

Proposed Modification to Construction Permit  
Permit #0000203739  
Facility ID 200720

This instant application seeks to modify the underlying Construction Permit to an alternate location and elevation, on the authorized operating channel and the authorized directional antenna pattern. The translator will continue to repeat Primary Station WNTC (AM) FACID 64336 Ashland City TN.

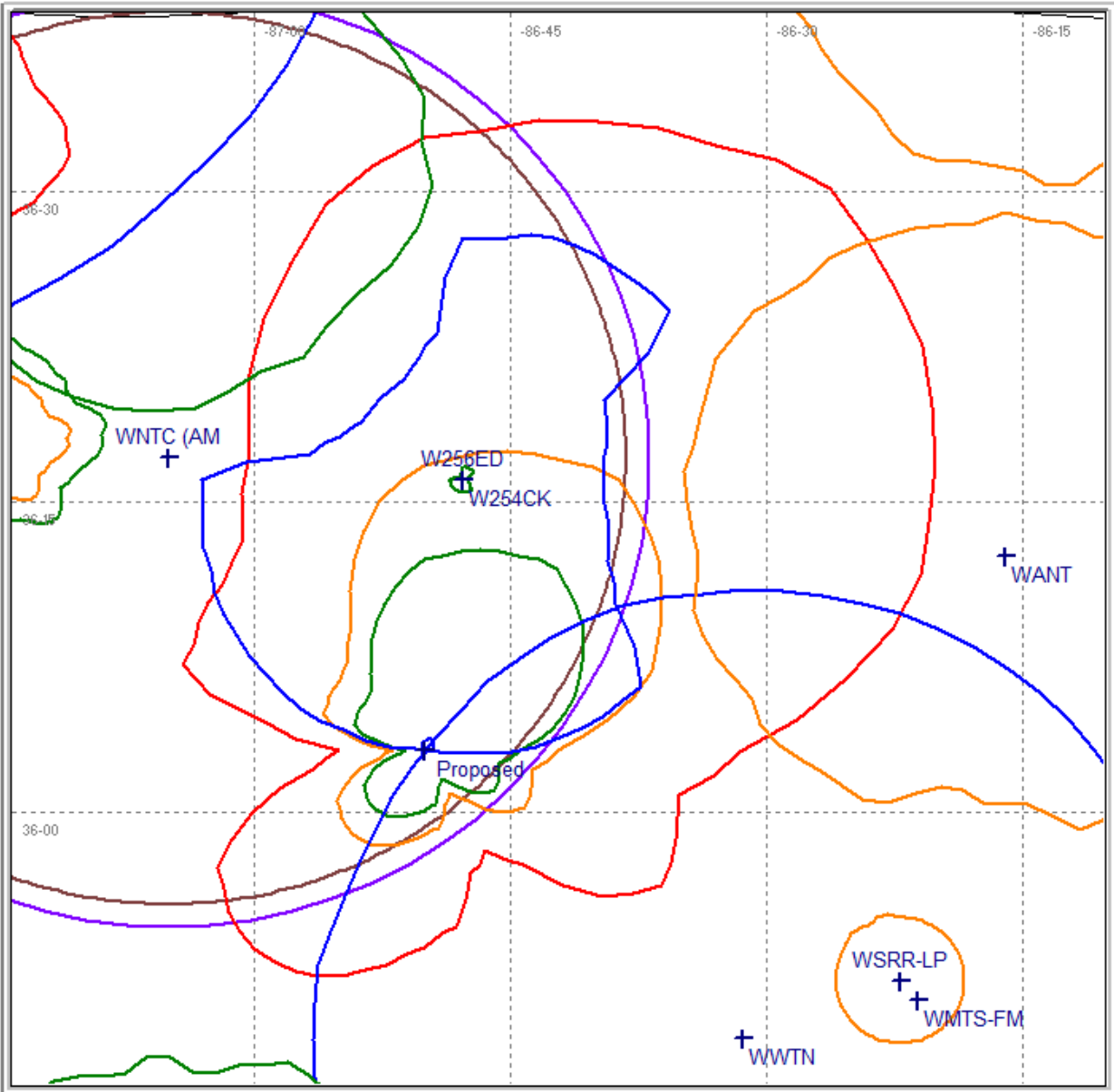
**PRIMARY STATION:**

The Primary AM station currently has 2 FM translators associated; that being W285FB and the facility subject of this application. There is an application being filed to modify W285FB and its Primary Station is being changed in that application, making a showing of multiple translator signal compliance unnecessary in this application.

**CONTOUR PROTECTION:**

The attached map of contours shows the allocation landscape as depicted in this chart:

CALL	CITY	ST CHN CL	DIST	SEP	BRNG	CLEARANCE
W256ED	ASHLAND CITY	TN 256 D	24.46	0.00	7.8	-52.98 dB
	This Facility - Mutually Exclusive Application					
WWTN	HENDERSONVILLE	TN 259 C0	38.00	0.00	132.7	-18.60 dB
	Adjacent Channel Waiver Demonstrated					
W254CK	NASHVILLE	TN 254 D	24.47	0.00	7.8	-1.29 dB
	Adjacent Channel Waiver Demonstrated					
WANT	LEBANON	TN 255 A	53.84	0.00	70.9	1.91 dB
W256CI	CLARKSVILLE	TN 256 D	70.30	0.00	321.3	8.64 dB
W255DK	COLUMBIA	TN 255 D	54.76	0.00	202.0	12.27 dB
WVLE	SCOTTSVILLE	KY 257 A	96.73	0.00	37.3	16.53 dB
WAHR	HUNTSVILLE	AL 256 C0	139.95	0.00	172.8	19.01 dB
WHSX	EDMONTON	KY 256 A	157.66	0.00	46.1	20.53 dB
WHOP-FM	HOPKINSVILLE	KY 254 C1	116.61	0.00	327.0	20.54 dB



**Proposed Facility:**

Blue - 100dBu(50,10)

Green - 60dBu(50,50)

Orange - 54dBu(50,10)

Red - 40dBu(50,10)

Other: W254CK 60.5dBu(50,50) and WWTN(FM) 78.3dBu(50,50) – Blue

**Other Facilities 60dBu(50,50):**

Co-Channel - Red

First Adjacent - Orange

Second/Third Adjacent – Blue

Primary AM station 25-Mile Limit – Brown

- In compliance with 47 CFR 74.1204(g) the proposed facility operates at an effective radiated power which is over 100 watts, therefore protection to intermediate frequency facilities has been calculated and meets all mileage separation requirements.

- The proposed location is within the protected 60dbu (50,50) contour of third-adjacent station WWTN(FM) channel 259-C0 located 38.0 km away. Therefore, an interference analysis has been conducted based on the u/d ratio of +40 dB at the proposed site. The signal of WWTN(FM) at the proposed location is 78.3 dBu (50,50) making the relevant interfering contour of the proposed facility 118.3 dBu (50,10). The free space distance to this contour in a worse-case scenario utilizing a single dipole antenna is 135 meters. The proposed antenna height is 72 meters above ground. A chart of calculations is attached; the data for the chart was provided by the manufacturer and the calculations demonstrate that the interfering contour will not reach a point 2 meters above the ground in the direction of the primary lobe of the antenna at any depression angle

- The proposed location is slightly within the protected 60dbu (50,50) contour of second-adjacent translator W254CK located 24.5km away. Therefore, an interference analysis has been conducted based on the u/d ratio of +40 dB at the proposed site. The signal of W254CK at the proposed location is 60.5 dBu (50,50) making the relevant interfering contour of the proposed facility 100.5 dBu (50,10). The free space distance to this contour in a worse-case scenario utilizing a single dipole antenna is 980 meters. The proposed antenna height is 72 meters above ground and the attached aerial photo shows a path of 980 meters at the 30 degree azimuth of the proposed antenna. The Google Earth photo also has a terrain profile which demonstrates the true elevation of the antenna with respect to the surrounding terrain in the azimuth of the antenna. Also attached is the antenna vertical radiation pattern superimposed on a terrain profile chart, which demonstrates that the entire 100.5dBu (50,10) contour does not reach the ground in the azimuth of the main lobe of the directional antenna.

Based on this showing, a waiver of section 74.1204 is requested in accordance with Living Way Ministries, Inc. (FCC 08-242) on the basis of zero population in the area of interference.

It should be noted that should any actual real world interference occur, the applicant acknowledges that it will promptly suspend operation of this translator in accordance with 47 CFR. 74.1203.

SCALA  
Model CA2 RM Vertivcally Circularly Polarized FM Antenna



Frequency =  
Interfering Contour

99.1
118.3

dBu (50,10)

ERP= 250 watts  
Height = 70 m AGL

Depression Angle	Relative Field (o)		Effective Power (w)	Distance to Contour (m)	Distance from Antenna to Ground (m)	Clearance (m)
1	0.998	250.000	249.0	134.62	4,010.91	3876
2	0.996	250.000	248.0	134.35	2,005.76	1871
3	0.994	250.000	247.0	134.08	1,337.51	1203
4	0.992	250.000	246.0	133.81	1,003.49	870
5	0.990	250.000	245.0	133.54	803.16	670
6	0.988	250.000	244.0	133.27	669.67	536
7	0.985	250.000	242.6	132.86	574.39	442
8	0.982	250.000	241.1	132.46	502.97	371
9	0.980	250.000	240.1	132.19	447.47	315
10	0.978	250.000	239.1	131.92	403.11	271
11	0.974	250.000	237.2	131.38	366.86	235
12	0.970	250.000	235.2	130.84	336.68	206
13	0.965	250.000	232.8	130.17	311.18	181
14	0.961	250.000	230.9	129.63	289.35	160
15	0.957	250.000	229.0	129.09	270.46	141
16	0.949	250.000	225.2	128.01	253.96	126
17	0.940	250.000	220.9	126.79	239.42	113
18	0.932	250.000	217.2	125.71	226.52	101
19	0.924	250.000	213.4	124.64	215.01	90
20	0.915	250.000	209.3	123.42	204.67	81
21	0.905	250.000	204.8	122.07	195.33	73
22	0.895	250.000	200.3	120.72	186.86	66
23	0.885	250.000	195.8	119.37	179.15	60
24	0.875	250.000	191.4	118.03	172.10	54
25	0.865	250.000	187.1	116.68	165.63	49
26	0.854	250.000	182.3	115.19	159.68	44
27	0.842	250.000	177.2	113.57	154.19	41
28	0.841	250.000	176.8	113.44	149.10	36
29	0.819	250.000	167.7	110.47	144.39	34
30	0.808	250.000	163.2	108.99	140.00	31
31	0.795	250.000	158.0	107.24	135.91	29
32	0.783	250.000	153.3	105.62	132.10	26
33	0.770	250.000	148.2	103.86	128.53	25
34	0.757	250.000	143.3	102.11	125.18	23
35	0.745	250.000	138.8	100.49	122.04	22
36	0.731	250.000	133.6	98.60	119.09	20
37	0.717	250.000	128.5	96.71	116.31	20
38	0.703	250.000	123.6	94.83	113.70	19
39	0.689	250.000	118.7	92.94	111.23	18
40	0.675	250.000	113.9	91.05	108.90	18
41	0.659	250.000	108.6	88.89	106.70	18
42	0.643	250.000	103.4	86.73	104.61	18
43	0.627	250.000	98.3	84.57	102.64	18
44	0.611	250.000	93.3	82.42	100.77	18
45	0.595	250.000	88.5	80.26	98.99	19

NOTES:

- HEIGHT HAS BEEN REDUCED BY 2 METERS TO ALLOW FOR HUMAN EXPOSURE

Depression Angle	Relative Field	Effective Power (w)	Distance to Contour (m)	Distance from Antenna to Ground (m)	Clearance (m)
46	0.578	83.5	77.96	97.31	19
47	0.561	78.7	75.67	95.71	20
48	0.544	74.0	73.38	94.19	21
49	0.527	69.4	71.09	92.75	22
50	0.510	65.0	68.79	91.38	23
51	0.494	61.0	66.63	90.07	23
52	0.478	57.1	64.48	88.83	24
53	0.462	53.4	62.32	87.65	25
54	0.446	49.7	60.16	86.52	26
55	0.430	46.2	58.00	85.45	27
56	0.413	42.6	55.71	84.44	29
57	0.396	39.2	53.42	83.47	30
58	0.379	35.9	51.12	82.54	31
59	0.362	32.8	48.83	81.66	33
60	0.345	29.8	46.54	80.83	34
61	0.329	27.1	44.38	80.03	36
62	0.313	24.5	42.22	79.28	37
63	0.297	22.1	40.06	78.56	39
64	0.281	19.7	37.90	77.88	40
65	0.265	17.6	35.75	77.24	41
66	0.250	15.6	33.72	76.62	43
67	0.235	13.8	31.70	76.05	44
68	0.220	12.1	29.68	75.50	46
69	0.205	10.5	27.65	74.98	47
70	0.190	9.0	25.63	74.49	49
71	0.177	7.8	23.87	74.03	50
72	0.164	6.7	22.12	73.60	51
73	0.151	5.7	20.37	73.20	53
74	0.138	4.8	18.61	72.82	54
75	0.125	3.9	16.86	72.47	56
76	0.115	3.3	15.51	72.14	57
77	0.105	2.8	14.16	71.84	58
78	0.095	2.3	12.81	71.56	59
79	0.085	1.8	11.47	71.31	60
80	0.075	1.4	10.12	71.08	61
81	0.071	1.3	9.58	70.87	61
82	0.067	1.1	9.04	70.69	62
83	0.063	1.0	8.50	70.53	62
84	0.059	0.9	7.96	70.39	62
85	0.055	0.8	7.42	70.27	63
86	0.054	0.7	7.28	70.17	63
87	0.053	0.7	7.15	70.10	63
88	0.051	0.7	6.88	70.04	63
89	0.051	0.7	6.88	70.01	63
90	0.050	0.6	0.00	70.00	70

- DISTANCE FROM ANTENNA TO GROUND IS ACTUALLY TO A POINT 2 METERS ABOVE GROUND

Aerial Photo of Tower Location and Azimuth of Antenna & Terrain Profile

