

## ENGINEERING STATEMENT

### THE BOARD OF EDUCATION OF SOUTHFIELD APPLICATION TO COVER CONSTRUCTION PERMIT BPED-20040608AAF WSHJ-FM CHANNEL 202A - SOUTHFIELD, MICHIGAN

#### Background

This engineering statement describes the installation and discusses aspects of the application that require explanation.

#### Transmitter Site

The coordinates (NAD-27) of the proposed tower site are:

42-28-12 North Latitude  
83-15-52 West Longitude

The height of the antenna radiation center is 39 meters AGL, 237 meters AMSL and 21 meters height above average terrain (See Exhibit E1).

#### Predicted Interference Contours

#### Transmitter Output Power

ERP	0.105 kW	-9.789 dBk
ERI Antenna Gain		
ERI FM100-2 Two Bay Antenna		
Antenna Gain = 0.897		-0.472 dB
"N" Type End Connectors		-0.100 dB
82.0 meters of transmission line		
Andrew LDF5-50A		
1.13 dB/100m @ 88.0 MHz		-0.926 dB
"N" Type End Connectors		-0.100 dB
1.0 meter Jumper Cable with "N"/"N" Connectors		
Andrew 201124		<u>-0.090 dB</u>
<b>Transmitter output Power</b>	<b>0.155 kW</b>	<b>-8.101 dBk</b>

#### FAA Considerations

The applicant proposes a structure with an overall height of 44 meters above ground level (AGL). The structure is less than 200 feet (61 meters) AGL, is within the city limits of Southfield and shielded by surrounding structures. Therefore, no notification of the FAA is required pursuant to present Part 77 requirements and no antenna structure registration is required.

Obstruction lighting is not required.

### Environmental Considerations

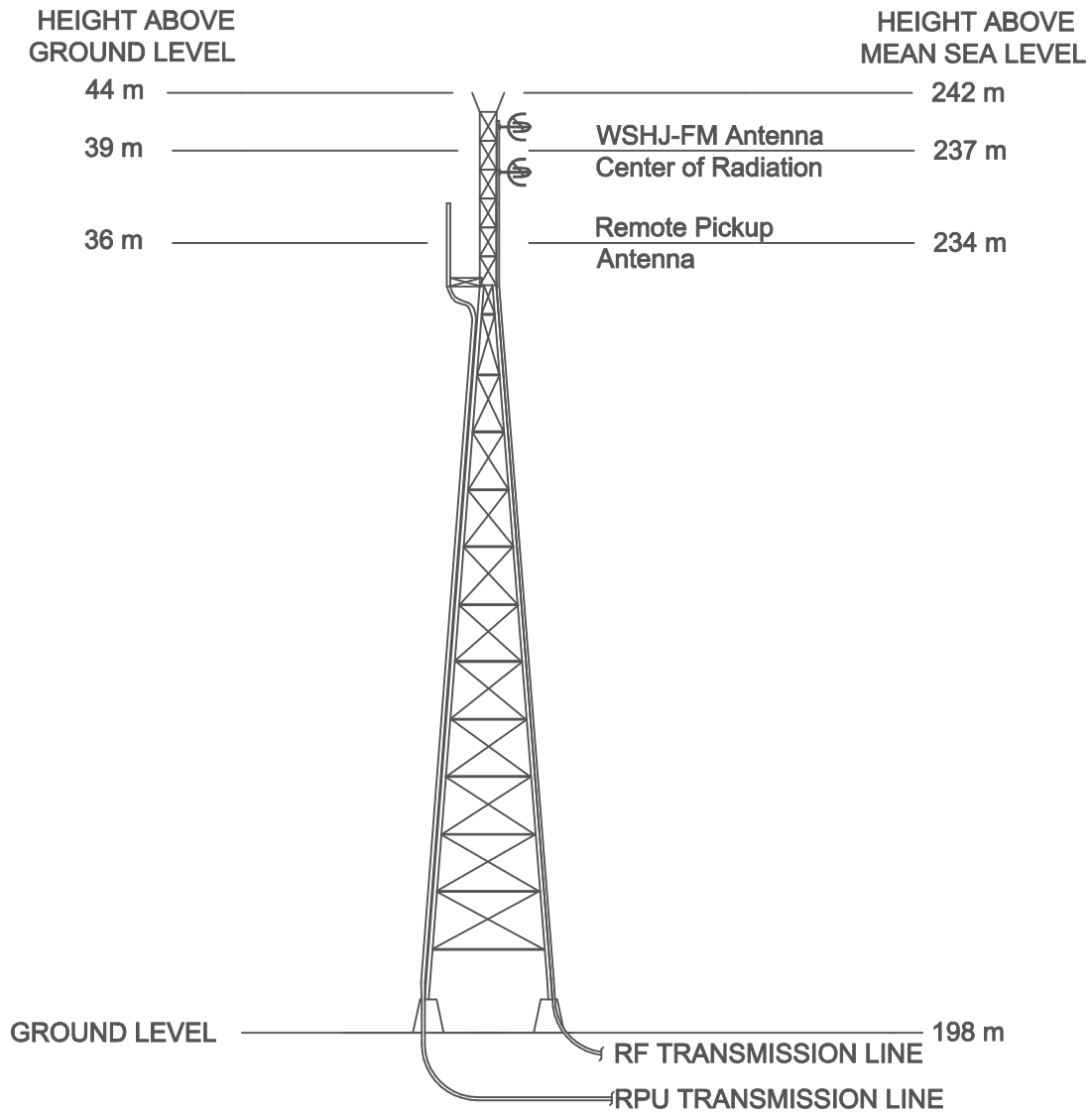
A grant of this application would be deemed to have no significant effect on the quality of the human environment. It is also excluded from environmental processing pursuant to the provision of Section 1.1307(b).

The relocation of the proposed facility involves the use of the antenna mounted on the side of an existing structure, which does not correspond to any of the types of facilities specified in Section 1.1307(a).

The power flux density at 2 meters above ground level is predicted to be less than 0.005 milliwatts per centimeter squared. This level is approximately 15 dB below the specified maximum permissible exposure (MPE) of 0.2 milliwatts per centimeter squared for general population/ uncontrolled space and approximately 22 dB below the MPE of 1.0 milliwatts per centimeter squared for worker/controlled space. Therefore, at ground level there is no potential for human exposure in spaces with general population/uncontrolled access and occupational/controlled worker access to exceed the FCC MPE limits. There are no nearby terrain features or structures having public or worker access which would exceed the MPE in the main beam of the antenna.

The base of the tower will be fenced to control worker and public access to the tower structure. There is, however, a potential for workers on the structure and in the vicinity of the antenna to be exposed to high RFR levels when the station is in operation. Worker exposure will be mitigated through proper instruction and signage. When any worker will be in the vicinity of the antenna elements, the station will cease operation. Procedural policies will be instituted to prevent accidental energizing of the transmitter/antenna while a worker is on the structure in a hazardous area.

# WSHJ-FM SELF-SUPPORTING TOWER



**WSHJ-FM 88.3 MHz Southfield, MI  
TOWER CONFIGURATION  
5/29/2004**

## **EXHIBIT E-1**

**(NOT TO SCALE)**

**THE XMOD COMPANY**