



GPS SURVEY SYSTEMS • LAND SURVEYING • SUBDIVISION DESIGN
Mel Davis, RLS • Terry Wanic, PS

November 27, 2013

David Bolduc
WUPJ, Escanaba, MI

Antenna Site: Highway M69
LaBranche, MI

WUPJ (FM) Construction Permit file # BMPED-20130625ADH

SCOPE OF WORK

As a licensed professional in the state of Michigan, I have been selected to provide a service of staking and verifying the direction of a FM Antenna for WUPJ, Escanaba, MI. The antenna is to be pointed in a direction of 56 degrees Azimuth to True/Geodetic North per drawings (#1819D01) for WUPJ-FM, Escanaba.

EQUIPMENT: Trimble R6 GPS & Sokkia SET 4B total station.

PROCEDURE / CONDITIONS: Prior to installation of the antennas, a control base line, on a geodetic azimuth of 56°, was established using the Trimble R6 GPS at the existing tower site relative to the mounting positions for the new antennas per the construction drawings as provided. Once the antennas were installed, we returned to the site and verified the orientation of the antennas using the Sokkia total station by measurement from the established base line. Conditions were adequate to preform and verify antenna alignment.

CERTIFICATION

I certify that on November 14, 2013 I have located the azimuth to the best of my control and information provided from the base to the tip of the 3 foot +/- long antennas whose final position is on said date as follows:

Top antenna: Geodetic Azimuth $56^{\circ} \pm 1^{\circ}$

Intermediate antennas: Geodetic Azimuth $56^{\circ} \pm 1^{\circ}$

Bottom antenna: Geodetic Azimuth $56^{\circ} \pm 1^{\circ}$

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