

# T Z SAWYER TECHNICAL CONSULTANTS

2130 HUTCHISON GROVE COURT, SUITE 100  
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## DIGITAL LPTV FACILITY MINOR CHANGE APPLICATION

K10RS

FCC FACILITY ID: 182854

ASPEN, COLORADO

FEBRUARY 2023

### ENGINEERING NARRATIVE

#### Minor Change Application:

K10RS, seeks to modify its current CONSTRUCTION permit (LMS: 0000207226) to specific a new transmission site and antenna system parameters. The proposed antenna is a SCALA CL-713, a directional horizontally polarized yagi antenna. A full-service filter mask is to be employed. The facility requested is not contingent upon a grant or channel move of any other known facility at the time of filing.

The current construction permit (minor modification) was a modification of the original unbuilt permit (LMS:000116673). This new minor modification of permit seeks further modification of the original permit. As the underlying permit expires on March 11, 2023, *time is of the essence*, and the permittee is ready to move forward with construction and operation at the site proposed herein.

Maximum Effective Radiated Power (ERP) is 0.45 kilowatts (main lobe directional antenna), horizontal polarization only.

#### Modification Compliance:

Pursuant to 47 CFR §74.787(b) the instant application is considered a “minor” change because;

- There is no change in transmitting antenna location such that the protected service contour resulting from the change does not overlap some portion of the protected service contour of the authorized facilities of the existing station CONSTRUCTION PERMIT as illustrated in Figure 1, Present & Proposed Service Contours.
- There is no change in transmitting antenna location greater than 30 miles (48km) from the reference coordinates of the existing station construction permit antenna location, as noted below:

CALCULATED DISTANCE BETWEEN EXISTING LICENSE AND PROPOSED SITES

SITE	LAT (NAD83)	LON (NAD83)	(KM)	(MI)
ORIGINAL CP	39-13-33.00 N	106-50-09.20 W	3.801	2.362
PROPOSED CP MOD	39-11-39.30 N	106-49-08.00 W		

#### FCC Tower Registration (ASR) - FAA Notification:

The proposed antenna mounting structure is 8.5 meter in overall height (AGL). This is an existing building with a chimney mounted pole that extends approximately 28-feet AGL and is used for communication purposes (primarily amateur radio service) and does not require an FCC ASR number or FAA notification. No changes in the supporting structure is required that would require notification to the FAA or a FCC ASR number . The center of radiation of the antenna is pole mounted on the building chimney (a permanent structure) at 8.5 meters above ground level.

An exhibit has been prepared in which the proposed site has been marked on a large scale topographic map and includes an overhead view using satellite imagery from Google Earth.

Antenna Elevations:

The ground elevation at the site is 2400 meters above mean sea level (AMSL). The center of radiation of the proposed antenna is 8.5 meters above ground level (AGL). Thus, the center of radiation is 2408.5 eters above mean sea level (AMSL), as tabulated below:

ALL ELEVATIONS IN METERS	
GROUND ELEVATION	2400.0
SUPPORTING STRUCTURE OVERALL HEIGHT AGL	8.5
ANTENNA HEIGHT AGL	8.5
ANTENNA RCAMSL	2408.5

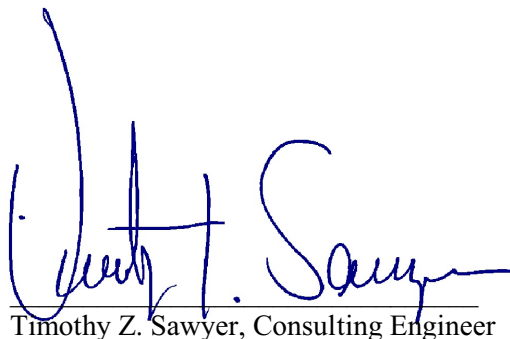
FCC TVStudy Results:

The results of a interference study of the proposal using the FCC TVStudy program (Version 2.2.5), shows that no prohibitive interference will occur from the proposal. A copy of the summary report has been included in this application. The applicant accepts any incoming interference that is predicted to exist to the proposed facility by any authorized or pending, primary or secondary TV station at the time this application is submitted.

Environmental Evaluation Statement:

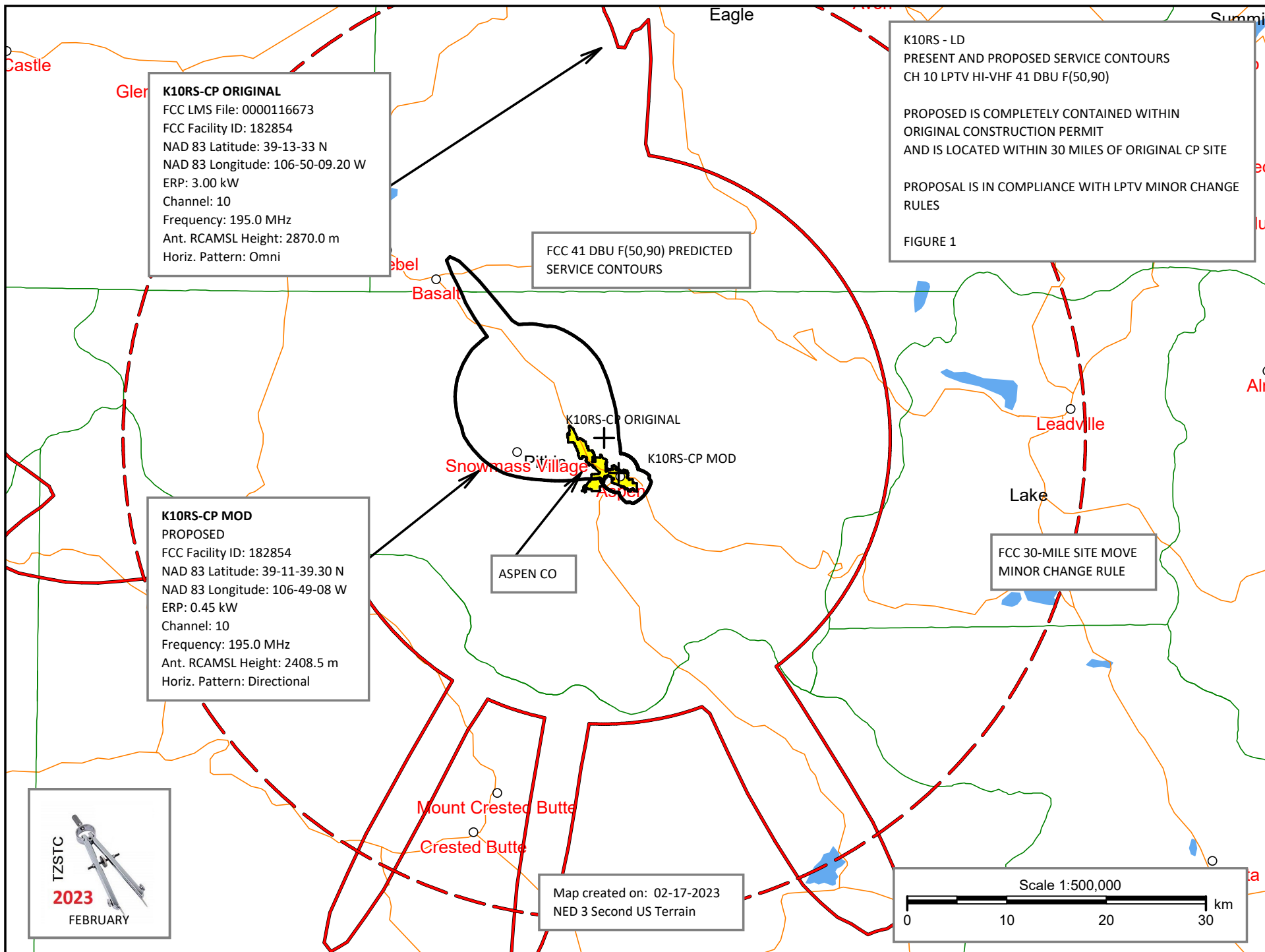
The environmental evaluation statement concerning this proposal has been included in this application and can be found as a separate file upload within the application. A grant of this proposal would NOT be an action which would have a significant environmental effect as demonstrated in the environmental evaluation statement.

February 17, 2023

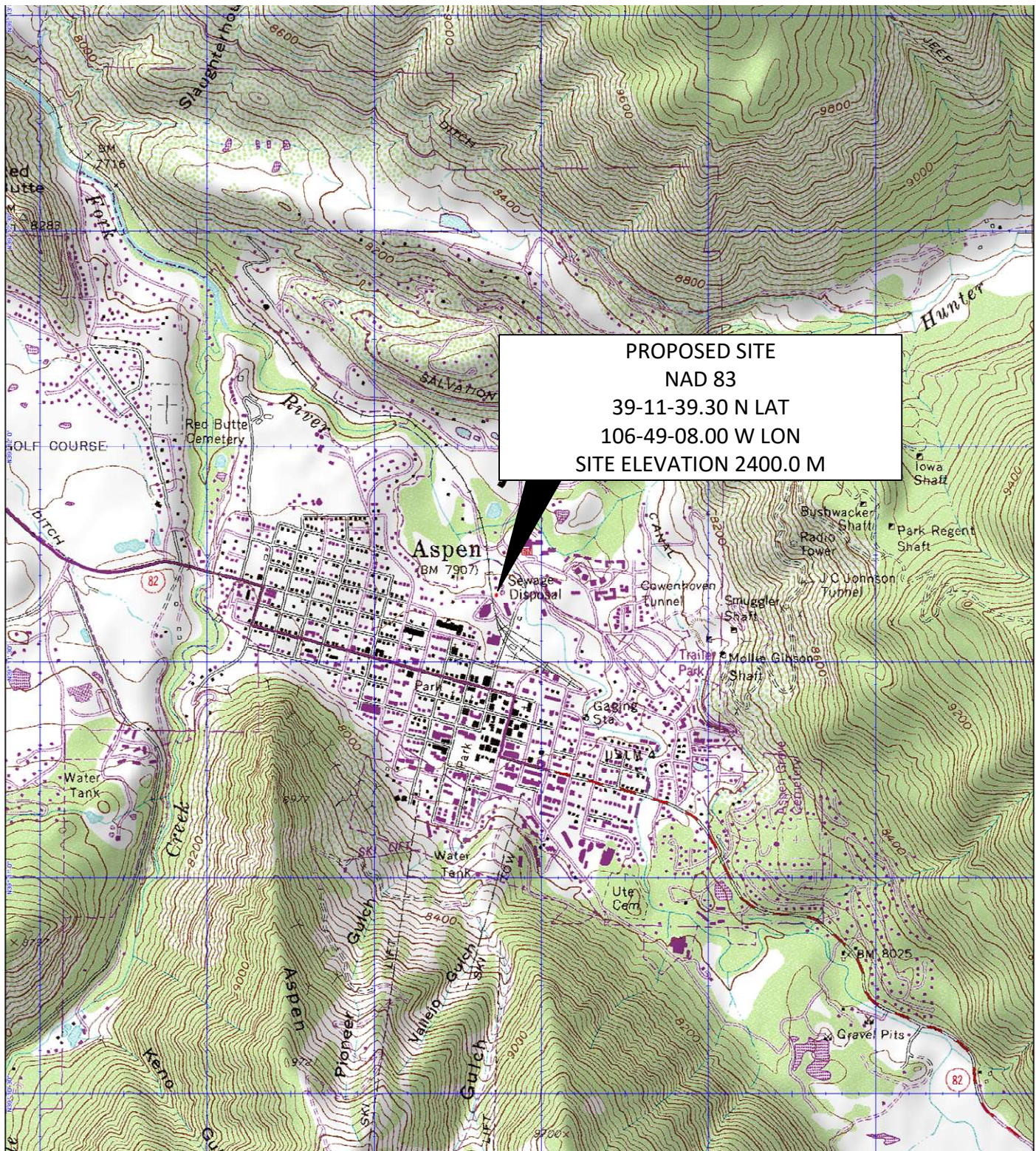
A handwritten signature in blue ink, appearing to read "Timothy Z. Sawyer", is written over a horizontal line.

Timothy Z. Sawyer, Consulting Engineer

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## TOPOGRAPHIC SITE MAP

**K10RS  
ASPEN, COLORADO**

**FIGURE  
2A**

FALL CHURCH, VIRGINIA 22043-2555

SIZE  
A

CAGE NO  
N/A

DWG NO  
20230217K10RS.2A

REV  
NONE

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SCALE  
N/A

FEBRUARY 2023

SHEET





Google Earth - Edit Placemark

Name:

Latitude:

Longitude:

Description Style, Color View Altitude

#### DETERMINATION Results

Structure does not require registration. The structure meets the 6.10-meter (20-foot) Rule criteria.

#### Your Specifications

##### NAD83 Coordinates

Latitude	39-11-39.3 north
Longitude	106-49-08.0 west

##### Measurements (Meters)

Overall Structure Height (AGL)	8.5
Support Structure Height (AGL)	8.5
Site Elevation (AMSL)	2400

##### Structure Type

BPIPE - Building with Pipe

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#### PHOTOGRAPH OF EXISTING TOWER SITE AND TOWER AIR SLOPE RESULTS

K10RS  
ASPEN, CO

FIGURE  
2B

FALL CHURCH, VIRGINIA 22043-2555

SIZE  
A

CAGE NO  
N/A

DWG NO  
20230217K10RS.2B

REV  
NONE

(c) 2023, ALL RIGHTS RESERVED

SCALE  
N/A

FEBRUARY 2023

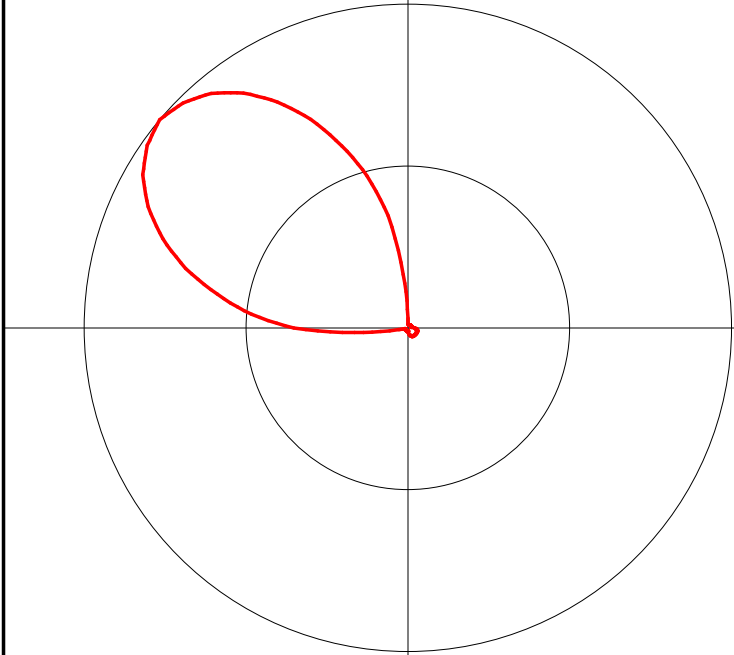
SHEET

SCA CL-713 HORZ PATTERN

Pre-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	1.0
10.0	0.945
20.0	0.805
30.0	0.598
40.0	0.352
50.0	0.03
60.0	0.01
70.0	0.01
80.0	0.01
90.0	0.01
100.0	0.01
110.0	0.01
120.0	0.01
130.0	0.01
140.0	0.02
150.0	0.025
160.0	0.03
170.0	0.03
180.0	0.03
190.0	0.03
200.0	0.03
210.0	0.025
220.0	0.02
230.0	0.01
240.0	0.01
250.0	0.01
260.0	0.01
270.0	0.01
280.0	0.01
290.0	0.01
300.0	0.01
310.0	0.03
320.0	0.352
330.0	0.598
340.0	0.805
350.0	0.945

Rotation Angle = 310



PATTERN PLOTTED AS ROTATED  
310 DEG TRUE.

FIGURE 3 K10RS, ASPEN, CO

FIGURE 4 - K10RS MINOR CHANGE INTERFERENCE REPORT  
FCC TV SUMMARY RESULTS

CELL SIZE 1.0 KM PROFILE SPACING 1.0

Study created: 2023.02.17 19:02:45  
Study build station data: LMS TV 2023-02-17

Proposal: K10RS-D D10 LD APP ASPEN, CO  
File number: K10RS SITE-2 APP  
Facility ID: 182854  
Station data: User record  
Record ID: 681  
Country: U.S.

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

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KUSA	D9	DT	LIC	DENVER, CO	BLANK0000129226	148.6 km
No	KKCO	D9	LD	LIC	GRAND JUNCTION, CO	BLCDDT20121025ABH	81.0
No	K09TH-D	D9	LD	LIC	GUNNISON, CO	BLDTV20091021ABR	74.4
No	K09ZS-D	D9	LD	LIC	MESA, CO	BLANK0000072776	179.8
No	K09PJ-D	D9	LD	LIC	OURAY, CO	BLDTV20101013ADN	150.3
No	K09WB-D	D9	LD	LIC	POWDERHORN, CO	BLDTV20110913AAY	103.3
No	K09YO-D	D9	LD	LIC	THOMASVILLE, CO	BLDTV20100709AIA	21.2
No	K09DY-D	D9	LD	LIC	WESTCLIFFE, CO	BLDTV20120615ACG	172.9
No	K10PM-D	D10	LD	LIC	BRECKENRIDGE, CO	BLDTV20101015AAN	77.9
No	KWHS-LD	D10	LD	LIC	COLORADO SPRINGS, CO	BLANK0000081492	176.4
No	KHDT-LD	D10	LD	LIC	DENVER, CO	BLANK0000162625	148.3
No	K10MZ-D	D10	LD	LIC	DOLORES, CO	BLDTV20110329ADA	242.9
No	K10NY-D	D10	LD	LIC	ISMAY CANYON, CO	BLDTV20110808ACQ	270.6
No	K10RB-D	D10	LD	LIC	MESA, CO	BLDTV20141217ABI	120.2
No	KRMZ	D10	DT	LIC	STEAMBOAT SPRINGS, CO	BLCDDT20060711ABO	140.9
No	K10PR-D	D10	LD	LIC	THOMASVILLE, CO	BLDTV20100709AHY	21.2
No	DKRYD-LP	N10-	TX	APP	VAIL, CO	BLTVL20080311ADN	58.5
No	K10AD-D	D10	LD	CP	VALLECITO, CO	BLANK0000062938	234.5
No	K10AD-D	D10	LD	LIC	VALLECITO, CO	BLDTV20120608AAN	213.8
No	K10MA-D	D10	LD	LIC	WAUNITA HOT SPRINGS, CO	BLDTV20101216ACS	76.2
No	K10OD-D	D10	LD	LIC	WEBER CANYON, CO	BLDTV20110329ACS	247.4
No	KBSL-DT	D10	DT	LIC	GOODLAND, KS	BLCDDT20130318ADJ	453.4
No	K10CG-D	D10	LD	LIC	AZTEC, NM	BLDTV20090527ABW	306.6
No	KCHF	D10	DT	LIC	SANTA FE, NM	BLANK0000004531	380.3
No	KCHF	D10	DT	APP	SANTA FE, NM	BLANK0000159381	443.5
No	K42AD-D	D10	LD	LIC	BLANDING/MONTICELLO, UT	BLANK0000059864	274.8
No	K10RL-D	D10	LD	LIC	EAST PRICE, UT	BLANK0000093945	346.2
No	K10RN-D	D10	LD	LIC	HELPER, UT	BLANK0000093754	349.6
No	DK20NG-D	N10	TX	APP	MONTEZUMA CRK/ANETH, UT	BLTTV20080404ACO	304.6
No	K10RO-D	D10	LD	LIC	ROOSEVELT, ETC., UT	BLANK0000095199	311.5
No	K10FQ-D	N10	TX	LIC	BIG LARAMIE, ETC., WY	BLTTV3978	254.6
No	K10FQ-D	D10	LD	LIC	BIG LARAMIE, ETC., WY	BLANK0000143326	254.6
No	K11PS-D	D11	LD	LIC	COLLBRAN, CO	BLDTV20141217ABJ	98.9
No	KSBK-LD	D11z	LD	LIC	COLORADO SPRINGS, CO	BLANK0000121881	177.5
No	K11AT-D	D11	LD	LIC	GUNNISON, CO	BLDTV20090820ACK	74.4
No	K11TJ-D	D11	LD	LIC	SARGENTS, CO	BLDTV20101221ABN	95.9
No	K11LM-D	D11	LD	LIC	THOMASVILLE, CO	BLDTV20100920AAU	21.2
No	KQCK	D11	DT	LIC	CHEYENNE, WY	BLANK0000191318	204.2
No	KQCK	D11	DT	CP	CHEYENNE, WY	BLANK0000194070	204.2
No	K13ML-D	N13	TX	LIC	HOTCHKISS, ETC., CO	BLTTV4039	87.0
No	K13ML-D	N13	TX	CP	HOTCHKISS, ETC., CO	BPTTV20130103ABC	86.7

No non-directional AM stations found within 0.8 km  
No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D10  
Mask: Full Service  
Latitude: 39 11 39.30 N (NAD83)  
Longitude: 106 49 8.00 W  
Height AMSL: 2408.5 m  
HAAT: 0.0 m  
Peak ERP: 0.450 kW  
Antenna: SCA-CL-713 (ID 1010386) 310.0 deg

Elev Pattn: Generic

48.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.000 kW	-502.3 m	3.4 km
45.0	0.000	-725.4	2.0
90.0	0.000	-855.0	2.8
135.0	0.000	-710.4	3.4
180.0	0.000	-835.3	2.0
225.0	0.000	-522.0	2.0
270.0	0.056	-388.6	11.6
315.0	0.426	13.1	19.2

Database HAAT does not agree with computed HAAT

Database HAAT: 0 m    Computed HAAT: -566 m

Distance to Canadian border: 1089.9 km

Distance to Mexican border: 823.7 km

Conditions at FCC monitoring station: Grand Island NE

Bearing: 72.3 degrees    Distance: 738.8 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 52.5 degrees    Distance: 170.7 km

ERP: 0.000045 kW    Field strength: -82.4 dBu, 0.0 mV/m

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%

Proposal causes no interference to K10RS SITE-2 APP APP

No IX check failures found.



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K10RS  
LPTV CHANNEL 10 OPERATION  
FACILITY ID: 182854  
ASPEN, COLORADO  
FEBUARY 2023

## ENVIRONMENTAL EVALUATION STATEMENT

A grant of this proposal would NOT be an action which would have a significant environmental effect as demonstrated in this environmental evaluation statement. Any changes in equipment, or construction, if necessary will not trigger any event with regards to Section 106 of the National Historical Preservation Act (NHPA).

The proposal does not meet any of the criteria specified in Section 1.1307 of the FCC Rules. More specifically, the proposed facilities are not known to fall within any of the categories enumerated in Sections 1.1307(a)(1)-(7) and will not involve the use of high intensity white lights. Furthermore, operation of the proposed facility will not involve the exposure of workers or the general public to levels of radio frequency electromagnetic fields exceeding guidelines adopted by the Federal Communications Commission. (The current FCC guidelines are based upon criteria contained in the National Council of Radiation Protection and Measurements (NCRP) Report No.86 (1986) and ANSI/IEEE C95.1-1992.)

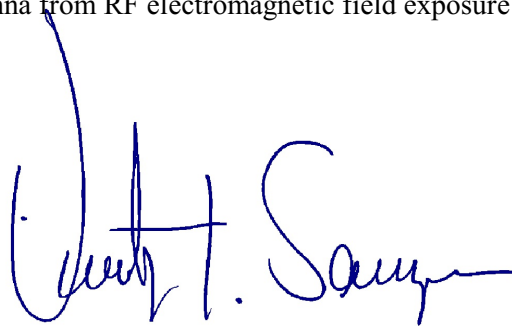
CALCULATED POWER DENSITY AT 2 METERS AGL (0.45 ANTENNA RELATIVE FIELD VALUE) ERP MAX (H ONLY)

CR AGL 8.5 M ERP MAX 0.45 KW	MPE ( $\mu\text{W}/\text{CM}^2$ )	CALCULATED VALUE ( $\mu\text{W}/\text{CM}^2$ )	% OF MPE	PASS/FAIL
CONTROLLED AREA	1000	72.0373	7.20%	PASS
PUBLIC AREA	200		36.02%	PASS

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 are posted at the site. The applicant will coordinate exposure procedures with any co-located facilities 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.

February 17, 2023

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