



**ENGINEERING STUDY**  
**CP MODIFICATION APPLICATION**  
**W275CT- BNPFT-20180316ABP**

**TECHNICAL STATEMENT**

This technical statement and attached exhibits were prepared on behalf of WLOH Radio Company, licensee of AM radio station WLOH, 1320 kHz, Lancaster, OH. Facility ID #73217. This application seeks to modify the current construction permit for new FM translator W275CT for use as a fill-in service for the above referenced station.

**Facilities Proposed**

Location (NAD83)	39° 43' 43.9" N Latitude, 82° 13' 23.0" W Longitude
Location (NAD27)	39° 43' 43.7" N Latitude, 82° 13' 23.5" W Longitude
Channel	275D (102.9MHz)
Tower Overall AGL Height-	55m
Tower ASR	N/A
Proposed Antenna	NICOM BKG-77
Antenna AGL Height-	52m
Site AMSL Height-	297m
ERP	250 Watts-DIRECTIONAL- Circular Pol EXHIBIT A

## **COMPLIANCE WITH 74.1204(a) [contour overlap]**

The proposed translator on channel 275D will be fully compliant with 74.1204(a). A table showing the allocation is attached as Exhibit B and a map depicting the closest pertinent facilities is attached as Exhibit C (WWCD) and D (WDHT).

## **COMPLIANCE WITH 74.1201(g) [AM fill-in], 74.1233(a) [Minor Change]**

Exhibit E demonstrates that the proposed translator will be entirely contained within 25 miles of the WLOH transmitter in accordance with 74.1201(g) and the proposed translator will serve some portion of the existing CP 60dBu service area in accordance with 74.1233(a).

The proposed facility is within 320km of the common border between the US and Canada at approximately 190km. There is no effect on any Canadian allotments.

## **ENVIRONMENTAL EXHIBIT**

The proposed translator facility will utilize a directional antenna located on an existing non-registered tower. The attachment of the proposed translator antenna will not alter the existing proposed tower structure for purposes of the Nationwide Programmatic Agreement and the NHPA Section 106.

The exact location of the tower was determined using Google Earth (NAD83) and the Google Earth map is shown as Exhibit F. The NADCON conversion program to convert to NAD27 is shown in Exhibit G.

The RF density near the tower was calculated using an EPA Type 2 “Opposed V Dipole” antenna setting at 250 watts horizontal and vertical, using the proposed Nicom BKG-77 antenna.

Using the FCC program “FM Model for Windows”, it was calculated that the proposed antenna contributes approximately  $1.8\mu\text{W}/\text{cm}^2$  or 0.9 % of the total allowable  $200\mu\text{W}/\text{cm}^2$ . The maximum was found to be 51 meters from the base of the tower. The FCC calculator output is shown as Exhibit H.

There are no tall buildings within 1,000m of the proposed tower. There are no other non-excluded RF facilities on the proposed tower.

Based upon the preceding evaluation, the proposed antenna will not cause the RF density at the tower site to exceed public exposure limits and contributes less than 5% of the MPE at ground level. Based upon the preceding, this proposed facility is excluded from further Environmental Assessment under 47CFR 1.1306 and 1.1307.

The proposed new FM translator along with other users at the site will maintain an occupational safety policy and agrees to reduce power or cease operation during periods of maintenance to avoid potentially harmful exposure of personnel to non-ionizing RF radiation.

Respectfully Submitted

A handwritten signature in black ink, appearing to read "Bert Goldman", with a long, sweeping horizontal line extending to the right.

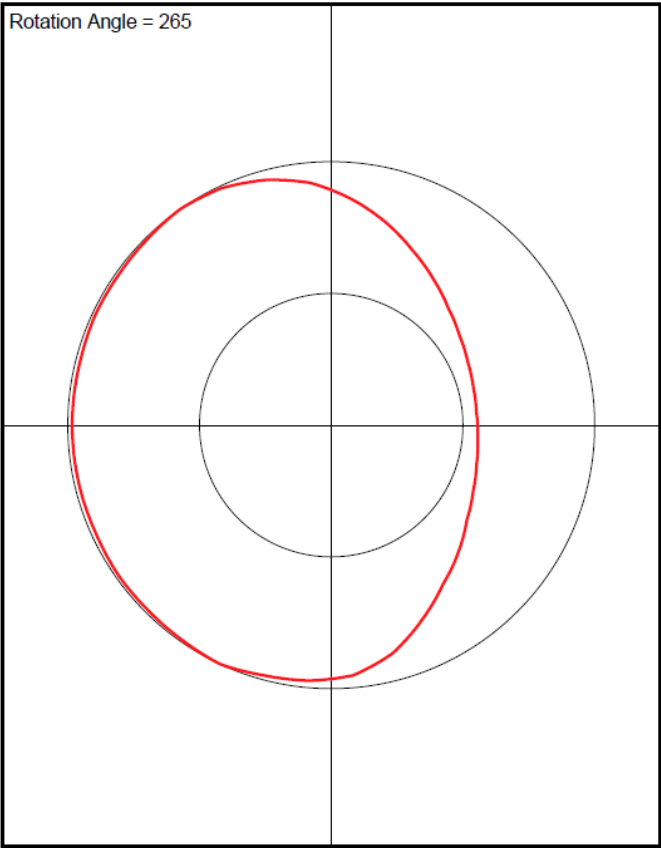
Bert Goldman  
Technical Consultant

**EXHIBIT A- ANTENNA PATTERN**

WLOH BKG-77 Antenna Pattern

Pre-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	0.983
10.0	0.983
20.0	0.983
30.0	0.988
40.0	0.988
50.0	0.992
60.0	1.0
70.0	0.991
80.0	0.963
90.0	0.923
100.0	0.862
110.0	0.797
120.0	0.731
130.0	0.676
140.0	0.628
150.0	0.594
160.0	0.571
170.0	0.558
180.0	0.553
190.0	0.558
200.0	0.571
210.0	0.594
220.0	0.628
230.0	0.682
240.0	0.738
250.0	0.815
260.0	0.897
270.0	0.953
280.0	0.973
290.0	0.983
300.0	1.0
310.0	0.992
320.0	0.988
330.0	0.988
340.0	0.983
350.0	0.983



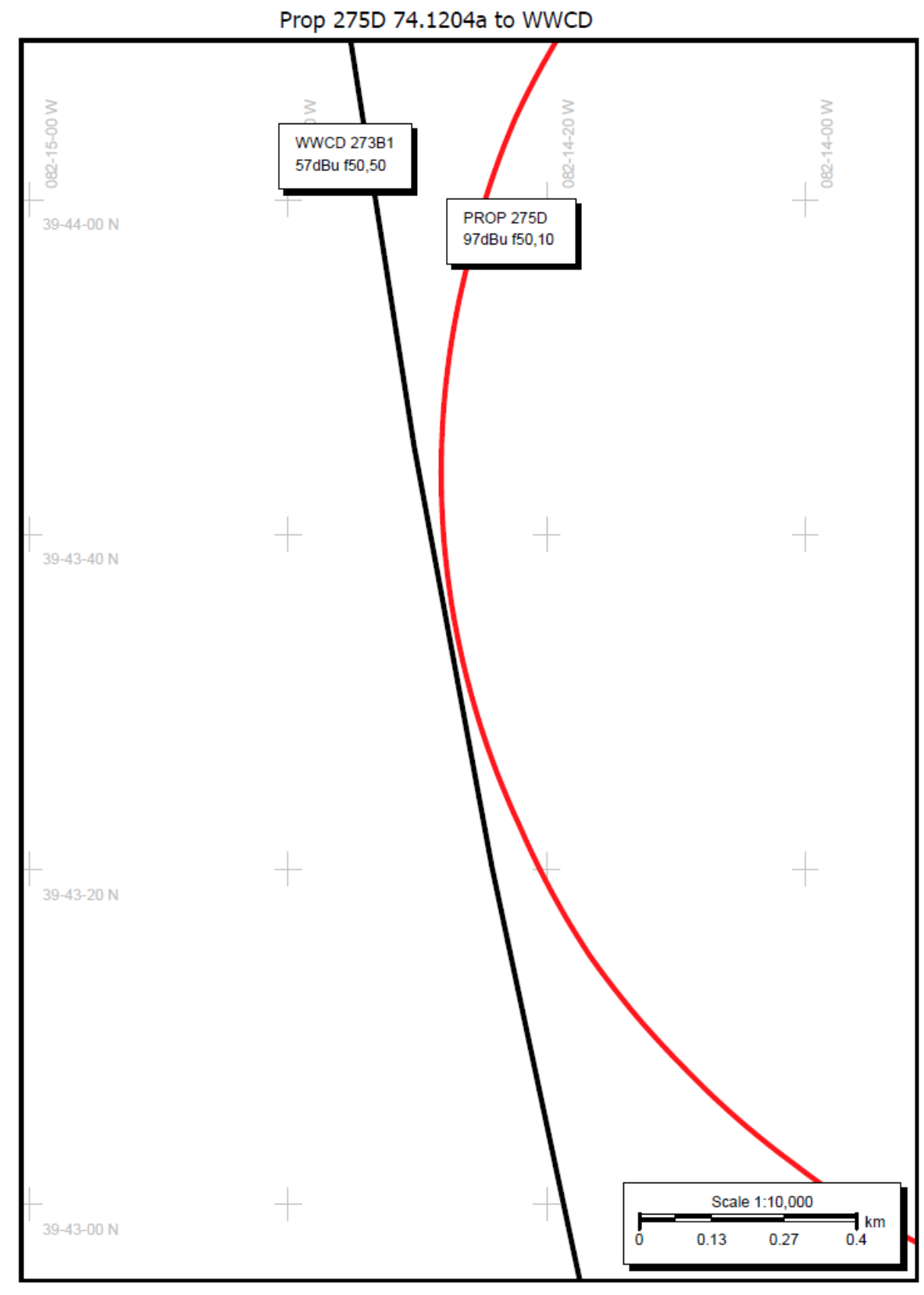
## **EXHIBIT B- ALLOCATION STUDY**

ComStudy 2.2 search of channel 275 (102.9 MHz Class A) at 39-43-43.6 N, 82-13-23.6 W.

CALL	CITY	ST CHN CL	DIST	SEP	BRNG	CLEARANCE
W275CT	SOMERSET	OH 275 D	7.31	0.00	42.8	-71.83 dB Current CP
WWCD	BALTIMORE	OH 273 B1	44.57	48.00	276.2	0.90 dB Exhibit C
WDHT	URBANA	OH 275 B	143.02	178.00	280.6	8.51 dB Exhibit D
W272EE	ZANESVILLE	OH 272 D	30.08	0.00	42.4	10.46 dB
WNND	PICKERINGTON	OH 278 A	49.46	31.00	300.0	11.91 dB
NEW	COSHOCTON	OH 274 D	69.44	0.00	28.9	17.06 dB
WV KO-FM	JOHNSTOWN	OH 276 A	66.90	72.00	326.4	18.94 dB
W277CX	LOGAN	OH 277 D	26.22	0.00	212.0	18.17 dB
WHBR-FM	PARKERSBURG	WV 276 A	83.94	72.00	129.5	19.67 dB
WYFM	SHARON	PA 275 B	199.60	178.00	41.7	20.69 dB
W277BV	ZANESVILLE	OH 277 D	28.30	0.00	34.1	21.77 dB
WBWO-LP	MOUNDSVILLE	WV 275 LP100	126.70	67.00	78.3	23.04 dB
WTCR-FM	HUNTINGTON	WV 277 B	146.14	69.00	186.1	25.50 dB
WVSR-FM	CHARLESTON	WV 274 B	159.67	113.00	162.4	25.72 dB
WHBR-FM	PARKERSBURG	WV 276 A	70.44	72.00	126.6	26.98 dB
WLYI	BURGETTSTOWN	PA 278 B	152.82	69.00	62.9	29.06 dB
WCPZ	SANDUSKY	OH 274 B	180.74	113.00	350.0	30.68 dB

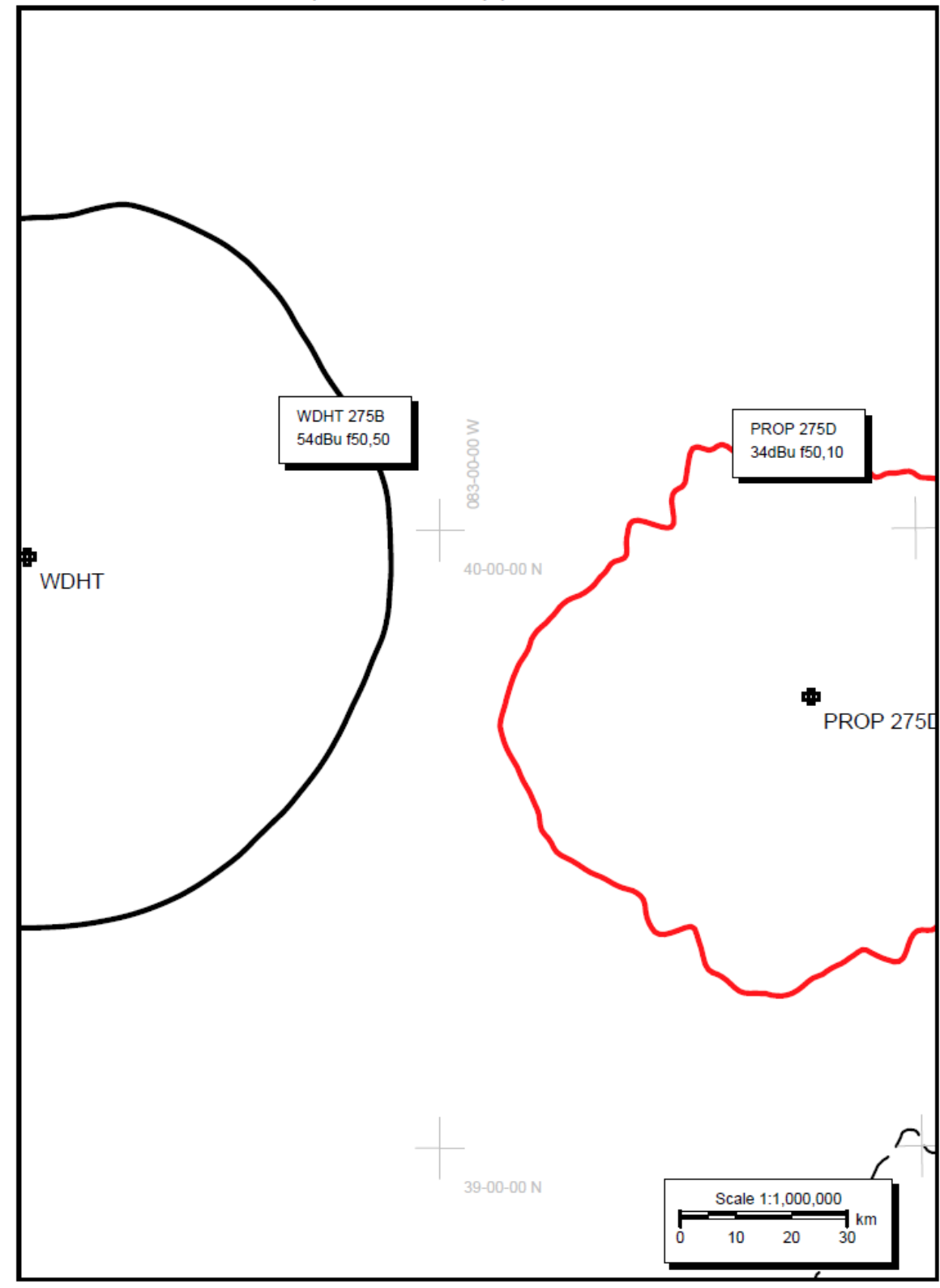
CDBS AS OF 5/30/2018

## EXHIBIT C Pertinent Protection Contours WWCD



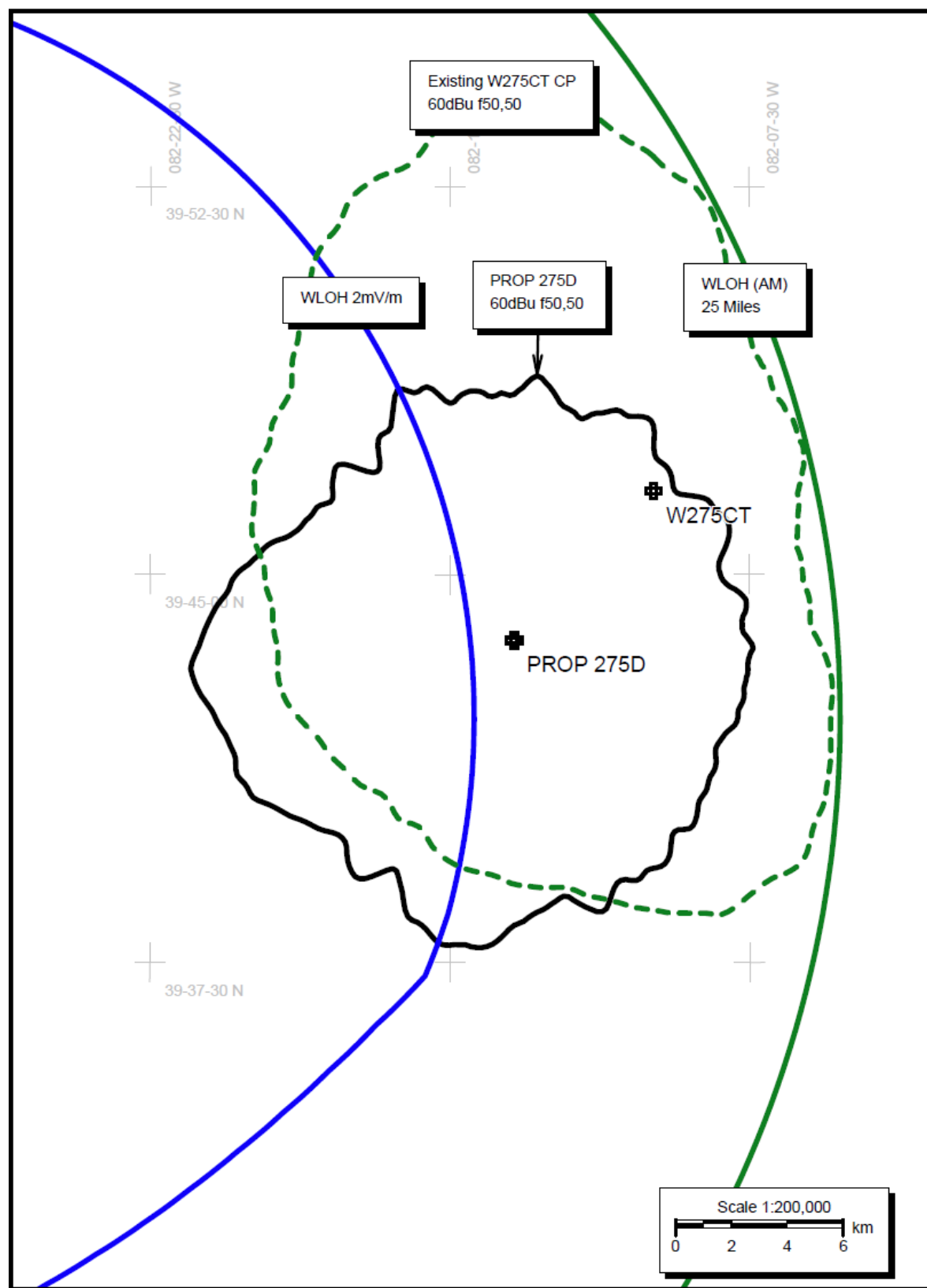
## EXHIBIT D Pertinent Protection Contours WDHT

Prop 275D 74.1204(a) to WDHT



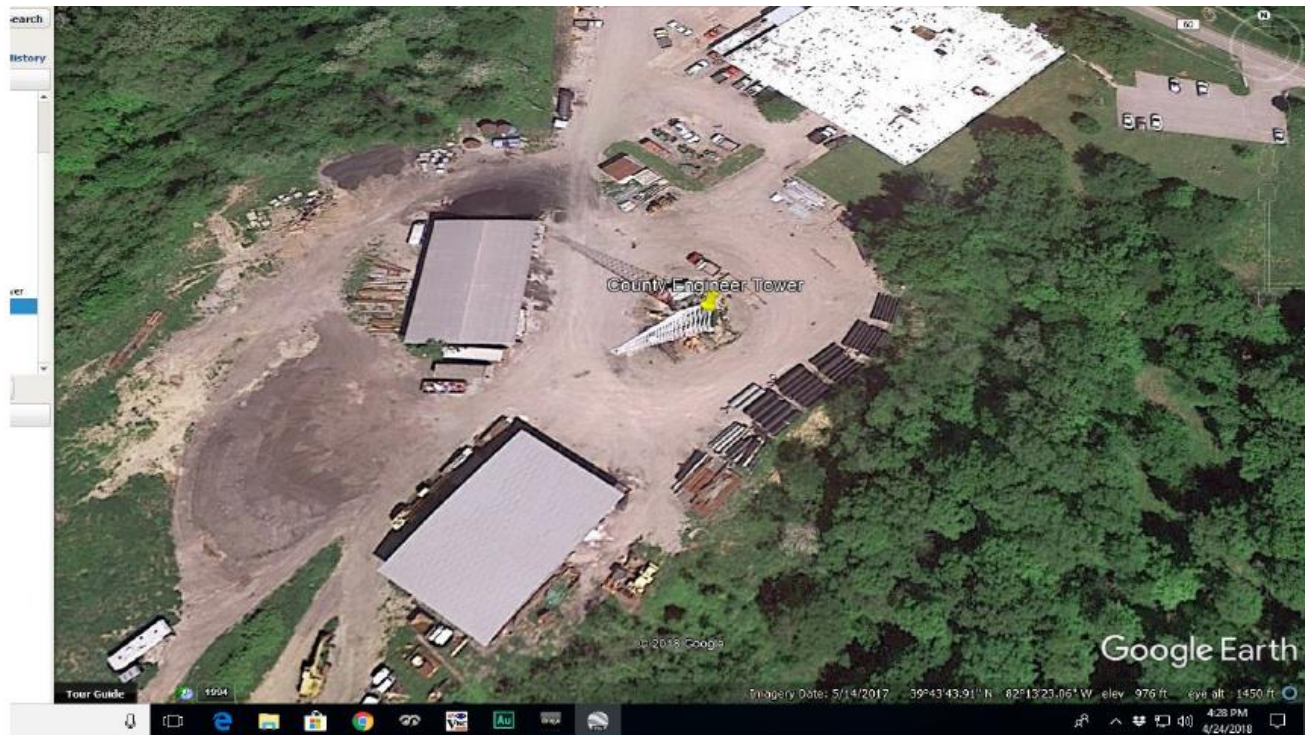
**EXHIBIT E - 74.1201(g), 74.1233(a) Compliance**

Prop 275D 74.1201(g), 74.1233(a) Compliance





## **EXHIBIT F Google Earth for Proposed W275CT**



Important Data: Coordinates- Lat 39 43 43.90 Lon -82 13 23.07

MSL at Ground Level- 976 ft Tower Over Height- 180 ft Available Tower Height- 170 ft (1146 MSL)

Distance from tower to center of Somerset Ohio- 6.75 Miles

Distance from tower to 25 Mile limit- 7.31 Miles

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## EXHIBIT G-

### Output from NADCON for station

North American Datum Conversion

NAD 83 to NAD 27

NADCON Program Version 2.11

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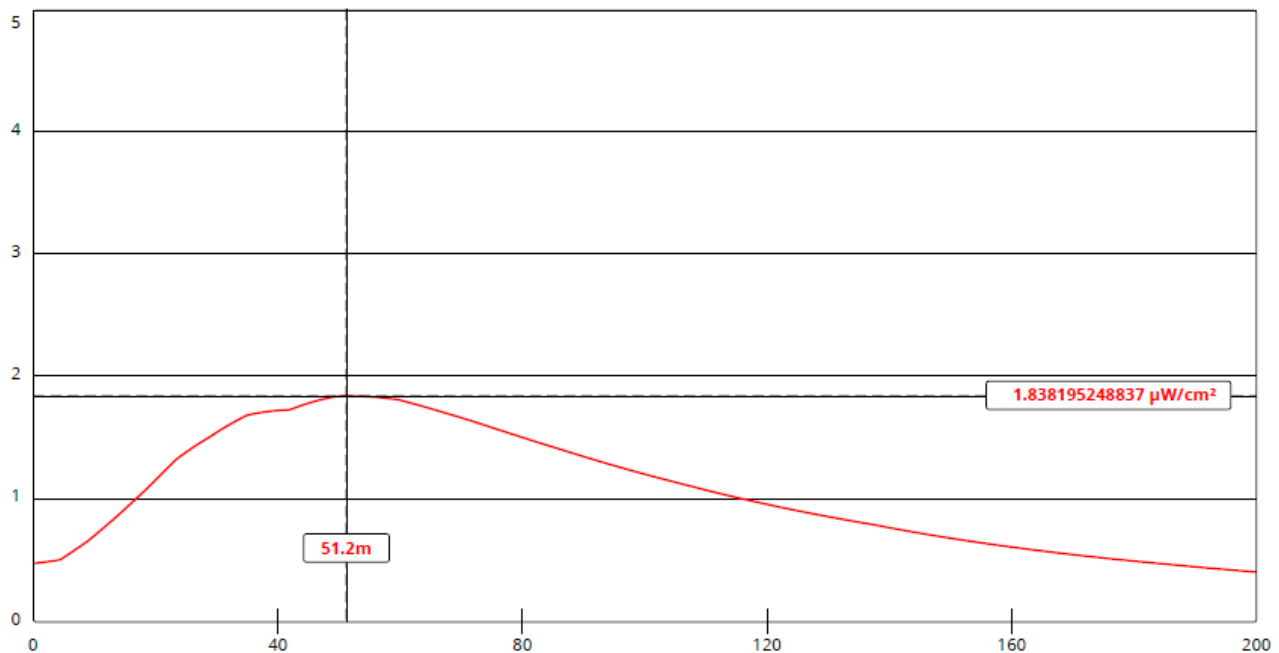
Transformation #: 1      Region: Conus

	Latitude	Longitude
NAD 27 datum values:	39 43 43.65152	82 13 23.46857
NAD 83 datum values:	39 43 43.90000	82 13 23.00000
NAD 27 - NAD 83 shift values:	-0.24849	0.46857(secs.)
	-7.664	11.159 (meters)
Magnitude of total shift:		13.537(meters)



[NGS HOME PAGE](#)

## EXHIBIT H- FCC “FM Model” RFR Calculation



[View Tabular Results +](#)

Channel Selection	Channel 275 (102.9 MHz) ▾		
<a href="#">Antenna Type +</a>	EPA Type 2: Opposed V Dipole ▾		
Height (m)	<input type="text" value="52"/>	Distance (m)	<input type="text" value="200"/>
ERP-H (W)	<input type="text" value="250"/>	ERP-V (W)	<input type="text" value="250"/>
Num of Elements	<input type="text" value="1"/>	Element Spacing ( $\lambda$ )	<input type="text" value="1"/>
Num of Points	<input type="text" value="500"/>	Apply	