

TECHNICAL SUMMARY
APPLICATION FOR CONSTRUCTION PERMIT
FM TRANSLATOR STATION W273DS
MERIDEN, CONNECTICUT
CHANNEL 273 (102.5 MHZ) 0.25 KW (DA)

1. Application Purpose: It is proposed to change the directional antenna (DA) system. No other changes are proposed.

2. Fill-in Translator Coverage/Minor Change Compliance: W273DS is a fill-in FM translator for AM station WBOM on 1470 kHz at Meriden, Connecticut (Facility ID 1220). Figure 1 is a map demonstrating that W273DS's proposed 60 dBu contour is entirely within a 25 mile circle from WBOM's licensed transmitter site as required for fill-in compliance. In addition, as there will be no change in transmitter site, the proposed operation complies with the FCC's minor change rules [74.1233(a)(2)].

3. Section 74.1204 Compliance: Figure 2 is an allocation study for channel 273 based on Section 74.1204. Figure 2 lists the results of a numerical analysis of the potential for contour overlap to all nearby co-channel, first, second and third-adjacent channel facilities as well as IF related stations. For the purposes of the numerical study, the maximum HAAT (330 meters) and ERP (0.25 Watts) values were used in determining the maximum distance in any direction to the predicted coverage and interfering contours. Figure 3 demonstrates that the proposal complies with the contour overlap provisions of Section 73.1204 of the FCC rules, except with respect to WYPH-LP, WAQY and WDRC-FM. With respect to WYPH-LP, protection has not been provided as its license has been turned in. The WAQY and WDRC-FM short-spacings are discussed below.

Specifically, the proposal does not comply with the contour overlap provisions of Section 73.1204 of the FCC rules with respect to second adjacent channel stations WAQY and WDRC-FM. However, based on the undesired-to-desired (U/D) signal strength interference ratio methodology, which is permitted by the FCC (per *Living Way Ministries, Inc.*, 2002), it has been determined that no actual interference would occur due to lack of population under Section 74.1204(d). Specifically, the calculated WAQY f(50,50) field strength at the proposed site is 62.2 dBu. Using the 40 dB u/d ratio contained in Section 73.1204 of the FCC rules, the proposed f(50,10) interfering signal is 102.2 dBu. Similarly, the calculated WDRC-FM f(50,50) field strength at the proposed site is 82.3 dBu. Using the 40 dB U/D ratio contained in Section 73.1204 of the FCC rules, the proposed f(50,10) interfering signal is 122.3 dBu. As the 102.2 dBu interfering signal to WAQY is the lowest it is the most critical. Figure 4 is a graph of

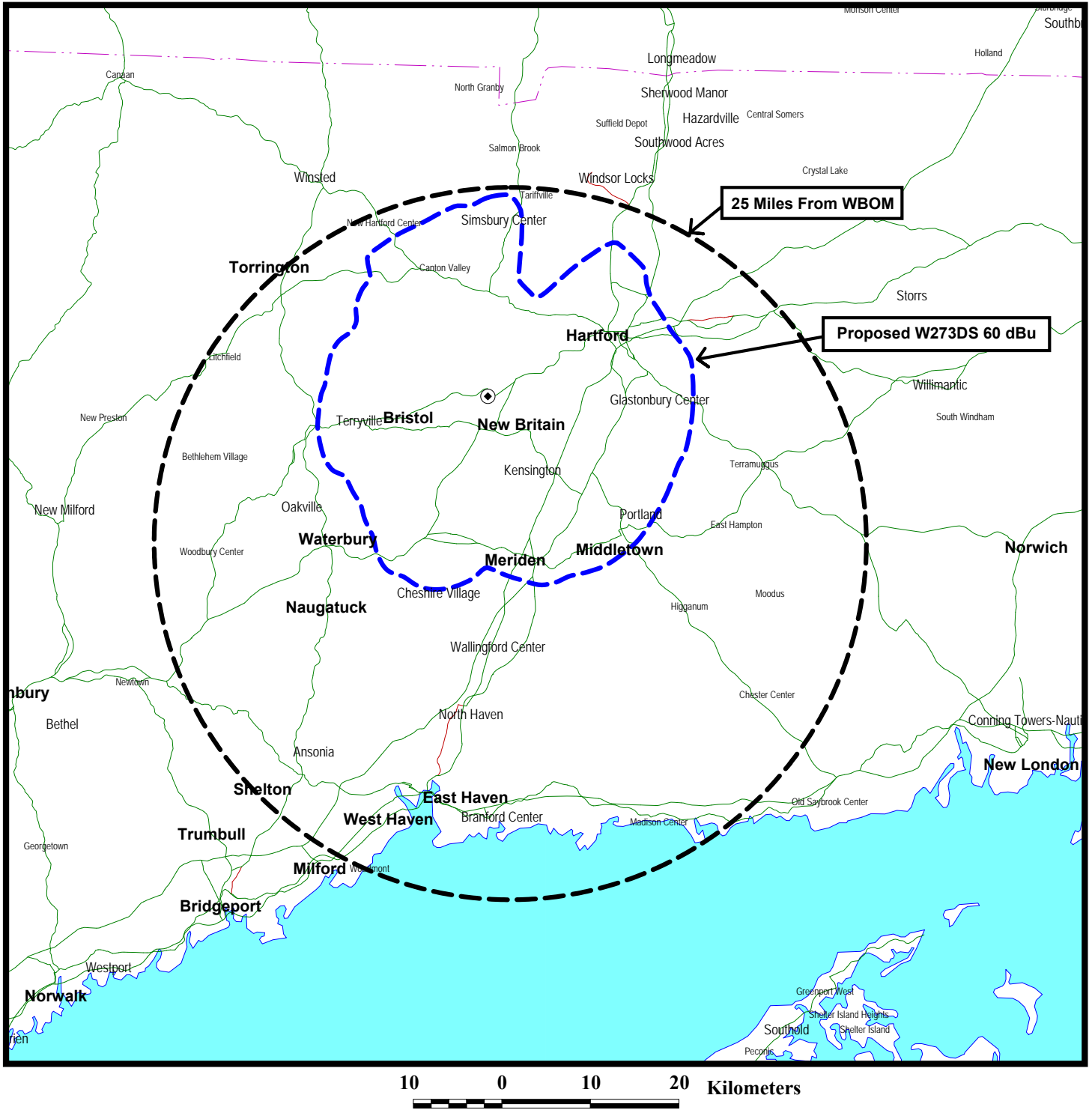
the proposed 102.2 dBu signal using the proposed vertical plane relative field pattern (see Figure 5) and assuming free-space propagation. As shown on Figure 4, the interfering 102.2 dBu signal will not reach ground level and, therefore, will contain no population.

4. Use of NGDC 1-Second Terrain: A 1-second terrain database was used to determine the locations of the protected and interfering contours depicted on Figures 1 and 3. Terrain data was derived along 72 equally spaced radials.

5. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed antenna will be located 147 meters above ground level. The total ERP is 0.5 kW (horizontal & vertical polarization). A worst-case vertical plane relative field value of 1.0 is presumed for the antenna's downward radiation (for angles below 60 degrees downward). The calculated power density at a point 2 meters above ground level is 0.8 uW/cm^2 which is only 0.4% of the FCC's recommended limit of 200 uW/cm^2 for FM frequencies for an uncontrolled environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

Access to the transmitting site is restricted and appropriately marked with RFR warning signs. Furthermore, as this is a multi-user site, a formal RFR protection protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.

Figure 1



AM FILL-IN COMPLIANCE MAP

FM TRANSLATOR STATION W273DS
MERIDEN, CONNECTICUT
CH 273 (102.5 MHz) 0.250 KW (DA)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

FM Contour Study LMS

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



Channel: 273 **Coordinates:** 041-42-13 072-49-55 (NAD 83) **ERP:** 0.25 kW **Max. HAAT:** 330 m **Considering Only Interference Caused**

Comment:

Callsign	Chan.	Service	Status	Freq.	City	State	Co.	Rec.	Latitude	Dist. (km)	Sep. (km)	Spac. (km)
Facility ID	ARN			Class	DA	73.215	ERP (kW)	HAAT (m)	Longitude	Bear. (deg)	Comment	
W270DL	270	FX	L2C	101.9	MILFORD	CT	US	C	41-20-59.3	41.01	19.67	21.34
139339	BLANK	0000082854	D	DRI		0.25			072-58-21.4	196.62	CLEAR	
W270DL 60.0 dBu desired distance: 18.6 km						Proposed 100.0 dBu undesired distance: 1.1 km						
WAQY	271	FM	MOD	102.1	SPRINGFIELD	MA	US	C	42-05-00.3	43.5	68.8	-25.3
58551	BLANK	BMLH-19930514I	B	NDI		17	238		072-42-14.3	14.04	SHORT	/1
WAQY 54.0 dBu desired distance: 66.8 km						Proposed 94.0 dBu undesired distance: 2.0 km						
W272DO	272	FX	L2C	102.3	NEW HAVEN	CT	US	C	41-20-58.3	41.03	53.38	-12.35
138034	BLANK	BLFT-20170724A	D	DRI		0.25			072-58-20.4	196.58	SHORT	/2
W272DO 60.0 dBu desired distance: 17.9 km						Proposed 54.0 dBu undesired distance: 35.5 km						
WMOS	272	FM	L2C	102.3	STONINGTON	CT	US	C	41-24-23.3	89.33	63.05	26.28
60251	BLANK	BLH-19931021K	A	NDI		3	100		071-50-13.2	111.43	CLEAR	
WMOS 60.0 dBu desired distance: 27.6 km						Proposed 54.0 dBu undesired distance: 35.5 km						
W273DS	273	FX	L2C	102.5	MERIDEN	CT	US	C	41-42-13	0	95.65	-95.65
202641	BLANK	0000145218	D	DRI		0.25			072-49-55	0	SHORT	/3
W273DS 60.0 dBu desired distance: 24.7 km						Proposed 40.0 dBu undesired distance: 70.9 km						
WYPH-LP	273	FL	L2C	102.5	MANCHESTER	CT	US	C	41-47-50.2	28.58	76.56	-47.98
193136	BLANK	BLL-20170807AA	LP1	NDI		0.1	13		072-30-43	68.47	SHORT	/4
WYPH-LP 60.0 dBu desired distance: 5.6 km						Proposed 40.0 dBu undesired distance: 70.9 km						
WZCS-LP	273	FL	L2C	102.5	SPRINGFIELD	MA	US	C	42-08-11.3	51.45	76.56	-25.11
192782	BLANK	BLL-20150409AE	LP1	NDI		0.1	17		072-36-40.3	20.71	SHORT	/2
WZCS-LP 60.0 dBu desired distance: 5.6 km						Proposed 40.0 dBu undesired distance: 70.9 km						
W273CN	273	FX	L2C	102.5	WESTPORT	CT	US	C	41-14-29.3	72.99	84.92	-11.93
156144	BLANK	BLFT-20160128E	D	DRI		0.15			073-27-11.4	225.41	SHORT	/2
W273CN 60.0 dBu desired distance: 14.0 km						Proposed 40.0 dBu undesired distance: 70.9 km						
WKLB-FM	273	FM	L2C	102.5	WALTHAM	MA	US	C	42-18-37.4	148.35	155.56	-7.21
10542	BLANK	BLH-20090515AE	B	NDI		14	276		071-14-12.2	62.36	SHORT	/2
WKLB-FM 54.0 dBu desired distance: 66.8 km						Proposed 34.0 dBu undesired distance: 88.8 km						
WHVC	273	FM	L2C	102.5	RHINEBECK	NY	US	C	41-50-27.7	97.5	102.24	-4.74
184688	BLANK	BLED-20180820A	A	NDI		1.35	214		073-59-24.2	279.43	SHORT	/2
WHVC 60.0 dBu desired distance: 31.3 km						Proposed 40.0 dBu undesired distance: 70.9 km						

FM Contour Study LMS

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Facility ID	ARN			Class	DA	73.215	ERP (kW)	HAAT (m)	Longitude	Bear. (deg)	Comment	
WBAZ	273	FM	L2C	102.5	BRIDGEHAMPTON	NY	US	C	40-53-58.3	96.84	99.16	-2.32
52061	BLANK	BLH-19960604KE	A	NDI		4.8	106		072-23-04.3	157.17	SHORT	/2
WBAZ 60.0 dBu desired distance: 28.2 km				Proposed 40.0 dBu undesired distance: 70.9 km								
WNEW-FM	274	FM	L2C	102.7	NEW YORK	NY	US	C	40-44-54.3	143.57	116.11	27.46
25442	BLANK	BLH-19940204KE	B	NDI		6	415		073-59-08.5	222.64	CLEAR	
WNEW-FM 54.0 dBu desired distance: 66.6 km				Proposed 48.0 dBu undesired distance: 49.5 km								
WDRF-FM	275	FM	AMD	102.9	HARTFORD	CT	US	C	41-33-44.4	15.72	72.47	-56.75
7718	BLANK	BLH-20140929AK	B	DRI		19.54	247		072-50-38.4	183.65	SHORT	/1
WDRF-FM 54.0 dBu desired distance: 70.4 km				Proposed 94.0 dBu undesired distance: 2.0 km								

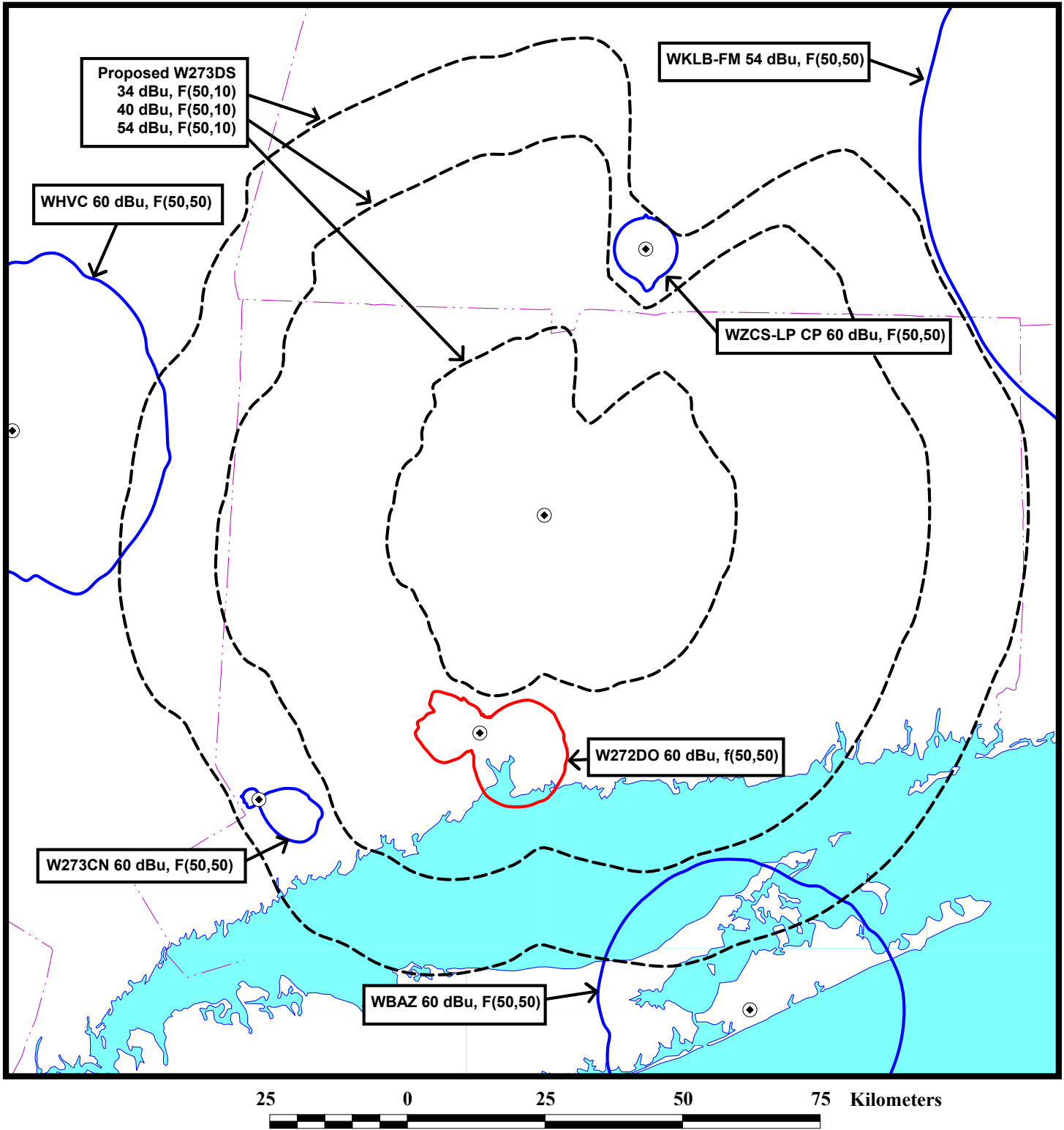
/1 There will be overlap normally prohibited by Section 74.1204. However, based on the U/D signal strength ratio method, which is permitted by the FCC per Living Way Ministries, there will be no actual interference due to lack of population under Section 74.1204(d). See Comprehensive Technical Summary and Figure 4.

/2 Proposal complies with the contour overlap provisions of Section 74.1204(a). See Comprehensive Technical Exhibit and Figure 3.

/3 Authorized W273DS operation.

/4 WYPH-LP has not been protected as its license has been turned in.

Figure 3



COMPLIANCE WITH SECTION 74.1204
FM TRANSLATOR STATION W273DS
MERIDEN, CONNECTICUT
CH 273 (102.5 MHZ) 0.250 KW (DA)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 4

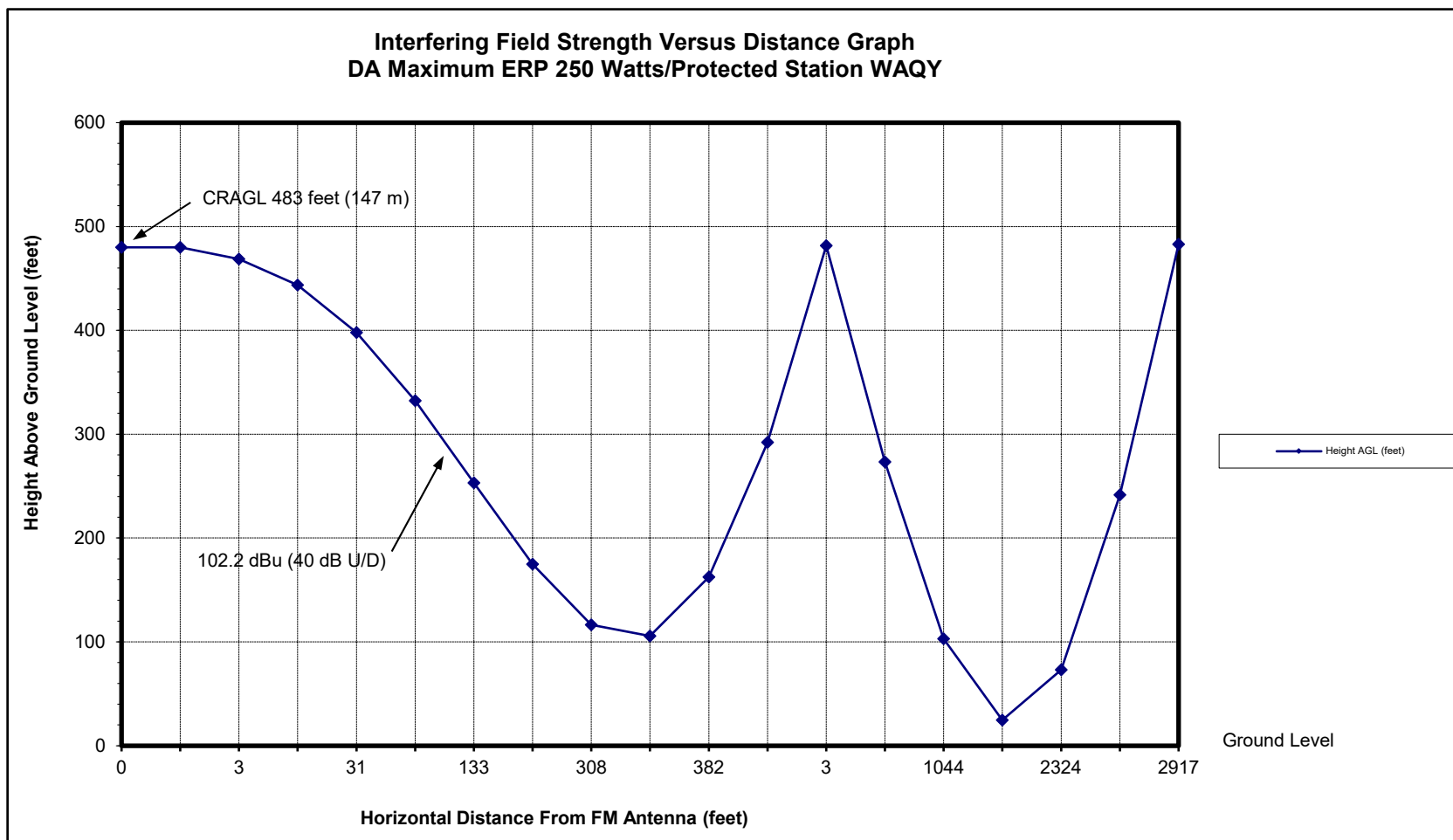


Figure 5



Date **28 Apr 2021**
 Call Letters
 Location
 Customer
 Antenna Type **DCR-L4E**
 Channel **273**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **FE04L500002600C**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.809	2.4	0.988	10.6	0.787	30.5	0.014	51.0	0.158	71.5	0.025
-9.5	0.826	2.6	0.986	10.8	0.780	31.0	0.027	51.5	0.155	72.0	0.024
-9.0	0.843	2.8	0.984	11.0	0.772	31.5	0.040	52.0	0.151	72.5	0.022
-8.5	0.859	3.0	0.982	11.5	0.753	32.0	0.052	52.5	0.148	73.0	0.020
-8.0	0.875	3.2	0.979	12.0	0.733	32.5	0.064	53.0	0.144	73.5	0.019
-7.5	0.889	3.4	0.976	12.5	0.713	33.0	0.075	53.5	0.141	74.0	0.017
-7.0	0.903	3.6	0.974	13.0	0.693	33.5	0.086	54.0	0.137	74.5	0.016
-6.5	0.916	3.8	0.971	13.5	0.672	34.0	0.096	54.5	0.133	75.0	0.014
-6.0	0.928	4.0	0.968	14.0	0.650	34.5	0.105	55.0	0.129	75.5	0.013
-5.5	0.939	4.2	0.964	14.5	0.629	35.0	0.114	55.5	0.125	76.0	0.012
-5.0	0.950	4.4	0.961	15.0	0.607	35.5	0.122	56.0	0.122	76.5	0.011
-4.5	0.959	4.6	0.957	15.5	0.585	36.0	0.129	56.5	0.118	77.0	0.010
-4.0	0.968	4.8	0.953	16.0	0.562	36.5	0.137	57.0	0.114	77.5	0.009
-3.5	0.975	5.0	0.950	16.5	0.540	37.0	0.143	57.5	0.110	78.0	0.008
-3.0	0.982	5.2	0.946	17.0	0.517	37.5	0.149	58.0	0.106	78.5	0.007
-2.8	0.984	5.4	0.941	17.5	0.494	38.0	0.154	58.5	0.102	79.0	0.006
-2.6	0.986	5.6	0.937	18.0	0.472	38.5	0.159	59.0	0.099	79.5	0.006
-2.4	0.988	5.8	0.933	18.5	0.449	39.0	0.164	59.5	0.095	80.0	0.005
-2.2	0.990	6.0	0.928	19.0	0.426	39.5	0.168	60.0	0.091	80.5	0.004
-2.0	0.992	6.2	0.923	19.5	0.404	40.0	0.171	60.5	0.087	81.0	0.004
-1.8	0.993	6.4	0.918	20.0	0.381	40.5	0.174	61.0	0.084	81.5	0.003
-1.6	0.995	6.6	0.913	20.5	0.359	41.0	0.177	61.5	0.080	82.0	0.003
-1.4	0.996	6.8	0.908	21.0	0.337	41.5	0.179	62.0	0.077	82.5	0.002
-1.2	0.997	7.0	0.903	21.5	0.315	42.0	0.181	62.5	0.073	83.0	0.002
-1.0	0.998	7.2	0.897	22.0	0.293	42.5	0.182	63.0	0.070	83.5	0.002
-0.8	0.999	7.4	0.892	22.5	0.272	43.0	0.183	63.5	0.067	84.0	0.001
-0.6	0.999	7.6	0.886	23.0	0.250	43.5	0.184	64.0	0.063	84.5	0.001
-0.4	1.000	7.8	0.880	23.5	0.230	44.0	0.184	64.5	0.060	85.0	0.001
-0.2	1.000	8.0	0.875	24.0	0.209	44.5	0.184	65.0	0.057	85.5	0.001
0.0	1.000	8.2	0.868	24.5	0.189	45.0	0.183	65.5	0.054	86.0	0.001
0.2	1.000	8.4	0.862	25.0	0.170	45.5	0.182	66.0	0.051	86.5	0.000
0.4	1.000	8.6	0.856	25.5	0.150	46.0	0.181	66.5	0.048	87.0	0.000
0.6	0.999	8.8	0.850	26.0	0.132	46.5	0.180	67.0	0.046	87.5	0.000
0.8	0.999	9.0	0.843	26.5	0.113	47.0	0.178	67.5	0.043	88.0	0.000
1.0	0.998	9.2	0.837	27.0	0.096	47.5	0.176	68.0	0.041	88.5	0.000
1.2	0.997	9.4	0.830	27.5	0.078	48.0	0.174	68.5	0.038	89.0	0.000
1.4	0.996	9.6	0.823	28.0	0.062	48.5	0.172	69.0	0.036	89.5	0.000
1.6	0.995	9.8	0.816	28.5	0.045	49.0	0.170	69.5	0.034	90.0	0.000
1.8	0.993	10.0	0.809	29.0	0.030	49.5	0.167	70.0	0.031		
2.0	0.992	10.2	0.802	29.5	0.015	50.0	0.164	70.5	0.029		
2.2	0.990	10.4	0.795	30.0	0.000	50.5	0.161	71.0	0.027		