

**Exhibit 13.1 - Copy of Existing
Antenna Structure Registration****Registration Detail**

Reg Number	1008564	Status	Constructed
File Number	A0010197	Constructed	01/01/1984
FAA Study	83-AGL-1274-OE	EMI	No
FAA Issue Date	08/26/1993	NEPA	No

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Communications Purposes

Location (in NAD83 Coordinates)

Lat/Long 42-57-13.0 N 085-41-55.0 W 399 GARFIELD S W
 City, State GRAND RAPIDS , MI
 Center of
 AM Array

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
186.0	193.0
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
379.0	192.0

Painting and Lighting Specifications

FCC Paragraphs 1, 3, 5, 14, 21

Owner & Contact Information

FRN Licensee ID

Owner

FURNITURE CITY BROADCASTING CORP DBA = WFUR
 FM
 Attention To: WILLIAM E KUIPER JR
 399 GARFIELD S W
 GRAND RAPIDS , MI 49504

P: (616)451-9387
 E:

Contact

P:
 E:

Last Action Status

Status	Constructed	Received	11/21/1996
Purpose	New	Entered	11/22/1996
Mode	Mail In (Manual)		

Related Applications

11/21/1996 A0010197 - New (NE)

Comments**Comments**

None



Exhibit 13.2

Vertical Plan of Antenna System

The site is located at 399 Garfield SW,
the city of Grand Rapids, Kent County, Michigan.

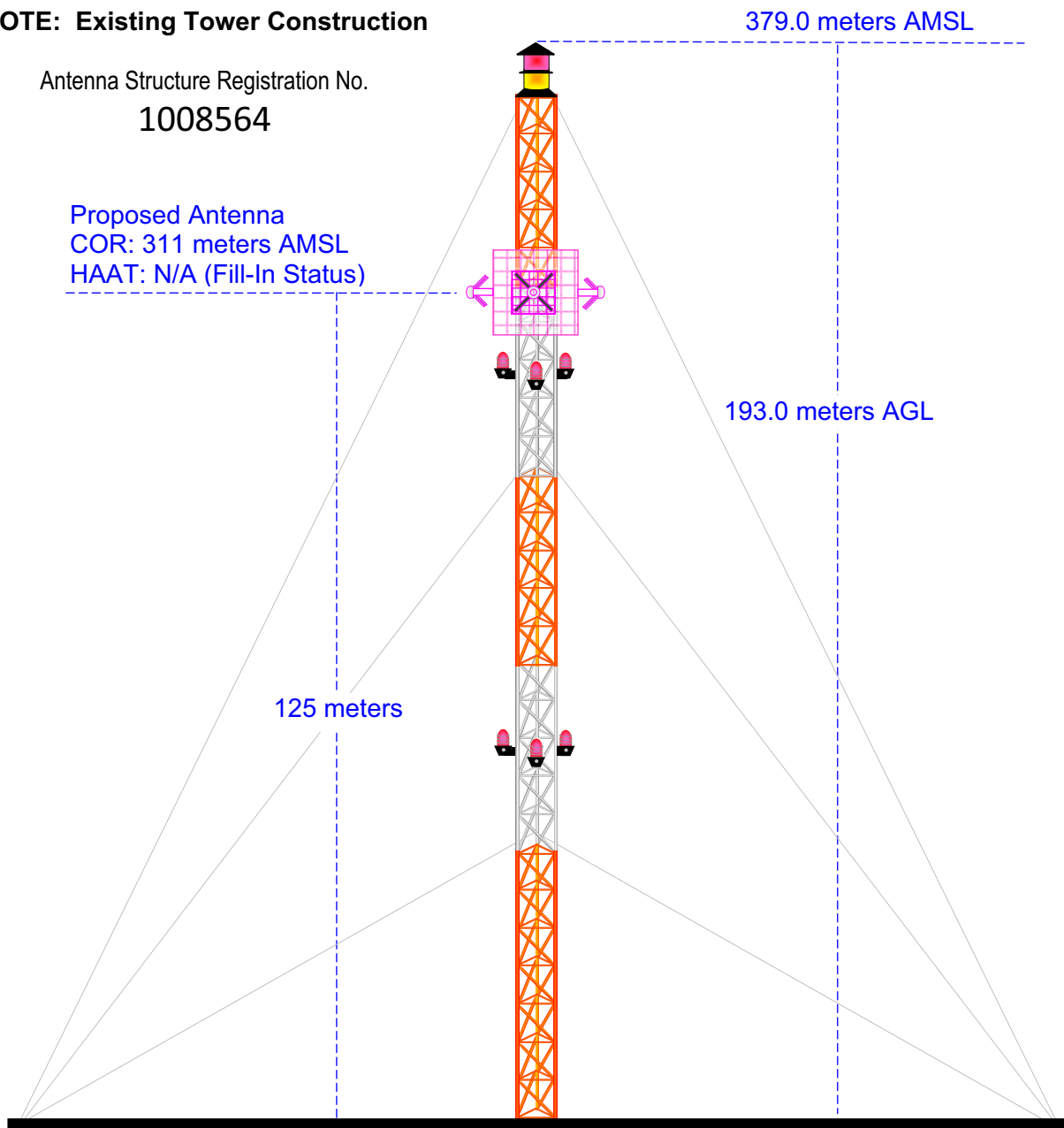
Site Location (NAD 27)

NL: 42° 57' 13"
WL: 85° 41' 55"

NOTE: Existing Tower Construction

Antenna Structure Registration No.
1008564

Proposed Antenna
COR: 311 meters AMSL
HAAT: N/A (Fill-In Status)



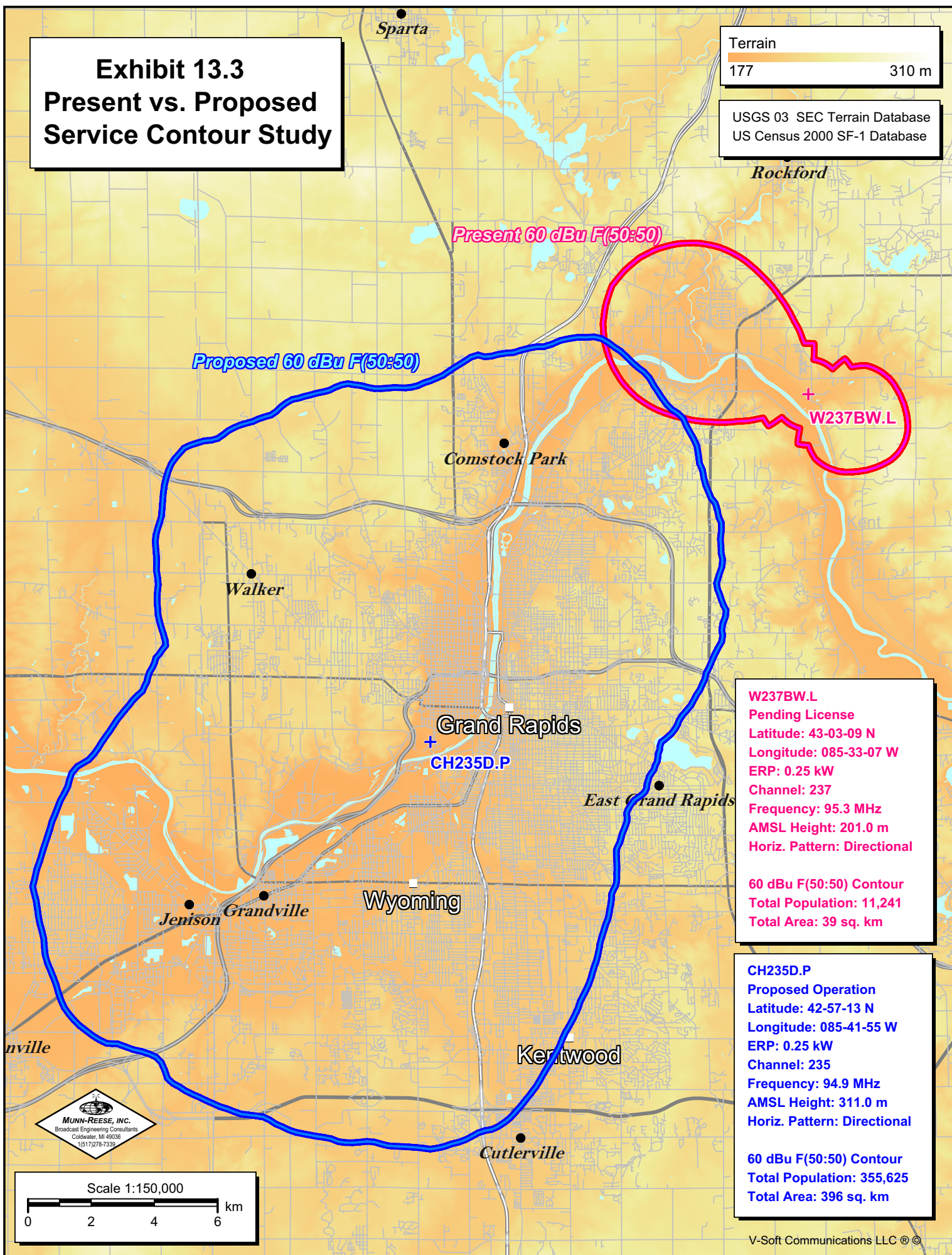
Ground Elevation = 186.0 m AMSL
Drawing is not to Scale

MUNN-REESE, INC.
Broadcast Engineering Consultants
Coldwater, MI 49036

Exhibit 13.3 Present vs. Proposed Service Contour Study

Terrain
177 310 m

USGS 03 SEC Terrain Database
US Census 2000 SF-1 Database



W237BW.L

Grand Rapids
CH235D.P

W237BW.L
Pending License
Latitude: 43-03-09 N
Longitude: 085-33-07 W
ERP: 0.25 kW
Channel: 237
Frequency: 95.3 MHz
AMSL Height: 201.0 m
Horiz. Pattern: Directional

60 dBu F(50:50) Contour
Total Population: 11,241
Total Area: 39 sq. km

CH235D.P
Proposed Operation
Latitude: 42-57-13 N
Longitude: 085-41-55 W
ERP: 0.25 kW
Channel: 235
Frequency: 94.9 MHz
AMSL Height: 311.0 m
Horiz. Pattern: Directional

60 dBu F(50:50) Contour
Total Population: 355,625
Total Area: 396 sq. km

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(616) 278-7300

Scale 1:150,000

0 2 4 6 km

Terrain
171 360 m

USGS 03 SEC Terrain Database
US Census 2000 SF-1 Database

Exhibit 13.4 Proposed vs. Primary Service Contour Study

Call: WYGR(AM)
BL-19810819BH
Freq: 1530 kHz
WYOMING, MI, US
Hours: D
Lat: 42-55-38 N
Lng: 085-44-50 W
Power: 0.5 kW
Theo RMS: 305.78 mV/m
@ 1km @ 1kW

CH235D.P
Proposed Operation
Latitude: 42-57-13 N
Longitude: 085-41-55 W
ERP: 0.25 kW
Channel: 235
Frequency: 94.9 MHz
AMSL Height: 311.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

25 mile AM Site Radius

2 mV/m Daytime Contour

Proposed 60 dBu F(50:50) Contour

CH235D.P

WYGR(AM)

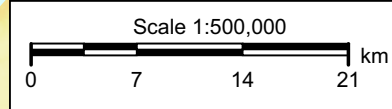


Exhibit 13.5

Tabulation of Proposed Allocation

REFERENCE 42 57 13.0 N. 85 41 55.0 W.		CH# 235D - 94.9 MHz, Pwr= 0.25 kw DA, HAAT= 94.4 M, COR= 311 M Average Protected F(50-50)= 12.51 km Standard Directional							DISPLAY DATES DATA 12-11-10 SEARCH 12-20-10	
CH CITY	CALL	TYPE ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
235B East Lansing	WMMQ	LIC _CN MI	109.8 290.6	99.2 BLH19911106KF	42 38 45.0 84 33 38.0	50.000 150	138.2 421	65.6 Radio License Holding Cbc,	-45.9*<	2.2
233B Holland	WTNR	LIC _CN MI	243.2 63.0	24.1 BLH19840309AR	42 51 20.0 85 57 45.0	50.000 152	6.0 353	65.3 Radio License Holding Cbc,	4.4	-42.8*<
237D Grand Rapids	W237CZ	LIC _C MI	162.9 342.9	3.7 BLFT20101028AAC	42 55 19.0 85 41 07.0	0.250	1.1 271	9.7 Goodrich Radio Llc	-8.8*<	-6.8*<
235D Spring Lake	629243	APP _V MI	289.7 109.4	38.3 BNPFT20030310BBP	43 04 07.0 86 08 32.0	0.019	21.3 280	6.4 Calvary Chapel of Twin Fal	8.1	2.1
235D Grand Haven	643238	APP _C MI	286.5 106.2	43.6 BNPFT20030317JEZ	43 03 50.9 86 12 47.8	0.080	23.8 234	7.1 Radio Assist Ministry, Inc	10.7	6.2
235C3 Scottville	WKZC	LIC _CN MI	335.0 154.5	135.7 BLH19931022KC	44 03 27.0 86 24 58.0	17.000 122	107.5 318	38.3 Lake Michigan Broadcasting	16.6	57.9
Proposed to Canada as Class C1 950126-Accepted by Canada 950331										
289B Grand Rapids	WSRW-FM	LIC _CX MI	157.1 337.2	36.0 BLH20071129AJD	42 39 17.4 85 31 37.9	265.000 177	85.0 424	84.4 Cc Licenses, Llc	14.5R	21.5M
235A Benton Harbor	WSJM-FM	LIC NCN MI	209.6 29.1	112.4 BLH19980925KDD	42 04 19.0 86 22 14.0	2.200 116	72.3 318	23.2 Wsjm, Inc.	26.8	43.7
237A Whitehall	WGVS-FM	LIC _CN MI	311.3 130.9	67.8 BLH19821105AF	43 21 14.0 86 19 38.0	2.000 110	2.1 304	22.9 Grand Valley State Univers	54.3	43.9
Accepted by Canada on 940207										
233C1 Hemlock	AL9594	RSV-A MI	45.5 226.2	123.5 RM10057	43 43 36.0 84 36 16.0	100.000 299	10.1 521	72.3	101.1	50.0
Pet. for Recon. filed 11/19/2001										
236D Kalamazoo	W236AV	LIC _C MI	177.2 357.2	75.6 BLFT20041228AAQ	42 16 28.0 85 39 12.0	0.036	8.5 324	6.0 Family Life Broadcasting S	54.4	50.6

Terrain database is USGS 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 = 1, 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.
 < = Contour Overlap
 Reference station has protected zone issue: AM tower

Blue highlighted text denotes supplemental contour protection studies toward WMMQ(FM) - East Lansing, CH235B as included in **Exhibit 13.6**.

Yellow highlighted text denotes a \$74.1204(d) Waiver Request for given second and third adjacent channel interference to WTNR(FM) - Holland, MI CH233B and W237CZ - Grand Rapids, MI, CH237D as included in **Exhibit 13.7**. Full protection will be afforded both facilities as the calculated interference area will not reach the ground or 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 specifications have been included in **Exhibit 13.7**.

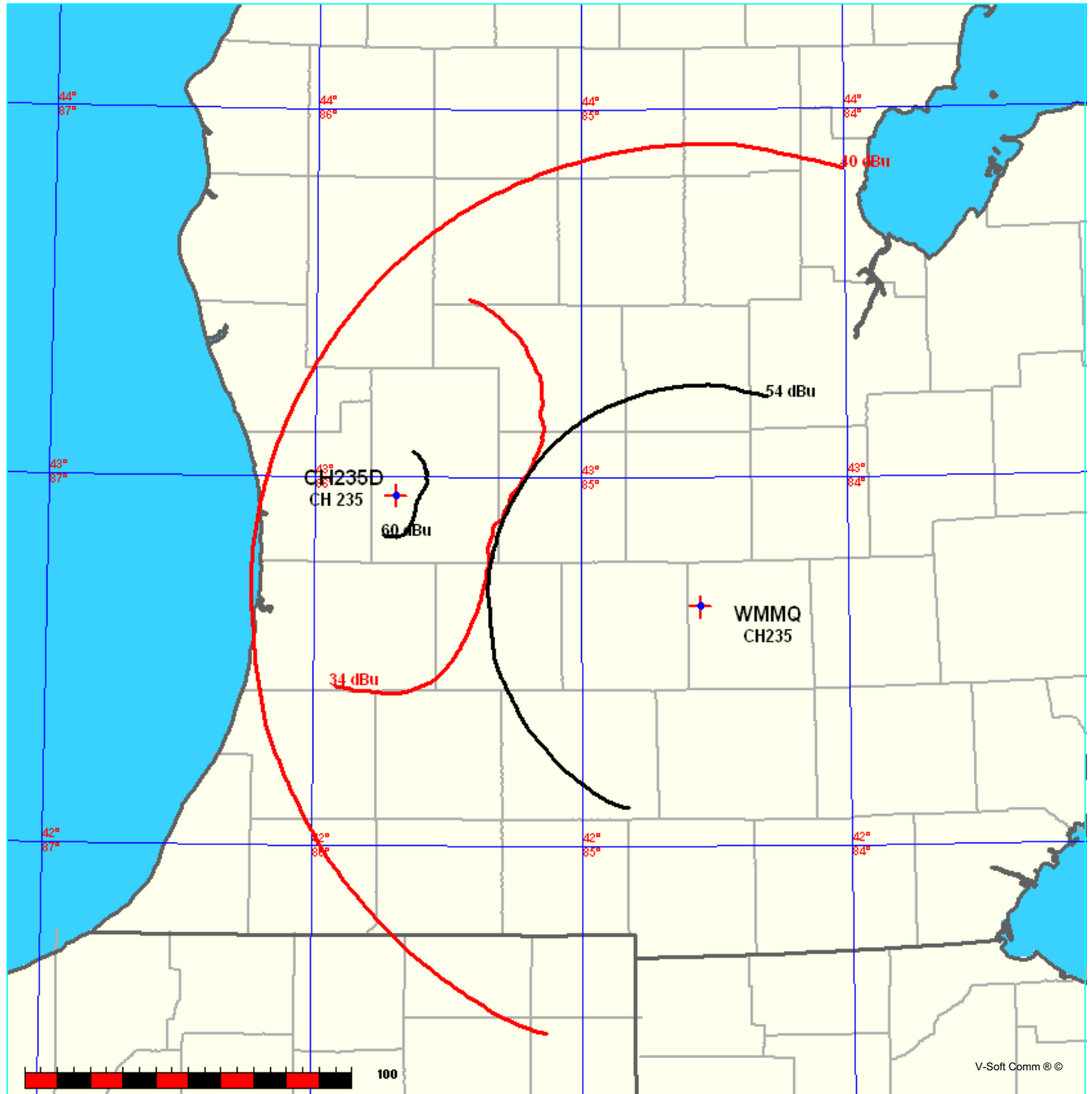
Exhibit 13.6

Contour Protection Studies Toward WMMQ(FM) - East Lansing, MI CH235B

FMCommander Single Allocation Study - 12-20-2010 - USGS 03 SEC
CH235D's Overlaps (In= -45.88 km, Out= 2.22 km)

CH235D CH 235 D DA
Lat= 42 57 13.0, Lng= 85 41 55.0
0.25 kW 94.4 M HAAT, 311 M COR
Prot.= 60 dBu, Intef.= 34 dBu

WMMQ CH 235 B BLH19911106KF
Lat= 42 38 45.0, Lng= 84 33 38.0
50.0 kW 150 M HAAT, 421 M COR
Prot.= 54 dBu, Intef.= 40 dBu



Munn-Reese, Inc.
Broadcast Engineering Consultants
Coldwater, MI 49036

Exhibit 13.6

Contour Protection Studies Toward WMMQ(FM) - East Lansing, MI CH235B

12-20-2010

Terrain Data: USGS 03 SEC

FMOVer Analysis

CH235D

WMMQ BLH19911106KF

Channel = 235D

Max ERP = 0.25 kW

RCAMSL = 311 M

N. Lat. 42 57 13.0

W. Lng. 85 41 55.0

Protected

60 dBu

Channel = 235B

Max ERP = 50 kW

RCAMSL = 421 M

N. Lat. 42 38 45.0

W. Lng. 84 33 38.0

Interfering

40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
070.0	000.0999	0090.6	009.8	294.6	050.0000	0154.5	091.7	50.13**	46.66
071.0	000.0958	0090.7	009.7	294.4	050.0000	0154.5	091.6	50.14**	46.71
072.0	000.0918	0089.1	009.5	294.3	050.0000	0154.5	091.6	50.13**	46.68
073.0	000.0879	0088.0	009.4	294.1	050.0000	0154.5	091.7	50.13**	46.67
074.0	000.0841	0087.4	009.3	294.0	050.0000	0154.5	091.7	50.13**	46.67
075.0	000.0804	0087.0	009.1	293.9	050.0000	0154.5	091.6	50.13**	46.67
076.0	000.0767	0086.4	009.0	293.7	050.0000	0154.4	091.7	50.12**	46.65
077.0	000.0732	0087.1	008.9	293.6	050.0000	0154.4	091.6	50.13**	46.69
078.0	000.0697	0087.0	008.8	293.5	050.0000	0154.4	091.6	50.13**	46.68
079.0	000.0663	0087.1	008.7	293.4	050.0000	0154.4	091.6	50.13**	46.67
080.0	000.0630	0086.5	008.5	293.3	050.0000	0154.4	091.7	50.12**	46.63
081.0	000.0604	0086.2	008.4	293.2	050.0000	0154.4	091.7	50.11**	46.61
082.0	000.0579	0085.9	008.3	293.0	050.0000	0154.3	091.7	50.11**	46.59
083.0	000.0555	0084.7	008.2	292.9	050.0000	0154.3	091.8	50.09**	46.52
084.0	000.0531	0083.5	008.0	292.8	050.0000	0154.3	091.9	50.06**	46.45
085.0	000.0507	0083.3	007.9	292.7	050.0000	0154.3	091.9	50.06**	46.42
086.0	000.0484	0083.9	007.8	292.6	050.0000	0154.3	091.9	50.06**	46.42
087.0	000.0462	0083.9	007.7	292.5	050.0000	0154.3	091.9	50.05**	46.39
088.0	000.0440	0083.6	007.6	292.4	050.0000	0154.2	092.0	50.03**	46.34
089.0	000.0419	0082.4	007.5	292.3	050.0000	0154.2	092.0	50.01**	46.25
090.0	000.0398	0080.6	007.3	292.2	050.0000	0154.2	092.1	49.98**	46.14
091.0	000.0389	0080.6	007.3	292.1	050.0000	0154.2	092.1	49.98**	46.14
092.0	000.0381	0081.2	007.3	292.0	050.0000	0154.1	092.1	49.99**	46.17
093.0	000.0373	0081.2	007.2	291.9	050.0000	0154.1	092.1	49.99**	46.17
094.0	000.0364	0082.0	007.2	291.8	050.0000	0154.1	092.1	50.00**	46.21
095.0	000.0356	0082.6	007.2	291.8	050.0000	0154.1	092.0	50.00**	46.23
096.0	000.0348	0082.4	007.1	291.7	050.0000	0154.1	092.1	50.00**	46.21
097.0	000.0340	0082.8	007.1	291.6	050.0000	0154.0	092.0	50.00**	46.22
098.0	000.0332	0082.2	007.1	291.5	050.0000	0154.0	092.1	49.99**	46.18
099.0	000.0325	0081.9	007.0	291.4	050.0000	0154.0	092.1	49.98**	46.15
100.0	000.0317	0082.5	007.0	291.4	050.0000	0154.0	092.1	49.98**	46.16

Munn-Reese, Inc.

Broadcast Engineering Consultants

Coldwater, MI 49036

Exhibit 13.6

Contour Protection Studies Toward WMMQ(FM) - East Lansing, MI CH235B

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	
101.0	000.0310	0083.0	007.0	291.3	050.0000	0154.0	092.1	49.98**	46.16
102.0	000.0303	0084.2	007.0	291.2	050.0000	0154.0	092.1	49.99**	46.19
103.0	000.0296	0084.6	007.0	291.1	050.0000	0153.9	092.1	49.99**	46.19
104.0	000.0290	0083.8	006.9	291.0	050.0000	0153.9	092.1	49.97**	46.13
105.0	000.0283	0082.3	006.8	291.0	050.0000	0153.9	092.2	49.95**	46.04
106.0	000.0277	0081.0	006.7	290.9	050.0000	0153.9	092.3	49.92**	45.95
107.0	000.0270	0080.8	006.7	290.8	050.0000	0153.8	092.3	49.91**	45.91
108.0	000.0264	0081.0	006.6	290.7	050.0000	0153.8	092.4	49.90**	45.88
109.0	000.0257	0081.3	006.6	290.7	050.0000	0153.8	092.4	49.90**	45.86
110.0	000.0251	0082.2	006.6	290.6	050.0000	0153.8	092.4	49.89**	45.85
111.0	000.0251	0083.7	006.7	290.5	050.0000	0153.8	092.3	49.91**	45.91
112.0	000.0251	0084.7	006.7	290.5	050.0000	0153.7	092.3	49.92**	45.95
113.0	000.0251	0084.9	006.7	290.4	050.0000	0153.7	092.3	49.92**	45.95
114.0	000.0251	0085.0	006.7	290.3	050.0000	0153.7	092.3	49.92**	45.94
115.0	000.0251	0085.1	006.7	290.2	050.0000	0153.7	092.3	49.92**	45.93
116.0	000.0251	0085.4	006.7	290.2	050.0000	0153.7	092.3	49.92**	45.93
117.0	000.0251	0086.1	006.8	290.1	050.0000	0153.6	092.3	49.92**	45.94
118.0	000.0251	0086.6	006.8	290.0	050.0000	0153.6	092.3	49.92**	45.94
119.0	000.0251	0086.7	006.8	289.9	050.0000	0153.6	092.3	49.91**	45.93
120.0	000.0251	0087.0	006.8	289.9	050.0000	0153.6	092.3	49.91**	45.91
121.0	000.0257	0087.7	006.9	289.8	050.0000	0153.6	092.2	49.92**	45.95
122.0	000.0264	0088.6	006.9	289.7	050.0000	0153.6	092.2	49.94**	46.00
123.0	000.0270	0089.8	007.0	289.6	050.0000	0153.5	092.1	49.95**	46.05
124.0	000.0277	0090.9	007.1	289.5	050.0000	0153.5	092.1	49.97**	46.10
125.0	000.0283	0091.9	007.2	289.4	050.0000	0153.5	092.0	49.98**	46.14
126.0	000.0290	0093.2	007.3	289.3	050.0000	0153.5	092.0	49.99**	46.19
127.0	000.0296	0094.3	007.4	289.3	050.0000	0153.5	092.0	50.00**	46.23
128.0	000.0303	0094.5	007.4	289.2	050.0000	0153.4	092.0	50.00**	46.23
129.0	000.0310	0094.1	007.4	289.1	050.0000	0153.4	092.0	50.00**	46.21
130.0	000.0317	0094.1	007.5	289.0	050.0000	0153.4	092.0	49.99**	46.19
131.0	000.0333	0094.3	007.6	288.9	050.0000	0153.4	091.9	50.00**	46.24
132.0	000.0350	0094.1	007.7	288.8	050.0000	0153.4	091.9	50.01**	46.27
133.0	000.0368	0093.8	007.8	288.7	050.0000	0153.4	091.9	50.02**	46.28
134.0	000.0386	0093.9	007.8	288.6	050.0000	0153.4	091.9	50.02**	46.31
135.0	000.0404	0093.7	007.9	288.5	050.0000	0153.3	091.9	50.03**	46.32
136.0	000.0423	0092.9	008.0	288.4	050.0000	0153.3	091.9	50.02**	46.30
137.0	000.0442	0092.6	008.1	288.3	050.0000	0153.3	091.9	50.02**	46.30
138.0	000.0461	0092.4	008.2	288.2	050.0000	0153.3	091.9	50.02**	46.31
139.0	000.0481	0092.3	008.2	288.1	050.0000	0153.4	091.9	50.03**	46.31
140.0	000.0502	0092.6	008.3	288.0	050.0000	0153.4	091.8	50.03**	46.32
141.0	000.0528	0092.9	008.5	287.9	050.0000	0153.4	091.8	50.04**	46.35
142.0	000.0555	0093.1	008.6	287.8	050.0000	0153.3	091.8	50.04**	46.36
143.0	000.0583	0093.2	008.7	287.6	050.0000	0153.3	091.8	50.04**	46.36
144.0	000.0611	0093.1	008.8	287.5	050.0000	0153.3	091.8	50.04**	46.35
145.0	000.0640	0093.4	008.9	287.4	050.0000	0153.3	091.8	50.04**	46.35

Exhibit 13.6

Contour Protection Studies Toward WMMQ(FM) - East Lansing, MI CH235B

12-20-2010 Terrain Data

WMMQ BLH19911106KF

CH235D

Channel = 235B

Max ERP = 50 kW

RCAMSL = 421 M

N. Lat. 42 38 45.0

W. Lng. 84 33 38.0

Protected

54 dBu

Channel = 235D

Max ERP = 0.25 kW

RCAMSL = 311 M

N. Lat. 42 57 13.0

W. Lng. 85 41 55.0

Interfering

34 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
246.0	050.0000	0145.2	064.4	150.3	000.0809	0094.5	069.5	25.86	
247.0	050.0000	0145.7	064.5	150.2	000.0804	0094.4	068.4	26.15	
248.0	050.0000	0146.1	064.5	150.1	000.0801	0094.4	067.3	26.46	
249.0	050.0000	0146.5	064.6	150.1	000.0797	0094.4	066.1	26.77	
250.0	050.0000	0146.9	064.6	149.9	000.0794	0094.3	065.0	27.09	
251.0	050.0000	0147.4	064.7	149.8	000.0790	0094.3	063.9	27.40	
252.0	050.0000	0148.6	064.9	149.8	000.0788	0094.3	062.7	27.75	
253.0	050.0000	0149.3	065.0	149.6	000.0784	0094.2	061.6	28.10	
254.0	050.0000	0149.7	065.0	149.4	000.0777	0094.2	060.5	28.44	
255.0	050.0000	0150.0	065.1	149.2	000.0769	0094.2	059.4	28.77	
256.0	050.0000	0149.9	065.1	148.9	000.0759	0094.2	058.3	29.10	
257.0	050.0000	0149.6	065.0	148.5	000.0747	0094.1	057.2	29.42	
258.0	050.0000	0148.6	064.9	148.0	000.0732	0094.2	056.2	29.70	
259.0	050.0000	0147.9	064.8	147.5	000.0716	0094.2	055.2	29.99	
260.0	050.0000	0147.3	064.7	147.0	000.0700	0094.1	054.1	30.27	
261.0	050.0000	0147.0	064.6	146.5	000.0684	0094.0	053.1	30.54	
262.0	050.0000	0146.6	064.6	145.9	000.0667	0093.8	052.1	30.79	
263.0	050.0000	0146.2	064.5	145.3	000.0649	0093.5	051.1	31.02	
264.0	050.0000	0146.2	064.5	144.7	000.0631	0093.2	050.1	31.25	
265.0	050.0000	0146.0	064.5	144.0	000.0612	0093.1	049.2	31.46	
266.0	050.0000	0145.6	064.5	143.3	000.0591	0093.1	048.2	31.65	
267.0	050.0000	0145.4	064.4	142.5	000.0569	0093.1	047.3	31.83	
268.0	050.0000	0145.5	064.4	141.7	000.0548	0093.0	046.4	32.00	
269.0	050.0000	0146.1	064.5	141.0	000.0528	0092.9	045.4	32.19	
270.0	050.0000	0147.5	064.7	140.3	000.0509	0092.7	044.4	32.40	
271.0	050.0000	0148.9	064.9	139.5	000.0492	0092.5	043.4	32.62	
272.0	050.0000	0150.0	065.1	138.7	000.0475	0092.3	042.5	32.83	
273.0	050.0000	0150.9	065.2	137.7	000.0455	0092.5	041.6	33.03	
274.0	050.0000	0151.5	065.3	136.6	000.0435	0092.6	040.7	33.19	

Munn-Reese, Inc.

Broadcast Engineering Consultants

Coldwater, MI 49036

Exhibit 13.6**Contour Protection Studies Toward WMMQ(FM) - East Lansing, MI CH235B**

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
275.0	050.0000	0151.9	065.3	135.5	000.0413	0093.3	039.9	33.37
276.0	050.0000	0152.2	065.4	134.3	000.0390	0093.9	039.2	33.49
277.0	050.0000	0152.5	065.4	133.0	000.0367	0093.8	038.4	33.53
278.0	050.0000	0152.9	065.4	131.6	000.0344	0094.2	037.7	33.58
279.0	050.0000	0153.1	065.5	130.2	000.0319	0094.1	037.1	33.55
280.0	050.0000	0153.2	065.5	128.6	000.0307	0094.4	036.5	33.66
281.0	050.0000	0153.2	065.5	127.0	000.0297	0094.3	036.0	33.74
282.0	050.0000	0153.3	065.5	125.4	000.0286	0092.3	035.5	33.61
283.0	050.0000	0153.2	065.5	123.7	000.0274	0090.6	035.0	33.46
284.0	050.0000	0152.9	065.4	121.9	000.0263	0088.4	034.7	33.22
285.0	050.0000	0152.8	065.4	120.1	000.0252	0087.0	034.4	33.03
286.0	050.0000	0152.9	065.4	118.2	000.0251	0086.6	034.1	33.11
287.0	050.0000	0153.2	065.5	116.3	000.0251	0085.6	033.8	33.13
288.0	050.0000	0153.4	065.5	114.4	000.0251	0085.0	033.6	33.15
289.0	050.0000	0153.4	065.5	112.5	000.0251	0084.9	033.5	33.19
290.0	050.0000	0153.6	065.5	110.5	000.0251	0083.1	033.4	33.03
291.0	050.0000	0153.9	065.6	108.6	000.0260	0081.2	033.4	32.99
292.0	050.0000	0154.1	065.6	106.6	000.0273	0080.8	033.4	33.14
293.0	050.0000	0154.3	065.6	104.6	000.0285	0082.8	033.5	33.51
294.0	050.0000	0154.5	065.6	102.7	000.0298	0084.8	033.7	33.83
295.0	050.0000	0154.5	065.7	100.8	000.0311	0082.9	033.9	33.71
296.0	050.0000	0154.7	065.7	098.9	000.0325	0081.9	034.2	33.66
297.0	050.0000	0154.7	065.7	097.1	000.0339	0082.7	034.6	33.79
298.0	050.0000	0154.7	065.7	095.4	000.0353	0082.5	035.0	33.76
299.0	050.0000	0154.7	065.7	093.7	000.0367	0081.5	035.4	33.62
300.0	050.0000	0154.6	065.7	092.0	000.0381	0081.2	035.9	33.52
301.0	050.0000	0154.6	065.7	090.4	000.0394	0080.3	036.5	33.34
302.0	050.0000	0154.7	065.7	088.9	000.0421	0082.5	037.1	33.60
303.0	050.0000	0154.9	065.7	087.4	000.0453	0083.9	037.7	33.79
304.0	050.0000	0155.2	065.7	086.0	000.0485	0083.9	038.3	33.81
305.0	050.0000	0155.4	065.8	084.6	000.0516	0083.3	039.0	33.74
306.0	050.0000	0155.6	065.8	083.4	000.0546	0084.2	039.8	33.78
307.0	050.0000	0156.0	065.8	082.1	000.0577	0085.8	040.5	33.86
308.0	050.0000	0156.4	065.9	080.9	000.0606	0086.2	041.3	33.80
309.0	050.0000	0156.8	065.9	079.8	000.0636	0086.6	042.1	33.72
310.0	050.0000	0157.0	066.0	078.8	000.0670	0087.2	043.0	33.67
311.0	050.0000	0157.3	066.0	077.8	000.0704	0087.0	043.8	33.52
312.0	050.0000	0157.6	066.1	076.9	000.0736	0087.0	044.7	33.37
313.0	050.0000	0158.0	066.1	076.0	000.0767	0086.4	045.6	33.15
314.0	050.0000	0158.3	066.1	075.2	000.0797	0086.9	046.6	33.01
315.0	050.0000	0158.8	066.2	074.4	000.0826	0087.1	047.6	32.84
316.0	050.0000	0159.1	066.2	073.7	000.0852	0087.8	048.5	32.68
317.0	050.0000	0159.3	066.3	073.1	000.0877	0088.0	049.6	32.45
318.0	050.0000	0159.4	066.3	072.5	000.0900	0088.4	050.6	32.23
319.0	050.0000	0159.4	066.3	071.9	000.0921	0089.2	051.6	32.01
320.0	050.0000	0159.4	066.3	071.4	000.0940	0090.1	052.7	31.78

Exhibit 13.7 **§74.1204(d) 2nd & 3rd Adjacent** **Channel Given Interference** **Waiver Request Study Toward**

WTNR(FM) - CH233B - Holland, MI
W237CZ - CH237D - Grand Rapids, MI

Proposed Antenna: PSI FMP-1-DA (1-Bay Panel Antenna) Proposed Power: 0.25 kW Antenna Height AGL: 125 meters Interference Contour: 115 dBu 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			Distance from Ant.	Distance	Field Strength	Distance	Field Strength
Below Horizon	Relative Field	ERP in kW	ERP in dBk	to Interference Contour	from Ant. to Artificial Plane	in dBu @ Artificial Plane	from Ant. to Ground Level	in dBu @ Ground Level
0°	1.000	0.250	-6.02	197.23 m	infinite	---	---	---
-5°	0.996	0.248	-6.06	196.44 m	1353.90 m	98.23 dBu	1434.21 m	97.73 dBu
-10°	0.985	0.243	-6.15	194.27 m	679.53 m	104.12 dBu	719.85 m	103.62 dBu
-15°	0.966	0.233	-6.32	190.52 m	455.92 m	107.42 dBu	482.96 m	106.92 dBu
-20°	0.940	0.221	-6.56	185.39 m	345.01 m	109.61 dBu	365.48 m	109.10 dBu
-25°	0.906	0.205	-6.88	178.69 m	279.21 m	111.12 dBu	295.78 m	110.62 dBu
-30°	0.866	0.187	-7.27	170.80 m	236.00 m	112.19 dBu	250.00 m	111.69 dBu
-35°	0.816	0.166	-7.79	160.94 m	205.73 m	112.87 dBu	217.93 m	112.37 dBu
-40°	0.766	0.147	-8.34	151.08 m	183.58 m	113.31 dBu	194.47 m	112.81 dBu
-45°	0.707	0.125	-9.03	139.44 m	166.88 m	113.44 dBu	176.78 m	112.94 dBu
-50°	0.643	0.103	-9.86	126.82 m	154.04 m	113.31 dBu	163.18 m	112.81 dBu
-55°	0.573	0.082	-10.86	113.01 m	144.05 m	112.89 dBu	152.60 m	112.39 dBu
-60°	0.500	0.063	-12.04	98.61 m	136.25 m	112.19 dBu	144.34 m	111.69 dBu
-65°	0.423	0.045	-13.49	83.43 m	130.20 m	111.13 dBu	137.92 m	110.63 dBu
-70°	0.342	0.029	-15.34	67.45 m	125.57 m	109.60 dBu	133.02 m	109.10 dBu
-75°	0.259	0.017	-17.75	51.08 m	122.16 m	107.43 dBu	129.41 m	106.93 dBu
-80°	0.174	0.008	-21.21	34.32 m	119.82 m	104.14 dBu	126.93 m	103.64 dBu
-85°	0.087	0.002	-27.23	17.16 m	118.45 m	98.22 dBu	125.48 m	97.72 dBu
-90°	0.001	0.000	-66.02	0.20 m	118.00 m	59.46 dBu	125.00 m	58.96 dBu

+
WTNR(FM)

W235D.P - 115.0 dBu F(50:10) Contour

W237CZ - 75.0 dBu F(50:50) Contour

+
W237CZ.L

WTNR(FM) - 75.0 dBu F(50:50) Contour

USGS 03 Sec Terrain Database
US Census 2000 SF1 Database

Terrain
177 311 m

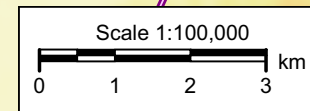


Exhibit 13.7 - §74.1204(d) 2nd & 3rd Adjacent Channel Waiver Request
Antenna Manufacturer Supplied Vertical Radiation Pattern

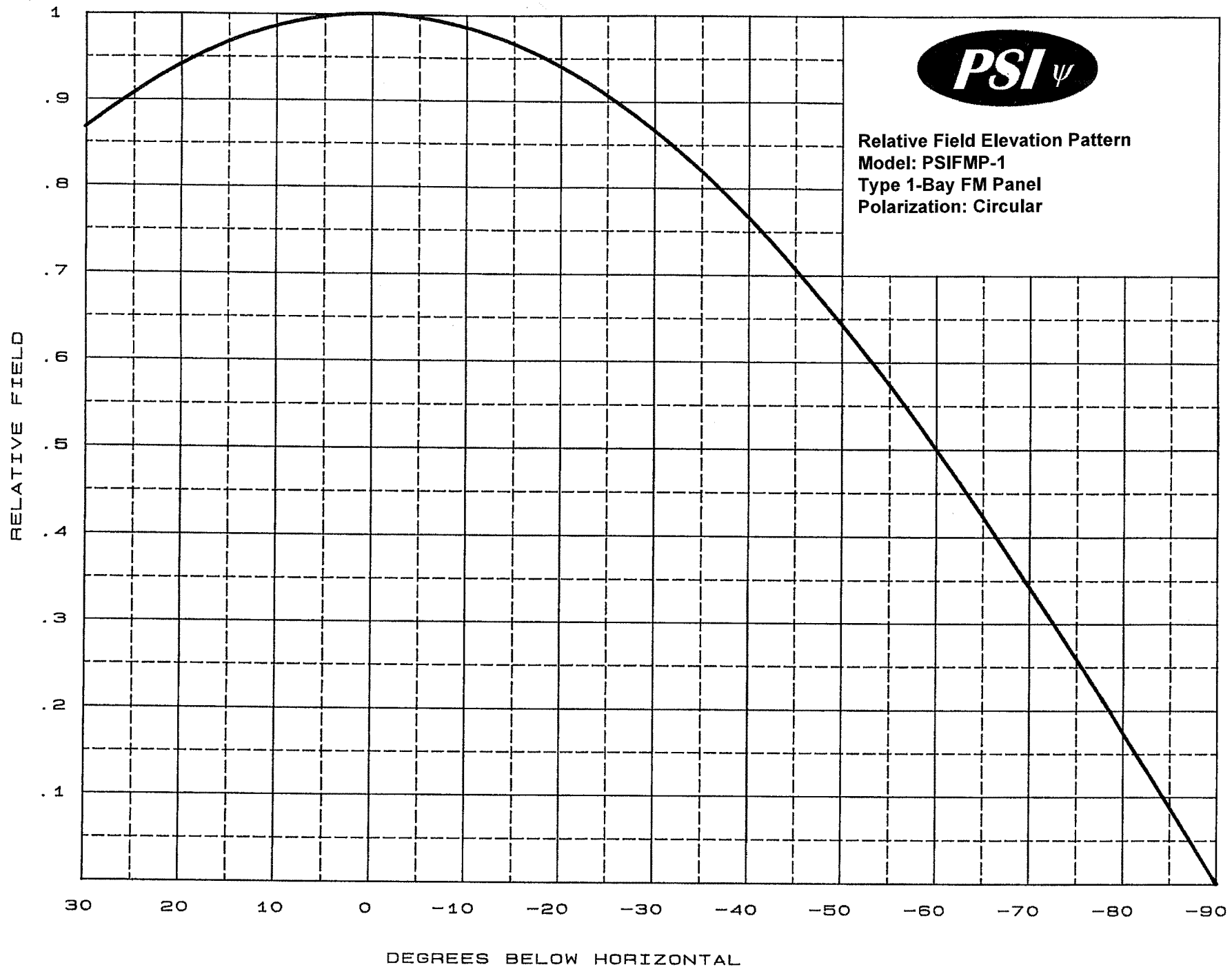


Exhibit 13.7 - §74.1204(d) 2nd & 3rd Adjacent Channel Waiver Request

Antenna Manufacturer Supplied Vertical Radiation Pattern



Propagation Systems Inc.

Elevation Pattern Tabulation

Antenna: PSIFMP-1

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90.00	0.001	-60.000	-50.00	0.643	-3.839	-10.00	0.985	-0.134
-89.00	0.017	-35.177	-49.00	0.656	-3.663	-9.00	0.988	-0.109
-88.00	0.035	-29.156	-48.00	0.669	-3.490	-8.00	0.990	-0.086
-87.00	0.052	-25.634	-47.00	0.682	-3.325	-7.00	0.992	-0.066
-86.00	0.070	-23.136	-46.00	0.695	-3.166	-6.00	0.994	-0.049
-85.00	0.087	-21.198	-45.00	0.707	-3.012	-5.00	0.996	-0.034
-84.00	0.104	-19.626	-44.00	0.719	-2.862	-4.00	0.997	-0.022
-83.00	0.122	-18.286	-43.00	0.731	-2.719	-3.00	0.998	-0.013
-82.00	0.139	-17.134	-42.00	0.743	-2.580	-2.00	0.999	-0.007
-81.00	0.156	-16.117	-41.00	0.755	-2.445	-1.00	1.000	-0.003
-80.00	0.174	-15.207	-40.00	0.766	-2.316	0.00	1.000	0.000
-79.00	0.191	-14.390	-39.00	0.777	-2.190	1.00	1.000	-0.003
-78.00	0.208	-13.644	-38.00	0.788	-2.071	2.00	0.999	-0.007
-77.00	0.225	-12.962	-37.00	0.798	-1.955	3.00	0.998	-0.013
-76.00	0.242	-12.330	-36.00	0.809	-1.842	4.00	0.997	-0.022
-75.00	0.259	-11.741	-35.00	0.819	-1.733	5.00	0.996	-0.034
-74.00	0.276	-11.194	-34.00	0.829	-1.630	6.00	0.994	-0.049
-73.00	0.292	-10.684	-33.00	0.839	-1.529	7.00	0.992	-0.066
-72.00	0.309	-10.203	-32.00	0.848	-1.432	8.00	0.990	-0.086
-71.00	0.325	-9.750	-31.00	0.857	-1.339	9.00	0.988	-0.109
-70.00	0.342	-9.320	-30.00	0.866	-1.251	10.00	0.985	-0.134
-69.00	0.358	-8.914	-29.00	0.875	-1.164	11.00	0.982	-0.162
-68.00	0.375	-8.530	-28.00	0.883	-1.082	12.00	0.978	-0.193
-67.00	0.391	-8.165	-27.00	0.891	-1.003	13.00	0.974	-0.227
-66.00	0.407	-7.815	-26.00	0.899	-0.928	14.00	0.970	-0.263
-65.00	0.423	-7.482	-25.00	0.906	-0.855	15.00	0.966	-0.301
-64.00	0.438	-7.164	-24.00	0.913	-0.786	16.00	0.961	-0.344
-63.00	0.454	-6.860	-23.00	0.920	-0.720	17.00	0.956	-0.389
-62.00	0.469	-6.569	-22.00	0.927	-0.657	18.00	0.951	-0.436
-61.00	0.485	-6.291	-21.00	0.933	-0.598	19.00	0.945	-0.487
-60.00	0.500	-6.023	-20.00	0.940	-0.542	20.00	0.940	-0.540
-59.00	0.515	-5.764	-19.00	0.945	-0.487	21.00	0.933	-0.598
-58.00	0.530	-5.517	-18.00	0.951	-0.437	22.00	0.927	-0.657
-57.00	0.545	-5.279	-17.00	0.956	-0.389	23.00	0.920	-0.720
-56.00	0.559	-5.050	-16.00	0.961	-0.344	24.00	0.913	-0.786
-55.00	0.573	-4.830	-15.00	0.966	-0.301	25.00	0.906	-0.855
-54.00	0.588	-4.616	-14.00	0.970	-0.263	26.00	0.899	-0.927
-53.00	0.602	-4.413	-13.00	0.974	-0.227	27.00	0.891	-1.003
-52.00	0.616	-4.214	-12.00	0.978	-0.193	28.00	0.883	-1.082
-51.00	0.629	-4.024	-11.00	0.982	-0.162	29.00	0.875	-1.164
						30.00	0.866	-1.251

Exhibit 13.8

Tabulation of Proposed Directional Antenna Pattern

CH235D

02-28-2011

RMS(V)= .822

Graph is Relative Field

Azi	Field	dBk	kw
000	1.000	-06.0	0.250
010	1.000	-06.0	0.250
020	1.000	-06.0	0.250
030	1.000	-06.0	0.250
040	1.000	-06.0	0.250
050	1.000	-06.0	0.250
060	0.796	-08.0	0.158
070	0.632	-10.0	0.100
080	0.502	-12.0	0.063
090	0.399	-14.0	0.040
100	0.356	-15.0	0.032
110	0.317	-16.0	0.025
120	0.317	-16.0	0.025
130	0.356	-15.0	0.032
140	0.448	-13.0	0.050
150	0.564	-11.0	0.080
160	0.710	-09.0	0.126
170	0.893	-07.0	0.199
180	1.000	-06.0	0.250
190	1.000	-06.0	0.250
200	1.000	-06.0	0.250
210	1.000	-06.0	0.250
220	1.000	-06.0	0.250
230	1.000	-06.0	0.250
240	1.000	-06.0	0.250
250	1.000	-06.0	0.250
260	0.796	-08.0	0.158
270	0.632	-10.0	0.100
280	0.540	-11.4	0.073
290	0.540	-11.4	0.073
300	0.632	-10.0	0.100
310	0.796	-08.0	0.158
320	1.000	-06.0	0.250
330	1.000	-06.0	0.250
340	1.000	-06.0	0.250
350	1.000	-06.0	0.250

