

# EXHIBIT 12.1

## DESCRIPTION OF PROPOSED ANTENNA SYSTEM

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### DAYTIME/NIGHTTIME ANTENNA SYSTEM

1. The daytime antenna system will consist of four (4) vertical guyed, uniform cross-section steel towers. The nighttime antenna system will consist of three (3) vertical guyed, uniform cross-section steel towers. Two towers will be common between day and night modes of operations. All towers will stand 104.0° or 59.3 meters above a 1.2 meter base pier and insulator for a height of 60.5 meters Above Ground Level (AGL). TOWAIR has been consulted and no obstruction lighting is required. Given the site elevation of 283.5 meters, the overall heights for all tower will be 344.0 meters AMSL.
2. The proposed ground system will consist of 120 buried copper radials, extending 64.6 meters (212 feet) in length, about the base of the Daytime Towers 1 and 2 and 51.3 meters (168 ft) in length around the remaining daytime and nighttime towers. Radials will run the entire length except where shortened to terminate at property boundaries or at transverse copper straps running midway between the towers. The material used for the radial will be #10 AWG, soft drawn copper wire.
3. The proposed day antenna system theoretical parameters are as follows:

PROPOSED DAYTIME THEORETICAL PARAMETERS				
TOWER	FIELD	PHASE	SPACING	ORIENTATION
1(NW)	1.000	0.0°	0.0°	0.0°
2(NE)	0.630	-71.0°	113.2°	63.5°
2(SW)	0.530	-6.0°	186.0°	173.0°
3(SE)	0.334	-77.0°	113.2°*	63.5°*

\* referenced to preceding tower.

4. The proposed night antenna system theoretical parameters are as follows:

PROPOSED NIGHTTIME THEORETICAL PARAMETERS				
TOWER	FIELD	PHASE	SPACING	ORIENTATION
1 (N)	0.622	-117.7°	0.0°	0.0°
2(C)	1.000	0.0°	93.0°	173.0°
3(S)	0.555	157.3°	186.0°	173.0°

5. The theoretical RMS for the proposed daytime operation will be 235.79 mV/m at one kilometer. The standard pattern RMS will be 274.80 mV/m at one kilometer with a theoretical RSS of 279.11 mV/m at one kilometer. Daytime power will be 0.67 kW.
6. The theoretical RMS for the proposed nighttime array will be 140.88 mV/m at one kilometer. The standard pattern RMS will be 148.30 mV/m at one kilometer with a theoretical RSS of 186.57 mV/m at one kilometer. Nighttime power will be 0.175 kW.
7. The sampling system for the proposed array will conform to §73.68 of the Commission's Rules regarding approved sampling systems.

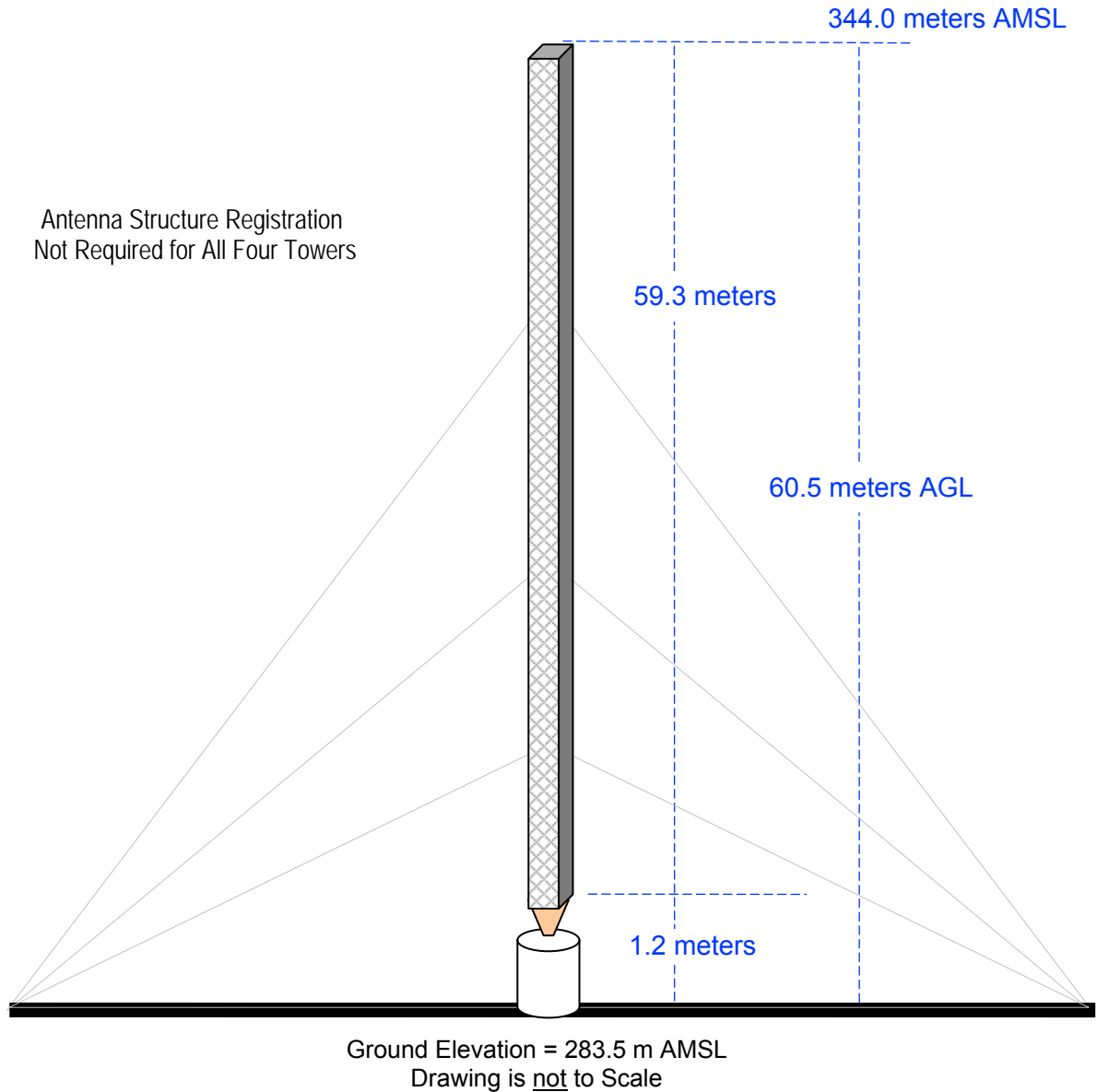
## EXHIBIT 12.2

### VERTICAL PLAN OF ANTENNA SYSTEM

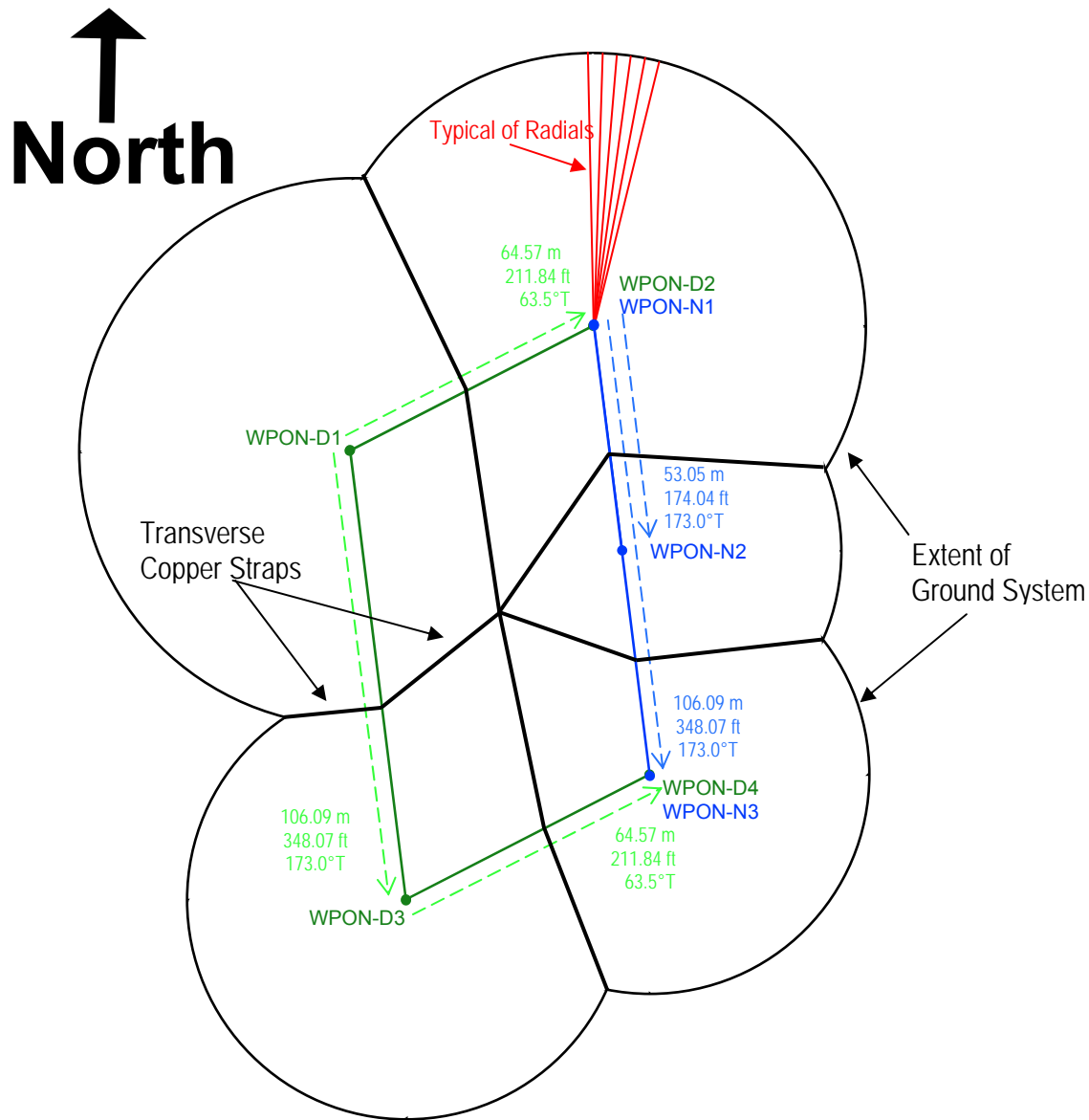
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The site is located 0.9 km northeast of the intersection of E. Maple and Child's Lake Roads, city of Wixom, Oakland, County, Michigan.

Site Location  
NL: 42° 32' 39"  
WL: 83° 33' 36"



## Exhibit 12.3 Horizontal Plat of Antenna Array

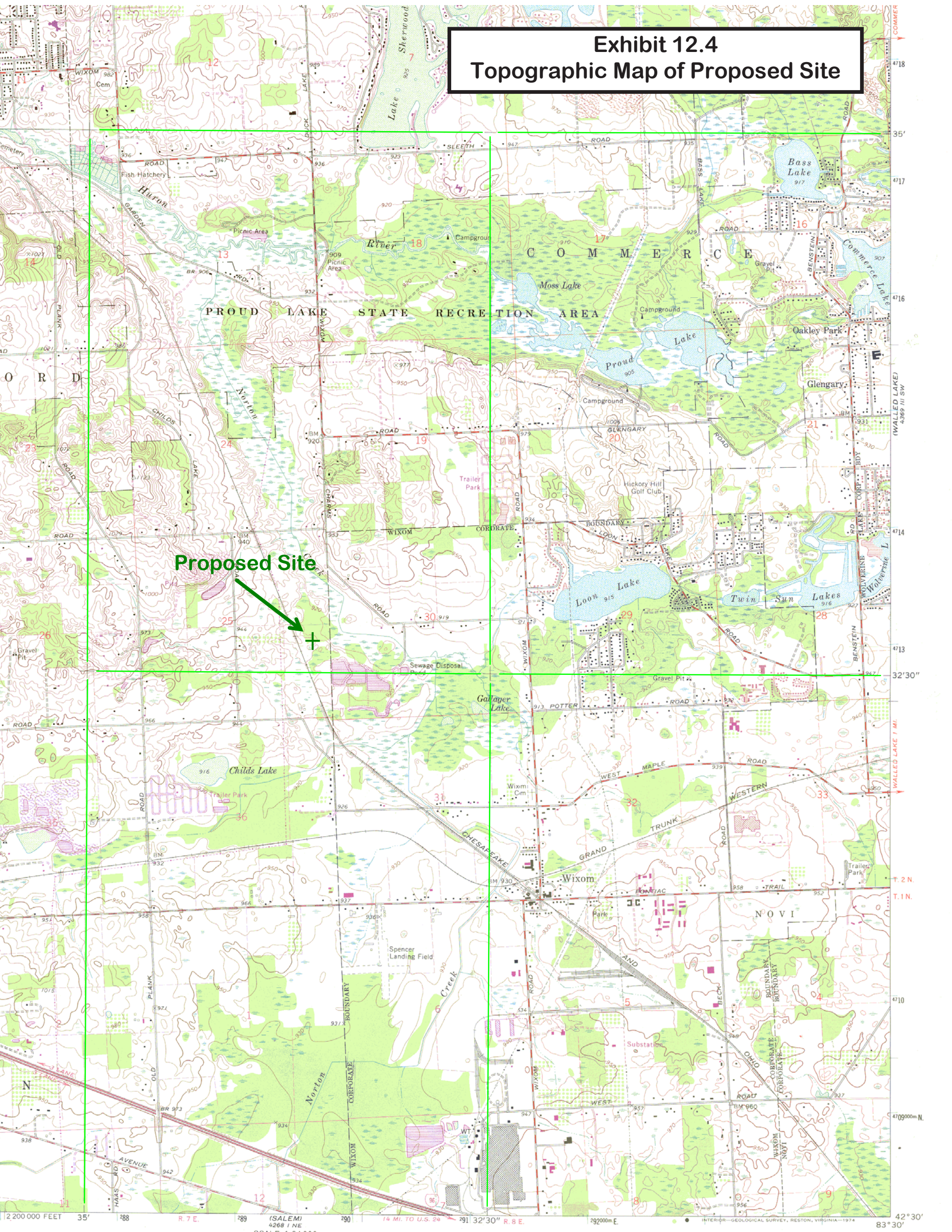


The proposed ground system will consist of 120 buried copper radials, extending 64.6 meters (212 feet) in length, about the base of the Daytime Towers 1 and 2 and 51.3 meters (168 ft) in length around the remaining daytime and nighttime towers. Radials will run the entire length except where shortened to terminate at property boundaries or at transverse copper straps running midway between the towers. The material used for the radial will be #10 AWG, soft drawn copper wire.





Exhibit 12.4  
Topographic Map of Proposed Site



Proposed Site



2 200 000 FEET 35' 288 R. 7 E. 289 (SALEM) 4268 1 NE 290 14 MI. TO U.S. 24 291 32'30" R. 8 E. 292 000m E. 42° 30' 83° 30'

SCALE 1:24 000

1 000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET  
DATUM IS MEAN SEA LEVEL

3 1/2" 62 MILES 1"44' 31 MILES

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Coldwater, MI 49036  
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THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Primary highway, all weather, hard surface	Light-duty road, all weather, improved surface
Secondary highway, all weather, hard surface	Unimproved road, fair or dry weather

Interstate Route

MICHIGAN

QUADRANGLE LOCATION

MILFORD, MICH.  
N4230—W8330/7.5

1969  
PHOTOREVISED 1973  
AMS 4269 II SE—SERIES V862

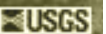


**Exhibit 12.5**  
**Photograph of**  
**Proposed Site**

**Proposed Site**



March 27, 1999



**WPON.L**  
 Present Daytime Operation  
 Freq: 1460 kHz  
 Class: B  
 Latitude: 42-32-38 N  
 Longitude: 083-29-58 W  
 Power: 1 kW  
 RMS: 299.07 mV/m @1km  
 # Towers: 4  
 # Augs: 0

**Exhibit 12.6a**  
**Present Daytime**  
**Service Contour Study**

0.5 mV/m  
 2.0 mV/m  
 5.0 mV/m

Scale 1:750,000  
 0 10 20 30 km

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**WPON.L**  
 Present Daytime Operation  
 Freq: 1460 kHz  
 Class: B  
 Latitude: 42-32-38 N  
 Longitude: 083-29-58 W  
 Power: 1 kW  
 RMS: 299.07 mV/m @1km  
 # Towers: 4  
 # Augs: 0

**Exhibit 12.6a**  
**Present Daytime**  
**Service Contour Study**

Scale 1:750,000  
 0 10 20 30 km

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**WPON.L**  
 Present Daytime Operation  
 Freq: 1460 kHz  
 Class: B  
 Latitude: 42-32-38 N  
 Longitude: 083-29-58 W  
 Power: 1 kW  
 RMS: 299.07 mV/m @1km  
 # Towers: 4  
 # Augs: 0

**Exhibit 12.6a**  
**Present Daytime**  
**Service Contour Study**

Scale 1:750,000  
 0 10 20 30 km

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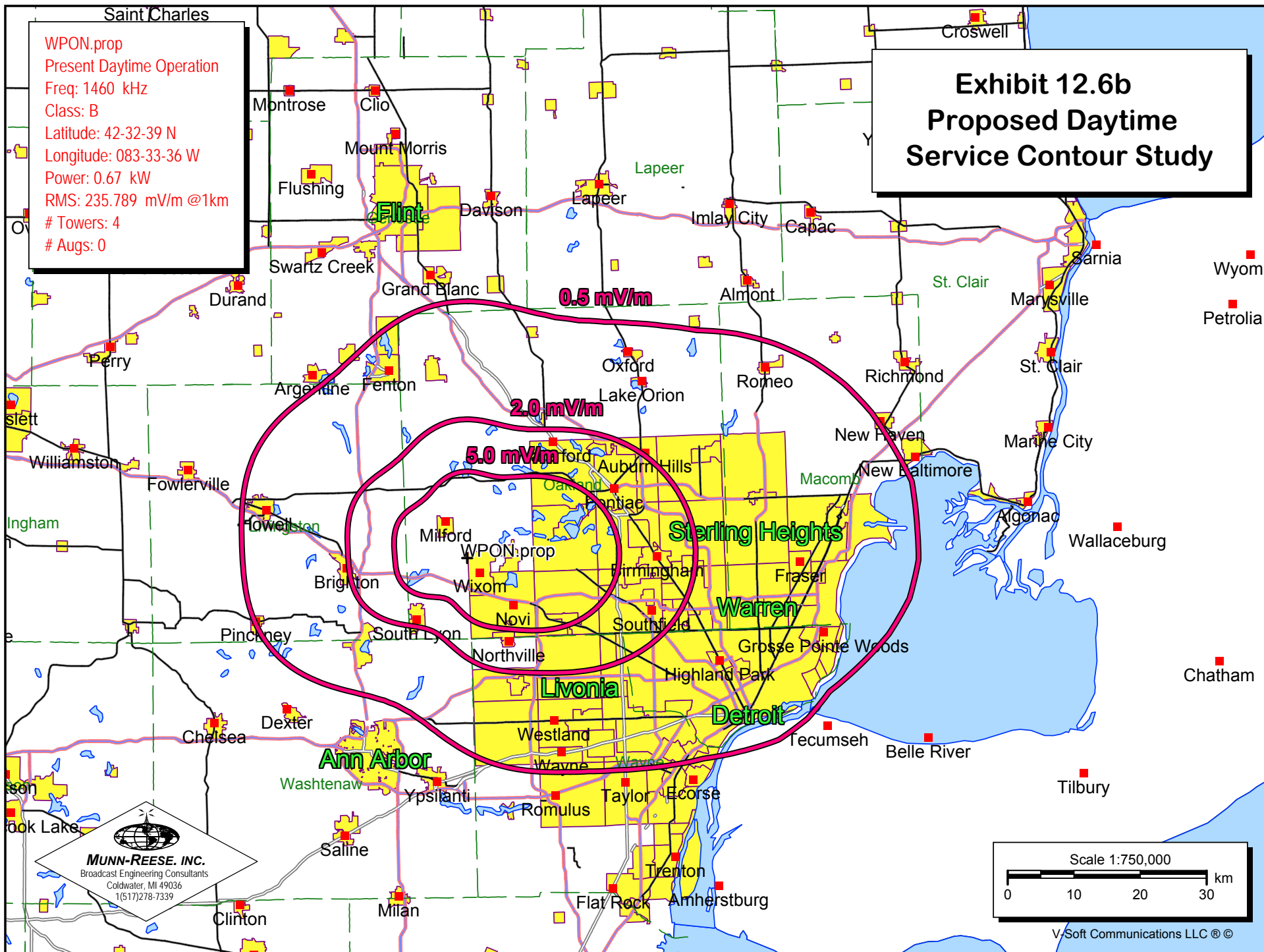
**WPON.L**  
 Present Daytime Operation  
 Freq: 1460 kHz  
 Class: B  
 Latitude: 42-32-38 N  
 Longitude: 083-29-58 W  
 Power: 1 kW  
 RMS: 299.07 mV/m @1km  
 # Towers: 4  
 # Augs: 0

**Exhibit 12.6a**  
**Present Daytime**  
**Service Contour Study**

Scale 1:750,000  
 0 10 20 30 km

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**Exhibit 12.7  
Present & Proposed  
Nighttime Service  
Contours**

**WPON.L**  
Present Nighttime Operation  
Freq: 1460 kHz  
Class: B  
Latitude: 42-32-38 N  
Longitude: 083-29-58 W  
Power: 0.76 kW  
RMS: 288.31 mV/m @1km  
# Towers: 3  
# Augs: 0

**WPON.prop**  
Proposed Nighttime Operation  
Freq: 1460 kHz  
Class: B  
Latitude: 42-32-39 N  
Longitude: 083-33-36 W  
Power: 0.175 kW  
RMS: 140.884 mV/m @1km  
# Towers: 3  
# Augs: 0

16.828 mV/m Present N.H.F.

16.802 mV/m Proposed N.H.F.

WPON.prop

WPON.L  
Walled Lake

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Scale 1:125,000

0 1 2 3 km

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## Exhibit 12.8a Present Day & Night "Blanket" Contour Study

**WPON.L**  
Present Daytime Operation  
Freq: 1460 kHz  
Class: B  
Latitude: 42-32-38 N  
Longitude: 083-29-58 W  
Power: 1 kW  
RMS: 299.07 mV/m @1km  
# Towers: 4  
# Augs: 0

1.0 V/m Population: 95

**WPON.L**  
Present Nighttime Operation  
Freq: 1460 kHz  
Class: B  
Latitude: 42-32-38 N  
Longitude: 083-29-58 W  
Power: 0.76 kW  
RMS: 288.31 mV/m @1km  
# Towers: 3  
# Augs: 0

1.0 V/m Population: 77

"+" Represent U.S. Census 2000 Population Centroid Datum

Scale 1:7,500  
0 0.1 0.2 0.3 km

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## Exhibit 12.8b Proposed Day & Night "Blanket" Contour Study

WPON.prop  
Proposed Daytime Operation  
Freq: 1460 kHz  
Class: B  
Latitude: 42-32-39 N  
Longitude: 083-33-36 W  
Power: 0.67 kW  
RMS: 235.724 mV/m @1km  
# Towers: 4  
# Augs: 0

1.0 V/m Population: none

WPON.prop  
Proposed Nighttime Operation  
Freq: 1460 kHz  
Class: B  
Latitude: 42-32-39 N  
Longitude: 083-33-36 W  
Power: 0.175 kW  
RMS: 140.884 mV/m @1km  
# Towers: 3  
# Augs: 0

1.0 V/m Population: none

WPON.prop  
+

+  
37

+  
84

+  
61

+  
118



"+" Represent U.S. Census 2000 Population Centroid Datum

