Comprehensive Technical Exhibit

Application for Construction Permit

K246BE - Williamsburg, Iowa

Extreme Grace Media, Inc.

March 2011

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Application for Construction Permit

The following engineering statement and attached exhibits have been prepared for **Extreme Grace Media, Inc.** ("XGM"), licensee of FM translator station K246BE at Williamsburg, Iowa, and are in support of their application for construction permit to modify that facility.[1] This application proposes to relocate the facility, and change the frequency of operation. Other parameters associated with the facility would necessarily change as a result.

Currently K246BE translates NCE FM station KAYP(FM) at Burlington, Iowa, and operates with a maximum effective radiated power of 9 Watts utilizing a non-directional antenna.[2] The current channel of operation is channel 246. Under this application, a change in the frequency of operation from channel 246 to channel 245 is proposed. Additionally XGM would change the primary station to KXGM-FM at Hiawatha, Iowa and relocate the transmitter site.[3] Finally, the maximum effective radiated power would be increased from 0.009 kW to 0.227 kW.

K246BE would receive its programming from KXGM-FM via an off-air feed. The predicted 60 dBu service contour of K246BE would lie outside of the KXGM-FM 60 dBu service contour as illustrated in Exhibit E-1.[4] The translator, therefore, would not be considered a fill-in. The maximum effective radiated power, however, is consistent with the power/height limitation table in Section 74.1235 of the Commission's Rules.

[1] The Facility ID for K246BE at Williamsburg, IA is 152290.
[2] The Facility ID for KAYP(FM) at Burlington, IA is 86561.
[3] The Facility ID for KXGM-FM at Hiawatha, IA is 85165.
[4] Exhibit E-1 also illustrates the predicted 60 dBu service contour for the licensed K246BE facility. The overlap between the two K246BE contours confirms that the requested changes constitute a minor change to the facility.

The tabulation below lists the average terrain along the relevant translator azimuths. As this table indicates, the radial with the lowest average elevation is the 120 degree radial at an average elevation of 234.5 meters above mean sea level. As indicated on the form pages, the center of radiation is at 281 meters AMSL, or 46.5 meters above average terrain. At this height, a maximum effective radiated power of 250 Watts is permissible.

30 Second Terrain Database

Starting point coordinates: 41 44 1 91 56 00

Maximum distance: 16.0 km Distance increment: .050 km

Azimuth	Endpoint Coordinates		3 - 16 km Average Elevation	Total Path Delta H
.0	41.8775	91.9328	248.0 meters	43.0 meters
30.0	41.8582	91.8362	241.3	44.0
60.0	41.8055	91.7656	245.1	45.0
90.0	41.7335	91.7399	249.5	19.0
120.0	41.6615	91.7659	234.5	24.0
150.0	41.6089	91.8365	246.0	15.0
180.0	41.5897	91.9328	243.3	31.0
210.0	41.6089	92.0290	250.1	36.0
240.0	41.6615	92.0996	246.7	23.0
270.0	41.7335	92.1256	257.3	25.0
300.0	41.8055	92.1000	246.3	51.0
330.0	41.8582	92.0294	243.5	49.0

Average of all radials: 246.0 meters

The proposed facility would comply with the interference provisions of Section 74.1204 of the Commission's Rules. The television channel six interference provisions of Section 74.1205 are not applicable due to the channel of operation. Compliance with the interference provisions is demonstrated through contour, Longley-Rice, and tabular methodologies.

Exhibit E-2 is a tabular contour based allocation study for the proposed facility, while Exhibit E-3 graphically illustrates the contour situation. These studies indicate that the proposed facility would have normally prohibited contour overlap with WMT-FM at Cedar Rapids, Iowa, and the allocation and construction permit facilities for North English, Iowa.[5]

[5] The Facility ID for WMT-FM and North English, Iowa are 73594 and 170998 respectively.

The authorized facility for North English, Iowa has not yet commenced operation. It is authorized on channel 246 as a class A facility.[6] XGM is cognizant of the fact that as a translator K246BE is secondary to broadcast facilities. As a result, once the North English facility commences operation, K246BE will have to make further modifications or cease operation to prevent creating harmful interference to North English. Since North English has not yet been constructed, the population within the area of contour overlap between that facility and K246BE is zero, thus a grant of this application, notwithstanding the contour overlap, would be consistent with the Commission's Rules.

WMT-FM, the other facility with which contour overlap occurs, is on channel 243, which is second adjacent to the proposed translator. Although the 100 dBu contour from the proposed facility would lie within the 60 dBu service contour of WMT-FM, zero persons are predicted to receive interference. First, the interference situation was studied via the Longley-Rice propagation method. Exhibits E-4 and E-5 illustrate the results of that study.

As demonstrated in those two exhibits, a small area is predicted to receive interference. This area, however, does not contain any housing units, nor does it have any resident population. Exhibit E-6 illustrates the locations of the two blue pixels on the Exhibit E-4 map, and confirms that these areas are located within farm fields, and contain no structures. As a result, zero population is predicted to be affected by any Longley-Rice calculated interference.

In addition to the Longley-Rice study, a contour / field strength tabulated study was also performed. This study examines the family of FCC contours from WMT-FM, and then using the

[6] See FCC File Nos. BNPH-20070430AAC and BAPH-20100524AEE.

defined U/D ratio for interference demonstrates that zero population would be affected. The first step in this study is Exhibit E-7, which illustrates the family of FCC F(50,50) service contours in the vicinity of the proposed translator site.

As demonstrated on this map, the predicted field strength of WMT-FM in the immediate vicinity of the proposed translator is between 69 and 70 dBu. Since WMT-FM operates on a second adjacent channel to the proposed translator, interference by the Commission's Rules is predicted to occur when the undesired field strength is 40 dB higher than the desired field strength from WMT-FM. In this instance, the assumption will be made that the WMT-FM field strength is 69 dBu in the vicinity of the tower resulting in interference field strength of 109 dBu from the proposed translator.

The power density for the proposed facility at a field strength of 109 dBu is given by the following equation:

$$\boldsymbol{S = \frac{E^2}{Z_0} = \frac{(0.2818)^2}{377} = 0.0002106} \qquad \textit{Eq. 1}$$

In this equation, S represents the calculated power density in Watts per square meter, E is the electric field intensity, which for 109 dBu is 0.2818 Volts per meter, and Z_0 is the characteristic impedance of free space of 377 Ohms.

The power density is also given by:

$$\boldsymbol{S = \frac{P}{4\pi R^2}} \qquad \textit{Eq. 2}$$

Where S is in the same units, P is the power in Watts (227 in this case), and R is the distance. Rearranging the terms in the equation, it can be solved for the distance to the desired power density as follows:

$$R^2 = \frac{P}{4\pi S} \qquad \textit{Eq. 3}$$

The results of these calculations for depression angles of 0 degrees to 90 degrees are tabulated in Exhibit E-8. It was assumed for these calculations that a Shively 6812-2 antenna would be utilized. This antenna is assumed to be omni-directional in the horizontal plane. The relative field values at the listed depression angles are based on the published data for the antenna.

The resulting "R" or radius value from Eq. 3 corresponds to the "Field Strength Radius" column in Exhibit E-8. Since each radius is assigned to a specific depression angle, the radius has both a horizontal and vertical component to it. The specific horizontal and vertical distances from the center of radiation were derived using basic trigonometry. Depression angles where the vertical radius is less than approximate 3 meters AGL, including negative values, result in areas where interference is assumed to potentially be experienced by resident population in the area. As indicated in the tabulation, these areas exist at locations from 2.17 meters from the base of the supporting structure out to 283 meters from the base of the supporting structure.

Exhibit E-9 contains two photographs that illustrate the location of this circular contour. As these photographs illustrate, the contour does not intersect any structure where resident or working population would be present. In addition, areas along roads would be unaffected as well.

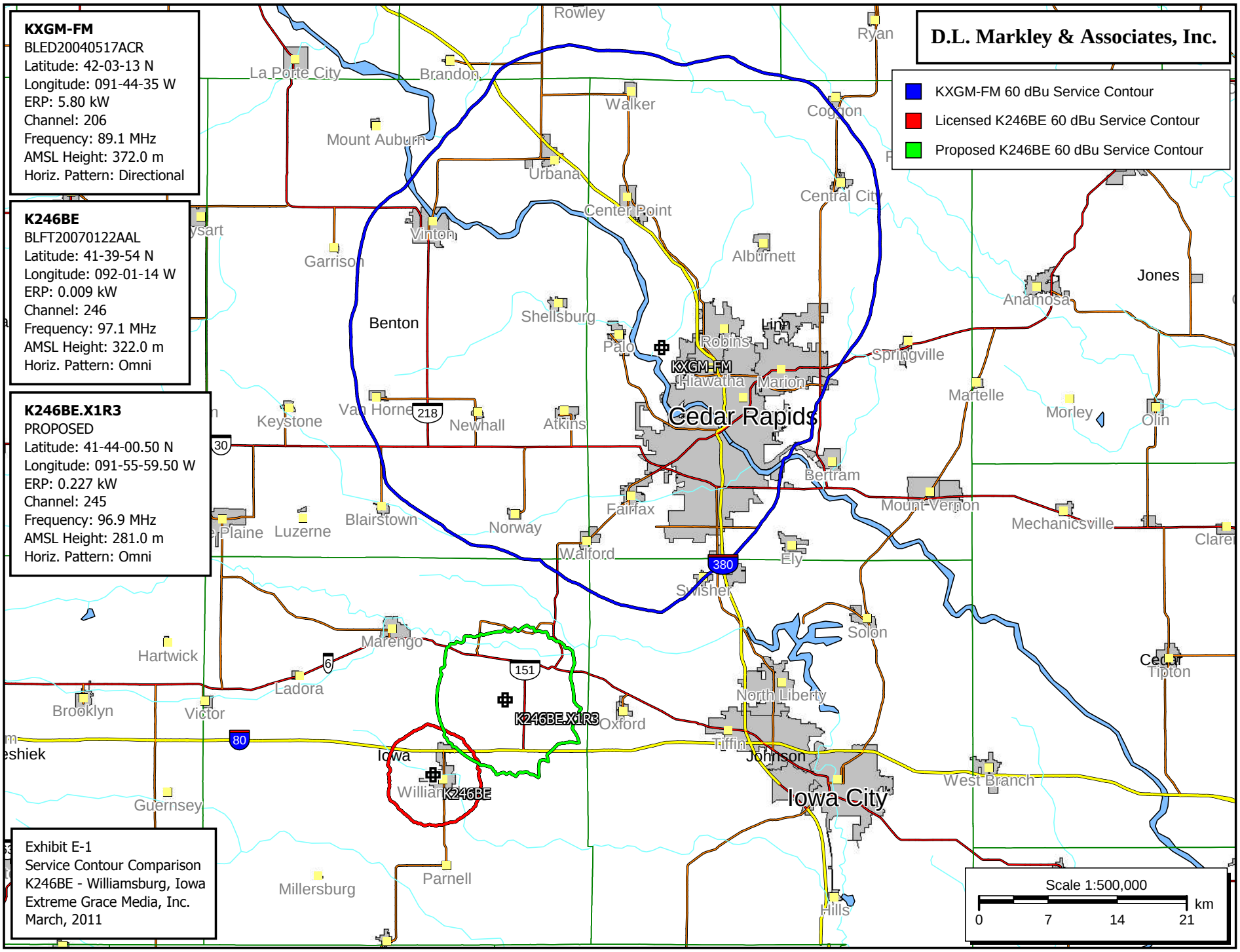
These two studies have demonstrated that although *de minimus* areas of predicted interference *may* occur, any such areas are not only extremely small in size, but are also clearly devoid of resident population. These studies are consistent with the provisions of Section 74.1204(d) of the Commission's Rules.

The proposed translator should be exempt from environmental processing. The supporting structure to be utilized by XGM for this translator is a mast that will not require excavation at the site. In addition, the structure is of insufficient height to be considered an obstruction to air navigation, and as such, does not require registration or obstruction lighting. RF exposure hazards to the general public will not exist due to the low effective radiated power. The Commission's *FM Model* software package predicts a maximum power density at ground level of 2.93 $\mu W/cm^2$ at 18 meters from the base of the structure. This is considerably less than the upper limit permissible under the uncontrolled environment condition of the applicable safety standard. XGM will coordinate with other users to reduce power or cease operation as necessary to prevent workers from being exposed to levels of radiofrequency radiation in excess of applicable standards.

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.

Above signature is digitized copy of actual signature
License Expires November 30, 2011

Jeremy D. Ruck, PE
March 9, 2011


KXGM-FM
BLED20040517ACR
Latitude: 42-03-13 N
Longitude: 091-44-35 W
ERP: 5.80 kW
Channel: 206
Frequency: 89.1 MHz
AMSL Height: 372.0 m
Horiz. Pattern: Directional
K246BE
BLFT20070122AAL
Latitude: 41-39-54 N
Longitude: 092-01-14 W
ERP: 0.009 kW
Channel: 246
Frequency: 97.1 MHz
AMSL Height: 322.0 m
Horiz. Pattern: Omni
K246BE.X1R3
PROPOSED
Latitude: 41-44-00.50 N
Longitude: 091-55-59.50 W
ERP: 0.227 kW
Channel: 245
Frequency: 96.9 MHz
AMSL Height: 281.0 m
Horiz. Pattern: Omni
D.L. Markley & Associates, Inc.
KXGM-FM 60 dBu Service Contour
Licensed K246BE 60 dBu Service Contour
Proposed K246BE 60 dBu Service Contour
Exhibit E-1
Service Contour Comparison
K246BE - Williamsburg, Iowa
Extreme Grace Media, Inc.
March, 2011
Scale 1:500,000
0 7 14 21 km
Rowley
Ryan
La Porte City
Brandon
Walker
Coggon
Mount Auburn
Urbana
Central City
Center Point
Vinton
Garrison
Alburnett
Jones
Anamosa
Benton
Shellsburg
Linn
Palo
Robins
KXGM-FM
Springville
Hiawatha
Marion
Martelle
Van Horne
218
Keystone
Newhall
Atkins
Cedar Rapids
Morley
Olin
30
Bertram
Fairfax
Mount Vernon
Plaine
Luzerne
Blairstown
Norway
Mechanicsville
Walford
Ely
380
Swisher
Solon
Hartwick
Marengo
6
151
Ladora
Tipton
Brooklyn
Victor
North Liberty
K246BE.X1R3
Oxford
80
Iowa
Tiffin
Johnson
West Branch
Williamsburg
K246BE
Iowa City
Guernsey
Parnell
Millersburg
Hills

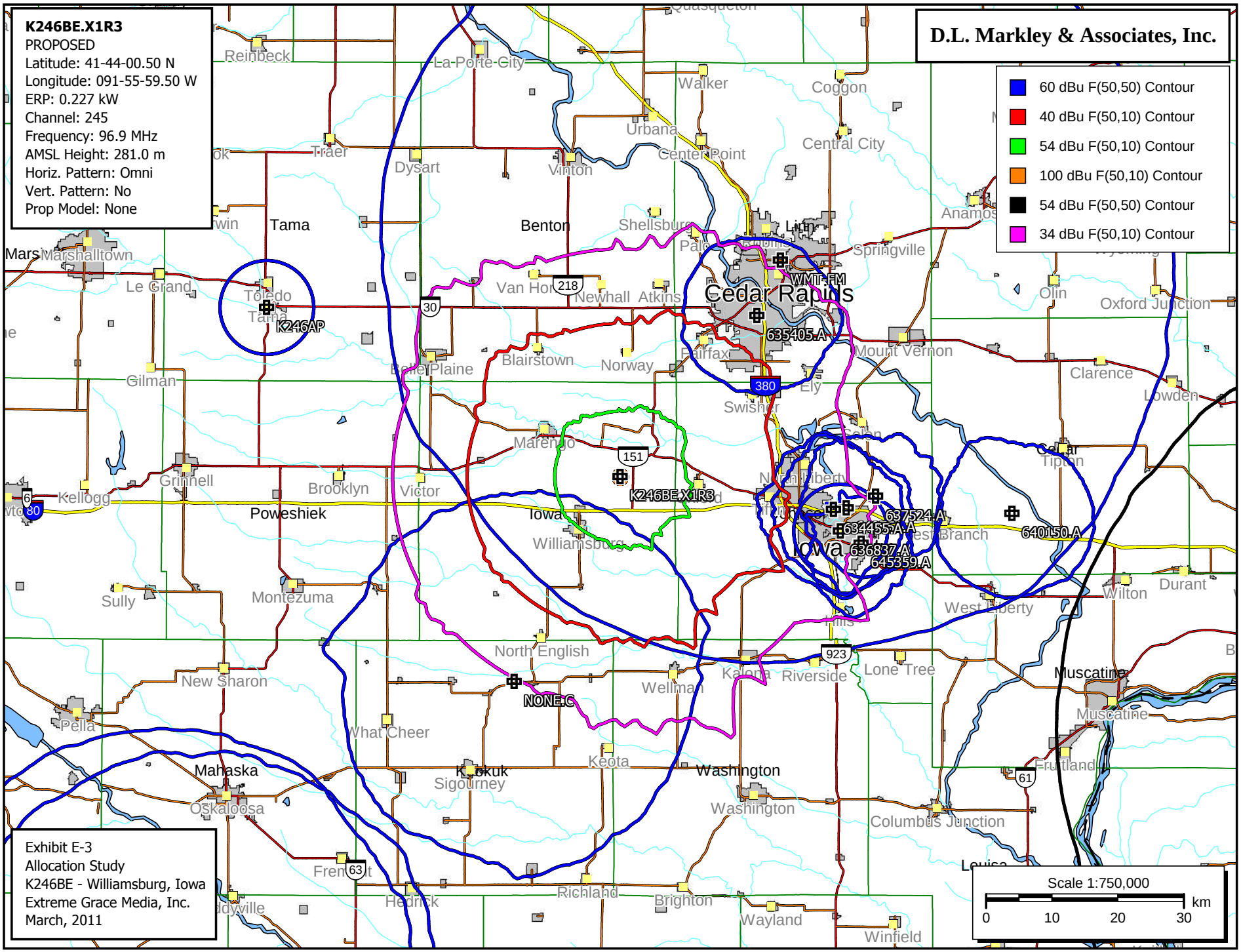
D.L. Markley & Associates, Inc.
Consulting Engineers

Extreme Grace Media, Inc.
Site #2 - Site #2

REFERENCE — CH# 246D - 97.1 MHz, Pwr= 0.227 kW, HAAT= 35.0 M, COR= 281 M — DISPLAY DATES
41 44 00.5 N. — Average Protected F(50-50)= 7.42 km — DATA 03-05-11
91 55 59.5 W. — Omni-directional — SEARCH 03-09-11

CH	CALL	TYPE	ANT	AZI	DIST	LAT	PWR(kW)	INT(km)	PRO(km)	*IN*	*OUT*
CITY		STATE		<--	FILE #	LNG	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)	
246D	K246BE	LIC	_C_	223.6	10.5	41 39 54.0	0.009	14.4	4.6	-11.0*<	-17.7<
Williamsburg		IA		43.6	BLFT20070122AAL	92 01 14.0		322	Extreme Grace Media, Inc.		
246A	AU7052741	VAC	___	206.9	34.8	41 27 15.0	6.000	88.3	29.5	-60.4*<	-18.0<
North English		IA		26.8	RM10002	92 07 21.0	100	343	Iowa-keokuk Radio		
246A	NONE	CP	_CX	207.2	34.9	41 27 15.0	6.000	88.3	29.6	-60.4*<	-18.0<
North English		IA		27.1	BNPH20070430AAC	92 07 30.0	100	343	Justin Mcluckie		
243C1	WMT-FM	LIC	_CX	36.4	40.7	42 01 40.0	100.000	7.5	60.7	25.4	-21.0*<
Cedar Rapids		IA		216.6	BMLH20050908ACY	91 38 25.0	158	411	Citicasters Licenses, Inc.		
247D	634455	APP	_C_	98.8	32.7	41 41 17.0	0.250	17.4	11.9	7.3	9.4
Iowa City		IA		279.0	BNPFT20030311ANL	91 32 43.0		300	Starboard Media Foundation		
247D	649751	APP	_C_	97.9	34.6	41 41 24.0	0.250	16.5	11.4	10.0	11.7
Iowa City		IA		278.2	BNPFT20030317HOX	91 31 19.0		296	E-string Wireless, Ltd		
247D	636837	APP	_C_	103.9	34.4	41 39 31.0	0.250	10.1	7.1	16.4	16.1
Iowa City		IA		284.2	BNPFT20030314CCW	91 31 58.0		238	University Of Northern Iow		
247D	645359	APP	_C_	105.5	37.9	41 38 30.2	0.250	11.0	7.7	19.0	18.9
Iowa City		IA		285.8	BNPFT20030317DUI	91 29 43.3		259	Radio Assist Ministry, Inc		
248D	635405	APP	_C_	40.3	32.0	41 57 09.0	0.140	0.8	11.6	23.4	19.3
Cedar Rapids		IA		220.4	BNPFT20030314BHO	91 41 00.0		359	Educational Media Foundati		
248D	637524	APP	_C_	94.4	38.8	41 42 20.0	0.250	1.1	11.0	30.0	26.7
Iowa City		IA		274.8	BNPFT20030317FZG	91 28 07.0		300	Educational Media Foundati		
246D	K246AP	LIC	_C_	295.7	59.3	41 57 44.0	0.250	23.8	7.1	28.3	28.1
Tama		IA		115.2	BLFT20070803ADY	92 34 42.0		265	Starboard Media Foundation		
249D	645346	APP	_C_	71.0	58.2	41 54 04.9	0.140	0.8	12.9	50.4	44.2
Mount Vernon		IA		251.5	BNPFT20030317HFJ	91 16 10.3		372	Radio Assist Ministry, Inc		
300C	KFMW	LIC	_C_	5.7	74.5	42 24 02.0	100.000	83.6	35.2	28.5R	46.0M
Waterloo		IA		185.7	BLH20031113AIR	91 50 36.0	550	834	Kxel Broadcasting Company,		
248D	640150	APP	_C_	95.4	59.6	41 40 51.9	0.205	1.0	11.4	50.8	47.1
West Liberty		IA		275.9	BNPFT20030317HFW	91 13 15.4		324	Radio Assist Ministry, Inc		
249C3	KCRR	LIC	_CN	326.1	88.3	42 23 28.0	16.000	3.9	38.2	76.8	49.1
Grundy Center		IA		145.7	BLH19940110KA	92 31 57.0	124	416	Cumulus Licensing Llc		

Terrain database is NGDC 30 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
Contour distances are on direct line to and from reference station. Reference zone = 2, Co to 3rd adjacent.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
"*"affixed to 'IN' or 'OUT' values = site inside protected contour.


K246BE.X1R3
PROPOSED
Latitude: 41-44-00.50 N
Longitude: 091-55-59.50 W
ERP: 0.227 kW
Channel: 245
Frequency: 96.9 MHz
AMSL Height: 281.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None
D.L. Markley & Associates, Inc.
60 dBu F(50,50) Contour
40 dBu F(50,10) Contour
54 dBu F(50,10) Contour
100 dBu F(50,10) Contour
54 dBu F(50,50) Contour
34 dBu F(50,10) Contour
Reinbeck
La Porte City
Walker
Coggon
Urbana
Traer
Dysart
Vinton
Center Point
Central City
Tama
Benton
Shellsburg
Palo
Lisbon
Springville
Anamosa
Marshalltown
Mars
Le Grand
Toledo
Tama
K246AP
Van Horne
218
30
Newhall
Atkins
WMT-FM
Cedar Rapids
635405-A
Olin
Oxford Junction
Fairfax
Mount Vernon
Clarence
Lowden
Gilman
Blairstown
Norway
Ely
380
Swisher
Marengo
151
Tipton
Grinnell
Brooklyn
Victor
K246BE.X1R3
Kellogg
80
Poweshiek
Iowa
Williamsburg
637524-A
634455-A
636837-A
645359-A
640150-A
West Branch
Iowa
Durant
Wilton
West Liberty
Sully
Montezuma
North English
923
Kalona
Riverside
Lone Tree
Muscatine
New Sharon
NONE-C
Wellman
Pella
What Cheer
Keota
Mahaska
Washington
Sigourney
Fruitland
61
Oskaloosa
Columbus Junction
Fremont
63
Hedrick
Richland
Brighton
Wayland
Winfield
Exhibit E-3
Allocation Study
K246BE - Williamsburg, Iowa
Extreme Grace Media, Inc.
March, 2011
Scale 1:750,000
km
0
10
20
30

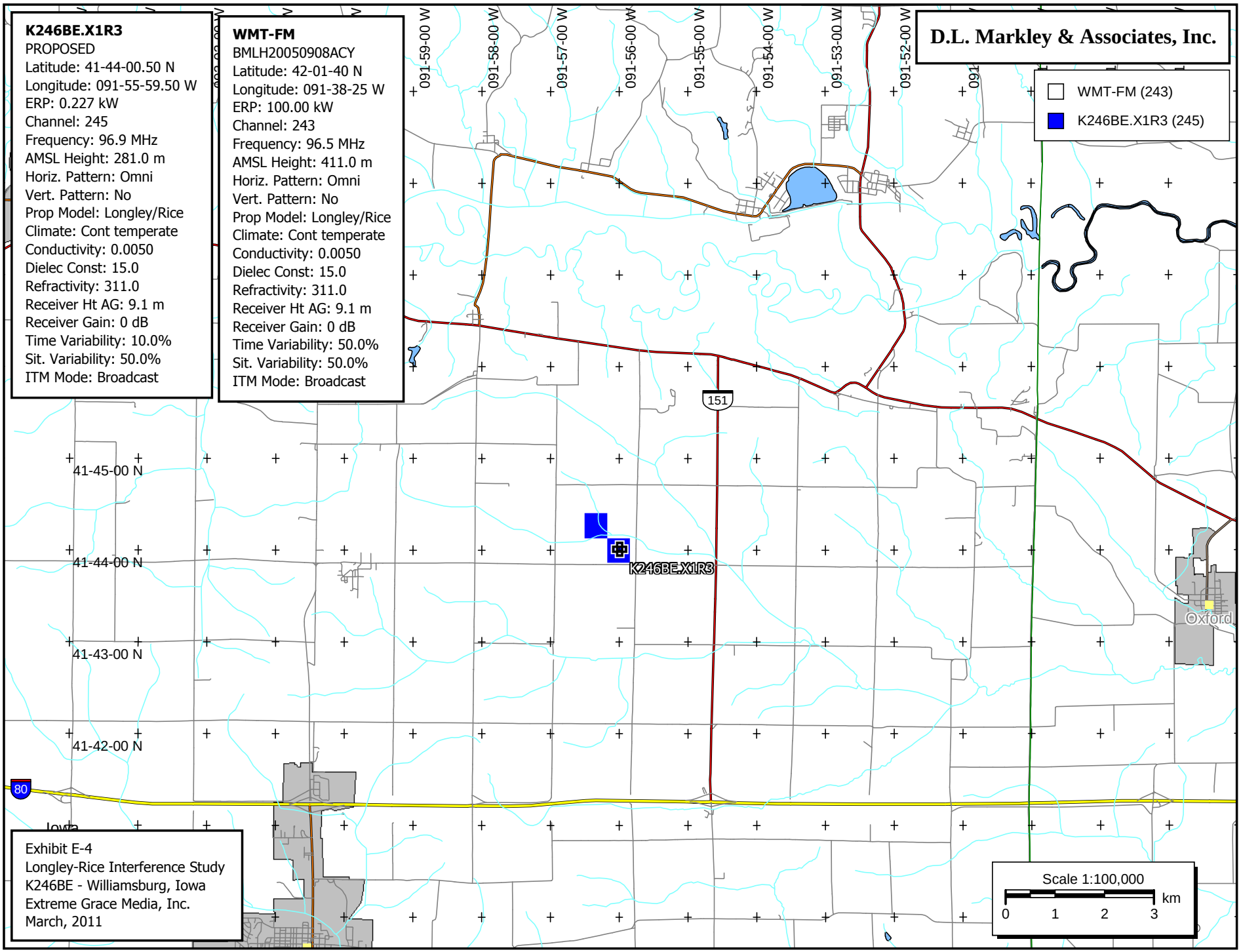

K246BE.X1R3
PROPOSED
Latitude: 41-44-00.50 N
Longitude: 091-55-59.50 W
ERP: 0.227 kW
Channel: 245
Frequency: 96.9 MHz
AMSL Height: 281.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: Longley/Rice
Climate: Cont temperate
Conductivity: 0.0050
Dielec Const: 15.0
Refractivity: 311.0
Receiver Ht AG: 9.1 m
Receiver Gain: 0 dB
Time Variability: 10.0%
Sit. Variability: 50.0%
ITM Mode: Broadcast
WMT-FM
BMLH20050908ACY
Latitude: 42-01-40 N
Longitude: 091-38-25 W
ERP: 100.00 kW
Channel: 243
Frequency: 96.5 MHz
AMSL Height: 411.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: Longley/Rice
Climate: Cont temperate
Conductivity: 0.0050
Dielec Const: 15.0
Refractivity: 311.0
Receiver Ht AG: 9.1 m
Receiver Gain: 0 dB
Time Variability: 50.0%
Sit. Variability: 50.0%
ITM Mode: Broadcast
D.L. Markley & Associates, Inc.
WMT-FM (243)
K246BE.X1R3 (245)
091-59-00 W
091-58-00 W
091-57-00 W
091-56-00 W
091-55-00 W
091-54-00 W
091-53-00 W
091-52-00 W
151
41-45-00 N
41-44-00 N
41-43-00 N
41-42-00 N
K246BE.X1R3
Oxford
80
Iowa
Exhibit E-4
Longley-Rice Interference Study
K246BE - Williamsburg, Iowa
Extreme Grace Media, Inc.
March, 2011
Scale 1:100,000
km
0
1
2
3

Exhibit E-5
Longley-Rice Interference Study Population Summary

Population Database: 2000 US Census (SF1)

WMT-FM (243) Cedar Rapids, IA - BMLH20050908ACY
Lat: 42-01-40 N Lng: 091-38-25 W ERP: 100.00 kW AMSL: 411.0 m
FM Interference Study
Protected: Circle: R = 100 km
Interference considered within 50 km.
Signal Resolution: 0.5 km

Study Date: 3/7/2011
FM Database Date: 3/5/2011

D/U Ratios Used:
Co: 20.0 dB
First Adj: 6.0 dB
Second Adj: -40.0 dB
Third Adj: -40.0 dB

Threshold for reception: 48.0 dBu.

Primary Terrain: V-Soft 3 Second US Terrain
Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Percentages calculated using a baseline population of 687,068.

Stations which cause interference:

Call Letters	H Units	Population	%	Area (sq. km)
K246BE.X1R3 (245)	0	0	0.000	0.46

Masking Summary:

Call Letters	Total Interference Population	%	Unique Interference Population	%
K246BE.X1R3 (245)	0	0.000	0	0.000

Call Letters	City	State	Dist	Azi
K246BE.X1R3 (245)	Williamsburg	IA	40.7	216.7

Totals for WMT-FM (243)

Calculation Area Population:	872,686	[31416.4 sq. km]
Not Affected by Terrain Loss:	687,068	[24581.1 sq. km]
Interfered Population:	0	[0.5 sq. km]
Interference Free:	687,068	[24580.6 sq. km]

Percent Interference: 0.00 %

Terrain Blocked Population: 185,618 [6835.3 sq. km]
Contour Area Population: 873,419

Interference Free Breakdown:

White:	636,225	[92.6%]
Black:	18,876	[2.7%]
Hispanic:	13,724	[2.0%]
Native American:	1,555	[0.2%]
Asian:	9,190	[1.3%]
Pacific Islander:	239	[0.0%]
Mixed Race:	6,636	[1.0%]
Other:	623	[0.1%]
Total:	687,068	

	Housing Units	Population	%
Illinois			
Mercer County			
Total	7,109	16,957	
WMT-FM (243)	53	129	
IxFree	53	129	100.00
Rock Island County			
Total	64,489	149,374	
WMT-FM (243)	452	1,138	
IxFree	452	1,138	100.00
Iowa			
Benton County			
Total	10,377	25,308	
WMT-FM (243)	10,377	25,308	
IxFree	10,377	25,308	100.00
Black Hawk County			
Total	51,759	128,012	
WMT-FM (243)	49,627	122,597	
IxFree	49,627	122,597	100.00
Bremer County			
Total	9,337	23,325	
WMT-FM (243)	1,796	4,394	
IxFree	1,796	4,394	100.00
Buchanan County			
Total	8,697	21,093	
WMT-FM (243)	8,684	21,063	
IxFree	8,684	21,063	100.00
Butler County			
Total	6,578	15,305	
WMT-FM (243)	36	99	
IxFree	36	99	100.00
Cedar County			
Total	7,570	18,187	
WMT-FM (243)	7,567	18,179	
IxFree	7,567	18,179	100.00

Clayton County			
Total	8,619	18,678	
WMT-FM (243)	1,554	3,814	
IxFree	1,554	3,814	100.00
Clinton County			
Total	21,585	50,149	
WMT-FM (243)	4,197	10,114	
IxFree	4,197	10,114	100.00
Delaware County			
Total	7,682	18,404	
WMT-FM (243)	7,569	18,194	
IxFree	7,569	18,194	100.00
Dubuque County			
Total	35,505	89,143	
WMT-FM (243)	5,265	14,061	
IxFree	5,265	14,061	100.00
Fayette County			
Total	9,505	22,008	
WMT-FM (243)	4,890	11,294	
IxFree	4,890	11,294	100.00
Grundy County			
Total	5,304	12,369	
WMT-FM (243)	1,244	2,943	
IxFree	1,244	2,943	100.00
Henry County			
Total	8,246	20,336	
WMT-FM (243)	580	1,428	
IxFree	580	1,428	100.00
Iowa County			
Total	6,545	15,671	
WMT-FM (243)	6,504	15,568	
IxFree	6,504	15,568	100.00
Jackson County			
Total	8,949	20,296	
WMT-FM (243)	2,943	7,023	
IxFree	2,943	7,023	100.00
Jasper County			
Total	15,659	37,213	
WMT-FM (243)	58	112	
IxFree	58	112	100.00
Jefferson County			
Total	7,241	16,181	
WMT-FM (243)	58	136	
IxFree	58	136	100.00
Johnson County			
Total	45,831	111,006	
WMT-FM (243)	45,831	111,006	
IxFree	45,831	111,006	100.00
Jones County			
Total	8,126	20,221	
WMT-FM (243)	7,929	19,740	
IxFree	7,929	19,740	100.00
Keokuk County			
Total	5,013	11,400	
WMT-FM (243)	3,241	7,254	
IxFree	3,241	7,254	100.00

Linn County			
Total	80,551	191,701	
WMT-FM (243)	80,551	191,701	
IxFree	80,551	191,701	100.00
Louisa County			
Total	5,133	12,183	
WMT-FM (243)	1,484	3,885	
IxFree	1,484	3,885	100.00
Mahaska County			
Total	9,551	22,335	
WMT-FM (243)	128	266	
IxFree	128	266	100.00
Marshall County			
Total	16,324	39,311	
WMT-FM (243)	405	1,022	
IxFree	405	1,022	100.00
Muscatine County			
Total	16,786	41,722	
WMT-FM (243)	8,786	22,276	
IxFree	8,786	22,276	100.00
Poweshiek County			
Total	8,556	18,815	
WMT-FM (243)	4,724	10,464	
IxFree	4,724	10,464	100.00
Scott County			
Total	65,649	158,668	
WMT-FM (243)	3,660	9,483	
IxFree	3,660	9,483	100.00
Tama County			
Total	7,583	18,103	
WMT-FM (243)	5,297	12,638	
IxFree	5,297	12,638	100.00
Washington County			
Total	8,543	20,670	
WMT-FM (243)	8,150	19,679	
IxFree	8,150	19,679	100.00
Wisconsin			
Grant County			
Total	19,940	49,597	
WMT-FM (243)	27	60	
IxFree	27	60	100.00

Exhibit E-6

Illustration of Longley-Rice Calculated Areas of Predicted Interference

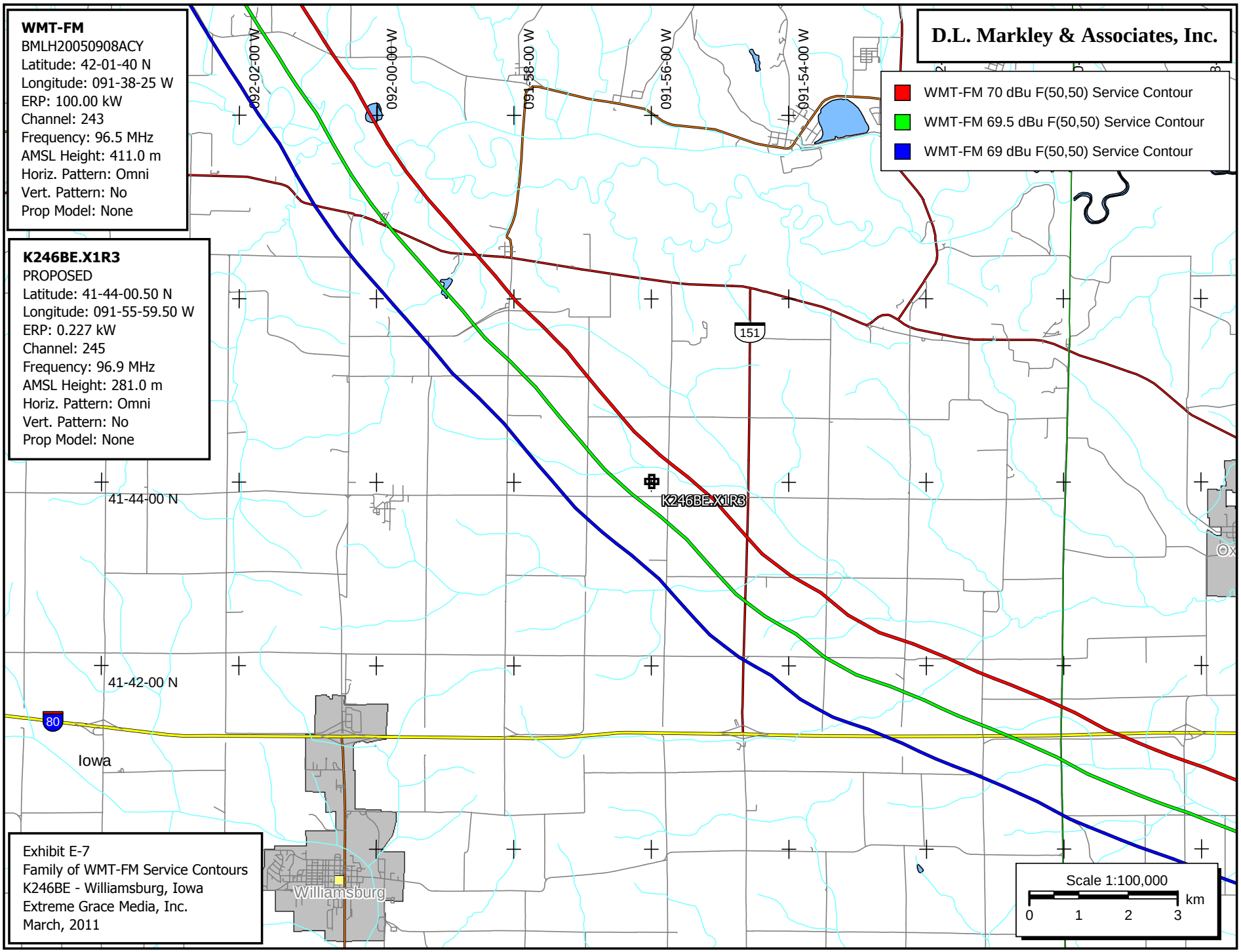

WMT-FM
BMLH20050908ACY
Latitude: 42-01-40 N
Longitude: 091-38-25 W
ERP: 100.00 kW
Channel: 243
Frequency: 96.5 MHz
AMSL Height: 411.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None
K246BE.X1R3
PROPOSED
Latitude: 41-44-00.50 N
Longitude: 091-55-59.50 W
ERP: 0.227 kW
Channel: 245
Frequency: 96.9 MHz
AMSL Height: 281.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None
D.L. Markley & Associates, Inc.
WMT-FM 70 dBu F(50,50) Service Contour
WMT-FM 69.5 dBu F(50,50) Service Contour
WMT-FM 69 dBu F(50,50) Service Contour
092-02-00 W
092-00-00 W
091-58-00 W
091-56-00 W
091-54-00 W
41-44-00 N
41-42-00 N
151
80
Iowa
K246BE.X1R3
Williamsburg
Scale 1:100,000
0 1 2 3 km
Exhibit E-7
Family of WMT-FM Service Contours
K246BE - Williamsburg, Iowa
Extreme Grace Media, Inc.
March, 2011

Exhibit E-8 - Summary of Power Density Calculations								
Facility:	K246BE							
COR:		28.0	m AGL				Z0 (Ohms)	377
ERP:		227	Watts				**ALL distances meters**	
Antenna:		SHI 6812-2						
FS Contour:		109	dBu					
E Field Strength:		0.2818	V/m					
Power Density:		0.0002106971	W/m^2					
Dep.			ERP in	Radius	Field Strength	Radius	Radius	Radius
θ	Erel	Prel	Watts	Squared	Radius	Vert. Dist.	AGL	Horiz. Dist.
0	1.000	1.000	227.00	85734.840	292.81	0.00	28.00	292.81
1	0.999	0.998	226.55	85563.456	292.51	5.11	22.89	292.47
2	0.995	0.990	224.74	84879.635	291.34	10.17	17.83	291.16
3	0.989	0.978	222.03	83859.048	289.58	15.16	12.84	289.19
4	0.980	0.960	218.01	82339.741	286.95	20.02	7.98	286.25
5	0.969	0.939	213.14	80501.671	283.73	24.73	3.27	282.65
6	0.956	0.914	207.46	78356.157	279.92	29.26	-1.26	278.39
7	0.941	0.885	201.00	75916.572	275.53	33.58	-5.58	273.48
8	0.923	0.852	193.39	73039.997	270.26	37.61	-9.61	267.63
9	0.903	0.815	185.10	69908.960	264.40	41.36	-13.36	261.15
10	0.881	0.776	176.19	66544.039	257.96	44.79	-16.79	254.04
11	0.858	0.736	167.11	63114.903	251.23	47.94	-19.94	246.61
12	0.832	0.692	157.13	59347.714	243.61	50.65	-22.65	238.29
13	0.805	0.648	147.10	55558.320	235.71	53.02	-25.02	229.67
14	0.776	0.602	136.69	51627.463	227.22	54.97	-26.97	220.47
15	0.745	0.555	125.99	47584.980	218.14	56.46	-28.46	210.71
16	0.714	0.510	115.72	43707.279	209.06	57.63	-29.63	200.96
17	0.681	0.464	105.27	39760.475	199.40	58.30	-30.30	190.69
18	0.647	0.419	95.02	35889.376	189.44	58.54	-30.54	180.17
19	0.612	0.375	85.02	32111.470	179.20	58.34	-30.34	169.43
20	0.576	0.332	75.31	28444.762	168.66	57.68	-29.68	158.48
21	0.539	0.291	65.95	24907.772	157.82	56.56	-28.56	147.34
22	0.502	0.252	57.20	21605.523	146.99	55.06	-27.06	136.29
23	0.465	0.216	49.08	18538.016	136.15	53.20	-25.20	125.33
24	0.427	0.182	41.39	15631.948	125.03	50.85	-22.85	114.22
25	0.389	0.151	34.35	12973.482	113.90	48.14	-20.14	103.23
26	0.352	0.124	28.13	10622.890	103.07	45.18	-17.18	92.64
27	0.314	0.099	22.38	8453.112	91.94	41.74	-13.74	81.92
28	0.277	0.077	17.42	6578.349	81.11	38.08	-10.08	71.61
29	0.240	0.058	13.08	4938.327	70.27	34.07	-6.07	61.46
30	0.203	0.041	9.35	3533.047	59.44	29.72	-1.72	51.48
31	0.168	0.028	6.41	2419.780	49.19	25.34	2.66	42.17
32	0.132	0.017	3.96	1493.844	38.65	20.48	7.52	32.78
33	0.098	0.010	2.18	823.397	28.69	15.63	12.37	24.07
34	0.065	0.004	0.96	362.230	19.03	10.64	17.36	15.78
35	0.032	0.001	0.23	87.792	9.37	5.37	22.63	7.68
36	0.001	0.000	0.00	0.086	0.29	0.17	27.83	0.24
37	0.029	0.001	0.19	72.103	8.49	5.11	22.89	6.78
38	0.058	0.003	0.76	288.412	16.98	10.46	17.54	13.38

Exhibit E-8 - Summary of Power Density Calculations								
Facility:	K246BE							
COR:		28.0	m AGL				Z0 (Ohms)	377
ERP:		227	Watts				**ALL distances meters**	
Antenna:		SHI 6812-2						
FS Contour:		109	dBu					
E Field Strength:		0.2818	V/m					
Power Density:		0.0002106971	W/m^2					
Dep.			ERP in	Radius	Field Strength	Radius	Radius	Radius
θ	Erel	Prel	Watts	Squared	Radius	Vert. Dist.	AGL	Horiz. Dist.
39	0.086	0.007	1.68	634.095	25.18	15.85	12.15	19.57
40	0.112	0.013	2.85	1075.458	32.79	21.08	6.92	25.12
41	0.137	0.019	4.26	1609.157	40.11	26.32	1.68	30.27
42	0.161	0.026	5.88	2222.333	47.14	31.54	-3.54	35.03
43	0.183	0.033	7.60	2871.174	53.58	36.54	-8.54	39.19
44	0.204	0.042	9.45	3567.941	59.73	41.49	-13.49	42.97
45	0.224	0.050	11.39	4301.831	65.59	46.38	-18.38	46.38
46	0.242	0.059	13.29	5020.975	70.86	50.97	-22.97	49.22
47	0.258	0.067	15.11	5706.854	75.54	55.25	-27.25	51.52
48	0.273	0.075	16.92	6389.732	79.94	59.40	-31.40	53.49
49	0.287	0.082	18.70	7061.893	84.04	63.42	-35.42	55.13
50	0.299	0.089	20.29	7664.780	87.55	67.07	-39.07	56.28
51	0.310	0.096	21.81	8239.118	90.77	70.54	-42.54	57.12
52	0.319	0.102	23.10	8724.463	93.40	73.60	-45.60	57.51
53	0.327	0.107	24.27	9167.541	95.75	76.47	-48.47	57.62
54	0.334	0.112	25.32	9564.236	97.80	79.12	-51.12	57.48
55	0.339	0.115	26.09	9852.734	99.26	81.31	-53.31	56.93
56	0.343	0.118	26.71	10086.618	100.43	83.26	-55.26	56.16
57	0.346	0.120	27.18	10263.832	101.31	84.97	-56.97	55.18
58	0.348	0.121	27.49	10382.832	101.90	86.41	-58.41	54.00
59	0.348	0.121	27.49	10382.832	101.90	87.34	-59.34	52.48
60	0.347	0.120	27.33	10323.246	101.60	87.99	-59.99	50.80
61	0.345	0.119	27.02	10204.589	101.02	88.35	-60.35	48.97
62	0.343	0.118	26.71	10086.618	100.43	88.68	-60.68	47.15
63	0.339	0.115	26.09	9852.734	99.26	88.44	-60.44	45.06
64	0.334	0.112	25.32	9564.236	97.80	87.90	-59.90	42.87
65	0.328	0.108	24.42	9223.697	96.04	87.04	-59.04	40.59
66	0.322	0.104	23.54	8889.331	94.28	86.13	-58.13	38.35
67	0.315	0.099	22.52	8507.040	92.23	84.90	-56.90	36.04
68	0.306	0.094	21.26	8027.868	89.60	83.07	-55.07	33.56
69	0.298	0.089	20.16	7613.597	87.26	81.46	-53.46	31.27
70	0.288	0.083	18.83	7111.191	84.33	79.24	-51.24	28.84
71	0.278	0.077	17.54	6625.931	81.40	76.97	-48.97	26.50
72	0.267	0.071	16.18	6111.951	78.18	74.35	-46.35	24.16
73	0.256	0.066	14.88	5618.718	74.96	71.68	-43.68	21.92
74	0.244	0.060	13.51	5104.309	71.44	68.68	-40.68	19.69
75	0.231	0.053	12.11	4574.897	67.64	65.33	-37.33	17.51
76	0.218	0.048	10.79	4074.463	63.83	61.94	-33.94	15.44
77	0.205	0.042	9.54	3603.007	60.03	58.49	-30.49	13.50

Exhibit E-8 - Summary of Power Density Calculations								
Facility:	K246BE							
COR:		28.0	m AGL				Z0 (Ohms)	377
ERP:		227	Watts				**ALL distances meters**	
Antenna:		SHI 6812-2						
FS Contour:		109	dBu					
E Field Strength:		0.2818	V/m					
Power Density:		0.0002106971	W/m^2					
Dep.			ERP in	Radius	Field Strength	Radius	Radius	Radius
θ	Erel	Prel	Watts	Squared	Radius	Vert. Dist.	AGL	Horiz. Dist.
78	0.191	0.036	8.28	3127.693	55.93	54.70	-26.70	11.63
79	0.177	0.031	7.11	2685.987	51.83	50.87	-22.87	9.89
80	0.162	0.026	5.96	2250.025	47.43	46.71	-18.71	8.24
81	0.148	0.022	4.97	1877.936	43.34	42.80	-14.80	6.78
82	0.132	0.017	3.96	1493.844	38.65	38.27	-10.27	5.38
83	0.117	0.014	3.11	1173.624	34.26	34.00	-6.00	4.18
84	0.101	0.010	2.32	874.581	29.57	29.41	-1.41	3.09
85	0.085	0.007	1.64	619.434	24.89	24.79	3.21	2.17
86	0.069	0.005	1.08	408.184	20.20	20.15	7.85	1.41
87	0.052	0.003	0.61	231.827	15.23	15.20	12.80	0.80
88	0.036	0.001	0.29	111.112	10.54	10.53	17.47	0.37
89	0.018	0.000	0.07	27.778	5.27	5.27	22.73	0.09
90	0.000	0.000	0.00	0.000	0.00	0.00	28.00	0.00

Exhibit E-9

Field Strength / Contour Interference Area