

Exhibit 12.1 - Copy of Existing Antenna Structure Registration

Registration Detail

Reg Number	1002165	Status	Granted
File Number	A0567214	Constructed	01/01/1991
FAA Study	2007-AGL-7003-OE	EMI	No
FAA Issue Date	09/14/2007	NEPA	No

Antenna Structure

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

Location (in NAD83 Coordinates)

Lat/Long 43-34-33.0 N 084-46-29.0 W 64 KM W OF BLUE GRASS RD OLD US RT 27

City, State MOUNT PLEASANT , MI

Center of
AM Array

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
242.9	169.2
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
412.1	168.2

Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 9

Paint and Light in Accordance with FAA Circular Number 70/7460-1G

.

Owner & Contact Information

FRN	0002733764	Licensee ID	L00053639
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Owner

CENTRAL MICHIGAN UNIVERSITY DBA = PUBLIC
BROADCASTING

Attention To: RANDALL KAPENGA
3965 E BROOMFIELD
MOUNT PLEASANT , MI 48859

P: (517)774-3105
E:

Contact

P:
E:

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Last Action Status

Status	Granted	Received	10/25/2007
Purpose	Modification	Entered	10/25/2007
Mode	Interactive		

Related Applications

10/25/2007	A0567214 - Modification (MD)
08/26/1996	A0002389 - New (NE)

.

Comments

Comments



Exhibit 12.2

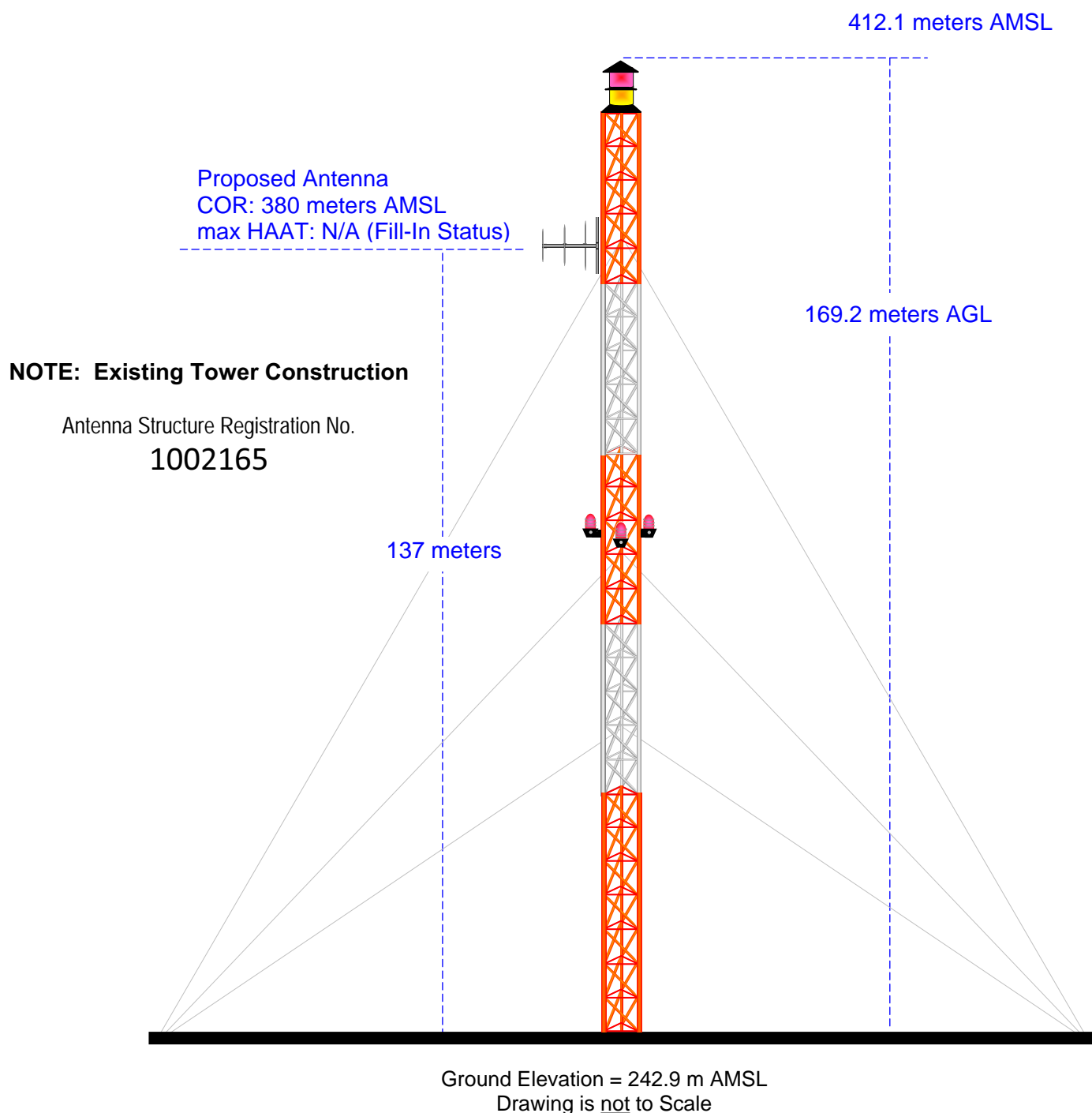
Vertical Plan of Antenna System

The site is located west of Blue Grass Road & Old US 27
the city of Mount Pleasant, Isabella County, Michigan.

Site Location (NAD 27)

NL: 43° 34' 33"

WL: 84° 46' 29"



MUNN-REESE, INC.

Broadcast Engineering Consultants
Coldwater, MI 49036

W214BH.L
BLFT20040217ABW
Latitude: 43-35-46 N
Longitude: 084-45-55 W
ERP: 0.10 kW
Channel: 214
Frequency: 90.7 MHz
AMSL Height: 244.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model:

60 dBu Contour
Total Population: 33,884
Total Area: 99.86 sq. km

W214BH.P
Proposed Operation
Latitude: 43-34-33 N
Longitude: 084-46-29 W
ERP: 0.10 kW
Channel: 214
Frequency: 90.7 MHz
AMSL Height: 380.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model:

60 dBu Contour
Total Population: 39,560
Total Area: 244.16 sq. km

Exhibit 12.3 Present vs Proposed Contour Study

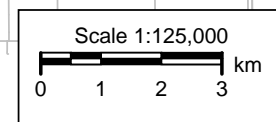
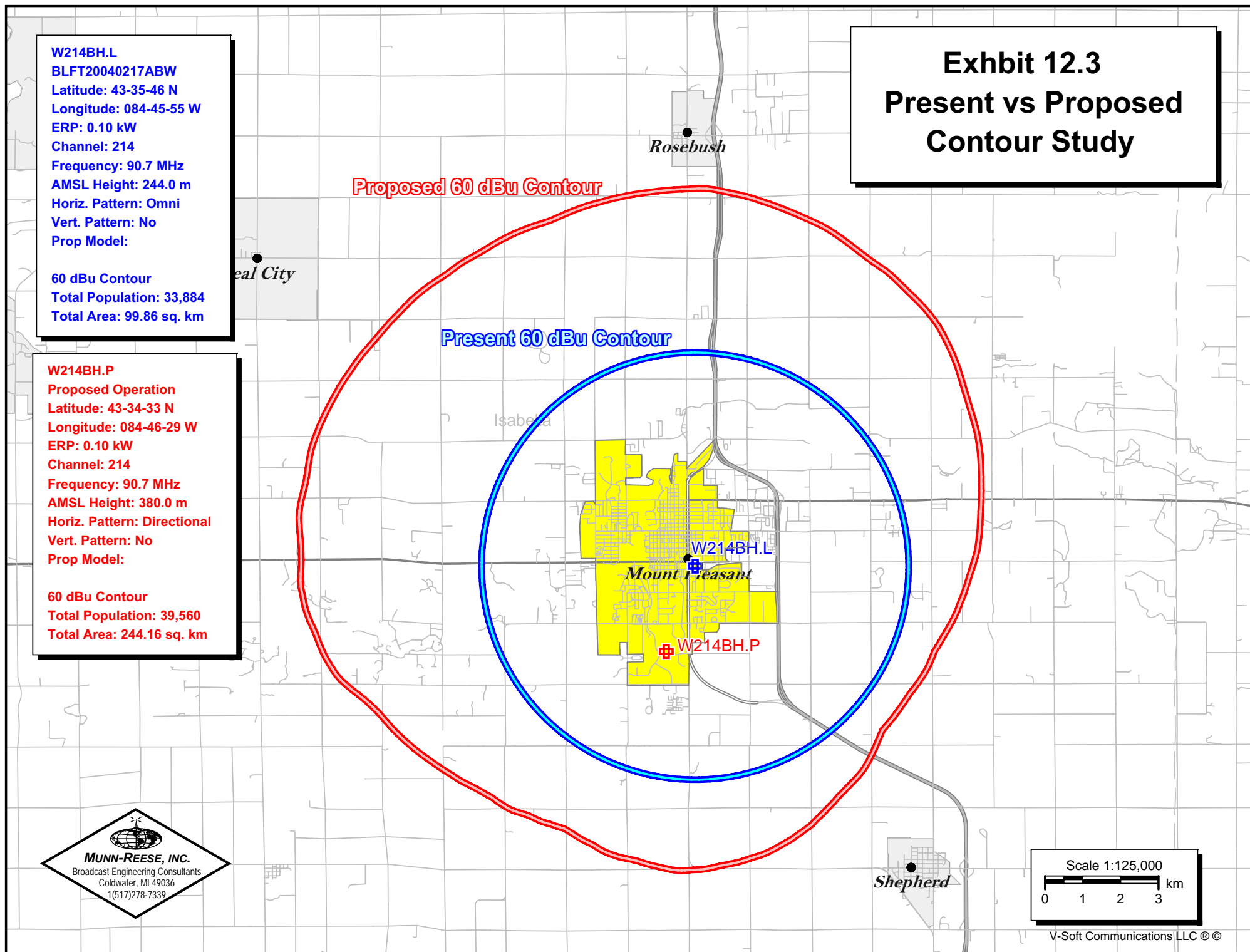


Exhibit 12.4 Proposed vs Primary Service Contour Study

W214BH.P
Proposed Operation
Latitude: 43-34-33 N
Longitude: 084-46-29 W
ERP: 0.10 kW
Channel: 214
Frequency: 90.7 MHz
AMSL Height: 380.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model:

WMHW-FM.L
BLED20070919ABY
Latitude: 43-34-33 N
Longitude: 084-46-29 W
ERP: 13.00 kW
Channel: 218
Frequency: 91.5 MHz
AMSL Height: 380.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model:

WMHW-FM.C
BPED20070905ACK
Latitude: 43-34-33 N
Longitude: 084-46-29 W
ERP: 9.10 kW
Channel: 218
Frequency: 91.5 MHz
AMSL Height: 404.5 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model:

Proposed 60 dBu Contour

Primary Licensed 60 dBu Contour

Primary Construction Permit 60 dBu Contour

Clare

Isabella

Midland

Mount Pleasant

W214BH.P
WMHW-FM.L
WMHW-FM.C

Montcalm

Gratiot

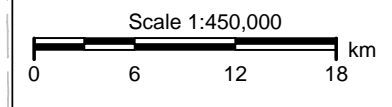


Exhibit 12.5

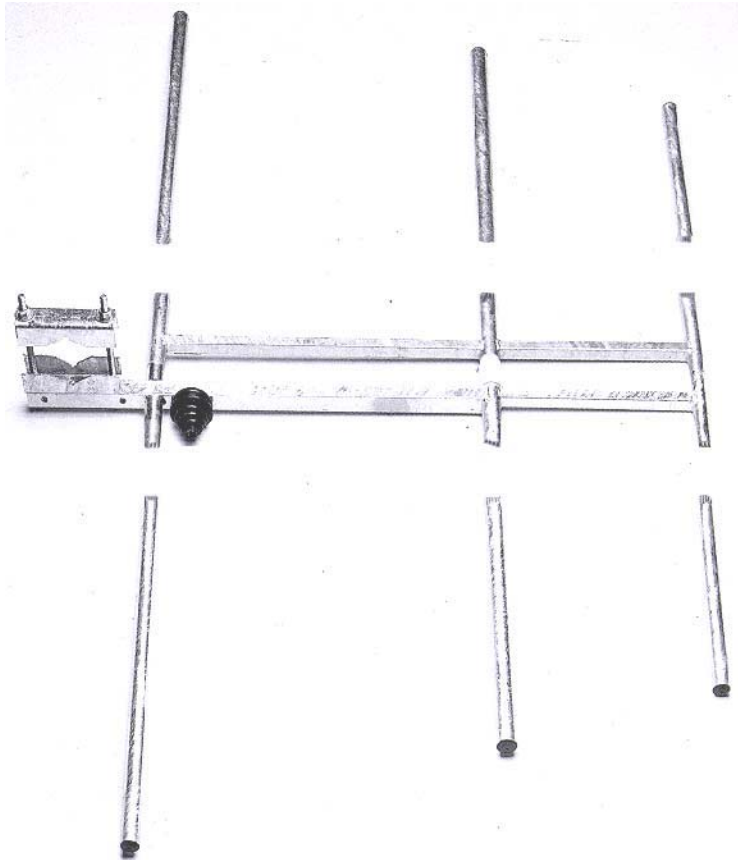
Tabulation of Proposed Allocation

Central Michigan University

REFERENCE											CH# 214D - 90.7 MHz, Pwr= 0.1 kW, HAAT= 139.4 M, COR= 380 M		DISPLAY DATES	
43 34 33.0 N.											Average Protected F(50-50)= 11.99 km		DATA 09-12-09	
84 46 29.0 W.											Standard Directional		SEARCH 09-18-09	
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)				
214D	W214BH	LIC	_C_	18.6	2.4	43 35 46.0	0.100	18.6	5.6	-28.2*	-43.3*			
Mount Pleasant		MI		198.6	BLFT20040217ABW	84 45 55.0		244	Great Lakes Community Broa					
213B	WKAR-FM	LIC	_EY	163.1	101.4	42 42 08.0	87.000	101.5	69.7	-6.0*<	23.4			
East Lansing		MI		343.4	BLED19861204KC	84 24 51.0	273	541	Michigan State University					
Grandfathered at 87. kw @ 273 M														
214A	WKKM	CP	_CX	357.7	49.1	44 01 02.0	0.100	22.2	6.6	14.8	1.7			
Harrison		MI		177.7	BNPED20071012AHH	84 47 56.0	30	366	The Country King, Incorpor					
7/29/2008: Accepted on channel 214A by Industry Canada in 7/14/2008 letter. Note: not specially negotia														
ted.														
215A	WQAC	LIC	_CN	159.5	23.3	43 22 46.0	0.100	8.0	5.6	9.4	9.4			
Alma		MI		339.6	BLED19930402KA	84 40 25.0	20	250	Alma College					
215A	WTRK	LIC	_CX	91.1	64.1	43 33 42.0	0.430	21.7	14.4	35.4	39.7			
Freeland		MI		271.7	BLED20061113AFY	83 58 52.0	99	289	Educational Media Foundati					
215B1	WSLI	APP	DVX	219.0	69.9	43 05 12.0	11.500	27.1	18.5	37.1	43.5			
Belding		MI		38.7	BPED20080711AEN	85 18 59.0	73	330	Smile Fm					
215B1	WSLI	APP	DVX	219.0	69.9	43 05 12.0	11.500	27.1	18.5	37.1	43.5			
Belding		MI		38.7	BPED20080711AEN	85 18 59.0	73	330	Smile Fm					
215B1	WSLI	APP	DVX	219.0	69.9	43 05 12.0	11.500	27.1	18.5	37.1	43.5			
Belding		MI		38.7	BPED20080711AEN	85 18 59.0	73	330	Smile Fm					
211C2	WUCX-FM	LIC	_CN	91.3	87.7	43 33 10.0	30.000	5.2	47.5	75.5	40.0			
Bay City		MI		272.1	BLED19891010KB	83 41 24.0	146	328	Central Michigan Universit					
212C1	WBLV	LIC	_CN	268.8	102.5	43 33 00.0	100.000	7.6	61.0	85.9	41.0			
Twin Lake		MI		88.0	BLED19901002KB	86 02 34.0	185	427	Blue Lake Fine Arts Camp					
215A	WSLI	LIC	_VX	219.0	69.9	43 05 12.0	2.900	19.3	13.1	44.9	48.9			
Belding		MI		38.7	BLED20080714AFO	85 18 59.0	30	287	Smile Fm					
214B	WNFR	LIC	DCX	103.5	181.8	43 10 27.0	42.000	130.4	47.1	45.0	113.3			
Sandusky		MI		285.0	BLED20050303ACY	82 36 01.0	150	364	Ross Bible Church					
216C1	WOLW	LIC	DEN	316.3	108.3	44 16 33.0	50.000	5.9	52.0	91.1	55.6			
Cadillac		MI		135.7	BLED19880502KC	85 42 49.0	213	560	Northern Christian Radio,					
217A	WOES	LIC	DHN	151.9	66.8	43 02 44.0	0.550	0.5	7.2	60.4	59.5			
Ovid-elsie		MI		332.1	BLED19810917AB	84 23 14.0	52	276	Ovid-elsie Area Schools					
267B	WBFX	LIC	_CN	218.6	75.9	43 02 28.0	50.000	0.0	0.0	14.5R	61.4M			
Grand Rapids		MI		38.2	BLH5400	85 21 28.0	128	378	Cc Licenses, Llc					
213C	WPHN	LIC	_CN	15.4	180.3	45 08 17.0	100.000	103.7	71.2	64.6	91.3			
Gaylord		MI		195.9	BLED19850419LP	84 09 44.0	305	579	Northern Christian Radio,					
217A	WCHW-FM	LIC	_HN	88.6	72.7	43 35 19.0	0.110	0.7	6.1	64.8	66.4			
Bay City		MI		269.2	BLED19820112AC	83 52 28.0	38	219	School District, Bay City					

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.

Exhibit 12.6 - Reprint of Directional Antenna Data from Antenna Manufacturer (Actual DA Pattern Rotated to 340°T)



NICOM
BKY3/P
Medium Power
Portable
Broadband FM
Directional Antenna
Antena Portátil
Direccional
de FM Banda Ancha

This broadband dipole antenna constructed of stainless steel is designed to last a long time in any weather condition. Because of its sturdy construction it can support up to 2 kw of input power with the appropriate connector. Since it has a wide angle of radiation it is strongly recommended for omni-directional arrays. Due to the fact that it is easily disassembled and reassembled, it can be placed in a compact container making it very portable and

inexpensive to ship.

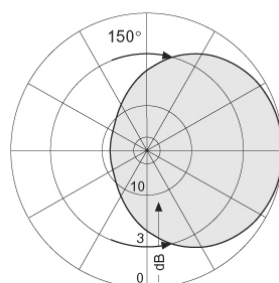
Esta antena dipolo de banda ancha, fabricada de acero inoxidable fue concebida para ser duradera en cualquier condición de clima. Debido a su robusta construcción puede soportar hasta 2 kw de potencia de entrada con el conector apropiado. Esta antena es recomendada para formaciones omnidireccionales ya que tiene un gran ángulo de irradiación. Dado al hecho que es fácil de armar y desarmar esta antena puede ser enviada en un contenedor muy compacto rendiendola portátil y económica para envíos.

TECHNICAL SPECIFICATIONS

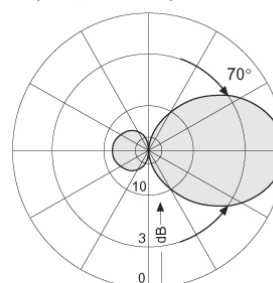
Antenna type	3 element directional antenna
Frequency range	87.5 - 108 MHz
Bandwidth	20 MHz
Impedance	50 Ohms
Connectors	N type (1 kw) - EIA 7/8 (2 kw)
Power rating	2000 Watts max.
VSWR	< 1.2 max.
Polarization	vertical or horizontal
Gain	4.5 dB (referred to half-wave dipole)
H plane	150 degrees
V plane	70 degrees

Front-to-back ratio	18 dB
Lightning protection	all parts grounded
Max wind velocity	130 mph (208 km/h)
Wind load	48.4 Lbs (22 kg)
Wind surface	2.0 ft ² (0.19 m ²)
Materials (external)	stainless steel
Mounting	from 2" to 4"
Weight	20 Lbs (9 kg)
Dimensions	50"×72"×3" (1250×1800×60mm)
Packing	53"×19"×4" (1300×480×100mm)

Radiation Patterns (at mid-band)



in H-plane
Horizontal Radiation Pattern



in E-plane
Vertical Radiation Pattern

Exhibit 12.6 - Reprint of Directional Antenna Data from Antenna Manufacturer (Actual DA Pattern Rotated to 340°T)

TX station: BKY/3
Frequency: 98.00 MHz

Site name:

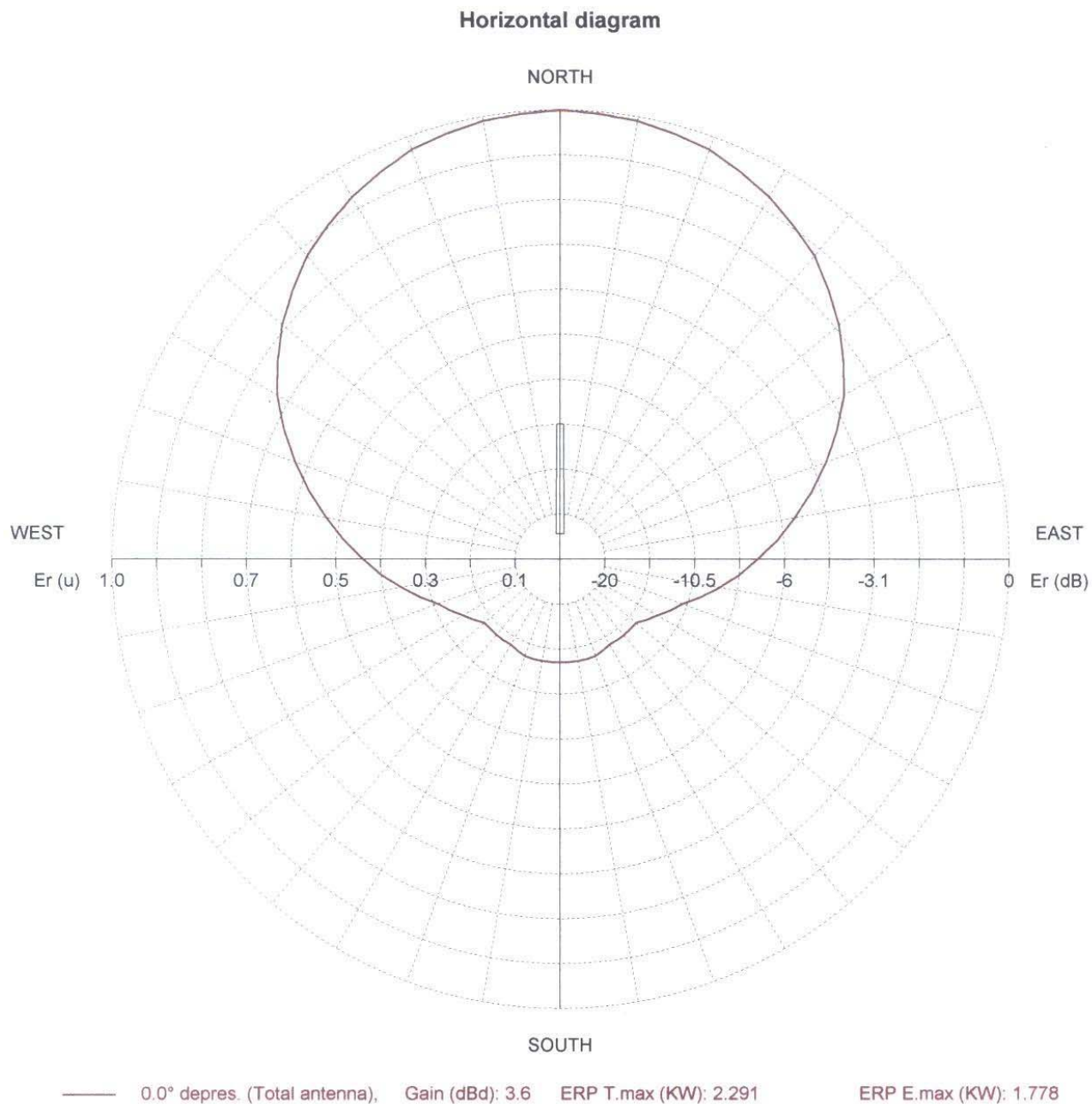


Exhibit 12.6 - Reprint of Directional Antenna Data from Antenna Manufacturer (Actual DA Pattern Rotated to 340°T)

TX station: BKY/3

Site name:

Frequency: 98.00 MHz

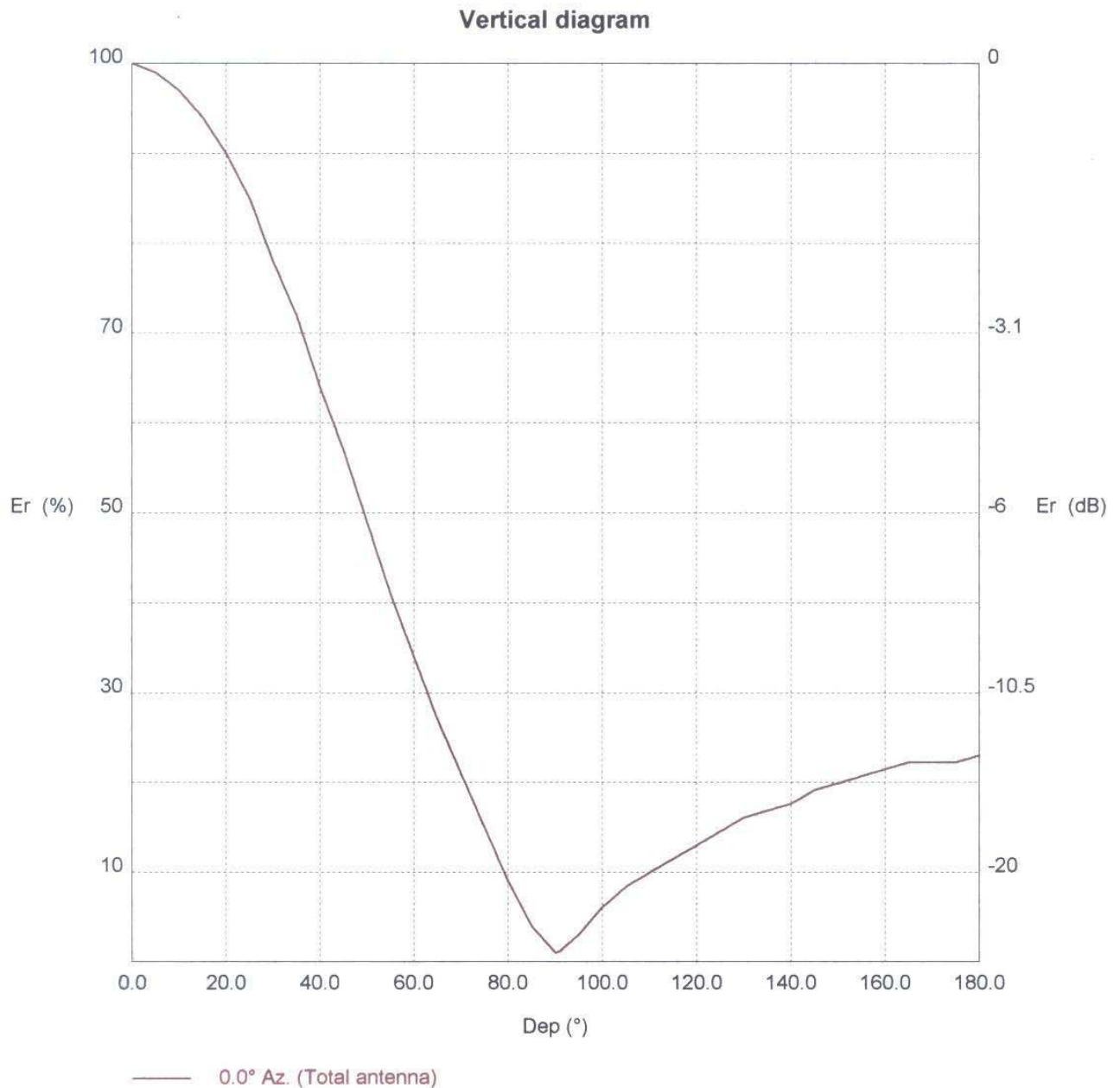


Exhibit 12.6 - Reprint of Directional Antenna Data from Antenna Manufacturer (Actual DA Pattern Rotated to 340°T)

TX station: BKY/3

Site name:

Frequency: 98.00 MHz

Vertical diagram at an azimuth of 0° degrees

Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)
0.0	100.0	1.78	60.0	34.0	0.21	120.0	13.0	0.03
2.0	99.6	1.76	62.0	31.2	0.17	122.0	13.6	0.03
4.0	99.2	1.75	64.0	28.4	0.14	124.0	14.3	0.04
6.0	98.6	1.73	66.0	25.8	0.12	126.0	14.9	0.04
8.0	97.8	1.70	68.0	23.4	0.10	128.0	15.5	0.04
10.0	97.0	1.67	70.0	21.0	0.08	130.0	16.1	0.05
12.0	95.8	1.63	72.0	18.6	0.06	132.0	16.4	0.05
14.0	94.6	1.59	74.0	16.2	0.05	134.0	16.7	0.05
16.0	93.2	1.54	76.0	13.8	0.03	136.0	17.0	0.05
18.0	91.6	1.49	78.0	11.4	0.02	138.0	17.3	0.05
20.0	90.0	1.44	80.0	9.0	0.01	140.0	17.6	0.06
22.0	88.0	1.38	82.0	7.0	0.01	142.0	18.2	0.06
24.0	86.0	1.32	84.0	5.0	0.00	144.0	18.9	0.06
26.0	83.6	1.24	86.0	3.4	0.00	146.0	19.3	0.07
28.0	80.8	1.16	88.0	2.2	0.00	148.0	19.6	0.07
30.0	78.0	1.08	90.0	1.0	0.00	150.0	19.9	0.07
32.0	75.6	1.02	92.0	1.7	0.00	152.0	20.2	0.07
34.0	73.2	0.95	94.0	2.6	0.00	154.0	20.5	0.08
36.0	70.4	0.88	96.0	3.7	0.00	156.0	20.9	0.08
38.0	67.2	0.80	98.0	4.9	0.00	158.0	21.2	0.08
40.0	64.0	0.73	100.0	6.1	0.01	160.0	21.5	0.08
42.0	61.2	0.67	102.0	7.1	0.01	162.0	21.8	0.08
44.0	58.4	0.61	104.0	8.0	0.01	164.0	22.1	0.09
46.0	55.4	0.55	106.0	8.7	0.01	166.0	22.2	0.09
48.0	52.2	0.48	108.0	9.4	0.02	168.0	22.2	0.09
50.0	49.0	0.43	110.0	10.0	0.02	170.0	22.2	0.09
52.0	45.8	0.37	112.0	10.6	0.02	172.0	22.2	0.09
54.0	42.6	0.32	114.0	11.2	0.02	174.0	22.2	0.09
56.0	39.6	0.28	116.0	11.8	0.02	176.0	22.4	0.09
58.0	36.8	0.24	118.0	12.4	0.03	178.0	22.7	0.09

TX station: BKY/3

Site name:

Frequency: 98.00 MHz

Horizontal diagram at 0.0° depres. (Total antenna)

Az (°)	Er (%)	ERP (KW)	Az (°)	Er (%)	ERP (KW)	Az (°)	Er (%)	ERP (KW)
0.0	100.0	1.78	120.0	25.0	0.11	240.0	25.0	0.11
10.0	99.0	1.74	130.0	22.0	0.09	250.0	29.0	0.15
20.0	97.0	1.67	140.0	22.0	0.09	260.0	36.0	0.23
30.0	93.0	1.54	150.0	22.0	0.09	270.0	44.0	0.34
40.0	88.0	1.38	160.0	23.0	0.09	280.0	53.0	0.50
50.0	81.0	1.17	170.0	23.0	0.09	290.0	63.0	0.71
60.0	73.0	0.95	180.0	23.0	0.09	300.0	73.0	0.95
70.0	63.0	0.71	190.0	23.0	0.09	310.0	81.0	1.17
80.0	53.0	0.50	200.0	23.0	0.09	320.0	88.0	1.38
90.0	44.0	0.34	210.0	22.0	0.09	330.0	93.0	1.54
100.0	36.0	0.23	220.0	22.0	0.09	340.0	97.0	1.67
110.0	29.0	0.15	230.0	22.0	0.09	350.0	99.0	1.74



Exhibit 12.7 - Copy of TV6 Letter of Concurrence

STATEMENT OF PERMISSION

TO: FCC AUDIO BUREAU

This is to indicate that WLNS-TV has no objection to the operation of Translator W214BH by Central Michigan University. The translator will be located on the Central Michigan University campus and is operating at 90.7 mHz.

We understand that this translator has been operated for several years by another owner. Central Michigan University has agreed to rectify any interference this continued operation may cause to the protected signal of WLNS-TV.

We agree that this Statement of Permission can be filed by Central Michigan University's communications attorney with the FCC as part of its applications to acquire and operate this translator.

Don Carmichael. General Manager
Young Broadcasting of Lansing

Date

