

APPLICATION FOR CONSTRUCTION PERMIT

PROPOSED NEW LOW POWER FM STATION
NEW BUFFALO, MICHIGAN
107.9 MHz / 0.100 kW ERP / ND

NEW BUFFALO AREA SCHOOLS

NOVEMBER, 2013

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JEREMY RUCK & ASSOCIATES, INC.

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11.4.2013

APPLICATION FOR CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **New Buffalo Area Schools** ("New Buffalo"), and are in support of their application for construction permit for a new low power FM station to serve New Buffalo, Michigan. This application is being submitted during the 2013 LPFM filing window.

The proposed facility would operate on FM channel 300 with an effective radiated power of 0.100 kW. A non-directional antenna is proposed for use by the facility. The proposed center of radiation for the facility is 30.0 meters AGL. When combined with the site elevation of 203.6 meters AMSL, this yields a center of radiation of 233.6 meters AMSL.

A study of the proposed facility was performed utilizing the Commission's *Towair* utility. That study did not report the existence of any airports within 8 kilometers of the proposed site location. As a result neither registration of the structure nor notification to the Federal Aviation Administration of the proposed construction is required.

The proposed facility would be in compliance with the provisions of Section 73.811 of the Commission's Rules. Exhibit E-1 illustrates the proposed site location, along with the calculated 60 dBu service contour, 34 dBu F(50,10) contour, 3 kilometer site radius, and 16 kilometer site radius. As this map demonstrates, the proposed site location lies in proximity to the shoreline of Lake Michigan.

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Due to this site location, the entire 3 to 16 kilometer segment of the 0, 270, and 315 degree true radials lies over Lake Michigan. In addition, as demonstrated, the 34 dBu contour does not encompass land area of the United States along these radials. As a result, only the 45, 90, 135, 180, and 225 degree true radials are to be included in the calculation of the center of radiation above average terrain. The table below details the average elevation and height above average terrain along the eight cardinal radials, and indicates the omission of the above three referenced radials per Section 73.313(d) of the Commission's Rules. This table demonstrates that the center of radiation does not exceed 30 meters above average terrain, and as thus a 100 Watt ERP is to be specified.

The proposed facility would be in compliance with the provisions of Section 73.811 of the Commission's Rules. The following table lists the average elevation values along the eight cardinal radials determined in accordance with the provisions of Sections 73.813 and 73.313 of the Commission's Rules as discussed in the preceding paragraph.¹ As this table demonstrates, the proposed facility would operate at the LP100 reference parameters of 100 Watts ERP at a center of radiation of 30 meters above average terrain.

Azimuth	Average Elev. (m)	COR HAAT (m)
0	Omitted	Omitted
45	194.2	39.4
90	197.3	36.3
135	219.9	13.7
180	218.5	15.1
225	190.6	43.0
270	Omitted	Omitted
315	Omitted	Omitted
Average:	204.1	29.5

¹ Terrain elevations were acquired through a sample of the FCC 30-second linearly interpolated terrain database.

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Exhibit E-2 is a single channel spacing study for the proposed facility. This study demonstrates that the proposed facility would comply with all spacing requirements under Section 73.807 of the Commission's Rules.

The provisions of Section 73.827(a) of the Commission's Rules are not applicable to the proposed facility. The Commission's FM database lists twenty (20) records within a 50 kilometer radius of the proposed LPFM facility. These translator records and their primary stations are listed in the following table. As this table demonstrates, none of the translators receives an off-air signal within three channels of the proposed LPFM facility.

Callsign	City of License	Facility ID	Pri. Station	City of License	Facility ID	Channel
1563384	Benton Harbor, MI	142079	WUFN(FM)	Albion, MI	20630	244 Off-Air
1564933	Benton Harbor, MI	156712	WOFR(FM)	Schoolcraft, MI	91642	208 Off-Air
1566879	Benton Harbor, MI	142079	WUFN(FM)	Albion, MI	20630	244 Off-Air
1569872	Benton Harbor, MI	142079	WUFN(FM)	Albion, MI	20630	244 Off-Air
1572132	Benton Harbor, MI	156712	WOFR(FM)	Schoolcraft, MI	91642	208 Off-Air
W203AJ	Michigan City, IN	1618	WAFR(FM)	Tupelo, MS	1592	202 SAT
W212CL	Benton Harbor, MI	78882	WPCS(FM)	Pensacola, FL	52230	208 SAT
W216BX	Benton Harbor, MI	92626	KAWZ(FM)	Twin Falls, ID	8414	210 SAT
W223AU	South Bend, IN	140817	WHLP(FM)	Hanna, ID	91345	210 Off-Air
W236BD	Michigan City, IN	143871	WFRN-FM	Elkhart, IN	53639	284 Off-Air
W241AD	South Bend, IN	79264	WSBT(AM)	South Bend, IN	73985	OTHER
W243AJ	Mishawaka, IN	78392	WFRN-FM	Elkhart, IN	53639	284 Off-Air
W248AP	Chesterton, IN	143899	WFRN-FM	Elkhart, IN	53639	284 Off-Air
W262AU	Granger, IN	152865	WFRN-FM	Elkhart, IN	53639	284 Off-Air
W266BF	South Bend, IN	147678	WFRN-FM	Elkhart, IN	53639	284 Off-Air
W272BZ	Portage, IN	143915	WFRN-FM	Elkhart, IN	53639	284 Off-Air
W273BM	Benton Harbor, MI	145269	WFRN-FM	Elkhart, IN	53639	284 Off-Air
W294BA	Valparaiso, IN	143860	WFRN-FM	Elkhart, IN	53639	284 Off-Air
W295AF	La Porte, IN	85655	WJCH(FM)	Joliet, IL	20847	220 Off-Air
W300AL	Mishawaka, IN	81894	WQKO(FM)	Howe, IN	39886	220

The provisions of Section 73.825 of the Commission's Rules are not applicable to the proposed facility. The proposed LPFM facility would operate on FM channel 300. This is not one of the channels covered under the referenced section of the Commission's Rules.

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The proposed facility would not constitute a significant environmental impact, and is exempt from environmental processing. The proposed facility would not utilize a site described in Section 1.1307(a) of the Commission's Rules. The proposed site is located on the campus of New Buffalo Middle School and New Buffalo High School. This location is not within a wilderness area or wildlife preserve.

The proposed construction would not affect the habitat of any endangered or threatened species identified within Berrien County, Michigan. In addition, no location listed on the National Register of Historic Places, or eligible for listing, is in the vicinity of the proposed construction. Therefore, the proposed structure would not impact any such place. In addition, no Indian religious sites are located within the vicinity of the proposed structure.

The proposed structure would be a small footprint tower, and as such would not require any significant change in surface features. The site would not affect any wetland, or be located within a flood plain. Due to the height of the structure, and location of any aircraft landing areas in the vicinity, white obstruction lighting would not be required for the supporting structure.

The proposed facility would not constitute an RF exposure hazard to persons in the vicinity of the site. Under a worst-case scenario, the power density at two meters above ground level calculated by the equations in Appendix A of *OET Bulletin 65* is $8.52 \mu\text{W}/\text{cm}^2$. This value is considerably less than the upper limit permissible under the uncontrolled environment condition of the safety standard.

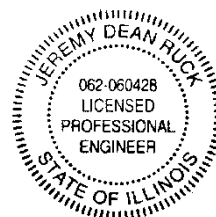
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New Buffalo certifies it will coordinate with all future users of the site to ensure that workers and other personnel having access are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Such coordination will include, but is not necessarily limited to, a reduction in transmitter power operation, or cessation of operation.

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, 2015

Jeremy D. Ruck, PE
November 4, 2013

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NBAS

Latitude: 41-47-46.50 N
Longitude: 086-43-41.30 W
ERP: 0.10 kW
Channel: 300
Frequency: 107.9 MHz
AMSL Height: 233.6 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

16 km Site Radius

3 km Site Radius

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34 dBu F(50,10) Contour

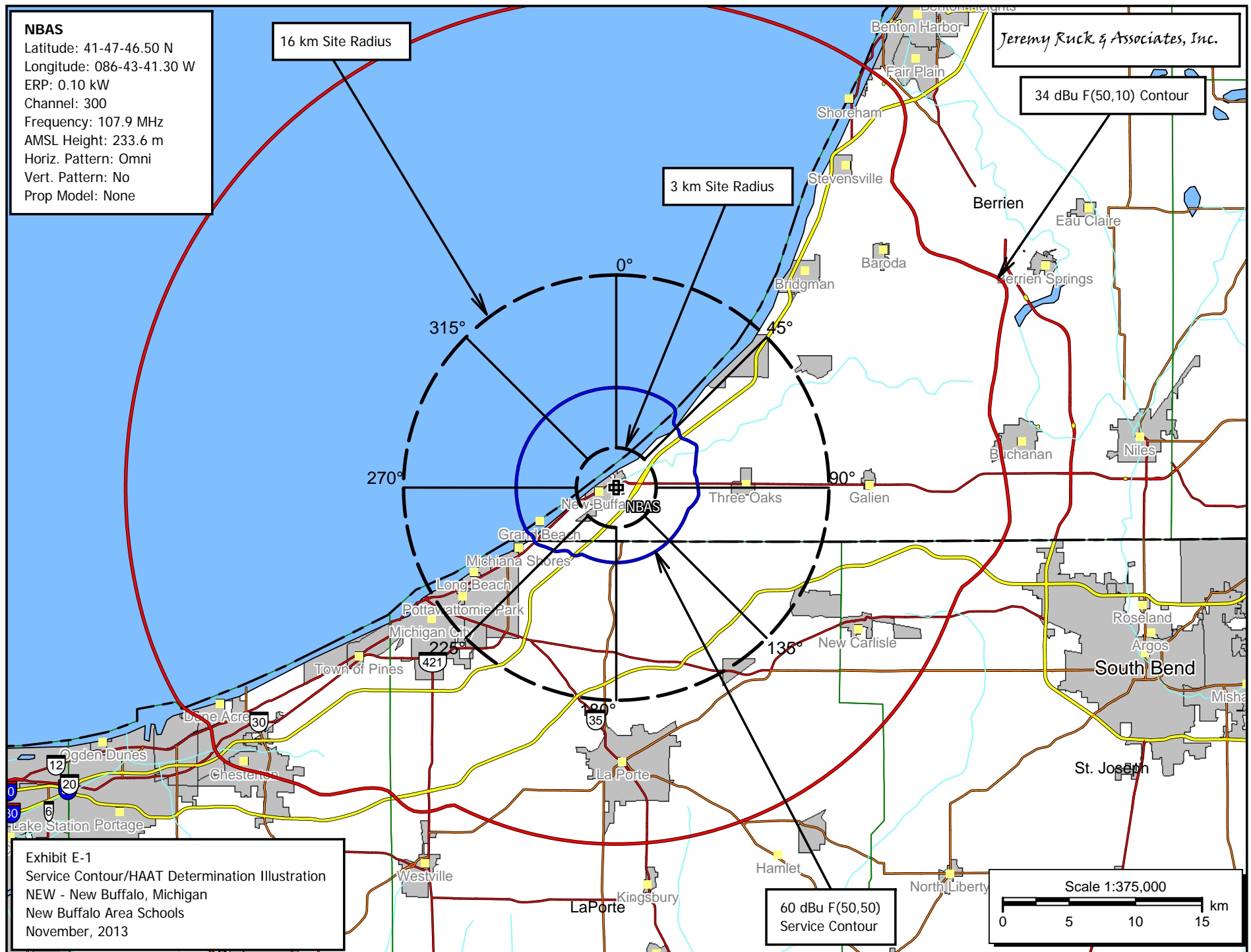


Exhibit E-1
Service Contour/HAAT Determination Illustration
NEW - New Buffalo, Michigan
New Buffalo Area Schools
November, 2013

Scale 1:375,000

0 5 10 15 km

60 dBu F(50,50)
Service Contour

Jeremy Ruck & Associates, Inc.
Consulting Engineers - Canton, Illinois
Exhibit E-2 - Single Channel Spacing Study
NEW - New Buffalo, Michigan

REFERENCE		DISPLAY DATES
41 47 46.5 N.	CLASS = L1 Int = L1	DATA 10-31-13
86 43 41.3 W.	Current Spacings to 2nd Adj.	SEARCH 11-04-13
----- Channel 300 - 107.9 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin
WLEY-FM	LIC-D 300B	Aurora	IL 278.3	112.70	111.5	1.2
WGCI-FM	LIC 298B	Chicago	IL 277.3	75.92	66.5	9.4
W300AL	LIC 300D	Mishawaka	IN 114.2	48.62	31.5	17.1
WRKR	LIC 299B	Portage	MI 71.7	120.90	96.5	24.4

Reference station has protected zone issue:
All separation margins include rounding