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Consultants in Electronic Media Technology/Management

Technical Statement for
Grant Media LLC

For Construction Permit:

WEUX
Channel 48
Chippewa Falls, WI

CP for Station Licensed in File No. BLCT-19981224KJ

For Modification of Construction Permit:

WEUX-DT
Channel 49
Chippewa Falls, WI

Modification of Permit Issued in File No. BPCDT-19991027ACD

Introduction

This Technical Statement provides the supplemental technical data and information required for a pair of coordinated applications on FCC Form 301 "Application for Construction Permit for Commercial Broadcast Station" by Grant Media LLC. ("Grant") for both its analog and digital television facilities at Chippewa Falls, WI. Grant seeks a construction permit for its analog station, Station WEUX ("WEUX-TV") on Channel 48, and modification of the currently authorized construction permit for its digital station, Station WEUX-DT on Channel 49. In particular, this Technical Statement addresses the additional information required by Section III-C – TV Engineering, applicable to Station WEUX-TV, and by Section III-D – DTV Engineering – applicable to Station WEUX-DT, respectively. The instant applications request a new Construction Permit for WEUX-TV, licensed in File Number BLCT-19981224KJ on August 12, 1999, and modification of the

construction permit for WEUX-DT issued on May 14, 2001, in File Number BPCDT-19991027ACD. The applications seek to move the two WEUX operations to a common antenna system, thereby making it financially feasible for WEUX to construct its digital facilities.

WEUX-DT is one of the financially challenged operations for which Grant has obtained from the Commission extensions of the deadline for construction of its DTV facilities. The station has been operating with reduced facilities under the Special Temporary Authorization (STA) in File Number BDSTA-20051221AQC, issued on January 19, 2006, and extended in File Number BEDSTA-20060627AEU, issued on August 21, 2007. Grant recently suffered the loss of its founder, long-time CEO, and decision-maker. In the aftermath of that loss, new top management has obtained the financing to construct digital facilities for WEUX-DT with somewhat reduced capacity from those authorized in the currently outstanding construction permit but still serving both a larger area and population than its current analog signal. The modification of that CP is intended to conform the facilities to the available budget.

Complicating matters is a recent technical evaluation of the WEUX-TV analog facilities, which revealed that the transmission line for that operation is likely to fail in the near future, potentially before the transition to full digital operation in February, 2009. Grant does not have the financial resources both to replace the transmission line for WEUX-TV and to build the new facilities for WEUX-DT. Moreover, replacement of the analog line would cause interruptions to the analog service that would be longer than if that service were moved to a new antenna. Consequently, a plan has been developed that will combine the two operations, on adjacent Channels 48 and 49, onto a single antenna and transmission line. This will permit saving the cost of replacing the line for the analog operation – only to be used for the short duration of the remaining life of that station, while also allowing the digital station to use an antenna that is mounted on top of the tower rather than on its side, with corresponding coverage benefits.

Thus, it is the purpose of the current applications to permit joint operation of both the analog and digital operations of WEUX on a common antenna and transmission line, to

save the cost of replacement of the transmission line for WEUX-TV, which might financially jeopardize the completion of facilities for WEUX-DT, and to enable improvement of the facilities for WEUX-DT by allowing it to operate from the top of the tower on which the antennas for both stations are located. In the process, the proposed facilities of WEUX-DT will need to be reduced, and the facilities of WEUX-TV will be reduced by virtue of their being fitted onto an antenna optimized for WEUX-DT.

Facilities & Implementation Schedule

The proposed facilities include an antenna mounted on top of the WEUX tower for both stations – WEUX-TV and WEUX-DT. The proposed height above ground level to the center of radiation of the antenna is 144 meters – the same as the existing WEUX-TV antenna. This corresponds to a height above average terrain of 223 meters. Operation by WEUX-TV is proposed at 1550 kW ERP, and operation by WEUX-DT is proposed at 780 kW ERP. As discussed in detail below, these power levels were determined by matching the farthest extent of the contours of the proposed operations with the contours of the corresponding authorized facilities (i.e., the licensed facilities of WEUX-TV and the construction permit facilities of WEUX-DT). The location of the facilities is unchanged from that currently used by the stations, thus no location maps are provided herewith. Full specifications for the proposed facilities are provided below in Figure 1 for WEUX-DT and in Figure 2 for WEUX-TV, respectively. The proposed tower layout is shown below in Figure 3.

The antenna proposed for use by WEUX-DT is a moderately directional, nearly cardioid, slot design having 0.7 degree of electrical beam tilt. The antenna azimuth characteristics are used to control radiation across the western arc from about 210 through 330 degrees so that the resulting contour roughly parallels the boundary of the Eau Claire – La Crosse Designated Market Area (DMA) on its western side. Since the transmitter is located farther from the edges of the DMA to the north, east, and south, no azimuth pattern control is applied in those directions. Elevation power gain of the antenna on Channel 49 is 25.00 (13.98 dBd) at the vertical beam maximum (0.7 degree below horizontal), 16.50 (12.17 dBd) in the horizontal plane, and 24.13 (13.83 dBd) at 0.414 degree below horizontal, the average depression angle to the radio horizon (computed at 1-degree

azimuth intervals). The azimuth power gain is 1.60 (2.04 dB), yielding a total power gain in the main beam of 40.00 (16.02 dBd).

The objective of the antenna pattern design for WEUX-DT was to achieve the best possible service to the Eau Claire – La Crosse DMA while obtaining sufficient gain to permit the use of a single amplifier cabinet in the transmitter. As is discussed below in the section on Population Losses & Remaining Service, this objective is achieved with the proposed pattern. As a result of increasing the height of the antenna to the top of the tower, it was necessary to reduce the ERP of WEUX-DT from the 1 MW value permitted by the existing construction permit to match the contour of the CP facilities, but the reduced digital signal still will serve both a larger area and a larger population than the current analog signal. Moreover, there will be sufficient reserve in the transmitter power output (TPO) capacity to permit the station to apply for an increase back to 1 MW after the DTV transition is completed and the current application freeze is lifted. An interference study to post-transition stations and facilities shows no new interference would be caused to any of them by such a power increase.

The same antenna as just described also is proposed for use by WEUX-TV. It has the same azimuth pattern but somewhat different elevation characteristics on Channel 48. In particular, the elevation pattern produces 1.2 degrees of electrical beam tilt at the lower frequency. The antenna azimuth pattern results in a reduction in signal levels across the western arc from about 210 through 330 degrees so that the resulting contour again roughly parallels the boundary of the Eau Claire – La Crosse Designated Market Area (DMA) on its western side, although at a closer distance than the digital station's contour. Moreover, since the existing analog station's antenna is a tri-lobe pattern, when the analog power is set to keep the new pattern from exceeding the old in any direction, there are areas that cannot be served with the new pattern, at least as indicated by its contour (but see the end of the section below on Population Losses & Remaining Service), despite an actual increase in peak ERP necessary to match the new contour to the old in other directions. Elevation power gain of the antenna on Channel 48 remains 25.00 (13.98 dBd) at the vertical beam maximum (now 1.2 degrees below horizontal), becomes 6.30 (7.99 dBd) in the horizontal plane, and drops to 19.05 (12.80 dBd) at 0.414 degree

below horizontal, the average depression angle to the radio horizon (computed at 1-degree azimuth intervals). The azimuth power gain still is 1.60 (2.04 dB), yielding a total power gain in the main beam of 40.00 (16.02 dBd).

A plot of the azimuthal radiation pattern applicable to both stations in relative field values is included as Figure 4. The azimuthal power patterns expressed in decibels relative to 1 kW (dBk) are plotted in Figure 5a for WEUX-DT and in Figure 5b for WEUX-TV. The tabulated azimuthal field and power values for both stations are given in Figure 6. The elevation radiation patterns in relative field values are included as Figure 7a for WEUX-DT and in Figure 7b for WEUX-TV. The elevation power patterns expressed in decibels relative to 1 kW (dBk) are plotted in Figure 8a for WEUX-DT and in Figure 8b for WEUX-TV. The tabulated elevation field and power values for both stations are given in Figure 9. Figure 10 gives the tabulated values of average elevations and contour distances for both stations for the eight required radial directions, calculated as prescribed in §73.625(b) for WEUX-DT and §73.684 for WEUX-TV. Figure 11 shows the 41 and 48 dBu contours of the proposed facilities on a map of the coverage area as prescribed by §73.625(b)(3), along with the 41 dBu contour of the currently authorized facility for WEUX-DT. Figure 12 shows the Grade A, Grade B, and City Grade contours of the proposed facilities on a map of the coverage area as prescribed by §73.684(c)(4), along with the Grade B contour of the licensed facility for WEUX-TV.

The antenna proposed in the associated applications has a lead time from its manufacturer of about five months, given the manufacturer's current backlog. That backlog is expected to increase as the DTV transition date draws closer. The weather in the area where the stations are located can only be counted upon to be conducive to antenna installation work from late spring until early fall. Tower crews to install the antenna are predicted to be in short supply during the spring, summer, and fall of 2008, which will be the last window for such work prior to the DTV transition date. Moreover, the likelihood of failure of the WEUX-TV transmission line militates toward the earliest possible date for installation of the new antenna and line. Given these factors, if the FCC approves the applications by the beginning of November, 2007, the earliest the installation can take place will be about the beginning of April, 2008. As authorization by the Commission

moves beyond November, the earliest possible installation time correspondingly will move through the middle of 2008.

WEUX-DT Service Area

The WEUX-DT service area has been shaped to follow the outline of the DMA to the extent possible, while maintaining service within the DMA as close as feasible to that predicted for the currently authorized construction permit facilities. The current CP facilities include the use of an omnidirectional antenna, but the proposed antenna reduces the signal in the direction of Minneapolis/St Paul, where another station carries the same network (Fox) and much of the same programming. As shown on the map of Figure 11, the 41 and 48 dBu contours of the proposed antenna pattern follow those of the currently authorized pattern roughly from due north through east to due south. In the western arc, the cardioid pattern selected creates a contour that encompasses the westernmost projection of the DMA and parallels the north-south county boundaries on the western edge of the DMA. As is clear from Figure 11, the 48 dBu contour encompasses the principal community (Chippewa Falls). It also is the case that, despite the reduction in service to the west, the proposed 41 dBu (noise-limited) contour still exceeds the Grade B contour of the currently licensed analog facilities in all directions.

WEUX-TV Service Area

Using the new antenna pattern, the WEUX-TV service area will be limited by a number of factors. First, since the old pattern is a tri-lobe shape, having projections that extend beyond an inner, nearly circular area, the service area using the new pattern will be limited by the power reduction necessary to match the new pattern to the shortest distance projections of the old pattern. Since the new pattern is nearly circular from the north, through east, to the south, the projections of the old pattern are necessarily eliminated. Second, since there has been an intentional reduction of the pattern to the west, reducing service on the digital facility outside the stations' market, there is a corresponding reduction in service to the west for the analog service. The bulk of the loss, as observed on the contour map of Figure 12, is outside the DMA, although there is a pair of wedge-shaped areas to the northeast and southwest of the transmitter site that fall outside the

contour of the new pattern but are within the DMA boundary. As discussed below, the population losses in these areas have been minimized to the extent possible. The contour of the new antenna pattern still encompasses the bulk of the DMA that was similarly circumscribed by the old pattern.

Population Losses & Remaining Service for WEUX-TV

To help in optimizing the antenna pattern and to permit evaluation of the impact of the proposed pattern change on the service to be provided by WEUX-TV, a number of population studies were conducted. The studies used both the FCC's contour methods and the Longley-Rice terrain sensitive propagation model, in conjunction with the 2000 US Census. All population values reported are total population of all ages. Studies of WEUX-TV used F(50,50) propagation statistics. To determine the population differences that result from the proposed antenna pattern change, the licensed facility of WEUX-TV was used as the reference. To put population losses into context, the presence of the signals of other stations in areas of loss also were studied and are reported herein.

The population study results for WEUX-TV are shown in Table 1 below. The table reports the results of three studies: a pure contour comparison study on the left, a Longley-Rice study without any contour limitation in the center, and a Longley-Rice study limited to the area circumscribed by the licensed facility contour on the right. In each case, there are separate results reported for population within the La Crosse – Eau Claire DMA counties (in the upper portion of the results area) and for the overall population without consideration of the DMA boundary. There are thus six sets of results in the table. Within each set of study results, the population using the licensed antenna pattern is reported in the upper left box, the population using the proposed antenna pattern is reported in the upper right box (in the column labeled "4C160"), and the change in population, as a percentage of the licensed population, is reported in the lower right box.

As mentioned previously, the pattern for WEUX-TV is what resulted from the optimization for the digital service that will continue when the analog service is terminated in less than 1½ years. Nevertheless, the results for WEUX-TV show that the

Table 1 — Population Study Results for WEUX-TV

	Contour Study		L-R Unlimited		L-R w/Contour Limit	
Antenna	Licensed	4C160	Licensed	4C160	Licensed	4C160
Within DMA Pop	209,775	208,618	225,945	222,336	205,225	202,971
Pop Δ %	Reference	–0.55	Reference	–1.60	Reference	–1.10
Overall Pop	271,494	242,813	314,994	276,951	261,970	244,832
Pop Δ %	Reference	–10.56	Reference	–12.08	Reference	–6.54

bulk of the population within the station's DMA will continue to be served following the change in antenna pattern. As can be seen in the upper set of study results, which are those within the DMA boundary, there are predicted to be reductions in service of 0.6 percent, 1.6 percent, and 1.1 percent by the contour, unlimited Longley-Rice, and contour-limited Longley-Rice studies, respectively. When the overall population is considered, the population reductions become 10.6, 12.1, and 6.5 percent for the corresponding studies, as shown in the lower group in Table 1.

Given the service reductions predicted outside the DMA and despite the short time that the proposed antenna would be in use for the analog service, additional studies were carried out with respect to WEUX-TV and the service predicted to be received from other stations by viewers in the areas where its service will be reduced. Since WEUX-TV is an affiliate of the Fox network, the principal additional studies examined the population reduction when the service from KMSP-TV, the Fox affiliate in Minneapolis – St Paul was considered. That station serves the DMA where the signal from WEUX-TV will be reduced – to the west of the DMA in which WEUX-TV is located. Two such studies were conducted: one Longley-Rice study with no contour limitation and one Longley-Rice study within the bounds of the WEUX-TV Grade B contour. These are equivalent to the studies the results of which are reported in the center and on the right side of the lower group of studies in Table 1. Indeed, in both cases, the reference value used as the divisor in computing the percentage reduction in service is the value shown as the

Table 2 — Population Study Results for WEUX-TV + KMSP-TV

	L-R Unlimited		L-R w/Contour Limit	
Antenna	Licensed	4C160	Licensed	4C160
Overall Pop	3,583,669	3,578,059	262,985	260,090
Pop Δ %	Reference (314,994)	–1.78	Reference (261,970)	–1.11

reference in Table 1 for the corresponding study. The results of the additional studies including KMSP-TV are given in Table 2.[1] For reference, the licensed and proposed Grade B contours of WEUX-TV and the Grade B contours of KMSP-TV and WLAX-TV, the two nearest stations also carrying the Fox network, are shown in Figure 13.

By comparing the equivalent study results in Tables 1 and 2, it can be seen that the reductions in service from WEUX-TV outside its DMA are largely mitigated by the signal from KMSP-TV serving the area where the reductions would occur. This is evident from the decreases in the reductions from 12.08 percent to 1.78 percent in the case of the Longley-Rice study where no contour limitation is applied and from 6.54 percent to 1.11 percent when the Longley-Rice study is limited to within the WEUX-TV licensed facility contour. Thus, it is apparent that the loss in service of the Fox network programming in the area will be *de minimis* during the short period (on the order of 6 – 9 months) from when the new antenna actually can be installed until the turn-off of the analog signals altogether (February, 2009).

[1] It should be noted that KMSP-TV is a High VHF station, on Channel 9, while WEUX-TV is a UHF station on Channel 48. To make the combined population counts possible in conducting the studies, it was necessary to apply a single threshold to the field strength values of the signals from both stations. Since the Grade B threshold for High VHF is 56 dBu and the Grade B threshold for UHF is 64 dBu, the power level of KMSP-TV was offset higher by 8 dB, and a threshold of 64 dBu was used in evaluating service to the study cells in which population was counted. Since the Longley-Rice program evaluated propagation from KMSP-TV with the correct frequency characteristics applied, this approach had the effect of evaluating each station with respect to the Grade B threshold applicable to its respective channel. This result was confirmed by mapping the signal levels from KMSP-TV alone and determining that no difference existed between the result obtained with the offset power and signal levels and the result obtained when KMSP-TV was evaluated normally for its channel.

To further evaluate the effect of the reduction in service from WEUX-TV during the short period prior to the complete shut-down of analog service, a study was conducted using contour methods to determine the number of stations that would continue to provide service to the area that the WEUX-TV contour no longer would reach once the new antenna is installed. There are two slivers of geographic arcs where there currently are five or fewer stations providing contour coverage and where the number of stations would decrease by one, as determined by contour location – one to the north and northeast of the transmitter and one to the south southwest. The various areas affected are shown in Figure 14. The areas and populations of these arc slivers were determined and showed that about two percent of the area of the licensed contour and a little less than two percent of the population within the licensed contour are within the arc slivers. The reduction in contour coverage of the arc slivers ranges from a reduction from five stations providing service to four to a reduction from three stations providing service to two. The arc slivers continue into areas where there are higher numbers of stations indicated by their contours as providing service, which areas also would see decreased contour coverage, but it was deemed unnecessary to pursue the study beyond areas where five stations currently have contour coverage.

It should be noted that, while the contour method has been used for decades to indicate where a station was considered to provide service and would be protected from interference, as a practical matter, service does not honor contour boundaries. In some cases, signals of the specified strength do not reach a contour because of terrain; in other cases, the signal reaching the contour location actually may be stronger than the contour indicates. Since it is an analog service that is being considered, the effect of the contour location in this instance is to show approximately how much the signal will decrease in the areas where the contour no longer shows coverage. In the case of WEUX-TV, the arc slivers show a reduction of a fraction of a dB for most of their areas, with some portions reaching a 1 dB reduction and a small portion reaching as high as a 2 dB reduction. The impact of this is that, for those viewers in the fringe of the station's service area, images will become up to about 2 dB noisier than they would have been prior to installation of the station's new antenna, but the service, where it currently exists in reality, will not disappear. For the duration of the transition, those people in the arcs of the contour

slivers who currently have service will continue to receive service; it just will be degraded slightly. Since the fringe areas are places where consumers are likely to use large receiving antennas mounted high on their properties or on small towers, the impact is likely to be even less due to the higher receiving antenna height and higher antenna gain used, especially when combined with preamplifiers and relatively lower noise receivers, than those that were assumed when the Grade B contour field strength value was first determined in the 1940s and 1950s.

Environmental Impact / Radio Frequency Radiation

None of the conditions specified in Section 1.1307 that would require the preparation of an Environmental Assessment pertain with respect to the proposed facility at Chippewa Falls. In particular, because it will be mounted on a tower at an existing site, the new operation does not implicate many of the causes for further investigation and preparation of further reports.

With respect to Radio Frequency Radiation exposure, OET Bulletin 65 provides methods for evaluating the level of exposure for both employees (occupational/controlled situations) and non-employees (general population/uncontrolled situations). The combination of the antenna radiation patterns, as provided in the manufacturer's technical specifications, with the antenna height above ground level and the operating power levels of both stations indicate that the potential exposure would be less than 5 percent of the Maximum Permissible Exposure (MPE) limit for general population / uncontrolled situations. Specifically, application of the formulas provided in OET-65 Supplement A yields a value less than one percent (actually 0.37 percent) of the MPE. Thus, the proposed operation is categorically excluded from having to submit a detailed RF exposure analysis of the site.

Notwithstanding the foregoing, Grant recognizes its responsibility for the safety and health of employees and contractors when exposed to RF radiation conditions. It will take the steps necessary to assure that personnel working in its facilities and on the tower and antenna are protected from exposure to RF radiation levels exceeding those specified in the Commission's rules. The steps to be taken will include measurements and

monitoring as well as power reductions or turning off the transmitter if necessary to ensure a safe working environment.

Notifications

The site at Chippewa Falls is not in proximity to any of the government radio astronomy installations named in Section 73.1030, nor is it proximate to any of the named radio receiving locations. Furthermore, the nearest FCC monitoring station is over 525 km distant. Thus none of the notifications mandated or recommended by Section 73.1030 is required in this instance.

Summary

Given all of the considerations involved with Grant and WEUX — its financial difficulties in constructing its digital facility, its loss of its founder and decision-maker, its having now obtained sufficient funding that allows it to build its new digital facility, the anticipated failure of its analog transmission line with the attendant potential complete loss of analog service, the timing of installation of the new antenna such that any deleterious effects will be limited to a brief period, the nature of the analog signals such that they will degrade gracefully rather than disappearing from those viewers who will receive reduced signal levels — it is eminently in the public interest to permit WEUX to build its new digital facility while accommodating the needs of its analog operation using a single antenna. The result will be to enable another digital operation to serve an area and a population greater than that served by the corresponding analog service prior to the DTV transition date while preserving the corresponding analog service through the short remaining life of the NTSC system. With these many factors in mind, it is requested that the Commission approve the applications of Grant Media LLC described herein as expeditiously as possible.

Figure 1 — Technical Specifications — Proposed WEUX-DT Facility Channel 49 — Eau Claire, WI

Frequency

Channel	49
Frequency Band	680 - 686 MHz
Center Frequency	683 MHz

Location

Site	E9772 780th Avenue, Colfax, WI
Geographic Coordinates (NAD27)	44° 57’ 24” N 91° 40’ 03” W
Tower Registration (FAA Study Number)	1035248 (97-AGL-5382-OE)

Elevation

Elevation of site above mean sea level	385.0 m
Overall height of tower above site elevation	152.0 m
Overall height of tower above mean sea level	537.0 m
Height of antenna radiation center above site elevation	144.0 m
Elevation of average terrain (45-degree spaced radials, 3.2-16.1 km)	305.9 m
Height of antenna radiation center above mean sea level	529.0 m
Height of antenna radiation center above average terrain (HAAT)	223.1 m

Antenna

Manufacturer	Dielectric
Model	TFU-29ETT-R 4C160 DC N48 D49
Description	Top-Mounted UHF Cavity
Orientation (rotation around vertical axis)	90 degrees true
Electrical beam tilt	1.2°
Mechanical beam tilt	None
Polarization	Horizontal
Gain (in horizontal plane – 0° depression)	26.40 (14.22 dB)
Gain (peak of beam – 0.7° depression)	40.00 (16.02 dB)

Power

Effective radiated power (ERP) (main beam – 0.7° depression)	780 kW
Effective radiated power (ERP) (toward avg. radio horizon – 0.414° dn.)	753.5 kW
Effective radiated power (ERP) (horizontal plane)	514.9 kW

Figure 2 — Technical Specifications — Proposed WEUX-TV Facility
Channel 48 — Eau Claire, WI

Frequency

Channel	48
Frequency Band	674 - 680 MHz
Center Frequency	677 MHz

Location

Site	E9772 780th Avenue, Colfax, WI
Geographic Coordinates (NAD27)	44° 57’ 24” N 91° 40’ 03” W
Tower Registration (FAA Study Number)	1035248 (97-AGL-5382-OE)

Elevation

Elevation of site above mean sea level	385.0 m
Overall height of tower above site elevation	152.0 m
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Elevation of average terrain (45-degree spaced radials, 3.2-16.1 km)	305.9 m
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Height of antenna radiation center above average terrain (HAAT)	223.1 m

Antenna

Manufacturer	Dielectric
Model	TFU-29ETT-R 4C160 DC N48 D49
Description	Top-Mounted UHF Cavity
Orientation (rotation around vertical axis)	90 degrees true
Electrical beam tilt	1.2°
Mechanical beam tilt	None
Polarization	Horizontal
Gain (in horizontal plane – 0° depression)	10.08 (10.03 dB)
Gain (peak of beam – 1.2° depression)	40.00 (16.02 dB)

Power

Effective radiated power (ERP) (main beam – 1.2° depression)	1550 kW
Effective radiated power (ERP) (toward avg. radio horizon – 0.414° dn.)	1181.2 kW
Effective radiated power (ERP) (horizontal plane)	390.2 kW

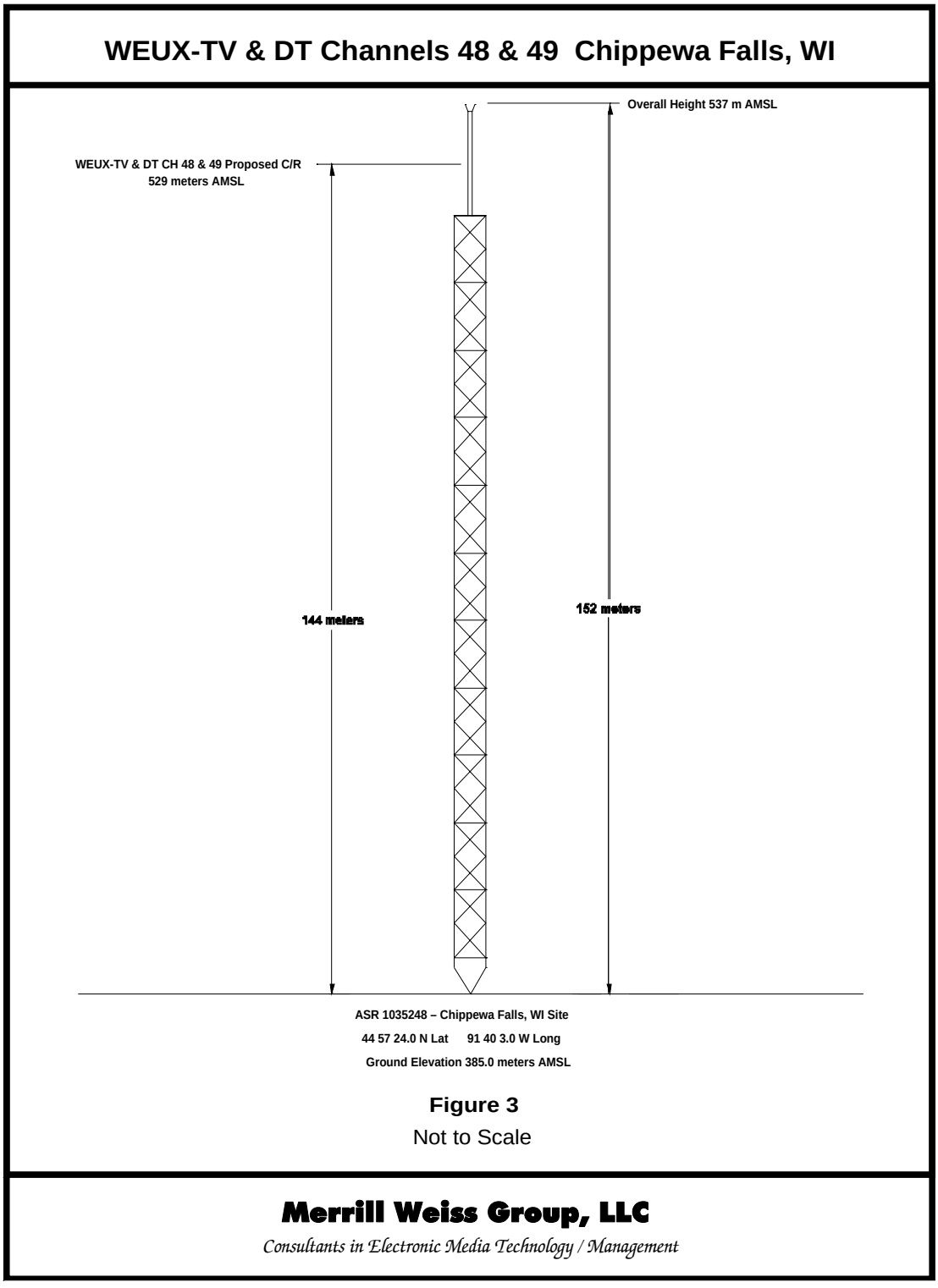

Figure 3 — WEUX-DT & WEUX-TV Proposed Tower Layout

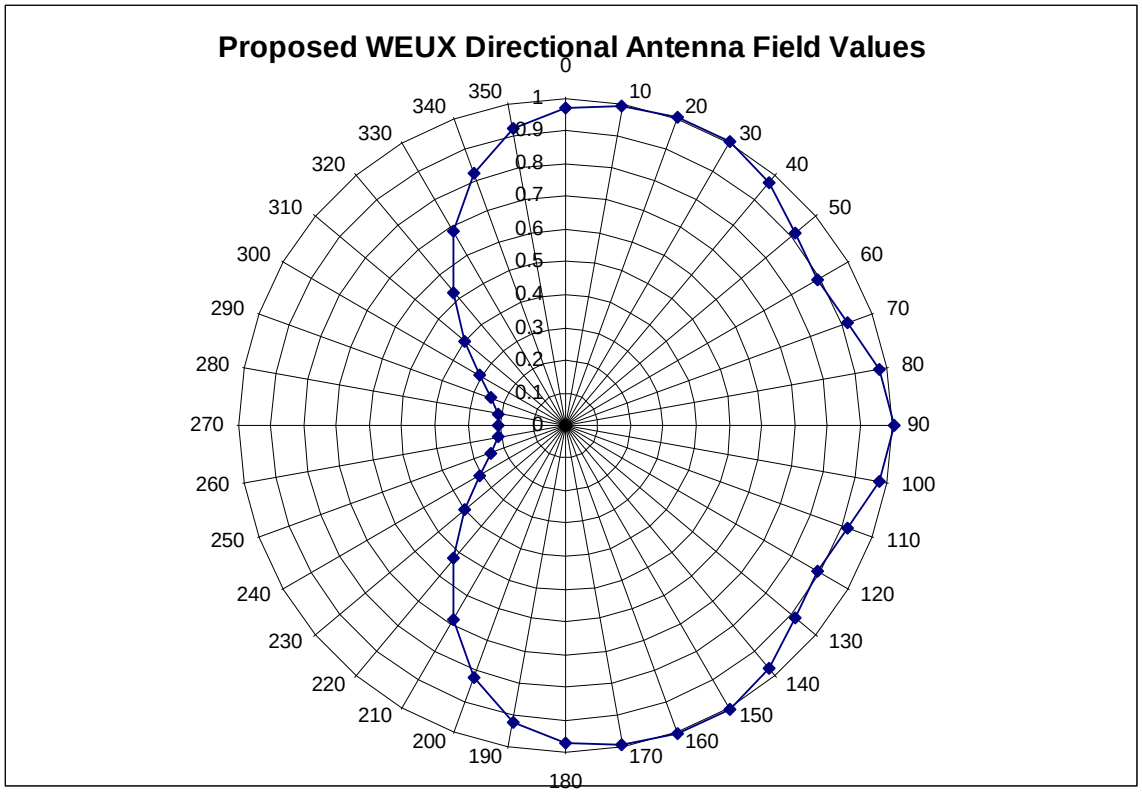

Figure 4 — WEUX-DT & WEUX-TV Azimuth Pattern in Relative Field Values

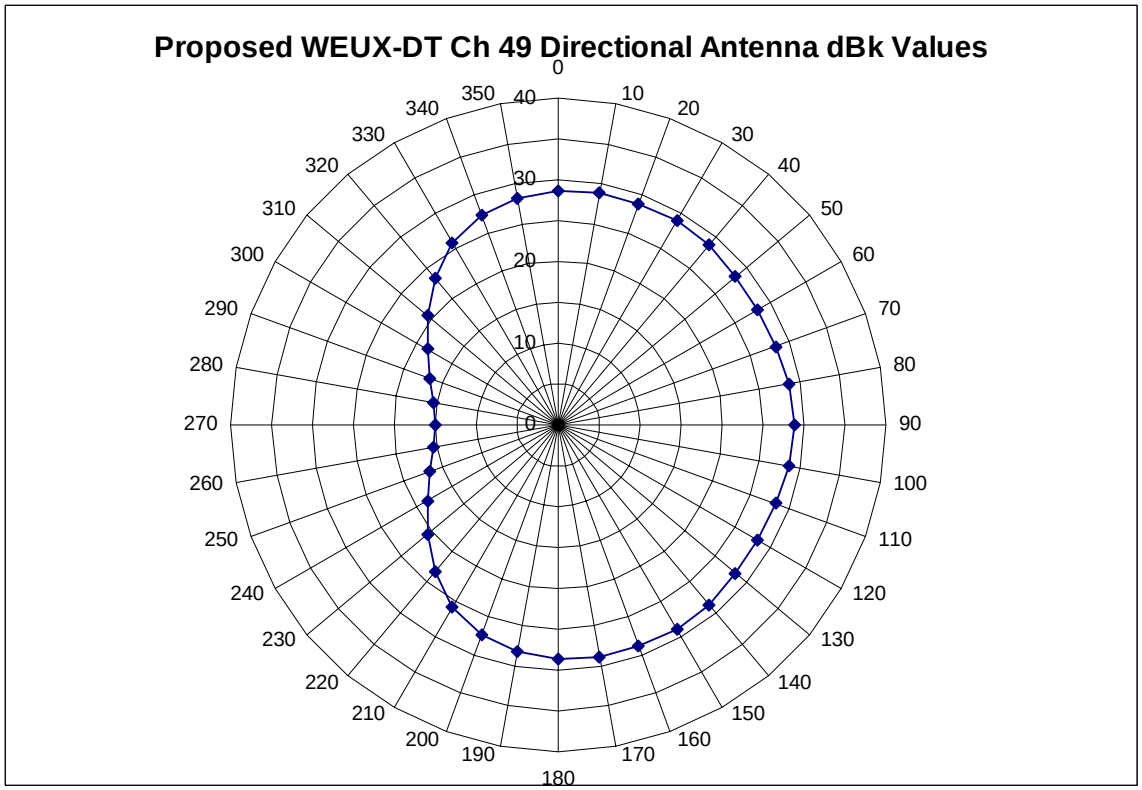

Figure 5a — WEUX-DT Azimuth Pattern in dBk (at Depression w/Maximum)

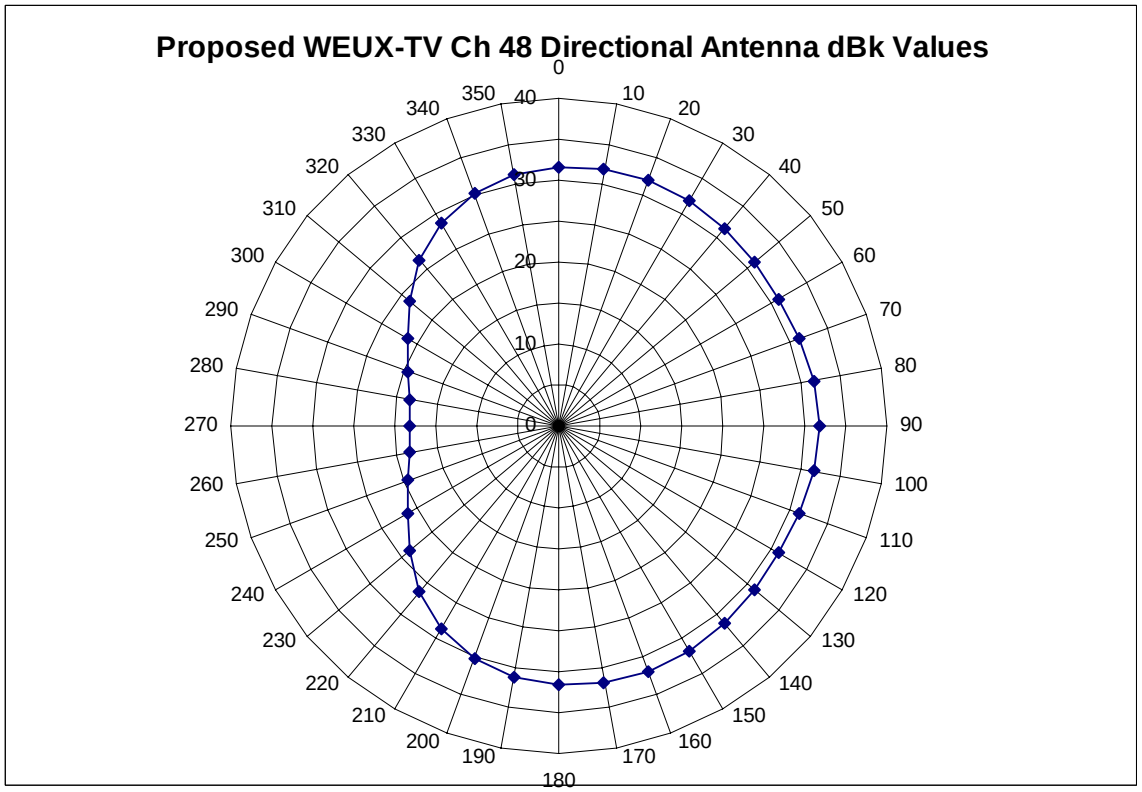

Figure 5b — WEUX-TV Azimuth Pattern in dBk (at Depression w/Maximum)

Figure 6 — WEUX-DT & WEUX-TV Azimuthal Radiation Pattern Tabulated Values

Azimuth	Relative Field	Effective Radiated Power (dBk)		Azimuth	Relative Field	Effective Radiated Power (dBk)	
		Chnl 48	Chnl 49			Chnl 48	Chnl 49
0	0.967	31.612	28.630	170	0.988	31.799	28.816
10	0.988	31.799	28.816	180	0.967	31.612	28.630
20	0.998	31.886	28.904	190	0.916	31.141	28.159
max 24	1.000	31.903	28.921	200	0.820	30.180	27.197
30	0.996	31.869	28.886	210	0.681	28.566	25.584
40	0.965	31.594	28.612	220	0.529	26.372	23.390
50	0.915	31.132	28.149	230	0.396	23.857	20.875
60	0.887	30.862	27.879	240	0.301	21.475	18.492
70	0.915	31.132	28.194	250	0.243	19.615	16.633
80	0.972	31.657	28.674	260	0.213	18.471	15.489
max 90	1.000	31.903	28.921	270	0.204	18.096	15.114
100	0.972	31.657	28.674	280	0.213	18.471	15.489
110	0.915	31.132	28.194	290	0.243	19.615	16.633
120	0.887	30.862	28.879	300	0.301	21.475	18.492
130	0.915	31.132	28.149	310	0.396	23.857	20.875
140	0.965	31.594	28.612	320	0.529	26.372	23.390
150	0.996	31.869	28.886	330	0.681	28.566	25.584
max 156	1.000	31.903	28.921	340	0.820	30.180	27.197
160	0.998	31.886	28.904	350	0.916	31.141	28.159

Derived from data supplied by manufacturer

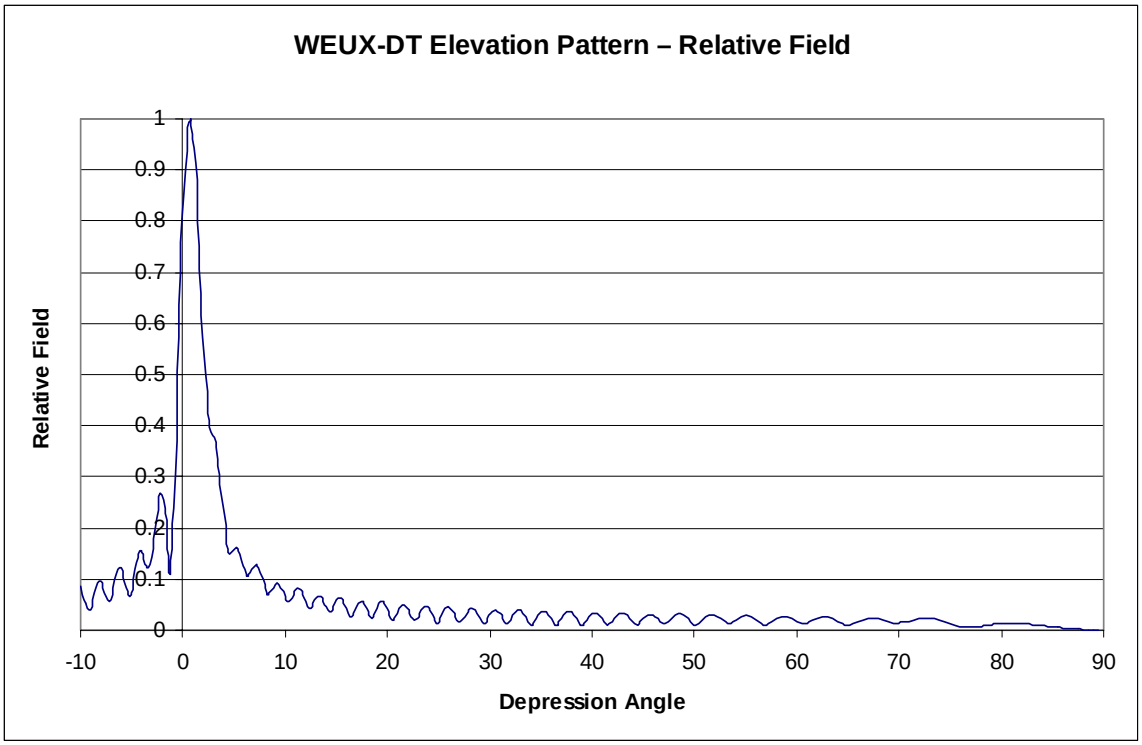

Figure 7a — WEUX-DT Elevation Pattern in Relative Field Values

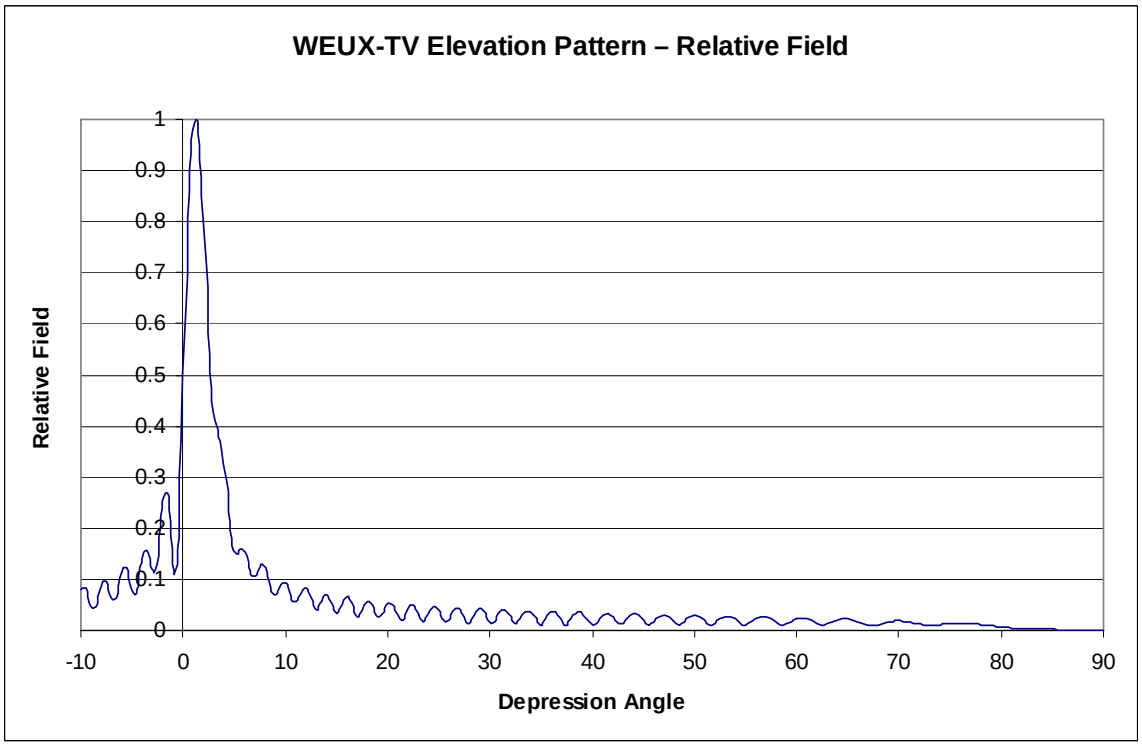

Figure 7b — WEUX-TV Elevation Pattern in Relative Field Values

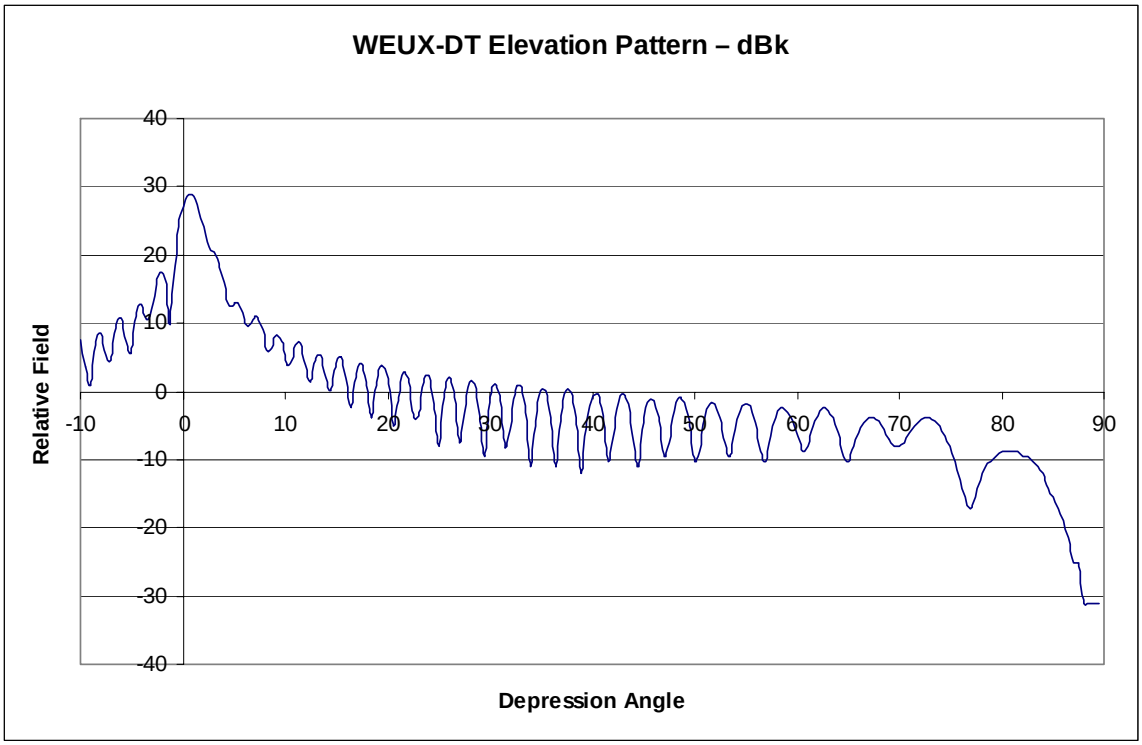

Figure 8a — WEUX-DT Elevation Pattern in dBk (at Bearing w/Maximum)

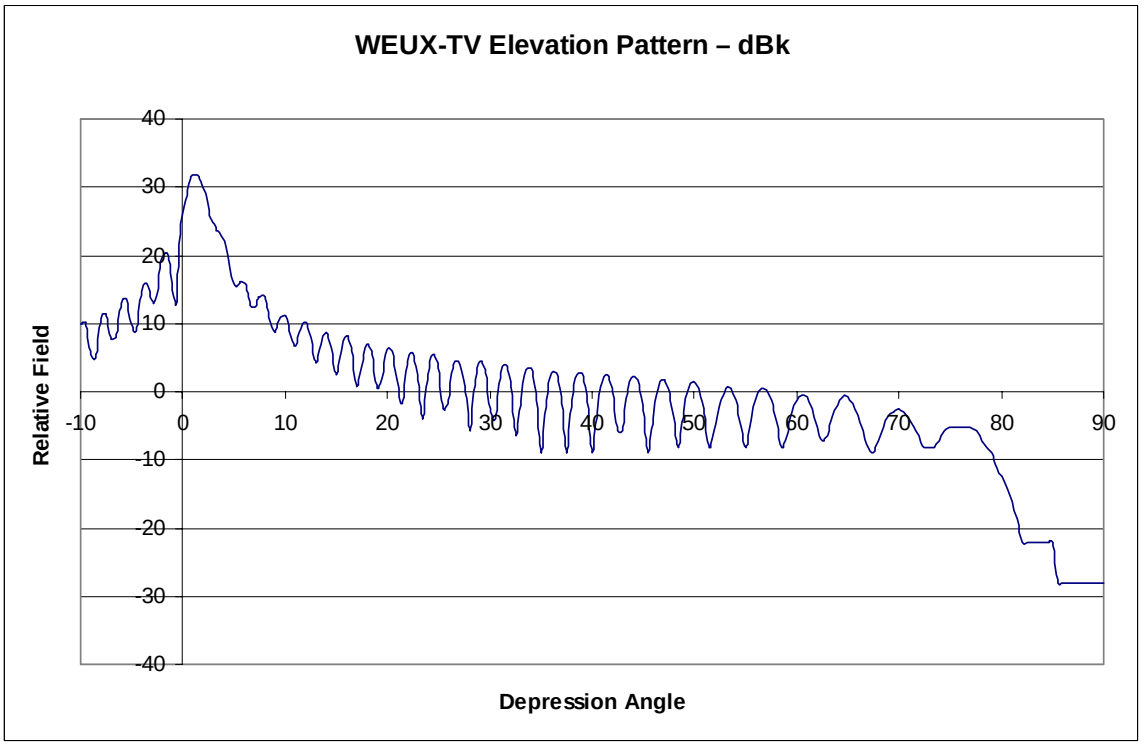

Figure 8b — WEUX-TV Elevation Pattern in dBk (at Bearing w/Maximum)

Figure 9 — WEUX-DT & WEUX-TV Elevation Radiation Pattern Tabulated Values

Depression Angle	Relative Field		Effective Radiated Power (dBk)		Depression Angle	Relative Field		Effective Radiated Power (dBk)	
	Chnl 48	Chnl 49	Chnl 48	Chnl 49		Chnl 48	Chnl 49	Chnl 48	Chnl 49
-5.0	0.079	0.069	9.856	5.698	8.0	0.123	0.084	13.701	7.407
-4.5	0.072	0.134	9.050	11.463	8.5	0.091	0.073	11.006	6.123
-4.0	0.138	0.157	14.701	12.839	9.0	0.070	0.091	8.805	8.102
-3.5	0.157	0.121	15.821	10.577	9.5	0.087	0.086	10.689	7.602
-3.0	0.119	0.141	13.414	11.905	10.0	0.092	0.066	11.179	5.312
-2.5	0.147	0.236	15.158	16.359	10.5	0.072	0.058	8.964	4.178
-2.0	0.240	0.264	19.508	17.353	11.0	0.055	0.079	6.711	6.873
-1.5	0.260	0.160	20.199	12.858	11.5	0.074	0.081	9.288	7.091
-1.0	0.158	0.183	15.876	14.170	12.0	0.083	0.055	10.285	3.728
-0.5	0.189	0.505	17.104	22.907	12.5	0.063	0.042	7.890	1.386
0.0	0.503	0.812	25.935	27.112	13.0	0.041	0.063	4.159	4.908
0.5	0.806	0.979	30.008	28.735	13.5	0.057	0.067	7.021	5.442
0.7	0.895	1.000	30.927	28.921	14.0	0.069	0.046	8.680	2.176
1.0	0.981	0.969	31.737	28.647	14.5	0.054	0.036	6.551	0.047
1.2	1.000	0.915	31.903	28.149	15.0	0.034	0.058	2.533	4.190
1.5	0.969	0.796	31.628	26.926	15.5	0.051	0.064	6.055	5.045
2.0	0.806	0.572	30.030	24.069	16.0	0.065	0.044	8.162	1.790
2.5	0.584	0.426	27.202	21.502	16.5	0.053	0.027	6.389	-2.452
3.0	0.429	0.376	24.552	20.425	17.0	0.028	0.048	0.846	2.546
3.5	0.378	0.320	23.440	19.013	17.5	0.039	0.057	3.725	4.038
4.0	0.327	0.224	22.194	15.926	18.0	0.056	0.042	6.867	1.386
4.5	0.233	0.155	19.218	12.694	18.5	0.050	0.023	5.883	-3.844
5.0	0.156	0.158	15.766	12.894	19.0	0.027	0.042	0.531	1.386
5.5	0.156	0.154	15.736	12.667	19.5	0.032	0.055	2.006	3.728
6.0	0.157	0.120	15.821	10.505	20.0	0.052	0.044	6.223	1.790
6.5	0.125	0.109	13.791	9.627	20.5	0.051	0.020	6.055	-5.058
7.0	0.106	0.127	12.409	10.997	21.0	0.030	0.032	1.446	-0.976
7.5	0.124	0.119	13.769	10.424	21.5	0.021	0.049	-1.652	2.725

Derived from data supplied by manufacturer

Tabulation of 41 and 48 dBu Contour Derivations
WEUX-DT Channel 49 at 780 kW

Azimuth	Average Terrain Elevation (meters)	Antenna Height Above Average Terrain (meters)	Effective Radiated Power (kw) to Radio Horizon	F(50,90) Contour Distance (km)	
				41 dBu (Noise Limited)	48 dBu (City Grade)
0°	329	200	727.9	81.4	72.0
45°	335	194	690.7	80.5	71.3
*90°	311	218	780.0	83.8	73.6
135°	295	234	690.7	84.5	74.1
180°	289	240	727.9	85.7	74.8
225°	287	242	163.6	75.6	67.6
270°	295	234	32.5	67.1	59.4
315°	306	223	163.6	74.2	66.4

* Heading to Principal Community — Chippewa Falls, WI

Figure 10b — Tabulation of 64, 74 and 80 dBu Contour Derivations
WEUX-TV Channel 48 at 1550 kW

Azimuth	Average Terrain Elevation (meters)	Antenna Height Above Average Terrain (meters)	Effective Radiated Power (kw) to Radio Horizon	F(50,50) Contour Distance (km)		
				64 dBu Grade B	74 dBu Grade A	80 dBu City Grade
0°	329	200	813.8	60.7	46.7	38.4
45°	335	194	765.3	60.0	46.0	37.6
*90°	311	218	895.0	62.6	48.5	40.1
135°	295	234	808.8	63.1	48.8	40.4
180°	289	240	858.5	63.9	49.5	41.1
225°	287	242	193.5	54.7	40.5	32.2
270°	295	234	38.0	44.2	30.3	22.6
315°	306	223	189.0	53.3	39.3	31.0

* Heading to Principal Community — Chippewa Falls, WI

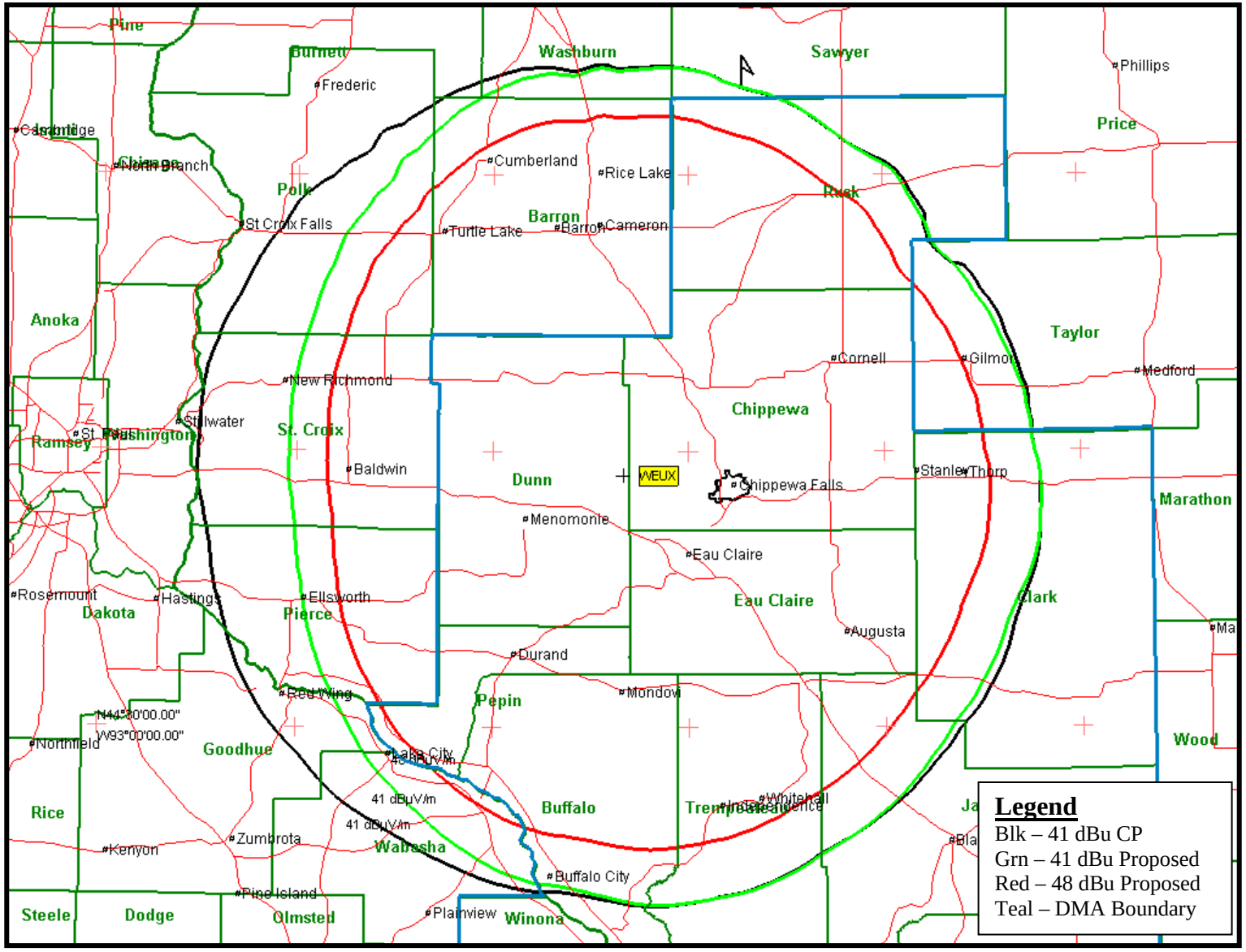

Figure 11 — WEUX-DT Contour Comparison: Construction Permit & Proposed Facilities

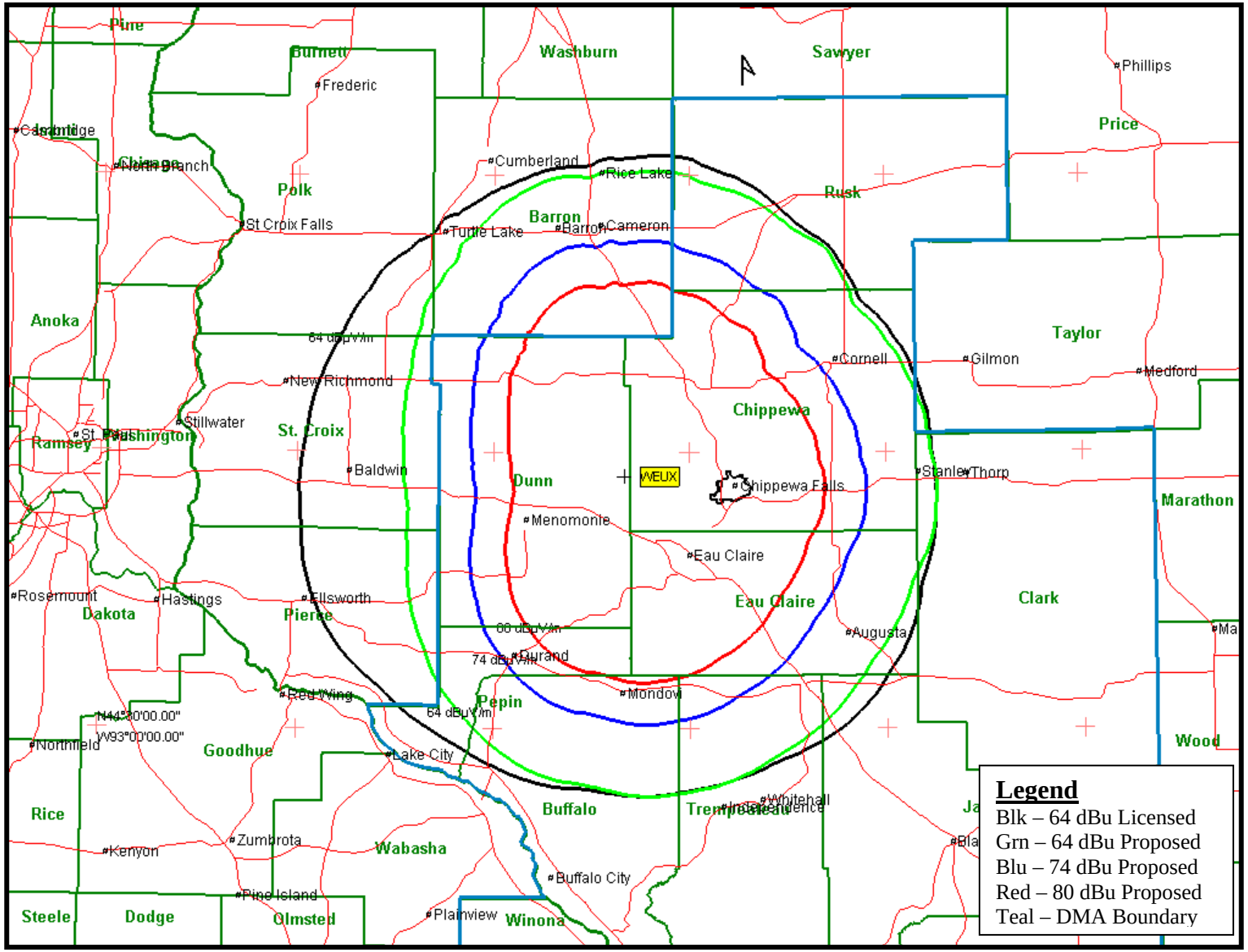

Figure 12 — WEUX-TV Contour Comparison: Licensed & Proposed Facilities

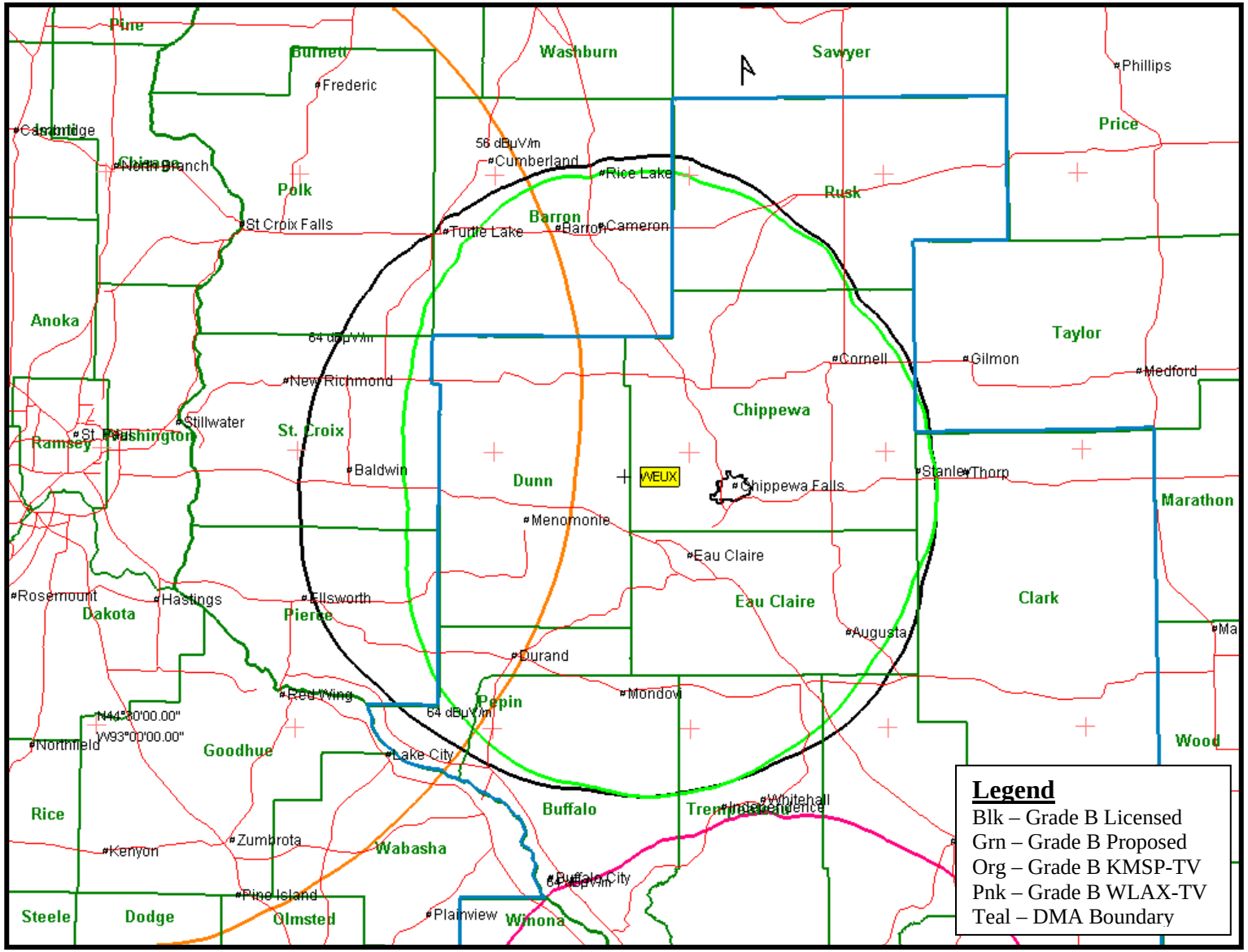

Figure 13 — WEUX-TV Licensed & Proposed Grade B + KMSP-TV & WLAX-TV Grade B Contours

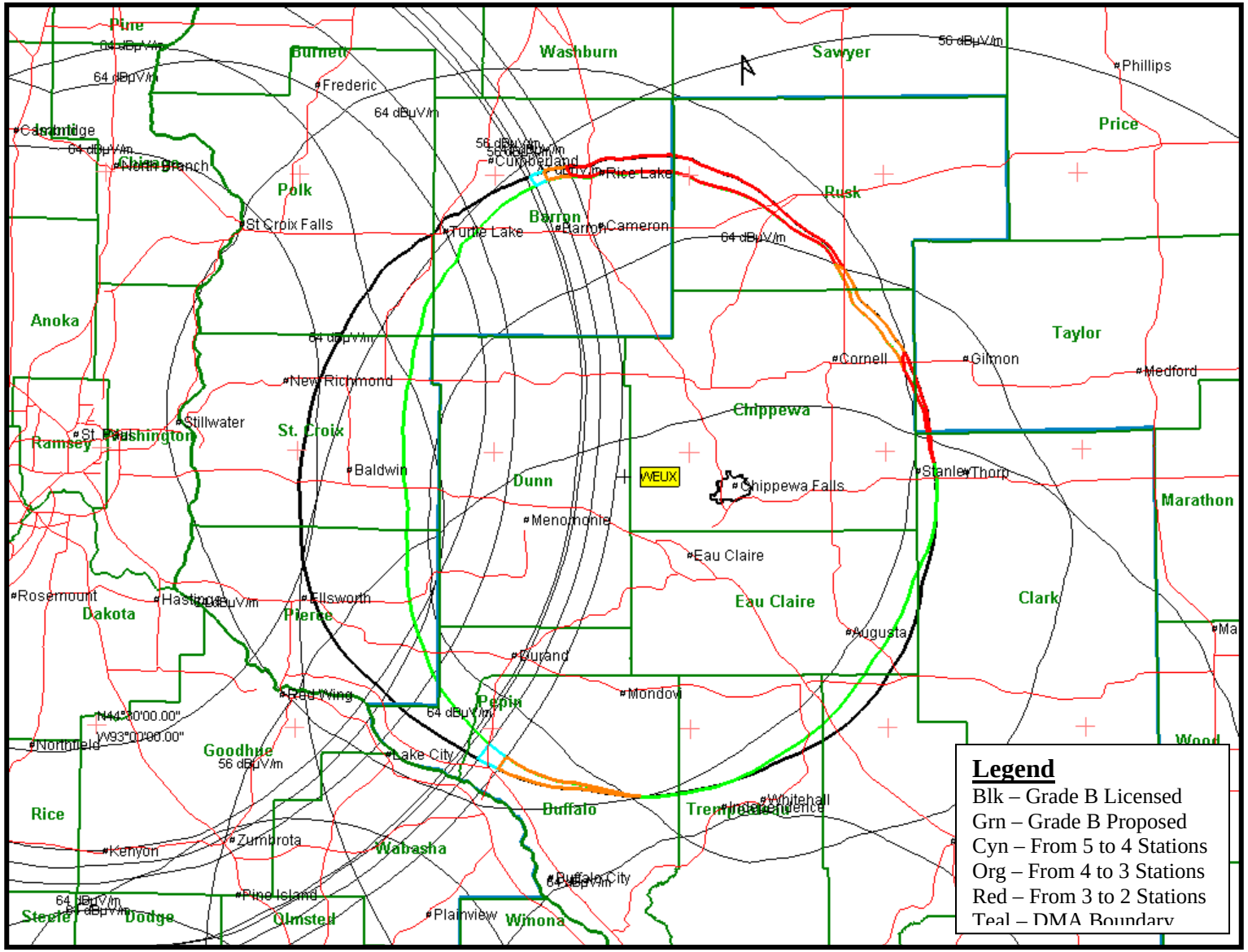

Figure 14 — WEUX-TV Licensed & Proposed + Nearby Stations Grade B Contours & WEUX-TV Loss Areas