

Specifically, MBC Grand supports the Commission's proposal to modify the AM Protection Standards, to relax the Class A AM co-channel protection contour to the 0.5 mV/m groundwave contour, eliminate critical hour reductions, change the nighttime RSS calculation methodology, and increase the daytime protection to the 2 mV/m contour for Classes C and D AM stations. It does not, however, support changing the daytime protection standard for Class B stations to any level greater than the 1 mV/m contour. In addition, MBC Grand supports the Commission's proposal to increase the allowable area in which an AM station can use a fill-in FM translator to the greater of the 2 mV/m contour or 25 miles radius from the AM station's transmitter site.

1. Change nighttime co-channel protection standard for Class A stations to 0.5 mV/m groundwave contour; eliminate critical hour power reductions; and change nighttime RSS calculation methodology.

As set forth in more detail in the attached Engineering Exhibit of Larry H. Will, P.E., the proposed changes to modify the AM protection standards, with one exception, would be welcome. In Section IV.A of FNPRM, the Commission sought comments on its proposal to change the Class A protection standards. MBC Grand agrees with changing the co-channel protection contour for Class A stations from the 0.5 mV/m-50 percent skywave contour to the 0.5 mV/m groundwave contour at night in FCC Rules 73.182(a)(1)(i)(B) and 73.182(q).

MBC Grands' Station KNZZ is a co-channel Class B station that must protect a Class A station in Cleveland, Ohio, more than 1400 miles away. With a reduction in the nighttime protection standard, KNZZ could improve its coverage and boost what is currently sub-standard nighttime coverage. If the rule is changed, the station could operate with a less complex directional antenna system at night. The attached Engineering Exhibit shows in more detail that KNZZ would be able to provide a much improved signal to listeners along two major highways

in western Colorado if it is able to relax its nighttime directional pattern. Provision of local news, weather and informative programming to travelers and commuters in what can often be severe winter weather is a matter of public safety. Ability to provide that service is severely hampered under the current protection standard. Some of these transportation corridors are in the extreme nulls of KNZZ's nighttime pattern. Relaxation of the protection to Class A stations at night would make that service problem less pronounced.

Signal reception for AM stations since KNZZ first went on the air 45 years ago has changed dramatically. It is well documented that manmade noise from unintentional radiators adversely affects AM reception.¹ Increasing the power level enabled with the reduction of the Class A protection standards will allow AM stations to improve service quality by overcoming manmade interference.

The Commission should also step up enforcement of Part 15 and Part 2 devices. Many electronic devices do not comply with their certifications, causing interference to AM signal reception in the home from microwave ovens to variable light controls. The Commission should purchase a couple of devices off-the-shelf from different places in order to test whether they meet their specifications. If manufacturers were on notice that this testing was being done, they would be more likely to pay attention to complying with their certifications. Power increases from changing the nighttime protection standards coupled with stepped up enforcement against non-compliant electronic devices would go a long way to helping the quality of AM reception. If these further changes are made, it will reduce disparity between the daytime and nighttime coverage of AM stations and improve their ability to compete with FM radio.

¹ FNPRM at paras. 3, 50, 55, 60, 61 & 64. *See, e.g.*, "Can Radio Get Noise Floor Issues Under Control?" RadioWorld, August 17, 2009, available at <http://www.radioworld.com/article/can-radio-get-noise-floor-issues-under-control/1665> (last visited March 19, 2016)(synopsis of technical paper presented by Chuck Kelly, director of sales for Nautel Ltd.).

Given the limited improvement in protection and the complete variability of skywave propagation during critical hours, MBC Grand approves the elimination of critical hour protection of Class A stations. It would allow operators such as MBC Grand to provide improved reception if it did not need to reduce power during critical hours. *See* Engineering Exhibit.

With respect to nighttime RSS calculations, MBC Grand agrees with the proposal to return to the pre-1991 50% nighttime exclusion rule. The changes made in 1991 had the perverse effect of impeding modifications more than reducing interference as was initially intended. FNPRM para. 60. Return to the pre-1991 50% exclusion will help Class B stations such as KNZZ to overcome their severely limited nighttime power with extreme nulls. *See* attached Engineering Exhibit.

2. Change Daytime Protections.

MBC Grand supports the Commission's proposal to change protected signal levels for Class C and D AM stations to 2 mV/m contours, but not for Class B AM stations. Power increases will go a long way toward overcoming increases in the noise floor. Nevertheless, MBC Grand cannot support changing the protected signal level for Class B stations to the 2 mV/m contour. Its station, KNZZ, is a Class B station operating with maximum power. To the extent other Class B stations not operating with maximum power can increase power toward KNZZ, it will not be able to counter that with a commensurate power increase to preserve its existing service level. As set forth in the attached Engineering Exhibit, however, MBC Grand would accept changing the existing protected contour for Class B stations from 0.5 mV/m to 1 mV/m as that would improve signal to noise ratios for other stations without a significant impact on the signal quality of existing Class B stations already operating with maximum power.

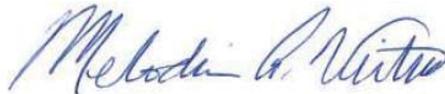
3. Increase area in which fill-in translators can be used by AM stations.

Finally, MBC Grand urges the Commission to allow AM stations to use fill-in FM translators to the greater of their 2 mV/m contours or a 25-mile radius from the AM transmitter site. Greater siting flexibility will particularly help stations with complex directional patterns to provide fill-in service through the use of FM translators. *See* attached Engineering Exhibit. MBC Grand is in the process of purchasing fill-in translators to use with each of its AM stations by taking advantage of the 250-mile modification windows the Commission adopted in the FNPRM.² Adoption of the proposed siting change will give MBC Grand additional options for siting its translators.

Consequently, MBC Grand requests that the Commission change the nighttime and critical hours protection to Class A AM stations, eliminate critical hours protection, revert back to the old pre-1991 rule for nighttime RSS Calculation methodology, and revise the daytime protection for Class C and D stations to 2 mV/m and for Class B stations to 1 mV/m protected contours.

Respectfully submitted,

MBC GRAND BROADCASTING, INC.



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March 21, 2016

² *See* FCC File Nos. BALFT-20151221AWL, BALFT-20151221AYG, BALFT-20151221AYS and BALFT-20151221AYY.

ATTACHMENT

Engineering Exhibit

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MBC GRAND BROADCASTING CORPORATION

GRAND JUNCTION, CO

ENGINEERING EXHIBIT

March 21, 2016

This Engineering Exhibit is submitted in support of the comments of MBC Grand Broadcasting (“MBC Grand”) in response to the First Report and Order, Further Notice of Proposed Rule Making in *Revitalization of AM Radio Service*, in MB Docket13-249 (the “FNPRM”).

Specifically, we are addressing portions of the FNPRM in Section IV, Paragraph A, 1, 2, and 3 about Modification of AM Protection Standards.

Secondly, we are supporting the proposals to increase the allowable coverage area for FM translators operating exclusively with AM stations to provide increased signal availability, especially at night.

1: Change Nighttime and Critical Hours Protection to Class A AM Stations.

MBC Grand supports the Commission’s proposal to modify the technical requirements to change the NIGHTTIME Class A co-channel protection contour from the 0.5 mV/m 50% skywave contour to the 0.5 mV/m groundwave contour. MBC Grand operates one of the “drop in” stations authorized in Report and Order, “Clear Channel Broadcasting in the AM Broadcast Band”, Docket 6741, 31 FCC 565, adding “11 (now 12) new Class II-A, 50 kW stations mainly

in the western portion of the United States”¹. This Docket basically reduced the protected distance for the existing Class I-A stations from 1500 to 750 miles allowing more full service to be constructed in the western states. MBC Grand operates one of these stations, KNZZ, 1100 KHz, 50 kW Day, 36 kW Critical Hours, and 10 kW Night DA-N.

In the 45+ years since KNZZ began operation, much has changed within the KNZZ station’s service area. First, as the Commission has already determined, manmade noise has increased dramatically. The metropolitan area has increased in size and ground wave signal strengths have decreased somewhat with distance due mainly to urban sprawl. The net effect of these changing conditions is documented lower average signal levels, particularly with distance, than when the station first began operation. As a result of the sprawl, many people commute to work with longer timeframes and often during the critical or nighttime power levels which can and do greatly diminish signal strength as compared to the daytime operation of the station^{2,3}.

The increase in population surrounding KNZZ, and probably for many other stations, often occurs in corridors of good road transportation which can be or often are located “in the nulls” of the NIGHTTIME pattern⁴. The wide protection to the E-NE is for the required nighttime skywave protection of Class A station WTAM, 1100 KHz in Cleveland, OH. The required direction and breadth of this null combines in greatly reduced nighttime signals along the I-70 corridor running eastward from Grand Junction to Glenwood Springs as well as along I-

¹ See also Further Notice of Proposed Rulemaking, “Clear Channel Broadcasting in the AM Band”, Docket 20642, FCC 78-863, December 19, 1978.

² One solution would be to allow daytime operation before sunrise and after sunset for these and similar stations. However, the probability of excessive caused interference to other stations is unknown and likely there is no support of this option.

³ KNZZ is not required to change antenna pattern during critical hours so the real impact occurs during the time periods when the station operated at 10 kW, DA-N.

⁴ The existing KNZZ NIGHTTIME pattern at 10 kW has two very narrow main lobes centered at 171 and 348 degrees combined with deep nulls over 28 thru 99 and 218 thru 308 degrees.

70 towards Utah from the “mirror” null to the west. This corridor is one of three that terminate in Grand Junction⁵.

Using the most recent KNZZ Nighttime Proof of Performance plot for reference (Figure 1) along with a map of the Mesa Country area around Grand Junction (Figure 2), the major lobe (0 to -6 dB) nighttime coverage of KNZZ only encompasses approximately 120 degrees out of 360 degrees total. Worse, as also shown in Figure 1, even though the maximum permitted nighttime power is 10 kW, the actual nighttime effective radiated power between roughly 55 and 105 degrees and between 230 and 300 degrees varies between less than 0.1 kW and 0.5 kW. Figure 2 shows those areas along with the deep slope of the stations major lobe nighttime pattern follows generally along all three of the major road corridors into the City of Grand Junction. As a result, mobile car reception is very problematic along these three corridors at night as one travels away from the transmitter site⁶.

Eliminating nighttime skywave protection to WTAM, Cleveland, Ohio, located 1425 miles generally east of Grand Junction would allow KNZZ the opportunity to simplify its directional antenna to widen the main pattern lobes, offer greatly improved signals along at least two of the three major corridors, and provide expanded service toward several smaller towns along I-70 towards Glenwood Springs, out to Fruita to the W-NW, and possibly to the towns of Delta and Montrose to the southeast.

MBC Grand also supports the complete elimination of Critical Hours power reductions. Oftentimes these reductions are a very small reduction in field strength with little improvement in protection, given the complete variability of skywave propagation during critical hours⁷. This

⁵ The other two are U.S. Route 50 running from Montrose to Grand Junction and I-70/US 6 continuing westerly from Grand Junction towards Utah.

⁶ The four red lines centered on the transmitter site of KNZZ depict the referenced azimuths.

⁷ Critical Hours propagation variability is routinely varying by 10's of dB. For KNZZ, the 36 kW results in a modest 1.42 dB reduction, an amount that is generally indistinguishable to any listener with any format.

improvement, while small, would slightly improve reception along the road corridors discussed above.

2: Change Nighttime RSS Calculation Methodology

MBC Grand agrees with the proposals as specified in Para. 62 of the FNPRM. The post 1991 25% exclusion rule, as clearly pointed out by the Commission in the FNPRM makes it impossible to “tweak” nighttime directional antennas along with meaningful transmitter site improvements and/or transmitter site changes. The return to the pre-1991 50% exclusion will also assist Class B stations with highly restricted nighttime power coupled with deep nulls⁸.

3: Change daytime Protection to Class B, C, and D Stations.

MBC Grand also owns a number of AM stations of the above referenced Classes and has been concerned about indoor reception issues brought about by increases in manmade noise for many years⁹. The widespread use of various non-compliant FCC Part 15 and 18 “unintentional radiators” such as compact fluorescent lighting, certain LED lighting and multi-voltage solid state switching power supplies coupled with poor noise abatement issues has been widely documented and will not be repeated here.

There is an unwritten rule in not only radio reception but for television as well concerning use in the home. The reception has to be reliable for the morning alarm call and for routine listening on a portable “Kitchen Radio” for a station to be considered for regular and reliable indoor use. The 2 mV/m protected service contour goes a long way to insure that goal. In addition, the use of the 2 mV/m contour for AM radio reception everywhere would allow many AM stations to increase power up to four times even if there is a first adjacent station nearby. And that first adjacent station could also make a similar move. For any stations

⁸ Figure 1 above shows the present KNZZ null pairs are from a nominal 12 to 20 dB below the 10 kW allowed in the main lobe.

⁹ Widely available FCC Part 15 and 18 non-compliant unintentional radiators have proliferated the US Market originating mainly from China.

operating with powers of 0.25 to 2 or 3 kilowatts, the "up to 4 times" power increase mentioned above may well be justified and "doable" economically for some or perhaps many of these stations. It's a change that is long overdue.

MBC Grand supports the proposal to change the protected signal levels for only Class C, and D stations to a universal 2 mV/m in conjunction with:

a) Maintaining the co-channel 26 dBu D/U ratio which would then be the 2 mV/m desired to the 0.1 mV/m undesired;

b) Reverting to pre-1991 1st adjacent ratios of 1:1 or 0 dB. The undersigned has many hours of "subjective" listening to AM signals in the crowded band and adjacent channel protections within the receivers have also improved where the strict requirements of the NRSC 9 KHz modulation audio roll off has really cleaned up the AM band in virtually all receivers I have encountered.

c) The strict FCC requirements for radiation suppression out to 30-40 KHz also will allow for less stringent protection of both 2nd and 3rd adjacent channel signals. My own experience with 2nd and 3rd adjacent listening is there is now room to allow an increase in the U/D ratios for both 2nd and 3rd adjacent stations¹⁰.

d) MBC Grand cannot support the change of full power 50 kilowatt daytime Class B contour to 2 mV/m simply because its Class B station, KNZZ on 1100 kHz is already operating at 50 kilowatts non-directional and therefore has no avenue to increase power further to increase signal penetration as would be possible for any station that operated at lower transmitted power as is discussed in the second paragraph of this Section for Classes C and D. MBC Grand would support changing the existing Class B 50 kilowatt stations daytime protected contour from 0.5 to 1 mV/m because that would improve signal to noise ratios over that received at the present 0.5 mV/m by 4 times (power) or 6 dB. Based on the undersigned's mobile listening experience, a 1

¹⁰ See FNPRM Para 63 & 64 and footnotes along with footnotes 171 thru 173.

mV/m AM signal holds up well when driving under overpasses and generally eliminates the annoying brief fade-outs while listening in the vehicle.

The net result of increasing the protected Class B station daytime contour to 2 mV/m would ultimately result in distant co-channel and adjacent stations not already running 50 kW increasing daytime power with the real effect of REDUCING the present service area of any nearby Class B full power station. A reading of 73.182(a)(2) suggests this was not the intent of the 50 kW western United States Class B (I-B) additions referenced above¹¹. Rather the Commission wanted to make high power daytime primary service available to areas of the United States where cities and towns were smaller and further apart.

4: Modify the AM Station FM Translator Fill-In Service Area Criteria

MBC Grand concurs with the basic proposal listed in Paragraph 68 of the FNPRM as proposed by the Commission. As discussed in Section 1 above, MBC Grand has at least one Class B station with a highly directional night pattern which has severe coverage limitations under the present Commission Rules regarding co-channel nighttime Class A station protection. Specifically, MBC Grand supports the change of the wording of the limitations regarding the FM translator 1 mV/m service contour and the physical restriction of “not to exceed 25 miles”. As spelled out in Paragraph 68 of the FNPRM regarding Section 74.1201(g) *“to provide that the coverage contour (1 mV/m) of an FM translator rebroadcasting an AM radio broadcast station as its primary station must be contained within the greater of either the 2 mV/m daytime contour of the AM station or a 25-mile (40 km) radius centered at the AM transmitter site, but that in no event may the translator’s 1 mV/m coverage contour extend beyond a 40-mile (64 km) radius centered at the AM transmitter site”*. This additional expansion will also assist AM stations with daytime directional patterns that would otherwise need to limit a fill-in FM Translator to fit within those narrow contours while at the same time giving others the flexibility to go beyond 25 miles if the FM translator’s 1 mV/m service contour fit within the station’s daytime service area.

¹¹ The Commission clearly wanted to provide wide area PRIMARY service for these stations.

5: CONCLUSIONS

MBC Grand believes that many of the proposals in the FNPRM are worthy of adoption with the only exception regarding an increase in the daytime existing full power Class B stations from 0.2 to 2 mV/m. If adopted, present full power Class B stations will eventually lose service area in locations between their present 0.5 mV/m contour and their present 2 mV/m contour as a result of nearby stations not running full facilities raising power to the higher allowable actual values of U/D signal levels.

Respectfully Submitted,

A handwritten signature in blue ink that reads "Larry H. Will". The signature is written in a cursive style with a large, stylized initial "L".

Larry H. Will, PE

March 21, 2016

ATTACHMENTS:

Figure 1 – KNZZ Licensed Directional Pattern

Figure 2 – Approximate Present and Proposed Example 4 mV/m Nighttime Coverage

FIGURE 1 03-16-2016

**KNZZ NIGHTTIME PATTERN
FROM SEPTEMBER 1997
PROOF OF PERFORMANCE**

EXHIBIT E-6.01B

**KNZZ
MBC GRAND BROADCASTING, INC.
1100 kHz 50 kW/36 kW/10 kW DA-N
GRAND JUNCTION, COLORADO
SEPTEMBER 1997**

**MEASURED NIGHTTIME DIRECTIONAL
HORIZONTAL RADIATION PATTERN**

UNATTENUATED FIELD AT 1.0 KM

0.5/ -13.5° 1/0° 0.5/ +10.5°
○ 175° ○ 175° ○ 81°T →

STANDARD PATTERN

Measured - - - -
Measured Radial ○
Standard Pattern ———

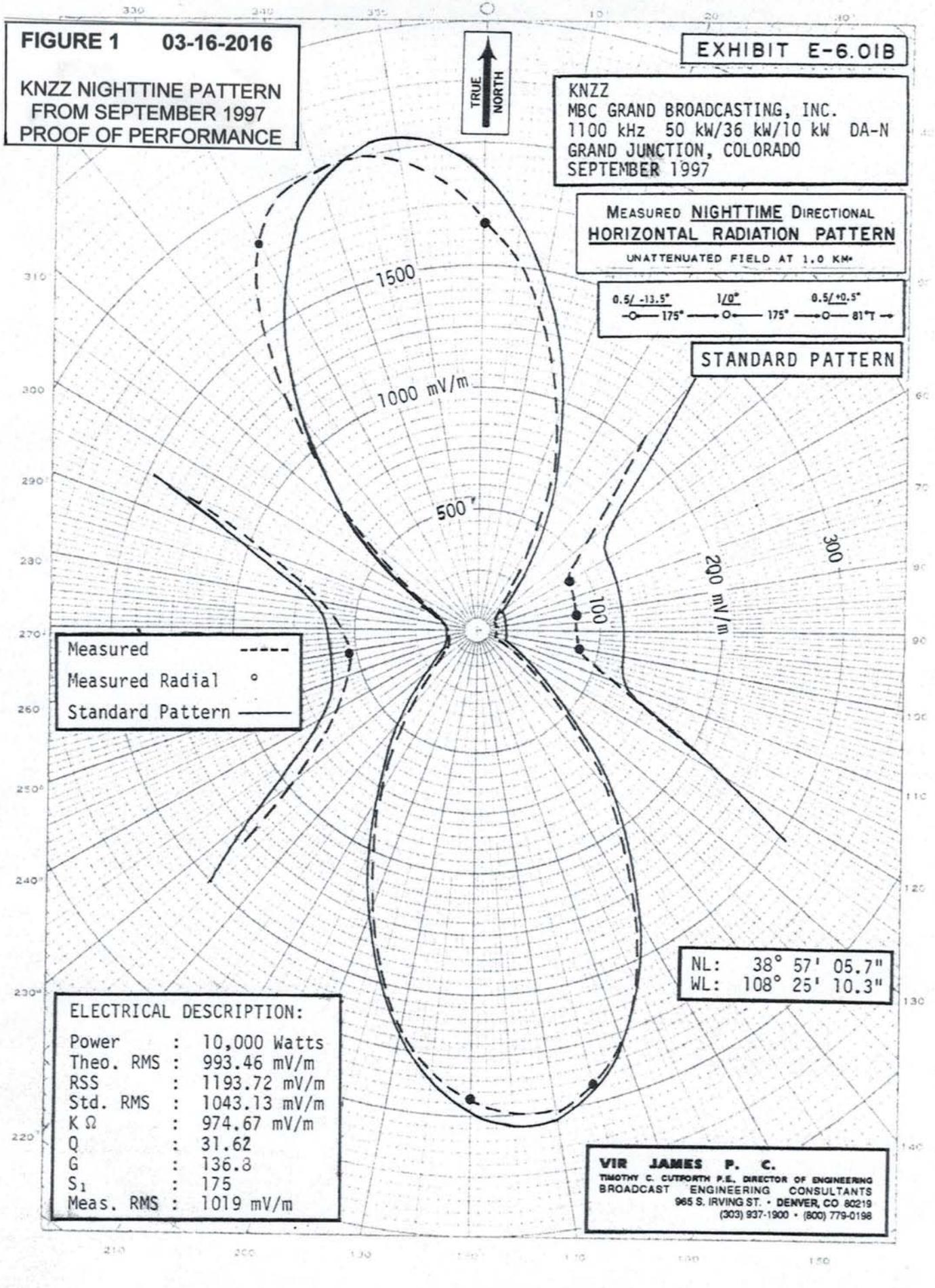
ELECTRICAL DESCRIPTION:

Power : 10,000 Watts
Theo. RMS : 993.46 mV/m
RSS : 1193.72 mV/m
Std. RMS : 1043.13 mV/m
K Ω : 974.67 mV/m
Q : 31.62
G : 136.8
S₁ : 175
Meas. RMS : 1019 mV/m

NL: 38° 57' 05.7"
WL: 108° 25' 10.3"

VIR JAMES P. C.
TIMOTHY C. CUTFORTH P.E., DIRECTOR OF ENGINEERING
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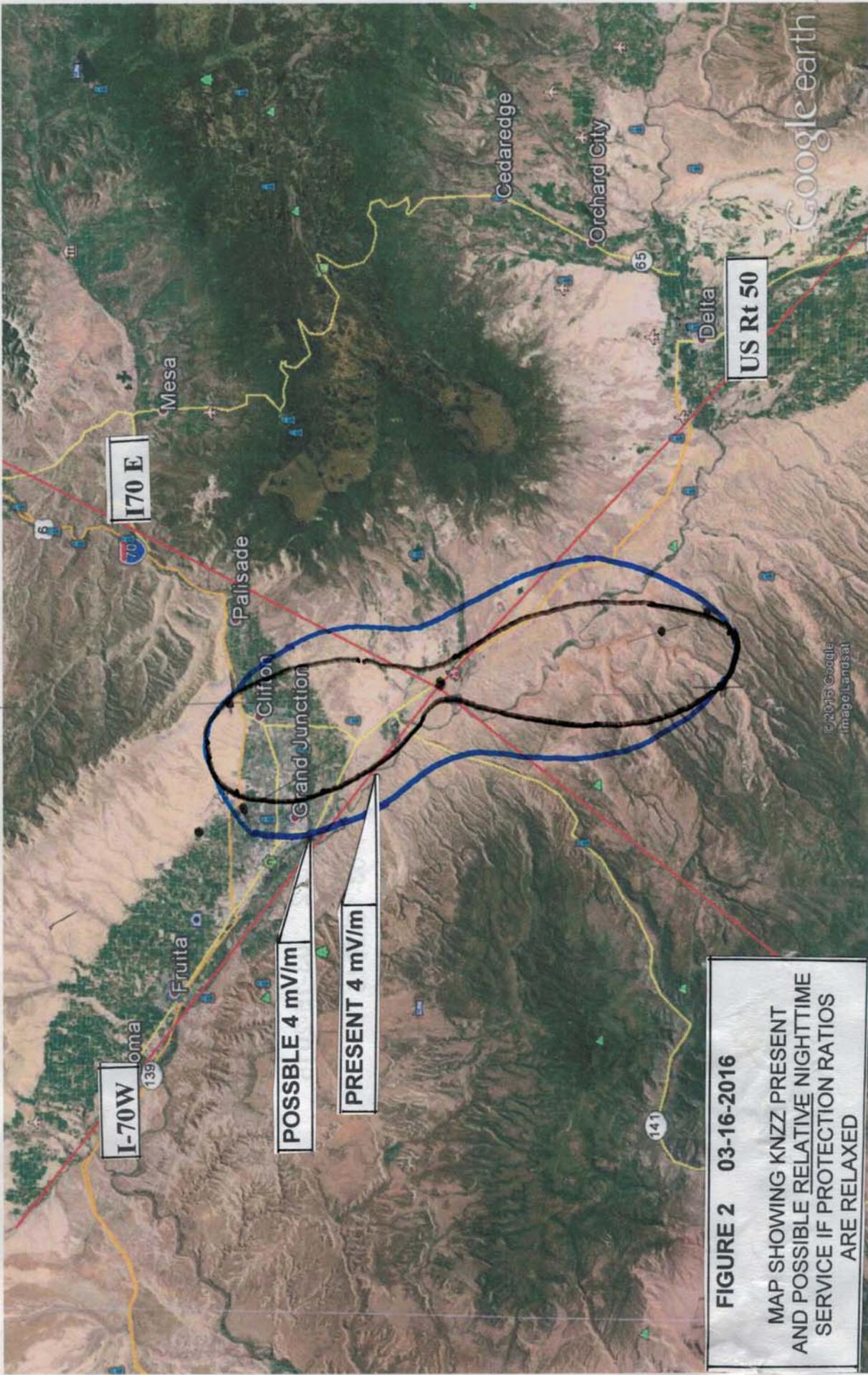


FIGURE 2 03-16-2016
 MAP SHOWING KNZZ PRESENT
 AND POSSIBLE RELATIVE NIGHTTIME
 SERVICE IF PROTECTION RATIOS
 ARE RELAXED

Google earth

miles
km

40 70

