

EXHIBIT A

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of HME EQUITY FUND II, LLC, licensee of Class A digital television station W33BY-D, Channel 33 in Detroit, Michigan, in support of its application for modification of Construction Permit 0000026746, which authorizes operation on its post-repack channel, Channel 15, as W15EC-D. The purpose of this application is to specify operation from a new site and an increase in effective radiated power to 15.0 kW.

It is proposed to mount an ERI directional antenna at the 120.4-meter level of an existing 152-meter tower. Exhibit B is a map upon which the predicted 51 dBu service contour of this new proposal is plotted.

Azimuth and elevation pattern data for the proposed ERI antenna are included in Exhibit C. Exhibit D contains the summary results from a TVStudy interference study, which was conducted using a cell size and increment spacing of 1.0 kilometer. It concludes that the proposed W15EC-D facility meets the Commission's de minimis interference criteria to all co-channel and adjacent-channel post-repack full-power and Class A and LPTV/translator facilities. In addition, it is believed that no interference to any Land Mobile facility in Detroit or Cleveland will occur. Although allotments for such facilities have been made on Channels 15 and 16 in Detroit and Channel 15 in Cleveland, none are believed to have been implemented as a result of Canada's refusal to accept those assignments.

A detailed power density calculation is provided in Exhibit E.

EXHIBIT A

Since no change in the overall height or location of the existing tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, the Federal Communications Commission issued Antenna Structure Registration Number 1057943 to this tower.

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read 'K. T. Fisher', with a stylized, elongated final letter.

KEVIN T. FISHER

October 29, 2017



**SMITHANDFISHER**

**CONTOUR POPULATION**  
2015 U.S. CENSUS DATA  
3,409,312 (1,529,677 HH)

**SMITHANDFISHER**

**FCC 51 DBU  
SERVICE CONTOUR**

**Proposed Site**

**EXHIBIT B**  
**PREDICTED SERVICE CONTOUR**  
**PROPOSED W15EC-D**  
**CHANNEL 15 - DETROIT, MICHIGAN**

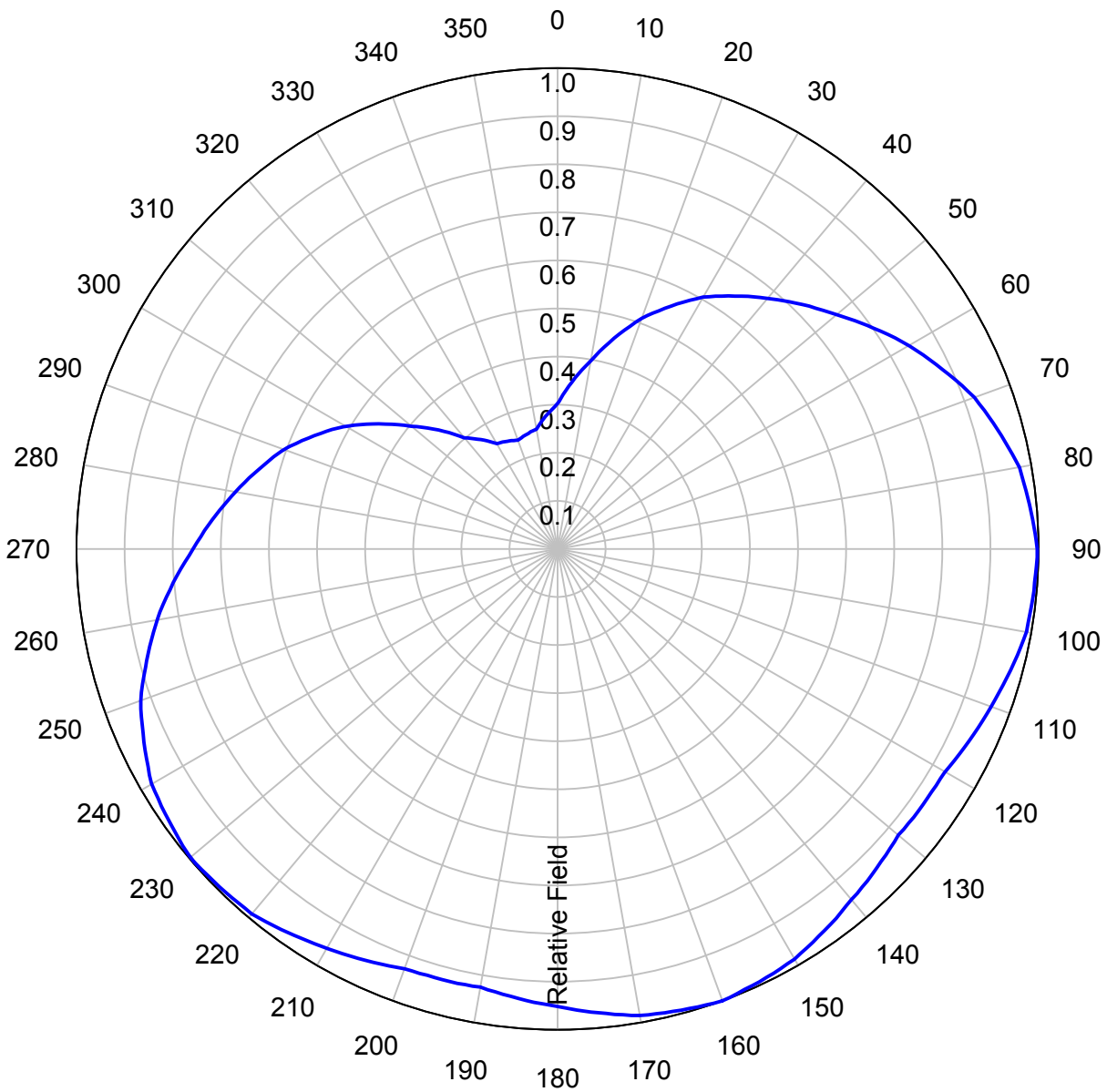
Scale 1:500,000  
0 4 8 12 mi

Scale 1:500,000

A horizontal scale bar with a black outline. It is divided into four equal segments by three vertical tick marks. Below the bar, the numbers 0, 4, 8, and 12 are placed at the corresponding tick marks. The unit 'mi' is placed at the right end of the bar.

**AZIMUTH PATTERN****Type:**ALP-W**Channel:**15**Directivity:**NumericdBd1.561.93**Peak(s) at:****Location:****Polarization:**Horizontal

Note: Pattern shape and directivity may vary with channel and mouting configuration.



*Preliminary, subject to final design and review.*

**TABULATED DATA FOR AZIMUTH PATTERN****Type: ALP-W****PolarizationHorizontal**

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.302	-10.40	92	0.996	-0.03	184	0.941	-0.53	276	0.711	-2.96
2	0.321	-9.87	94	0.994	-0.05	186	0.935	-0.58	278	0.696	-3.15
4	0.340	-9.37	96	0.993	-0.06	188	0.930	-0.63	280	0.680	-3.35
6	0.359	-8.90	98	0.991	-0.08	190	0.925	-0.68	282	0.665	-3.54
8	0.378	-8.45	100	0.990	-0.09	192	0.926	-0.67	284	0.650	-3.74
10	0.397	-8.02	102	0.984	-0.14	194	0.927	-0.66	286	0.635	-3.94
12	0.420	-7.54	104	0.978	-0.19	196	0.927	-0.66	288	0.620	-4.15
14	0.442	-7.09	106	0.971	-0.26	198	0.928	-0.65	290	0.605	-4.36
16	0.465	-6.65	108	0.965	-0.31	200	0.929	-0.64	292	0.586	-4.64
18	0.487	-6.25	110	0.959	-0.36	202	0.935	-0.58	294	0.567	-4.93
20	0.510	-5.85	112	0.953	-0.42	204	0.941	-0.53	296	0.548	-5.22
22	0.529	-5.53	114	0.947	-0.47	206	0.947	-0.47	298	0.529	-5.53
24	0.548	-5.22	116	0.941	-0.53	208	0.953	-0.42	300	0.510	-5.85
26	0.567	-4.93	118	0.935	-0.58	210	0.959	-0.36	302	0.487	-6.25
28	0.586	-4.64	120	0.929	-0.64	212	0.965	-0.31	304	0.465	-6.65
30	0.605	-4.36	122	0.928	-0.65	214	0.971	-0.26	306	0.442	-7.09
32	0.620	-4.15	124	0.927	-0.66	216	0.978	-0.19	308	0.420	-7.54
34	0.635	-3.94	126	0.927	-0.66	218	0.984	-0.14	310	0.397	-8.02
36	0.650	-3.74	128	0.926	-0.67	220	0.990	-0.09	312	0.378	-8.45
38	0.665	-3.54	130	0.925	-0.68	222	0.991	-0.08	314	0.359	-8.90
40	0.680	-3.35	132	0.930	-0.63	224	0.993	-0.06	316	0.340	-9.37
42	0.696	-3.15	134	0.935	-0.58	226	0.994	-0.05	318	0.321	-9.87
44	0.711	-2.96	136	0.941	-0.53	228	0.996	-0.03	320	0.302	-10.40
46	0.727	-2.77	138	0.946	-0.48	230	0.997	-0.03	322	0.292	-10.69
48	0.742	-2.59	140	0.951	-0.44	232	0.993	-0.06	324	0.282	-11.00
50	0.758	-2.41	142	0.958	-0.37	234	0.988	-0.10	326	0.273	-11.28
52	0.775	-2.21	144	0.965	-0.31	236	0.984	-0.14	328	0.263	-11.60
54	0.793	-2.01	146	0.971	-0.26	238	0.979	-0.18	330	0.253	-11.94
56	0.810	-1.83	148	0.978	-0.19	240	0.975	-0.22	332	0.251	-12.01
58	0.828	-1.64	150	0.985	-0.13	242	0.964	-0.32	334	0.248	-12.11
60	0.845	-1.46	152	0.988	-0.10	244	0.954	-0.41	336	0.246	-12.18
62	0.860	-1.31	154	0.991	-0.08	246	0.943	-0.51	338	0.243	-12.29
64	0.876	-1.15	156	0.994	-0.05	248	0.933	-0.60	340	0.241	-12.36
66	0.891	-1.00	158	0.997	-0.03	250	0.922	-0.71	342	0.243	-12.29
68	0.907	-0.85	160	1.000	0.00	252	0.907	-0.85	344	0.246	-12.18
70	0.922	-0.71	162	0.997	-0.03	254	0.891	-1.00	346	0.248	-12.11
72	0.933	-0.60	164	0.994	-0.05	256	0.876	-1.15	348	0.251	-12.01
74	0.943	-0.51	166	0.991	-0.08	258	0.860	-1.31	350	0.253	-11.94
76	0.954	-0.41	168	0.988	-0.10	260	0.845	-1.46	352	0.263	-11.60
78	0.964	-0.32	170	0.985	-0.13	262	0.828	-1.64	354	0.273	-11.28
80	0.975	-0.22	172	0.978	-0.19	264	0.810	-1.83	356	0.282	-11.00
82	0.979	-0.18	174	0.971	-0.26	266	0.793	-2.01	358	0.292	-10.69
84	0.984	-0.14	176	0.965	-0.31	268	0.775	-2.21	360	0.302	-10.40
86	0.988	-0.10	178	0.958	-0.37	270	0.758	-2.41			
88	0.993	-0.06	180	0.951	-0.44	272	0.742	-2.59			
90	0.997	-0.03	182	0.946	-0.48	274	0.727	-2.77			

*Preliminary, subject to final design and review.*

## **TABULATED DATA FOR AZIMUTH PATTERN FCC FILING FORMAT**

Type: ALP-W

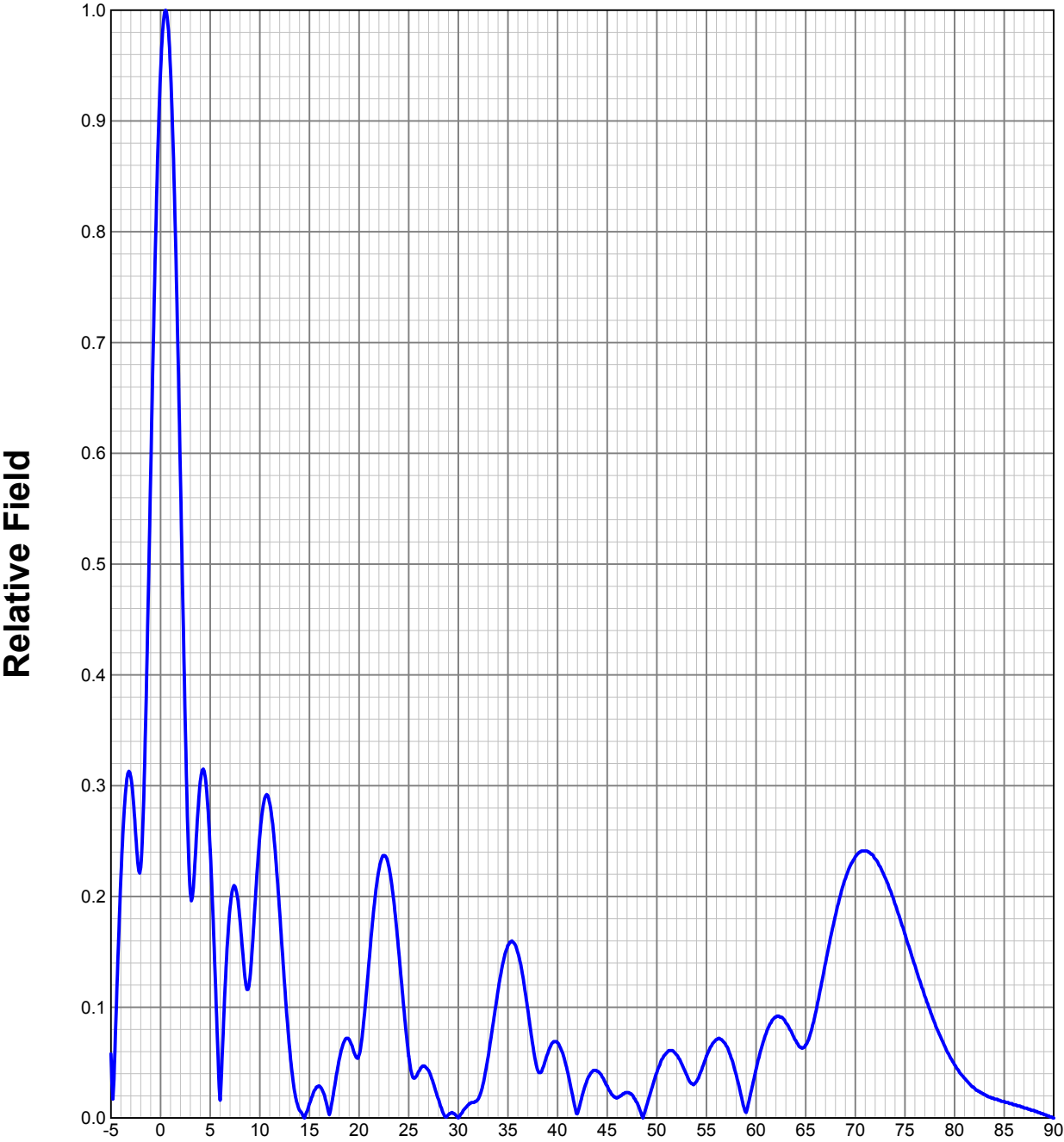
PolarizationHorizontal

<b>ANGLE</b>	<b>FIELD</b>	<b>ERP (kW)</b>	<b>ERP (dBk)</b>
0	0.302	1.368	1.360
10	0.397	2.364	3.736
20	0.510	3.901	5.911
30	0.605	5.489	7.395
40	0.680	6.934	8.410
50	0.758	8.616	9.353
60	0.845	10.708	10.297
70	0.922	12.748	11.054
80	0.975	14.256	11.540
90	0.997	14.906	11.734
100	0.990	14.698	11.673
110	0.959	13.792	11.396
120	0.929	12.942	11.120
130	0.925	12.831	11.083
140	0.951	13.563	11.323
150	0.985	14.550	11.629
160	1.000	14.996	11.760
170	0.985	14.550	11.629
180	0.951	13.563	11.323
190	0.925	12.831	11.083
200	0.929	12.942	11.120
210	0.959	13.792	11.396
220	0.990	14.698	11.673
230	0.997	14.906	11.734
240	0.975	14.256	11.540
250	0.922	12.748	11.054
260	0.845	10.708	10.297
270	0.758	8.616	9.353
280	0.680	6.934	8.410
290	0.605	5.489	7.395
300	0.510	3.901	5.911
310	0.397	2.364	3.736
320	0.302	1.368	1.360
330	0.253	0.960	-0.178
340	0.241	0.871	-0.600
350	0.253	0.960	-0.178

*Preliminary, subject to final design and review.*

ELEVATION PATTERN

Type:	ALP16L2		Channel:	15
Directivity:	Numeric	dBd	Location:	
Main Lobe:	16.59	12.20	Beam Tilt:	0.50
Horizontal:	14.82	11.71	Polarization:	Horizontal



Preliminary, subject to final design and review.

## TABULATED DATA FOR ELEVATION PATTERN

Type: ALP16L2

PolarizationHorizontal

ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB
-5.00	0.058	-24.73	6.75	0.160	-15.92	27.00	0.043	-27.33	50.50
-4.75	0.026	-31.70	7.00	0.190	-14.42	27.50	0.031	-30.17	51.00
-4.50	0.089	-21.01	7.25	0.206	-13.72	28.00	0.017	-35.39	51.50
-4.25	0.156	-16.14	7.50	0.209	-13.60	28.50	0.004	-47.96	52.00
-4.00	0.217	-13.27	7.75	0.199	-14.02	29.00	0.003	-50.46	52.50
-3.75	0.265	-11.55	8.00	0.179	-14.94	29.50	0.004	-47.96	53.00
-3.50	0.297	-10.54	8.25	0.152	-16.33	30.00	0.000	-40.00	53.50
-3.25	0.312	-10.12	8.50	0.127	-17.92	30.50	0.007	-43.10	54.00
-3.00	0.308	-10.23	8.75	0.116	-18.71	31.00	0.012	-38.42	54.50
-2.75	0.287	-10.84	9.00	0.126	-17.99	31.50	0.014	-37.08	55.00
-2.50	0.255	-11.87	9.25	0.155	-16.19	32.00	0.017	-35.39	55.50
-2.25	0.227	-12.88	9.50	0.191	-14.38	32.50	0.031	-30.17	56.00
-2.00	0.226	-12.92	9.75	0.226	-12.94	33.00	0.055	-25.19	56.50
-1.75	0.274	-11.24	10.00	0.255	-11.87	33.50	0.085	-21.41	57.00
-1.50	0.359	-8.90	10.50	0.289	-10.78	34.00	0.115	-18.79	57.50
-1.25	0.467	-6.62	11.00	0.284	-10.93	34.50	0.140	-17.08	58.00
-1.00	0.580	-4.73	11.50	0.246	-12.18	35.00	0.156	-16.14	58.50
-0.75	0.693	-3.19	12.00	0.186	-14.61	35.50	0.159	-15.97	59.00
-0.50	0.794	-2.00	12.50	0.120	-18.42	36.00	0.149	-16.54	59.50
-0.25	0.880	-1.11	13.00	0.063	-24.01	36.50	0.128	-17.86	60.00
0.00	0.945	-0.49	13.50	0.024	-32.40	37.00	0.098	-20.18	60.50
0.25	0.986	-0.13	14.00	0.007	-43.10	37.50	0.066	-23.61	61.00
0.50	1.000	0.00	14.50	0.000	-40.00	38.00	0.043	-27.33	61.50
0.75	0.986	-0.12	15.00	0.013	-37.72	38.50	0.045	-26.94	62.00
1.00	0.946	-0.48	15.50	0.025	-32.04	39.00	0.058	-24.73	62.50
1.25	0.881	-1.10	16.00	0.029	-30.75	39.50	0.068	-23.35	63.00
1.50	0.796	-1.98	16.50	0.021	-33.56	40.00	0.068	-23.35	63.50
1.75	0.693	-3.19	17.00	0.003	-50.46	40.50	0.059	-24.58	64.00
2.00	0.579	-4.75	17.50	0.027	-31.37	41.00	0.042	-27.54	64.50
2.25	0.462	-6.71	18.00	0.053	-25.51	41.50	0.021	-33.56	65.00
2.50	0.350	-9.12	18.50	0.069	-23.22	42.00	0.004	-47.96	65.50
2.75	0.258	-11.78	19.00	0.071	-22.97	42.50	0.021	-33.56	66.00
3.00	0.203	-13.85	19.50	0.059	-24.58	43.00	0.035	-29.12	66.50
3.25	0.204	-13.83	20.00	0.057	-24.88	43.50	0.042	-27.54	67.00
3.50	0.236	-12.54	20.50	0.090	-20.92	44.00	0.042	-27.54	67.50
3.75	0.275	-11.21	21.00	0.141	-17.02	44.50	0.037	-28.64	68.00
4.00	0.304	-10.34	21.50	0.190	-14.42	45.00	0.029	-30.75	68.50
4.25	0.315	-10.05	22.00	0.224	-13.00	45.50	0.021	-33.56	69.00
4.50	0.308	-10.23	22.50	0.237	-12.51	46.00	0.018	-34.89	69.50
4.75	0.282	-10.98	23.00	0.227	-12.88	46.50	0.021	-33.56	70.00
5.00	0.242	-12.32	23.50	0.196	-14.15	47.00	0.023	-32.77	70.50
5.25	0.190	-14.45	24.00	0.150	-16.48	47.50	0.021	-33.56	71.00
5.50	0.129	-17.79	24.50	0.100	-20.00	48.00	0.014	-37.08	71.50
5.75	0.065	-23.74	25.00	0.056	-25.04	48.50	0.002	-53.98	72.00
6.00	0.016	-35.92	25.50	0.036	-28.87	49.00	0.012	-38.42	72.50
6.25	0.065	-23.74	26.00	0.042	-27.54	49.50	0.027	-31.37	73.00
6.50	0.118	-18.56	26.50	0.047	-26.56	50.00	0.041	-27.74	73.50

Preliminary, subject to final design and review.



TVSTUDY INTERFERENCE ANALYSIS RESULTS  
PROPOSED W15EC-D  
CHANNEL 15 – DETROIT, MICHIGAN

Study created: 2017.10.30 15:36:01

Study build station data: LMS TV 2017-10-24 (1)

Proposal: W33BY-D D15 DC CP DETROIT, MI  
File number: BLANK0000026746  
Facility ID: 25722  
Station data: User record  
Record ID: 44  
Country: U.S.

Build options:  
Protect LPTV records from Class A

Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number	Distance
WDCQ-TV	D15	DT	LIC	BAD AXE, MI	BLEDT20030922ABG	133.9 km
WEWS-TV	D15	DT	LIC	CLEVELAND, OH	BLCDT20091211ACS	162.7

Non-directional AM stations within 0.8 km:  
WDTK 1400 L ND1 U DETROIT, MI BL19810811AJ

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D15  
Mask: Full Service  
Latitude: 42 24 22.00 N (NAD83)  
Longitude: 83 6 44.00 W  
Height AMSL: 314.9 m  
HAAT: 0.0 m  
Peak ERP: 15.0 kW  
Antenna: HSW at 160 Degree Orientation  
Elev Pattn: Generic  
Elec Tilt: 0.75

48.8 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	1.83 kW	121.8 m	36.7 km
45.0	8.62	124.4	44.7
90.0	14.8	128.5	47.7
135.0	13.6	128.2	47.2
180.0	13.2	132.6	47.4
225.0	14.9	128.3	47.7
270.0	7.75	119.9	43.8
315.0	1.37	108.4	34.1

Database HAAT does not agree with computed HAAT

Database HAAT: 0 m    Computed HAAT: 124 m

\*\*Proposal service area extends beyond baseline plus 1.0%

Proposal service area population is more than 95.0% of baseline

\*\*Proposal 23.83 dBu contour crosses Canadian border, coordination required

Distance to Canadian border: 10.6 km

Distance to Mexican border: 2152.8 km

Conditions at FCC monitoring station: Allegan MI

Bearing: 276.4 degrees    Distance: 234.0 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 269.7 degrees    Distance: 1858.6 km

\*\*Proposal fails contour check to land mobile station: Cleveland OH ch. 15

\*\*Proposal fails distance check to land mobile station: Detroit MI ch. 15, 9.9 km

\*\*Proposal fails distance check to land mobile station: Detroit MI ch. 16, 9.9 km

Proposal is not within the Offshore Radio Service protected area

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%

No IX check failures found.

POWER DENSITY CALCULATION

PROPOSED W15EC-D  
CHANNEL 15 – DETROIT, MICHIGAN

[MODIFICATION OF CONSTRUCTION PERMIT 0000026746]

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Detroit facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 15.0 kW, an antenna radiation center 120.4 meters above ground, and the specific elevation pattern of the proposed ERI antenna, maximum power density two meters above ground of  $0.0019 \text{ mW/cm}^2$  is calculated to occur 38 meters south-southeast of the base of the tower. Since this is only 0.6 percent of the  $0.32 \text{ mW/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 15 (476-482 MHz), a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.