

**ENGINEERING REPORT**  
**FM Translator Minor**  
**Construction Permit Application**

for

**W237BW (Formerly W236BK) - Forest Hills, MI**  
**Pending License No. BLFT-20110217AAU**

Minor Site Change, Frequency Change,  
and Change in Cities of License to  
CH235D – Grand Rapids, MI

**March, 2011**

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(Exhibit numbering is in response to FCC Online Form 349, Section III-A)

## **Discussion**

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This firm has been retained to prepare the required engineering report in support of a minor construction permit application for FM translator W237BW (formerly W236BK) - Forest Hills, MI, Pending License No. BLFT-20110217AAU. W237BW presently operates on 95.3 MHz with 0.250 kW of horizontal only directional power with an antenna COR of 201 meters AMSL. A minor frequency and site change is requested with a new COR AMSL height and power. Operation on CH235D with 250 watts ERP at a COR of 311 meters AMSL is requested. The facility will operate with a circularly polarized directional antenna. The translator will rebroadcast new AM station WYGR(AM), Wyoming, MI, 1530 kHz, Facility ID No. 74248.

The proposed facility will be mounted on existing ASR tower 1008564. A copy of the existing Antenna Structure Registration has been included in **Exhibit 13.1**. A copy of the vertical antenna system has been included in **Exhibit 13.2**. As this proposal will not increase the overall tower height, it is believed the FAA need not be notified.

It has been determined the translator may be used in the area without interference to any existing FM broadcast station or facility with the exception of WTNR(FM); CH233B - Holland, MI and W237CZ; CH237D – Grand Rapids, MI. General allocation details are found in **Exhibit 13.5**. A §74.1204(d) second and third adjacent channel given interference waivers is requested toward WTNR(FM) and W237CZ as included in **Exhibit 13.7**. There is one facility close enough to merit further protection showings. An FMCommander™ map and tabulation of contours toward WMMQ(FM) – East Lansing, MI has been included in **Exhibit 13.6**. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

The applicant would like to note the use of the USGS 03 second terrain database for all allocation, contour and HAAT calculations contained here-in.

The translator site and proposed 60 dBu contour lie inside of the WYGR(AM) 2 mV/m daytime contour and within a 25 mile radius from the AM site. A map of the proposed service area in relation to the primary AM station and 2 mV/m AM service contour has been included in **Exhibit 13.4**.

Regarding protection of international concerns, the facility is and will remain within 320 km of the common border between the United States and Canada. As noted in **Exhibit 13.5**, all Canadian concerns have been fully protected. In addition, the application certifies that the proposed 34 dBu F(50:10) contour will not enter Canadian soil. A copy of the 34 dBu F(50:10) contour will be supplied upon request.

The proposed operating parameters have been changed from the licensed values, however the proposed service contour serves a portion of the present service area as seen in **Exhibit 13.3**.

## Discussion (continued)

**RADIATION PROTECTION:** The Commission requires an engineering study regarding compliance with the guidelines for human protection from radiofrequency radiation. This report section is in response to that provision of the Rules. The current Federal Communications Commission guidelines for RF radiation protection are set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01).

The FM Broadcast facility proposed in this application will not produce human exposure to radiofrequency radiation in excess of the applicable safety standards specified in §1.1310 of the Commission's rules. ***Exhibit 17.1*** provides the details of the study that was made to demonstrate compliance. The facility is properly marked with signs, and entry is restricted by means of fencing with locked doors and/or gates. Any other means as may be required to protect employees and the general public will be employed.

***In the event work would be required in proximity to the antenna such that the person or persons working in the area would be potentially exposed to fields in excess of the guidelines set forth in OET Bulletin No. 65 (Edition 97-01), the transmitter power will be reduced or the station will cease operation during the critical period.***

**DISTANCES TO CONTOURS:** The following tabulation of the distances to the proposed service contours results from calculations performed in accordance with §73.313(d) and §73.333 Figure 1 utilizing the USGS 03 terrain database.

N. Lat. = 425713.0    W. Lng. = 854155.0						
HAAT and Distance to Contour,						
FCC, FM 2-10 Mi, 51 pts Method - USGS 03 SEC						
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	233.3	77.7	0.2500	-6.02	1.000	11.42
030	200.6	110.4	0.2500	-6.02	1.000	13.50
060	228.4	82.6	0.1584	-8.00	0.796	10.53
090	230.4	80.6	0.0398	-14.00	0.399	7.30
120	224.0	87.0	0.0251	-16.00	0.317	6.80
150	216.7	94.3	0.0795	-11.00	0.564	9.48
180	210.8	100.2	0.2500	-6.02	1.000	12.88
210	203.7	107.3	0.2500	-6.02	1.000	13.32
240	192.6	118.4	0.2500	-6.02	1.000	13.98
270	209.6	101.4	0.0999	-10.01	0.632	10.38
300	218.5	92.5	0.0999	-10.01	0.632	9.93
330	230.1	80.9	0.2500	-6.02	1.000	11.63
Ave El= 216.55 M    HAAT= 94.45 M    AMSL= 311						