ATTACHMENT

COMMUNITY COVERAGE SUPPLEMENTAL SHOWING
USING AN ALTERNATIVE CONTOUR PREDICTION METHOD
STATION WXJB
HOMOSASSA, FLORIDA
CH 260C3   9.2 KW (DA-MAX)   163 M

Attached as Figure 2A is a map showing portions of the FCC predicted 70 dBu and 60 dBu coverage contours. As indicated, the FCC predicted 70 dBu contour does not encompass 80% of the principal community of Homosassa. However, using a terrain sensitive propagation model, the 70 dBu is predicted to encompass 100% of Homosassa.

Acceptability of Supplemental Showing

It is believed that it is appropriate to use a supplemental showing based on the FCC's policies and decisions for considering supplemental showings in the context of compliance with coverage of the community of license (Section 73.315).[1] Specifically, as indicated below, there is at least a 23 percent difference in the distance to the 70 dBu contour based on the supplemental method compared to the distance provided by the standard prediction method. As such, the terrain along propagation paths from the WXJB transmitter site towards the Homosassa city limits "departs widely" from the 50 meter delta standard, thus satisfying the requirements in the *Minor Changes R&O* that the 70 dBu contour as predicted by the supplemental method be at least 10% larger than the distance based on the standard prediction method.

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[1] See *Amendments of Parts 73 and 74 of the Commission Rules to Permit Certain Minor Changes in Broadcast Facilities Without a Construction Permit*, Report and Order, 12 FCC Rcd 12371, 12401-03 (1997)(the "*Minor Changes R&O*"); *KNTV Licensee, 19 FCC Rcd 15479 (2004); Letter to Christopher Sova, Esq. re KFME(FM) from Peter H. Doyle, Chief, Audio Division, Media Bureau (March 5, 2004)("KFME"), affirmed sub nom. CMP Houston-KC, LLC*, Memorandum Opinion and Order, 23 FCC Rcd 10565 (2008)("*KFME MO&O*"); and *Skytower Communications – 94.3, LLC, Request for Determination of Compliance with the Main Studio Location Rule, 47 CFR 73.1125*, Memorandum Opinion and Order and Notice of Apparent Liability for Forfeiture, Facility ID No. 25799, NaL/Acct. No. MB 201041410015, FRN: 0001790724, DA 10-1760.

Longley-Rice Coverage Analysis

The Longley-Rice propagation model[2] was used as more precise alternative to the Commission's standard prediction method to determine the location of WXJB's proposed 70 dBu contour. The Homosassa town limits are located across the arc of azimuths from 305° clockwise to 325° true from the proposed WXJB transmitter site. Therefore, for the Longley-Rice analysis terrain profiles were prepared for the following radials: 305°, 315°and 325° true. Figure 1A, Sheets 1 thru 3, depicts the 305°, 315° and 325° true terrain profiles, respectively. The terrain data was derived from the NGDC 3-second terrain database. Using these terrain elevations, calculations of the field strength were made at 0.1-km intervals along each radial using the Longley-Rice propagation model. The following parameters were employed in the calculations:

Model	Point-to-point irregular
Location Variability	50%
Time Variability	50%
Situation Variability	50%
Frequency	99.9 MHz
Polarization	Horizontal
Conductivity	0.005 S/m
Dielectric Constant	15.0
Transmitter Antenna Height AMSL	181 m
Transmitting Antenna	Directional
Maximum Effective Radiated Power	9200 W
Receive Antenna Height	9.1 m
Clutter Factor	3 db

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[2] Rice, P.L., A.G. Longley, K.A. Norton, and A.P. Barsis, "Transmission Loss Predictions for Tropospheric Communication Circuits," Technical Note 101 (Issued May 7, 1965, Revised January 1, 1967) National Bureau of Standards, Boulder, Colorado.
    See also Longley, A.G., and P.L. Rice, "Prediction of Tropospheric Radio transmission Loss Over Irregular Terrain: A Computer Method-1969,"" ESSA Technical Report ERL-ITS 67, Institute for Telecommunications Sciences, Boulder, Colorado, July 1968.

As indicated above, a 3 dB clutter factor was used
to take into account field strength variations due to local
clutter (e.g. trees, buildings).[3] The results of the study are
illustrated graphically on Figure 1A. The field strength data
along each radial was analyzed to determine the "median" values
using polynomial curve fitting (based on the method of least
squares).[4] The location of the "median" 70 dBu field strength
level is indicated on each radial based on this analysis.

The 70 dBu contour based on the alternate terrain
method (Longley-Rice) has been depicted on Figure 2A. Also
shown are the legal boundaries of Homosassa based on the 2010
Census, the proposed WXJB transmitter site and the protected 60
dBu contour based on the FCC's standard prediction method
[F(50,50)]. It has been determined that the Longley-Rice 70
dBu encompasses 100% of the land area within the Homosassa town
limits.

Compliance with 70 dBu Contour 10% Extension Criteria

The following tabulates the distance to the 70 dBu
contour along each radial based on the FCC's standard
prediction method [F(50,50)] and the Longley-Rice alternate
terrain method, the difference and percent change:

Radial	70 dBu Field Strength (km)		Difference	
	FCC F(50,50)	Longley-Rice	Km	Percent
305°T	23.5	35.5	12.0	+51.1
315°T	16.0	35.5	12.2	+52.5
325°T	16.2	35.5	12.6	+55.0

The difference between the distances to the 70 dBu contours
exceeds 10 percent.

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[3] Use of a 3 dB clutter factor appears "conservative" for the propagation
paths considered here. For instance, a 2 dB clutter factor was used by the
FCC to establish that KALF-FM at Red Bluff, California encompassed its main
studio location - see Memorandum from William Daniel, Chief, Propagation
Analysis Bureau, OET, to Dennis Williams, Chief, FM Branch, MMB, dated Oct.
6, 1992 concerning the supplemental showing of 3.16 mV/m contour of KALF-FM,
Red Bluff, CA, File BLH-851125KH. In addition, Bullington indicated that the
average loss from surrounding trees for horizontal polarization may be 2 to 3
dB (see Kenneth Bullington, "Radio Propagation at Frequencies Above 30
Megacycles, Proc IRE, October, 1947).

[4] The polynomial equation used for the analysis is shown on each graph as a
dashed line along with the R-squared value, which helps determine the line of
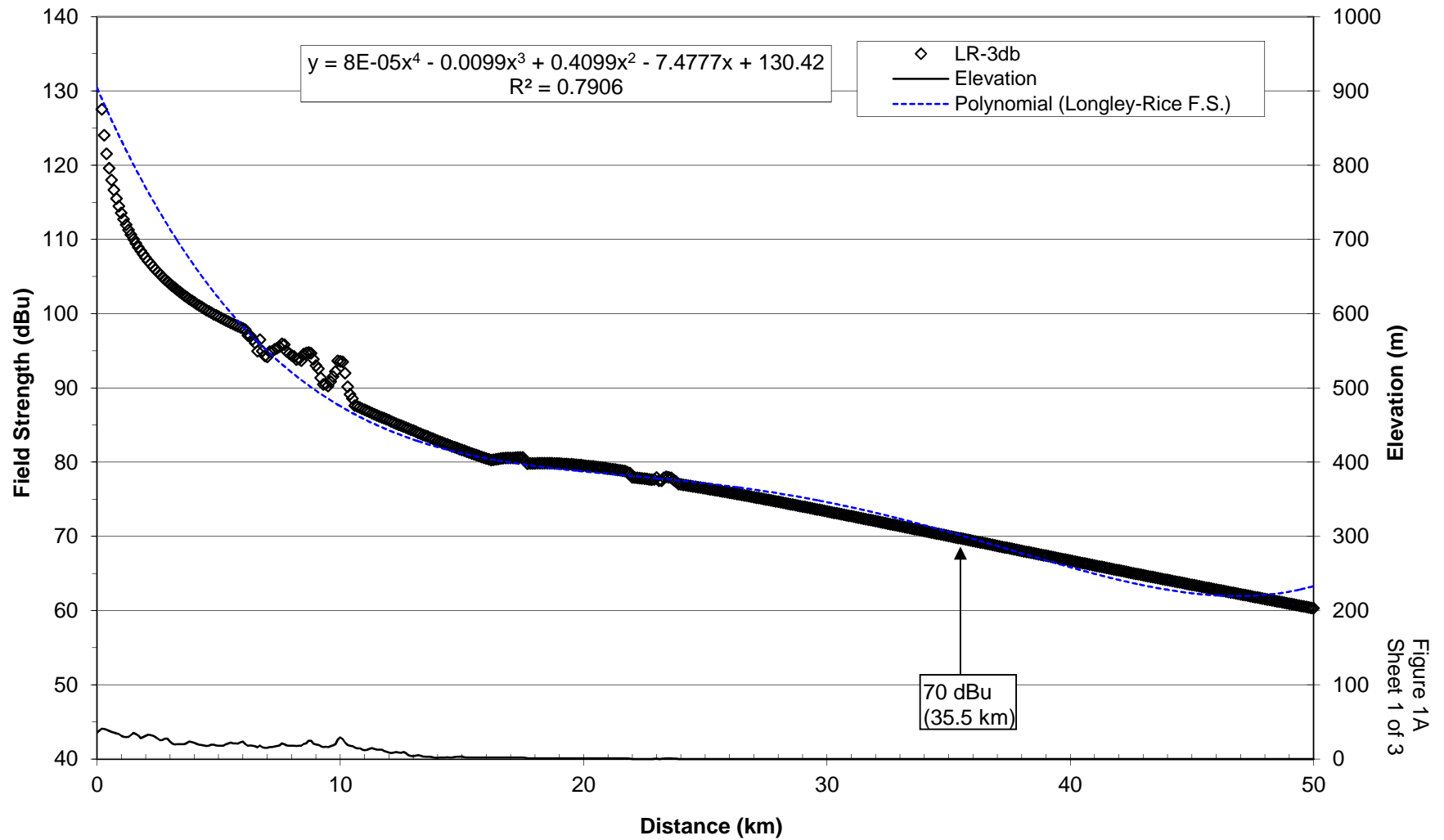best fit.

Sample Calculation

The following provides a sample Longley-Rice calculation along the 315° true radial.

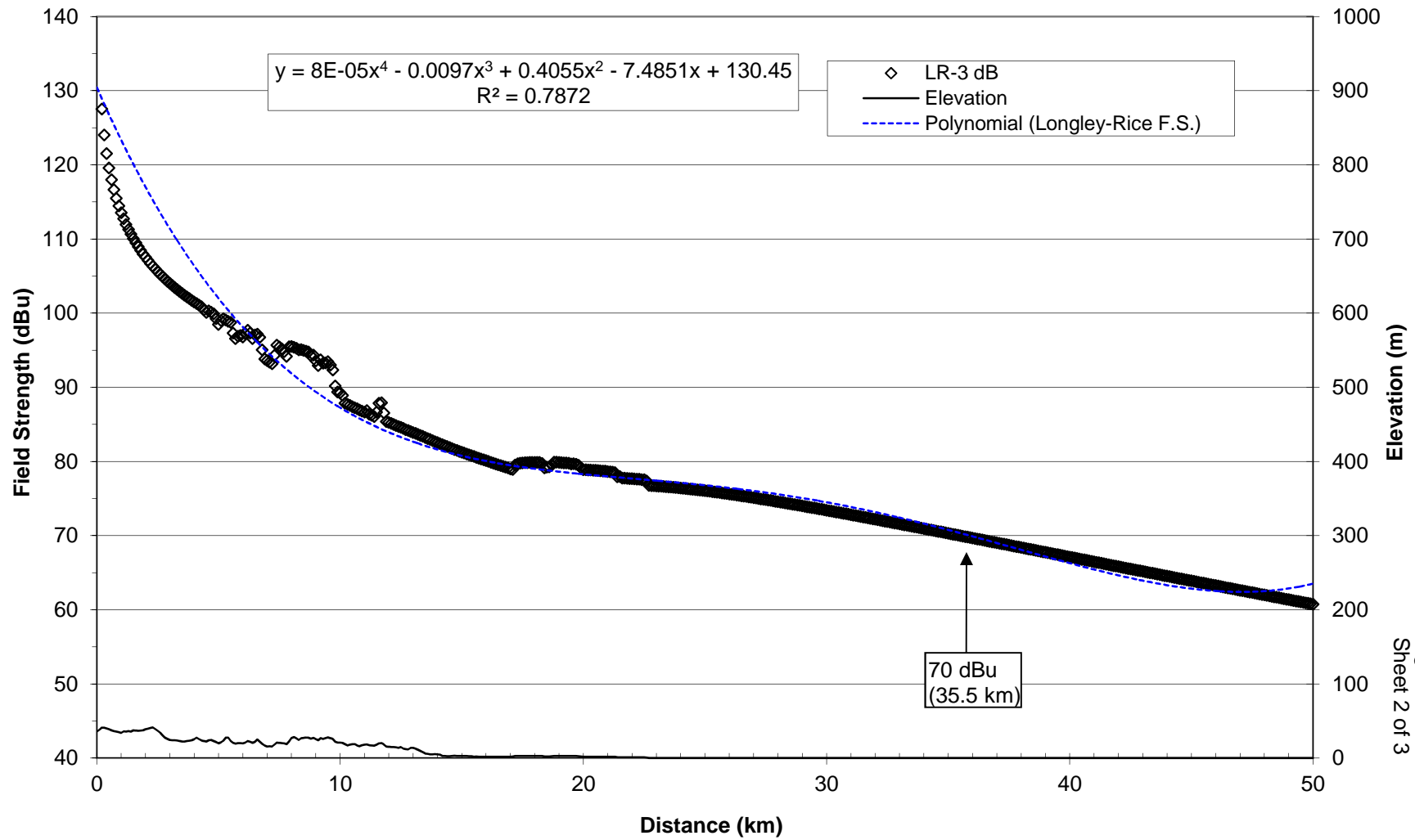|	
Free Space Field (9.2 kW @ 35.0 km)	85.7 dBu
Additional estimated transmission loss	12.4 dB
Clutter Loss	3 dB
Net received field	70.3 dBu

Conclusion

As demonstrated above, use of a supplemental showing is appropriate based on the FCC's policies and decisions for considering supplemental showings in the context of demonstrating compliance with coverage of the community of license (Section 73.315). In addition, the WXJB application complies with the community of license coverage requirements of Section 73.315 based on the supplemental showing.

WXJB 305 Degrees True

$y = 8E\text{-}05x^4 - 0.0099x^3 + 0.4099x^2 - 7.4777x + 130.42$

$R^2 = 0.7906$

◇ LR-3db
— Elevation
- - - Polynomial (Longley-Rice F.S.)

70 dBu
(35.5 km)

Field Strength (dBu)

Elevation (m)

Distance (km)

Figure 1A
Sheet 1 of 3

WXJB 315 Degrees True

$y = 8E-05x^4 - 0.0097x^3 + 0.4055x^2 - 7.4851x + 130.45$
$R^2 = 0.7872$

◇   LR-3 dB
—— Elevation
- - - Polynomial (Longley-Rice F.S.)

70 dBu
(35.5 km)

Field Strength (dBu)

Elevation (m)

Distance (km)

Figure 1A
Sheet 2 of 3

WXJB 325 Degrees True

$$y = 7E\text{-}05x^4 - 0.0083x^3 + 0.3558x^2 - 6.9267x + 129.04$$
$$R^2 = 0.7799$$

◇ LR-3db
—— Elevation
- - - Polynomial (Longley-Rice F.S.)

70 dBu
(35.5 km)

Field Strength (dBu)

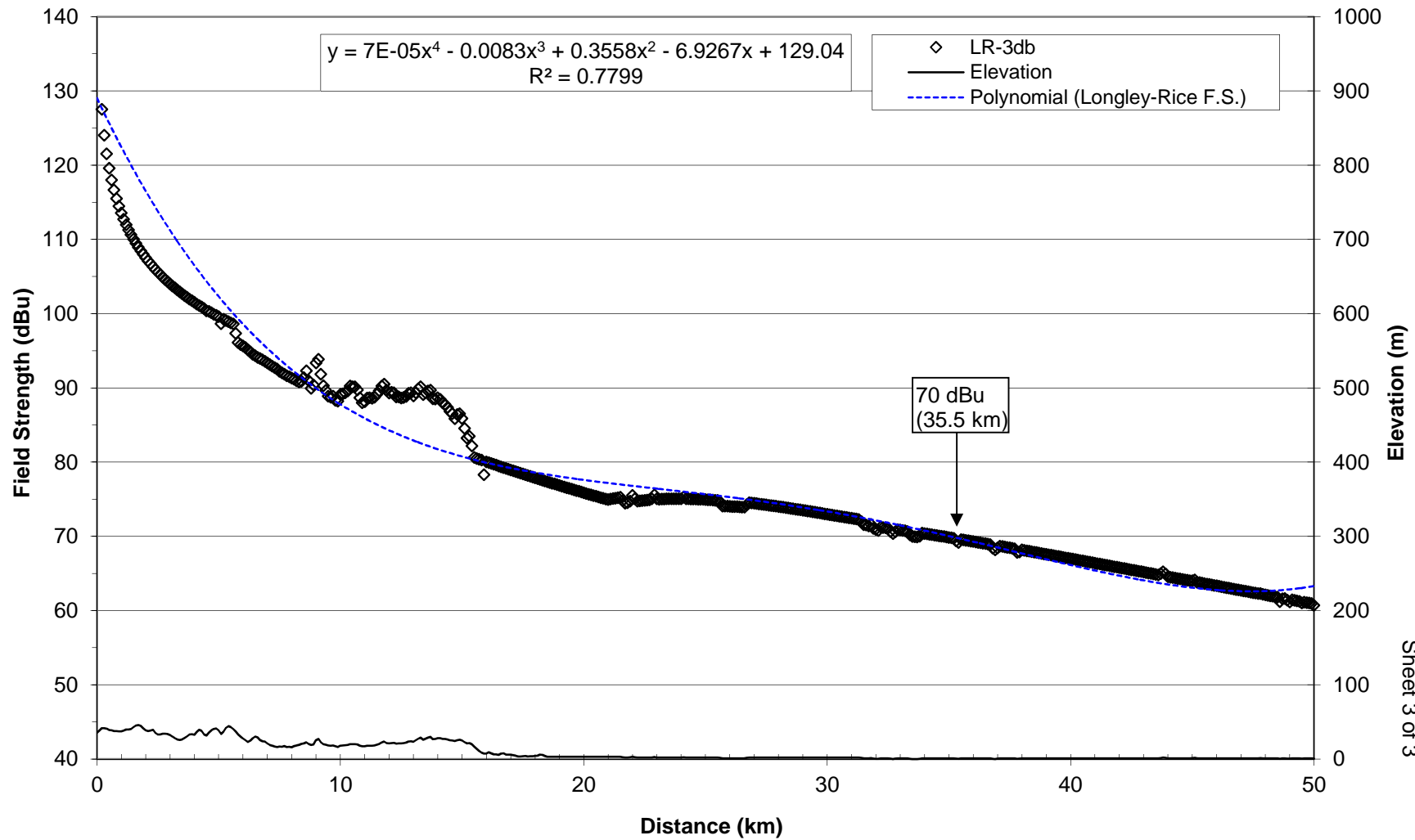Elevation (m)

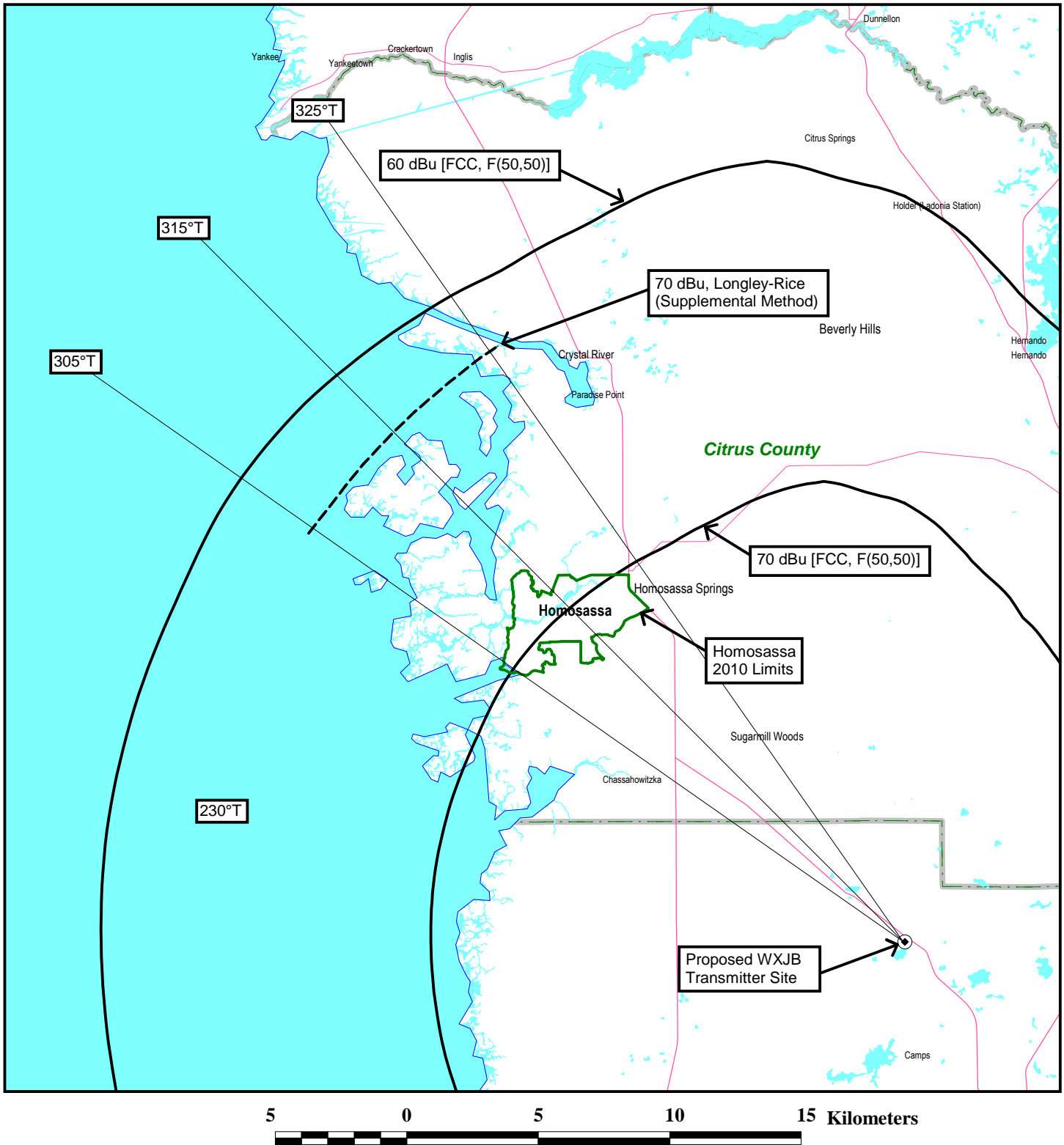Distance (km)

Figure 1A
Sheet 3 of 3

70 DBU - SUPPLEMENTAL SHOWING

FM STATION WXJB
HOMOSASSA, FLORIDA
CH 260A   9.2 KW (DA)   163 M

du Treil, Lundin & Rackley, Inc.   Sarasota, Florida