

**Comprehensive Technical Statement**

In support of

**Community Broadcasting, Inc.**

Minor Amendment to Construction Permit BNPFT-20130828ADM

FM Translator W234CC

94.7 MHz, Channel 234, FCC Facility ID # 138451

Sherman, IL

**Introduction**

Community Broadcasting, Inc. ("CBI") has signed an asset purchase agreement to sell the captioned construction permit to Long Nine, Inc. ("Long Nine"), the licensee of WMAY (AM), FCC Facility ID # 38348. Long Nine plans to use this translator for fill-in service for WMAY. Assignment application BAPFT-20150521ABL has been filed.

Changes are proposed to the following parameters:

- Power
- Antenna height
- Change primary station
- Change to fill-in service

**Overlap and Interference Requirements**

There is no prohibited overlap with any co-channel, first-adjacent, or third-adjacent facility or proposal. Overlap does exist with the second adjacent protected contour of WDZQ, FCC Facility ID # 47004.

As shown below, the application qualifies under §74.1204(d) because interference will not reach the ground or any building or highway in the area.

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**Skywaves Consulting LLC**

PO Box 4, Millbury, MA 01527

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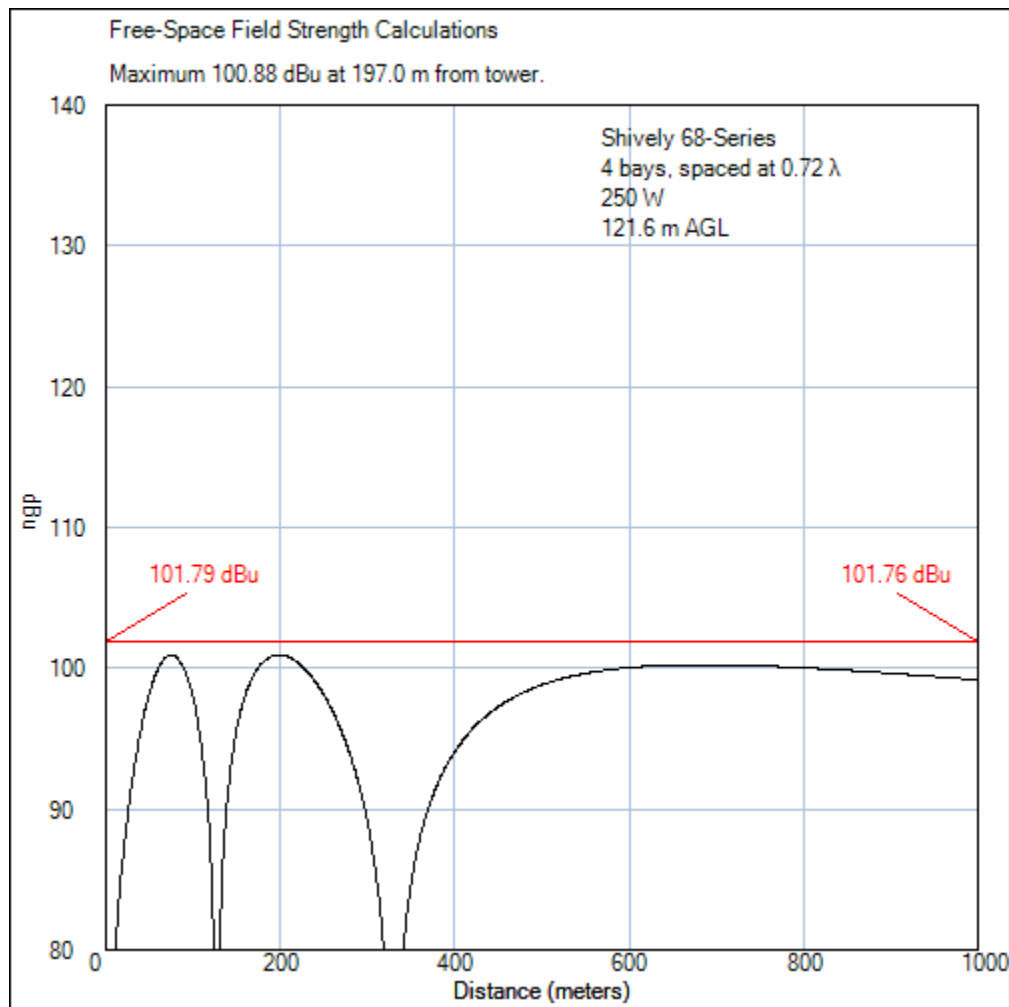
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### Interference Showing: WDZQ

The f(50,50) signal of WDZQ at the tower is 61.79 dBu. The interfering signal is 40 dB higher, or 101.79 dBu. 1,000 m beyond the tower, the f(50,50) field strength of WDZQ is 61.26, and the interfering signal level is 101.26 dBu. The free-space distance to 101.26 dBu at the proposed power level of 250 W is 960 m. Therefore, no interference can occur more than 1 km from the site.

The proposed antenna will consist of four bays of Shively 6812b, spaced at  $0.72\lambda$ , and centered 121.6 m above the ground. The proposed effective radiated power is 250 W.



The above graph shows that the signal level will remain below the interference level everywhere within 1,000 m. The maximum signal anywhere within this range is 100.88 dBu.

There are no buildings within 250 m of the tower other than unattended equipment spaces associated with this tower and one nearby.

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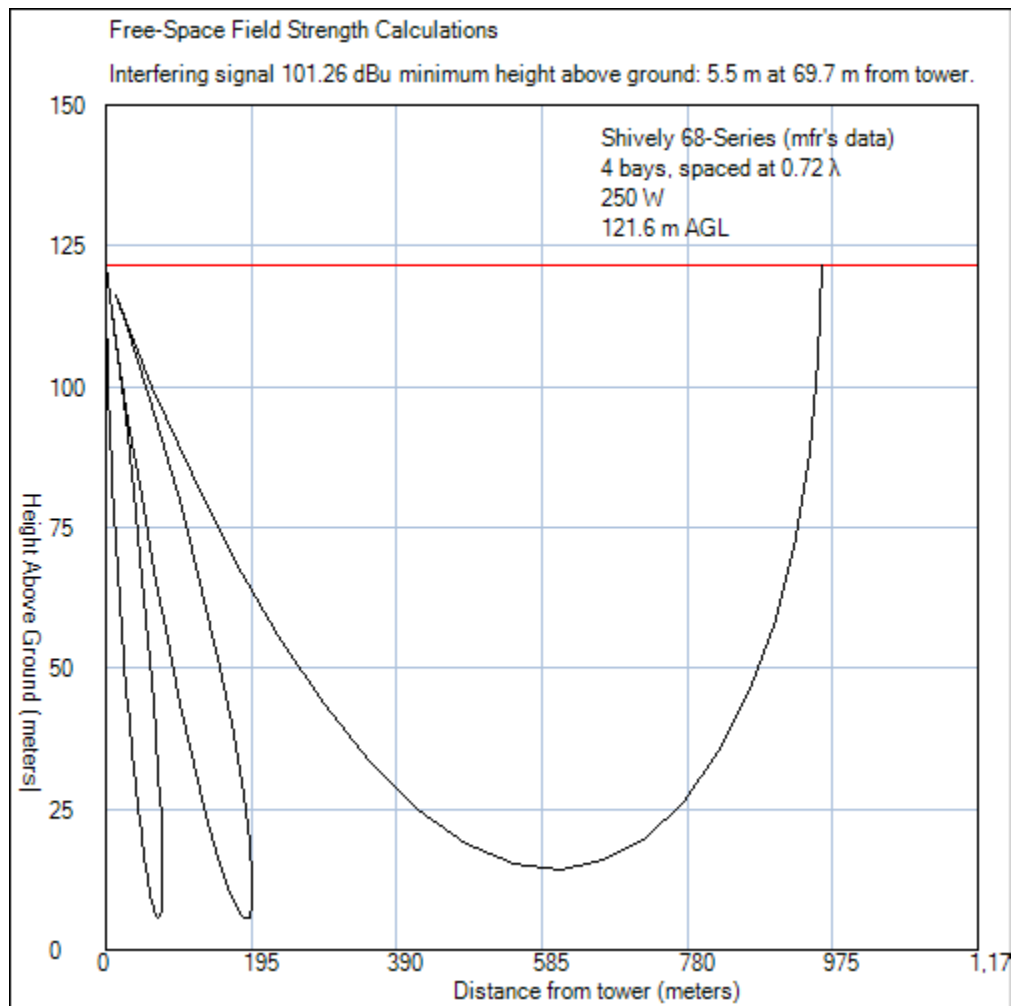
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Looked at another way, the interfering signal level of 101.26 dBu will be more than 5 meters above the ground:



These graphs were created based on output from the manufacturer's FM antenna design software. The pattern tabulation as calculated by this software is included on the following page.

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Antenna Mfg.: Shively Labs

Date: 6/22/2015

Antenna Type: 6812b

Station: W234CC

Beam Tilt 0

Frequency: 94.7

Gain (Max) 1.815

2.588 dB

Channel #: 234

Gain (Horizon) 1.815

2.588 dB

Figure: Figure 3

Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field
-90	0.000	-44	0.001	0	1.000	46	0.040
-89	0.002	-43	0.021	1	0.996	47	0.057
-88	0.005	-42	0.043	2	0.984	48	0.073
-87	0.007	-41	0.065	3	0.964	49	0.087
-86	0.010	-40	0.088	4	0.937	50	0.100
-85	0.012	-39	0.110	5	0.902	51	0.111
-84	0.015	-38	0.132	6	0.861	52	0.120
-83	0.018	-37	0.153	7	0.814	53	0.128
-82	0.021	-36	0.173	8	0.761	54	0.134
-81	0.025	-35	0.190	9	0.704	55	0.138
-80	0.029	-34	0.206	10	0.644	56	0.141
-79	0.033	-33	0.219	11	0.580	57	0.142
-78	0.037	-32	0.228	12	0.514	58	0.142
-77	0.042	-31	0.234	13	0.447	59	0.141
-76	0.047	-30	0.236	14	0.380	60	0.139
-75	0.053	-29	0.234	15	0.314	61	0.136
-74	0.059	-28	0.227	16	0.249	62	0.132
-73	0.065	-27	0.215	17	0.186	63	0.127
-72	0.071	-26	0.198	18	0.125	64	0.122
-71	0.077	-25	0.176	19	0.069	65	0.116
-70	0.084	-24	0.148	20	0.016	66	0.110
-69	0.090	-23	0.115	21	0.033	67	0.103
-68	0.097	-22	0.076	22	0.076	68	0.097
-67	0.103	-21	0.033	23	0.115	69	0.090
-66	0.110	-20	0.016	24	0.148	70	0.084
-65	0.116	-19	0.069	25	0.176	71	0.077
-64	0.122	-18	0.125	26	0.198	72	0.071
-63	0.127	-17	0.186	27	0.215	73	0.065
-62	0.132	-16	0.249	28	0.227	74	0.059
-61	0.136	-15	0.314	29	0.234	75	0.053
-60	0.139	-14	0.380	30	0.236	76	0.047
-59	0.141	-13	0.447	31	0.234	77	0.042
-58	0.142	-12	0.514	32	0.228	78	0.037
-57	0.142	-11	0.580	33	0.219	79	0.033
-56	0.141	-10	0.644	34	0.206	80	0.029
-55	0.138	-9	0.704	35	0.190	81	0.025
-54	0.134	-8	0.761	36	0.173	82	0.021
-53	0.128	-7	0.814	37	0.153	83	0.018
-52	0.120	-6	0.861	38	0.132	84	0.015
-51	0.111	-5	0.902	39	0.110	85	0.012
-50	0.100	-4	0.937	40	0.088	86	0.010
-49	0.087	-3	0.964	41	0.065	87	0.007
-48	0.073	-2	0.984	42	0.043	88	0.005
-47	0.057	-1	0.996	43	0.021	89	0.002
-46	0.040	0	1.000	44	0.001	90	0.000
-45	0.021			45	0.021		

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## **International**

The FM Agreements with Canada and Mexico require evaluation and potential coordination of any proposal within 320 km of the border.

The distance to the nearest point along the US/Canada border is 593 km. Coordination with Canada is not required.

The distance to the nearest point along the US/Mexico border is 1,550 km. Coordination with Mexico is not required.

## **Quiet Zones**

The proposed site is outside the National Radio Quiet Zone (National Radio Astronomy Observatory Notification Area) in West Virginia.

The proposed site is outside the Arecibo Observatory notification area in Puerto Rico.

The proposed site is not within a 100 km extension of the Table Mountain Radio Receiving Zone in Colorado.

## **Protected Monitoring Stations**

The nearest Protected Monitoring Station is 433 km distant, in Allegan, MI. This is well beyond any potential 80 dBu contour.

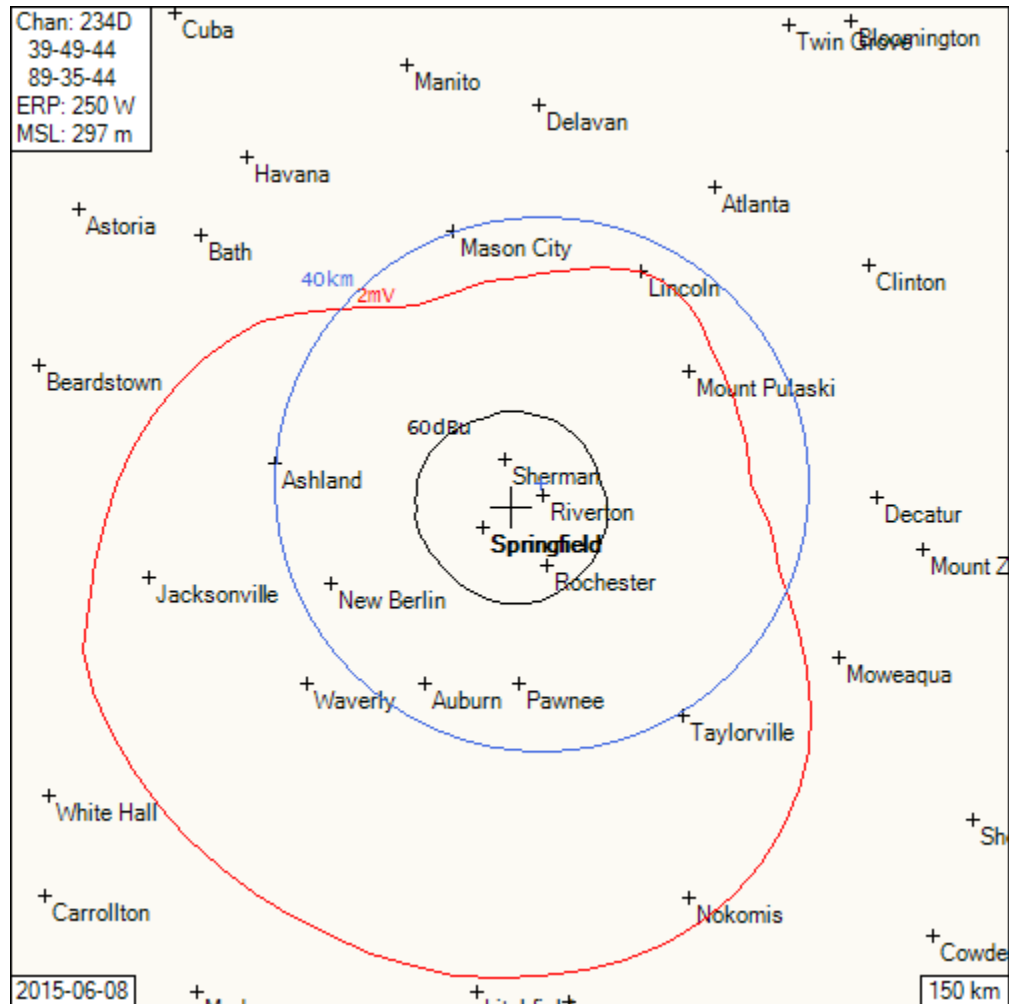
## **Minor Change**

No change in frequency is proposed, and the proposal uses the same tower approved under the existing construction permit. It is therefore self-evident that the 60 dBu f(50,50) contours will overlap. Therefore, the proposal is for a minor change.

## Fill-In Translator

The proposed primary station is WMAY (AM), Springfield, IL, FCC Facility ID # 38348.

As shown below, the proposed 60 dBu f(50,50) contour (black) falls entirely within the WMAY 2 mV/m day contour (red) and within a 40 km circle from the WMAY transmitter (blue):



Purchaser Long Nine is the licensee of primary station WMAY (AM).

Therefore, the proposal is for fill-in service.

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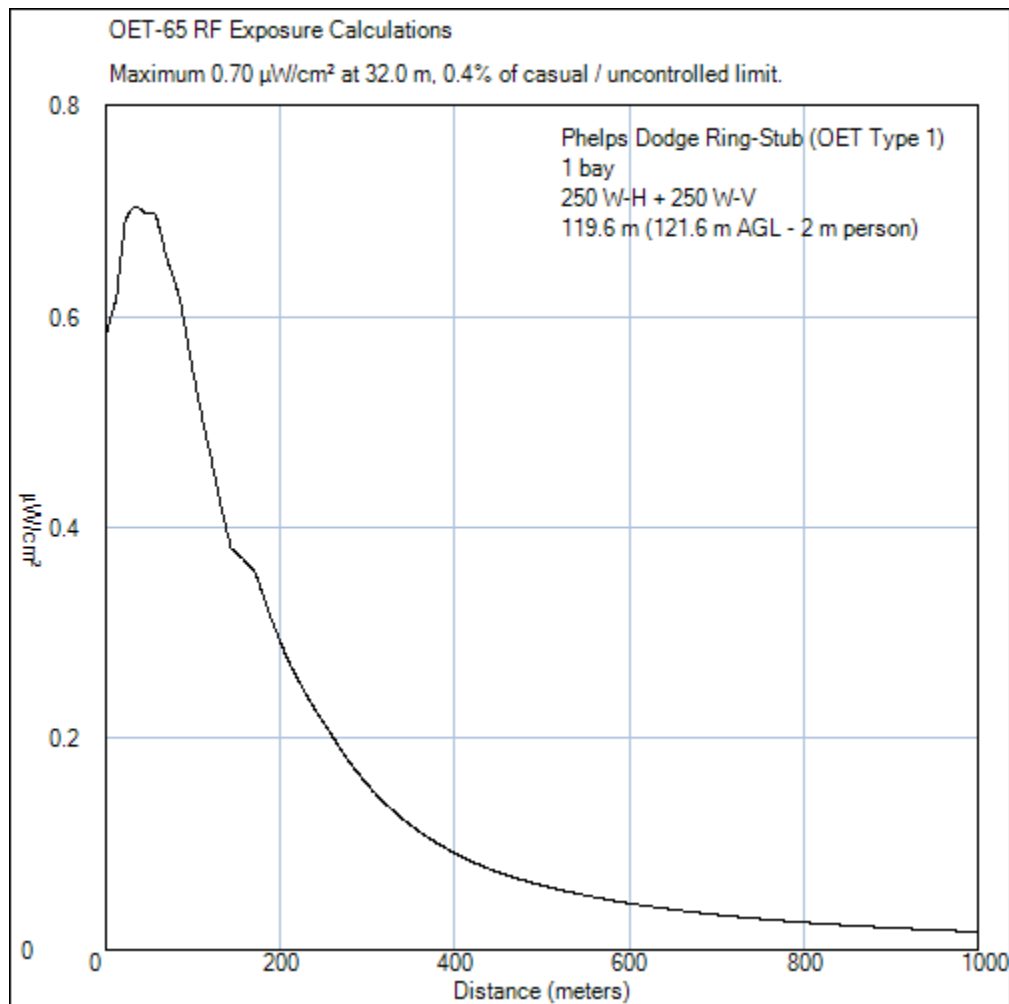
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## RF Exposure / Environmental

The antenna will be centered at 121.6 m above the ground. The effective radiated power will be 250 W-H + 250 W-V.



Using the worst case assumption, one bay of the worst-case Ring-Stub (OET Type 1) antenna, FMMODEL returns a maximum of less than ½% of the limit for casual / uncontrolled exposure.

The tower is surrounded by a locked fence, and other appropriate access controls are provided. Warning signs provide notification to the public and to authorized personnel of hazardous areas.

The applicant agrees to coordinate with other users of the site to reduce power or shut down temporarily in order to protect workers at the site.

No change to the tower height is proposed, and no construction or excavation is required.

Therefore, the proposal is not for a major environmental action.

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**Form 349 Tech Box Data**

Channel	234
Primary Station	Facility ID # 38348 WMAY (AM) Springfield, IL
Delivery Method	Other (direct audio feed from studio)
Coordinates (NAD-27)	39 49 44 N Lat 89 35 44 W Lon
Coordinates (NAD-83)	39 49 44.0 N Lat 89 35 44.0 W Lon
ASR	1055248
Site Elevation AMSL	175.6 m
Overall Tower Height AGL	140.8 m
Radiation Center AGL	121.6 m
Effective Radiated Power	250 W-H + 250 W-V
Antenna type	Omnidirectional
Manufacturer / Model	SHI 6812B-4-SS Bays spaced at 0.72λ

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