

ENGINEERING REPORT

Translator Application
Channel 265D, 100.9 MHz
Tower, MN

March, 2003

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Discussion

This firm has been retained to prepare the required engineering report in support of a new Translator Application for Tower, MN on Channel 265. The Translator will rebroadcast K280AZ, Cook, MN, Channel 280. This proposal meets the requirements of the Rules.

It has been determined that the translator may be used in the area without interference to any existing FM broadcast station. A copy of the FCC Form 349 Tech Box Worksheet has been included in **Exhibit 1.0**. This represents the actual technical information as filed with the FCC in the recent Translator Window. A copy of the allocation has been included for this translator has been included as **Exhibit 1.1**. A copy of the vertical placement of the antenna on the proposed tower has been included as **Exhibit 2.0**. The proposed Translator Coverage area has been depicted in **Exhibit 3.0**. **Exhibit 3.1** of this report is a map showing the relationship of the primary station protected contour to the protected contour of the translator station.

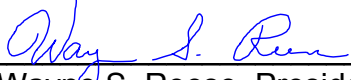
The proposed facility will meet the requirements of the Rules for operation without a licensed operator in attendance. The transmitter site should be reached promptly at all hours and in all seasons. The transmitter should be equipped with proper control and interface circuits which will place the translator in a non-radiating condition in the event the proper incoming signal is absent. The transmitter and controls should be placed in a locked area to prevent unauthorized tampering with the equipment. A person or persons should be assigned to observe the signals of the station each day, and to take corrective action if required. The equipment proposed for this operation is listed in the type-approved list of the Commission.


CERTIFICATION

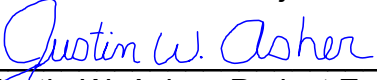
I hereby certify, subject to penalties for perjury, that the contents of this Engineering Statement are true and accurate to the best of my knowledge and belief.

March 27, 2003

Munn-Reese, Inc.

By 
Wayne S. Reese, President

By 
Donald J. Baad, Project Engineer

By 
Justin W. Asher, Project Engineer

PO Box 220
Coldwater, MI 49036
517-278-7339

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1. Channel: _____

2. Primary Station:	Call Sign	City	State	Channel
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3. Delivery Method:

☐ Off-air ☐ Microwave ☐ Satellite ☐ Via _____ ☐ Other

4. Antenna Location Coordinates: (NAD 27)

_____° _____'	_____"	<input type="checkbox"/> N	<input type="checkbox"/> S	Latitude
_____° _____'	_____"	<input type="checkbox"/> E	<input type="checkbox"/> W	Longitude

5. Antenna Structure Registration Number: _____

☐ Not applicable ☐ FAA Notification Filed with FAA

6. Antenna Location Site Elevation Above Mean Sea Level: _____ meters

7. Overall Tower Height Above Ground Level: _____ meters

8. Height of Radiation Center Above Ground Level: _____ meters (H) _____ meters (V)

9. Effective Radiated Power: _____ kW (H) _____ kW (V)

10. Transmitting Antenna:

☐ Nondirectional ☐ Directional "Off-the-shelf" ☐ Directional composite

Manufacturer	Model
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Rotation: _____° ☐ No rotation

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0		60		120		180		240		300	
10		70		130		190		250		310	
20		80		140		200		260		320	
30		90		150		210		270		330	
40		100		160		220		280		340	
50		110		170		230		290		350	
Additional Azimuths											

Exhibit 1.1 - Translator Allocation

Munn-Reese Inc.
Coldwater - MI 49036

Translator Site Check - Channel 265D - 100.9 MHz

BBN - Tower MN

REFERENCE	CH# 265D - 100.9 MHz, Pwr= 0.25 kw, HAAT=71.5 M, COR= 488 M	DISPLAY DATES
47 48 16 N	Average Protected F(50-50)= 11.0 km	DATA 03-01-03
92 15 12 W	Ave. F(50-10) 40 dBu= 37.4 54 dBu= 15.7 80 dBu= 3.4 100 dBu= 1.1	SEARCH 03-04-03

CH CITY	CALL STATE	TYPE STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	COR(M) INT(km)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
263C1 *WSCN	LIC CN	174.6 113.36	46 47 21	97.000	572	57.8	98.13	54.45		
Cloquet	MN	354.6 BLED19900717KA	92 06 51	147	7.0	Minnesota Public Radio				
> Reference HAAT at 174.6°= 40.9 M, Pwr= 0.25 kw, Pro. Dist. = 8.26 km, Int Dist. = 1.11 km										
Commerical channel operating Educational										

 "*" = ERP and HAAT on direct line to and from reference station.

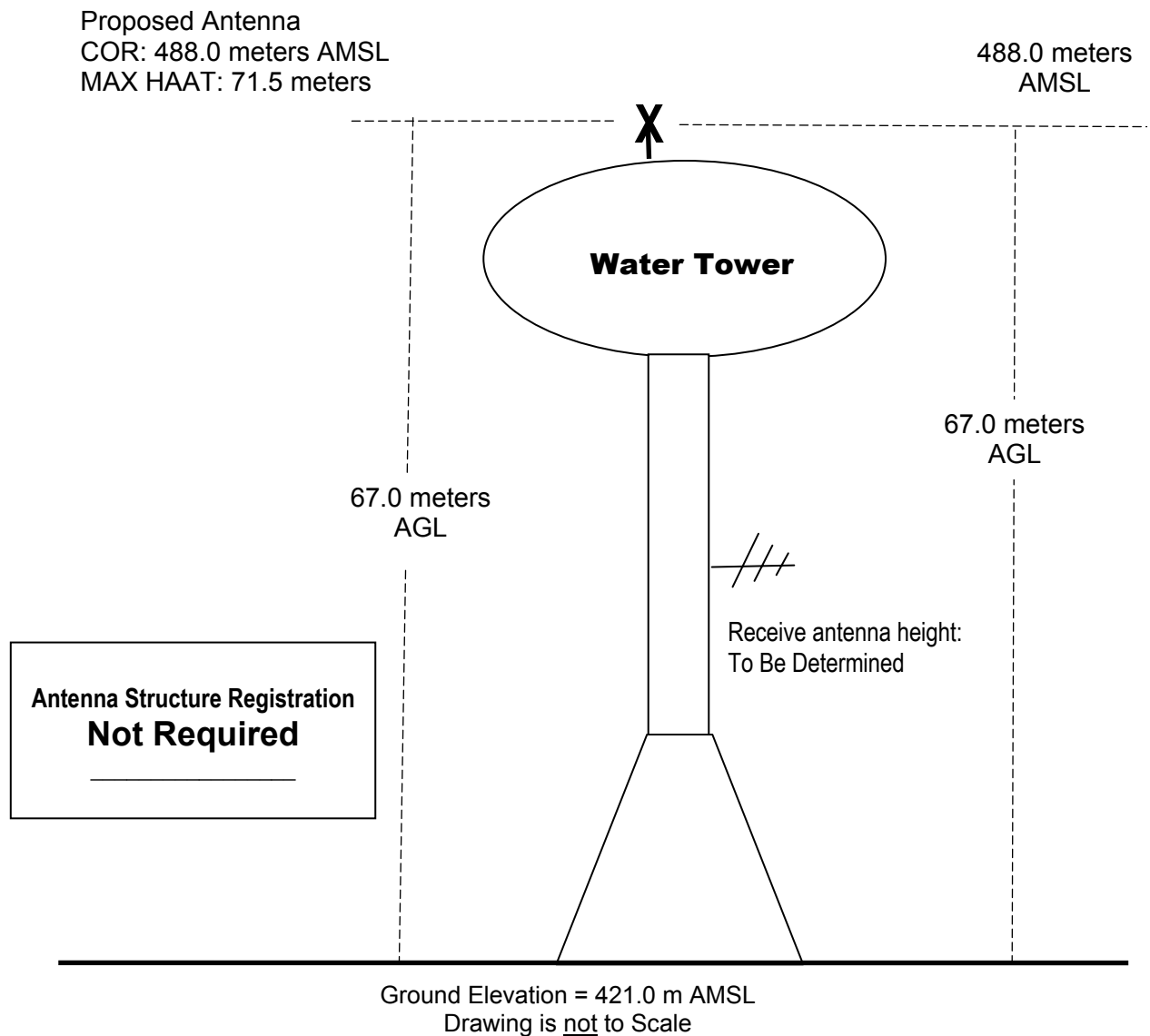
MUNN-REESE, INC.
 Broadcast Engineering Consultants
 COLDWATER, MI 49036-0220
 517-278-7339

EXHIBIT 2.0

VERTICAL PLAN OF ANTENNA SYSTEM

This station will rebroadcast K280AZ, Cook, MN.

	<u>Site Location</u>
NL:	47° 48' 16"
WL:	92° 15' 12"



HRT-XI.A

Tower, MN

Latitude: 47-48-16 N

Longitude: 092-15-12 W

ERP: 0.25 kW

Channel: 265

Frequency: 100.9 MHz

AMSL Height: 488.0 m

Horiz. Pattern: Omni

**Exhibit 3.0
Coverage Map**

F(50-50) 60.0 dBu

Tower HRT-XI.A

Babbitt

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COLDWATER, MI 49036-0220

517-278-7339

Scale 1:250,000

0 3 6 9 km

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K280AZ

Cook, MN
Latitude: 47-51-04 N
Longitude: 092-41-21 W
ERP: 0.091 kW
Channel: 280
Frequency: 103.9 MHz
AMSL Height: 439.0 m
Horiz. Pattern: Directional

HRT-XI.A

Tower, MN
Latitude: 47-48-16 N
Longitude: 092-15-12 W
ERP: 0.25 kW
Channel: 265
Frequency: 100.9 MHz
AMSL Height: 488.0 m
Horiz. Pattern: Omni

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COLDWATER, MI 49036-0220
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**Exhibit 3.1
Primary Station
Coverage Map**

Cook

K280AZ

F(50-50) 60.0 dBu

F(50-50) 60.0 dBu

Tower

HRT-XI.A

Scale 1:300,000

0 4 8 12 km

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