

ENGINEERING STATEMENT – SECOND ADJACENT CHANNEL PROTECTION

WFAN-FM (270B) and WNEW-FM (274B) are second adjacent-channel stations to the proposed channel 272 LPFM facility and both are located only 48 kilometers away from the proposed LPFM transmitter site. The 54 dBu F50,50 service contour of each of these primary FM stations extends well beyond the LPFM transmitter site. Using the well-established *Living Way Ministries* Methodology, no actual interference to any population is predicted to exist to WFAN-FM or WNEW-FM.

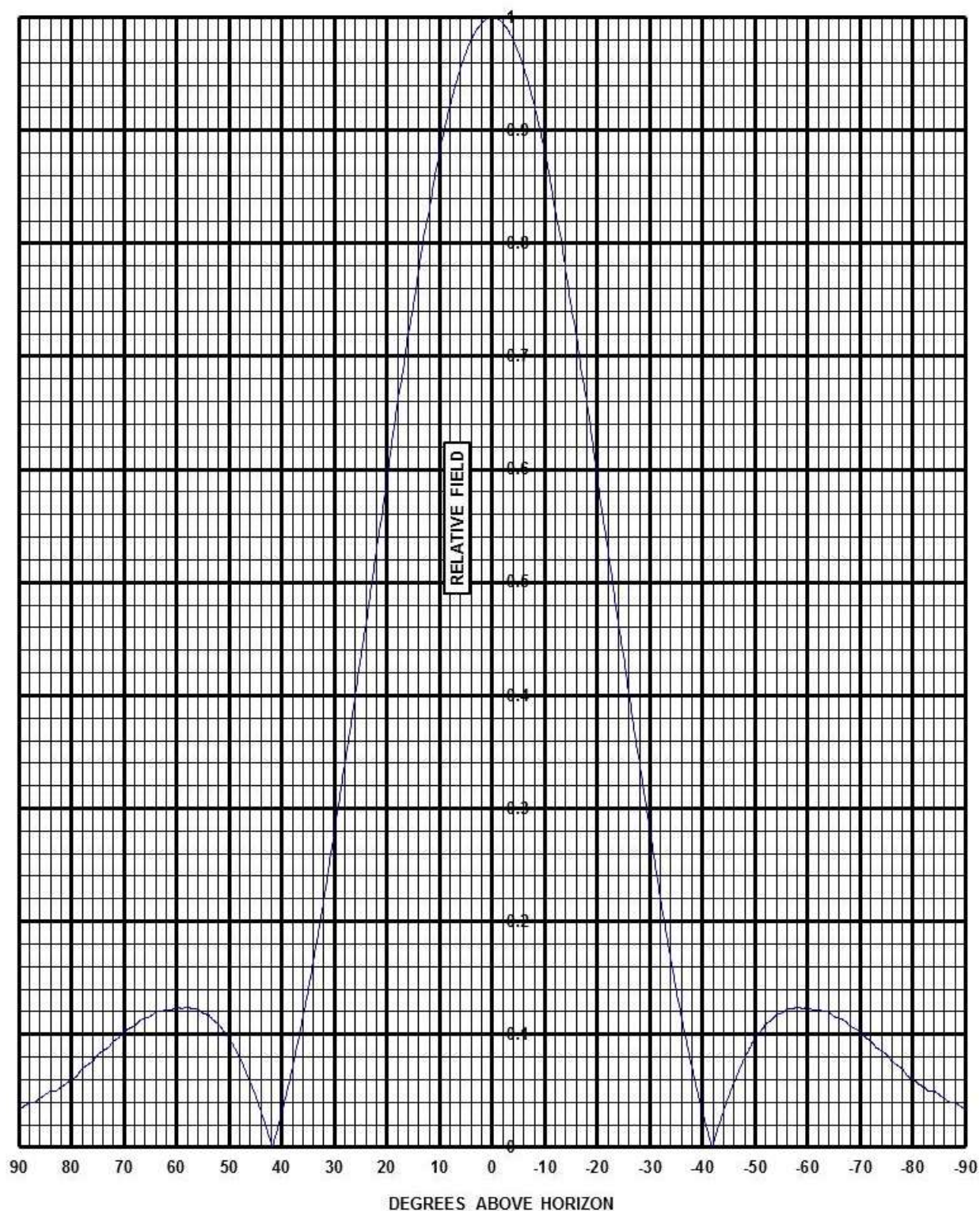
Note that a rule waiver of Section 73.807 for this second adjacent-channel protection using the well-established *Living Way Ministries* Methodology is respectfully requested if such a rule waiver is deemed necessary for protection to any station.

The F50,50 signal strength from both WFAN-FM and WNEW-FM at the proposed LPFM transmitter site is greater than 62 dBu (the “desired” signal). The second/third adjacent-channel protection is an undesired-to-desired (“U/D”) dB signal strength ratio of 40:1. Therefore, predicted interference to WFAN-FM and WNEW-FM from the proposed LPFM facility is a signal of greater than or equal to 102 dBu.

The allowed maximum ERP is 30 watts; however, the ERP will be maintained at 15 watts in order to aid with the second adjacent-channel protection. A Free Space Loss (“FSL”) 102 dBu signal extends 216 meters from the transmitting antenna. A vertical plane relative field pattern for the proposed Jampro JLLP three-bay halfwave-spaced antenna is attached. By adjusting for the vertical plane downward relative field values of the proposed antenna, it is herein demonstrated that the 102 dBu interfering signal (using a free space field determination) does not exist at any point at ground level.

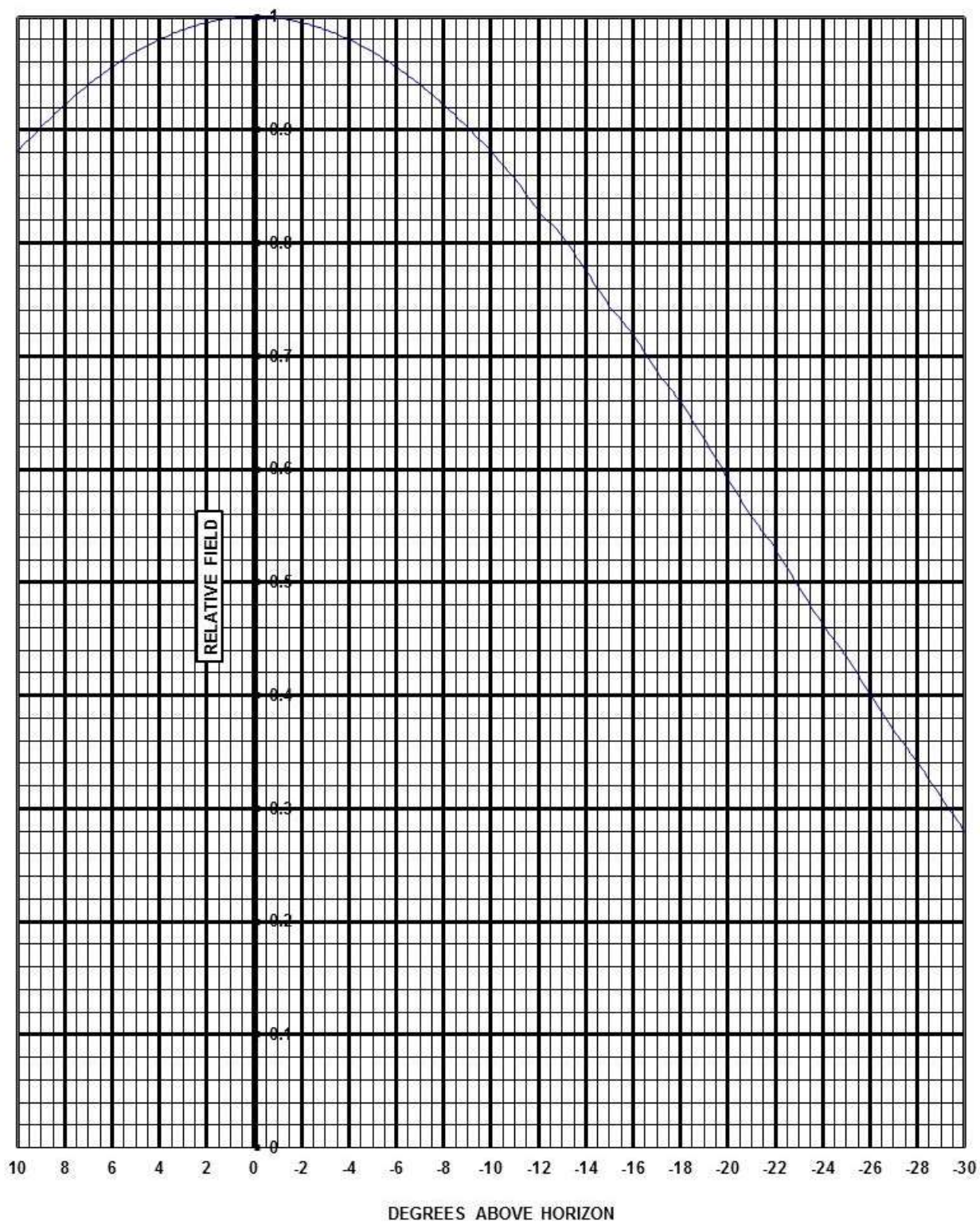
Attached is an FSL study using the spreadsheet recommended by the FCC for these types of studies. The clearance is at least 9.3 meters to ground level and there are no homes or buildings that can be reached by a 102 dBu FSL signal of the LPFM that is more than two stories tall. See the attached aerial map of the site.

Therefore, pursuant to the LPFM rules, both WFAN-FM and WNEW-FM are adequately protected by the proposed facility.



Frequency: 105.1 MHz

Model: JLLP-3 RFR.5
Description: FM Sidemount Antenna
-0° Beam Tilt, 0% Null Fill



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Elevation Pattern Tabulation

RELATIVE FIELD VS ELEVATION ANGLE

<u>ELEVATION ANGLE</u>	<u>RELATIVE FIELD</u>	<u>ELEVATION ANGLE</u>	<u>RELATIVE FIELD</u>	<u>ELEVATION ANGLE</u>	<u>RELATIVE FIELD</u>
10	0.881	-26	0.402	-61	0.121
9	0.903	-27	0.369	-62	0.121
8	0.922	-28	0.342	-63	0.121
7	0.940	-29	0.310	-64	0.120
6	0.956	-30	0.280	-65	0.116
5	0.969	-31	0.251	-66	0.114
4	0.980	-32	0.219	-67	0.113
3	0.989	-33	0.192	-68	0.107
2	0.995	-34	0.166	-69	0.105
1	0.999	-35	0.139	-70	0.103
0	1.000	-36	0.115	-71	0.097
-1	0.999	-37	0.093	-72	0.094
-2	0.995	-38	0.070	-73	0.088
-3	0.989	-39	0.050	-74	0.085
-4	0.980	-40	0.031	-75	0.082
-5	0.969	-41	0.014	-76	0.076
-6	0.956	-42	0.003	-77	0.073
-7	0.940	-43	0.018	-78	0.070
-8	0.922	-44	0.033	-79	0.063
-9	0.903	-45	0.046	-80	0.060
-10	0.881	-46	0.058	-81	0.057
-11	0.857	-47	0.069	-82	0.053
-12	0.828	-48	0.079	-83	0.050
-13	0.807	-49	0.088	-84	0.050
-14	0.776	-50	0.097	-85	0.047
-15	0.744	-51	0.102	-86	0.043
-16	0.719	-52	0.109	-87	0.040
-17	0.686	-53	0.112	-88	0.040
-18	0.660	-54	0.117	-89	0.037
-19	0.626	-55	0.119	-90	0.033
-20	0.592	-56	0.122		
-21	0.558	-57	0.122		
-22	0.530	-58	0.124		
-23	0.496	-59	0.123		
-24	0.463	-60	0.124		
-25	0.435				

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74.1204(d) or equivalent LPFM Showing

WXDP-LP, Hazlet, NJ 272L

ERP (kw)
Height of Antenna above Ground (m)
Translator's IX Contour

0.015
53
102

JAM JLLP 3Bay (HW)

<u>Depression Angle from Horizon</u>	<u>Antenna Relative Field</u>	<u>ERP (kw) from the Antenna RF</u>	<u>Dist. To IX Contour (m)</u>	<u>Height IX Contour Above Ground (m)</u>
0	1	0.0150	215.7971	53.000
5	0.969	0.0141	209.1074	34.775
10	0.881	0.0116	190.1173	19.986
15	0.744	0.0083	160.5531	11.446
20	0.592	0.0053	127.7519	9.306
25	0.435	0.0028	93.8717	13.328
30	0.28	0.0012	60.4232	22.788
35	0.139	0.0003	29.9958	35.795
40	0.031	0.0000	6.6897	48.700
45	0.046	0.0000	9.9267	45.981
50	0.097	0.0001	20.9323	36.965
55	0.119	0.0002	25.6799	31.964
60	0.124	0.0002	26.7588	29.826
65	0.116	0.0002	25.0325	30.313
70	0.103	0.0002	22.2271	32.113
75	0.082	0.0001	17.6954	35.908
80	0.06	0.0001	12.9478	40.249
85	0.047	0.0000	10.1425	42.896
90	0.033	0.0000	7.1213	45.879

Note: Input the ERP, Height of the antenna above Ground, the Calculated Translator IX contour, and the specified Antenna Relative Field Pat

Proposed LPFM Site

N 40 19 21 W 74 05 02

Google Earth

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1000 ft