

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

NEBRASKA RURAL RADIO ASSOCIATION

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)



Station License



Direct Measurement of Power

for associated Correction of Coordinate Application BP-20160217AAL**1. Facilities authorized in construction permit**

Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
KAWL	BP-20160217AAL	1370 kHz	Unlimited	Night 0.18 kW	Day 0.5 kW

2. Station location

State Nebraska	City or Town York
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3. Transmitter location

State Nebraska	County York	City or Town York	Street address (or other identification) Route 4; Box 121-A
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4. Main studio location

State Nebraska	County York	City or Town York	Street address (or other identification) 1309 Road 11
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5. Remote control point location (specify only if authorized directional antenna)

State	County	City or Town	Street address (or other identification)
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6. Has type-approved stereo generating equipment been installed?



Yes



No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68?



Yes



No



Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed.

Exhibit No.

8. Operating constants:

RF common point or antenna current (in amperes) without modulation for night system 1.19 amperes	RF common point or antenna current (in amperes) without modulation for day system 1.98 amperes
Measured antenna or common point resistance (in ohms) at operating frequency Night 128.0 ohms Day 128.0 ohms	Measured antenna or common point reactance (in ohms) at operating frequency Night -j 135.0 ohms Day -j 135.0 ohms

Antenna indications for directional operation

Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day

Manufacturer and type of antenna monitor:

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9. Description of antenna system ((f directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator One (1) vertical, guyed, uniform cross-section, steel tower mounted on a concrete base pier and insulator.	Overall height in meters of radiator above base insulator, or above base, if grounded. 97.5 meters	Overall height in meters above ground (without obstruction lighting) 98.9 meters	Overall height in meters above ground (include obstruction lighting) 100.0 meters	If antenna is either top loaded or sectionalized, describe fully in an Exhibit. Exhibit No.
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Excitation



Series



Shunt

Antenna Structure Registration: 1031907

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude	40 °	50 '	34 "	West Longitude	97 °	35 '	17 "
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If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits.

Exhibit No.
See Attached

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system.

Exhibit No.

10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

The Form 302-AM is being filed for the dual purposes of covering concurrently pending KAWL(AM) Correction of Coordinate Construction Permit Application BP-20160217AAL; and also as a condition of licensing for recently co-located Translator K278CI (formerly K282BE) as authorized under BPFT-20160129AFT. The KAWL(AM) BP-20160217AAL correction of coordinate filing does not proposal any physical change to the operating plant, however the K278CI BPFT-20160129AFT Translator authorization has resulted in the addition of a new Nicom BKG/77-2(NDA) antenna, feedline and Kintronics FMC 1.5 Isocoupler to the tower.

11. Give reasons for the change in antenna or common point resistance.

The daytime and nighttime antenna resistance measurement has been retaken in response to the above noted modification to the tower as authorized under FM Translator Construction Permit BPFT-20160129AFT.

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type) Justin W. Asher	Signature (check appropriate box below) 
Address (include ZIP Code) P.O. Box 220 385 Airport Drive Coldwater, MI 49036	Date March 03, 2016 Telephone No. (Include Area Code) 1(517)278-7339



Technical Director



Registered Professional Engineer



Chief Operator



Technical Consultant



Other (specify)

York, NE - KAWL(AM) Copy of Existing ASR (NDA)



Registration Detail

Reg Number	1031907	Status	Constructed
File Number	A0973371	Constructed	01/01/1973
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Commu

Location (in NAD83 Coordinates)

Lat/Long	40-50-34.0 N 097-35-18.0 W	Address	ROUTE 4 BOX 121-A
City, State	YORK , NE		
Zip	68467	County	YORK
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
499.9	100.0
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
599.9	98.9

Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 13
Paint and Light in Accordance with FAA Circular Number 70/7460-1J

FAA Notification

FAA Study	97-ACE-1048-OE	FAA Issue Date	08/25/1997
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Owner & Contact Information

FRN	0002390557	Owner Entity Type	Other - Non-profit Corporation
Assignor FRN	0011656113	Assignor ID	L01023956

Owner

Nebraska Rural Radio Association
P.O. Box 880
Lexington , NE 68850

P: (308)324-2371
F:
E: clarson@kneb.com

Contact

Larson , Craig
P.O. Box 880
Lexington , NE 68850

P: (308)324-2371
F:
E: clarson@kneb.com

Last Action Status

Status	Constructed	Received	06/11/2015
Purpose	Change Owner	Entered	06/11/2015
Mode	Interactive		

Related Applications

06/11/2015	A0973371 - Change Owner (OC)
01/19/2011	A0711424 - Change Owner (OC)
10/20/1997	A0037850 - New (NE)

Comments

Comments

None

History

Date	Event
06/12/2015	Registration Printed
06/12/2015	Change of Ownership Letter Sent
06/11/2015	Change of Ownership Received
All History (7)	

Automated Letters

06/12/2015	Authorization, Reference
06/12/2015	Ownership Change, Reference 867248
01/20/2011	Authorization, Reference
All letters (4)	

**York, NE - KAWL(AM)
USGS Topographic
Photo-Map of Existing Site**

NDA Tower:	<u>Latitude (D M S)</u>	<u>Longitude (D M S)</u>
NAD 27 datum values:	40 50 33.9600	097 35 16.8200
NAD 83 datum values:	40 50 34.0000	097 35 18.0000



0 100 200ft

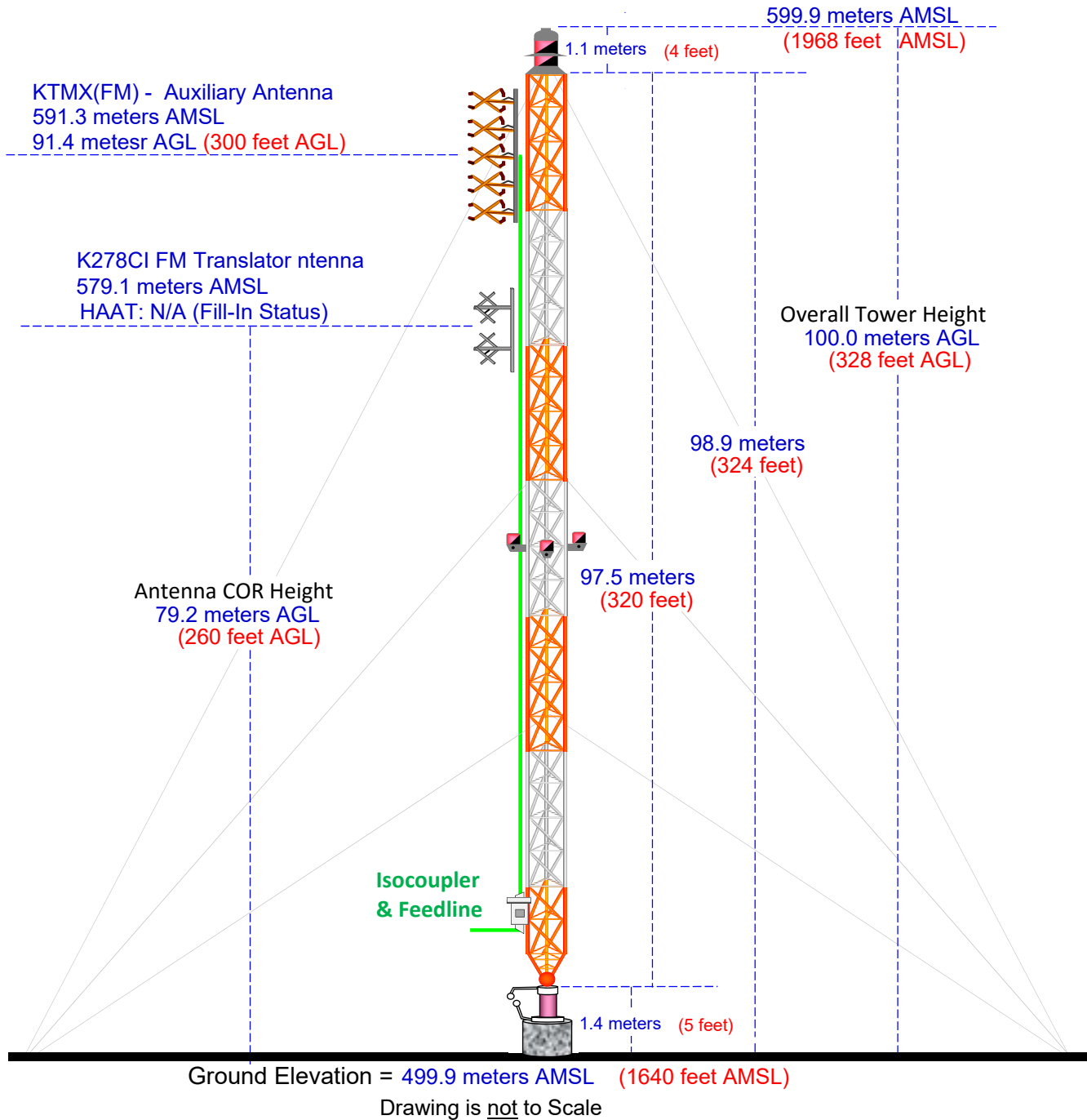


York, NE - KAWL(AM)

Vertical Plan of Antenna System

THE SITE IS LOCATED AT ROUTE 4 BOX 121-A;
THE CITY OF YORK; YORK COUNTY; THE STATE OF NEBRASKA.

Antenna Structure Registration No.	<u>Latitude (D M S)</u>	<u>Longitude (D M S)</u>
1031907	NAD 27 datum values: 40 50 33.9600	097 35 16.8200
	NAD 83 datum values: 40 50 34.0000	097 35 18.0000



York, NE - KAWL(AM)

Description of Proposed Antenna System

1. The KAWL(AM) - York, NE (1370 kHz) common daytime/nighttime antenna system consists of one (1) non-directional vertical guyed uniform cross-section steel tower mounted on a base pier and insulator. The tower stands 97.5 meters AGL above a 1.4 meter base pier and insulator for an overall tower height of 98.9 meters AGL without aviation lighting. Accounting for a 1.1 meter aviation beacon, the top of the tower will stand at 100.0 meters AGL. Given the site elevation of 499.9 meters, the tower stands at an overall height of 599.9 meters AMSL.
2. The existing ground system consists of 120 buried copper radials, extending 61.0 meters (200 feet) or 100.29° in electrical length (0.279 λ) about the base of the tower. A 14.6 meter x 14.6 meter (48 ft x 48 ft) copper mesh ground screen remains in place at the base of the tower.
3. The theoretical efficiency for the proposed daytime operation is 312.21 mV/m/kW at 1 km. Given the daytime operating power of 0.50 kW, the theoretical radiation will be 220.8 mV/m at 1 km. Justification for the reduced efficiency can be traced to the former KAWL(AM) Construction Permit BP-19,112, on which the currently operation is based. This filing reads in part, "*The proposed radiator is 320 feet high as compared to the 200 foot radiator now in use. The new tower then is 0.45 wavelength at the operating frequency of 1370 KHZ. From 73.190, Figure 8 the radiation at one mile attenuated would be 157.7 Mv/m (miles) for 500 watts. The present KAWL-AM radiator is 0.28 wavelength. From 73.190, Figure 8, the radiation at one mile attenuated is 137.2 Mv/m (miles) for 500 wattts. This value agrees with that given in the Official List and is the value used for all of the contour calculations both existing and proposed found in the exhibits attached hereto. In order to reduce the excessive radiation from the higher tower a resister will be inserted in series with the tower to insure that the radiation from the proposed tower will not exceed the present 137.2 Mv/m (miles) (or 220.8 mV/m at 1 km)*".
4. The theoretical efficiency for the proposed nighttime operation is 312.21 mV/m/kW at 1 km. Given the nighttime operating power of 0.176 kW, the theoretical radiation will be 131.0 mV/m at 1 km (See explanation in Point 3)
5. No §73.68 approved sampling system is required as non-directional operation is proposed.

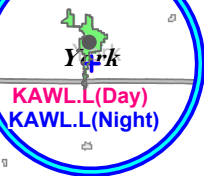
York, NE - KAWL(AM) Licensed Service Contour Study

Daytime 0.5 mV/m Contour

Daytime 2.0 mV/m Contour

Daytime 5.0 mV/m Contour

Nighttime 7.07 mV/m N.I.F. Contour



KAWL.L(Day)
KAWL.L(Night)

KAWL.L(Day)
YORK, NE
Corrected Operation
Facility ID: 35107
Freq: 1370 kHz
Class: D
Latitude: 40-50-34 N
Longitude: 097-35-17 W
Power: 0.5 kW
RMS: 312.21 mV/m @1km
Towers: 1
Augs: 0

0.5 mV/m Contour
Total Population: 508,149
Coverage Area: 20,608 sq. km

2.0 mV/m Contour
Total Population: 50,711
Coverage Area: 6,584 sq. km

5.0 mV/m Contour
Total Population: 18,142
Coverage Area: 2,369 sq. km

KAWL.L(Night)
YORK, NE
Corrected Operation
Facility ID: 35107
Freq: 1370 kHz
Class: D
Latitude: 40-50-34 N
Longitude: 097-35-17 W
Power: 0.176 kW
RMS: 312.21 mV/m @1km
Towers: 1
Augs: 0

7.07 mV/m N.I.F. Contour
Total Population: 10,601
Coverage Area: 647 sq. km

Map M3 Ground Conductivities
U.S. Census 2010 PL Database

Scale 1:1,000,000

0 15 30 45 km

