

Exhibit 13.1 - Copy of Existing Antenna Structure Registration



Registration Detail

Reg Number	1028734	Status	Constructed
File Number	A0452798	Constructed	09/04/2002
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Commu

Location (in NAD83 Coordinates)

Lat/Long	41-37-55.0 N 093-27-27.0 W	Address	7504 NE 38TH AVE
City, State	DES MOINES , IA		
Zip	50009	County	POLK
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
291.3	319.4
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
610.7	318.8

Painting and Lighting Specifications

FAA Chapters 4, 7, 13
Paint and Light in Accordance with FAA Circular Number 70/7460-1J

FAA Notification

FAA Study	97-ACE-0742-OE	FAA Issue Date	07/07/1997
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Owner & Contact Information

FRN	0003576667	Owner Entity Type	
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Owner

Saga Communications of Iowa, LLC
Attention To: Gregory Urbiel
73 Kercheval Avenue, Suite 201
Grosse Point Farms , MI 48236

P: (313)886-7070
F:
E: gurbiel@sagacom.com

Contact

Smithwick , Gary S
5028 Wisconsin Avenue, NW Suite 301
Washington , DC 20016

P: (202)363-4050
F:
E: gsmithwick@fccworld.com

Last Action Status

Status	Constructed	Received	06/22/2005
Purpose	Admin Update	Entered	06/22/2005
Mode	Interactive		

Related Applications

06/22/2005	A0452798 - Admin Update (AU)
09/04/2002	A0280779 - Change Owner (OC)
09/04/2002	A0280828 - Notification (NT)

Related applications (5)

Comments

Comments

None

History

Date	Event
06/23/2005	Registration Printed
06/22/2005	ASR Application receipt email sent: Tower email
06/22/2005	Administrative Update Received

All History (10)

Automated Letters

06/23/2005	Authorization, Reference 432474
09/05/2002	Authorization, Reference 235719
09/05/2002	Ownership Change, Reference 235800

All letters (5)

Exhibit 13.2

Vertical Plan of Antenna System

The site is located at 7504 NE 38th Ave
the city of Des Moines, Polk County, Iowa.

Site Location (NAD 27)

NL: 41° 37' 55"

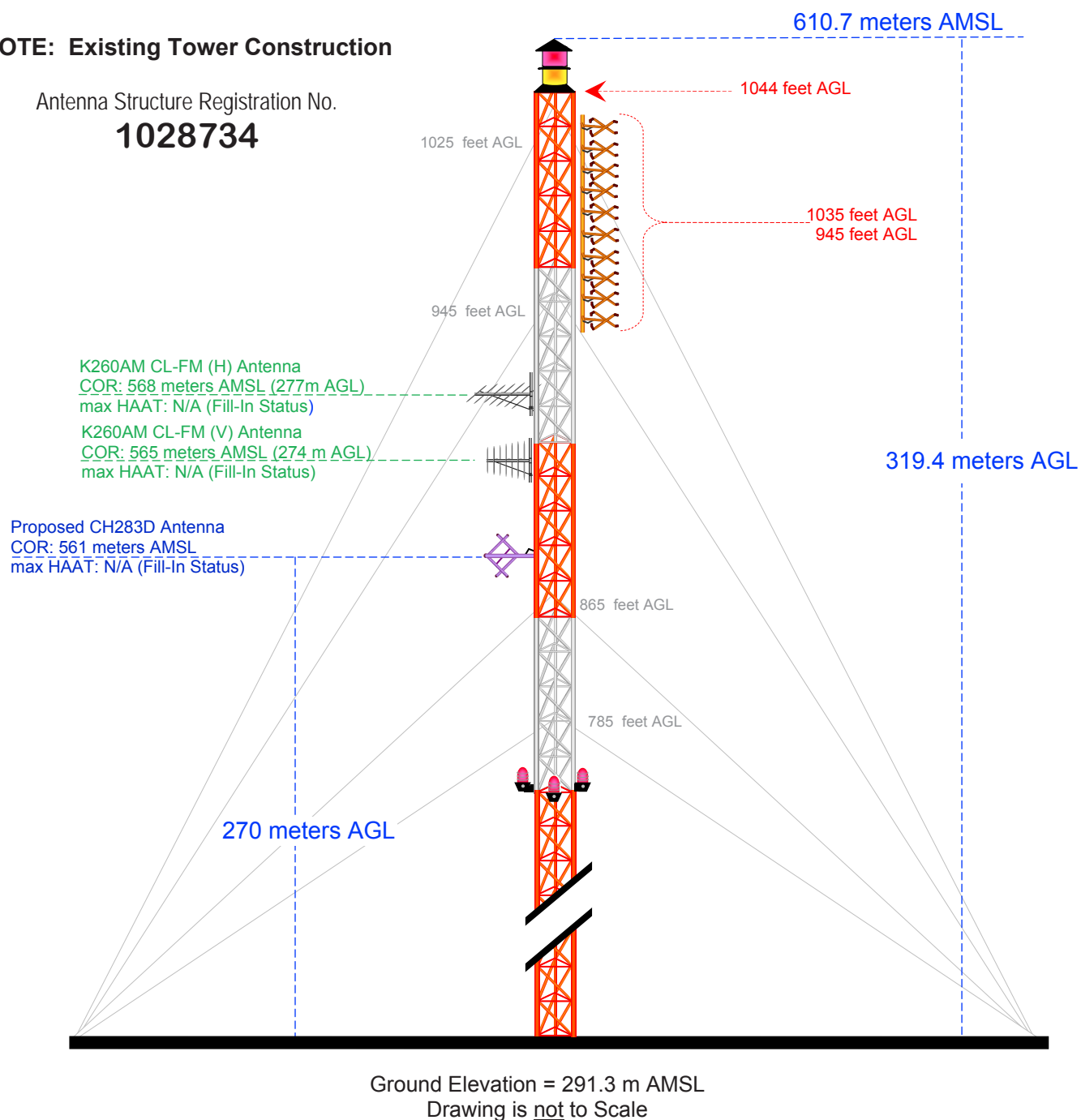
WL: 93° 27' 26"

(41-37-55.0NL; 93-27-27.0WL NAD 1983)

NOTE: Existing Tower Construction

Antenna Structure Registration No.

1028734



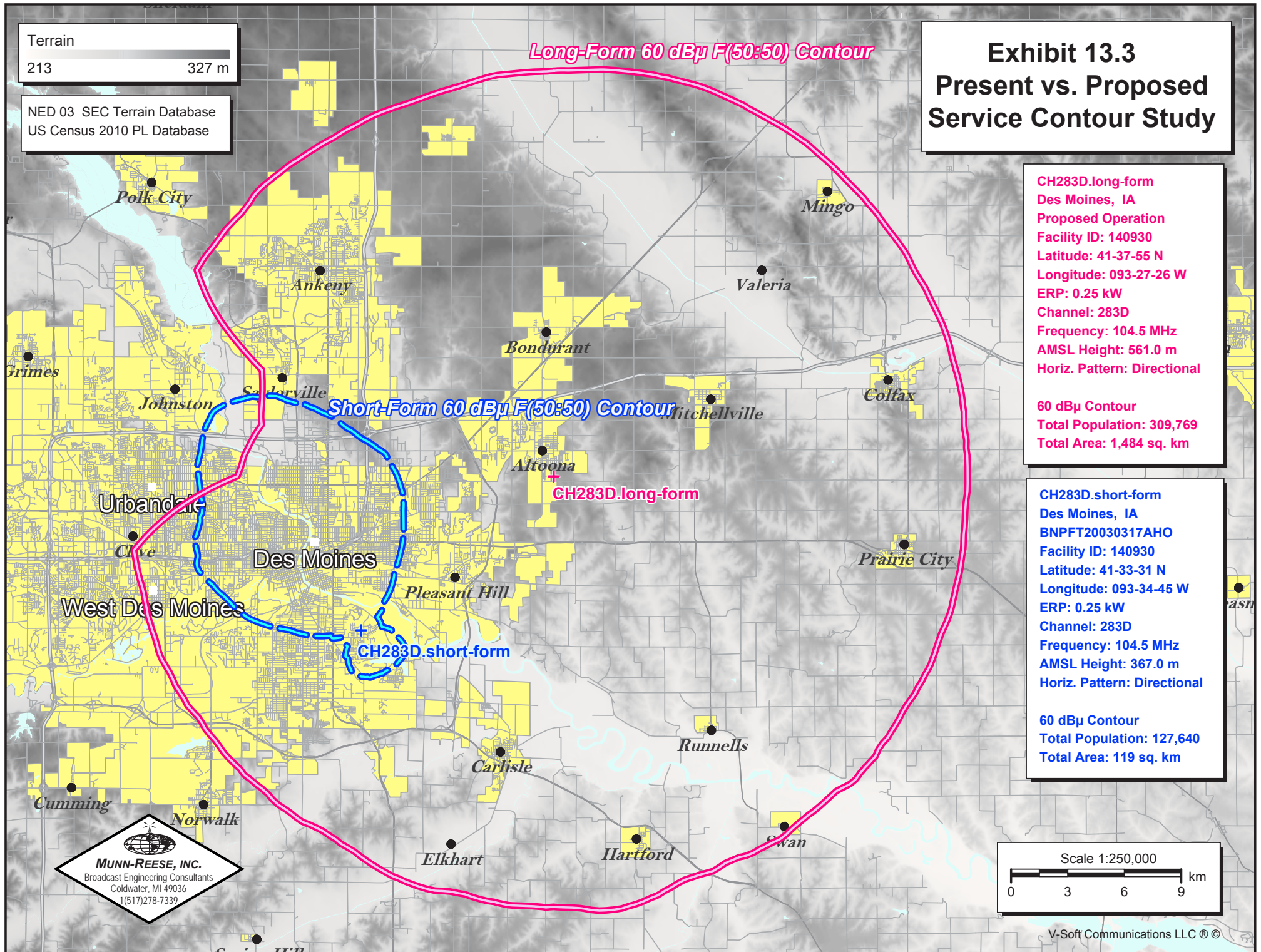
MUNN-REESE, INC.

Broadcast Engineering Consultants
Coldwater, MI 49036

Terrain
213 327 m

NED 03 SEC Terrain Database
US Census 2010 PL Database

Exhibit 13.3 Present vs. Proposed Service Contour Study



Terrain
162 440 m

NED 03 SEC Terrain Database
US Census 2010 PL Database

Exhibit 13.4 Proposed vs. Primary Service Contour Study

CH283D.long-form
Des Moines, IA
Proposed Operation
Facility ID: 140930
Latitude: 41-37-55 N
Longitude: 093-27-26 W
ERP: 0.25 kW
Channel: 283D
Frequency: 104.5 MHz
AMSL Height: 561.0 m
Horiz. Pattern: Directional

KAZR(FM)
Pella, IA
BMLH20120925AAO
Facility ID: 28882
Latitude: 41-32-17 N
Longitude: 093-17-57 W
ERP: 100.00 kW
Channel: 277C1
Frequency: 103.3 MHz
AMSL Height: 489.0 m
Horiz. Pattern: Omni

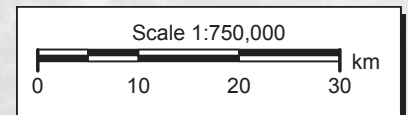
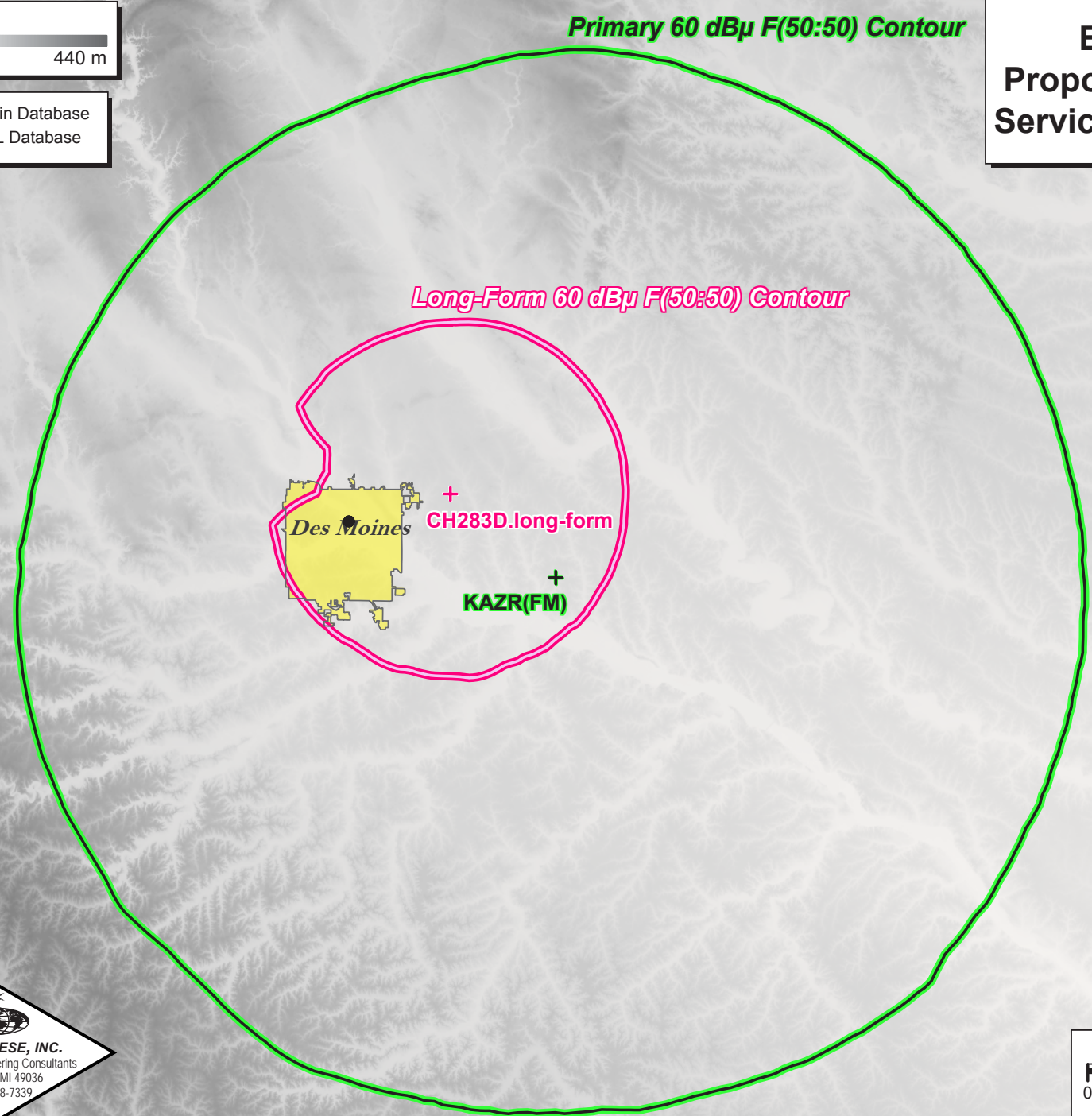


Exhibit 13.5

Tabulation of Proposed Allocation

Saga Communications Of Iowa, Llc CH# 283D - 104.5 MHz, Pwr= 0.25 kw DA, HAAT= 288.2 M, COR= 561 M Average Protected F(50-50)= 22.12 km Standard Directional											
REFERENCE		DISPLAY DATES								DATA 09-01-13	
41 37 55.0 N.		SEARCH 09-04-13									
93 27 26.0 W.											
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)	
283D	632421	APP DH_		231.2	13.01	41 33 31.0	0.250	4.0	1.1	-13.7*<	-56.5<
Des Moines	IA			51.2	BNPFT20030317AHO	93 34 45.0	107	367	Saga Communications Of Iow		
283C1	KDAT	LIC _CN		70.5	154.15	42 04 51.0	100.000	160.1	62.4	-28.0*<	25.0
Cedar Rapids	IA			251.7	BLH5113	91 41 45.0	168	422	Cumulus Licensing Llc		
281C0	KLTI-FM	LIC _CN		309.2	47.73	41 54 09.0	100.000	10.5	74.1	15.6	-27.5*<
Ames	IA			128.9	BLH19861229KC	93 54 15.0	308	615	Saga Communications Of Iow		
284D	1564023	APP DV_		277.8	25.15	41 39 44.0	0.010	1.3	0.7	7.9	0.6
Des Moines	IA			97.6	BNPFT20030317GYN	93 45 26.0		341	Educational Media Foundati		
284D	1568042	APP DV_		277.8	25.15	41 39 44.0	0.010	1.3	0.7	7.9	0.6
Des Moines	IA			97.6	BNPFT20130809AAS	93 45 26.0		341	Educational Media Foundati		
286C3	KCCQ	LIC _CN		342.3	51.97	42 04 38.0	25.000	4.4	42.1	26.3	8.7
Ames	IA			162.2	BLH19980203KC	93 38 54.0	100	403	Citicasters Licenses, Inc.		
From channel 296A per D92-155											
283C0	KSRZ	LIC _C_		261.2	217.23	41 18 16.0	100.000	177.3	75.6	18.0	74.9
Omaha	NE			79.5	BMLH20050610AIL	96 01 41.0	332	673	Journal Broadcast Corporat		
285C2	KBOE-FM	LIC _CN		116.8	75.94	41 19 15.0	50.000	5.8	51.1	47.9	23.8
Oskaloosa	IA			297.4	BLH19910919KB	92 38 44.0	150	391	Jomast Corporation		
280D	637056	APP _C_		118.9	55.18	41 23 27.0	0.115	0.8	11.8	32.2	42.3
Pella	IA			299.3	BNPFT20030314BEA	92 52 40.0	143	384	Holcomb International Mini		
230D	K230AT	LIC _C_		236.2	46.05	41 24 02.0	0.165	136.0	66.4	9.5R	36.6M
Winterset	IA			55.9	BLFT20070122ALL	93 54 58.0	79	375	First Ventures Capital Par		
282C3	KRKN	LIC _CN		131.0	128.35	40 52 06.0	23.500	61.0	40.0	44.8	54.7
Eldon	IA			311.8	BLH19960807KD	92 18 20.0	104	334	O-town Communications, Inc		
285D	K285GI	CP _C_		327.3	114.32	42 29 43.0	0.250	1.1	11.9	91.9	101.3
Fort Dodge	IA			146.8	BNPFT20130328AFH	94 12 35.0		422	Starboard Media Foundation		
283C2	KJLY	LIC _CX		349.3	257.95	43 54 38.0	50.000	136.7	51.2	99.9	141.9
Blue Earth	MN			168.9	BMLED20091008ABL	94 03 09.0	150	461	Minn-iowa Christian Broadc		

Terrain database is NED 03 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= West Zone, Co to 3rd adjacent.
 All separation margins (if shown) include rounding
 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.
 < = Contour Overlap

Green Text denotes the Auction 83 Application facility to be modified by this Form 349 Long-Form filing. This facility need not be protected.

Yellow Highlighted Text denotes a §74.1204(d) Second Adjacent Channel Given Interference Waiver Request toward KLTI-FM - Ames, IA (CH281C0). Full protection will be afforded the facility as the calculated interference area will not reach the ground nor a 7 meter artificial plane representing a standard two story building when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. The §74.1204(d) waiver requests have been included in **Exhibit 13.8**. A copy of the antenna manufacturer's vertical radiation pattern has been included in **Exhibit 13.9**.

Blue Highlighted Text denotes supplemental contour protection studies toward select facilities as included in **Exhibit(s) 13.7 and 13.8**.

Exhibit 13.6 - Contour Protection Study toward APP284D - Des Moines, IA (APP ID: 1564023)

Saga Communications Of Iowa, Llc

FMCommander Single Allocation Study - 09-04-2013 - NED 03 SEC
CH283D.P's Overlaps (In= 7.87 km, Out= 0.63 km)

CH283D.P CH 283 D DA
Lat= 41 37 55.0, Lng= 93 27 26.0
0.25 kW 288.2 M HAAT, 561 M COR
Prot.= 60 dBu, Intef.= 54 dBu

1564023 CH 284 D DA BNPFT20030317GYN
Lat= 41 39 44.0, Lng= 93 45 26.0
0.01 kW 0 M HAAT, 341 M COR
Prot.= 60 dBu, Intef.= 54 dBu

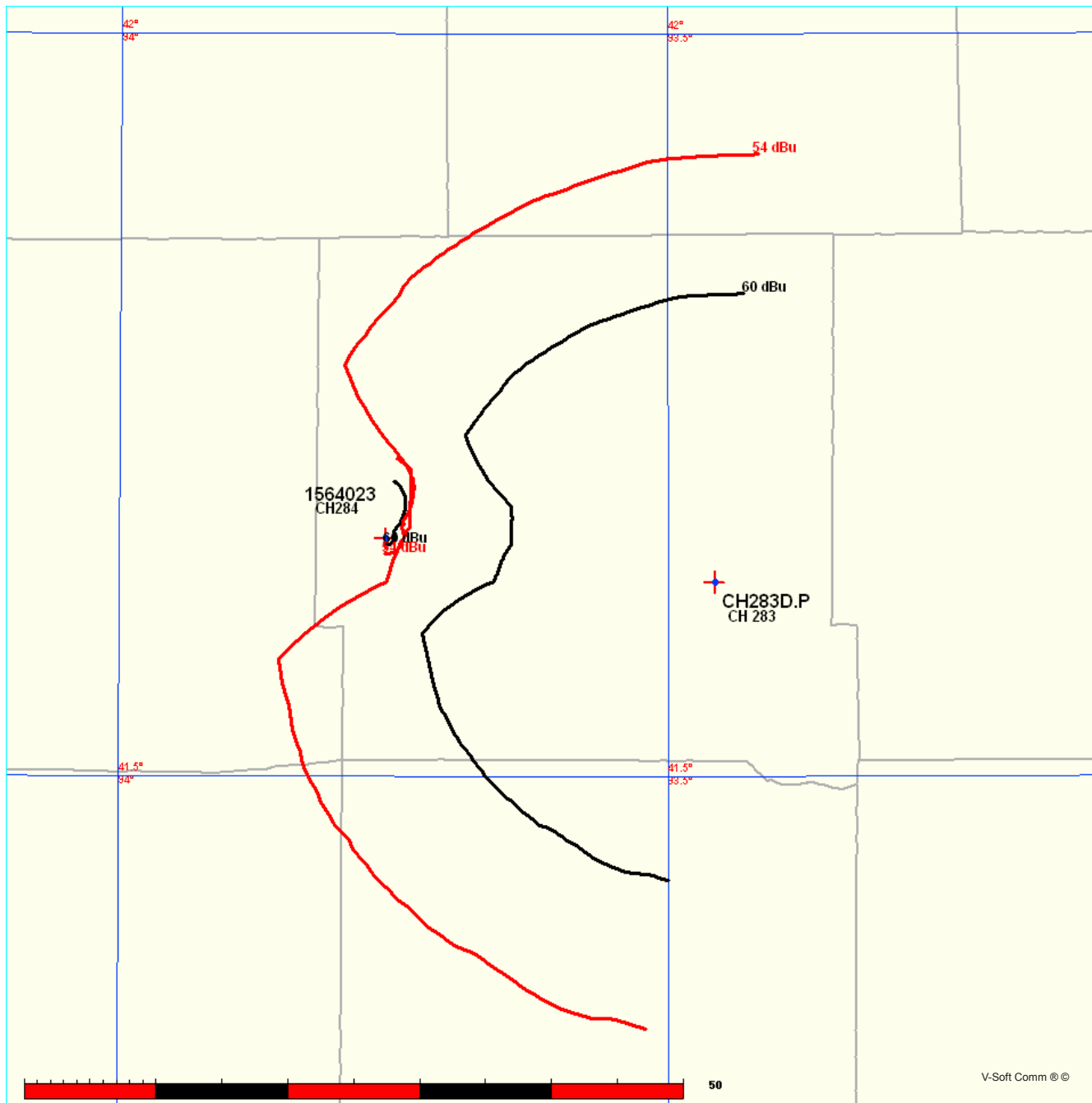


Exhibit 13.6 - Contour Protection Study toward APP284D - Des Moines, IA (APP ID: 1564023)

09-04-2013

Terrain Data: NED 03 SEC

FMOver Analysis

CH283D.P

1564023 BNPFT20030317GYN

Channel = 283D
Max ERP = 0.25 kW
RCAMSL = 561 M
N. Lat. 41 37 55.0
W. Lng. 93 27 26.0
Protected
60 dBu

Channel = 284D
Max ERP = 0.01 kW
RCAMSL = 341 M
N. Lat. 41 39 44.0
W. Lng. 93 45 26.0
Interfering
54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
234.0	000.2500	0305.0	022.7	158.6	000.0000	0074.0	018.0	07.86	
235.0	000.2500	0303.6	022.7	158.7	000.0000	0073.7	017.6	08.16	
236.0	000.2500	0303.6	022.7	159.0	000.0000	0073.3	017.2	08.45	
237.0	000.2500	0305.6	022.8	159.6	000.0000	0072.5	016.8	08.66	
238.0	000.2500	0307.3	022.8	160.1	000.0000	0071.7	016.5	08.89	
239.0	000.2500	0306.5	022.8	160.2	000.0000	0071.4	016.1	09.21	
240.0	000.2500	0306.9	022.8	160.6	000.0000	0071.4	015.7	09.54	
241.0	000.2500	0307.7	022.8	161.0	000.0000	0072.1	015.3	09.96	
242.0	000.2500	0306.6	022.8	161.1	000.0000	0072.3	014.9	10.15	
243.0	000.2500	0306.2	022.8	161.2	000.0000	0072.5	014.5	10.64	
244.0	000.2500	0307.2	022.8	161.6	000.0000	0072.7	014.1	11.14	
245.0	000.2500	0308.1	022.9	162.0	000.0000	0073.2	013.7	11.70	
246.0	000.2500	0307.7	022.8	162.1	000.0000	0073.3	013.3	12.24	
247.0	000.2500	0305.9	022.8	162.0	000.0000	0073.3	012.9	12.79	
248.0	000.2500	0304.6	022.7	161.9	000.0000	0073.2	012.5	13.36	
249.0	000.2500	0304.3	022.7	162.0	000.0000	0073.3	012.1	13.96	
250.0	000.2500	0303.6	022.7	162.0	000.0000	0073.2	011.7	14.57	
251.0	000.2500	0303.3	022.7	161.9	000.0000	0073.2	011.3	15.20	
252.0	000.2500	0301.6	022.6	161.6	000.0000	0072.8	010.9	15.79	
253.0	000.2500	0300.5	022.6	161.4	000.0000	0072.5	010.5	16.43	
254.0	000.2500	0299.2	022.5	161.1	000.0000	0072.3	010.2	17.07	
255.0	000.2500	0299.0	022.5	160.9	000.0000	0071.9	009.8	17.71	
256.0	000.2500	0299.4	022.5	160.8	000.0000	0071.7	009.4	18.39	
257.0	000.2500	0299.5	022.5	160.6	000.0000	0071.4	009.0	19.07	
258.0	000.2500	0299.5	022.5	160.3	000.0000	0071.4	008.6	19.80	
259.0	000.2500	0299.1	022.5	159.8	000.0000	0072.2	008.2	20.61	
260.0	000.2500	0299.0	022.5	159.3	000.0000	0072.9	007.8	21.46	
261.0	000.2285	0299.5	022.1	155.3	000.0000	0081.2	007.5	23.02	
262.0	000.2079	0299.7	021.6	150.8	000.0000	0075.8	007.3	22.89	
263.0	000.1884	0299.7	021.1	146.0	000.0000	0067.6	007.2	22.22	
264.0	000.1697	0299.9	020.6	140.9	000.0000	0063.5	007.1	21.85	
265.0	000.1521	0299.5	020.0	135.6	000.0000	0062.4	007.2	21.60	
266.0	000.1354	0298.7	019.4	130.4	000.0000	0063.8	007.3	21.43	
267.0	000.1197	0297.2	018.8	125.2	000.0000	0063.5	007.6	20.80	
268.0	000.1050	0295.3	018.1	120.4	000.0000	0066.6	007.9	20.44	

Exhibit 13.6 - Contour Protection Study toward APP284D - Des Moines, IA (APP ID: 1564023)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
269.0	000.0912	0294.1	017.4	116.1	000.0000	0077.7	008.4	20.91
270.0	000.0784	0293.7	016.7	112.4	000.0000	0080.9	008.9	20.31
271.0	000.0767	0293.4	016.6	110.4	000.0000	0078.6	008.9	20.08
272.0	000.0751	0293.3	016.5	108.4	000.0000	0079.9	008.9	20.20
273.0	000.0734	0294.6	016.5	106.5	000.0000	0083.0	008.9	20.57
274.0	000.0718	0295.1	016.4	104.6	000.0000	0085.0	008.9	20.75
275.0	000.0702	0294.5	016.3	102.7	000.0000	0089.1	008.9	21.03
276.0	000.0686	0294.2	016.1	100.8	000.0000	0088.4	009.0	20.81
277.0	000.0671	0294.4	016.1	099.0	000.0000	0087.7	009.1	20.60
278.0	000.0655	0293.5	015.9	097.2	000.0000	0086.4	009.2	20.25
279.0	000.0640	0292.6	015.8	095.6	000.0000	0084.3	009.4	19.78
280.0	000.0625	0291.4	015.7	094.0	000.0000	0082.2	009.5	19.28
281.0	000.0640	0290.7	015.7	092.3	000.0000	0080.2	009.5	19.15
282.0	000.0655	0289.4	015.8	090.6	000.0000	0079.3	009.5	19.08
283.0	000.0671	0287.7	015.9	088.9	000.0000	0078.3	009.5	18.95
284.0	000.0686	0286.0	015.9	087.2	000.0000	0078.5	009.5	18.91
285.0	000.0702	0284.7	015.9	085.5	000.0000	0079.5	009.5	18.96
286.0	000.0718	0283.8	016.0	083.8	000.0000	0080.7	009.6	19.02
287.0	000.0734	0283.1	016.1	082.1	000.0000	0079.8	009.6	18.84
288.0	000.0751	0283.0	016.2	080.3	000.0000	0079.2	009.7	18.71
289.0	000.0767	0283.4	016.3	078.5	000.0000	0078.8	009.7	18.60
290.0	000.0784	0284.1	016.4	076.7	000.0000	0076.9	009.8	18.29
291.0	000.0912	0281.7	017.0	073.3	000.0000	0074.3	009.4	18.58
292.0	000.1050	0280.8	017.6	069.4	000.0000	0070.9	009.2	18.69
293.0	000.1197	0280.9	018.2	065.3	000.0000	0066.4	008.9	18.54
294.0	000.1354	0281.8	018.8	060.9	000.0000	0065.5	008.8	18.70
295.0	000.1521	0282.5	019.4	056.6	000.0000	0063.0	008.8	20.27
296.0	000.1697	0282.4	019.9	052.5	000.0000	0064.2	008.8	22.10
297.0	000.1884	0282.3	020.5	048.5	000.0001	0062.5	008.9	25.63
298.0	000.2079	0281.0	020.9	045.0	000.0001	0063.0	009.1	29.89
299.0	000.2285	0279.9	021.4	041.8	000.0003	0063.2	009.3	32.26
300.0	000.2500	0279.2	021.8	038.7	000.0005	0064.1	009.6	34.17
301.0	000.2500	0279.0	021.8	038.5	000.0005	0064.1	010.0	33.72
302.0	000.2500	0278.9	021.8	038.2	000.0005	0064.1	010.4	33.26
303.0	000.2500	0278.1	021.7	038.2	000.0005	0064.1	010.8	32.65
304.0	000.2500	0277.0	021.7	038.2	000.0005	0064.1	011.1	31.99
305.0	000.2500	0276.7	021.7	038.1	000.0005	0064.1	011.5	31.43
306.0	000.2500	0276.4	021.7	038.1	000.0005	0064.1	011.9	30.87
307.0	000.2500	0276.5	021.7	038.0	000.0005	0064.2	012.3	30.36
308.0	000.2500	0275.4	021.7	038.2	000.0005	0064.1	012.7	29.66
309.0	000.2500	0274.7	021.6	038.3	000.0005	0064.1	013.0	29.02
310.0	000.2500	0273.4	021.6	038.5	000.0005	0064.1	013.4	28.31
311.0	000.2500	0274.0	021.6	038.5	000.0005	0064.1	013.8	27.85
312.0	000.2500	0274.8	021.6	038.5	000.0005	0064.1	014.2	27.40

Note: Due to the highly directional nature of the APP283D - Des Moines, IA Operational Pattern, the Effective Radiated Power along selected bearings is actually less than one watt. Contour calculations along these bearings remains accurate with the listed power of 0.000 watts being a product of rounding error.

Exhibit 13.6 - Contour Protection Study toward APP284D - Des Moines, IA (APP ID: 1564023)

09-04-2013

Terrain Data: NED 03 SEC

FMOver Analysis

1564023 BNPFT20030317GYN

CH283D.P

Channel = 284D

Max ERP = 0.01 kW

RCAMSL = 341 M

N. Lat. 41 39 44.0

W. Lng. 93 45 26.0

Protected

60 dBu

Channel = 283D

Max ERP = 0.25 kW

RCAMSL = 561 M

N. Lat. 41 37 55.0

W. Lng. 93 27 26.0

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
053.0	000.0000	0063.7	001.0	279.4	000.0634	0292.2	024.5	53.35	
054.0	000.0000	0063.4	000.9	279.3	000.0636	0292.3	024.5	53.35	
055.0	000.0000	0062.8	000.9	279.2	000.0637	0292.4	024.5	53.34	
056.0	000.0000	0063.0	000.8	279.1	000.0639	0292.5	024.5	53.34	
057.0	000.0000	0062.8	000.8	279.0	000.0640	0292.6	024.5	53.34	
058.0	000.0000	0063.1	000.8	278.9	000.0641	0292.7	024.6	53.33	
059.0	000.0000	0064.0	000.7	278.8	000.0643	0292.8	024.6	53.32	
060.0	000.0000	0066.1	000.7	278.7	000.0644	0292.8	024.6	53.31	
061.0	000.0000	0065.4	000.7	278.7	000.0644	0292.8	024.6	53.32	
062.0	000.0000	0064.3	000.7	278.7	000.0645	0292.8	024.6	53.33	
063.0	000.0000	0064.5	000.7	278.7	000.0645	0292.8	024.6	53.34	
064.0	000.0000	0064.8	000.7	278.6	000.0645	0292.8	024.6	53.34	
065.0	000.0000	0065.8	000.7	278.6	000.0646	0292.9	024.6	53.35	
066.0	000.0000	0066.9	000.7	278.6	000.0646	0292.9	024.6	53.36	
067.0	000.0000	0068.2	000.7	278.6	000.0646	0292.9	024.6	53.37	
068.0	000.0000	0069.3	000.7	278.6	000.0647	0292.9	024.6	53.37	
069.0	000.0000	0070.3	000.7	278.5	000.0647	0292.9	024.6	53.38	
070.0	000.0000	0071.4	000.7	278.5	000.0648	0292.9	024.6	53.39	
071.0	000.0000	0072.5	000.7	278.5	000.0648	0293.0	024.6	53.39	
072.0	000.0000	0073.6	000.7	278.5	000.0648	0293.0	024.6	53.40	
073.0	000.0000	0074.3	000.7	278.4	000.0649	0293.0	024.5	53.41	
074.0	000.0000	0074.7	000.7	278.4	000.0649	0293.0	024.5	53.42	
075.0	000.0000	0075.7	000.7	278.4	000.0649	0293.1	024.5	53.42	
076.0	000.0000	0076.7	000.7	278.4	000.0650	0293.1	024.5	53.43	
077.0	000.0000	0077.2	000.7	278.3	000.0650	0293.1	024.5	53.44	
078.0	000.0000	0078.4	000.7	278.3	000.0651	0293.2	024.5	53.44	
079.0	000.0000	0079.1	000.7	278.3	000.0651	0293.2	024.5	53.45	
080.0	000.0000	0079.2	000.7	278.3	000.0651	0293.2	024.5	53.45	
081.0	000.0000	0079.6	000.7	278.2	000.0652	0293.3	024.5	53.46	
082.0	000.0000	0079.7	000.7	278.2	000.0652	0293.3	024.5	53.47	
083.0	000.0000	0080.6	000.7	278.2	000.0653	0293.3	024.5	53.47	
084.0	000.0000	0080.6	000.7	278.2	000.0653	0293.3	024.5	53.48	
085.0	000.0000	0080.1	000.7	278.1	000.0653	0293.4	024.5	53.48	

MUNN-REESE, INC.

Broadcast Engineering Consultants

COLDWATER, MI 49036

Exhibit 13.6 - Contour Protection Study toward APP284D - Des Moines, IA (APP ID: 1564023)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
086.0	000.0000	0079.2	000.7	278.1	000.0654	0293.4	024.5	53.49
087.0	000.0000	0078.6	000.7	278.1	000.0654	0293.4	024.5	53.49
088.0	000.0000	0078.4	000.7	278.1	000.0655	0293.4	024.5	53.50
089.0	000.0000	0078.4	000.7	278.0	000.0655	0293.5	024.5	53.50
090.0	000.0000	0079.1	000.7	278.0	000.0655	0293.5	024.5	53.51
091.0	000.0000	0079.5	000.7	278.0	000.0656	0293.5	024.5	53.51
092.0	000.0000	0080.1	000.7	277.9	000.0656	0293.5	024.5	53.52
093.0	000.0000	0080.7	000.7	277.9	000.0657	0293.5	024.5	53.52
094.0	000.0000	0082.2	000.7	277.9	000.0657	0293.6	024.5	53.52
095.0	000.0000	0083.3	000.7	277.9	000.0657	0293.6	024.5	53.53
096.0	000.0000	0085.1	000.7	277.8	000.0658	0293.6	024.5	53.53
097.0	000.0000	0086.2	000.7	277.8	000.0658	0293.6	024.5	53.53
098.0	000.0000	0087.2	000.7	277.8	000.0659	0293.7	024.5	53.54
099.0	000.0000	0087.7	000.7	277.8	000.0659	0293.7	024.5	53.54
100.0	000.0000	0088.1	000.7	277.7	000.0660	0293.7	024.5	53.55
101.0	000.0000	0088.5	000.7	277.7	000.0660	0293.7	024.5	53.55
102.0	000.0000	0088.5	000.7	277.7	000.0660	0293.8	024.5	53.55
103.0	000.0000	0089.4	000.7	277.6	000.0661	0293.8	024.5	53.55
104.0	000.0000	0087.6	000.7	277.6	000.0661	0293.8	024.5	53.56
105.0	000.0000	0084.0	000.7	277.6	000.0662	0293.9	024.5	53.56
106.0	000.0000	0083.8	000.7	277.6	000.0662	0293.9	024.5	53.56
107.0	000.0000	0082.1	000.7	277.5	000.0662	0293.9	024.5	53.56
108.0	000.0000	0080.1	000.7	277.5	000.0663	0293.9	024.5	53.57
109.0	000.0000	0079.7	000.7	277.5	000.0663	0294.0	024.5	53.57
110.0	000.0000	0079.0	000.7	277.5	000.0664	0294.0	024.5	53.57
111.0	000.0000	0078.6	000.7	277.4	000.0664	0294.0	024.5	53.57
112.0	000.0000	0080.3	000.7	277.4	000.0665	0294.0	024.5	53.57
113.0	000.0000	0081.3	000.7	277.4	000.0665	0294.1	024.5	53.57
114.0	000.0000	0080.7	000.7	277.4	000.0665	0294.1	024.5	53.57
115.0	000.0000	0078.9	000.7	277.3	000.0666	0294.1	024.5	53.57
116.0	000.0000	0077.9	000.7	277.3	000.0666	0294.1	024.5	53.58
117.0	000.0000	0074.3	000.7	277.3	000.0667	0294.1	024.5	53.58
118.0	000.0000	0072.2	000.7	277.3	000.0667	0294.2	024.5	53.58
119.0	000.0000	0069.5	000.7	277.2	000.0667	0294.2	024.5	53.58
120.0	000.0000	0067.4	000.7	277.2	000.0668	0294.2	024.5	53.58
121.0	000.0000	0066.0	000.7	277.2	000.0668	0294.2	024.5	53.58
122.0	000.0000	0064.5	000.7	277.2	000.0668	0294.3	024.5	53.58
123.0	000.0000	0064.2	000.7	277.1	000.0669	0294.3	024.6	53.57
124.0	000.0000	0063.5	000.7	277.1	000.0669	0294.3	024.6	53.57
125.0	000.0000	0063.5	000.7	277.1	000.0670	0294.3	024.6	53.57
126.0	000.0000	0063.8	000.7	277.1	000.0670	0294.4	024.6	53.57
127.0	000.0000	0064.0	000.7	277.0	000.0670	0294.4	024.6	53.57
128.0	000.0000	0062.1	000.7	277.0	000.0671	0294.4	024.6	53.57
129.0	000.0000	0062.1	000.7	277.0	000.0671	0294.4	024.6	53.57
130.0	000.0000	0063.1	000.7	277.0	000.0671	0294.4	024.6	53.57

Note: Due to the highly directional nature of the APP283D - Des Moines, IA Operational Pattern, the Effective Radiated Power along selected bearings is actually less than one watt. Contour calculations along these bearings remains accurate with the listed power of 0.000 watts being a product of rounding error.

Exhibit 13.7 - Contour Protection Study toward APP284D - Des Moines, IA (APP ID: 1568042)

Saga Communications Of Iowa, Llc

FMCommander Single Allocation Study - 09-04-2013 - NED 03 SEC
CH283D.P's Overlaps (In= 7.87 km, Out= 0.63 km)

CH283D.P CH 283 D DA
Lat= 41 37 55.0, Lng= 93 27 26.0
0.25 kW 288.2 M HAAT, 561 M COR
Prot.= 60 dBu, Intef.= 54 dBu

1568042 CH 284 D DA BNPFT20130809AAS
Lat= 41 39 44.0, Lng= 93 45 26.0
0.01 kW 0 M HAAT, 341 M COR
Prot.= 60 dBu, Intef.= 54 dBu

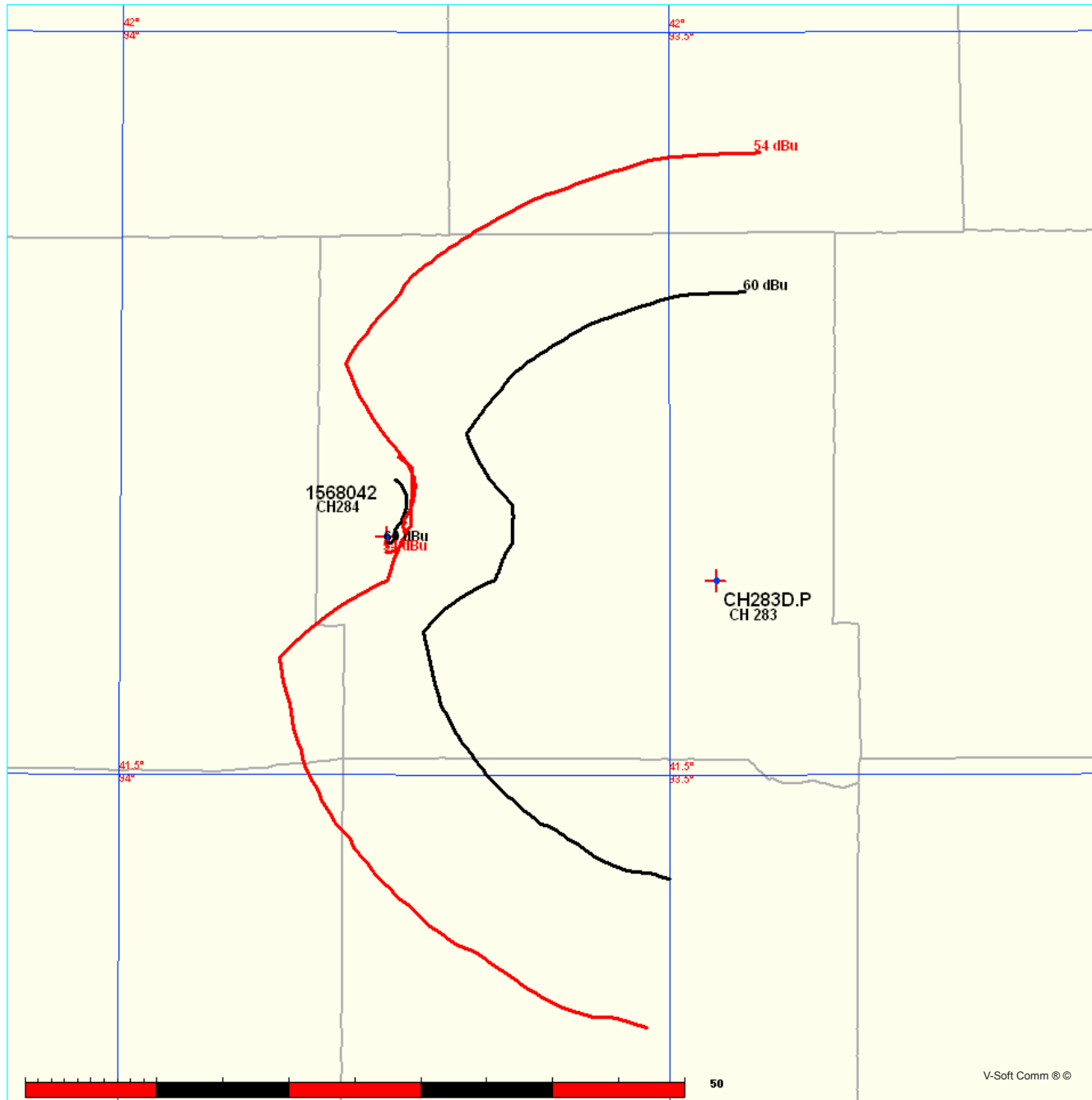


Exhibit 13.7 - Contour Protection Study toward APP284D - Des Moines, IA (APP ID: 1568042)

09-04-2013

Terrain Data: NED 03 SEC

FMOver Analysis

CH283D.P

1568042 BNPFT20130809AAS

Channel = 283D
Max ERP = 0.25 kW
RCAMSL = 561 M
N. Lat. 41 37 55.0
W. Lng. 93 27 26.0
Protected
60 dBu

Channel = 284D
Max ERP = 0.01 kW
RCAMSL = 341 M
N. Lat. 41 39 44.0
W. Lng. 93 45 26.0
Interfering
54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
235.0	000.2500	0303.6	022.7	158.7	000.0000	0073.7	017.6	08.16	
236.0	000.2500	0303.6	022.7	159.0	000.0000	0073.3	017.2	08.45	
237.0	000.2500	0305.6	022.8	159.6	000.0000	0072.5	016.8	08.66	
238.0	000.2500	0307.3	022.8	160.1	000.0000	0071.7	016.5	08.89	
239.0	000.2500	0306.5	022.8	160.2	000.0000	0071.4	016.1	09.21	
240.0	000.2500	0306.9	022.8	160.6	000.0000	0071.4	015.7	09.54	
241.0	000.2500	0307.7	022.8	161.0	000.0000	0072.1	015.3	09.96	
242.0	000.2500	0306.6	022.8	161.1	000.0000	0072.3	014.9	10.15	
243.0	000.2500	0306.2	022.8	161.2	000.0000	0072.5	014.5	10.64	
244.0	000.2500	0307.2	022.8	161.6	000.0000	0072.7	014.1	11.14	
245.0	000.2500	0308.1	022.9	162.0	000.0000	0073.2	013.7	11.70	
246.0	000.2500	0307.7	022.8	162.1	000.0000	0073.3	013.3	12.24	
247.0	000.2500	0305.9	022.8	162.0	000.0000	0073.3	012.9	12.79	
248.0	000.2500	0304.6	022.7	161.9	000.0000	0073.2	012.5	13.36	
249.0	000.2500	0304.3	022.7	162.0	000.0000	0073.3	012.1	13.96	
250.0	000.2500	0303.6	022.7	162.0	000.0000	0073.2	011.7	14.57	
251.0	000.2500	0303.3	022.7	161.9	000.0000	0073.2	011.3	15.20	
252.0	000.2500	0301.6	022.6	161.6	000.0000	0072.8	010.9	15.79	
253.0	000.2500	0300.5	022.6	161.4	000.0000	0072.5	010.5	16.43	
254.0	000.2500	0299.2	022.5	161.1	000.0000	0072.3	010.2	17.07	
255.0	000.2500	0299.0	022.5	160.9	000.0000	0071.9	009.8	17.71	
256.0	000.2500	0299.4	022.5	160.8	000.0000	0071.7	009.4	18.39	
257.0	000.2500	0299.5	022.5	160.6	000.0000	0071.4	009.0	19.07	
258.0	000.2500	0299.5	022.5	160.3	000.0000	0071.4	008.6	19.80	
259.0	000.2500	0299.1	022.5	159.8	000.0000	0072.2	008.2	20.61	
260.0	000.2500	0299.0	022.5	159.3	000.0000	0072.9	007.8	21.46	
261.0	000.2285	0299.5	022.1	155.3	000.0000	0081.2	007.5	23.02	
262.0	000.2079	0299.7	021.6	150.8	000.0000	0075.8	007.3	22.89	
263.0	000.1884	0299.7	021.1	146.0	000.0000	0067.6	007.2	22.22	
264.0	000.1697	0299.9	020.6	140.9	000.0000	0063.5	007.1	21.85	
265.0	000.1521	0299.5	020.0	135.6	000.0000	0062.4	007.2	21.60	
266.0	000.1354	0298.7	019.4	130.4	000.0000	0063.8	007.3	21.43	
267.0	000.1197	0297.2	018.8	125.2	000.0000	0063.5	007.6	20.80	
268.0	000.1050	0295.3	018.1	120.4	000.0000	0066.6	007.9	20.44	

Exhibit 13.7 - Contour Protection Study toward APP284D - Des Moines, IA (APP ID: 1568042)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
269.0	000.0912	0294.1	017.4	116.1	000.0000	0077.7	008.4	20.91
270.0	000.0784	0293.7	016.7	112.4	000.0000	0080.9	008.9	20.31
271.0	000.0767	0293.4	016.6	110.4	000.0000	0078.6	008.9	20.08
272.0	000.0751	0293.3	016.5	108.4	000.0000	0079.9	008.9	20.20
273.0	000.0734	0294.6	016.5	106.5	000.0000	0083.0	008.9	20.57
274.0	000.0718	0295.1	016.4	104.6	000.0000	0085.0	008.9	20.75
275.0	000.0702	0294.5	016.3	102.7	000.0000	0089.1	008.9	21.03
276.0	000.0686	0294.2	016.1	100.8	000.0000	0088.4	009.0	20.81
277.0	000.0671	0294.4	016.1	099.0	000.0000	0087.7	009.1	20.60
278.0	000.0655	0293.5	015.9	097.2	000.0000	0086.4	009.2	20.25
279.0	000.0640	0292.6	015.8	095.6	000.0000	0084.3	009.4	19.78
280.0	000.0625	0291.4	015.7	094.0	000.0000	0082.2	009.5	19.28
281.0	000.0640	0290.7	015.7	092.3	000.0000	0080.2	009.5	19.15
282.0	000.0655	0289.4	015.8	090.6	000.0000	0079.3	009.5	19.08
283.0	000.0671	0287.7	015.9	088.9	000.0000	0078.3	009.5	18.95
284.0	000.0686	0286.0	015.9	087.2	000.0000	0078.5	009.5	18.91
285.0	000.0702	0284.7	015.9	085.5	000.0000	0079.5	009.5	18.96
286.0	000.0718	0283.8	016.0	083.8	000.0000	0080.7	009.6	19.02
287.0	000.0734	0283.1	016.1	082.1	000.0000	0079.8	009.6	18.84
288.0	000.0751	0283.0	016.2	080.3	000.0000	0079.2	009.7	18.71
289.0	000.0767	0283.4	016.3	078.5	000.0000	0078.8	009.7	18.60
290.0	000.0784	0284.1	016.4	076.7	000.0000	0076.9	009.8	18.29
291.0	000.0912	0281.7	017.0	073.3	000.0000	0074.3	009.4	18.58
292.0	000.1050	0280.8	017.6	069.4	000.0000	0070.9	009.2	18.69
293.0	000.1197	0280.9	018.2	065.3	000.0000	0066.4	008.9	18.54
294.0	000.1354	0281.8	018.8	060.9	000.0000	0065.5	008.8	18.70
295.0	000.1521	0282.5	019.4	056.6	000.0000	0063.0	008.8	20.27
296.0	000.1697	0282.4	019.9	052.5	000.0000	0064.2	008.8	22.10
297.0	000.1884	0282.3	020.5	048.5	000.0001	0062.5	008.9	25.63
298.0	000.2079	0281.0	020.9	045.0	000.0001	0063.0	009.1	29.89
299.0	000.2285	0279.9	021.4	041.8	000.0003	0063.2	009.3	32.26
300.0	000.2500	0279.2	021.8	038.7	000.0005	0064.1	009.6	34.17
301.0	000.2500	0279.0	021.8	038.5	000.0005	0064.1	010.0	33.72
302.0	000.2500	0278.9	021.8	038.2	000.0005	0064.1	010.4	33.26
303.0	000.2500	0278.1	021.7	038.2	000.0005	0064.1	010.8	32.65
304.0	000.2500	0277.0	021.7	038.2	000.0005	0064.1	011.1	31.99
305.0	000.2500	0276.7	021.7	038.1	000.0005	0064.1	011.5	31.43
306.0	000.2500	0276.4	021.7	038.1	000.0005	0064.1	011.9	30.87
307.0	000.2500	0276.5	021.7	038.0	000.0005	0064.2	012.3	30.36
308.0	000.2500	0275.4	021.7	038.2	000.0005	0064.1	012.7	29.66
309.0	000.2500	0274.7	021.6	038.3	000.0005	0064.1	013.0	29.02
310.0	000.2500	0273.4	021.6	038.5	000.0005	0064.1	013.4	28.31
311.0	000.2500	0274.0	021.6	038.5	000.0005	0064.1	013.8	27.85
312.0	000.2500	0274.8	021.6	038.5	000.0005	0064.1	014.2	27.40

Note: Due to the highly directional nature of the APP283D - Des Moines, IA Operational Pattern, the Effective Radiated Power along selected bearings is actually less than one watt. Contour calculations along these bearings remains accurate with the listed power of 0.000 watts being a product of rounding error.

Exhibit 13.7 - Contour Protection Study toward APP284D - Des Moines, IA (APP ID: 1568042)

09-04-2013

Terrain Data: NED 03 SEC

FMOver Analysis

1568042 BNPFT20130809AAS

CH283D.P

Channel = 284D

Max ERP = 0.01 kW

RCAMSL = 341 M

N. Lat. 41 39 44.0

W. Lng. 93 45 26.0

Protected

60 dBu

Channel = 283D

Max ERP = 0.25 kW

RCAMSL = 561 M

N. Lat. 41 37 55.0

W. Lng. 93 27 26.0

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
053.0	000.0000	0063.7	001.0	279.4	000.0634	0292.2	024.5	53.35	
054.0	000.0000	0063.4	000.9	279.3	000.0636	0292.3	024.5	53.35	
055.0	000.0000	0062.8	000.9	279.2	000.0637	0292.4	024.5	53.34	
056.0	000.0000	0063.0	000.8	279.1	000.0639	0292.5	024.5	53.34	
057.0	000.0000	0062.8	000.8	279.0	000.0640	0292.6	024.5	53.34	
058.0	000.0000	0063.1	000.8	278.9	000.0641	0292.7	024.6	53.33	
059.0	000.0000	0064.0	000.7	278.8	000.0643	0292.8	024.6	53.32	
060.0	000.0000	0066.1	000.7	278.7	000.0644	0292.8	024.6	53.31	
061.0	000.0000	0065.4	000.7	278.7	000.0644	0292.8	024.6	53.32	
062.0	000.0000	0064.3	000.7	278.7	000.0645	0292.8	024.6	53.33	
063.0	000.0000	0064.5	000.7	278.7	000.0645	0292.8	024.6	53.34	
064.0	000.0000	0064.8	000.7	278.6	000.0645	0292.8	024.6	53.34	
065.0	000.0000	0065.8	000.7	278.6	000.0646	0292.9	024.6	53.35	
066.0	000.0000	0066.9	000.7	278.6	000.0646	0292.9	024.6	53.36	
067.0	000.0000	0068.2	000.7	278.6	000.0646	0292.9	024.6	53.37	
068.0	000.0000	0069.3	000.7	278.6	000.0647	0292.9	024.6	53.37	
069.0	000.0000	0070.3	000.7	278.5	000.0647	0292.9	024.6	53.38	
070.0	000.0000	0071.4	000.7	278.5	000.0648	0292.9	024.6	53.39	
071.0	000.0000	0072.5	000.7	278.5	000.0648	0293.0	024.6	53.39	
072.0	000.0000	0073.6	000.7	278.5	000.0648	0293.0	024.6	53.40	
073.0	000.0000	0074.3	000.7	278.4	000.0649	0293.0	024.5	53.41	
074.0	000.0000	0074.7	000.7	278.4	000.0649	0293.0	024.5	53.42	
075.0	000.0000	0075.7	000.7	278.4	000.0649	0293.1	024.5	53.42	
076.0	000.0000	0076.7	000.7	278.4	000.0650	0293.1	024.5	53.43	
077.0	000.0000	0077.2	000.7	278.3	000.0650	0293.1	024.5	53.44	
078.0	000.0000	0078.4	000.7	278.3	000.0651	0293.2	024.5	53.44	
079.0	000.0000	0079.1	000.7	278.3	000.0651	0293.2	024.5	53.45	
080.0	000.0000	0079.2	000.7	278.3	000.0651	0293.2	024.5	53.45	
081.0	000.0000	0079.6	000.7	278.2	000.0652	0293.3	024.5	53.46	
082.0	000.0000	0079.7	000.7	278.2	000.0652	0293.3	024.5	53.47	
083.0	000.0000	0080.6	000.7	278.2	000.0653	0293.3	024.5	53.47	
084.0	000.0000	0080.6	000.7	278.2	000.0653	0293.3	024.5	53.48	
085.0	000.0000	0080.1	000.7	278.1	000.0653	0293.4	024.5	53.48	

Exhibit 13.7 - Contour Protection Study toward APP284D - Des Moines, IA (APP ID: 1568042)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
086.0	000.0000	0079.2	000.7	278.1	000.0654	0293.4	024.5	53.49
087.0	000.0000	0078.6	000.7	278.1	000.0654	0293.4	024.5	53.49
088.0	000.0000	0078.4	000.7	278.1	000.0655	0293.4	024.5	53.50
089.0	000.0000	0078.4	000.7	278.0	000.0655	0293.5	024.5	53.50
090.0	000.0000	0079.1	000.7	278.0	000.0655	0293.5	024.5	53.51
091.0	000.0000	0079.5	000.7	278.0	000.0656	0293.5	024.5	53.51
092.0	000.0000	0080.1	000.7	277.9	000.0656	0293.5	024.5	53.52
093.0	000.0000	0080.7	000.7	277.9	000.0657	0293.5	024.5	53.52
094.0	000.0000	0082.2	000.7	277.9	000.0657	0293.6	024.5	53.52
095.0	000.0000	0083.3	000.7	277.9	000.0657	0293.6	024.5	53.53
096.0	000.0000	0085.1	000.7	277.8	000.0658	0293.6	024.5	53.53
097.0	000.0000	0086.2	000.7	277.8	000.0658	0293.6	024.5	53.53
098.0	000.0000	0087.2	000.7	277.8	000.0659	0293.7	024.5	53.54
099.0	000.0000	0087.7	000.7	277.8	000.0659	0293.7	024.5	53.54
100.0	000.0000	0088.1	000.7	277.7	000.0660	0293.7	024.5	53.55
101.0	000.0000	0088.5	000.7	277.7	000.0660	0293.7	024.5	53.55
102.0	000.0000	0088.5	000.7	277.7	000.0660	0293.8	024.5	53.55
103.0	000.0000	0089.4	000.7	277.6	000.0661	0293.8	024.5	53.55
104.0	000.0000	0087.6	000.7	277.6	000.0661	0293.8	024.5	53.56
105.0	000.0000	0084.0	000.7	277.6	000.0662	0293.9	024.5	53.56
106.0	000.0000	0083.8	000.7	277.6	000.0662	0293.9	024.5	53.56
107.0	000.0000	0082.1	000.7	277.5	000.0662	0293.9	024.5	53.56
108.0	000.0000	0080.1	000.7	277.5	000.0663	0293.9	024.5	53.57
109.0	000.0000	0079.7	000.7	277.5	000.0663	0294.0	024.5	53.57
110.0	000.0000	0079.0	000.7	277.5	000.0664	0294.0	024.5	53.57
111.0	000.0000	0078.6	000.7	277.4	000.0664	0294.0	024.5	53.57
112.0	000.0000	0080.3	000.7	277.4	000.0665	0294.0	024.5	53.57
113.0	000.0000	0081.3	000.7	277.4	000.0665	0294.1	024.5	53.57
114.0	000.0000	0080.7	000.7	277.4	000.0665	0294.1	024.5	53.57
115.0	000.0000	0078.9	000.7	277.3	000.0666	0294.1	024.5	53.57
116.0	000.0000	0077.9	000.7	277.3	000.0666	0294.1	024.5	53.58
117.0	000.0000	0074.3	000.7	277.3	000.0667	0294.1	024.5	53.58
118.0	000.0000	0072.2	000.7	277.3	000.0667	0294.2	024.5	53.58
119.0	000.0000	0069.5	000.7	277.2	000.0667	0294.2	024.5	53.58
120.0	000.0000	0067.4	000.7	277.2	000.0668	0294.2	024.5	53.58
121.0	000.0000	0066.0	000.7	277.2	000.0668	0294.2	024.5	53.58
122.0	000.0000	0064.5	000.7	277.2	000.0668	0294.3	024.5	53.58
123.0	000.0000	0064.2	000.7	277.1	000.0669	0294.3	024.6	53.57
124.0	000.0000	0063.5	000.7	277.1	000.0669	0294.3	024.6	53.57
125.0	000.0000	0063.5	000.7	277.1	000.0670	0294.3	024.6	53.57
126.0	000.0000	0063.8	000.7	277.1	000.0670	0294.4	024.6	53.57
127.0	000.0000	0064.0	000.7	277.0	000.0670	0294.4	024.6	53.57
128.0	000.0000	0062.1	000.7	277.0	000.0671	0294.4	024.6	53.57
129.0	000.0000	0062.1	000.7	277.0	000.0671	0294.4	024.6	53.57
130.0	000.0000	0063.1	000.7	277.0	000.0671	0294.4	024.6	53.57

Note: Due to the highly directional nature of the APP283D - Des Moines, IA Operational Pattern, the Effective Radiated Power along selected bearings is actually less than one watt. Contour calculations along these bearings remains accurate with the listed power of 0.000 watts being a product of rounding error.

KLTI-FM +

KLTI-FM
Ames, IA
BLH19861229KC
Facility ID: 7823
Latitude: 41-54-09 N
Longitude: 093-54-15 W
ERP: 100.00 kW
Channel: 281C0
Frequency: 104.1 MHz
AMSL Height: 615.0 m
Horiz. Pattern: Omni

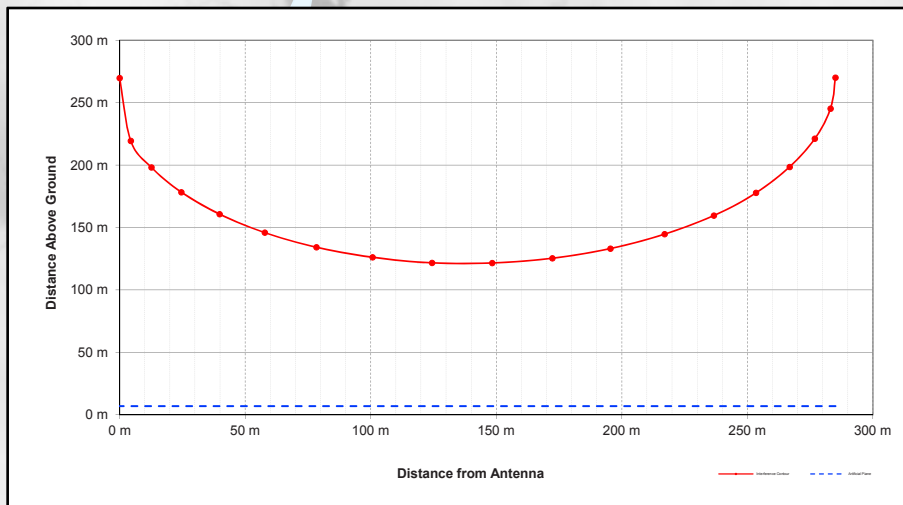
CH283D.long-form
Des Moines, IA
Proposed Operation
Facility ID: 140930
Latitude: 41-37-55 N
Longitude: 093-27-26 W
ERP: 0.25 kW
Channel: 283D
Frequency: 104.5 MHz
AMSL Height: 561.0 m
Horiz. Pattern: Directional

Exhibit 13.8

\$74.1204(d) 2nd Adjacent Channel Given Interference Waiver Request Study Toward KLTI-FM - Ames, IA

NED 03 SEC Terrain Database
US Census 2010 PL Database

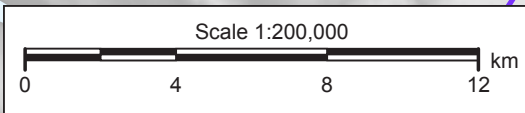
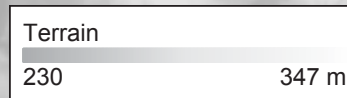
The Interference Contour corresponding to the KLTI-FM - Ames, IA Protected Contour at the proposed Translator site has been calculated to be no less than the 111.8 dBμ F(50:10) Interference Contour corresponding to the worst case KLTI-FM 71.8 dBμ F(50:50) Protected Contour. This represents the proposed interference contour which falls wholly within the 40:1 dBu ratio. As seen on the map and associated vertical protection study, full protection will be afforded KLTI-FM as the calculated interference area will not reach the ground nor a 7 meter artificial plane representing a standard two story building when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer's vertical radiation pattern has been included in **Exhibit 13.9**.



Proposed Antenna: 1 Bay SWR FMCE-1 - One Bay Fully Spaced
Proposed Power: 0.25 kW
Antenna Height AGL: 270 meters
Interference Contour: 111.8 dBμ f(50:10)
Artificial Ground Plane Height: 7 meters
Distance (Free Space) Equation: $= (10^{((106.92 - \text{desired dBu}) + (\text{ERP in dBk})/20))} * 1000$
Field Strength (dBu) Equation: $= 106.92 - 20 * (\text{LOG10}(\text{DistMeters}/1000)) + (\text{ERP in dBk})$

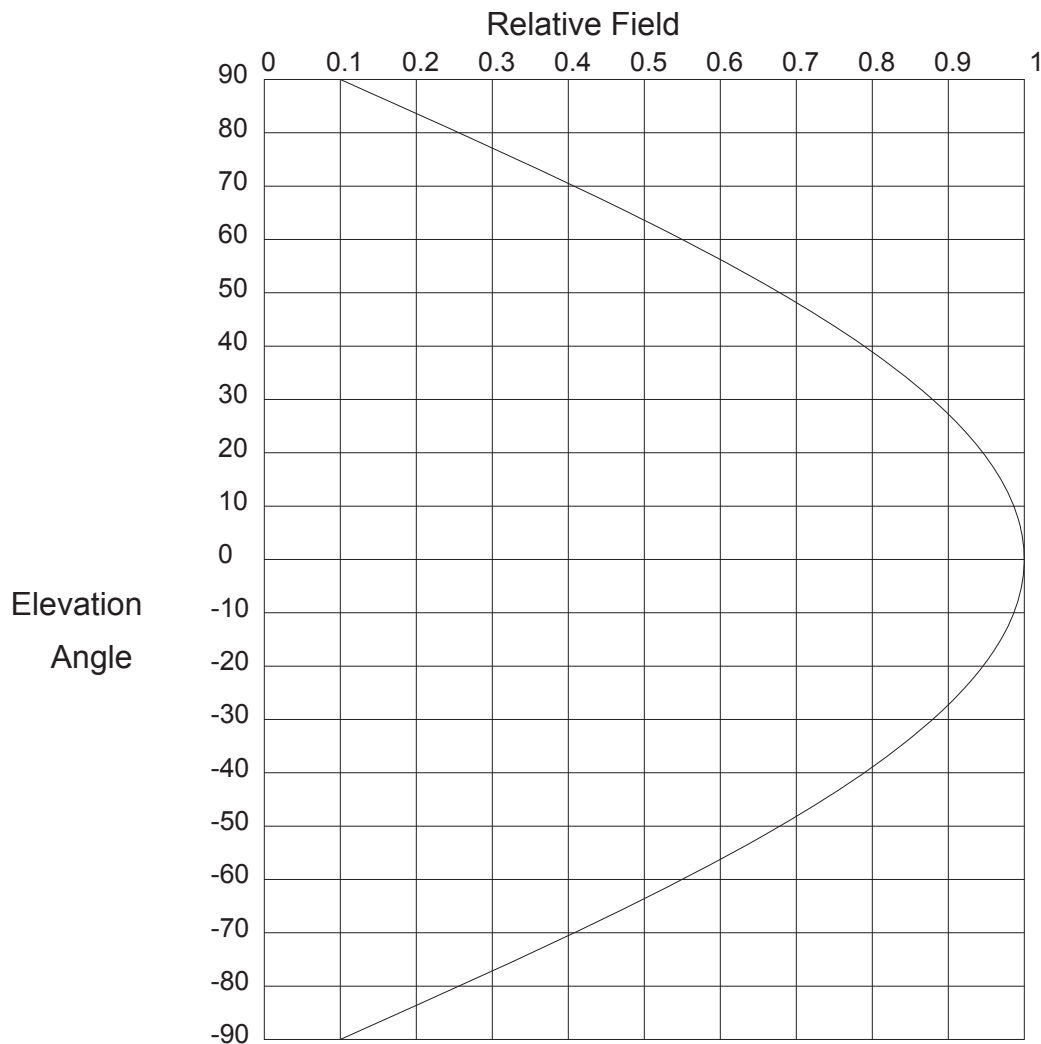
Depression Angle	Antenna Relative Field	ERP in kW	ERP in dBk	Distance to Interference Contour	Distance from Ant. to Artificial Plane	Field Strength in dBu @ Artificial Plane	Distance from Ant. to Ground Level	Field Strength in dBu @ Ground Level
0°	1.000	0.250	-6.02	285.08 m	infinite	---	---	---
-5°	0.997	0.249	-6.05	284.23 m	3017.59 m	91.28 dBu	3097.90 m	91.05 dBu
-10°	0.986	0.243	-6.14	281.09 m	1514.56 m	97.17 dBu	1554.87 m	96.94 dBu
-15°	0.969	0.235	-6.29	276.24 m	1016.15 m	100.49 dBu	1043.20 m	100.26 dBu
-20°	0.946	0.224	-6.50	269.69 m	768.96 m	102.70 dBu	789.43 m	102.47 dBu
-25°	0.916	0.210	-6.78	261.14 m	622.31 m	104.26 dBu	638.87 m	104.03 dBu
-30°	0.879	0.193	-7.14	250.59 m	526.00 m	105.36 dBu	540.00 m	105.13 dBu
-35°	0.837	0.175	-7.57	238.61 m	458.53 m	106.13 dBu	470.73 m	105.90 dBu
-40°	0.789	0.156	-8.08	224.93 m	409.16 m	106.60 dBu	420.05 m	106.38 dBu
-45°	0.736	0.135	-8.68	209.82 m	371.94 m	106.83 dBu	381.84 m	106.60 dBu
-50°	0.679	0.115	-9.38	193.57 m	343.32 m	106.82 dBu	352.46 m	106.59 dBu
-55°	0.616	0.095	-10.23	175.61 m	321.06 m	106.56 dBu	329.61 m	106.33 dBu
-60°	0.550	0.076	-11.21	156.80 m	303.69 m	106.06 dBu	311.77 m	105.83 dBu
-65°	0.480	0.058	-12.40	136.84 m	290.19 m	105.27 dBu	297.91 m	105.04 dBu
-70°	0.408	0.042	-13.81	116.31 m	279.88 m	104.17 dBu	287.33 m	103.95 dBu
-75°	0.333	0.028	-15.57	94.93 m	272.28 m	102.65 dBu	279.52 m	102.42 dBu
-80°	0.256	0.016	-17.86	72.98 m	267.06 m	100.53 dBu	274.17 m	100.30 dBu
-85°	0.178	0.008	-21.01	50.74 m	264.00 m	97.48 dBu	271.03 m	97.25 dBu
-90°	0.001	0.000	-66.02	0.29 m	263.00 m	52.50 dBu	270.00 m	52.27 dBu

KLTI-FM - 71.8 dBμ F(50:50) Contour



+ CH283D.long-form

Exhibit 13.9 - Manufacturer's Supplied Vertical Radiation Pattern (CH283D.long-form)



Elevation Pattern

Scale: Linear

Units: Field, Relative

Systems With Reliability

CLIENT:
ANTENNA TYPE: FMEC/1
FREQUENCY: 98.0 MHz
PATTERN POL.: Circular
DIRECTIVITY(Peak): 0.883/-0.539 dBd
DIRECTIVITY(Horiz): 0.883/-0.539 dBd

Date: 4/6/2010

Beam Tilt (Deg.) : 0
Null Fill(s)(%) : 0, 0, 0

Exhibit 13.9 - Manufacturer's Supplied Vertical Radiation Pattern (CH283D.long-form)



Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
90.0	.10 (-20)	52.0	.654 (-3.687)	14.0	.973 (-0.235)
89.0	.116 (-18.733)	51.0	.666 (-3.525)	13.0	.977 (-0.203)
88.0	.131 (-17.627)	50.0	.679 (-3.369)	12.0	.98 (-0.173)
87.0	.147 (-16.648)	49.0	.69 (-3.217)	11.0	.983 (-0.145)
86.0	.163 (-15.768)	48.0	.702 (-3.071)	10.0	.986 (-0.12)
85.0	.178 (-14.97)	47.0	.714 (-2.928)	9.8	.987 (-0.115)
84.0	.194 (-14.241)	46.0	.725 (-2.791)	9.6	.987 (-0.11)
83.0	.21 (-13.569)	45.0	.736 (-2.658)	9.4	.988 (-0.106)
82.0	.225 (-12.946)	44.0	.747 (-2.529)	9.2	.988 (-0.101)
81.0	.241 (-12.367)	43.0	.758 (-2.404)	9.0	.989 (-0.097)
80.0	.256 (-11.826)	42.0	.769 (-2.283)	8.8	.989 (-0.093)
79.0	.272 (-11.317)	41.0	.779 (-2.167)	8.6	.99 (-0.088)
78.0	.287 (-10.839)	40.0	.789 (-2.054)	8.4	.99 (-0.084)
77.0	.302 (-10.387)	39.0	.799 (-1.944)	8.2	.991 (-0.08)
76.0	.318 (-9.959)	38.0	.809 (-1.839)	8.0	.991 (-0.076)
75.0	.333 (-9.553)	37.0	.819 (-1.737)	7.8	.992 (-0.073)
74.0	.348 (-9.167)	36.0	.828 (-1.638)	7.6	.992 (-0.069)
73.0	.363 (-8.799)	35.0	.837 (-1.543)	7.4	.993 (-0.065)
72.0	.378 (-8.448)	34.0	.846 (-1.451)	7.2	.993 (-0.062)
71.0	.393 (-8.112)	33.0	.855 (-1.363)	7.0	.993 (-0.058)
70.0	.408 (-7.791)	32.0	.863 (-1.277)	6.8	.994 (-0.055)
69.0	.423 (-7.483)	31.0	.871 (-1.195)	6.6	.994 (-0.052)
68.0	.437 (-7.187)	30.0	.879 (-1.116)	6.4	.994 (-0.049)
67.0	.452 (-6.904)	29.0	.887 (-1.04)	6.2	.995 (-0.046)
66.0	.466 (-6.631)	28.0	.895 (-0.967)	6.0	.995 (-0.043)
65.0	.48 (-6.369)	27.0	.902 (-0.897)	5.8	.995 (-0.04)
64.0	.495 (-6.116)	26.0	.909 (-0.83)	5.6	.996 (-0.037)
63.0	.509 (-5.873)	25.0	.916 (-0.765)	5.4	.996 (-0.035)
62.0	.523 (-5.638)	24.0	.922 (-0.704)	5.2	.996 (-0.032)
61.0	.536 (-5.411)	23.0	.928 (-0.645)	5.0	.997 (-0.03)
60.0	.55 (-5.193)	22.0	.934 (-0.589)	4.8	.997 (-0.027)
59.0	.564 (-4.982)	21.0	.94 (-0.535)	4.6	.997 (-0.025)
58.0	.577 (-4.778)	20.0	.946 (-0.485)	4.4	.997 (-0.023)
57.0	.59 (-4.58)	19.0	.951 (-0.437)	4.2	.998 (-0.021)
56.0	.603 (-4.39)	18.0	.956 (-0.391)	4.0	.998 (-0.019)
55.0	.616 (-4.205)	17.0	.961 (-0.348)	3.8	.998 (-0.017)
54.0	.629 (-4.027)	16.0	.965 (-0.308)	3.6	.998 (-0.015)
53.0	.642 (-3.854)	15.0	.969 (-0.271)	3.4	.998 (-0.014)

Systems With Reliability

Page 1 of 3

CLIENT:

Date: 4/6/2010

ANTENNA TYPE: FMEC/1

FREQUENCY: 98.0 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 0.883/-0.539 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 0.883/-0.539 dBd

Null Fill(s)(%) : 0, 0, 0

Exhibit 13.9 - Manufacturer's Supplied Vertical Radiation Pattern (CH283D.long-form)



Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
3.2	.999 (-0.012)	-4.4	.997 (-0.023)	-12.0	.98 (-0.173)
3.0	.999 (-0.011)	-4.6	.997 (-0.025)	-12.2	.98 (-0.178)
2.8	.999 (-0.009)	-4.8	.997 (-0.027)	-12.4	.979 (-0.184)
2.6	.999 (-0.008)	-5.0	.997 (-0.03)	-12.6	.978 (-0.19)
2.4	.999 (-0.007)	-5.2	.996 (-0.032)	-12.8	.978 (-0.196)
2.2	.999 (-0.006)	-5.4	.996 (-0.035)	-13.0	.977 (-0.203)
2.0	.999 (-0.005)	-5.6	.996 (-0.037)	-13.2	.976 (-0.209)
1.8	1.00 (-0.004)	-5.8	.995 (-0.04)	-13.4	.975 (-0.215)
1.6	1.00 (-0.003)	-6.0	.995 (-0.043)	-13.6	.975 (-0.222)
1.4	1.00 (-0.002)	-6.2	.995 (-0.046)	-13.8	.974 (-0.229)
1.2	1.00 (-0.002)	-6.4	.994 (-0.049)	-14.0	.973 (-0.235)
1.0	1.00 (-0.001)	-6.6	.994 (-0.052)	-14.2	.973 (-0.242)
.8	1.00 (-0.001)	-6.8	.994 (-0.055)	-14.4	.972 (-0.249)
.6	1.00 (0)	-7.0	.993 (-0.058)	-14.6	.971 (-0.256)
.4	1.00 (0)	-7.2	.993 (-0.062)	-14.8	.97 (-0.263)
.2	1.00 (0)	-7.4	.993 (-0.065)	-15.0	.969 (-0.271)
.0	1.00 (0)	-7.6	.992 (-0.069)	-15.2	.969 (-0.278)
-.2	1.00 (0)	-7.8	.992 (-0.073)	-15.4	.968 (-0.285)
-.4	1.00 (0)	-8.0	.991 (-0.076)	-15.6	.967 (-0.293)
-.6	1.00 (0)	-8.2	.991 (-0.08)	-15.8	.966 (-0.3)
-.8	1.00 (-0.001)	-8.4	.99 (-0.084)	-16.0	.965 (-0.308)
-1.0	1.00 (-0.001)	-8.6	.99 (-0.088)	-16.2	.964 (-0.316)
-1.2	1.00 (-0.002)	-8.8	.989 (-0.093)	-16.4	.963 (-0.324)
-1.4	1.00 (-0.002)	-9.0	.989 (-0.097)	-16.6	.962 (-0.332)
-1.6	1.00 (-0.003)	-9.2	.988 (-0.101)	-16.8	.962 (-0.34)
-1.8	1.00 (-0.004)	-9.4	.988 (-0.106)	-17.0	.961 (-0.348)
-2.0	.999 (-0.005)	-9.6	.987 (-0.11)	-17.2	.96 (-0.357)
-2.2	.999 (-0.006)	-9.8	.987 (-0.115)	-17.4	.959 (-0.365)
-2.4	.999 (-0.007)	-10.0	.986 (-0.12)	-17.6	.958 (-0.374)
-2.6	.999 (-0.008)	-10.2	.986 (-0.124)	-17.8	.957 (-0.383)
-2.8	.999 (-0.009)	-10.4	.985 (-0.129)	-18.0	.956 (-0.391)
-3.0	.999 (-0.011)	-10.6	.985 (-0.134)	-18.2	.955 (-0.4)
-3.2	.999 (-0.012)	-10.8	.984 (-0.14)	-18.4	.954 (-0.409)
-3.4	.998 (-0.014)	-11.0	.983 (-0.145)	-18.6	.953 (-0.418)
-3.6	.998 (-0.015)	-11.2	.983 (-0.15)	-18.8	.952 (-0.427)
-3.8	.998 (-0.017)	-11.4	.982 (-0.156)	-19.0	.951 (-0.437)
-4.0	.998 (-0.019)	-11.6	.982 (-0.161)	-19.2	.95 (-0.446)
-4.2	.998 (-0.021)	-11.8	.981 (-0.167)	-19.4	.949 (-0.456)

Systems With Reliability

Page 2 of 3

CLIENT:

Date: 4/6/2010

ANTENNA TYPE: FMEC/1

FREQUENCY: 98.0 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 0.883/-0.539 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 0.883/-0.539 dBd

Null Fill(s)(%) : 0, 0, 0

Exhibit 13.9 - Manufacturer's Supplied Vertical Radiation Pattern (CH283D.long-form)



Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
-19.6	.948 (-0.465)	-27.2	.90 (-0.911)	-54.0	.629 (-4.027)
-19.8	.947 (-0.475)	-27.4	.899 (-0.924)	-55.0	.616 (-4.205)
-20.0	.946 (-0.485)	-27.6	.898 (-0.939)	-56.0	.603 (-4.39)
-20.2	.945 (-0.495)	-27.8	.896 (-0.953)	-57.0	.59 (-4.58)
-20.4	.944 (-0.505)	-28.0	.895 (-0.967)	-58.0	.577 (-4.778)
-20.6	.942 (-0.515)	-28.2	.893 (-0.981)	-59.0	.564 (-4.982)
-20.8	.941 (-0.525)	-28.4	.892 (-0.996)	-60.0	.55 (-5.193)
-21.0	.94 (-0.535)	-28.6	.89 (-1.01)	-61.0	.536 (-5.411)
-21.2	.939 (-0.546)	-28.8	.889 (-1.025)	-62.0	.523 (-5.638)
-21.4	.938 (-0.556)	-29.0	.887 (-1.04)	-63.0	.509 (-5.873)
-21.6	.937 (-0.567)	-29.2	.886 (-1.055)	-64.0	.495 (-6.116)
-21.8	.936 (-0.578)	-29.4	.884 (-1.07)	-65.0	.48 (-6.369)
-22.0	.934 (-0.589)	-29.6	.883 (-1.085)	-66.0	.466 (-6.631)
-22.2	.933 (-0.6)	-29.8	.881 (-1.101)	-67.0	.452 (-6.904)
-22.4	.932 (-0.611)	-30.0	.879 (-1.116)	-68.0	.437 (-7.187)
-22.6	.931 (-0.622)	-31.0	.871 (-1.195)	-69.0	.423 (-7.483)
-22.8	.93 (-0.633)	-32.0	.863 (-1.277)	-70.0	.408 (-7.791)
-23.0	.928 (-0.645)	-33.0	.855 (-1.363)	-71.0	.393 (-8.112)
-23.2	.927 (-0.656)	-34.0	.846 (-1.451)	-72.0	.378 (-8.448)
-23.4	.926 (-0.668)	-35.0	.837 (-1.543)	-73.0	.363 (-8.799)
-23.6	.925 (-0.68)	-36.0	.828 (-1.638)	-74.0	.348 (-9.167)
-23.8	.923 (-0.692)	-37.0	.819 (-1.737)	-75.0	.333 (-9.553)
-24.0	.922 (-0.704)	-38.0	.809 (-1.839)	-76.0	.318 (-9.959)
-24.2	.921 (-0.716)	-39.0	.799 (-1.944)	-77.0	.302 (-10.387)
-24.4	.92 (-0.728)	-40.0	.789 (-2.054)	-78.0	.287 (-10.839)
-24.6	.918 (-0.74)	-41.0	.779 (-2.167)	-79.0	.272 (-11.317)
-24.8	.917 (-0.753)	-42.0	.769 (-2.283)	-80.0	.256 (-11.826)
-25.0	.916 (-0.765)	-43.0	.758 (-2.404)	-81.0	.241 (-12.367)
-25.2	.914 (-0.778)	-44.0	.747 (-2.529)	-82.0	.225 (-12.946)
-25.4	.913 (-0.791)	-45.0	.736 (-2.658)	-83.0	.21 (-13.569)
-25.6	.912 (-0.803)	-46.0	.725 (-2.791)	-84.0	.194 (-14.241)
-25.8	.91 (-0.816)	-47.0	.714 (-2.928)	-85.0	.178 (-14.97)
-26.0	.909 (-0.83)	-48.0	.702 (-3.071)	-86.0	.163 (-15.768)
-26.2	.908 (-0.843)	-49.0	.69 (-3.217)	-87.0	.147 (-16.648)
-26.4	.906 (-0.856)	-50.0	.679 (-3.369)	-88.0	.131 (-17.627)
-26.6	.905 (-0.87)	-51.0	.666 (-3.525)	-89.0	.116 (-18.733)
-26.8	.903 (-0.883)	-52.0	.654 (-3.687)	-90.0	.10 (-20)
-27.0	.902 (-0.897)	-53.0	.642 (-3.854)	90.0	.00 (-50)

Systems With Reliability

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CLIENT:

Date: 4/6/2010

ANTENNA TYPE: FMEC/1

FREQUENCY: 98.0 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 0.883/-0.539 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 0.883/-0.539 dBd

Null Fill(s)(%) : 0, 0, 0

Exhibit 13.10

Proposed Directional Antenna Information

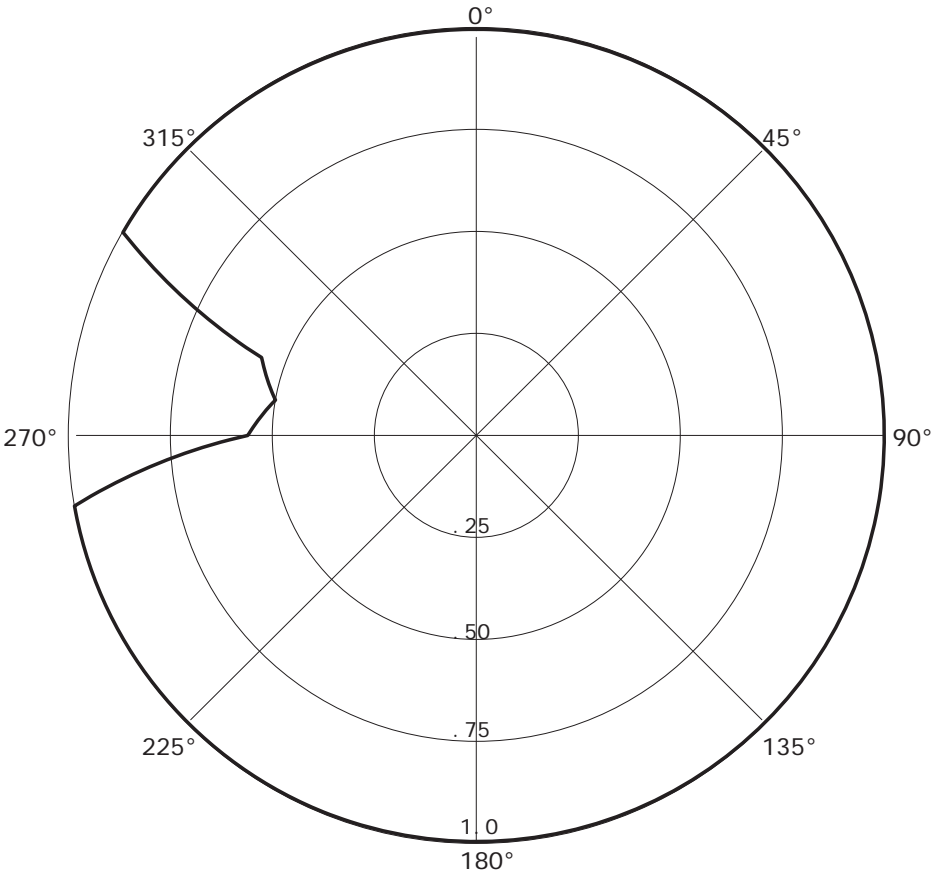
CH283D. P

09-04-2013

RMS(V)= .969

Graph is Relative Field

Azi	Field	dBk	kW
000	1.000	-06.021	0.250
010	1.000	-06.021	0.250
020	1.000	-06.021	0.250
030	1.000	-06.021	0.250
040	1.000	-06.021	0.250
050	1.000	-06.021	0.250
060	1.000	-06.021	0.250
070	1.000	-06.021	0.250
080	1.000	-06.021	0.250
090	1.000	-06.021	0.250
100	1.000	-06.021	0.250
110	1.000	-06.021	0.250
120	1.000	-06.021	0.250
130	1.000	-06.021	0.250
140	1.000	-06.021	0.250
150	1.000	-06.021	0.250
160	1.000	-06.021	0.250
170	1.000	-06.021	0.250
180	1.000	-06.021	0.250
190	1.000	-06.021	0.250
200	1.000	-06.021	0.250
210	1.000	-06.021	0.250
220	1.000	-06.021	0.250
230	1.000	-06.021	0.250
240	1.000	-06.021	0.250
250	1.000	-06.021	0.250
260	1.000	-06.021	0.250
270	0.560	-11.057	0.078
280	0.500	-12.041	0.063
290	0.560	-11.057	0.078
300	1.000	-06.021	0.250
310	1.000	-06.021	0.250
320	1.000	-06.021	0.250
330	1.000	-06.021	0.250
340	1.000	-06.021	0.250
350	1.000	-06.021	0.250



The antenna proposed in this application will be mounted in accordance with specific instructions provided by the antenna manufacturer. The antenna will be tested by the manufacturer using the type of mounting which will be employed in the field.

No other antennas of any type are or will be mounted on the same tower level as the directional antenna.

No antenna is or will be mounted within any vertical or horizontal distance specified by the antenna manufacturer as being necessary for proper operation of the directional antenna. In addition, the antenna will be assembled under the supervision of a qualified engineer and installed pursuant to the manufacturer's instructions and manufacturer specified antenna orientation.

The directional antenna pattern will be produced by means of parasitic elements and/or reflective panels adjusted to produce the required pattern.

The antenna pattern will be measured by the manufacturer on the test range, and the measurement results will be supplied to the Commission at the time Form 350-FM is filed covering the construction.