

T Z SAWYER TECHNICAL CONSULTANTS

2130 HUTCHISON GROVE COURT, SUITE 100
FALLS CHURCH, VIRGINIA 22043
TELEPHONE (703) 848-2130 / (202) 642-2130

DIGITAL LPTV FACILITY MINOR CHANGE APPLICATION

K27OW-LD

FCC FACILITY ID: 129454
ROCHESTER, MINNESOTA

FEBRUARY 2024

ENGINEERING NARRATIVE

Minor Change Application:

K27OW-LD seeks to modify its existing LICENSE permit (LMS:0000121243) to specific a new transmission site and antenna system parameters. The proposed antenna is a PSI PSILP8EC horizontally polarized directional UHF slot antenna system. 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 Maximum Effective Radiated Power (ERP) is 15-kilowatts, using 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 facility of the station license 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)
CURRENT/EXISTING	43-40-21.2 N	092-49-49.1 W	45.33	28.17
PROPOSED MOD	44-01-28.0 N	092-32-42.0 W		

FCC Tower Registration - ASR 1022166

The proposed antenna mounting structure is 108.0 meters in overall height above ground level (AGL) and has been registered with the FCC and issued ASR number 1022166. This is an existing communication tower upon which the antenna is to be side-mounted on the structure at the 45.72 meter AGL level. As no change in the overall height of the supporting structure will occur, notice to the FAA is not required.

Antenna Elevations:

The ground elevation at the site is 366.0 meters above mean sea level (AMSL). The center of radiation of the proposed antenna is 45.72 meters above ground level (AGL). Thus, the center of radiation is 427.7 meters above mean sea level (AMSL), as tabulated below:

ALL ELEVATIONS IN METERS

GROUND ELEVATION	366.0
SUPPORTING STRUCTURE OVERALL HEIGHT AGL	108.0
ANTENNA HEIGHT AGL	45.72
ANTENNA RCAMSL	411.72

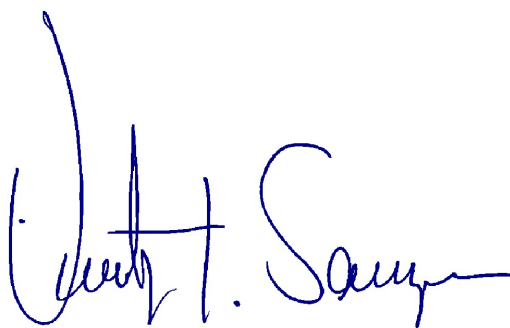
FCC TVStudy Results:

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. A cell size of 1.0 kilometer, with a 1.0 profile spacing (the default setting) was used.

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 29, 2024

A handwritten signature in blue ink, reading "Timothy Z. Sawyer". The signature is fluid and cursive, with the first name "Timothy" and last name "Sawyer" clearly legible.

Timothy Z. Sawyer, Consulting Engineer

T Z Sawyer Technical Consultants
2130 Hutchison Grove Court, Suite 100
Falls Church, VA 22043
Tel.: (703) 848-2130
e-mail: tzsawyer@tzsawyer.com

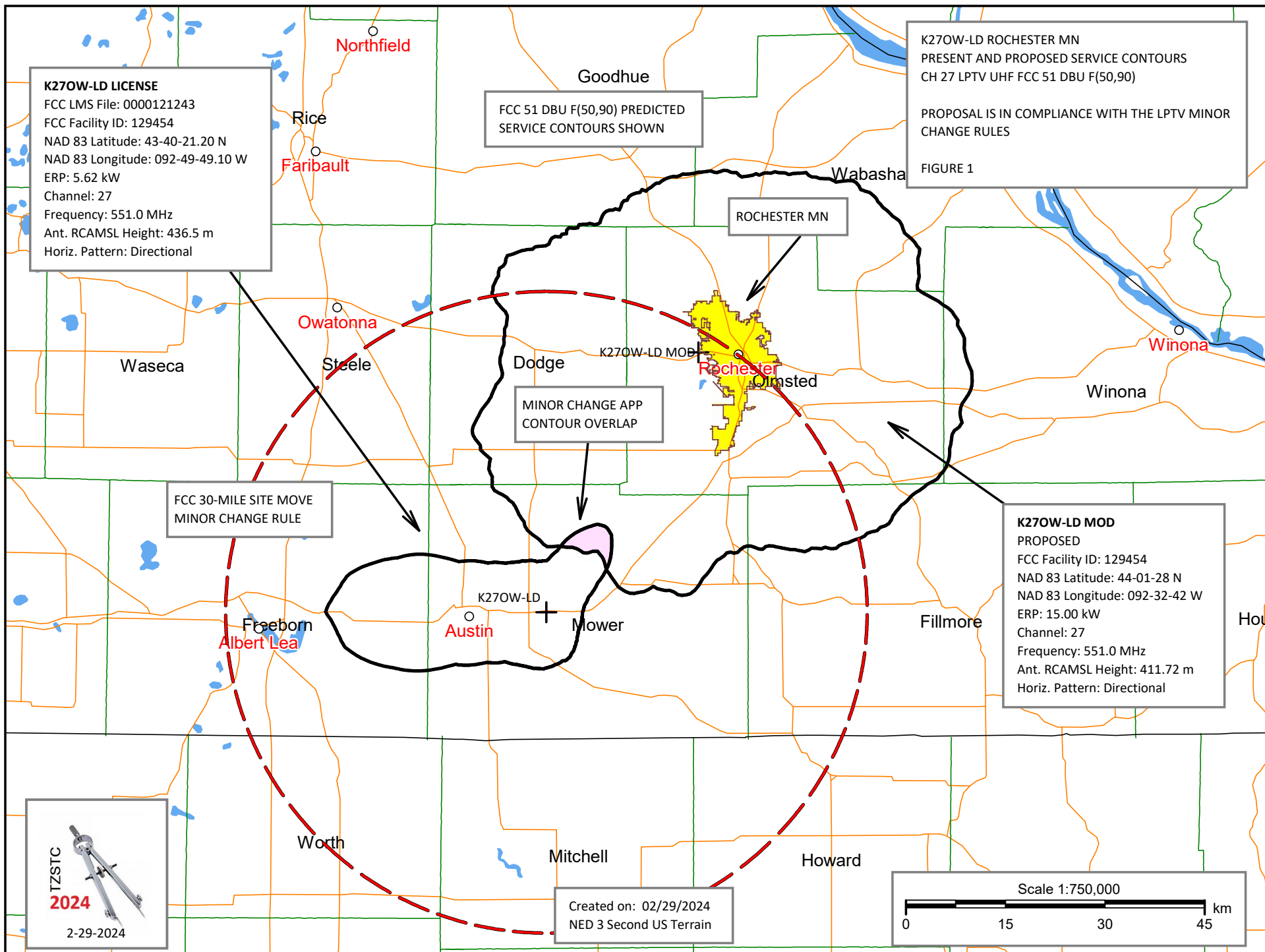


FIGURE 2 K27OW-LD PSI PSILP8EC DA PATTERN
Pre-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	0.93
10.0	0.93
20.0	0.94
30.0	0.94
40.0	0.96
50.0	0.98
60.0	1.0
70.0	1.0
80.0	0.98
90.0	0.92
100.0	0.84
110.0	0.74
120.0	0.62
130.0	0.49
140.0	0.38
150.0	0.3
160.0	0.26
170.0	0.26
180.0	0.26
190.0	0.26
200.0	0.26
210.0	0.3
220.0	0.38
230.0	0.49
240.0	0.62
250.0	0.74
260.0	0.84
270.0	0.92
280.0	0.98
290.0	1.0
300.0	1.0
310.0	0.98
320.0	0.96
330.0	0.94
340.0	0.94
350.0	0.93

Rotation Angle = 175

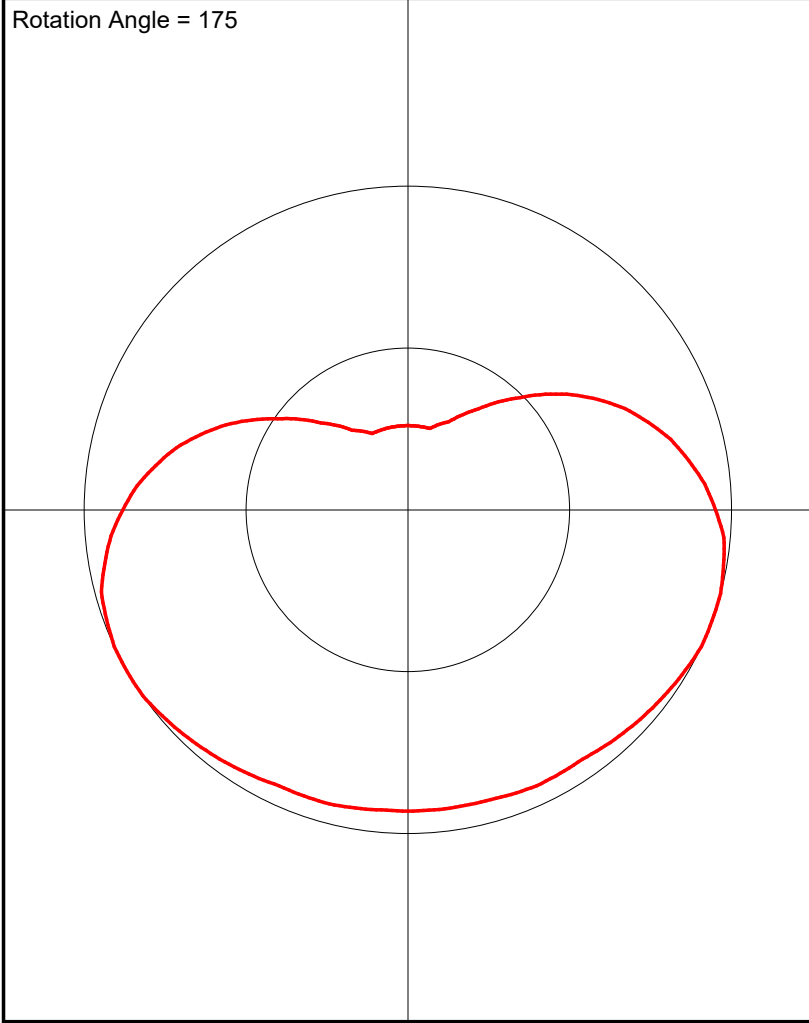


FIGURE 3 FCC TVSTUDY SUMMARY REPORT K270W-LD MINOR CHANGE APPLICATION

TVSTUDY PARAMETERS

CELL SIZE 1.0

PROFILE SPACING 1.0

Proposal: K270W-D D27 LD APP Rochester, MN
 File number: k270W-LD MINOR CHANGE
 Facility ID: 129454
 Station data: User record
 Record ID: 751
 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	WDMI-LD	D26	LD	LIC	MINNEAPOLIS, MN	BLANK0000194480	126.4 km
Yes	KXLT-TV	D26	DT	LIC	ROCHESTER, MN	BLANK0000063320	42.4
No	K26PF-D	D26	LD	CP	SAINT CLOUD, MN	BLANK0000226660	223.3
No	K26CS-D	D26	LD	LIC	ST. JAMES, MN	BLANK0000124213	164.0
No	W26FG-D	D26	LD	LIC	EAU CLAIRE, WI	BLANK0000195966	120.4
No	WZEO-LD	D26	LD	LIC	LA CROSSE, WI	BLANK0000197912	104.5
No	WKOW	D26	DT	LIC	MADISON, WI	BLCDT20111006AAO	265.3
Yes	KFXA	D27	DT	LIC	CEDAR RAPIDS, IA	BLCDT20050713ABD	218.2
No	K27LD-D	D27	LD	LIC	SALIX, IA	BLANK0000197222	351.2
No	W27EJ-D	D27	LD	LIC	STERLING, IL	BLANK0000063145	336.1
No	K27KN-D	D27	LD	LIC	ALEXANDRIA, MN	BLDTT20111123OCO	311.5
No	KCWV	D27	DT	CP	DULUTH, MN	BLANK0000036079	308.6
No	KCWV	D27	DT	LIC	DULUTH, MN	BLANK0000004652	308.6
No	K27FI-D	D27	LD	LIC	FROST, MN	BLDTT20090730ACP	121.3
No	K27NF-D	D27	LD	LIC	JACKSON, MN	BLANK0000064446	201.8
No	KRWF	D27	DT	LIC	REDWOOD FALLS, MN	BLCDT20080502ABG	240.0
No	KUON-TV	D27	DT	CP	LINCOLN, NE	BLANK0000221313	453.1
No	KOHA-LD	D27	LD	LIC	OMAHA, NE	BLANK0000181422	417.7
No	KCWS-LD	N27	TX	LIC	SIOUX FALLS, SD	BLANK0000116223	341.2
No	KCWS-LD	D27	LD	LIC	SIOUX FALLS, SD	BLANK0000178498	341.2
Yes	WHWC-TV	D27	DT	LIC	MENOMONIE, WI	BLANK0000157562	125.8
No	WVTV	D27	DT	LIC	MILWAUKEE, WI	BLANK0000121792	387.6
No	W27AU-D	D27	LD	LIC	WAUSAU, WI	BLDTL20110315ABH	248.8
No	K28PQ-D	D28	LD	LIC	SAINT CLOUD, MN	BLANK0000089168	176.8
No	K28OH-D	D28	LD	LIC	ST. JAMES, MN	BLANK0000064440	164.0
Yes	WXOW	D28	DT	LIC	LA CROSSE, WI	BLANK0000058613	97.3

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D27
 Mask: Full Service
 Latitude: 44 1 28.00 N (NAD83)
 Longitude: 92 32 42.00 W
 Height AMSL: 411.7 m
 HAAT: 0.0 m
 Peak ERP: 15.0 kW
 Antenna: PSI-PSILP8EC (ID 20495) 175.0 deg
 Elev Pattn: Generic

50.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	1.01 kW	84.8 m	28.4 km
45.0	3.60	90.9	35.6
90.0	13.5	82.6	41.0
135.0	13.8	66.9	38.8
180.0	13.0	54.3	36.2
225.0	14.4	60.2	37.9
270.0	11.6	36.1	30.8
315.0	2.17	54.4	27.6

Database HAAT does not agree with computed HAAT

Database HAAT: 0 m Computed HAAT: 66 m

Distance to Canadian border: 453.1 km

Distance to Mexican border: 1766.5 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 104.2 degrees Distance: 555.6 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 252.0 degrees Distance: 1129.5 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%

Proposal causes 0.16% interference to BLANK0000063320 LIC scenario 1
Proposal causes no interference to BLCDT20050713ABD LIC
Proposal causes 0.37% interference to BLANK0000157562 LIC scenario 2
Proposal causes 0.13% interference to BLANK0000058613 LIC scenario 1

---- Below is IX received by proposal k270W-LD MINOR CHANGE ----

Proposal receives 4.92% interference from scenario 1

No IX check failures found.

T Z SAWYER TECHNICAL CONSULTANTS

2130 HUTCHISON GROVE COURT, SUITE 100
FALLS CHURCH, VIRGINIA 22043
TELEPHONE (703) 848-2130 / (202) 642-2130

K27OW-LD
LPTV CHANNEL 27 OPERATION
FACILITY ID: 129454
ROCHESTER, MINNESOTA
FEBRUARY 2024

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.)

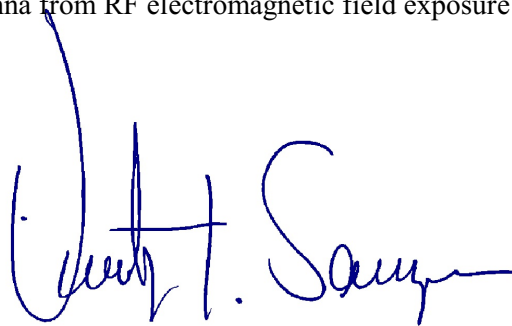
CALCULATED POWER DENSITY AT 2 METERS AGL (0.5 ANTENNA RELATIVE FIELD VALUE) ERP MAX (H ONLY)

CR AGL 45.72 M ERP MAX 8.0 KW	MPE ($\mu\text{W}/\text{CM}^2$)	CALCULATED VALUE ($\mu\text{W}/\text{CM}^2$)	% OF MPE	PASS/FAIL
CONTROLLED AREA	1836.7	65.5266	3.57%	PASS
PUBLIC AREA	367.3		17.84%	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 29,2024

T Z Sawyer Technical Consultants
2130 Hutchison Grove Court, Suite 100
Falls Church, Virginia 22043
Telephone: (703) 848-2130
e Mail to: tzsawyer@tzsawyer.com



Timothy Z. Sawyer, Consulting Engineer