70 dBμ coverage contour location presented herein relies on the Longley-Rice methodology (Irregular Terrain Model / National Bureau of Standards Technical Note 101). As is customary, Version 1.2.2 of the Longley-Rice code was executed on a computer. A clutter factor of 6 dB was employed. Predicted signal levels were computed for 0.25 km cells using a terrain increment of 0.1 km with USGS 3-arc second terrain data.

The Longley-Rice 70 dBμ contour is depicted on Figure 1 along with the 70 and 60 dBμ contours as derived from the FCC's standard F(50,50) curves. A detailed map is provided as Figure 2. The Longley-Rice contour distance represents the mean occurrence of 70 dBμ signal levels along each radial. For example, along the 44 degree radial the 70 dBμ contour distance is calculated at 30.9 km. A terrain profile is depicted in Figure 3 which shows the line of sight path and provides sample calculated signal level data along the 44 degree radial through Idalou. The Longley-Rice predicted signal level along this radial at the most distant point of Idalou is 74.9 dBμ (including a 6 dB clutter factor).

Terrain and Longley-Rice data are summarized in Table 1 for each radial (40° to 50° T) showing that the Longley-Rice contour distance exceeds the standard method by an average of 27.6 percent. This is well in excess of the 10 percent FCC benchmark for consideration of an alternate propagation method. Further, the average terrain roughness factor (Δh) along these radials is 19.6 meters and the Δh at the 44°T radial through Idalou is 19.3 meters, well below the 50 meter average Δh upon which the FCC's standard propagation curves are based. The larger contour distance and minimal Δh are due to the flat terrain in the vicinity of the transmitter and Idalou as depicted in Figure 3. Thus it can be concluded that the terrain departs widely from the average and an alternative means of predicting coverage is acceptable.¹ For these reasons it is believed that the proposal satisfies the FCC's current policies regarding demonstration of principal community coverage with a supplemental method.

¹ See *CMP Houston-KC, LLC*, FCC 08-139, Memorandum Opinion and Order, released July 2, 2008.

The supplemental method shows that the proposed 70 dBμ contour covers all of Idalou (based on 2010 US Census boundary data). It should be noted that the proposal maintains a maximum Class C3 facility at the currently authorized site. The principal community is entirely within the standard 60 dBμ protected contour as determined by the FCC's curves.

Proposed Site Allocation

An allocation spacing summary table for the proposed transmitter site is provided in Table 2. The proposed site is fully spaced to all authorized full power facilities, proposed stations, and allotments contained in the Commission's CDBS, except for one facility that will comply with §73.215. Contour protection pursuant to §73.215 is specified with respect to KSSL(FM) (Ch. 297C2, Post, TX).

Figure 4 depicts the pertinent protected and interfering contours for the proposed Ch. 299C3 with those of KSSL. Maximum class parameters are assumed for KSSL. Figure 4 demonstrates that no prohibited contour overlap would exist.

The nearest FCC monitoring station is 764 km distant at Douglas, AZ. This exceeds 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 authorized AM stations within 3.2 km of the proposed site. The site is located beyond the international coordination zones for FM stations.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. Based on OET-65 equation (10) and considering a worst-case situation of 100 percent field in downward elevations, the calculated RF electromagnetic field attributable to the proposed facility is $9.3 \mu\text{W}/\text{cm}^2$ which is 4.6 percent of the "uncontrolled / general public" maximum permissible exposure limit at the base of the antenna structure two meters above ground level. The calculated RF exposure will be even lower when the antenna's elevation pattern is considered. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from

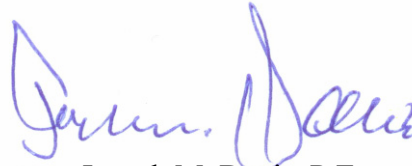
responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

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. The proposal involves installation of a side-mounted transmitting antenna on an existing antenna support structure which was constructed prior to March 16, 2001. No change in structure height is proposed.

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.
January 18, 2012

Chesapeake RF Consultants, LLC
207 Old Dominion Road
Yorktown, VA 23692
703-650-9600

List of Attachments

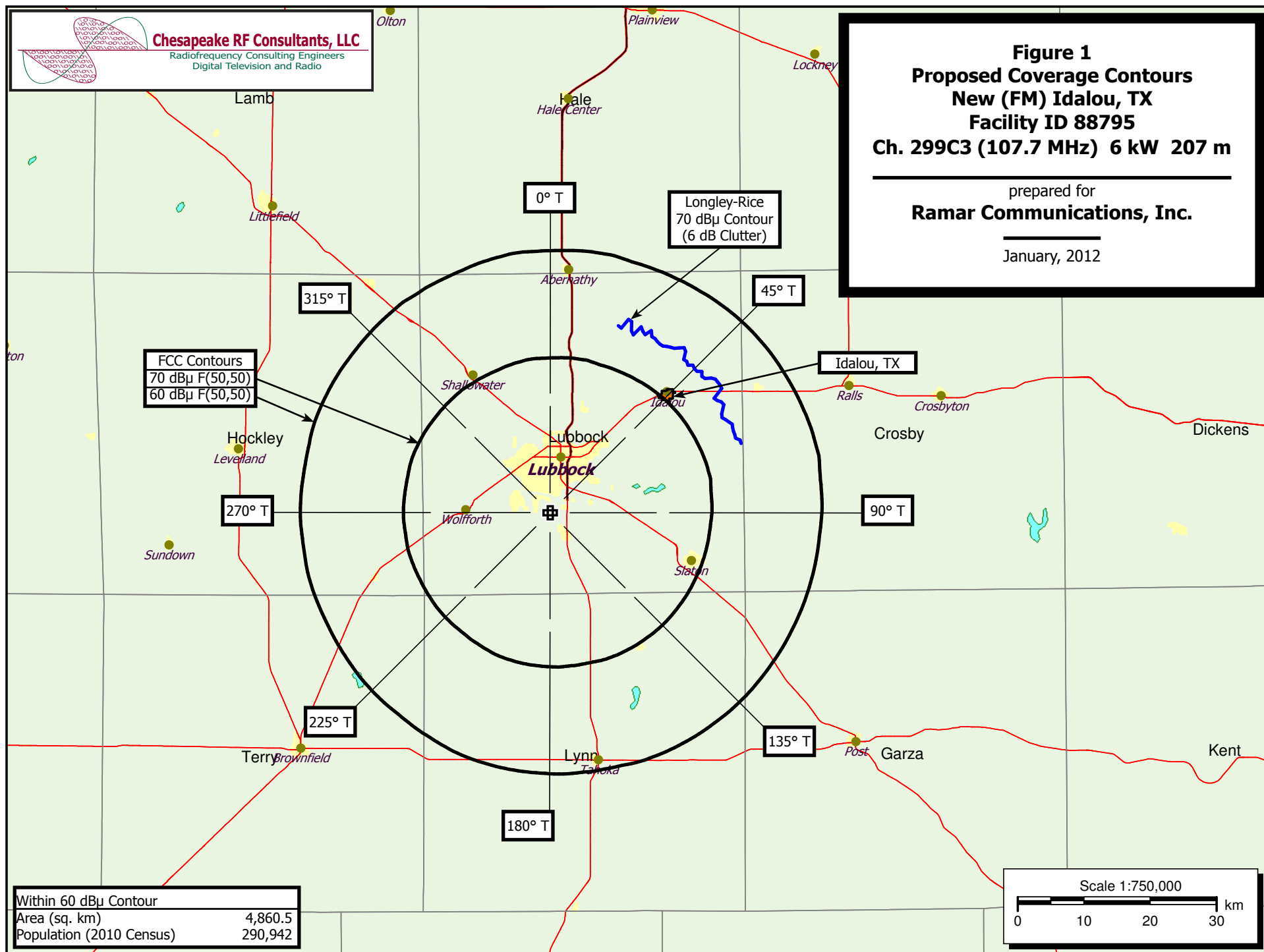
Figure 1	Proposed Coverage Contours
Figure 2	Principal Community Coverage
Figure 3	Terrain Profile and Longley-Rice Signal
Figure 4	§73.215 Contour Protection
Table 1	Terrain Data and Contour Distances
Table 2	Proposed Transmitter Site §73.207 Allocation Spacing Study
Form 301	Saved Version of Engineering Sections from FCC Form at Time of Upload

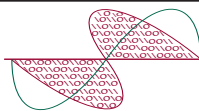
This material was entered January 18, 2012 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's account number and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.



prepared for
Ramar Communications, Inc.

January, 2012





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

Figure 2
Principal Community Coverage
New (FM) Idalou, TX
Facility ID 88795
Ch. 299C3 (107.7 MHz) 6 kW 207 m

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January, 2012

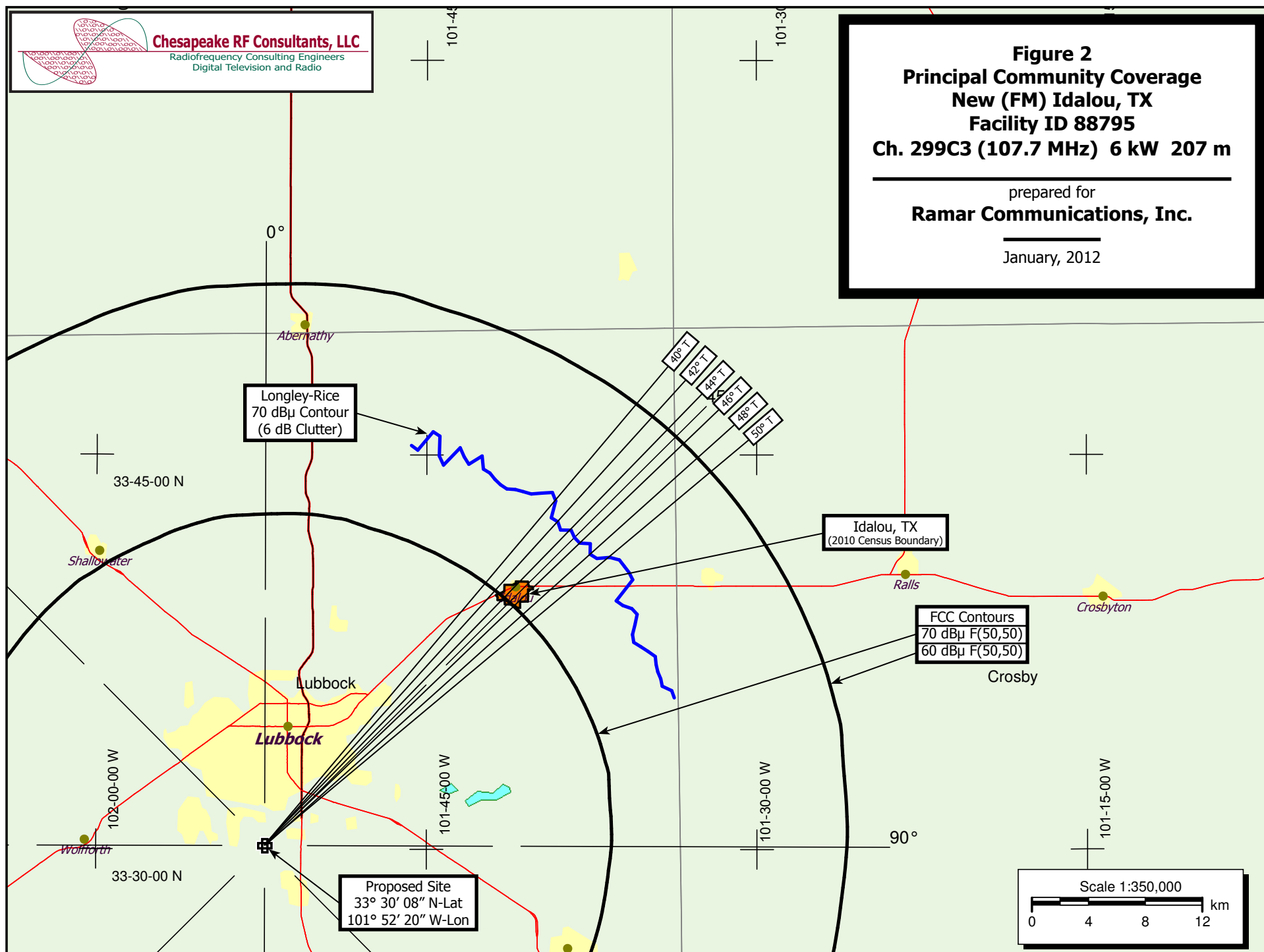
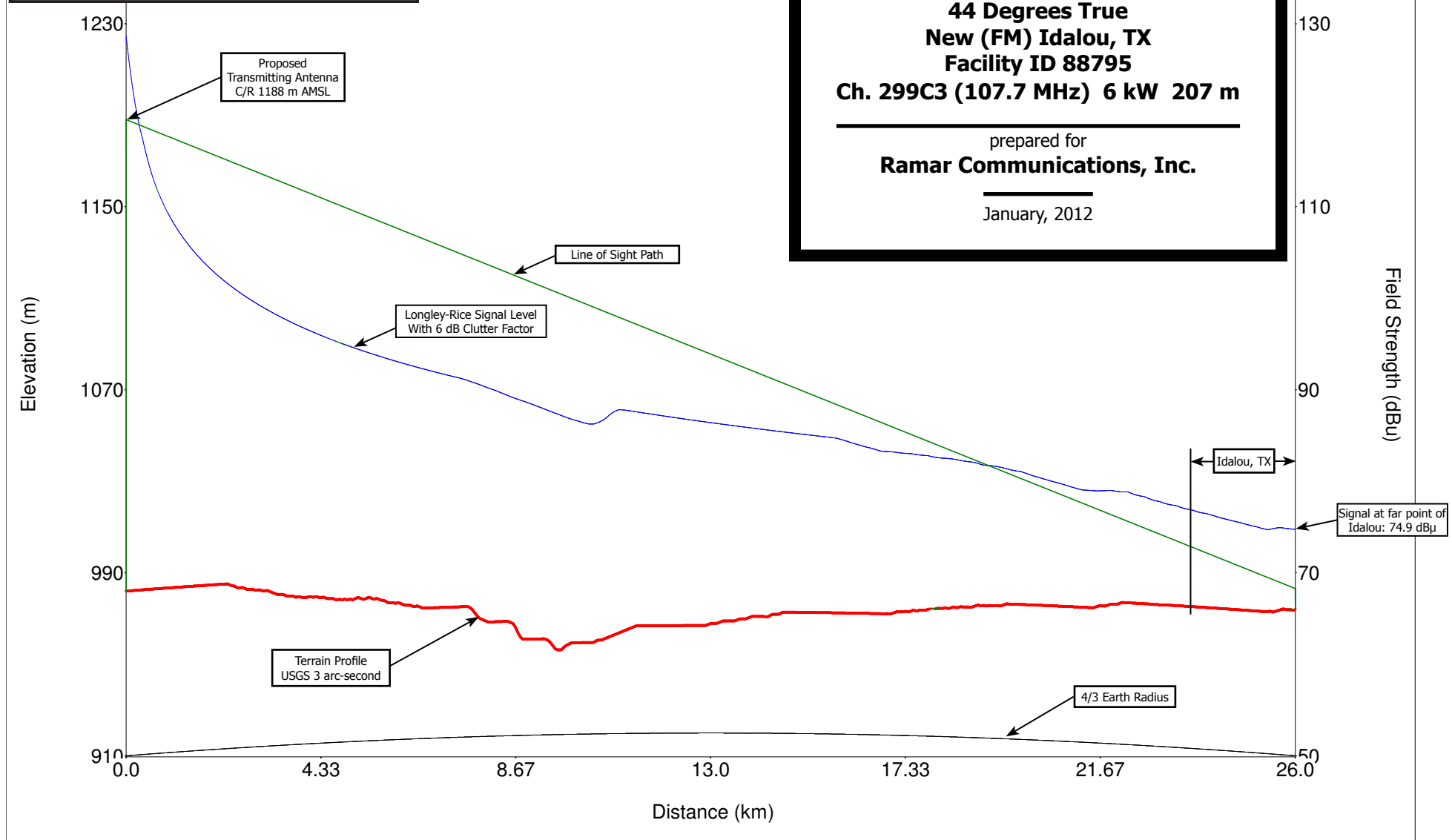


Figure 3
Terrain Profile and Longley-Rice Signal
44 Degrees True
New (FM) Idalou, TX
Facility ID 88795
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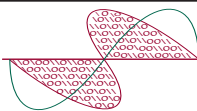
 January, 2012



Starting Latitude: 33-30-08 N
 Starting Longitude: 101-52-20 W

End Latitude: 33-40-14.51 N
 End Longitude: 101-40-38.91 W

Distance: 26 km
 Bearing: 44 deg



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

Figure 4
\$73.215 Contour Protection
New (FM) Idalou, TX
Facility ID 88795
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January, 2012

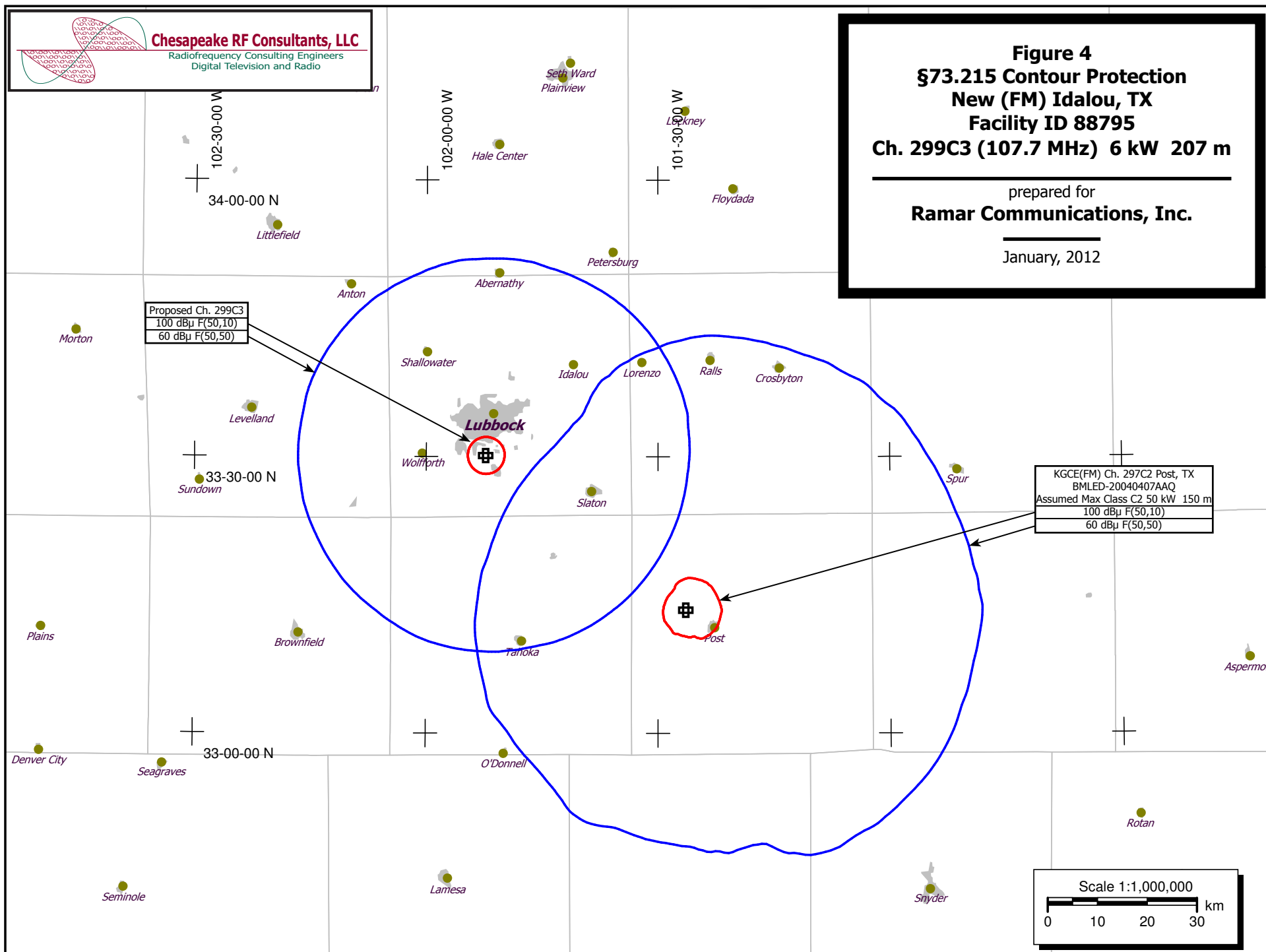


Table 1

Terrain Data and Contour Distances

prepared for

Ramar Communications, Inc.

New (FM) Idalou, TX

Azimuth (°T)	3-16 km Effective Height (m)	"Delta-h" 10-50 km Δh (m)	Contour Distance		
			FCC Curve 70 dB μ (km)	L-R Mean 70 dB μ (km)	L-R Percent Increase
40	223.4	23.6	24.1	31.7	31.5%
41	224.0	20.3	24.1	30.6	27.0%
42	224.6	20.6	24.2	30.7	26.9%
43	225.2	20.8	24.2	30.4	25.6%
44	225.7	19.3	24.2	30.9	27.7%
45	226.2	20.1	24.2	30.7	26.9%
46	226.6	19.6	24.3	30.7	26.3%
47	227.1	18.0	24.3	31.2	28.4%
48	227.4	17.6	24.3	30.7	26.3%
49	227.7	18.5	24.3	30.8	26.7%
50	228.0	17.7	24.3	31.6	30.0%
Average:		19.6			27.6%

Longley-Rice Study Input Data

Signal Resolution: 0.25 km

Terrain Profile Increment: 0.1 km

Area of calculation: Circle: R = 100 km

Terrain: USGS 3 Second

Latitude: 33-30-08 N

Longitude: 101-52-20 W

ERP: 6.00 kW

Channel: 299

Frequency: 107.7 MHz

AMSL Height: 1188.0 m

Horiz. Antenna Pattern: Omni

Vert. Elevation Pattern: No

Propagation Model: Longley/Rice

Climate: Continental temperate

Conductivity: 0.0050

Dielectric Constant: 15.0

Refractivity: 311.0

Receiver Height AG: 9.1 m

Receiver Gain: 0 dB

Time Variability: 50.0%

Situation Variability: 50.0%

ITM Mode: Broadcast

Clutter Factor: 6 dB

Table 2

Proposed Transmitter Site
§73.207 Allocation Spacing Study

prepared for

Ramar Communications, Inc.

New (FM) Idalou, TX



REFERENCE		CLASS = C3	DISPLAY DATES
33 30 08.0 N.			DATA 01-18-12
101 52 20.0 W.	Current	Spacings to 3rd Adj.	SEARCH 01-18-12
----- Channel 299 - 107.7 MHz -----			

Call		Channel	Location		Azi	Dist	FCC	Margin
971016MJ	CP	299C3	Idalou	TX	0.0	0.0	153.0	-153.0
KSSL	LIC	297C2	Post	TX	127.6	50.7	56.0	-5.3

§73.215 Contour Protection Processing Requested to KSSL(FM) (Lic)

KSMX-FM	LIC	298C1	Clovis	NM	301.0	150.9	144.0	6.9
KQLM	LIC	300C1	Odessa	TX	194.1	161.0	144.0	17.0
KZRK-FM	LIC	300C1	Canyon	TX	356.4	192.1	144.0	48.1

Section III-B - FM 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: 299										
2.	Class (select one): <input type="radio"/> A <input type="radio"/> B1 <input type="radio"/> B <input checked="" type="radio"/> C3 <input type="radio"/> C2 <input type="radio"/> C1 <input type="radio"/> C0 <input type="radio"/> C <input type="radio"/> D										
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 33 Minutes 30 Seconds 8 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 101 Minutes 52 Seconds 20 <input checked="" type="radio"/> West <input type="radio"/> East										
4.	Proposed Allotment or Assignment Coordinates: (NAD 27) <input checked="" type="checkbox"/> Not Applicable Latitude: Degrees Minutes Seconds <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees Minutes Seconds <input checked="" type="radio"/> West <input type="radio"/> East										
5.	Antenna Structure Registration Number: 1248244 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA										
6.	Overall Tower Height Above Ground Level:							289.6meters			
7.	Height of Radiation Center Above Mean Sea Level:							1188 meters(H)		1188 meters(V)	
8.	Height of Radiation Center Above Ground Level:							210meters(H)		210meters(V)	
9.	Height of Radiation Center Above Average Terrain:							207meters(H)		207meters(V)	
10.	Effective Radiated Power:							6 kW(H)		6 kW(V)	
11.	Maximum Effective Radiated Power: <input checked="" type="checkbox"/> Not Applicable (Beam-Tilt Antenna ONLY)							kW(H)		kW(V)	
12.	Directional Antenna Relative Field Values: <input checked="" type="checkbox"/> Not applicable (Nondirectional) Rotation (Degrees): <input type="checkbox"/> No Rotation										
Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0		10		20		30		40		50	
60		70		80		90		100		110	
120		130		140		150		160		170	
180		190		200		210		220		230	
240		250		260		270		280		290	
300		310		320		330		340		350	
Additional Azimuths											

[Relative Field Polar Plot](#)

NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

CERTIFICATION

AUXILIARY ANTENNA APPLICANTS ARE NOT REQUIRED TO RESPOND TO ITEMS 13-16. PROCEED TO ITEM 17.

13.	Availability of Channels. The proposed facility complies with the allotment requirements of 47 C.F.R. Section 73.203.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 26]
14.	Community Coverage. The proposed facility complies with 47 C.F.R. Section 73.315.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 27]
15.	Main Studio Location. The proposed main studio location complies with 47 C.F.R. Section 73.1125.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 28]

		[Exhibit 28]
16.	Interference. The proposed facility complies with all of the following applicable rule sections: Check all those that apply: Separation Requirements. <input checked="" type="checkbox"/> a) 47 C.F.R. Section 73.207 Grandfathered Short-Spaced. <input type="checkbox"/> b) 47 C.F.R. Section 73.213(a) with respect to station(s): [Exhibit 30] Exhibit required <input type="checkbox"/> c) 47 C.F.R. Section 73.213(b) with respect to station(s): [Exhibit 31] Exhibit required <input type="checkbox"/> d) 47 C.F.R. Section 73.213(c) with respect to station(s): [Exhibit 32] Exhibit required. Contour Protection <input checked="" type="checkbox"/> e) 47 C.F.R. Section 73.215 with respect to station(s): [Exhibit 33] Exhibit required.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 29]
17.	Environmental Protection Act. The proposed facility is excluded from environmental processing under 47. C.F.R. Section 1.1306 (i.e., The facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Appendix A, an Exhibit is required. By checking "Yes" above, 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.	<input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 34]
18.	Community of License Change - Section 307(b). If the application is being submitted to change the facility's community of license, then the applicant certifies that it has attached an exhibit containing information demonstrating that the proposed community of license change constitutes a preferential arrangement of station assignments under Section 307(b) of the Communications Act of 1934, as amended (47 U.S.C. Section 307(b)). An exhibit is required unless this question is not applicable.	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A [Exhibit 35]
PREPARERS CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.		

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 1/18/2012	
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 207 OLD DOMINION ROAD		
City YORKTOWN	State or Country (if foreign address) VA	Zip Code 23692 -
Telephone Number (include area code) 7036509600	E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM	