

## Arthur Doak

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**From:** Al Kenyon [ASKenyon@cox.net]  
**Sent:** Tuesday, October 25, 2011 7:36 PM  
**To:** Arthur Doak  
**Cc:** 'Lahey, Alisa R.'; 'Kent Smith'  
**Subject:** WUPN 302-FM Application  
**Attachments:** WUPN As-Built COL Study.pdf; P23\_WUPN\_Pattern Packet\_2.pdf; Revised Tower Az0001.pdf

Mr. Doak,

Regarding WUPN 302-FM Application, FCC File Number BLH-20111010ACC

Thank you for letting us know what additional information you needed to complete your review. I have attached three documents which I believe will provide the additional information necessary for your review.

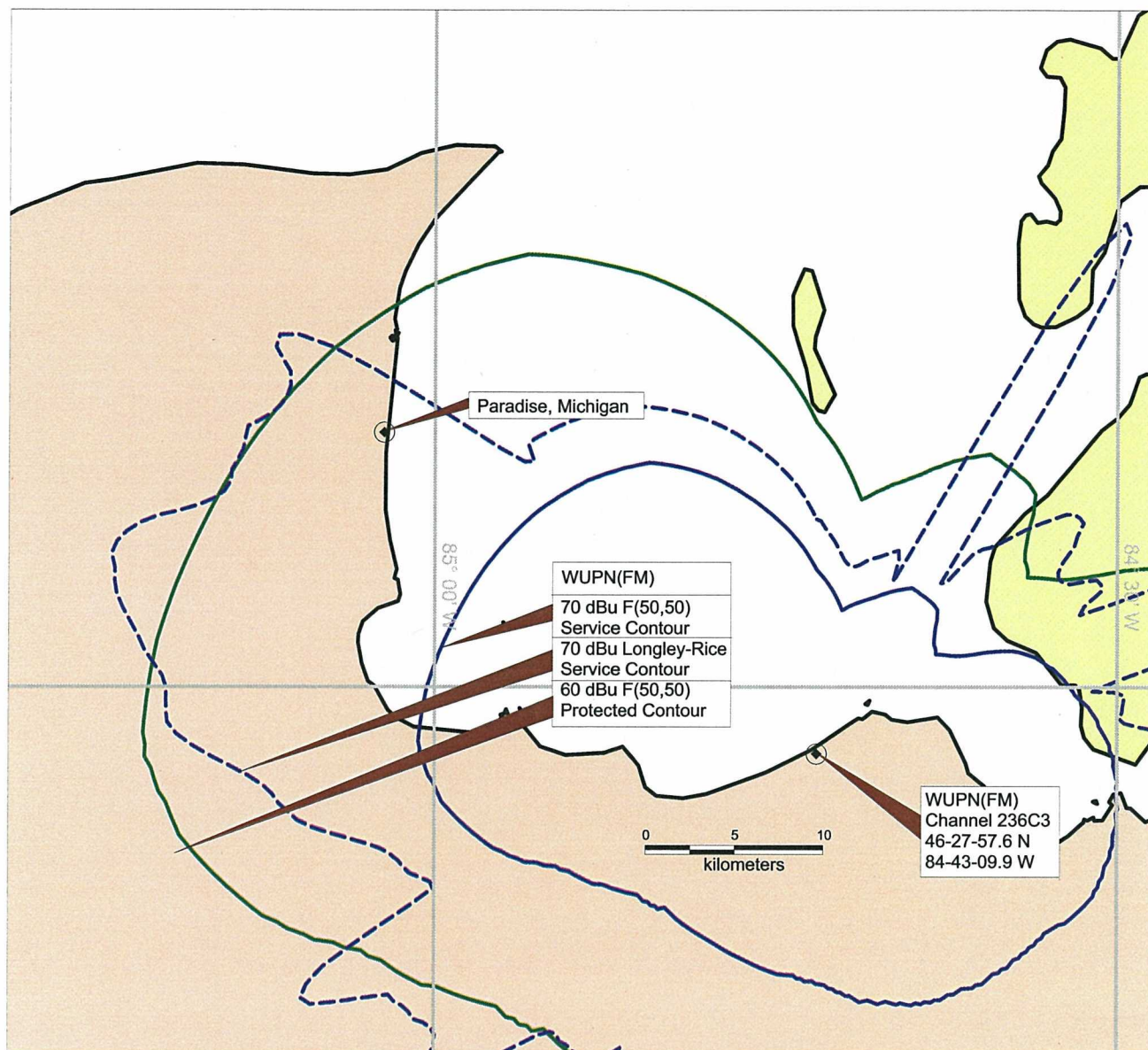
- A Community of License Service Study that is based on the antenna manufacturer's pattern study.
- An updated manufacturer's Antenna System Proof Exhibit (P23 WUPN Pattern Packet 2.pdf) which contains a table listing one degree horizontal azimuth pattern data. You will note that the measured field from 172 to 176 degrees True is 1.000 for 25 kW ERP.  
The final page of the updated manufacturer's Antenna System Proof Exhibit is the detail installation drawing. The figure shown in the upper left hand corner of the installation diagram contains the instruction to mount the antenna at an orientation of 210 degrees True.
- The final attachment is a Revised Tower Azimuth Statement from the surveyor confirming the installed antenna orientation at 210 degrees True. The Surveyor Statement as originally filled with the application contained a typographical error which apparently occurred when the surveyor's field notes were transcribed.

Should you have any additional technical questions please do not hesitate to contact me via email or at the cell phone number below.

Regards,

Al Kenyon  
[askenyon@cox.net](mailto:askenyon@cox.net)  
3440 Little Hunting Creek Dr.  
Alexandria, VA 22309  
571-435-3713 Cell  
703-780-6666 Home

Figure 1



## AS-BUILT COMMUNITY OF LICENSE SERVICE STUDY

DARBY ADVERTISING, INC.  
STATION WUPN(FM) PARADISE, MICHIGAN  
FACILITY ID NUMBER 170940  
CH 236C3 25.0 KW (H&V) 71 METERS AMSL

OCTOBER 2011

Proposal Number

Date

Call Letters

Location

Customer

Antenna Type

Frequency

Drawing #:

**25-Oct-11**

**WUPN**

**Paradise, MI**

**DCRM4ED**

**95.10 MHz**

**23**

## TABULATION OF HORIZONTAL AZIMUTH PATTERN

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.091	45	0.206	90	0.644	135	0.895	180	0.994	225	0.825	270	0.821	315	0.602
1	0.088	46	0.204	91	0.652	136	0.900	181	0.992	226	0.817	271	0.821	316	0.596
2	0.085	47	0.203	92	0.658	137	0.905	182	0.988	227	0.810	272	0.822	317	0.589
3	0.081	48	0.203	93	0.665	138	0.909	183	0.986	228	0.803	273	0.822	318	0.583
4	0.077	49	0.204	94	0.672	139	0.913	184	0.982	229	0.797	274	0.821	319	0.576
5	0.074	50	0.207	95	0.678	140	0.916	185	0.978	230	0.791	275	0.821	320	0.569
6	0.071	51	0.210	96	0.685	141	0.920	186	0.974	231	0.784	276	0.820	321	0.561
7	0.069	52	0.215	97	0.692	142	0.922	187	0.970	232	0.779	277	0.819	322	0.553
8	0.068	53	0.221	98	0.698	143	0.926	188	0.966	233	0.773	278	0.817	323	0.545
9	0.068	54	0.229	99	0.705	144	0.929	189	0.961	234	0.769	279	0.816	324	0.536
10	0.069	55	0.237	100	0.711	145	0.931	190	0.957	235	0.765	280	0.813	325	0.527
11	0.073	56	0.247	101	0.718	146	0.934	191	0.954	236	0.761	281	0.810	326	0.518
12	0.077	57	0.257	102	0.725	147	0.936	192	0.949	237	0.758	282	0.806	327	0.508
13	0.084	58	0.269	103	0.732	148	0.940	193	0.945	238	0.757	283	0.802	328	0.497
14	0.092	59	0.281	104	0.739	149	0.943	194	0.942	239	0.755	284	0.797	329	0.486
15	0.101	60	0.293	105	0.745	150	0.946	195	0.939	240	0.754	285	0.792	330	0.475
16	0.113	61	0.306	106	0.752	151	0.949	196	0.934	241	0.754	286	0.787	331	0.464
17	0.125	62	0.319	107	0.759	152	0.953	197	0.931	242	0.755	287	0.782	332	0.452
18	0.138	63	0.332	108	0.766	153	0.957	198	0.928	243	0.756	288	0.776	333	0.441
19	0.152	64	0.345	109	0.773	154	0.961	199	0.924	244	0.758	289	0.771	334	0.428
20	0.166	65	0.359	110	0.779	155	0.966	200	0.920	245	0.760	290	0.765	335	0.416
21	0.178	66	0.373	111	0.784	156	0.969	201	0.917	246	0.763	291	0.758	336	0.404
22	0.189	67	0.386	112	0.791	157	0.974	202	0.914	247	0.766	292	0.753	337	0.391
23	0.197	68	0.400	113	0.796	158	0.977	203	0.911	248	0.769	293	0.747	338	0.379
24	0.205	69	0.414	114	0.802	159	0.980	204	0.908	249	0.773	294	0.741	339	0.366
25	0.210	70	0.428	115	0.807	160	0.984	205	0.905	250	0.776	295	0.734	340	0.354
26	0.215	71	0.442	116	0.812	161	0.987	206	0.901	251	0.780	296	0.729	341	0.342
27	0.217	72	0.455	117	0.817	162	0.990	207	0.898	252	0.783	297	0.722	342	0.330
28	0.220	73	0.469	118	0.822	163	0.991	208	0.895	253	0.787	298	0.716	343	0.317
29	0.221	74	0.482	119	0.826	164	0.993	209	0.893	254	0.791	299	0.709	344	0.304
30	0.222	75	0.495	120	0.831	165	0.994	210	0.890	255	0.794	300	0.702	345	0.291
31	0.222	76	0.508	121	0.836	166	0.995	211	0.888	256	0.797	301	0.695	346	0.277
32	0.223	77	0.521	122	0.839	167	0.996	212	0.885	257	0.801	302	0.688	347	0.263
33	0.223	78	0.533	123	0.843	168	0.998	213	0.883	258	0.803	303	0.681	348	0.248
34	0.223	79	0.544	124	0.847	169	0.998	214	0.880	259	0.806	304	0.674	349	0.233
35	0.223	80	0.555	125	0.852	170	0.999	215	0.877	260	0.808	305	0.666	350	0.218
36	0.223	81	0.566	126	0.856	171	0.999	216	0.874	261	0.811	306	0.659	351	0.202
37	0.222	82	0.577	127	0.860	172	1.000	217	0.871	262	0.813	307	0.652	352	0.187
38	0.221	83	0.586	128	0.864	173	1.000	218	0.867	263	0.815	308	0.645	353	0.172
39	0.220	84	0.596	129	0.868	174	1.000	219	0.862	264	0.816	309	0.638	354	0.157
40	0.218	85	0.605	130	0.873	175	1.000	220	0.857	265	0.817	310	0.632	355	0.144
41	0.215	86	0.613	131	0.877	176	1.000	221	0.851	266	0.818	311	0.626	356	0.131
42	0.213	87	0.622	132	0.882	177	0.999	222	0.845	267	0.819	312	0.619	357	0.119
43	0.210	88	0.629	133	0.886	178	0.998	223	0.838	268	0.820	313	0.614	358	0.109
44	0.208	89	0.637	134	0.891	179	0.996	224	0.832	269	0.820	314	0.607	359	0.099





# NORTHWOODS

LAND SURVEYING, INC.

816 ASHMUN STREET, SUITE 1  
P.O. BOX 758  
SAULT STE. MARIE, MICHIGAN 49783  
PHONE 906-632-1500  
FAX 906-632-3220

## Surveyor's Declaration

I, Douglas A. Boyd, P.S., of Northwood's Land Surveying subject to the penalties of perjury do declare the following in regard to WUPN, Facility ID number 183306 and FCC File number BMPH-20110124ABU.

I am a licensed surveyor in the state of Michigan.

I have provided professional services to Darby Advertising Inc., permittee of WUPN, Paradise, Michigan.

I provided survey of WUPN tower site and layout of WUPN tower on November 1, 2010.

I certify that the WUPN-FM directional antenna has been oriented at the proper azimuth as specified by the antenna manufacturer's specifications.

### Surveyor's Note:

A field survey for the purpose of orienting a directional antenna was completed on October 12, 2011. The basis of bearings for the said survey is True North and control was established on site by GPS observation. The target orientation of 210° (TN) for the antenna was provided to me by Mr. Kent Smith.

Signed: \_\_\_\_\_

Date: 18-October 2011



*Professional Surveying, Engineering, & Mapping Services*