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VAL VISTA RV PARK, LLC
W27DQ, Digital Channel 27
FACILITY ID: 184934
ELMHURST, MI

APRIL 2022

MINOR CHANGE APPLICATION TO CORRECT ANTENNA TYPE AND MODEL FOR USE OF A COMMON ANTENNA WITH W31FA, ELMHURST, MI

Engineering Statement

Executive Summary:

EXPEDITED PROCESSING IS REQUESTED - The underlying construction permit expires on April 8, 2022. A tolling request has been filed to extend the construction permit.

W27DQ, seeks to make minor changes to the antenna type (manufacturer and model) previously specified in its construction permit to specify the following antenna:

Antenna Pattern Details:

Antenna Manufacturer	Model/Type	RCAMSL
Dielectric (DIE)	DIE TUL-C4SP-4/14M-1	494.9 meters

Figure 3 Antenna Relative Field Details:

A relative field tabulation and graphical plot of the horizontal radiation pattern, is included as Figure 3. Elliptical polarization is proposed.

The vertical polarized signal does not exceed or extend beyond the horizontally polarized signal in any azimuth. Maximum Effective Radiated Values for elliptical operation: 15-kw horizontal, 6.43-kw vertical.

Figure 1 Service Map:

A service map is included herein as Figure 1. No change in site or channel is proposed. This is simply a slight modification of the radiated pattern, due to use of a common antenna system with co-owned W31FA. Note: The W31FA's construction permit is being modified in a similar manner to specify the common antenna usage (i.e., change of antenna make/model for W31FA as well). As shown on the service map (Figure 1) the proposal meets the minor change criteria for low-power television facilities.

Figure 2 FCC TVStudy Summary Report:

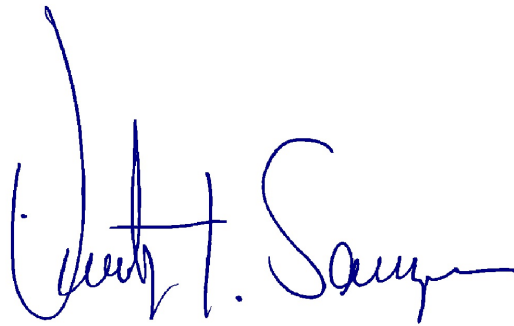
The summary report from the FCC TVStudy analysis, indicates no interference failures to other facilities. Applicant accepts all incoming interference from licensed or pending applications.

With Regards to Canada, the FCC TVStudy summary report indicates that the interference contour from this proposal does cross the US/Canadian Border.

HOWEVER, this minor change in antenna type does not increase interference to any known Canadian facilities, nor does the PROPOSED interference contour extend beyond the CURRENT f(50,10) interference contour into Canada, as shown on the service map in Figure 1. No change in site location or channel is proposed. As this facility has already been notified to Canada, AND no extension of the notified facility's interference contour occurs, no further coordination is thought to be required. There is no impact on facilities located within Canada.

Respectfully submitted on
April 7, 2022

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A handwritten signature in blue ink, appearing to read "Timothy Z. Sawyer". The signature is fluid and cursive, with a large initial "T" and "S".

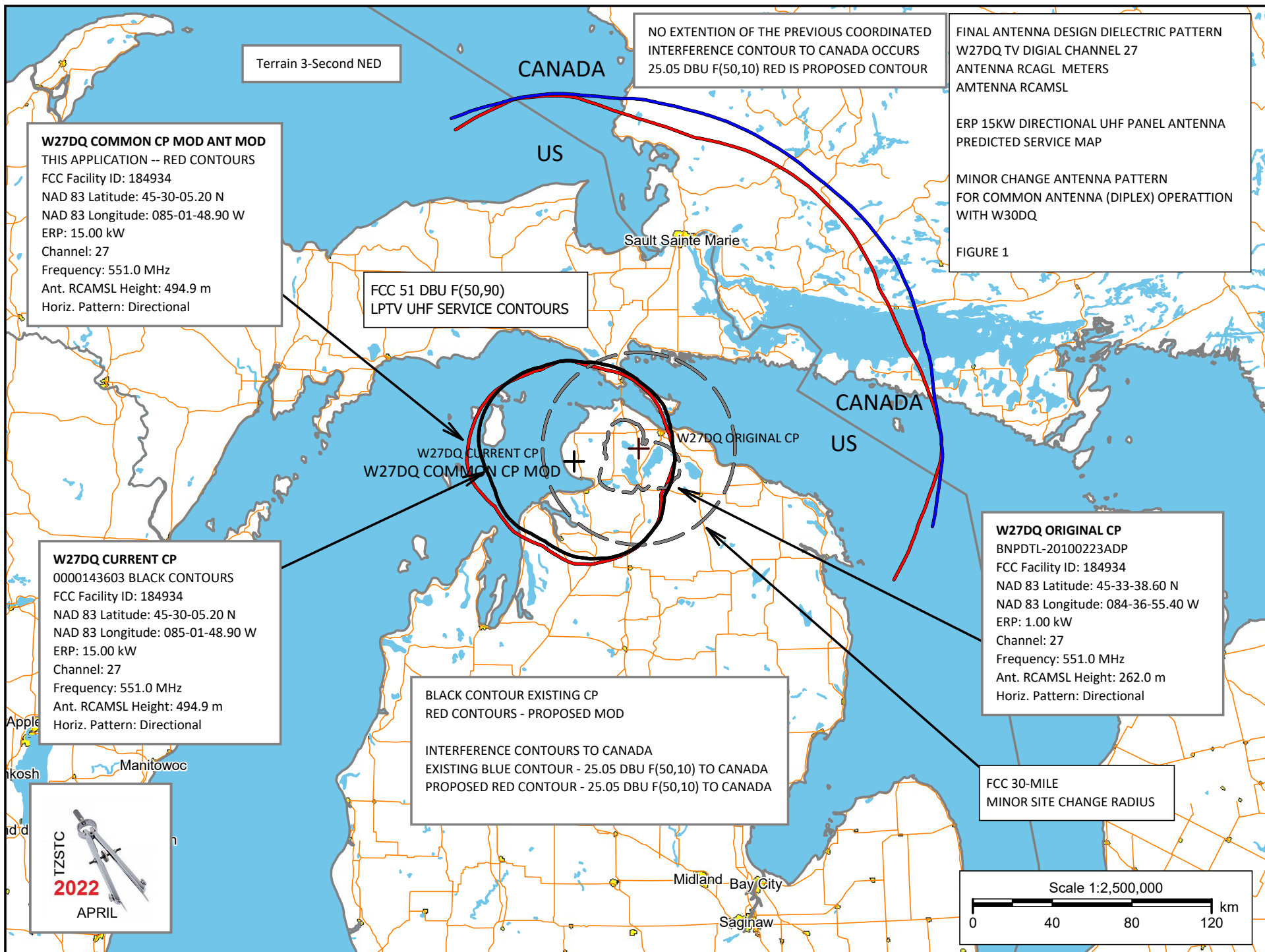


FIGURE 2 - FCC TVSTUDY SUMMARY REPORT - W27DQ FINAL COMMON ANTENNA

Proposal: W27DQ-D D27 LD APP ELMHURST, MI
File number: ELMHURST W27DQ FINAL DIE COMMON
Facility ID: 184934
Station data: User record
Record ID: 605
Country: U.S.

Build options:
Protect pre-transition records not on baseline channel

Search options:
Non-U.S. records included

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WCUM-TV	D26	DT	LIC	MOUNT PLEASANT, MI	BLEDT20130710ABN	195.1 km
No	WNDU-TV	D27	DT	LIC	SOUTH BEND, IN	BLANK0000116736	443.4
No	DDWFHD-LP	N27z	TX	APP	ANN ARBOR, MI	BLTT20000925AAY	372.8
No	W48CL	D27+	LD	CP	GRAND RAPIDS, MI	BLANK0000052038	281.9
Yes	W27ET-D	D27	LD	LIC	MAPLE VALLEY, MI	BLANK0000158765	138.6
No	WADL	D27	DT	LIC	MOUNT CLEMENS, MI	BLANK0000111708	369.6
Yes	W27DU-D	D27	LD	CP	TRAVERSE CITY, MI	BLANK0000143606	97.0
No	WVTM	D27	DT	LIC	MILWAUKEE, WI	BLANK0000121792	351.7
No	W27AU-D	D27	LD	LIC	WAUSAU, WI	BLDTL20110315ABH	368.3
No	W28EJ-D	D28	LD	CP	CHARLES, MI	BLANK0000143599	95.2
No	W28DY-D	D28	LD	LIC	SAULT STE. MARIE, MI	BLDTL20121210ABV	115.9
No	CITO-TV	D27	DT	LIC	TIMMINS, ON	BLANKCANADA231	458.2

No non-directional AM stations found within 0.8 km
No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D27
Mask: Full Service
Latitude: 45 30 5.20 N (NAD83)
Longitude: 85 1 48.90 W
Height AMSL: 494.9 m
HAAT: 0.0 m
Peak ERP: 15.0 kW
Antenna: DIE TUL-C4SP-4/14M-1 0.0 deg
Elev Pattern: Generic
Elec Tilt: 0.75

50.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	14.0 kW	212.5 m	51.3 km
45.0	11.3	241.4	51.8
90.0	14.3	213.1	51.4
135.0	12.9	265.8	53.8
180.0	7.91	284.8	52.3
225.0	2.46	309.2	47.3
270.0	10.2	307.3	54.9
315.0	12.3	265.8	53.6

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 262 m

****Proposal 25.05 dBu contour crosses Canadian border, coordination required**
Distance to Canadian border: 103.7 km

Distance to Mexican border: 2256.5 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 193.3 degrees Distance: 330.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 257.3 degrees Distance: 1744.6 km

Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Proposal causes no interference to BLANK0000158765 LIC
Proposal causes 0.73% interference to BLANK0000143606 CP scenario 1

---- Below is IX received by proposal ELMHURST W27DQ FINAL D ----

Proposal receives 1.70% interference from scenario 1

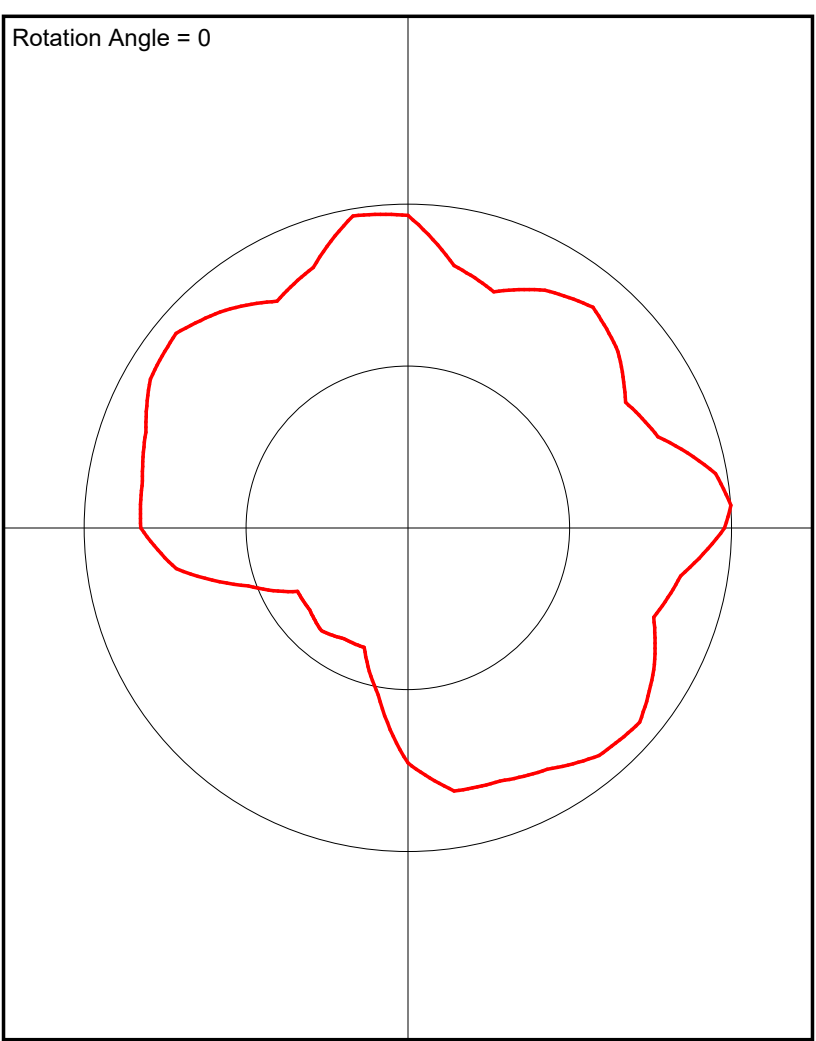
No IX check failures found.

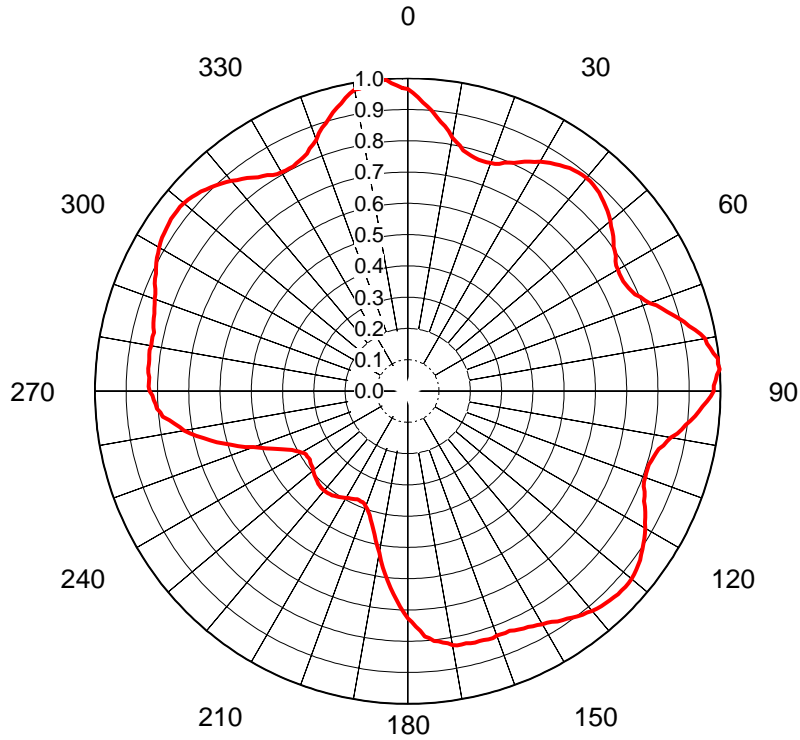
DIE-TUL-C4SP-4/14M-1 W27DQ FINAL

Pre-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	0.965
10.0	0.822
20.0	0.776
30.0	0.847
40.0	0.889
50.0	0.847
60.0	0.776
70.0	0.822
80.0	0.965
86.0	1.0
90.0	0.978
100.0	0.855
110.0	0.808
120.0	0.877
130.0	0.934
140.0	0.918
150.0	0.861
160.0	0.832
170.0	0.825
180.0	0.726
190.0	0.524
200.0	0.393
210.0	0.395
220.0	0.415
230.0	0.395
240.0	0.393
250.0	0.524
260.0	0.726
270.0	0.825
280.0	0.832
290.0	0.861
300.0	0.918
310.0	0.934
320.0	0.877
330.0	0.808
340.0	0.855
350.0	0.978

Rotation Angle = 0





AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-71754**
Date **29-Jul-21**
Call Letters **W27DQ**
Channel **27**
Frequency **551 MHz**
Antenna Type **TUL-C4SP-4/14M-1**
Gain **1.57 (1.96dB)**
Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.965	36	0.881	72	0.855	108	0.806	144	0.896	180	0.726	216	0.412	252	0.570	288	0.852
1	0.954	37	0.884	73	0.867	109	0.806	145	0.888	181	0.709	217	0.413	253	0.590	289	0.856
2	0.940	38	0.887	74	0.882	110	0.808	146	0.884	182	0.691	218	0.415	254	0.611	290	0.861
3	0.923	39	0.889	75	0.898	111	0.809	147	0.879	183	0.670	219	0.415	255	0.632	291	0.864
4	0.911	40	0.889	76	0.911	112	0.814	148	0.870	184	0.651	220	0.415	256	0.651	292	0.870
5	0.898	41	0.889	77	0.923	113	0.823	149	0.864	185	0.632	221	0.415	257	0.670	293	0.879
6	0.882	42	0.887	78	0.940	114	0.829	150	0.861	186	0.611	222	0.415	258	0.691	294	0.884
7	0.867	43	0.884	79	0.954	115	0.834	151	0.856	187	0.590	223	0.413	259	0.709	295	0.888
8	0.855	44	0.881	80	0.965	116	0.844	152	0.852	188	0.570	224	0.412	260	0.726	296	0.896
9	0.841	45	0.875	81	0.969	117	0.852	153	0.847	189	0.549	225	0.409	261	0.738	297	0.902
10	0.822	46	0.871	82	0.977	118	0.860	154	0.845	190	0.524	226	0.407	262	0.753	298	0.908
11	0.811	47	0.865	83	0.985	119	0.867	155	0.841	191	0.507	227	0.404	263	0.768	299	0.912
12	0.802	48	0.860	84	0.997	120	0.877	156	0.837	192	0.490	228	0.401	264	0.787	300	0.918
13	0.789	49	0.853	85	0.996	121	0.885	157	0.833	193	0.471	229	0.398	265	0.793	301	0.923
14	0.784	50	0.847	86	1.000	122	0.892	158	0.835	194	0.455	230	0.395	266	0.804	302	0.926
15	0.780	51	0.837	87	0.990	123	0.899	159	0.833	195	0.441	231	0.391	267	0.807	303	0.928
16	0.776	52	0.831	88	0.985	124	0.905	160	0.832	196	0.428	232	0.389	268	0.812	304	0.930
17	0.773	53	0.823	89	0.979	125	0.911	161	0.836	197	0.416	233	0.387	269	0.817	305	0.932
18	0.773	54	0.814	90	0.978	126	0.919	162	0.835	198	0.407	234	0.385	270	0.825	306	0.936
19	0.773	55	0.804	91	0.969	127	0.923	163	0.832	199	0.399	235	0.382	271	0.829	307	0.935
20	0.776	56	0.799	92	0.957	128	0.927	164	0.832	200	0.393	236	0.383	272	0.828	308	0.936
21	0.778	57	0.793	93	0.944	129	0.931	165	0.833	201	0.386	237	0.384	273	0.828	309	0.936
22	0.783	58	0.783	94	0.934	130	0.934	166	0.831	202	0.383	238	0.383	274	0.831	310	0.934
23	0.793	59	0.778	95	0.923	131	0.936	167	0.828	203	0.384	239	0.386	275	0.833	311	0.931
24	0.799	60	0.776	96	0.909	132	0.936	168	0.828	204	0.383	240	0.393	276	0.832	312	0.927
25	0.804	61	0.773	97	0.895	133	0.935	169	0.829	205	0.382	241	0.399	277	0.832	313	0.923
26	0.814	62	0.773	98	0.885	134	0.936	170	0.825	206	0.385	242	0.407	278	0.835	314	0.919
27	0.823	63	0.773	99	0.872	135	0.932	171	0.817	207	0.387	243	0.416	279	0.836	315	0.911
28	0.831	64	0.776	100	0.855	136	0.930	172	0.812	208	0.389	244	0.428	280	0.832	316	0.905
29	0.837	65	0.780	101	0.845	137	0.928	173	0.807	209	0.391	245	0.441	281	0.833	317	0.899
30	0.847	66	0.784	102	0.836	138	0.926	174	0.804	210	0.395	246	0.455	282	0.835	318	0.892
31	0.853	67	0.789	103	0.824	139	0.923	175	0.793	211	0.398	247	0.471	283	0.833	319	0.885
32	0.860	68	0.802	104	0.819	140	0.918	176	0.787	212	0.401	248	0.490	284	0.837	320	0.877
33	0.865	69	0.811	105	0.814	141	0.912	177	0.768	213	0.404	249	0.507	285	0.841	321	0.867
34	0.871	70	0.822	106	0.810	142	0.908	178	0.753	214	0.407	250	0.524	286	0.845	322	0.860
35	0.875	71	0.841	107	0.806	143	0.902	179	0.738	215	0.409	251	0.549	287	0.847	323	0.852

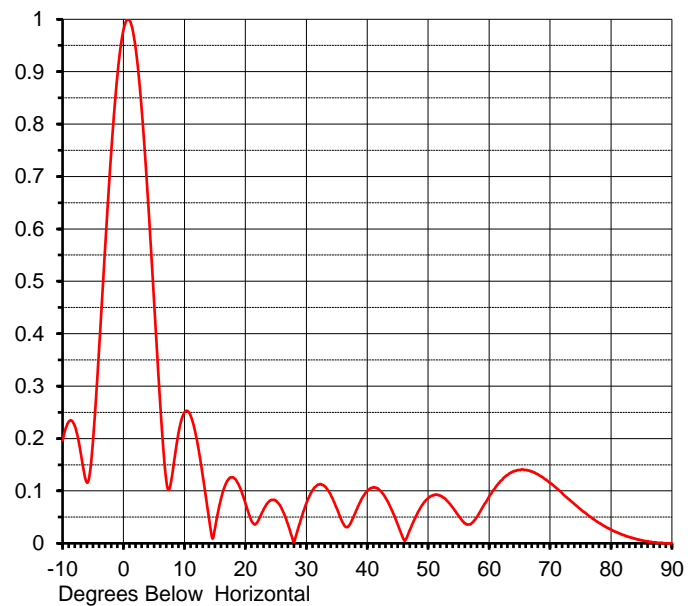
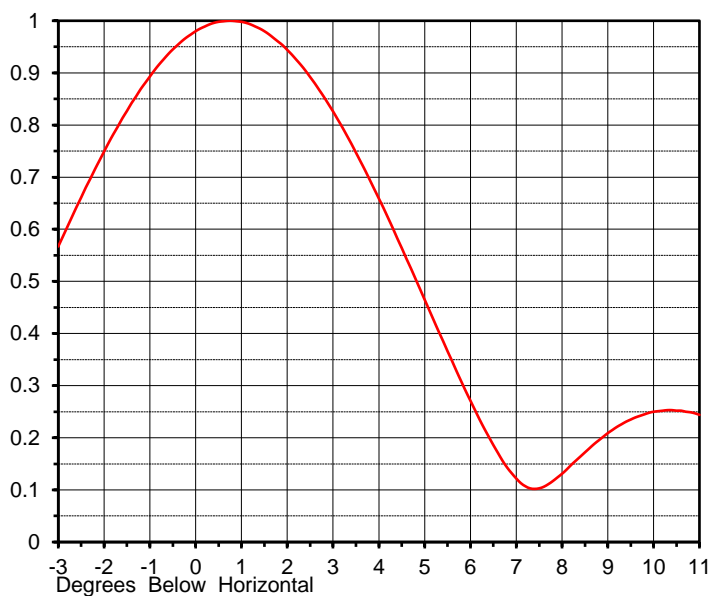
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ELEVATION PATTERN

Proposal No. **C-71754**
 Date **29-Jul-21**
 Call Letters **W27DQ**
 Channel **27**
 Frequency **551 MHz**
 Antenna Type **TUL-C4SP-4/14M-1**

RMS Directivity at Main Lobe **9.0 (9.54 dB)**
 RMS Directivity at Horizontal **8.6 (9.34 dB)**
Calculated

Beam Tilt **0.75 deg**
 Pattern Number **04U090075**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.196	10.0	0.250	30.0	0.076	50.0	0.086	70.0	0.115
-9.0	0.232	11.0	0.244	31.0	0.101	51.0	0.092	71.0	0.106
-8.0	0.224	12.0	0.200	32.0	0.112	52.0	0.091	72.0	0.096
-7.0	0.171	13.0	0.129	33.0	0.109	53.0	0.082	73.0	0.085
-6.0	0.116	14.0	0.050	34.0	0.093	54.0	0.069	74.0	0.075
-5.0	0.196	15.0	0.028	35.0	0.067	55.0	0.052	75.0	0.065
-4.0	0.372	16.0	0.085	36.0	0.039	56.0	0.038	76.0	0.056
-3.0	0.567	17.0	0.119	37.0	0.034	57.0	0.037	77.0	0.047
-2.0	0.749	18.0	0.126	38.0	0.057	58.0	0.050	78.0	0.039
-1.0	0.893	19.0	0.109	39.0	0.083	59.0	0.070	79.0	0.032
0.0	0.980	20.0	0.077	40.0	0.100	60.0	0.089	80.0	0.026
1.0	0.998	21.0	0.043	41.0	0.107	61.0	0.106	81.0	0.021
2.0	0.944	22.0	0.041	42.0	0.102	62.0	0.120	82.0	0.016
3.0	0.826	23.0	0.065	43.0	0.087	63.0	0.130	83.0	0.012
4.0	0.659	24.0	0.081	44.0	0.064	64.0	0.137	84.0	0.009
5.0	0.465	25.0	0.081	45.0	0.036	65.0	0.140	85.0	0.006
6.0	0.271	26.0	0.065	46.0	0.007	66.0	0.140	86.0	0.004
7.0	0.122	27.0	0.036	47.0	0.026	67.0	0.137	87.0	0.002
8.0	0.131	28.0	0.002	48.0	0.052	68.0	0.132	88.0	0.001
9.0	0.209	29.0	0.041	49.0	0.073	69.0	0.124	89.0	0.000
								90.0	0.000

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APRIL 2022

REVISED TO ADD VERTICAL POLARIZATION VALUE

Environmental Considerations as proposed in the application

Any changes in equipment or additions will not trigger any event with regards to Section 106 of the National Historical Preservation Act (NHPA). This is an existing developed communications site.

The proposal does not meet any of the criteria specified in Section 1.1307 of the FCC Rules. More specifically, the proposed facilities are not known to fall within any of the categories enumerated in Sections 1.1307(a)(1)-(7) and will not involve the use of high intensity white lights. Furthermore, operation of the proposed facility will not involve the exposure of workers or the general public to levels of radio frequency electromagnetic fields exceeding guidelines adopted by the Federal Communications Commission. (The current FCC guidelines are based upon criteria contained in the National Council of Radiation Protection and Measurements (NCRP) Report No.86 (1986) and ANSI/IEEE C95.1-1992.)

CALCULATED POWER DENSITY AT 2 METERS AGL (0.5 ANTENNA RELATIVE FIELD VALUE)

RCAGL: 120.0 m ERP (H): 15.0 KW ERP (V): 6.43 KW	MPE $\mu\text{W}/\text{cm}^2$	CALCULATED VALUE $\mu\text{W}/\text{cm}^2$	% OF MPE	PASS/FAIL
CONTROLLED AREA	1836.7	12.8632218	0.70%	PASS
PUBLIC AREA	367.3		3.50%	PASS

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs are posted at the site. The applicant will coordinate exposure procedures with any co-located facilities and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

April 7, 2022

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