

**Comprehensive Engineering Exhibit**  
**Minor Change Application**  
**W259BX, Facility ID No. 139444**

This is a 250-Mile Window Application. The translator licensee and that of the subject AM station are entities under common control.

The subject construction permit was applied for during the 2003 FM Translator window (the "Auction 83 FM Translator Window"), and is scheduled to expire on October 21, 2016. The Commission determined in its First Report and Order in Revitalization of the AM Radio Service, FCC 15-242 at n.36 (rel. Oct. 23, 2015), that waivers of Auction 83 FM Translator Window construction permit deadlines for permits to be modified for association with an AM station in the AM station FM translator modification windows are presumptively in the public interest, provided that the AM station licensee commits to prompt FM translator station construction and initiation of broadcast operations. The AM station/FM translator station licensee(s) here are committing to prompt FM translator station construction and initiation of broadcast operations upon the grant of the requested FM translator modification."

This fill-in application seeks to modify W259BX by changing the antenna location, height, frequency, and antenna type. It is proposed to operate with 250 watts ERP, utilizing a directional, circularly polarized antenna mounted 137 meters above ground level, on a tower identified by ASR Number 1039555.

Below as Figure 1 is a spacing/clearance table from which it can be determined that the "Living Way" method must be utilized to demonstrate that no actual interference will be caused to WWKA.

As shown in Figure 2, in the vicinity of the proposed location, WWKA is predicted to have a signal of 65.6 dBu, thus the respective +40 dB interfering signals is 105.6 dBu. This instant proposal, due to the vertical directivity of the antenna and its height above ground, will not create any actual interference to WWKA as shown in Figures 3. Figure 4 is an aerial image allowing determination that no tall buildings are located in the vicinity of the proposed antenna site.

As shown in Figure 5, the entire 60 dBu contour fits within the predicted daytime 2 mV/m contour and within 25 miles of the primary AM station for which this translator is to be "fill-in".

The proposed facilities were evaluated in terms of potential radio frequency radiation exposure at ground level in accordance with OET Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation."

The proposed antenna system is an ERI Model 100A-4F-DA-HW, four-element, half-wave spaced antenna mounted 137 meters above ground. For purposes of this analysis the FM Model program has been set to calculate values for a worst case "Ring Stub" antenna element, operated with an effective radiated power of 0.25 Kilowatts in both the horizontal and vertical polarizations. At 2 meters above the surface, at 113 meters from the base of the tower, this proposal will contribute worst case, 0.030 microwatts per square centimeter, or 0.003 percent of the allowable ANSI limit for controlled exposure, and 0.015 percent of the allowable limit for uncontrolled exposure. This figure is less than 5% of the applicable FCC limit at all locations extending out from the base of the tower. Section 1.1307(b)(3) excludes applications when the calculated level is predicted to be less than 5% of the applicable

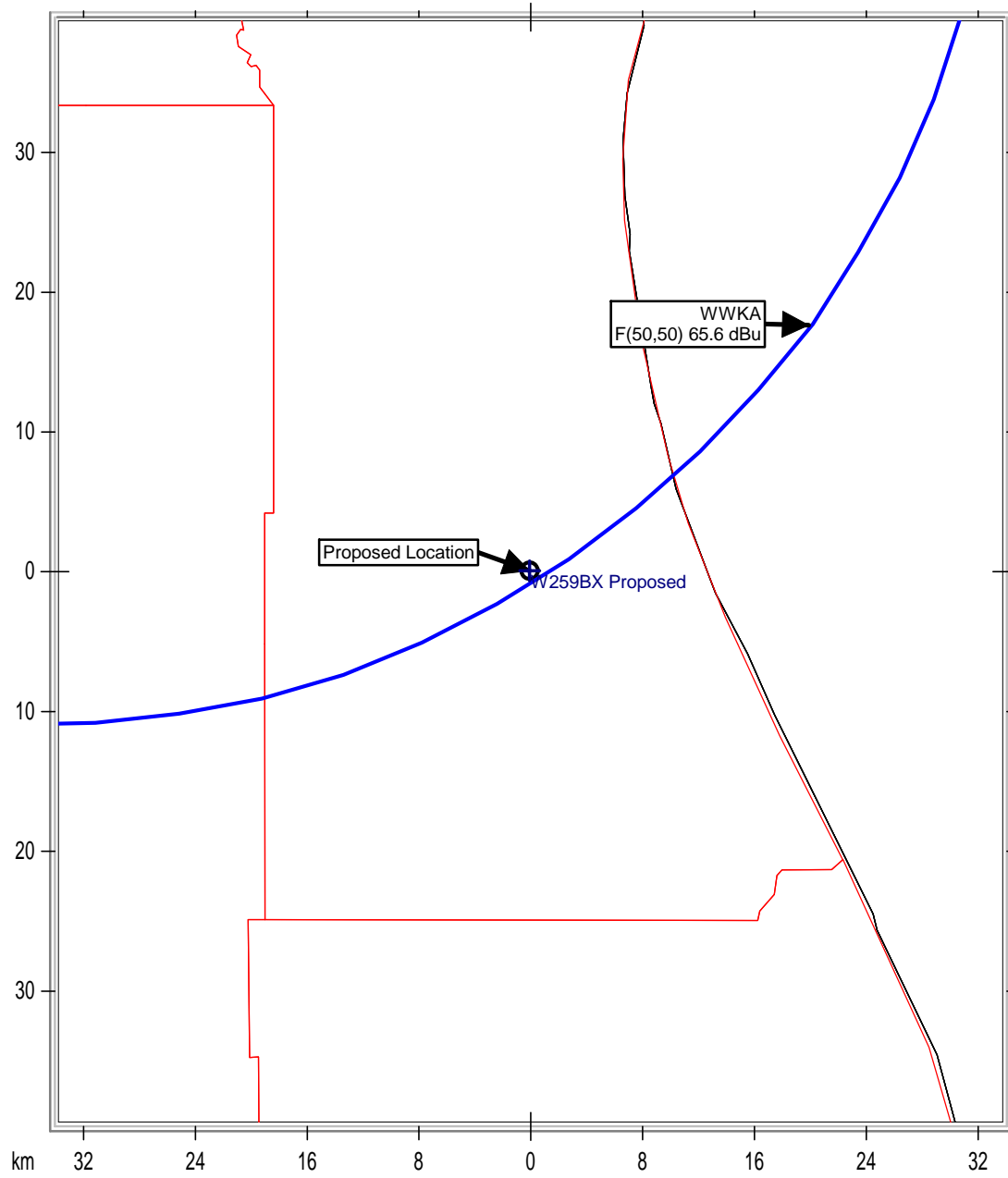
exposure limit. It is therefore believed that his proposal is in compliance with OET Bulletin Number 65 as required by the FCC.

Further, the applicant will see that signs are posted in the vicinity of the tower, warning of potential radio frequency hazards at the site. The site itself is restricted from public access. The applicant will cooperate with other users of the tower to reduce power of the facility, or discontinue operation, was necessary to limit human exposure to levels less than specified by the FCC should anyone be required to climb the tower for maintenance or inspection.

**Figure 1. Spacing/Clearance Table**

| Callsign | Channel | ERP_w  | ARN               | Class | Status | Dist_km | Sep | Clr      | Clr Notes  |
|----------|---------|--------|-------------------|-------|--------|---------|-----|----------|------------|
| WWKA     | 222     | 99000  | BLH-20011221AAP   | C     | LIC    | 68.7    | 0   | -6.16 dB | Living Way |
| KRAQ-LP  | 225     | 89.3   | BNPL-20131104AAK  | LP100 | CP     | 30.9    | 24  | 0.81 dB  | Clear      |
| W227AF   | 227     | 55     | BLFT-19960409TA   | D     | LIC    | 10.35   | 0   | 5.50 dB  | Clear      |
| WAVW     | 224     | 50000  | BMLH-20100113ABB  | C2    | LIC    | 93.81   | 0   | 8.85 dB  | Clear      |
| NEW      | 225     | 100    | BNPL-20131112AAG  | LP100 | APP    | 67.23   | 24  | 14.58 dB | Clear      |
| NEW      | 226     | 100    | BNPL-20131113AUL  | LP100 | CP     | 35.73   | 13  | 16.23 dB | Clear      |
| WIKX     | 225     | 100000 | BLH-20000626AET   | C1    | LIC    | 200.43  | 0   | 22.32 dB | Clear      |
| WFLZ-FM  | 227     | 97000  | BLH-20110317ABC   | C     | LIC    | 158     | 0   | 24.10 dB | Clear      |
| WFPF-LP  | 224     | 100    | BLL-20150803AAM   | LP100 | LIC    | 90.09   | 13  | 25.00 dB | Clear      |
| WQOL     | 279     | 50000  | BMLH-20100810ABB  | C2    | LIC    | 40.69   | 15  | 25.7     | Clear      |
| W225CA   | 225     | 99     | BNPFT-20131022AAC | D     | CP     | 158.11  | 0   | 26.12 dB | Clear      |
| W226BT   | 226     | 99     | BLFT-20150312AAO  | D     | LIC    | 88      | 0   | 27.57 dB | Clear      |
| W224CE   | 224     | 10     | BNPFT-20130318AGL | D     | CP     | 61.9    | 0   | 29.21 dB | Clear      |
| WKIE-LP  | 224     | 28     | BLL-20150924ADZ   | LP100 | LIC    | 78.1    | 13  | 29.46 dB | Clear      |
| WMFQ     | 225     | 50000  | BLH-20011022AAS   | C2    | LIC    | 179.67  | 0   | 31.69 dB | Clear      |
| WKRO-FM  | 226     | 24500  | BLH-20130401AGL   | C3    | LIC    | 126.63  | 0   | 32.49 dB | Clear      |
| W224CF   | 224     | 250    | BMPFT-20150901ACD | D     | CP MOD | 112.69  | 0   | 32.11 dB | Clear      |
| NEW      | 278     | 100    | BNPL-20131114BST  | LP100 | APP    | 40.11   | 7   | 33.1     | Clear      |
| WRDJ-LP  | 228     | 100    | BMLL-20071126AAR  | LP100 | LIC    | 41.75   | 6   | 35.19 dB | Clear      |
| W224CQ   | 224     | 27     | BNPFT-20130814ADF | D     | CP     | 106.61  | 0   | 38.92 dB | Clear      |
| WFEZ     | 226     | 98000  | BLH-20050224ABN   | C0    | LIC    | 235.04  | 0   | 38.35 dB | Clear      |
| WRXW-LP  | 224     | 45     | BLL-20151013AEH   | LP100 | LIC    | 93.78   | 13  | 38.43 dB | Clear      |
| W227BT   | 227     | 13     | BLFT-20071025AAB  | D     | LIC    | 87.73   | 0   | 39.37 dB | Clear      |

Figure 2. Contour Map



— National Borders    — County Borders    — State Borders

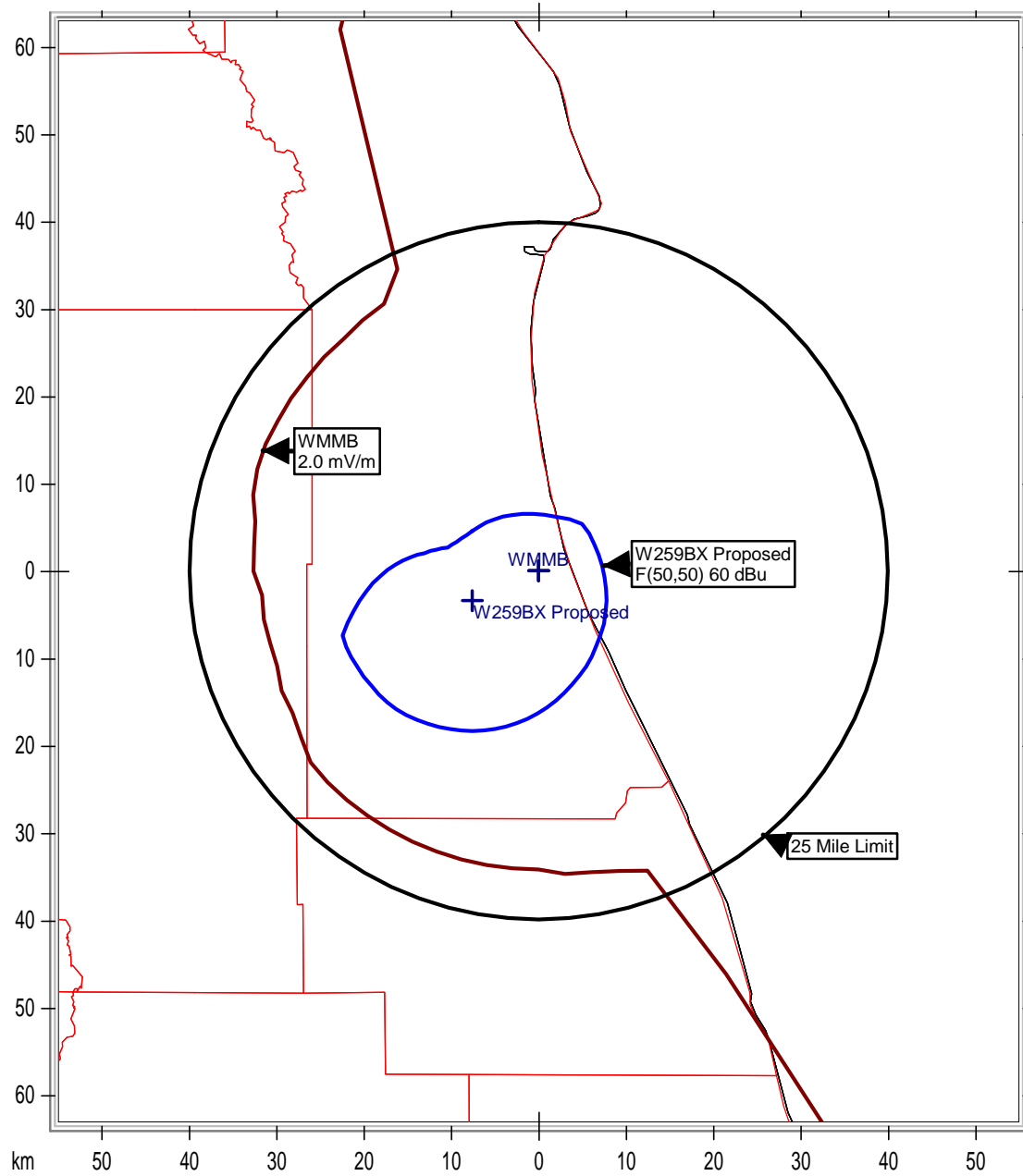
**Figure 3. Distance to Signal Contour**

|  |                 |   |               |                              |                         |                         |                        |                       |  |  |  |  |  |  |  |  |
|--|-----------------|---|---------------|------------------------------|-------------------------|-------------------------|------------------------|-----------------------|--|--|--|--|--|--|--|--|
| <b>Proposed Antenna:</b>               |                 | ERI 100A-4F-HW  |               | Fill in<br>"yellow"<br>cells |                         |                         |                        |                       |  |  |  |  |  |  |  |  |
| <b>Proposed Power:</b>                 |                 | 0.25  | kW            |                              |                         |                         |                        |                       |  |  |  |  |  |  |  |  |
| <b>Antenna Height AGL:</b>             |                 | 137   | meters        |                              |                         |                         |                        |                       |  |  |  |  |  |  |  |  |
| <b>Interference Contour:</b>           |                 | 105.6   | dBu           |                              |                         |                         |                        |                       |  |  |  |  |  |  |  |  |
| <b>Artificial Rcv Antenna Height:</b>  |                 | 2   | meters        |                              |                         |                         |                        |                       |  |  |  |  |  |  |  |  |
| <b>Distance (Free Space) Equation:</b> |                 | $=(10^{((106.92-[\text{desired dBu}]+[\text{ERP in dBk}])/20))})*1000$    |               |                              |                         |                         |                        |                       |  |  |  |  |  |  |  |  |
| <b>Field Strength (dBu) Equation</b>   |                 | $=106.92-(20*(\text{LOG10}[\text{DistMeters}/1000]))+[\text{ERP in dBk}]$ |               |                              |                         |                         |                        |                       |  |  |  |  |  |  |  |  |
| <b>Depression</b>                      |                 |   |               | <b>Distance</b>              |                         |                         |                        |                       |  |  |  |  |  |  |  |  |
| <b>Angle</b>                           | <b>Antenna</b>  |   |               | <b>from Ant.</b>             | <b>Distance</b>         | <b>Field Strength</b>   | <b>Distance</b>        | <b>Field Strength</b> |  |  |  |  |  |  |  |  |
| <b>Below</b>                           | <b>Relative</b> | <b>ERP</b>  | <b>ERP</b>    | <b>to Interf</b>             | <b>from Ant. to</b>     | <b>in dBu @</b>         | <b>from Ant.</b>       | <b>in dBu @</b>       |  |  |  |  |  |  |  |  |
| <b>Horizon</b>                         | <b>Field</b>    | <b>in kW</b>  | <b>in dBk</b> | <b>Contour</b>               | <b>Artificial Plane</b> | <b>Artificial Plane</b> | <b>to Ground Level</b> | <b>Ground Level</b>   |  |  |  |  |  |  |  |  |
| 0°                                     | 1.000           | 0.250   | -6.02         | 582.06 m                     | infinite                | ---                     | infinite               | ---                   |  |  |  |  |  |  |  |  |
| -5°                                    | 0.951           | 0.226   | -6.46         | 553.54 m                     | 1548.95 m               | 96.66 dBu               | 1571.90 m              | 96.53 dBu             |  |  |  |  |  |  |  |  |
| -10°                                   | 0.841           | 0.177   | -7.52         | 489.51 m                     | 777.43 m                | 101.58 dBu              | 788.95 m               | 101.45 dBu            |  |  |  |  |  |  |  |  |
| -15°                                   | 0.615           | 0.095   | -10.24        | 357.97 m                     | 521.60 m                | 102.33 dBu              | 529.33 m               | 102.20 dBu            |  |  |  |  |  |  |  |  |
| -20°                                   | 0.391           | 0.038   | -14.18        | 227.59 m                     | 394.71 m                | 100.82 dBu              | 400.56 m               | 100.69 dBu            |  |  |  |  |  |  |  |  |
| -25°                                   | 0.178           | 0.008   | -21.01        | 103.61 m                     | 319.44 m                | 95.82 dBu               | 324.17 m               | 95.69 dBu             |  |  |  |  |  |  |  |  |
| -30°                                   | 0.004           | 0.000   | -53.98        | 2.33 m                       | 270.00 m                | 64.31 dBu               | 274.00 m               | 64.19 dBu             |  |  |  |  |  |  |  |  |
| -35°                                   | 0.117           | 0.003   | -24.66        | 68.10 m                      | 235.37 m                | 94.83 dBu               | 238.85 m               | 94.70 dBu             |  |  |  |  |  |  |  |  |
| -40°                                   | 0.182           | 0.008   | -20.82        | 105.94 m                     | 210.02 m                | 99.66 dBu               | 213.13 m               | 99.53 dBu             |  |  |  |  |  |  |  |  |
| -45°                                   | 0.200           | 0.010   | -20.00        | 116.41 m                     | 190.92 m                | 101.30 dBu              | 193.75 m               | 101.18 dBu            |  |  |  |  |  |  |  |  |
| -50°                                   | 0.184           | 0.008   | -20.72        | 107.10 m                     | 176.23 m                | 101.27 dBu              | 178.84 m               | 101.15 dBu            |  |  |  |  |  |  |  |  |
| -55°                                   | 0.150           | 0.006   | -22.50        | 87.31 m                      | 164.80 m                | 100.08 dBu              | 167.25 m               | 99.95 dBu             |  |  |  |  |  |  |  |  |
| -60°                                   | 0.110           | 0.003   | -25.19        | 64.03 m                      | 155.88 m                | 97.87 dBu               | 158.19 m               | 97.74 dBu             |  |  |  |  |  |  |  |  |
| -65°                                   | 0.072           | 0.001   | -28.87        | 41.91 m                      | 148.96 m                | 94.58 dBu               | 151.16 m               | 94.46 dBu             |  |  |  |  |  |  |  |  |
| -70°                                   | 0.042           | 0.000   | -33.56        | 24.45 m                      | 143.66 m                | 90.22 dBu               | 145.79 m               | 90.09 dBu             |  |  |  |  |  |  |  |  |
| -75°                                   | 0.021           | 0.000   | -39.58        | 12.22 m                      | 139.76 m                | 84.44 dBu               | 141.83 m               | 84.31 dBu             |  |  |  |  |  |  |  |  |
| -80°                                   | 0.008           | 0.000   | -47.96        | 4.66 m                       | 137.08 m                | 76.22 dBu               | 139.11 m               | 76.09 dBu             |  |  |  |  |  |  |  |  |
| -85°                                   | 0.002           | 0.000   | -60.00        | 1.16 m                       | 135.52 m                | 64.28 dBu               | 137.52 m               | 64.15 dBu             |  |  |  |  |  |  |  |  |
| -90°                                   | 0.001           | 0.000   | -66.02        | 0.58 m                       | 135.00 m                | 58.29 dBu               | 137.00 m               | 58.16 dBu             |  |  |  |  |  |  |  |  |

**Figure 4. Proposed Location Aerial Image**

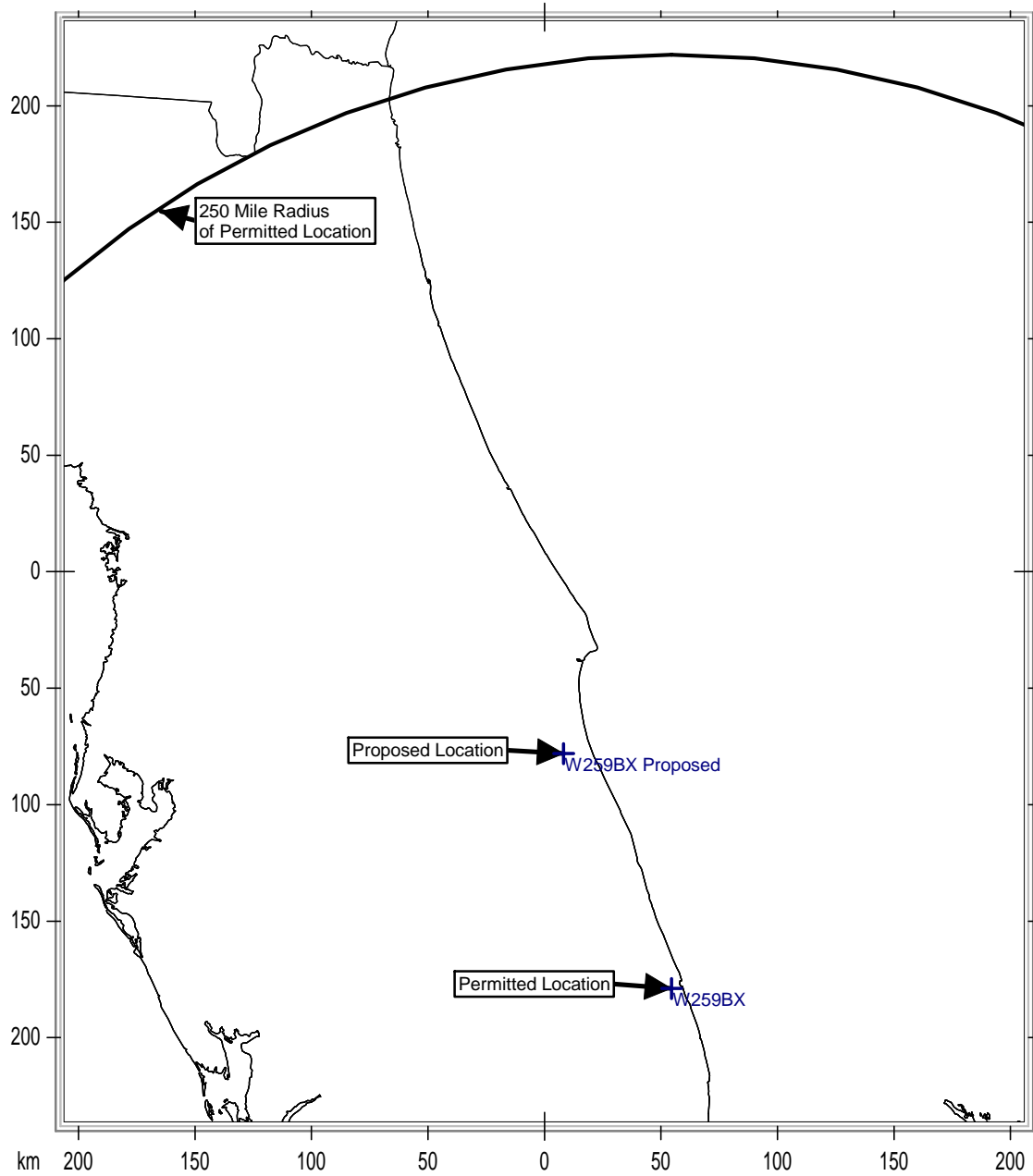


Figure 5. Contour and Distance Map



— National Borders    — County Borders    — State Borders

Figure 6. 250 Mile Radius



— National Borders — State Borders