

New\_LP  
Savannah, Georgia  
Application for New Low Power FM Station  
On Channel 274  
by  
Unitarian Universalist Church of Savannah, Inc.

Exhibit 11  
Interference Analysis

November 2013

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Declaration

I declare, under penalty of perjury, that I am a technical consultant to broadcasting and other communications systems, that I have over twenty-five years of experience in the engineering of broadcast and other communications systems, that I am familiar with the Federal Communications Commission's Rules found in the Code of Federal Regulations Title 47, that I am a Professional Engineer registered in North Carolina, that I have prepared or supervised the preparation of the attached Exhibit 11, Interference Analysis, for Unitarian Universalist Church of Savannah, Inc., and that all of the facts therein, except for facts of which the Federal Communications Commission may take official notice, are true to the best of my knowledge and belief.



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12 November 2013

### Narrative

This Exhibit supports an application for a new Low Power FM station in response to a filing window<sup>1</sup> for LPFM facilities. The application proposes operation on Channel 274 in Savannah, Georgia. Allocation details are provided in this exhibit

Figure 1 shows the proposed 60 dBu F(50,50) coverage area, the proposed studio location, and a 16.1 kilometer (10 mile) radius around the transmitter site. The eight radial Height Above Average Terrain is 53.4 meters. The equivalent Effective Radiated Power to produce a 5.6 kilometer distance to the 60 dBu F(50,50) contour is 0.031 kilowatts. That power level is used in interference analysis.

### Allocations

This application proposes service to Savannah, Georgia, on channel 274. An updated Table 1: Allocations is included in this exhibit with a list of the stations, construction permits, allocations, and applications studied. All facilities, including translator facilities as they existed on June 17, 2013<sup>2</sup>, are protected by this application, with the exception of facilities protected by the Undesired to Desired (U/D) method. Facilities protected by the U/D method are listed in Table 2.

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<sup>1</sup> *Public Notice, Media Bureau Announces Availability of the Revised FCC Form 318 and the Filing Procedures for October 15 – October 29, 2013 Low Power FM Filing Window*, DA 13-1385, released June 17, 2013.

<sup>2</sup> *Ibid*, fourth paragraph, which reads in part: “LPFM applications filed during this window must protect all FM, FM Translator, FM Booster and TV Channel 6 authorizations. LPFM applications also must protect pending broadcast applications in these services that were filed prior to the date of this Notice. Finally, LPFM applications must protect existing vacant FM allotments. “[Footnote omitted]

Table 1: Allocations

Allocation Study							
UUCS							
REFERENCE				CLASS = L1		DISPLAY DATES	
32 03 26.0 N.				Current		DATA 11-05-13	
81 08 47.0 W.				Spacings to 2nd Adj.		SEARCH 11-05-13	
----- Channel 274 - 102.7 MHz -----							
Call	Channel	Location		Azi	Dist	FCC	Margin
WGZO	LIC-N 276C3	Parris Island	SC	56.1	33.84	39.5	-5.7
	Protected by U/D study, see text and figures in this Exhibit.						
WPMX	LIC 275C3	Statesboro	GA	299.4	88.63	66.5	22.1
WYNR	LIC 273C1	Waycross	GA	218.2	126.96	99.5	27.5
WXLY	LIC 273C1	North Charleston	SC	55.1	149.34	99.5	49.8
-----							
All separation margins include rounding							

**Table 2: Facilities Protected by U/D Method**

Facility	WGZO Parris Island, South Carolina
Relationship	276 C3, second adjacent
Distance (km)	33.84
Bearing (degrees)	56.1
ERP (kW, on azimuth)	11.0
HAAT (m, on azimuth)	111.9
Ratio	40
Signal Strength (dBu)	60.3
Translator Signal Strength	100.3
Translator distance (km)	.371

**Undesired to Desired Method**

Protection to some facilities is provided through the use of Undesired to Desired Signal Strength Ratio (U/D) calculations. Table 2 lists the parameters studied. The proposed antenna is a Shively Labs 6812B-5 .75 five level .75 wavelength spaced omnidirectional antenna. Figure 2 is a plot of the antenna vertical elevation pattern.

The WGZO field strength calculated at ground level at the proposed New\_LP site is 60.3 dBu, using the FM Curves calculator on the FCC web site. For the translator interference contour, free space calculations are used. The corresponding 100.3 dBu field strength distance is .371 kilometers in the horizontal plane. The proposed antenna location is 54 meters above ground. As Figure 3 shows, the 100.3 dBu signal level will not reach the ground. At distances beyond 50 meters from the tower, it remains at least 19.6 meters (64 feet) above the ground. There are no structures in the potential interference area taller than 10 meters (33 feet).

Figure 4 is a topographic map of the transmitter site. Figure 5 is an aerial photograph of the site. There are no tall structures in the vicinity. Lines on the aerial photograph indicate distances to the closest structures at 54 meters, 108 meters, and 120 meters. There is no

population within the predicted interference area and therefore this facility is permitted under §73.807(e)(1).

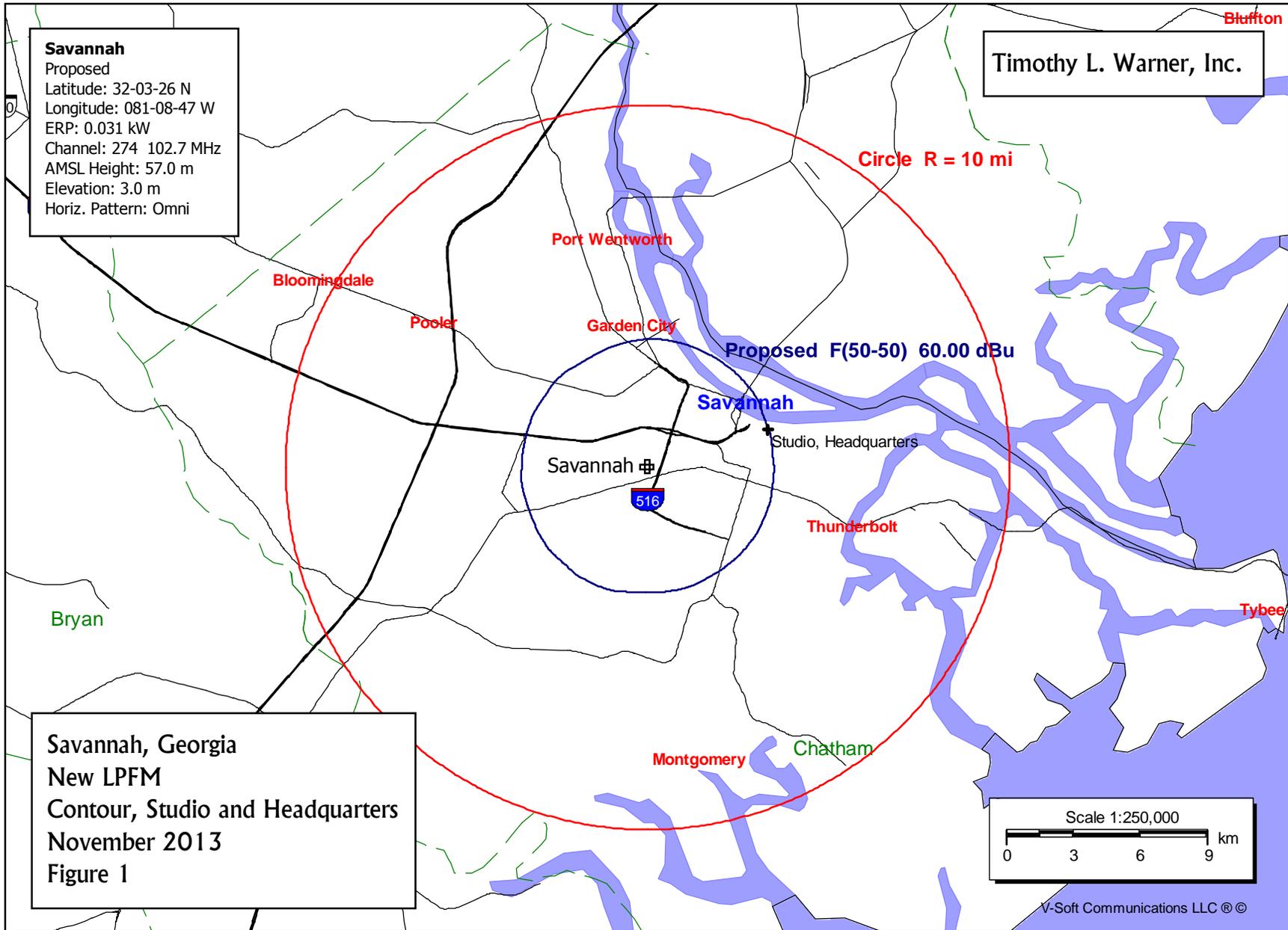
The applicant recognizes that the U/D method is only a tool for predicting likely interference. Should any actual interference be experienced, the applicant will cooperate fully in correcting the interference. Corrective steps may require changes in the transmitting antenna or other steps which would require Commission authorization, may require that the translator cease operation except for brief equipment tests, or may require filtering at the receivers which report interference.

#### Source of Data

Transmitter location, effective radiated power, directional antenna pattern, and elevation data are extracted from the Commission's CDBS. All contours for existing and proposed facilities are calculated using height above average terrain calculated at one degree horizontal increments.

The contours were evaluated using terrain extracted from the V-Soft Communications NED 03 terrain database. The NED 03 database is derived from the USGS National Elevation Data 30 meter terrain database.

All population data is from 2010 U.S. Census PL data files. Population is counted by considering the location of the centroid of each census block. The data for each block is counted if it falls within the area being counted.



**Savannah**  
 Proposed  
 Latitude: 32-03-26 N  
 Longitude: 081-08-47 W  
 ERP: 0.031 kW  
 Channel: 274 102.7 MHz  
 AMSL Height: 57.0 m  
 Elevation: 3.0 m  
 Horiz. Pattern: Omni

Timothy L. Warner, Inc.

Circle R = 10 mi

Proposed F(50-50) 60.00 dBu

Savannah

Studio, Headquarters

Savannah

516

Thunderbolt

Bloomingdale

Pooler

Port Wentworth

Garden City

Bryan

Tybee

Montgomery

Chatham

Savannah, Georgia  
 New LPFM  
 Contour, Studio and Headquarters  
 November 2013  
 Figure 1

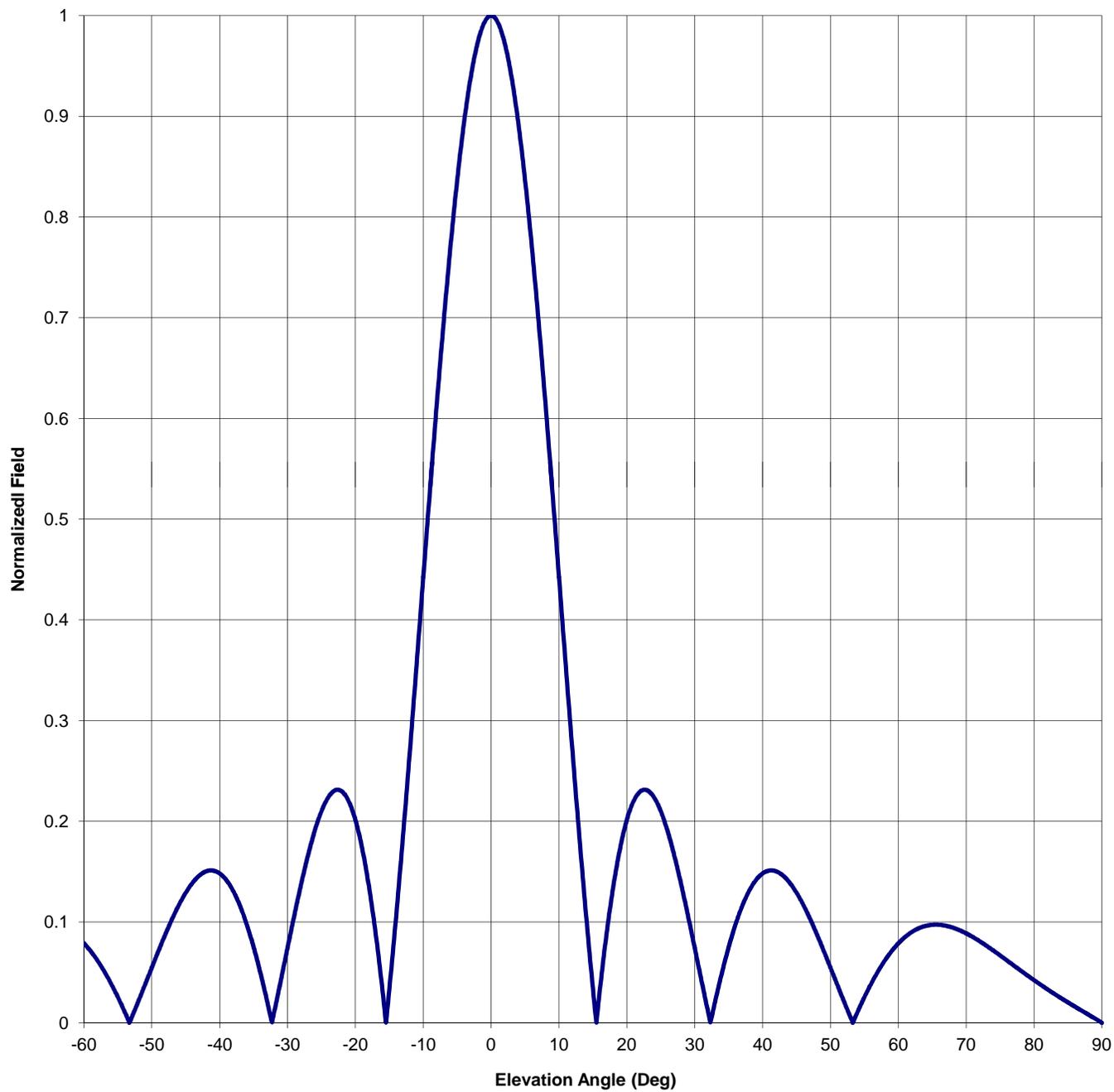
Scale 1:250,000  
 0 3 6 9 km

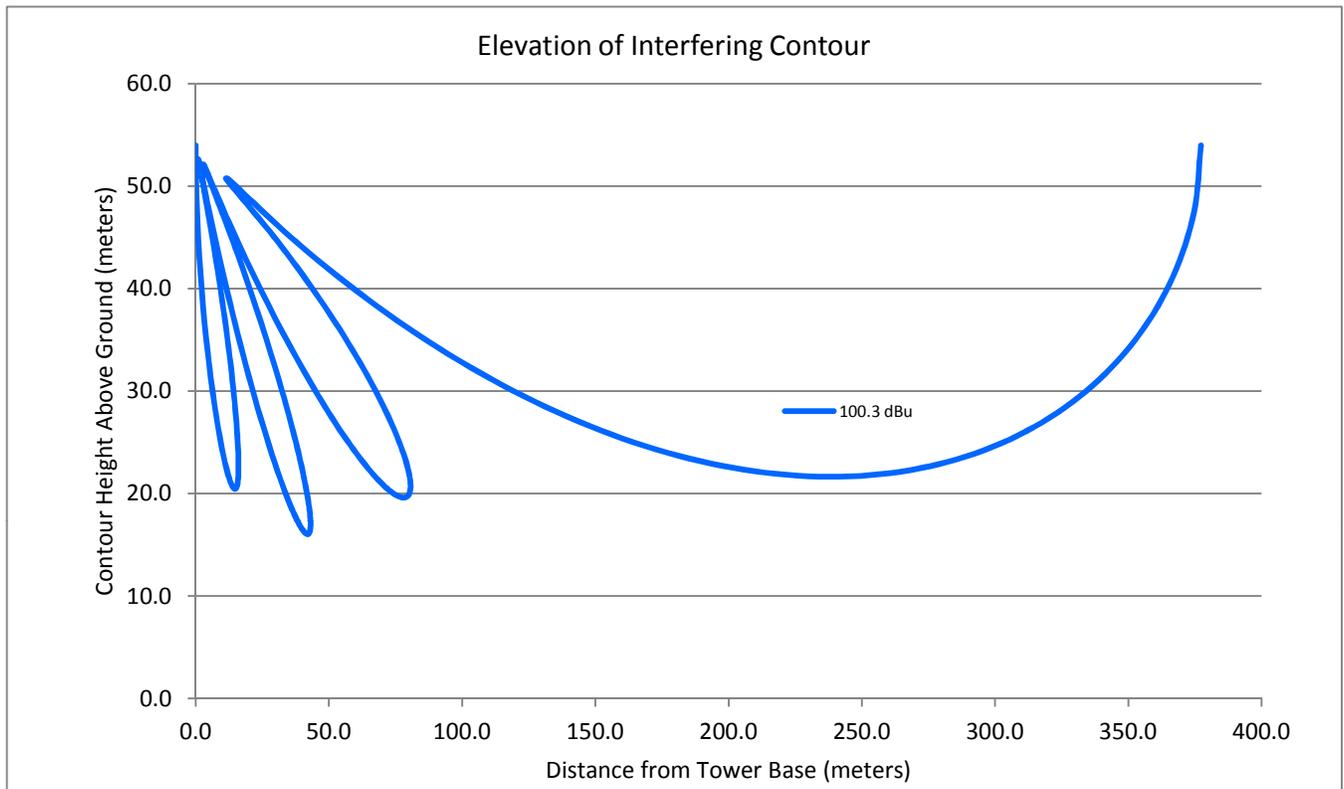
V-Soft Communications LLC ©

Antenna Mfg.: Shively  
Antenna Type: 6812B-5 .75  
Station: Savannah  
Frequency: 102.7  
Channel #: 274  
Figure: 2

Date: 11/12/2013

Beam Tilt	0	
Gain (Max)	2.342	3.696 dB
Gain (Horizon)	2.342	3.696 dB





81°9'

81°8'45"

81°8'30"

32°3'45"

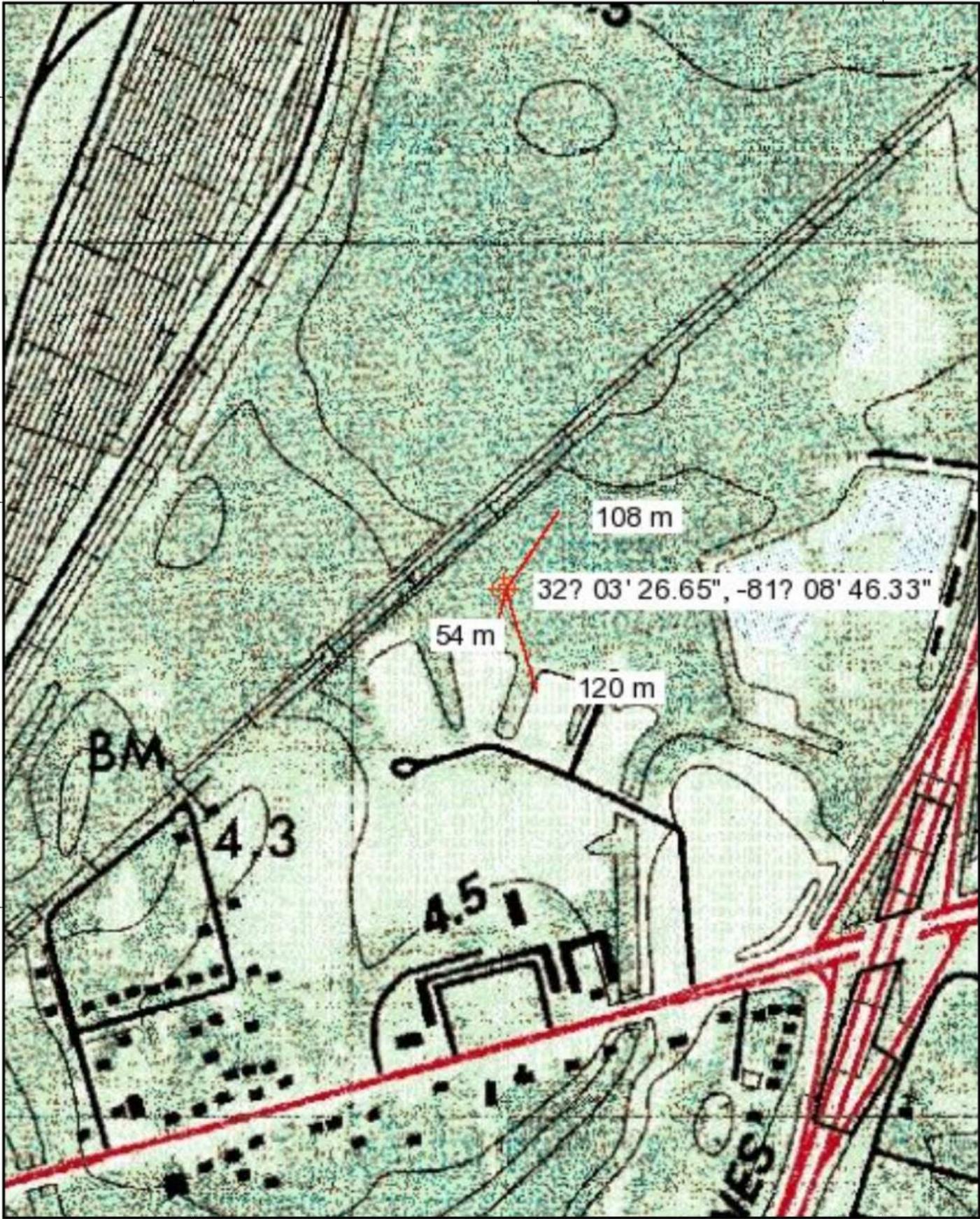
32°3'45"

32°3'30"

32°3'30"

32°3'15"

32°3'15"

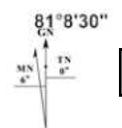
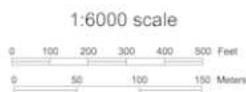


81°9'

81°8'45"

81°8'30"

Universal Transverse Mercator (UTM) Projection Zone 17  
North American Datum of 1983



Magnetic declination of 6W at center of map  
on March 17, 2011

Figure 4

81°8'55"

81°8'50"

81°8'45"

81°8'40"

32°3'35"

32°3'35"

32°3'30"

32°3'30"

32°3'25"

32°3'25"

32°3'20"

32°3'20"

32°3'15"

32°3'15"

81°8'55"

81°8'50"

81°8'45"

81°8'40"

Universal Transverse Mercator (UTM) Projection Zone 17  
North American Datum of 1983

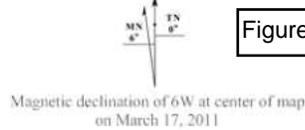
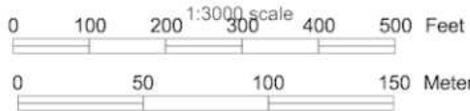


Figure 5

