

## **U/D Considerations**

The proposed facility provides contour protection to all existing stations with the exception of facility ID 71189 (channel 270). This station is second adjacent to the proposed translator. A U/D study will show that no interference will be caused to this station.

The signal strength of facility ID 71189 at the proposed site is more than 61.2 dBu (see exhibit below). Using a U/D ratio of 40 dB for second/third adjacent protection, the 101.2 dBu contour of the proposal was studied.

Due to antenna height above ground (0.023 km), this proposal fully protects both facility ID 71189. Attached below is freespace interference study using the freespace formula for calculating distance to contours. The signal strength at the ground is only 98.87 dBu (at 4 meters above ground the signal strength is 100.53 dB)

From the study it can be concluded that nowhere on the ground, or 4 meters above ground does the signal exceed 101.2 dBu. Because the interference is entirely above ground, and no high-rises are in the vicinity, no population affected by this proposal.

This application therefore fully meets the requirements of 74.1204(d) for a no-interference showing.

# Freespace Interference Study for a given antenna based on Vertical Radiation Pattern

Antenna Make: ETC

Antenna Model: FM-8 (1/2 lambda)

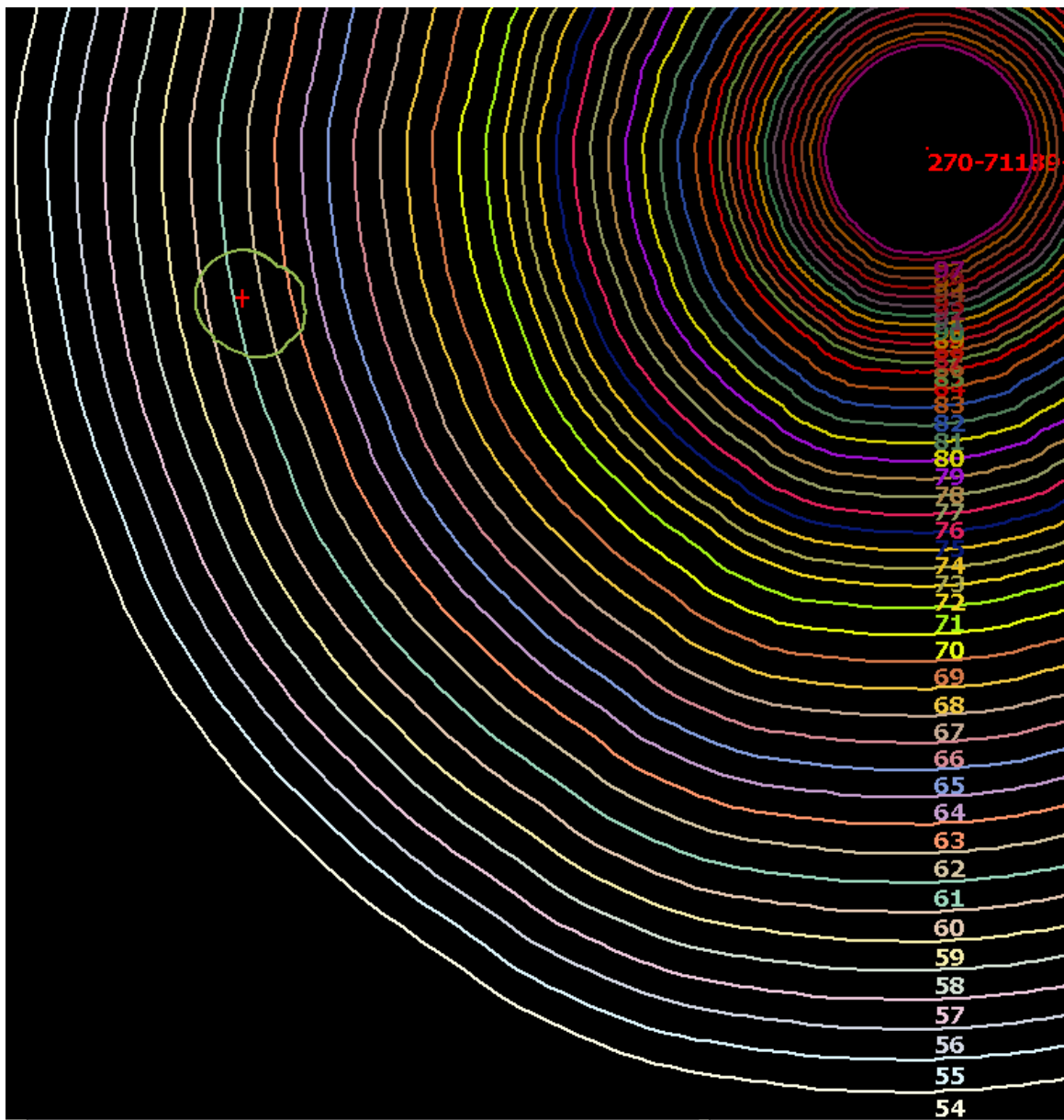
Depression Angle from Antenna	Antenna Relative Field	ERP Watts	ERP dBk	Distance to Ground from Antenna (km)	Free Space Signal (dBu)	2.5 dB Loss for Reflection	Signal Strength at Ground (dBu)	Circular Distance From Tower (m)
90	0.001	0.000	-78.86	0.0240	60.5	0	60.5	0.00
85	0.001	0.000	-78.86	0.0241	60.4	0	60.4	2.10
80	0.001	0.000	-78.86	0.0244	60.3	0	60.3	4.23
75	0.004	0.000	-66.82	0.0248	72.2	0	72.2	6.43
70	0.008	0.001	-60.80	0.0255	78.0	0	78.0	8.74
65	0.012	0.002	-57.28	0.0265	81.2	0	81.2	11.19
60	0.018	0.004	-53.76	0.0277	84.3	0	84.3	13.86
55	0.012	0.002	-57.28	0.0293	80.3	0	80.3	16.80
50	0.001	0.000	-78.86	0.0313	58.1	0	58.1	20.14
45	0.020	0.005	-52.84	0.0339	83.5	0	83.5	24.00
40	0.025	0.008	-50.90	0.0373	84.6	0	84.6	28.60
35	0.012	0.002	-57.28	0.0418	77.2	0	77.2	34.28
30	0.013	0.002	-56.58	0.0480	76.7	0	76.7	41.57
25	0.025	0.008	-50.90	0.0568	80.9	0	80.9	51.47
20	0.050	0.033	-44.88	0.0702	85.1	0	85.1	65.94
15	0.210	0.573	-32.42	0.0927	95.2	0	95.2	89.57
10	0.460	2.751	-25.61	0.1382	98.5	0	98.5	136.11
5	0.900	10.530	-19.78	0.2754	98.3	0	98.3	274.32

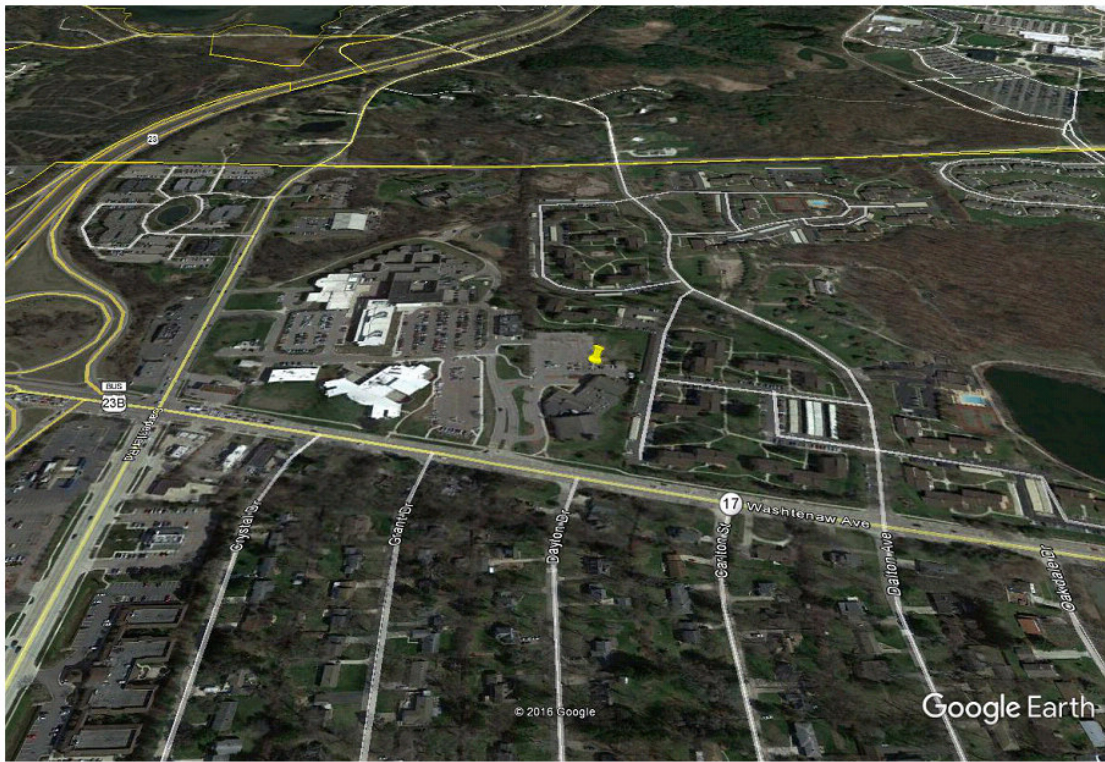
Distance to Ground Level assumes flat ground or a site where the ground level is above average terrain in all azimuths

Maximum ERP 13 watts  
Radiation Center AG 0.024 km  
Radiation Center AG 78.740 ft.

Max dBu to Ground Level 98.50

Facility ID 71189 to PROP U/D determination (61.2 dBU at red “+”):





Google Earth

feet 1000  
meters 300

