

ENGINEERING EXHIBIT

Application for Modification of Digital Low Power Television Construction Permit

prepared for

EICB-TV East, LLC
K20MB-D Sioux Falls, SD
Facility ID 182599
Ch. 20 (digital) 15 kW

EICB-TV East, LLC (“*EICB*”) is the permittee of digital Low Power Television station K20MB-D, Channel 20, Sioux Falls, SD, Facility ID 182599. K20MB-D is authorized to operate pursuant to a Construction Permit (“CP”, BNPDTL-20090825AXW) with 15 kW effective radiated power (“ERP”), nondirectional. *EICB* herein seeks a modification of the CP to utilize an alternate transmitting location.

As proposed herein, K20MB-D will be relocated to a tower structure associated with FCC Antenna Structure Registration number 1035413, 12.7 km from the authorized K20MD-D site. K20MD-D will utilize an existing transmitting top-mounted antenna which was previously employed by full service stations during the transition to digital. No change to the overall structure height will result from this proposal. The site is located more than 121 kilometers (75 miles) from the reference coordinates of the cities listed in Appendix A of DA 09-1487.¹

The proposed K20MD-D facility will operate with a nondirectional antenna at 15 kW ERP using a “full service” out of channel emission mask. Figure 1 depicts the coverage contour of the proposed facility as well as that of the CP facility. The service area overlap demonstrates compliance with §73.3572 for a minor change.

¹“Commencement of Rural, First-come, First-served digital licensing for Low Power Television and TV Translators Beginning August 25, 2009 and Commencement of Nationwide, First-come, First-served Digital Licensing for Low Power Television and TV Translator Services Beginning January 25, 2010,” Public Notice, DA 09-1487, Released June 29, 2009.

Interference study per OET Bulletin 69² shows that the proposal complies with the FCC's interference protection requirements toward all digital television, television translator, LPTV, and Class A stations. The results, summarized in Table 1, show that any new interference does not exceed the FCC's interference limits (0.5 percent to full power and Class A stations, and 2.0 percent to secondary stations) to any facility.

The nearest FCC monitoring station is 328 km distant at Grand Island, NE. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with "quiet" zones specified in §73.1030(a) and (b). The site is not within a border area requiring international coordination. There are no authorized AM radio stations within 3 km of the proposed site.

Human Exposure to Radiofrequency Electromagnetic Field

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. Based on OET-65 equation (10), and assuming the worst-case of 100 percent field in downward elevations, the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is $1.5 \mu\text{W}/\text{cm}^2$, which is 0.5 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent. The calculated signal density will be even lower when the antenna's elevation pattern is considered.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will be posted. With respect to worker safety, the

²FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. The default cell size of 1 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

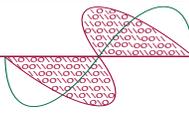
Environmental matters covered by this exhibit are limited to the evaluation of exposure to RF electromagnetic field. The proposal involves use of an existing transmitting antenna. No change in structure height is proposed.

List of Attachments

Figure 1 Coverage Contour Comparison
Table 1 Interference Analysis Results Summary
Form 2100 Saved Version of Engineering Sections from FCC Form at Time of Upload

Chesapeake RF Consultants, LLC

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Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 1
Coverage Contour Comparison
K20MB-D Sioux Falls, SD
Facility ID 182599
Ch. 20 (digital) 15 kW

prepared for
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July, 2015

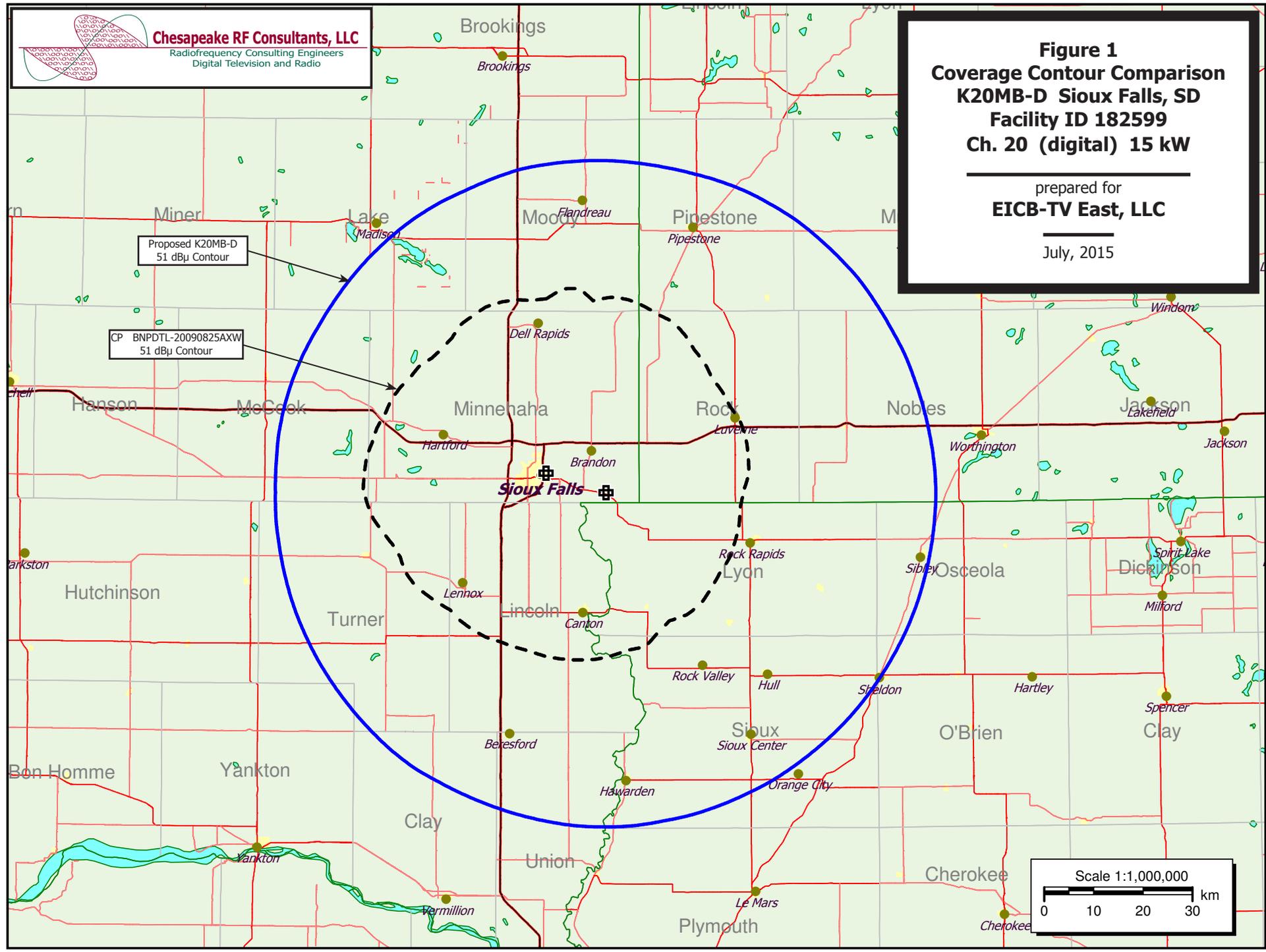


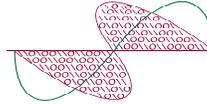
Table 1

Interference Analysis Results Summary

prepared for

EICB-TV East, LLC

K20MB-D Sioux Falls, SD



Chesapeake RF Consultants, LLC

Radiofrequency Consulting Engineers
Digital Television and Radio

| | | | |
|------------------------|----------------------|-------------|----------------------------------|
| K20MB-D | USERRECORD-01 | SIOUX FALLS | SD US |
| Channel 20 | ERP 15. kW | HAAT 589. m | RCAMSL 01019 m FULL SERVICE MASK |
| Latitude 043-31-07 | Longitude 0096-32-04 | | |
| Nondirectional antenna | | | |

The LMS application requires NAD-83 coordinates. FCC internal systems then convert to NAD-27 and port over to CDBS for processing. This interference analysis utilizes truncated NAD-27 coordinates to replicate FCC processing.

| Ch. | Call | City/State | Dist (km) | Status | Application Ref. No. | ---Population (2000 Census)--- | |
|-----|---------|------------------|--------------|--------|----------------------|--------------------------------|------------------|
| | | | | | | Baseline | New Interference |
| 19 | K19HZ-D | JACKSON MN | 124.5 | LIC | BLD TT-20090910AAS | --- | none |
| 19 | K19CV-D | REDWOOD FALLS MN | 169.8 | LIC | BLD TT-20120604AAX | --- | none |
| 19 | KXNE-TV | NORFOLK NE | 154.7 | LIC | BLED T-20090615ADS | --- | none |
| 19 | K19KJ-D | PLANKINTON SD | 155.1 | CP | BNPDTL-20100510AJE | --- | none |
| 19 | K19KH-D | WATERTOWN SD | 157.3 | CP | BNPDTL-20100505AEC | --- | none |
| 20 | K20LR-D | ASHBY MN | 288.0 | CP | BNPDTL-20100505AKR | --- | none |
| 20 | KSMQ-TV | AUSTIN MN | 323.0 | LIC | BLED T-20081223AAK | --- | none |
| 20 | K20LV-D | BREWSTER MN | 91.2 | CP | BNPDTL-20100510AJH | 18,519 | 218 (1.18%) |
| 20 | K20JY-D | OLIVIA MN | 191.2 | LIC | BLD TT-20120213ABM | --- | none |
| 20 | K20KW-D | SAINT CLOUD MN | 280.3 | CP | BNPDTL-20100216AEA | --- | none |
| 20 | K20LP-D | ST. JAMES MN | 168.5 | LIC | BLD TL-20120625AAR | --- | none |
| 20 | NEW | CASSELTON ND | 381.1 | APP | BNPDTL-20100505ALC | --- | none |
| 20 | KJRE | ELLENDALE ND | 359.4 | LIC | BLED T-20041109AAB | --- | none |
| 20 | KETV | OMAHA NE | 249.1 | LIC | BLCD T-20041222AED | 1,221,841 | 322 (0.03%) |
| 20 | K20MA-D | KADOKA SD | 378.5 | CP | BNPDTL-20100510AHU | --- | none |
| 20 | K20KZ-D | WATERTOWN SD | 157.3 | CP | BNPDTL-20100505ADZ | --- | none |
| 20 | W20DU-D | EAU CLAIRE WI | 393.9 | CP | BLANK-0000002180 | --- | none |
| 21 | KBVK-LP | SPENCER IA | 129.2 | LIC | BLD TL-20130327AAK | --- | none |
| 21 | K21LF-D | GRANITE FALLS MN | 161.9 | LIC | BLD TL-20110824ACJ | --- | none |
| 21 | K21DG-D | ST. JAMES MN | 168.7 | LIC | BLD TL-20091204ADE | --- | none |
| 21 | K21HS | NORFOLK NE | 178.4 | APP | BSTA-20121029AAH | --- | none |
| 21 | K21HS | NORFOLK NE | 178.5 | LIC | BLTT-20060510AAY | --- | none |
| 21 | K21LK-D | WENTWORTH SD | 56.6 | CP | BNPDTL-20100505AEK | --- | none |

Antenna Structure Registration

*Do you have an FCC Antenna Structure Registration (ASR) Number?

Yes No << Clear

ASR Number:

Lookup ASR Number

(<http://wireless2.fcc.gov/UlsApp>

[/AsrSearch/asrRegistrationSearch.jsp](#))

Coordinates (NAD83 (North American Datum of 1983))

Coordinates for each Site must be unique.

* Latitude (NAD83):

| DD | MM | SS.S | Direction |
|---------------------------------|---------------------------------|----------------------------------|---------------------------------|
| <input type="text" value="43"/> | <input type="text" value="31"/> | <input type="text" value="7.0"/> | <input type="text" value="N+"/> |

* Longitude (NAD83):

| DDD | MM | SS.S | Direction |
|---------------------------------|---------------------------------|----------------------------------|---------------------------------|
| <input type="text" value="96"/> | <input type="text" value="32"/> | <input type="text" value="6.0"/> | <input type="text" value="W-"/> |

* Structure Type:

* Overall Structure Height: meters

* Support Structure Height: meters

* Ground Elevation (AMSL (Above Mean Sea Level)): meters

Antenna Data

* Height of Radiation Center Above Ground Level: meters

* Height of Radiation Center Above Mean Sea Level: meters

* Effective Radiated Power: kW

Antenna Type

* Please select an antenna type:

- Directional Custom
- Non-Directional
- Off the Shelf

Antenna Manufacturer and Model

* Manufacturer:

* Model:

* Beam Tilt:

* Electrical Beam Tilt

 degrees

* Mechanical Beam Tilt

 Not Applicable Not Applicable

* Polarization:

Horizontal Circular Elliptical

Elevation Radiation Pattern

* Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?

Yes No << Clear

* Out-of-Channel Emission Mask:

- Full Service
- Simple
- Stringent
