

FM Translator W282AP -- Facility ID 141527 -- Bloomsburg, PA
Application for Modification of Construction Permit
ENGINEERING EXHIBIT

The application requests a minor modification of Construction Permit BPFT-20171215AAI to change antenna location, antenna elevation, and directional antenna envelope of W282AP. A change in primary station to WKRZ(FM) HD-2 is also requested. Please note that all F(50,50) and F(50,10) contours in the instant application are based on FCC 30-second terrain data.

Figure 1 demonstrates that the proposed 60 dBu contour overlaps that of the licensed W282AP facility (BLFT-20140509AAK); therefore, the requested modification is considered a minor change.

Figure 2 shows that the proposed 54 dBu coverage contour does not extend beyond the protected 54 dBu contour of primary station WKRZ(FM), Freeland, PA (Facility ID 34379) operating on Channel 253B.

Figure 3 shows that all co-channel and 1st-adjacent stations will be protected against prohibited contour overlap as specified in 47 CFR §74.1204(a) and (b).

Figure 4 is a detailed showing of clearance between the proposed 40 dBu interference contour and the protected 60 dBu contour of WGMF-FM.

Figure 5 shows the relationship between the proposed translator facility and local 2nd-adjacent stations. The predicted field strength of WMMZ, Channel 278A at the proposed W282AP site is 72 dBu, so the interference contour affecting WMMZ is 112 dBu. The predicted 60 dBu F(50,50) contour of W282CO extends just beyond the proposed site; therefore, the most significant interference contour shown in this plot is 100 dBu. (Facilities authorized in the W282CO construction permit are the same as presently licensed for W282AP.)

Figure 6 is an excerpt from a topographic map on which the proposed 100 dBu contour of the proposed facility (based on "free space" propagation) has been plotted. No buildings or major roads are shown within this contour. In the recent satellite image of **Figure 7**, the closest residence is shown at an azimuth of 150 degrees from the site; however, the 100 dBu contour extends only 107 meters in that direction and does not reach the structure. In accordance with 47 CFR §74.1204(d), these showings demonstrate that no actual interference will occur to WMMZ or W282CO, due to intervening terrain, lack of population or such other factors as may be applicable.

Maximum ERP of the proposed W282AP facility is 115 watts in both the horizontal and vertical polarizations. Under the worst-case assumption of an EPA Type 1 antenna with radiation center 10 meters above ground, this would produce a maximum radiofrequency power density of 72.2 $\mu\text{W}/\text{cm}^2$ at two meters

above ground level, as shown in **Figure 8**. FM Translator W242CY presently operates at the proposed site, and under a similar assumption produces a maximum radiofrequency power density of $69.8 \mu\text{W}/\text{cm}^2$ at two meters above ground level, as shown in **Figure 9**. The sum of the power densities is $142 \mu\text{W}/\text{cm}^2$, less than the general population/uncontrolled guideline limit of $200 \mu\text{W}/\text{cm}^2$. In coordination with other users, applicant will reduce power or cease operation of the proposed facility as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.

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Figure 1
Present and Proposed Coverage Contours

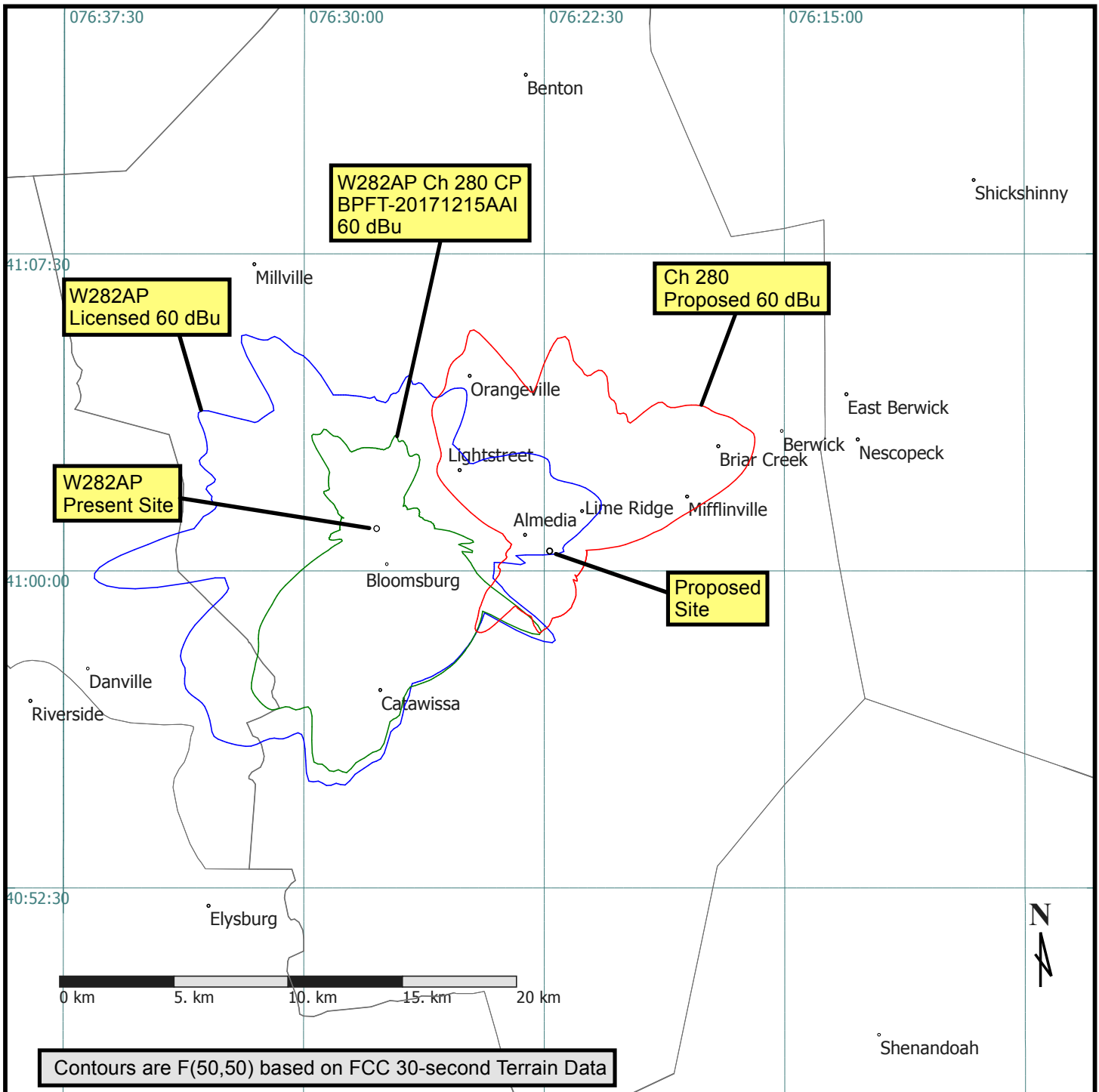


Figure 2
54 dBu Contour Fill-in Area

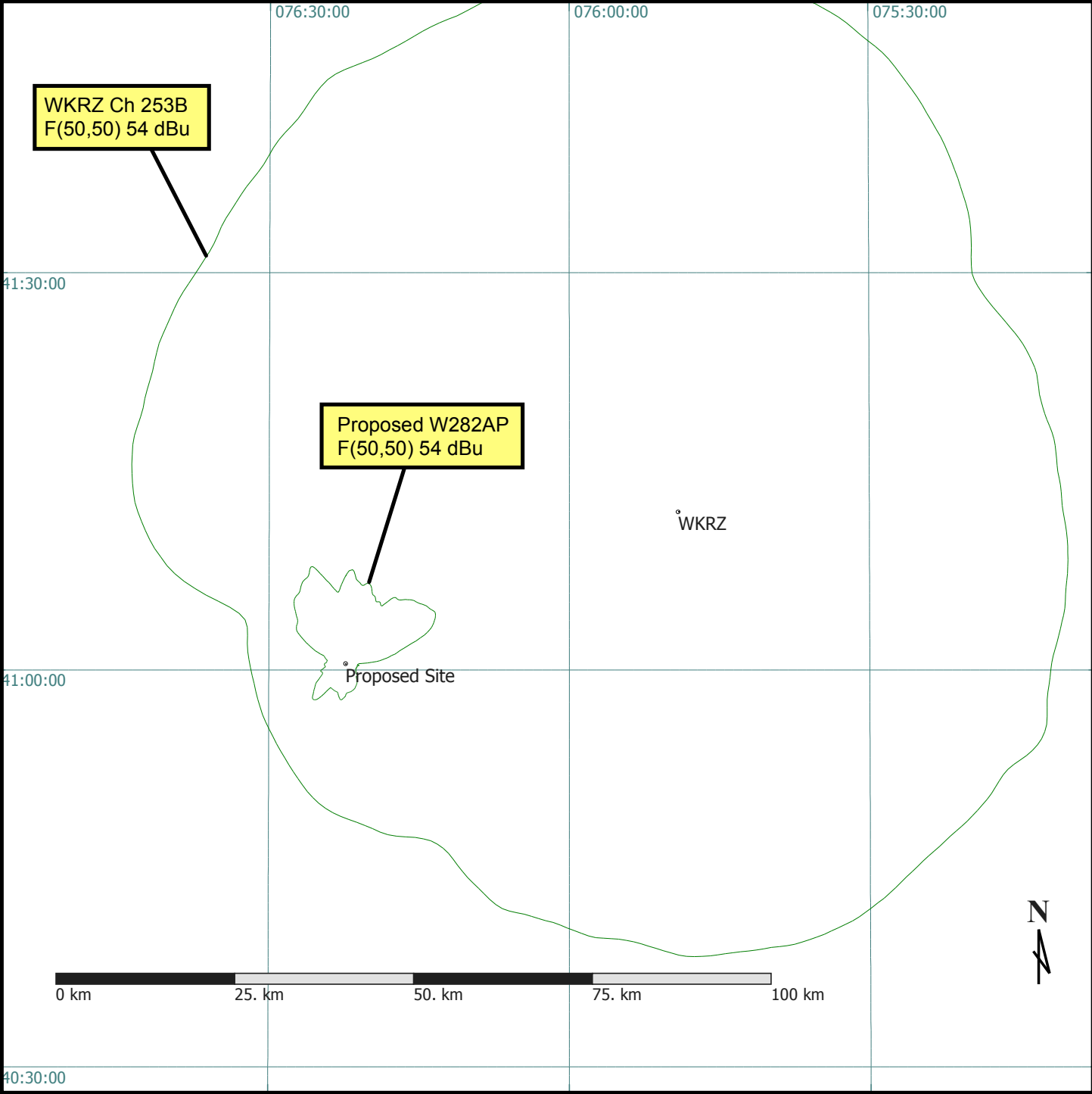


Figure 3
Co-Channel and 1st-Adjacent Contour Protection

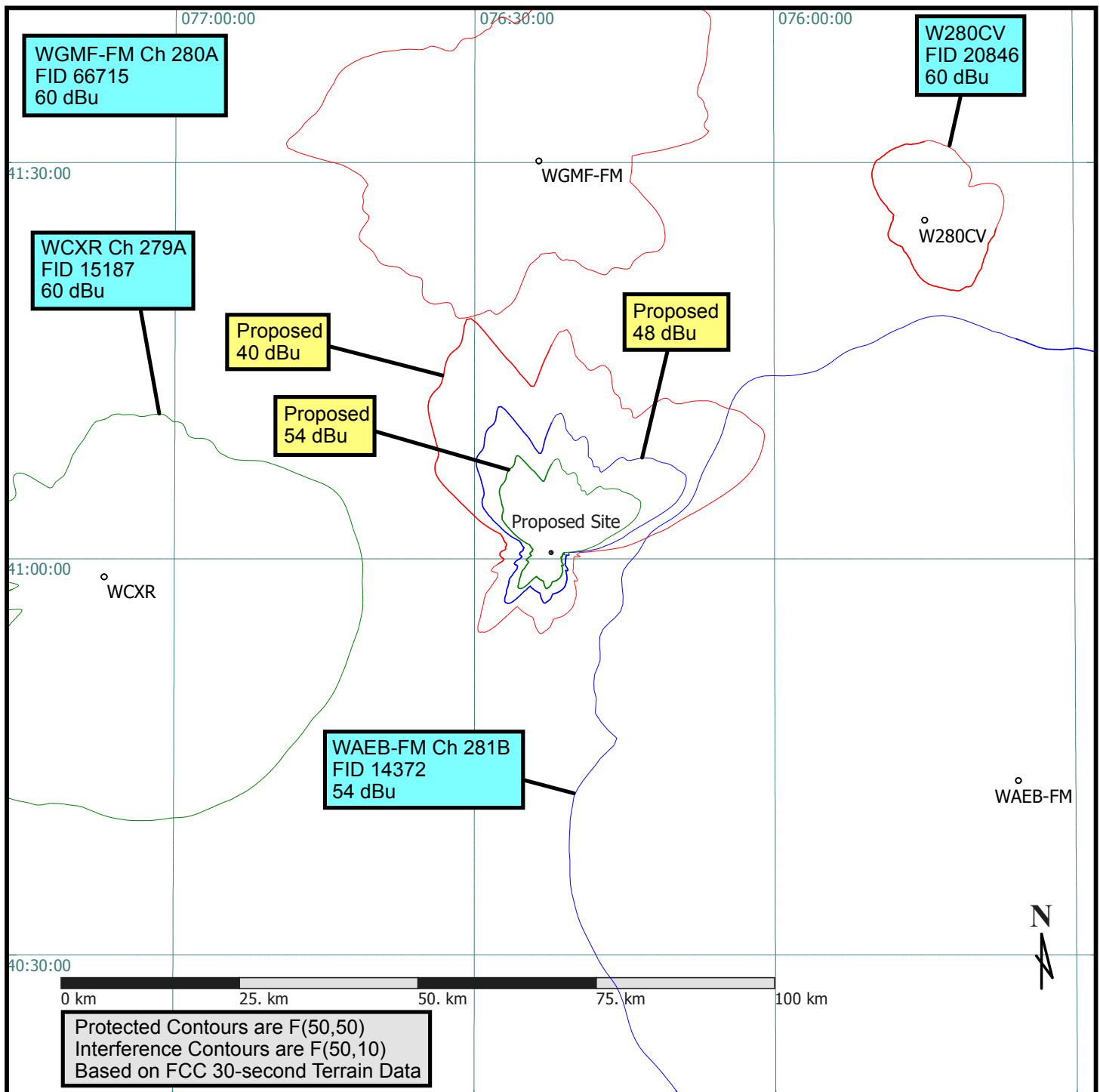


Figure 4
Detail of Clearance from WGMF-FM

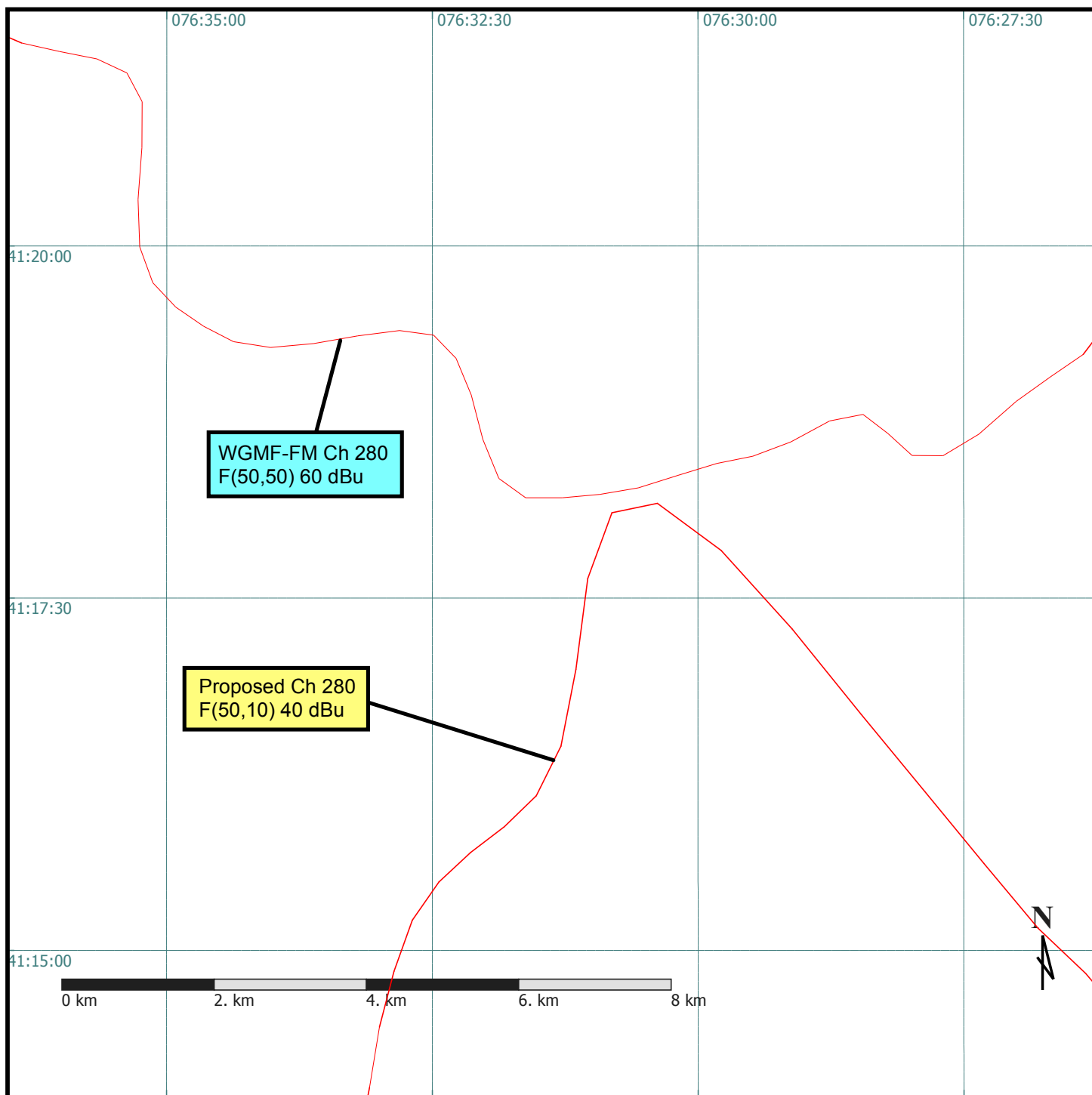


Figure 5
2nd-Adjacent Contours

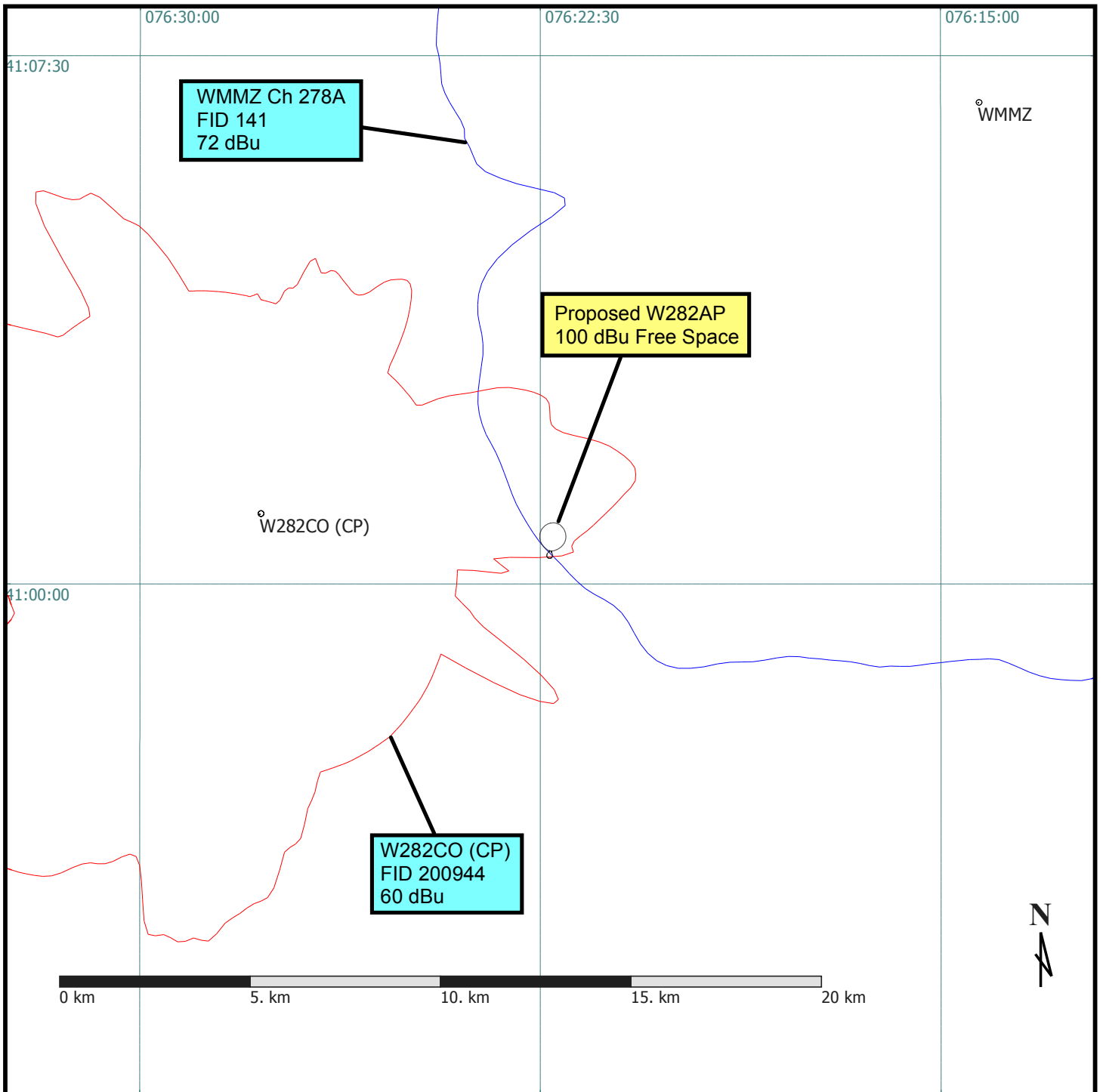


Figure 6
Topographic Map Showing 100 dBu

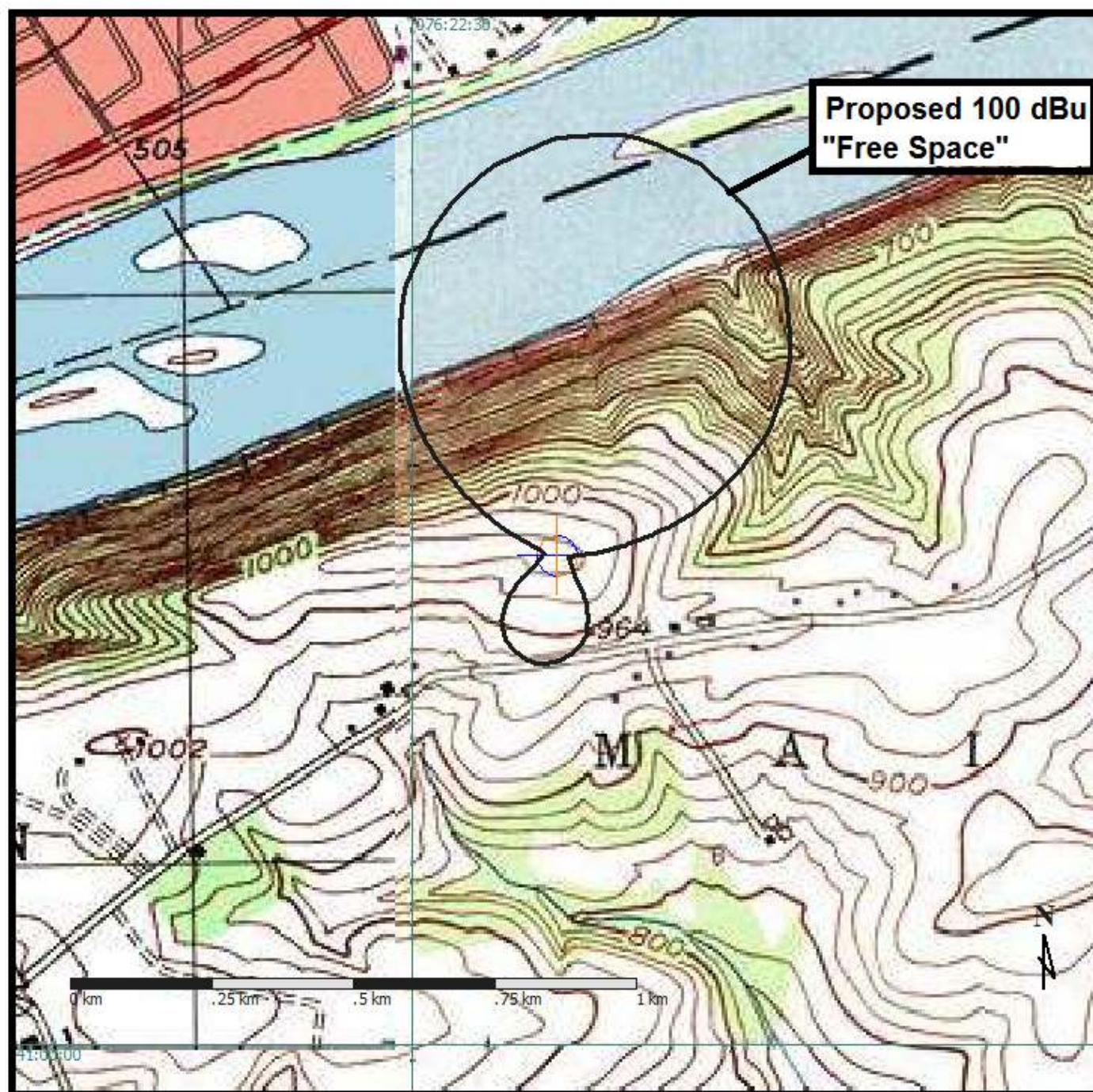
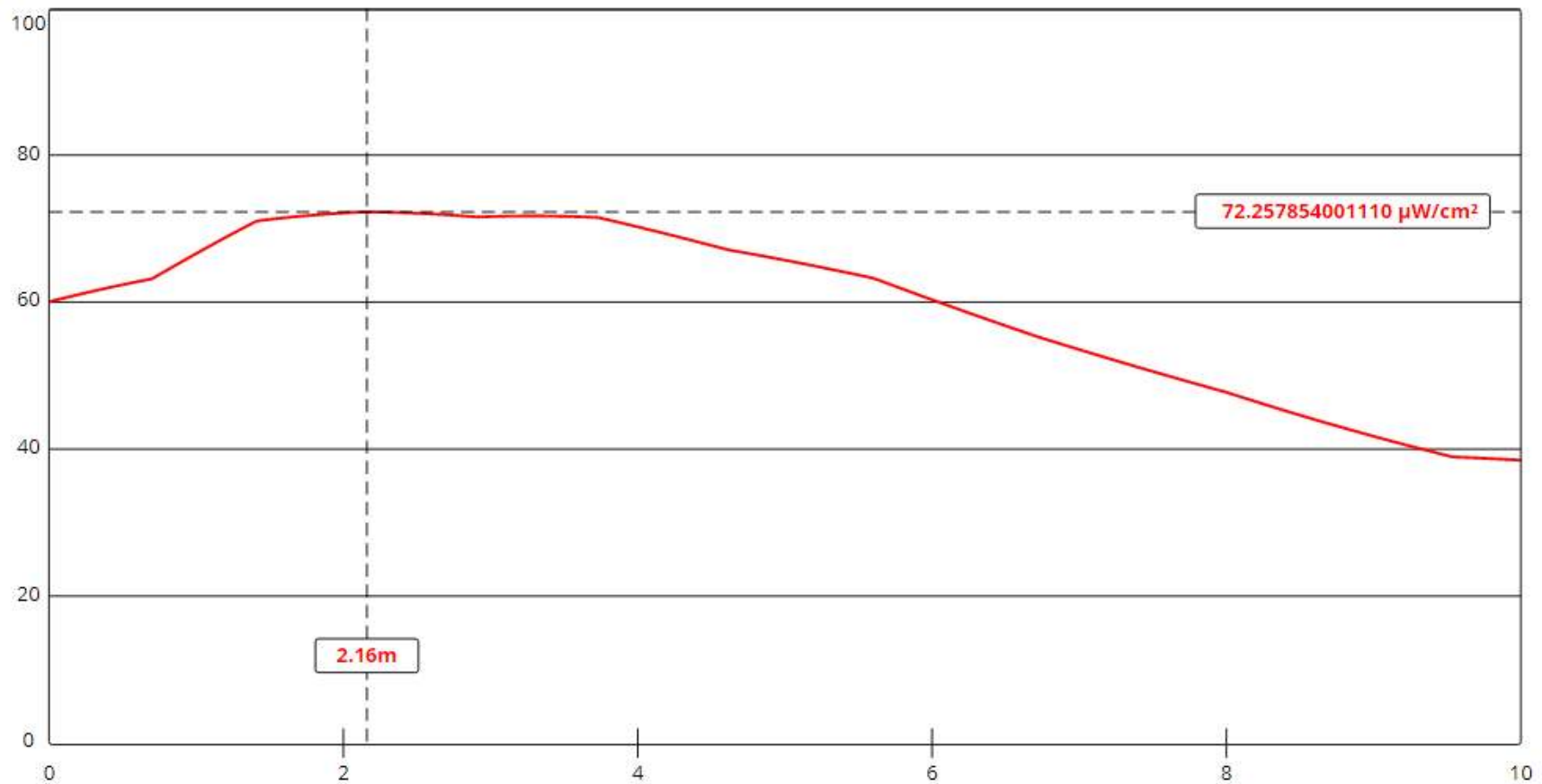


Figure 7 -- Satellite Image of Site



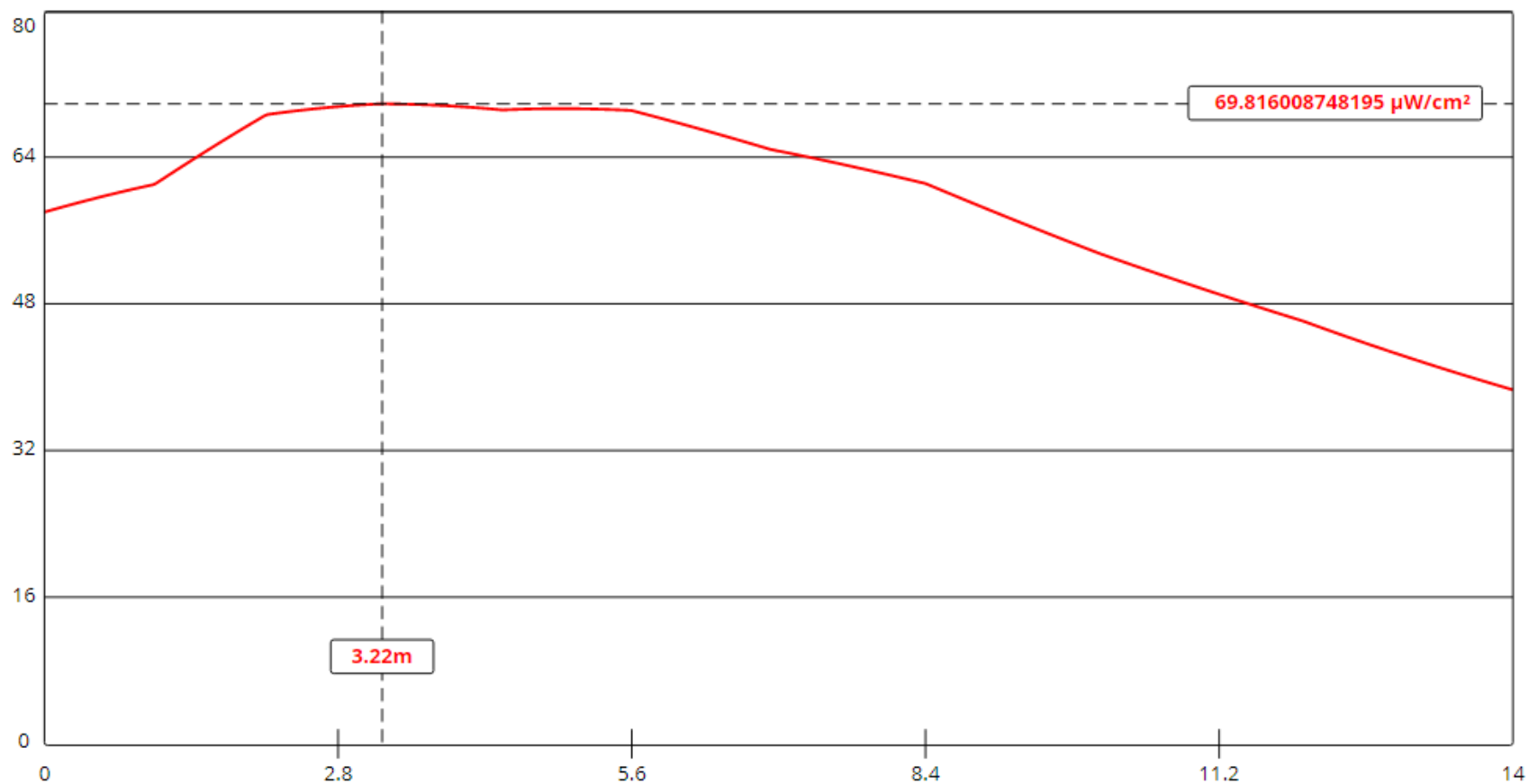
Figure 8 -- Proposed RF Power Density Plot



[View Tabular Results +](#)

Channel Selection	Channel 280 (103.9 MHz) ▼		
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other" ▼		
Height (m)	<input type="text" value="10"/>	Distance (m)	<input type="text" value="10"/>
ERP-H (W)	<input type="text" value="115"/>	ERP-V (W)	<input type="text" value="115"/>
Num of Elements	<input type="text" value="1"/>	Element Spacing (λ)	<input type="text" value="1"/>
Num of Points	<input type="text" value="500"/>	<input type="button" value="Apply"/>	

Figure 9 -- Collocated W242CY RF Power Density Plot



View Tabular Results +

Channel Selection	Channel 242 (96.3 MHz) ▼		
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other" ▼		
Height (m)	<input type="text" value="14"/>	Distance (m)	<input type="text" value="14"/>
ERP-H (W)	<input type="text" value="250"/>	ERP-V (W)	<input type="text" value="250"/>
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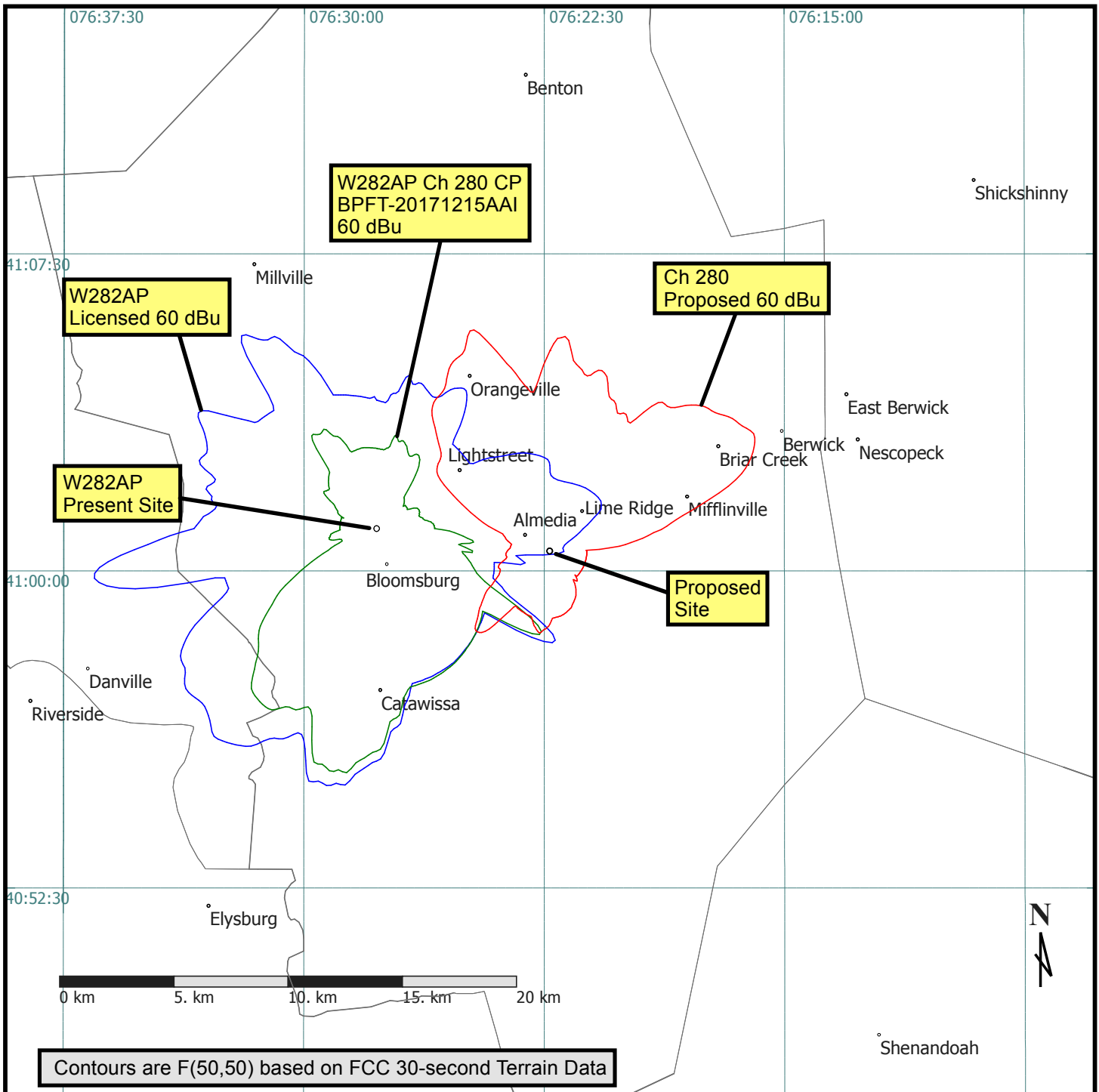


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54 dBu Contour Fill-in Area

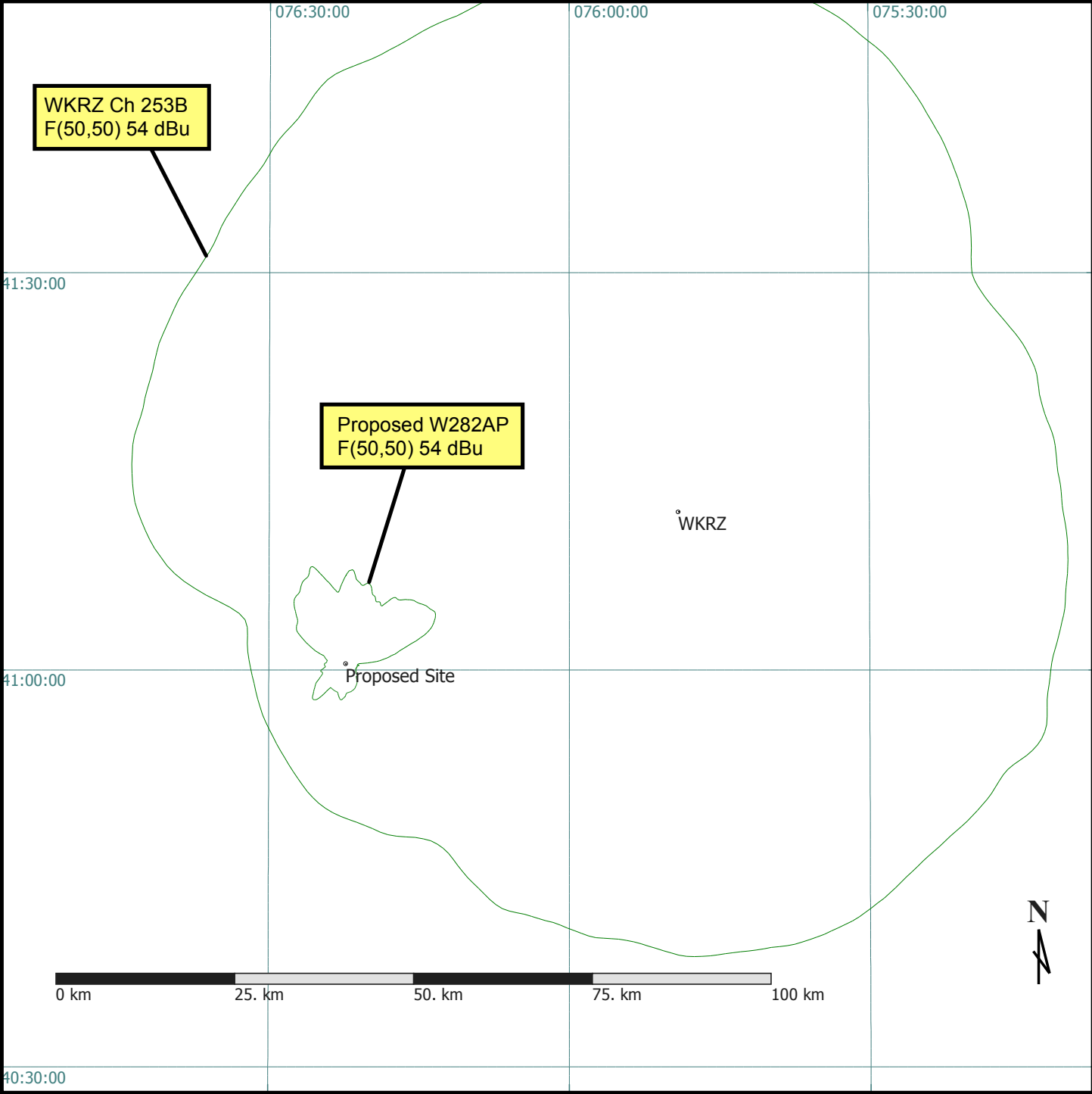


Figure 3
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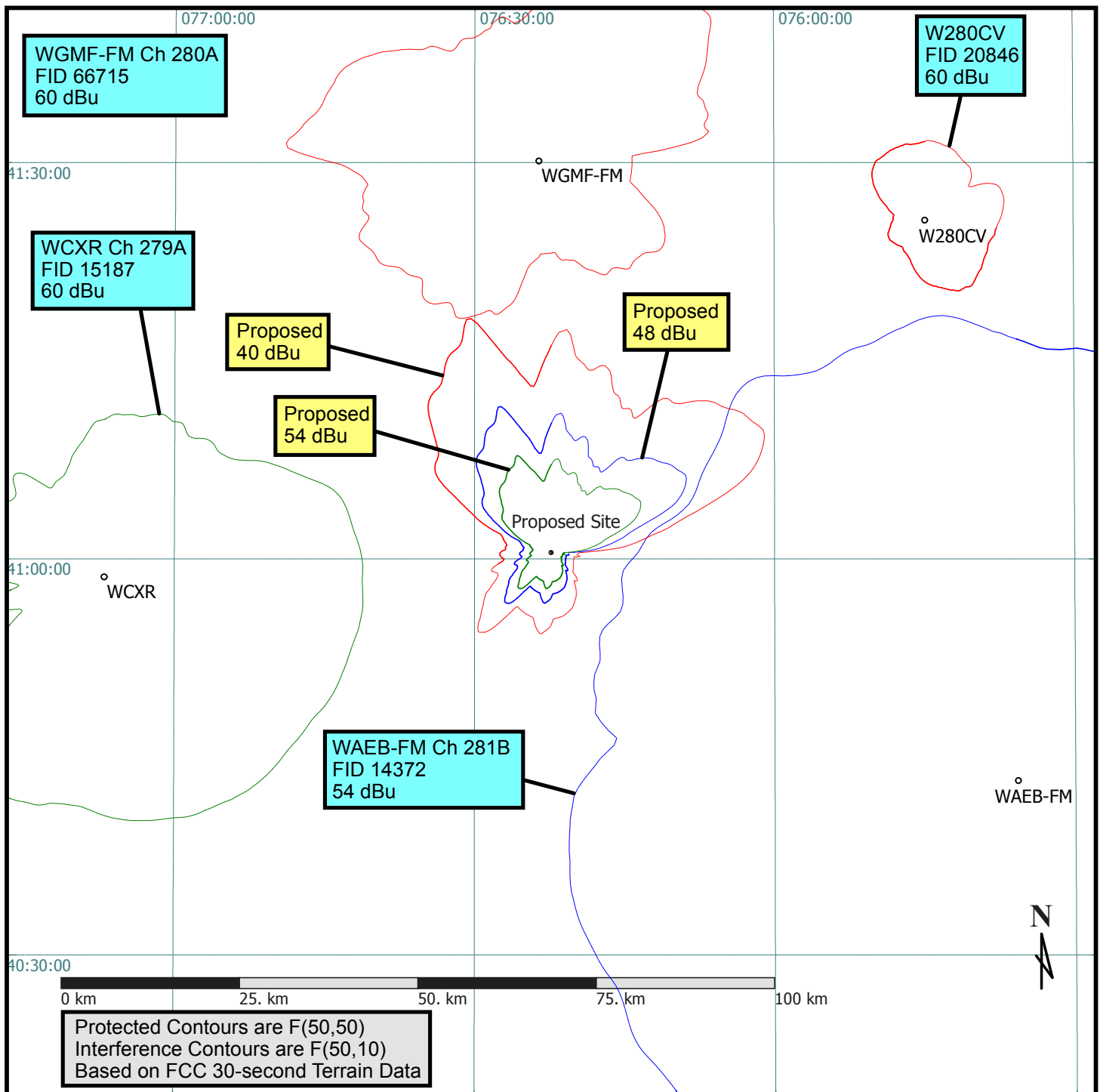


Figure 4
Detail of Clearance from WGMF-FM

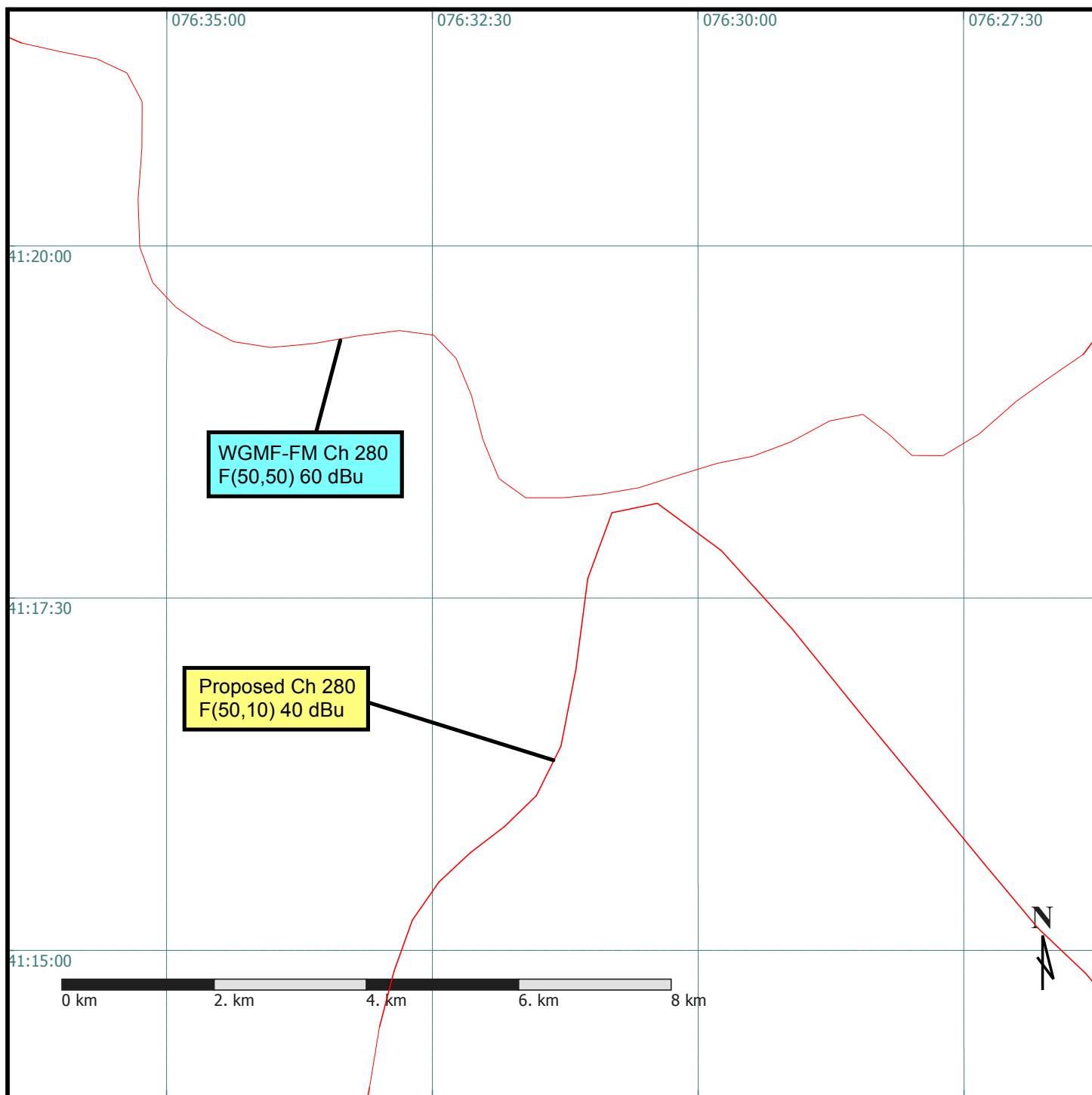
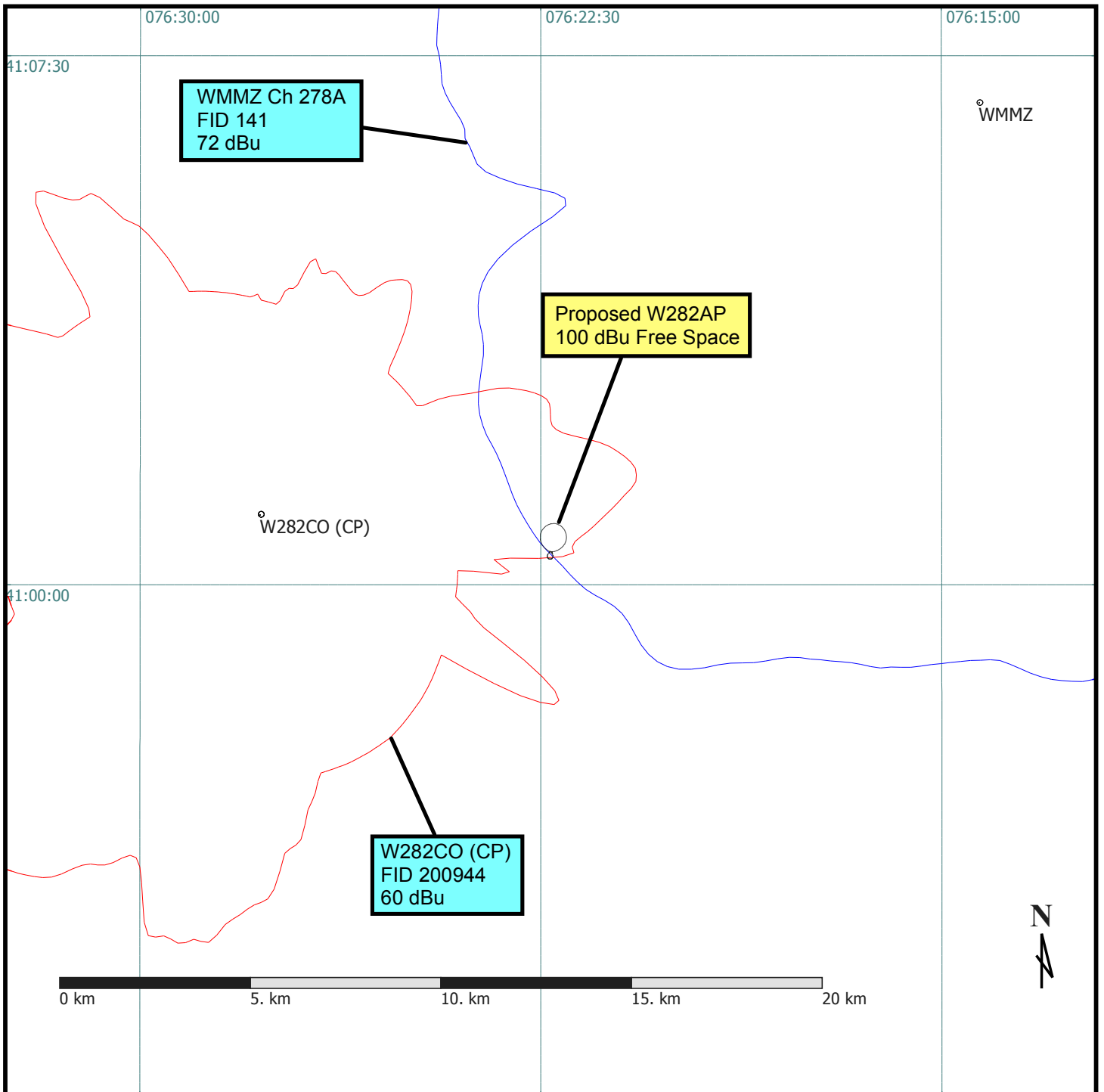


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2nd-Adjacent Contours



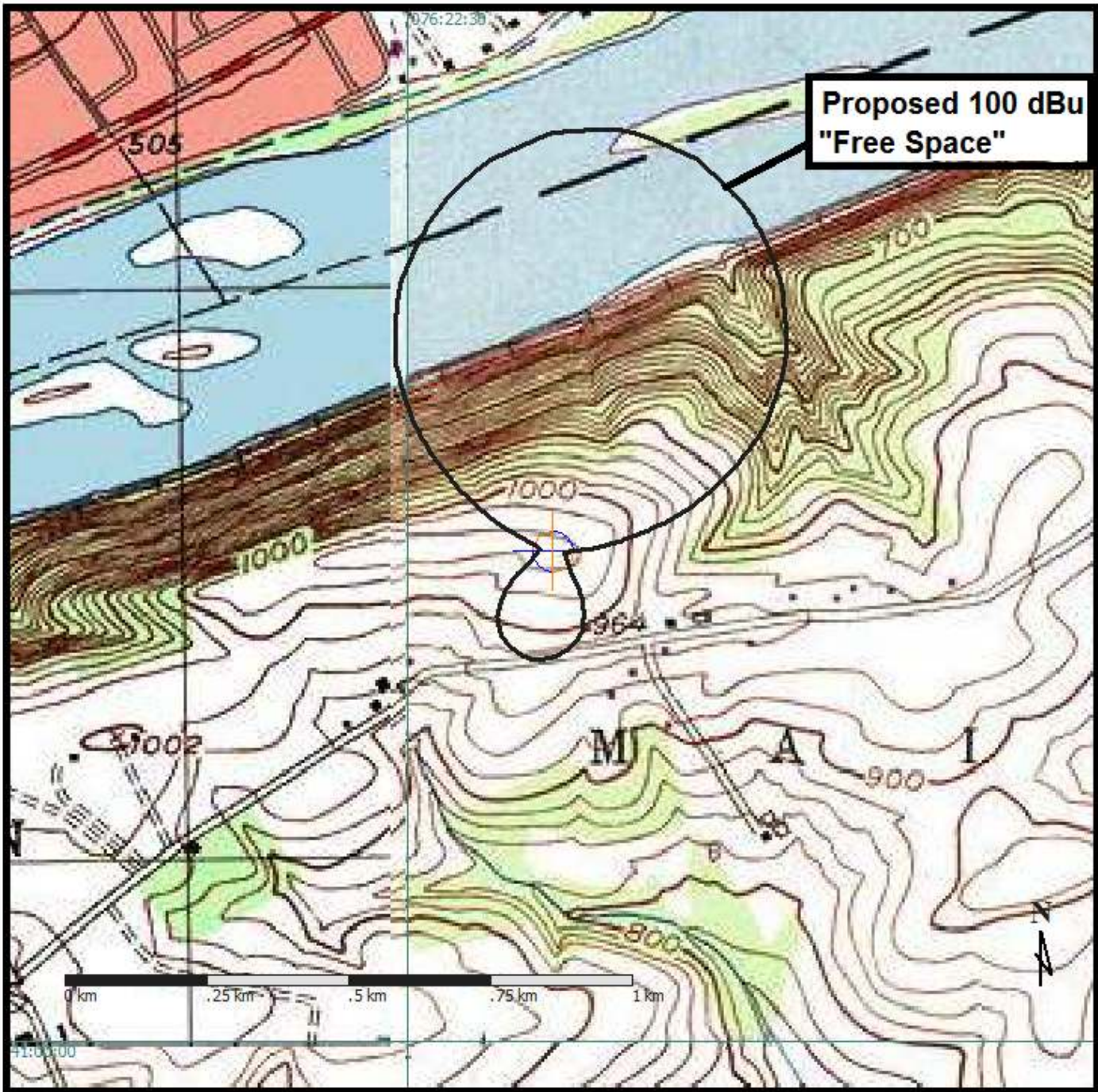
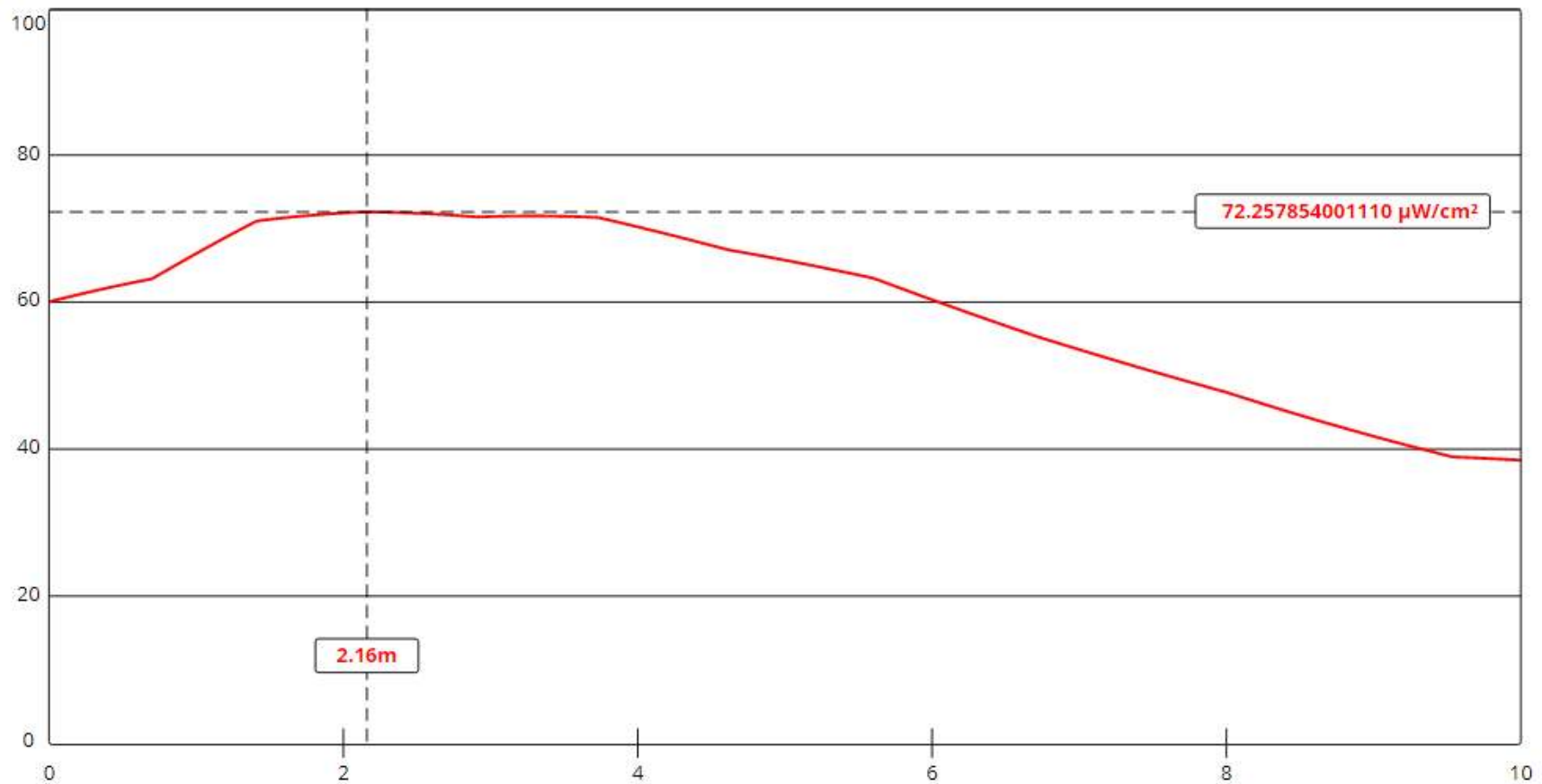


Figure 7 -- Satellite Image of Site



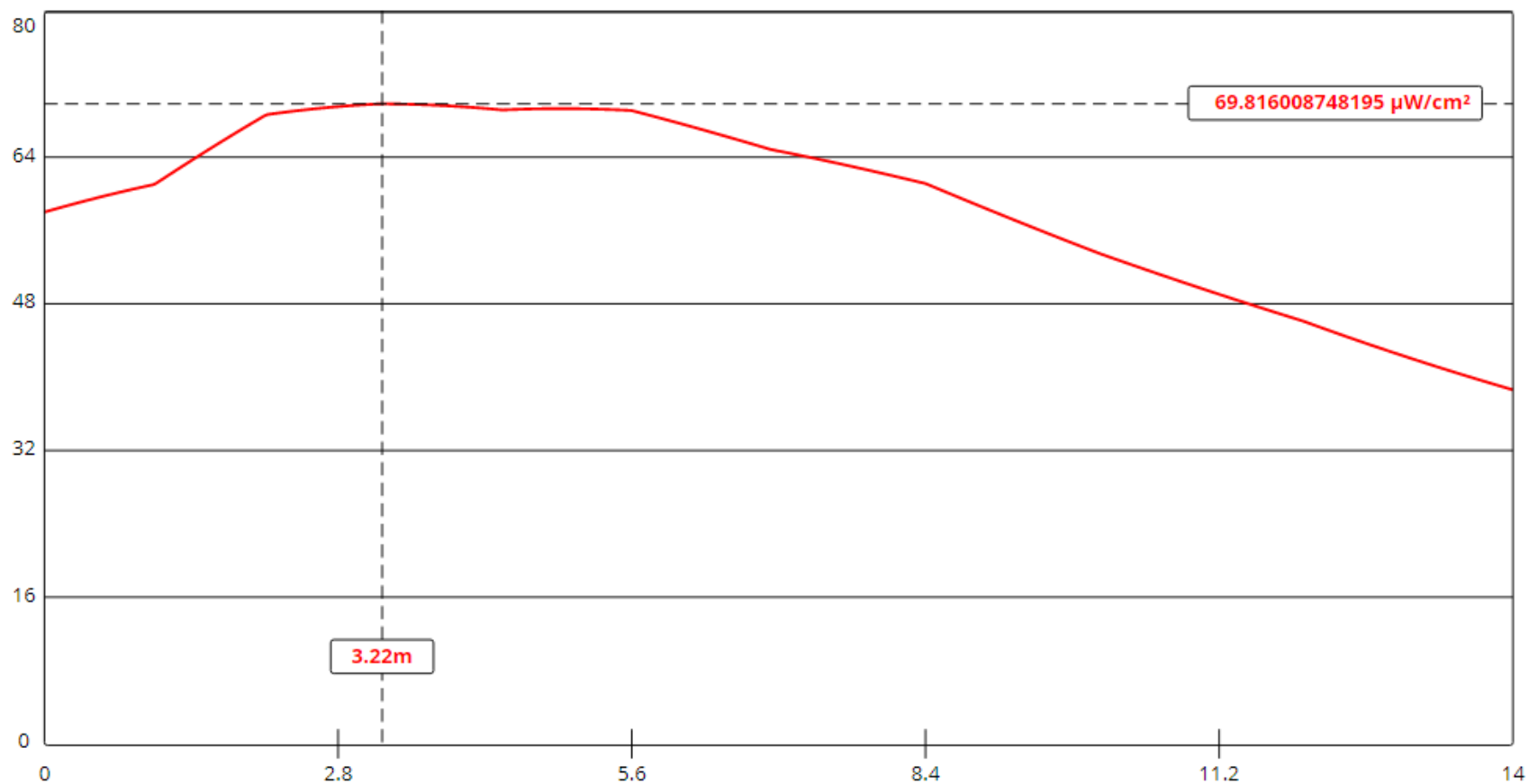
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ERP-H (W)	<input type="text" value="115"/>	ERP-V (W)	<input type="text" value="115"/>
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