Kessler and Gehman Associates
Consultants • Broadcast • Wireless

MINOR MODIFICATION OF A DIGITAL TRANSLATOR FACILITY HAVING FCC CALL SIGN K36OB-D FACILITY ID 168108

Verdi, NV

Prepared For:

Channel 5 Public Broadcasting, Inc.
1670 N. Virginia St.
Reno, NV 89503

Prepared By:

Ryan Wilhour
Consulting Engineer
Kessler and Gehman Associates
507 NW 60th Street, Suite D
Gainesville, FL 32607-2055
352-332-3157 Extension 3
ryan@kesslerandgehman.com
www.kesslerandgehman.com

Prepared On:

October 4, 2018

TABLE OF CONTENTS

1.0 MINOR MODIFICATION OF A DIGITAL TELEVISION TRANSLATOR

Channel 5 Public Broadcasting, Inc. is the licensee of a digital Low Power Television Translator Station having call sign K36OB-D, Facility ID 168108. K36OB-D is permitted[1] to operate on channel 36 with an ERP of 15 kW through a directional antenna using a full-service emission mask. It is herein proposed to correct the ground elevation and coordinates, change the antenna make and model and reduce its height and ERP.

Pursuant to 47 CFR Section 74.787(b) the instant application is considered a "minor" change because:

- There is no change in channel frequency.
- There is no change in transmitting antenna location such that the protected contour resulting from the change does not overlap some portion of the protected contour of the authorized facilities of the existing station as illustrated in Appendix D.
- There is no change in transmitting antenna location greater than 30 miles (48km) from the reference coordinates of the existing station's antenna location.

2.0 STATION TRANSMITTER LOCATION AND ELEVATION

It is proposed to keep K36OB-D at its licensed and permitted location on an existing tower as illustrated in Appendix A. The existing structure does not have an FAA determination of no hazard to air navigation or an FCC Antenna Structure Registration ("ASR") number. Appendix B are the results of an FCC TOWAIR determination which indicates that the existing structure is not required to file for an FAA determination of no hazard to air navigation and is thus also exempt from FCC ASR filing. The instant application does not propose to increase or modify the existing support structure.

[1] FCC File Number: 0000052179

3.0 ALLOCATION ANALYSIS

Appendix C are the summarized results from TVStudy V2.2.5. As indicated the proposed K36OB-D facility is predicted to receive 17.73% aggregate inbound interference from FCC File No. BNPDTL-20090825AOX and BNPDTL-20090825BER both which are granted construction permits from 2009 and have not been built and licensed. These two facilities will not be a source of actual interference; however, if they are built and licensed, K36OB-D shall accept their interference.

4.0 AM STATION PROXIMITY

No AM Stations are located within 3.2 km of the proposed facility. Pursuant to 47 C.F.R. Section 1.30002(e), the construction or extension of an antenna supporting structure shall be considered subject to the moment method analysis and prior notification requirement; however, the instant application does not propose to extend the existing structure or build a new structure. Thus, the proposed facility is exempt from further AM analysis consideration.

5.0 INTERNATIONAL COORDINATION

The K36OB-D transmitter site is beyond the coordination distance to Canada and Mexico.

6.0 RADIO FREQUENCY RADIATION COMPLIANCE

A theoretical analysis has been conducted of the human exposure to radio frequency radiation ("RFR") using the calculation methodology described in OET Bulletin 65, Edition 97-01. The RFR analysis is conducted pursuant to the following methodology:

Terrain[2] extraction is compiled from the proposed tower site to radial lengths of 0.25 miles in 0.001 mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower edge of the proposed channel frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

Starting from the origin the maximum calculated RFR value is determined among the 360 degree radials for each 0.001 mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

The resulting RFR study in Appendix E demonstrates that the peak exposure is 0.8% of the most restrictive permissible exposure threshold. Pursuant to OET Bulletin 65 concerning multiple-user transmitter sites only those licensees whose transmitters produce power density levels greater than 5.0% of the exposure limit are considered significant contributors to RFR. Since the proposed operation is within 5% of the most permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR exposure. Thus, contributions to exposure from other RF sources in the vicinity of the proposed facility were not taken into account. The instant application is compliant with the FCC limits for human exposure to RF radiation and is excluded from further environmental processing since no changes are proposed to the tower structure in order to accommodate the proposed antenna.

[2] Terrain extraction is based upon a 3 arc second point spacing terrain database.

A chain link fence encloses the support structure and the applicant will cooperate with any other users of the tower by reducing the power to the antenna or if necessary completely cutting it off to protect maintenance workers on the tower.

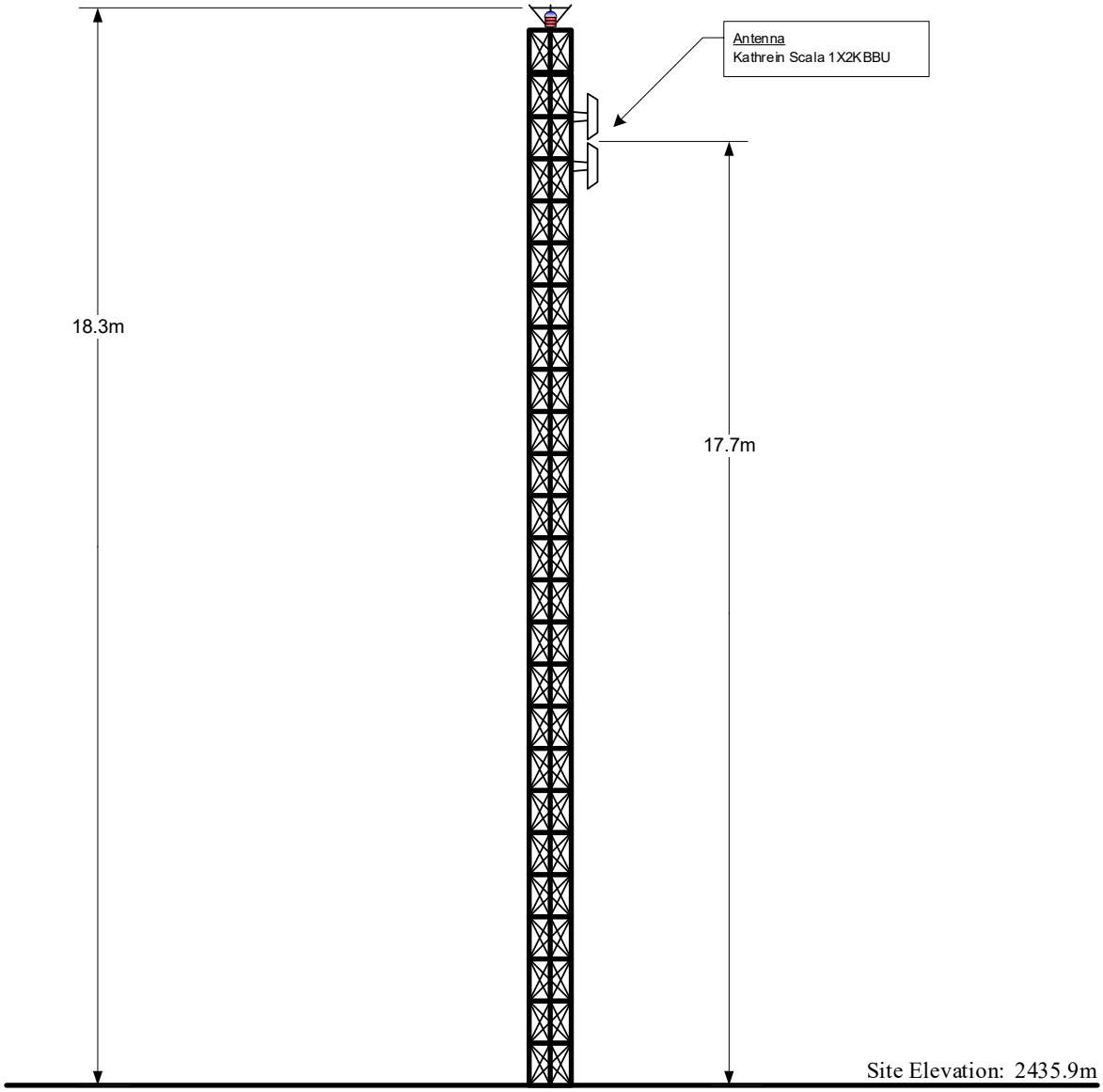
7.0 CERTIFICATION

The foregoing statement and the report regarding the engineering work are true and correct to the best of my knowledge. Executed October 4, 2018.

Kessler and Gehman Associates, Inc.

Ryan Wilhour
Consulting Engineer

APPENDIX A – Tower Elevation Diagram



Antenna CRAGL:	17.7 m
Antenna CRAMSL:	2453.6 m

NAD 83 Coordinates:

N. Latitude:	39º 34' 37.9"
W. Longitude:	119º 56' 22.8"

FCC Tower Registration Number:	N/A
FAA Study Number	N/A

NOTE: NOT TO SCALE

APPENDIX B – FCC TOWAIR Study

Antenna Structure Registration (ASR) filing determination was calculated from the FCC's structure registration tool:

http://wireless2.fcc.gov/UlsApp/AsrSearch/towairSearch.jsp

Results are as follows:

DETERMINATION Results	
Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.	
Your Specifications	
NAD83 Coordinates	
Latitude	39-34-37.9 north
Longitude	119-56-22.8 west
Measurements (Meters)	
Overall Structure Height (AGL)	18.3
Support Structure Height (AGL)	18.3
Site Elevation (AMSL)	2435.9
Structure Type	
LTOWER - Lattice Tower	

APPENDIX C – TVStudy V2.2.5 Allocation Analysis

```
Study created: 2018.10.04 14:27:12

Study build station data: LMS TV 2018-10-03

    Proposal: K36OB D36 LD LIC Verdi, NV
 File number: Proposed
 Facility ID: 168108
Station data: User record
   Record ID: 3457
     Country: U.S.

Build options:
Protect pre-transition records not on baseline channel

Search options:
Non-U.S. records included
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX   Call      Chan       Svc Status  City, State              File Number             Distance
No   KCRA-TV   D35        DT  LIC     SACRAMENTO, CA           BMLCDT20110630AGB       198.2 km
No   K35JX-D   D35        LD  LIC     WESTWOOD, CA             BLDTT20100722HYE        118.7
No   K35AX-D   D35        LD  LIC     HAWTHORNE, NV            BLDTT20100706HQD        160.6
No   NEW       D35        LD  APP     RENO, NV                 BNPDTL20090825AOX        12.1
No   K35FL-D   D35        LD  LIC     SILVER SPRINGS, NV       BLDTT20100729AAP        55.5
No   NEW       D35        LD  APP     SUN VALLEY, NV           BNPDTL20090825BER        12.0
No   K36BT     N36-       TX  LIC     BLUE LAKE, CA            BLTTL19940223IE         372.8
No   KHSL-TV   D36        DT  CP      CHICO, CA                BLANK0000027583         157.4
No   KHSL-TV   D36        LD  LIC     CHICO, CA                BLCDT20091221AGI        250.2
No   K36LY-D   D36        LD  LIC     DURHAM, CA               BLANK0000019191         131.7
No   KXTV      D36        LD  CP      SACRAMENTO, CA           BDRTCDT20140317ACA      176.0
No   KICU-TV   D36        DT  APP     SAN JOSE, CA             BLANK0000035729         286.4
No   KICU-TV   D36        DT  LIC     SAN JOSE, CA             BLCDT20090709ALH        286.4
No   KFRE-TV   D36        DT  LIC     SANGER, CA               BLCDT20060421AAI        281.4
No   K36HH-D   D36        LD  LIC     SUSANVILLE, ETC, CA      BLDTT20101207AFN        103.0
No   K49IG-D   D36        LD  CP      YREKA, CA                BLANK0000035593         335.3
No   K40CA     D36        LD  CP      BEOWAWE, NV              BLANK0000054562         299.5
No   K36DC     N36        TX  LIC     BEOWAWE, ETC., NV        BLTTL19940420IH         336.6
No   K36KN-D   D36        LD  LIC     EUREKA, NV               BLDTT20120423AAZ        338.2
No   K36NA-D   D36        LD  CP      FERNLEY, NV              BNPDTL20100512AGY        58.8
Yes  K36NB-D   D36        LD  CP      INCLINE VILLAGE, NV      BNPDTL20100611AHQ        30.1
No   K36GL-D   D36        LD  LIC     LOVELOCK, NV             BLDTT20110721AAT        119.6
Yes  K36FF-D   D36        LD  LIC     SHURZ, NV                BLDTT20110609AAR        112.9
No   K49BK-D   D36        LD  CP      WINNEMUCCA, NV           BLANK0000054078         243.5
No   K49BK-D   D36        LD  APP     WINNEMUCCA, NV           BLANK0000059884         243.5
No   K36IB-D   D36        LD  LIC     MIDLAND, ETC., OR        BLDTT20090921ACY        326.4
No   K38FW     N38+       TX  LIC     STATELINE, NV            BLTTL20030205AAP         68.6

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

    Channel: D36
       Mask: Full Service
   Latitude:  39 34 37.90 N (NAD83)
  Longitude: 119 56 22.80 W
Height AMSL: 2453.6 m
       HAAT: 698.6 m
   Peak ERP: 0.137 kW
    Antenna: SCA-1X2KBBU (ID 20718) 190.0 deg
Elev Pattrn: Generic
  Mech Tilt: 3.30 @ 190.0 deg

50.9 dBu contour:
```

Azimuth	ERP	HAAT	Distance
0.0 deg	0.000 kW	737.1 m	8.0 km
45.0	0.001	884.7	15.2
90.0	0.014	830.9	28.0
135.0	0.128	963.1	43.3
180.0	0.098	508.7	34.1
225.0	0.107	569.8	36.0
270.0	0.045	400.2	26.8
315.0	0.002	694.6	15.1

Distance to Canadian border: 1003.1 km

Distance to Mexican border: 807.8 km

Conditions at FCC monitoring station: Livermore CA
Bearing: 218.0 degrees Distance: 259.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 82.4 degrees Distance: 1253.1 km

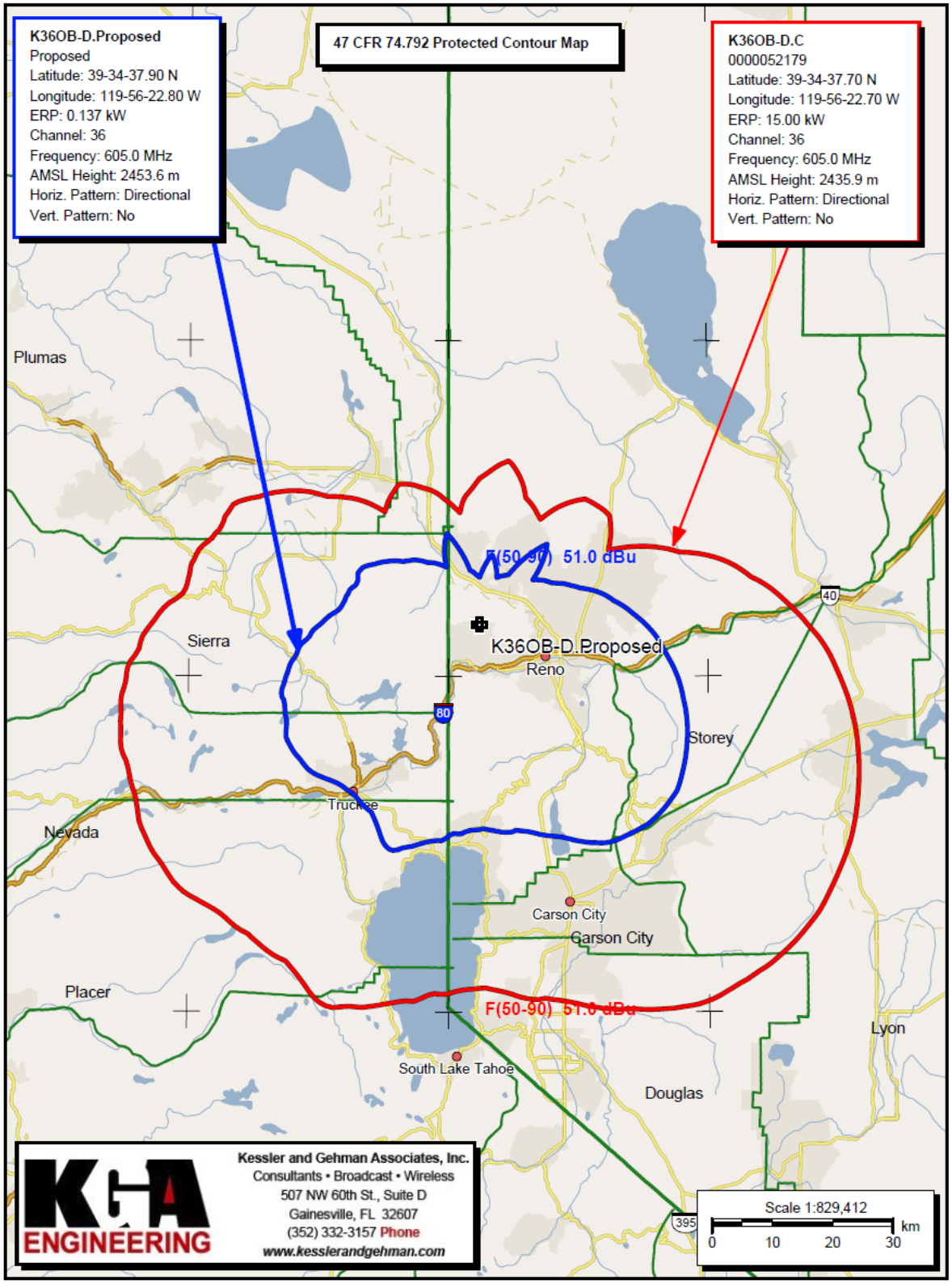
Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

---- Below is IX received by proposal Proposed ----

**MX with scenario 1, 17.73% interference received

APPENDIX D – 51dBμ F(50,90) Licensed and Proposed Contour



APPENDIX E – Far Field Exposure to RF Emissions