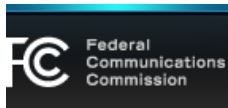


WHDH-TV, Boston Massachusetts  
Amendment to Engineering STA Application  
June 2018

WHDH-TV amends the instant STA application for an early Transition Phase assignment by including a copy of the following New Digital Auxiliary Construction Permit Application, which was filed by WHDH-TV on May 3, 2018 (File No. 0000053795). This Auxiliary Construction Permit Application shows the reduced area of coverage which WHDH would provide to its viewers during the period of time in which it has to remove its current Channel 42 antenna system in order to replace it with a new Channel 35 antenna system. As requested in this STA application, WHDH-TV is asking for a quicker transition period in order to reduce the time during which its auxiliary antenna operation would be in effect, and therefore, shorten the amount of time of a reduced coverage area.

In addition to a copy of the New Digital Auxiliary Construction Permit Application, also attached is a single page with a coverage map that shows the Boston area loss of over-the-air service by WHDH, in coverage and population of viewers, while the proposed auxiliary antenna would be in operation, as compared to the permanent Channel 35 operation.



## Licensing and Management System

FRN: 0003613825 | Search (/dataentry/public/tv/... Log Out (/dataentry/j\_spring\_security\_logout)

[Applications \(/dataentry/secure/applications.html\)](/dataentry/secure/applications.html)[Authorizations \(/dataentry/secure/authorizations.html\)](/dataentry/secure/authorizations.html)[Facilities \(/dataentry/secure/facilities.html\)](/dataentry/secure/facilities.html)

Approved by OMB (Office of Management and Budget) 3060-0027

New Digital Auxiliary Construction Permit Application

[FAQ \(/dataentry/api/download/faq\)](/dataentry/api/download/faq)

## Application Submitted

[Download Reference Copy \(.../api/download/draftcopy/DTX/25076f916097f7ff0160a3124f71320e\)](/api/download/draftcopy/DTX/25076f916097f7ff0160a3124f71320e)**Your application has been submitted for processing.**

- Please pay any **fees** associated with this application.
- Use the assigned **File Number** when referencing this application in the future.
- The progress of this application can be tracked on the **Applications** page.

## Application Summary

File Number: 0000053795  
Application Purpose: Construction Permit  
Status: Submitted  
Date Submitted: 2018-05-03

## Applicant Information

Name: WHDH-TV  
Title:  
Address: GOVERNMENT CENTER  
7 BULFINCH PLACE  
BOSTON, MA 02114  
United States  
Phone: +1 (617) 725-0710  
Email: pmagnes@whdh.com

## Fees, Waivers, and Exemptions

Exempt from FCC Application Fees? No

Application Type	Fee Code	Fee Amount
Construction Permit	MPT	\$1,070.00
Total		<b>\$1,070.00</b>
		<a href="#">Pay Fees</a>

[View Submitted Applications](#)Technical problems or trouble accessing the system? Submit Help Request (<https://esupport.fcc.gov/request.htm>) or Contact (877) 480-3201 TTY: (717) 338-2824

Federal Communications Commission  
445 12th Street SW  
Washington, DC 20554  
  
Phone: 1-888-225-5322  
TTY: 1-888-835-5322  
Fax: 1-866-418-0232  
Contact Us (<http://www.fcc.gov/contact-us>)

RSS (<http://www.fcc.gov/rss>)  
Privacy Policy (<http://www.fcc.gov/encyclopedia/privacy-policy>)  
Moderation Policy (<http://www.fcc.gov/comment-policy>)  
Website Policies & Notices (<http://www.fcc.gov/encyclopedia/website-notices>)  
Required Browser & Plug-ins (<http://www.fcc.gov/encyclopedia/required->

FOIA (<http://www.fcc.gov/foia>)  
No Fear Act Data (<http://www.fcc.gov/encyclopedia/no-fear-act-data>)  
Open Government Directive (<http://www.fcc.gov/open>)  
Plain Writing Act (<http://www.fcc.gov/encyclopedia/plain-writing-fcc>)  
2009 Recovery and Reinvestment Act (<http://www.fcc.gov/encyclopedia/american-recovery-and-reinvestment-act-2009>)



# Agency Tracking ID:PGC3091222 Authorization Number:060758

## Successful Authorization -- Date Paid: 5/3/18

### FILE COPY ONLY!!

READ INSTRUCTIONS CAREFULLY BEFORE PROCEEDING  (1) LOCKBOX # <b>979089</b>	FEDERAL COMMUNICATIONS COMMISSION <b>REMITTANCE ADVICE</b> <b>FORM 159</b> PAGE NO 1 OF 1	APPROVED BY OMB 3060-059 SPECIAL USE FCC USE ONLY
<b>SECTION A - Payer Information</b>		
(2) PAYER NAME (if paying by credit card, enter name exactly as it appears on your card) <b>HOLLAND &amp; KNIGHT LLP</b>		(3) TOTAL AMOUNT PAID (dollars and cents) <b>\$1070.00</b>
(4) STREET ADDRESS LINE NO. 1 <b>800 17TH STREET, STE. 1100</b>		
(5) STREET ADDRESS LINE NO. 2 <b>TELECOM-C. NAFTALIN</b>		
(6) CITY <b>WASHINGTON</b>	(7) STATE <b>DC</b>	(8) ZIP CODE <b>20006-3906</b>
(9) DAYTIME TELEPHONE NUMBER (INCLUDING AREA CODE) <b>202-9553000 x7040</b>	(10) COUNTRY CODE (IF NOT IN U.S.A.) <b>US</b>	
<b>FCC REGISTRATION NUMBER (FRN) AND TAX IDENTIFICATION NUMBER (TIN) REQUIRED</b>		
(11) PAYER (FRN) <b>0004148995</b>	(12) FCC USE ONLY	
IF PAYER NAME AND THE APPLICANT NAME ARE DIFFERENT, COMPLETE SECTION B IF MORE THAN ONE APPLICANT, USE CONTINUATION SHEETS (FORM 159-C)		
(13) APPLICANT NAME <b>WHDH-TV</b>		
(14) STREET ADDRESS LINE NO. 1 <b>GOVERNMENT CENTER</b>		
(15) STREET ADDRESS LINE NO. 2 <b>7 BULFINCH PLACE</b>		
(16) CITY <b>BOSTON</b>	(17) STATE <b>MA</b>	(18) ZIP CODE <b>02114</b>
(19) DAYTIME TELEPHONE NUMBER (INCLUDING AREA CODE) <b>+1 (617) 725-0710</b>	(20) COUNTRY CODE (IF NOT IN U.S.A.) <b>US</b>	
<b>FCC REGISTRATION NUMBER (FRN) AND TAX IDENTIFICATION NUMBER (TIN) REQUIRED</b>		
(21) APPLICANT (FRN) <b>0003613825</b>	(22) FCC USE ONLY	
<b>COMPLETE SECTION C FOR EACH SERVICE, IF MORE BOXES ARE NEEDED, USE CONTINUATION SHEET</b>		
(23A) FCC Call Sign/Other ID <b>WHDH</b>	(24A) Payment Type Code(PTC) <b>MPT</b>	(25A) Quantity <b>1</b>
(26A) Fee Due for (PTC) <b>\$1,070.00</b>	(27A) Total Fee <b>\$1070.00</b>	FCC Use Only
(28A) FCC CODE 1 <b>72145</b>	(29A) FCC CODE 2 <b>LMS0000053795</b>	
(23B) FCC Call Sign/Other ID	(24B) Payment Type Code(PTC)	(25B) Quantity
(26B) Fee Due for (PTC)	(27B) Total Fee	FCC Use Only
(28B) FCC CODE 1	(29B) FCC CODE 2	





(REFERENCE COPY - Not for submission)

# New Digital Auxiliary Construction Permit Application

File Number: **0000053795** | Submit Date: **05/03/2018** | Call Sign: **WHDH** | Facility ID: **72145** | FRN: **0003613825** | State: **Massachusetts** | City: **BOSTON**

Service: **DTX** | Purpose: **Construction Permit** | Status: **Submitted** | Status Date: **05/03/2018** | Filing Status: **Active**

General Information

Section	Question	Response
Attachments	Are attachments (other than associated schedules) being filed with this application?	Yes

Fees, Waivers, and Exemptions

Section	Question	Response
Fees	Is the applicant exempt from FCC application Fees?	No
	Indicate reason for fee exemption:	
Waivers	Does this filing request a waiver of the Commission's rule(s)?	No
	Total number of rule sections involved in this waiver request:	
	Are the frequencies or parameters requested in this filing covered by grandfathered privileges, previously approved by waiver, or functionally integrated with an existing station?	No

Application Type	Fee Code	Fee Amount
Construction Permit	MPT	1070.0
Total		1070.0

Applicant  
Information

Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
WHDH-TV Doing Business As: WHDH-TV	Paul Magnes GOVERNMENT CENTER 7 BULFINCH PLACE BOSTON, MA 02114 United States	+1 (617) 725- 0710	pmagnes@whdh. com	Trust

Authorization Holder Name

Check box if the Authorization Holder name is being updated because of the sale (or transfer of control) of the Authorization(s) to another party and for which proper Commission approval has not been received or proper notification provided.

Contact  
Representatives  
(2)

Contact Name	Address	Phone	Email	Contact Type
<b>JOHN E. HIDLE, PE</b> <i>CONSULTANT</i> <i>ENGINEER</i> CARL T. JONES CORPORATION	JOHN E. HIDLE, PE 7901 YARNWOOD COURT SPRINGFIELD, VA 22153 United States	+1 (703) 569-7704	JHIDLE@CTJC.COM	Technical Representative
<b>CHARLES R. NAFTALIN , ESQ .</b> HOLLAND & KNIGHT LLP	CHARLES R. NAFTALIN HOLLAND & KNIGHT LLP 800 17TH STREET, N.W., SUITE #1100 WASHINGTON, DC 20006 United States	+1 (202) 457-7040	CHARLES. NAFTALIN@HKLAW.COM	Legal Representative



Alien Ownership

Question	Response
1) Is the applicant a foreign government or the representative of any foreign government as specified in Section 310(a) of the Communications Act?	No
2) Is the applicant an alien or the representative of an alien? (Section 310(b)(1))	No
3) Is the applicant a corporation, or non-corporate entity, that is organized under the laws of any foreign government? (Section 310(b)(2))	No
4) Is the applicant an entity of which more than one-fifth of the capital stock, or other equity or voting interest, is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any entity organized under the laws of a foreign country? (Section 310(b)(3))	No
5) Is the applicant directly or indirectly controlled by any other entity of which more than one-fourth of the capital stock, or other equity or voting interest, is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof, or by any entity organized under the laws of a foreign country? (Section 310(b)(4))	No
6) Has the applicant received a declaratory ruling(s) under Section 310(b)(4) of the Communications Act?	
6a) Enter the citation of the applicable declaratory ruling by DA/FCC number, FCC Record citation, release date, or any other identifying information.	
7) Has there been any change in the applicant's foreign ownership since issuance of the declaratory ruling(s) cited in response to Question 6?	
7a) Enter the File or Docket Number of the Petition for Declaratory Ruling that the applicant has filed for its foreign ownership in connection with this application pursuant to Section 310(b)(4) of the Communications Act. It is not necessary to file a request for a foreign ownership declaratory ruling if the applicant attaches a showing that the requested authorization(s) is exempt from the provisions of Section 310(b)(4).	
8) Does the applicant certify that it is in compliance with the terms and conditions of the foreign ownership declaratory ruling(s) cited in response to Question 6?	
9) In connection with this application, is the applicant filing a foreign ownership Petition for Declaratory Ruling pursuant to Section 310(b)(4) of the Communications Act?	

Basic Qualifying Questions

Section	Question	Response
Revoked Application	Has the Applicant or any party to this application had any FCC station Authorization revoked or had any application for an initial, modification or renewal of FCC station Authorization denied by the Commission?	No
State or Federal Convictions	Has the Applicant or any party to this application, or any party directly or indirectly controlling the Applicant, ever been convicted of a felony by any state or federal court?	No

Channel and Facility Information

Section	Question	Response
Proposed Community of License	Facility ID	72145
	State	Massachusetts
	City	BOSTON
	DTX Channel	42
Facility Type	Facility Type	Commercial
	Station Type	Auxiliary
Zone	Zone	1

Antenna Location Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	Yes
	ASR Number	1005862
Coordinates (NAD83)	Latitude	42° 18' 41.0" N+
	Longitude	071° 12' 58.0" W-
	Structure Type	TOWER-A free standing or guyed struct
	Overall Structure Height	323.8 meters
	Support Structure Height	304.8 meters
	Ground Elevation (AMSL)	33.1 meters
Antenna Data	Height of Radiation Center Above Ground Level	245 meters
	Height of Radiation Center Above Average Terrain	233.7 meters
	Height of Radiation Center Above Mean Sea Level	245.0 meters
	Effective Radiated Power	900 kW

Antenna  
Technical Data

Section	Question	Response
Antenna Type	Antenna Type	Directional Custom
	Do you have an Antenna ID?	No
	Antenna ID	1003440
Antenna Manufacturer and Model	Manufacturer:	DIELECTRIC
	Model	TFU-16WB C160
	Rotation	0 degrees
	Electrical Beam Tilt	0.55
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Horizontal
DTV and DTS: Elevation Pattern	Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?	No
	Uploaded file for elevation antenna (or radiation) pattern data	

Directional Antenna Relative Field Values (Pre-rotated Pattern)

Degree	V <sub>A</sub> (Authorized Value)	Degree	V <sub>A</sub> (Authorized Value)	Degree	V <sub>A</sub> (Authorized Value)	Degree	V <sub>A</sub> (Authorized Value)
0	.857	90	.870	180	.856	270	.584
10	.912	100	.868	190	.810	280	.527
20	.965	110	.873	200	.756	290	.385
30	.997	120	.901	210	.668	300	.272
40	.992	130	.948	220	.527	310	.358
50	.952	140	.988	230	.355	320	.530
60	.903	150	.994	240	.273	330	.671
70	.873	160	.964	250	.387	340	.758
80	.867	170	.911	260	.528	350	.811

Additional Azimuths

Degree	V <sub>A</sub>
34	1.0
301	.271
239	.271
146	.996

**Parties to the  
Application (0)**

Information not provided.

**Attributable Interest**

Section	Question	Response
Equity and Financial Interests	Applicant certifies that equity and financial interests not set forth by the applicant parties are non-attributable.	
Other Authorizations	Does the applicant or any party to the application have an attributable interest in any other broadcast station(s).	

Construction  
Permit  
Certifications

Section	Question	Response
Post-Incentive Auction Expedited Processing	It will operate on the DTV channel for this station as established in the post-incentive auction channel reassignment public notice.	
	It will operate post-incentive auction facilities that do not expand the noise-limited service contour in any direction beyond that established by the post-incentive auction channel reassignment public notice.	
	It will operate post-incentive auction facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the post-incentive auction channel reassignment public notice.	
	The antenna structure to be used by this facility has been registered by the Commission and will not require re-registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely affect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.	
Environmental Effect	Would a Commission grant of Authorization for this location be an action which may have a significant environmental effect? (See Section 1.1306 of 47 C.F.R.)	No
Broadcast Facility	The proposed facility complies with the applicable engineering standards and assignment requirements of 47 C. F.R. Sections 73.616, 73.622(i), 73.623(e), 73.625, 73.1030, and 73.1125.	Yes

Legal  
Certifications

Section	Question	Response
Character Issues	<p>Applicant certifies that neither applicant nor any party to the application has or had any interest in, or connection with:</p> <p>(a) any broadcast application in any proceeding where character issues were left in unresolved or were resolved adversely against the applicant or party to the application; or</p> <p>(b) any pending broadcast application in which character issues have been raised.</p>	
Adverse Findings	<p>Has the Applicant or any party to this application had an adverse finding or an adverse final action taken by any court or administrative body in a civil or criminal proceeding brought under any law related to the following: any felony; mass media-related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination?</p>	
Program Service Certification	<p>Applicant certifies that it is cognizant of and will comply with its obligations as a Commission licensee to present a program service responsive to the issues of public concern facing the station's community of license and service area.</p>	
Local Public Notice	<p>Applicant certifies that it has or will comply with the public notice requirements of 47 C.F.R. Section 73.3580.</p>	
Auction Authorization	<p>Is the applicant submitting an application to obtain a construction permit as a result of winning an auction?</p>	
Equal Employment Opportunity (EEO)	<p>If the applicant proposes to employ five or more full-time employees, applicant certifies that it is filing simultaneously with this application a Model EEO Program Report.</p>	

## Certification

Section	Question	Response
General Certification Statements	The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by authorization or otherwise, and requests an Authorization in accordance with this application (See Section 304 of the Communications Act of 1934, as amended.).	
	The Applicant certifies that neither the Applicant nor any other party to the application is subject to a denial of Federal benefits pursuant to §5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. §862, because of a conviction for possession or distribution of a controlled substance. This certification does not apply to applications filed in services exempted under §1.2002(c) of the rules, 47 CFR . See §1.2002(b) of the rules, 47 CFR §1.2002(b), for the definition of "party to the application" as used in this certification §1.2002 (c). The Applicant certifies that all statements made in this application and in the exhibits, attachments, or documents incorporated by reference are material, are part of this application, and are true, complete, correct, and made in good faith.	
Authorized Party to Sign	<b>FAILURE TO SIGN THIS APPLICATION MAY RESULT IN DISMISSAL OF THE APPLICATION AND FORFEITURE OF ANY FEES PAID</b> Upon grant of this application, the Authorization Holder may be subject to certain construction or coverage requirements. Failure to meet the construction or coverage requirements will result in automatic cancellation of the Authorization. Consult appropriate FCC regulations to determine the construction or coverage requirements that apply to the type of Authorization requested in this application. WILLFUL FALSE STATEMENTS MADE ON THIS FORM OR ANY ATTACHMENTS ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. Code, Title 18, §1001) AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, §312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, §503).	
	I certify that this application includes all required and relevant attachments.	Yes
	I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.	<b>Paul Magnes</b> <i>Vice President and General Manager</i>  05/03/2018



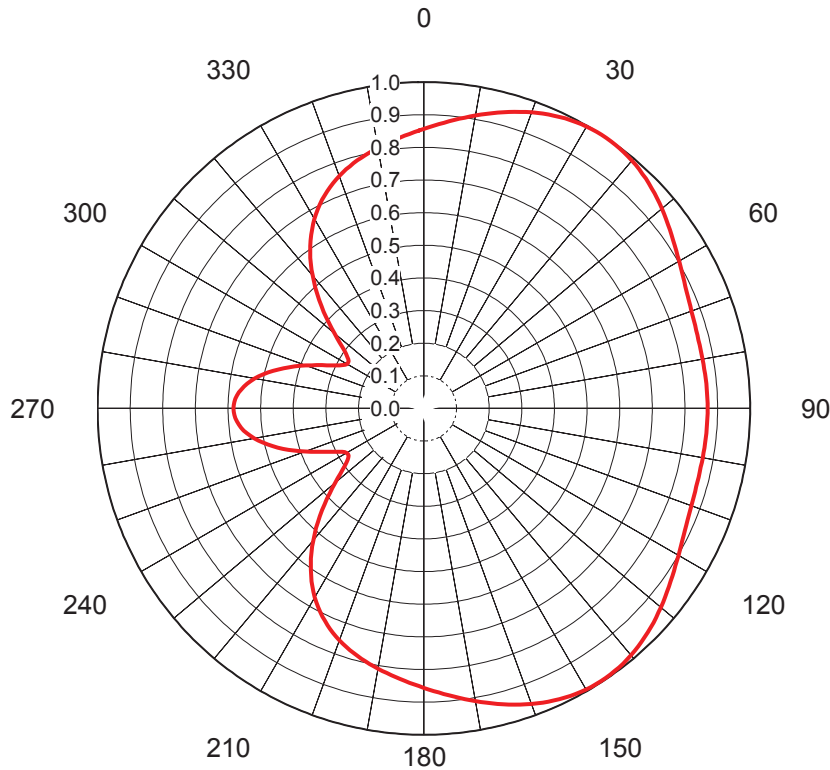
Attachments

File Name	Uploaded By	Attachment Type	Description
<a href="#"><u>WHDH - AUX Antenna Exhibits - 4-30-2018.pdf</u></a>	Applicant	Antenna Technical Data	WHDH - Auxiliary antenna exhibits - Dielectric model TFU-16WB C160.
<a href="#"><u>WHDH - Ch 42 - Form 2100 - Aux antenna Technical Document - 4-30-2018.pdf</u></a>	Applicant	All Purpose	WHDH Form 2100 Auxiliary antenna technical statement - April 30, 2018.
<a href="#"><u>WHDH - Rad Haz Compliance Statement - 4-30-2018.pdf</u></a>	Applicant	Construction Permit Certifications	WHDH Environmental and Radio Frequency Radiation Safety Compliance Statement.

## AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-71053**  
Date **5-Dec-17**  
Call Letters **WHDH**  
Channel **42**  
Frequency **641 MHz**  
Antenna Type **TFU-16WB C160**  
Gain **1.66 (2.21dB)**  
Calculated



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.857	36	0.999	72	0.870	108	0.870	144	0.995	180	0.856	216	0.590	252	0.418	288	0.416	324	0.593
1	0.862	37	0.998	73	0.869	109	0.871	145	0.996	181	0.851	217	0.575	253	0.434	289	0.401	325	0.607
2	0.867	38	0.996	74	0.868	110	0.873	146	0.996	182	0.847	218	0.559	254	0.449	290	0.385	326	0.621
3	0.873	39	0.994	75	0.868	111	0.874	147	0.996	183	0.842	219	0.544	255	0.464	291	0.369	327	0.634
4	0.878	40	0.992	76	0.867	112	0.876	148	0.996	184	0.837	220	0.527	256	0.478	292	0.354	328	0.647
5	0.883	41	0.989	77	0.867	113	0.878	149	0.995	185	0.832	221	0.511	257	0.492	293	0.339	329	0.659
6	0.889	42	0.986	78	0.867	114	0.881	150	0.994	186	0.828	222	0.493	258	0.505	294	0.325	330	0.671
7	0.894	43	0.983	79	0.867	115	0.883	151	0.993	187	0.823	223	0.476	259	0.517	295	0.312	331	0.682
8	0.900	44	0.979	80	0.867	116	0.886	152	0.991	188	0.819	224	0.459	260	0.528	296	0.300	332	0.692
9	0.906	45	0.975	81	0.868	117	0.890	153	0.989	189	0.814	225	0.441	261	0.538	297	0.290	333	0.702
10	0.912	46	0.971	82	0.868	118	0.893	154	0.986	190	0.810	226	0.423	262	0.548	298	0.282	334	0.711
11	0.917	47	0.966	83	0.868	119	0.897	155	0.983	191	0.805	227	0.406	263	0.556	299	0.276	335	0.720
12	0.923	48	0.962	84	0.868	120	0.901	156	0.980	192	0.800	228	0.389	264	0.563	300	0.272	336	0.729
13	0.929	49	0.957	85	0.869	121	0.905	157	0.976	193	0.796	229	0.372	265	0.569	301	0.271	337	0.737
14	0.934	50	0.952	86	0.869	122	0.909	158	0.972	194	0.791	230	0.355	266	0.575	302	0.272	338	0.744
15	0.940	51	0.947	87	0.869	123	0.914	159	0.968	195	0.786	231	0.340	267	0.579	303	0.276	339	0.751
16	0.945	52	0.942	88	0.869	124	0.919	160	0.964	196	0.780	232	0.325	268	0.581	304	0.282	340	0.758
17	0.951	53	0.937	89	0.870	125	0.924	161	0.959	197	0.775	233	0.312	269	0.583	305	0.291	341	0.764
18	0.956	54	0.932	90	0.870	126	0.928	162	0.954	198	0.769	234	0.300	270	0.584	306	0.301	342	0.770
19	0.961	55	0.927	91	0.870	127	0.933	163	0.949	199	0.763	235	0.290	271	0.583	307	0.313	343	0.776
20	0.965	56	0.922	92	0.870	128	0.938	164	0.944	200	0.756	236	0.282	272	0.581	308	0.327	344	0.782
21	0.970	57	0.917	93	0.869	129	0.943	165	0.939	201	0.750	237	0.276	273	0.578	309	0.342	345	0.787
22	0.974	58	0.912	94	0.869	130	0.948	166	0.933	202	0.742	238	0.272	274	0.574	310	0.358	346	0.792
23	0.978	59	0.907	95	0.869	131	0.953	167	0.928	203	0.735	239	0.271	275	0.569	311	0.374	347	0.797
24	0.982	60	0.903	96	0.869	132	0.958	168	0.922	204	0.727	240	0.273	276	0.562	312	0.391	348	0.802
25	0.985	61	0.899	97	0.869	133	0.962	169	0.916	205	0.718	241	0.277	277	0.555	313	0.409	349	0.806
26	0.989	62	0.895	98	0.868	134	0.967	170	0.911	206	0.709	242	0.283	278	0.547	314	0.426	350	0.811
27	0.991	63	0.891	99	0.868	135	0.971	171	0.905	207	0.700	243	0.292	279	0.537	315	0.444	351	0.815
28	0.994	64	0.888	100	0.868	136	0.975	172	0.899	208	0.690	244	0.302	280	0.527	316	0.462	352	0.820
29	0.996	65	0.884	101	0.868	137	0.978	173	0.894	209	0.679	245	0.314	281	0.515	317	0.479	353	0.824
30	0.997	66	0.882	102	0.868	138	0.982	174	0.888	210	0.668	246	0.327	282	0.503	318	0.497	354	0.829
31	0.999	67	0.879	103	0.868	139	0.985	175	0.883	211	0.657	247	0.341	283	0.490	319	0.514	355	0.833
32	1.000	68	0.877	104	0.868	140	0.988	176	0.877	212	0.644	248	0.356	284	0.476	320	0.530	356	0.838
33	1.000	69	0.875	105	0.868	141	0.990	177	0.872	213	0.632	249	0.371	285	0.462	321	0.547	357	0.843
34	1.000	70	0.873	106	0.869	142	0.992	178	0.867	214	0.618	250	0.387	286	0.447	322	0.562	358	0.847
35	1.000	71	0.871	107	0.869	143	0.994	179	0.861	215	0.604	251	0.403	287	0.432	323	0.578	359	0.852

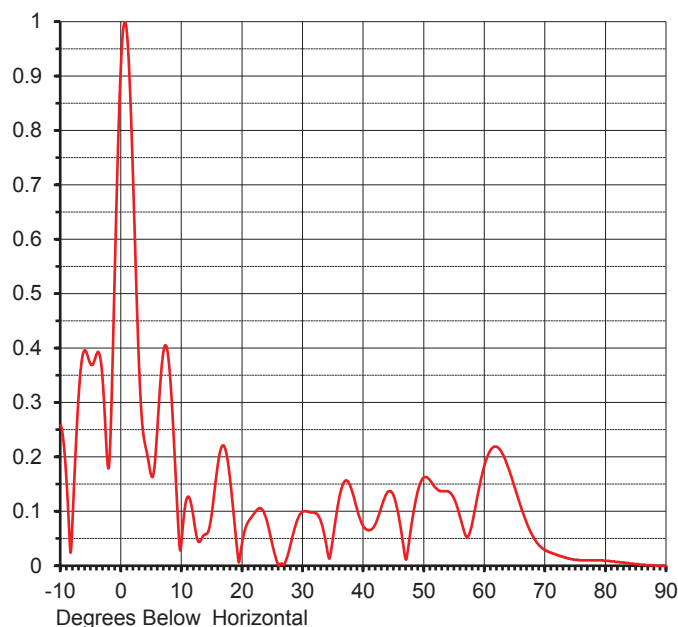
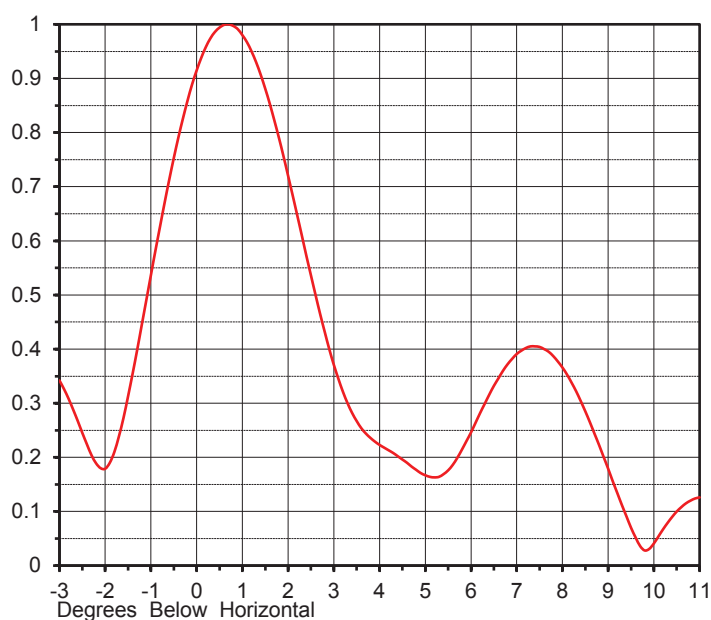
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## ELEVATION PATTERN

Proposal No. **C-71053**  
 Date **5-Dec-17**  
 Call Letters **WHDH**  
 Channel **42**  
 Frequency **641 MHz**  
 Antenna Type **TFU-16WB C160**

RMS Directivity at Main Lobe **13.5 ( 11.31 dB )**  
 RMS Directivity at Horizontal **11.9 ( 10.76 dB )**  
**Calculated**

Beam Tilt **0.55 deg**  
 Pattern Number **16W135055**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.258	10.0	0.054	30.0	0.100	50.0	0.163	70.0	0.029
-9.0	0.145	11.0	0.127	31.0	0.099	51.0	0.156	71.0	0.024
-8.0	0.101	12.0	0.081	32.0	0.097	52.0	0.142	72.0	0.020
-7.0	0.322	13.0	0.045	33.0	0.079	53.0	0.137	73.0	0.016
-6.0	0.396	14.0	0.058	34.0	0.027	54.0	0.136	74.0	0.013
-5.0	0.369	15.0	0.103	35.0	0.057	55.0	0.121	75.0	0.011
-4.0	0.391	16.0	0.192	36.0	0.127	56.0	0.086	76.0	0.010
-3.0	0.326	17.0	0.219	37.0	0.156	57.0	0.053	77.0	0.010
-2.0	0.190	18.0	0.153	38.0	0.140	58.0	0.083	78.0	0.010
-1.0	0.583	19.0	0.041	39.0	0.100	59.0	0.140	79.0	0.010
0.0	0.938	20.0	0.047	40.0	0.071	60.0	0.187	80.0	0.009
1.0	0.967	21.0	0.082	41.0	0.066	61.0	0.214	81.0	0.008
2.0	0.684	22.0	0.097	42.0	0.078	62.0	0.218	82.0	0.007
3.0	0.345	23.0	0.105	43.0	0.111	63.0	0.204	83.0	0.006
4.0	0.218	24.0	0.083	44.0	0.136	64.0	0.176	84.0	0.004
5.0	0.164	25.0	0.035	45.0	0.127	65.0	0.142	85.0	0.003
6.0	0.264	26.0	0.000	46.0	0.077	66.0	0.107	86.0	0.002
7.0	0.397	27.0	0.005	47.0	0.011	67.0	0.076	87.0	0.001
8.0	0.353	28.0	0.043	48.0	0.083	68.0	0.053	88.0	0.000
9.0	0.156	29.0	0.083	49.0	0.140	69.0	0.037	89.0	0.000
								90.0	0.000

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## **ENVIRONMENTAL AND RADIO FREQUENCY SAFETY**

The licensee of WHDH is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WHDH antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

The predicted emissions of WHDH must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For WHDH, which now operates on television Channel 42 (638-644 MHz), the MPE is 427.33 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) in an “uncontrolled” environment and 2,136.7  $\mu\text{W}/\text{cm}^2$  in a “controlled” environment. The proposed WHDH auxiliary facility will operate with a maximum ERP of 900 kW from a horizontally polarized directional transmitting antenna with a centerline height of 245 meters above ground level (AGL). Considering a predicted vertical plane relative field factor of 0.300 the WHDH facility is predicted to produce a power density at two meters above ground level of 46.593  $\mu\text{W}/\text{cm}^2$ , which is 10.90% of the FCC guideline value for an “uncontrolled” environment, and 2.18% of the FCC’s guideline value for “controlled” environments. Other than WHDH’s main and proposed auxiliary facilities there are no other broadcast facilities located at the WHDH licensed site. The total estimated percentage of the ANSI value at the site, including the cumulative radiation from all WHDH’s authorizations and proposed auxiliary facility, is 33.69% of the limit applicable to “uncontrolled” environments, and 6.74% of the limit for “controlled” environments. (See Appendix A)

APPENDIX A

**SUMMARY OF RADIOFREQUENCY  
RADIATION STUDY**  
WHDH, Boston, MA  
Channel 42, 900 kW, 233.7 m HAAT  
Auxiliary Antenna - Dielectric model TFU-16WB C160  
April, 2018

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLAR- IZATION</u>	<u>ANTENNA HEIGHT</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR</u>	<u>WORST-CASE PREDICTED POWER DENSITY (<math>\mu\text{W}/\text{cm}^2</math>)</u>	<u>FCC UNCONTROLLED LIMIT (<math>\mu\text{W}/\text{cm}^2</math>)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WHDH-Aux	DT	42	641	H	243	900.000	0.300	46.593	427.33	10.90%
WHDH-main**	DT	42	641	H	313.4	1000.000	0.300	31.008	427.33	7.26%
WHDH-repack**	DT	35	599	H & V	313.4	1000.000	0.300	62.017	399.33	15.53%
<b>TOTAL PERCENTAGE OF FCC GUIDELINE VALUE =</b>										<b>33.69%</b>

\* For television stations a very conservative vertical relative field factor of 0.3 was assumed pursuant to OET Bulletin 65.

\*\* The WHDH ch 42 auxiliary facility will be active only when the main ch 42 facility is inactive. The main ch 35 facility will be active only during testing and after transition phase 8.



**STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF AN APPLICATION FOR A  
PRE REPACK CONSTRUCTION PERMIT  
FOR AN AUXILIARY ANTENNA  
WHDH - BOSTON, MASSACHUSETTS  
DTV - CH. 42 - 900 kW - 233.7 m HAAT**

Prepared for: WHDH-TV

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Licensed Professional Engineer in the Commonwealth of Virginia, License No. 7418, and in the State of New York, License No. 63418.

**GENERAL**

This office has been authorized by WHDH-TV, licensee of WHDH, channel 42, facility ID number 72145, licensed to Boston, Massachusetts, to prepare this statement, FCC Form 2100, Schedule A, its technical sections, and the associated exhibits in support of an application for a construction permit for an auxiliary antenna to be used to broadcast on pre-repack channel 42 during the transition process. This auxiliary antenna will permit WHDH to continue its broadcast operation on channel 42 while the former channel 42 antenna is removed permit the installation of its authorized channel 35 antenna in its place.

**AUTHORIZED FACILITY**

WHDH's current authorization permits a facility with an ERP of 1000 kW at a Height Above Average Terrain (HAAT) of 288 meters. WHDH's authorized antenna is a Dielectric

**STATEMENT OF JOHN E. HIDLE, P.E.**  
**WHDH - Boston, Massachusetts**  
**PAGE 2**

Model TFU-GBH-R O6 channel 42 omni-directional horizontally polarized antenna. The antenna is mounted on WHDH's tower support structure, FCC registration number 1005862, with its radiation center line located 298 meters above ground level. The authorized antenna employs an electrical beam-tilt of 1 degree below the horizontal plane.

**PROPOSED DIRECTIONAL AUXILIARY ANTENNA**

The applicant proposes to install a new Dielectric model TFU-16WB-C160 horizontally polarized directional transmitting antenna at WHDH's licensed site, with its center of radiation located at a height above ground of 245 meters, and a height above average terrain of 233.7 meters. The antenna manufacturer's horizontal plane azimuth radiation pattern is shown and tabulated in exhibit 2. The manufacturer's vertical plane elevation radiation pattern, illustrating the antenna's radiation characteristics above and below the horizontal plane is shown and tabulated in Exhibit 3.

**PROPOSED AUXILIARY FACILITY**

WHDH proposes an auxiliary facility for its channel 42 broadcast operation to be utilized during the installation of its authorized new channel 35 post repack antenna. Once the authorized channel 35 antenna is installed and tested WHDH will continue its channel 42 broadcasting on the auxiliary antenna facility until its phase 8 transition date. At that time WHDH will commence broadcasting on channel 35 and cease operations on channel 42. The auxiliary antenna is designed to operate on channel 35 as well, and WHDH will seek authority to use the antenna as a channel 35 auxiliary facility.

## **PREDICTED COVERAGE CONTOURS**

The predicted coverage contours were calculated in accordance with the method described in Section 73.684 of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the National Geophysical Data Center Thirty Second Point Database (TPG-0050) as prescribed in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. Exhibit 1 contains the predicted DTV Noise Limited (41 dBu) contours for both the main and auxiliary facilities. It is clear that the predicted 41 dBu auxiliary contour remains wholly within, the predicted 41 dBu contour for the main facility. The instant proposal therefore complies with Section 73.1675(a)(1)(iii) of the FCC's Rules.

## **BLANKETING AND INTERMODULATION INTERFERENCE**

Other broadcast and non-broadcast technical facilities are co-located with, or located within 10 km of the WHDH transmitter/antenna site. The applicant recognizes its responsibility to remedy complaints of interference which might result from this proposal in accordance with applicable Rules.

## **RADIO FREQUENCY IMPACT**

The FCC's guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86



(1986) and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines define a maximum permissible exposure (MPE) level for occupational or “controlled” situations, and for “uncontrolled” environments that apply in all other cases that might affect the general public. The FCC Office of Engineering and Technology’s technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), provides assistance to determine whether FCC-regulated transmitting facilities, operations or devices comply with guidelines for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. OET Bulletin No. 65 contains the technical information necessary to evaluate compliance with the FCC’s policies and guidelines.

The Maximum Permitted Exposure (MPE) level for broadcast facilities that operate on a frequency between 30 MHz and 300 MHz is 200 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) for an “uncontrolled” environment, and is 1000 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) for a “controlled” environment. The MPE level for broadcast facilities that operate on a frequency between 300 MHz and 1500 MHz, primarily UHF TV stations, is determined, in  $\mu\text{W}/\text{cm}^2$ , for an “uncontrolled” environment by dividing the operating frequency in MHz by 1.5, and is similarly determined for a “controlled” environment by dividing the operating frequency in MHz by 0.3.

The predicted emissions of WHDH must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For WHDH, which now

**STATEMENT OF JOHN E. HIDLE, P.E.**  
**WHDH - Boston, Massachusetts**  
**PAGE 5**

operates on television Channel 42 (638-644 MHz), the MPE is 427.33 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) in an "uncontrolled" environment and 2,136.7  $\mu\text{W}/\text{cm}^2$  in a "controlled" environment. The proposed WHDH auxiliary facility will operate with a maximum ERP of 900 kW from a horizontally polarized directional transmitting antenna with a centerline height of 245 meters above ground level (AGL). Considering a predicted vertical plane relative field factor of 0.300 the WHDH facility is predicted to produce a power density at two meters above ground level of 46.593  $\mu\text{W}/\text{cm}^2$ , which is 10.90% of the FCC guideline value for an "uncontrolled" environment, and 2.18% of the FCC's guideline value for "controlled" environments. Other than WHDH's main and proposed auxiliary facilities there are no other broadcast facilities located at the WHDH licensed site. The total estimated percentage of the ANSI value at the site, including the cumulative radiation from all WHDH's authorizations and proposed auxiliary facility, is 33.69% of the limit applicable to "uncontrolled" environments, and 6.74% of the limit for "controlled" environments. (See Appendix A)

**OCCUPATIONAL SAFETY**

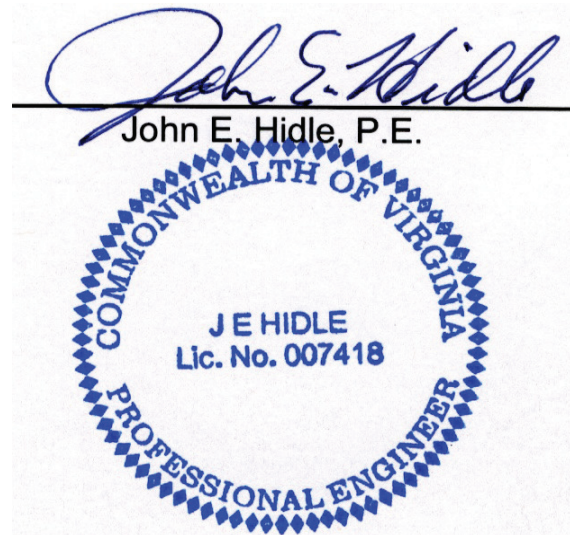
The licensee of WHDH is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WHDH antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

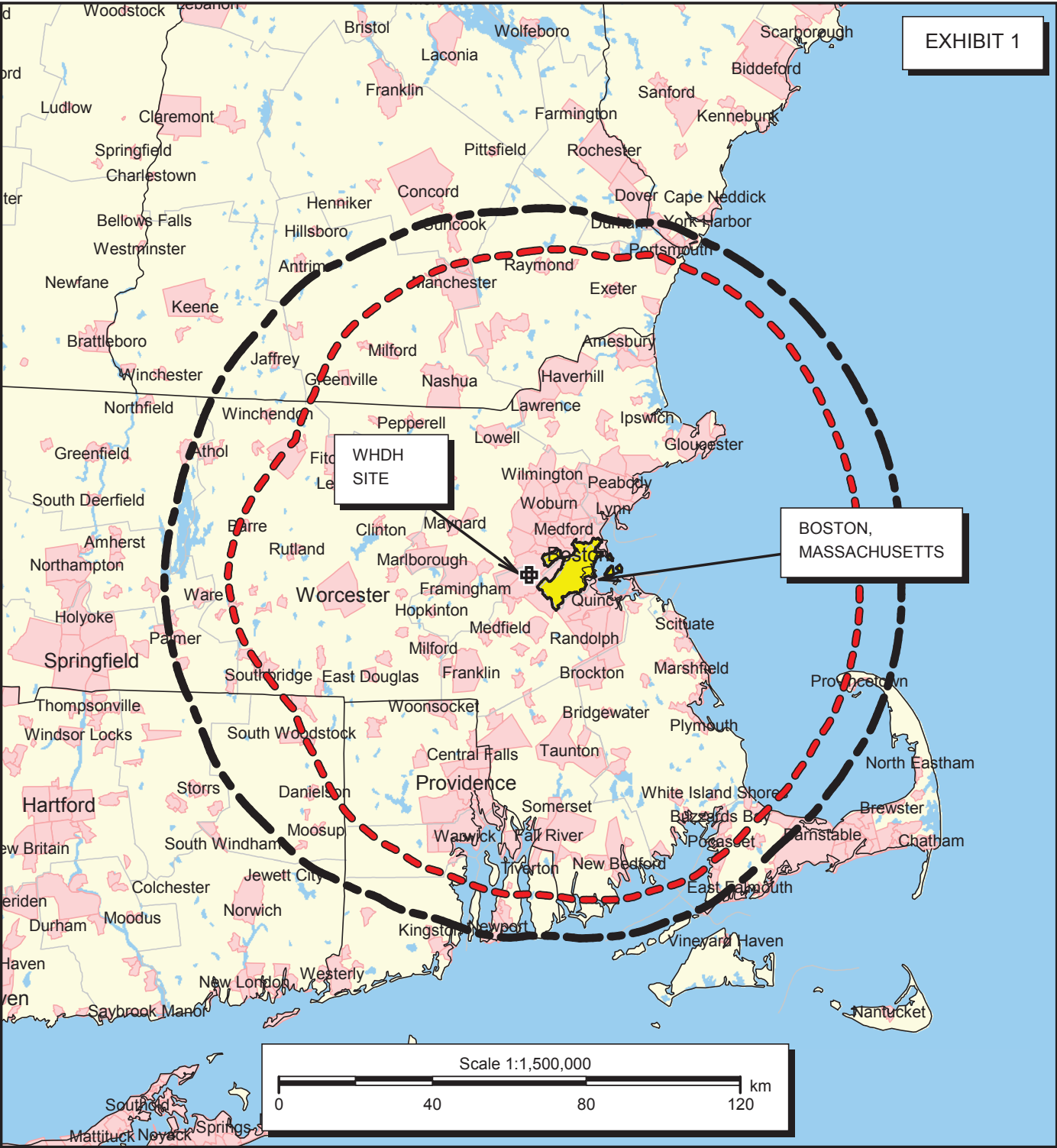
**STATEMENT OF JOHN E. HIDLE, P.E.**  
**WHDH - Boston, Massachusetts**  
**PAGE 6**

**SUMMARY**

It is submitted that the instant application for an auxiliary antenna for WHDH to use during the phase transition to its post repack channel 35, as described herein, complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement, FCC Form 2100, its technical sections, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: April 30, 2018





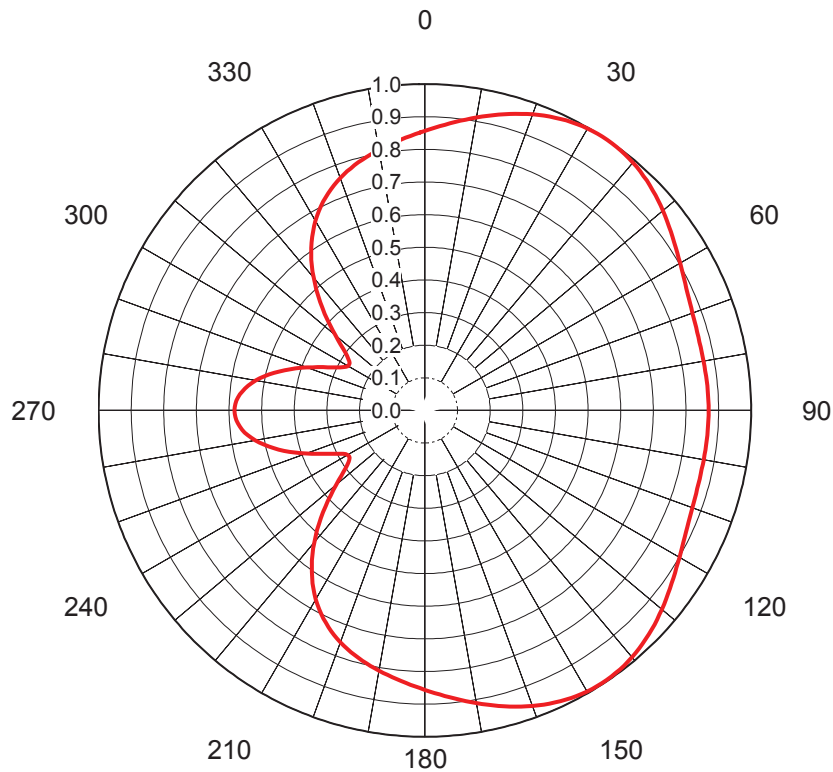
**PREDICTED COVERAGE CONTOURS**

**WHDH - BOSTON, MASSACHUSETTS**  
**DTV Channel 42 - 1000 kW ERP - 288 M HAAT**  
**APRIL, 2018**

—————  
Licensed  
Predicted Noise Limited 41 dBu  
F(50,90) Coverage Contour



- - - - -  
Proposed Auxiliary  
Predicted Noise Limited 41 dBu  
F(50,90) Coverage Contour



## AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-71053**  
 Date **5-Dec-17**  
 Call Letters **WHDH**  
 Channel **42**  
 Frequency **641 MHz**  
 Antenna Type **TFU-16WB C160**  
 Gain **1.66 (2.21dB)**  
 Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.857	36	0.999	72	0.870	108	0.870	144	0.995	180	0.856	216	0.590	252	0.418	288	0.416	324	0.593
1	0.862	37	0.998	73	0.869	109	0.871	145	0.996	181	0.851	217	0.575	253	0.434	289	0.401	325	0.607
2	0.867	38	0.996	74	0.868	110	0.873	146	0.996	182	0.847	218	0.559	254	0.449	290	0.385	326	0.621
3	0.873	39	0.994	75	0.868	111	0.874	147	0.996	183	0.842	219	0.544	255	0.464	291	0.369	327	0.634
4	0.878	40	0.992	76	0.867	112	0.876	148	0.996	184	0.837	220	0.527	256	0.478	292	0.354	328	0.647
5	0.883	41	0.989	77	0.867	113	0.878	149	0.995	185	0.832	221	0.511	257	0.492	293	0.339	329	0.659
6	0.889	42	0.986	78	0.867	114	0.881	150	0.994	186	0.828	222	0.493	258	0.505	294	0.325	330	0.671
7	0.894	43	0.983	79	0.867	115	0.883	151	0.993	187	0.823	223	0.476	259	0.517	295	0.312	331	0.682
8	0.900	44	0.979	80	0.867	116	0.886	152	0.991	188	0.819	224	0.459	260	0.528	296	0.300	332	0.692
9	0.906	45	0.975	81	0.868	117	0.890	153	0.989	189	0.814	225	0.441	261	0.538	297	0.290	333	0.702
10	0.912	46	0.971	82	0.868	118	0.893	154	0.986	190	0.810	226	0.423	262	0.548	298	0.282	334	0.711
11	0.917	47	0.966	83	0.868	119	0.897	155	0.983	191	0.805	227	0.406	263	0.556	299	0.276	335	0.720
12	0.923	48	0.962	84	0.868	120	0.901	156	0.980	192	0.800	228	0.389	264	0.563	300	0.272	336	0.729
13	0.929	49	0.957	85	0.869	121	0.905	157	0.976	193	0.796	229	0.372	265	0.569	301	0.271	337	0.737
14	0.934	50	0.952	86	0.869	122	0.909	158	0.972	194	0.791	230	0.355	266	0.575	302	0.272	338	0.744
15	0.940	51	0.947	87	0.869	123	0.914	159	0.968	195	0.786	231	0.340	267	0.579	303	0.276	339	0.751
16	0.945	52	0.942	88	0.869	124	0.919	160	0.964	196	0.780	232	0.325	268	0.581	304	0.282	340	0.758
17	0.951	53	0.937	89	0.870	125	0.924	161	0.959	197	0.775	233	0.312	269	0.583	305	0.291	341	0.764
18	0.956	54	0.932	90	0.870	126	0.928	162	0.954	198	0.769	234	0.300	270	0.584	306	0.301	342	0.770
19	0.961	55	0.927	91	0.870	127	0.933	163	0.949	199	0.763	235	0.290	271	0.583	307	0.313	343	0.776
20	0.965	56	0.922	92	0.870	128	0.938	164	0.944	200	0.756	236	0.282	272	0.581	308	0.327	344	0.782
21	0.970	57	0.917	93	0.869	129	0.943	165	0.939	201	0.750	237	0.276	273	0.578	309	0.342	345	0.787
22	0.974	58	0.912	94	0.869	130	0.948	166	0.933	202	0.742	238	0.272	274	0.574	310	0.358	346	0.792
23	0.978	59	0.907	95	0.869	131	0.953	167	0.928	203	0.735	239	0.271	275	0.569	311	0.374	347	0.797
24	0.982	60	0.903	96	0.869	132	0.958	168	0.922	204	0.727	240	0.273	276	0.562	312	0.391	348	0.802
25	0.985	61	0.899	97	0.869	133	0.962	169	0.916	205	0.718	241	0.277	277	0.555	313	0.409	349	0.806
26	0.989	62	0.895	98	0.868	134	0.967	170	0.911	206	0.709	242	0.283	278	0.547	314	0.426	350	0.811
27	0.991	63	0.891	99	0.868	135	0.971	171	0.905	207	0.700	243	0.292	279	0.537	315	0.444	351	0.815
28	0.994	64	0.888	100	0.868	136	0.975	172	0.899	208	0.690	244	0.302	280	0.527	316	0.462	352	0.820
29	0.996	65	0.884	101	0.868	137	0.978	173	0.894	209	0.679	245	0.314	281	0.515	317	0.479	353	0.824
30	0.997	66	0.882	102	0.868	138	0.982	174	0.888	210	0.668	246	0.327	282	0.503	318	0.497	354	0.829
31	0.999	67	0.879	103	0.868	139	0.985	175	0.883	211	0.657	247	0.341	283	0.490	319	0.514	355	0.833
32	1.000	68	0.877	104	0.868	140	0.988	176	0.877	212	0.644	248	0.356	284	0.476	320	0.530	356	0.838
33	1.000	69	0.875	105	0.868	141	0.990	177	0.872	213	0.632	249	0.371	285	0.462	321	0.547	357	0.843
34	1.000	70	0.873	106	0.869	142	0.992	178	0.867	214	0.618	250	0.387	286	0.447	322	0.562	358	0.847
35	1.000	71	0.871	107	0.869	143	0.994	179	0.861	215	0.604	251	0.403	287	0.432	323	0.578	359	0.852

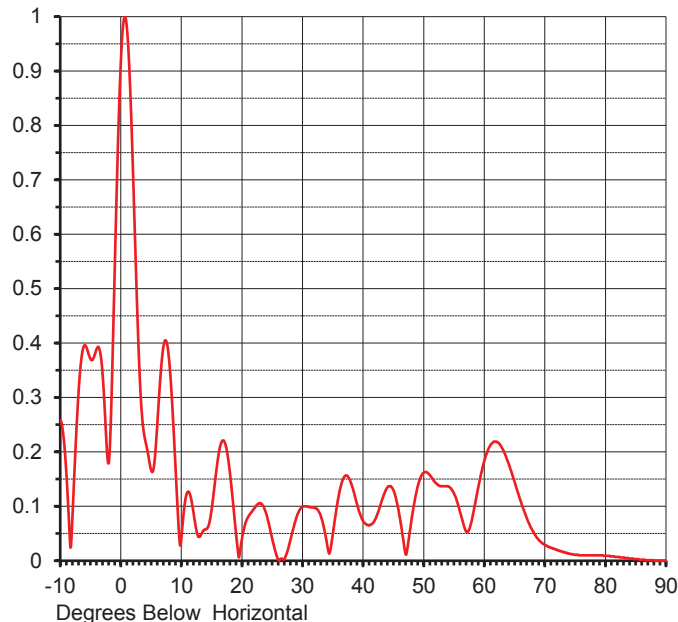
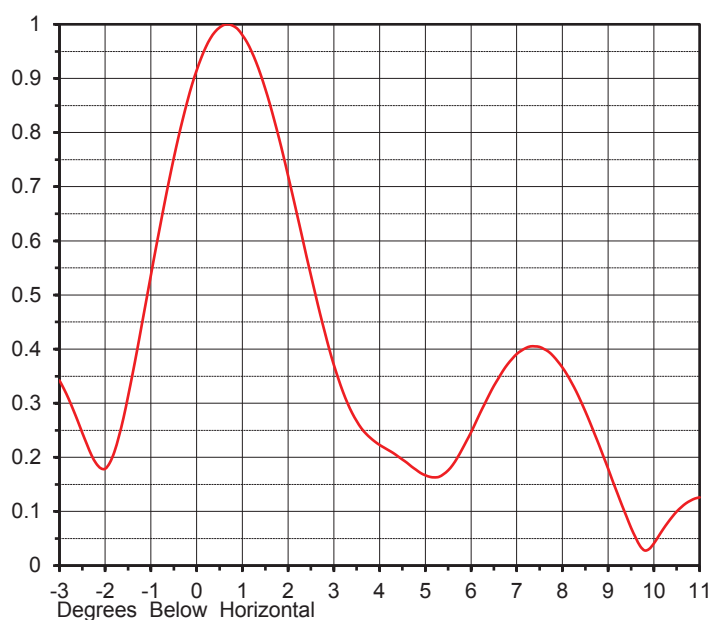
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## ELEVATION PATTERN

Proposal No. **C-71053**  
 Date **5-Dec-17**  
 Call Letters **WHDH**  
 Channel **42**  
 Frequency **641 MHz**  
 Antenna Type **TFU-16WB C160**

RMS Directivity at Main Lobe **13.5 ( 11.31 dB )**  
 RMS Directivity at Horizontal **11.9 ( 10.76 dB )**  
**Calculated**

Beam Tilt **0.55 deg**  
 Pattern Number **16W135055**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.258	10.0	0.054	30.0	0.100	50.0	0.163	70.0	0.029
-9.0	0.145	11.0	0.127	31.0	0.099	51.0	0.156	71.0	0.024
-8.0	0.101	12.0	0.081	32.0	0.097	52.0	0.142	72.0	0.020
-7.0	0.322	13.0	0.045	33.0	0.079	53.0	0.137	73.0	0.016
-6.0	0.396	14.0	0.058	34.0	0.027	54.0	0.136	74.0	0.013
-5.0	0.369	15.0	0.103	35.0	0.057	55.0	0.121	75.0	0.011
-4.0	0.391	16.0	0.192	36.0	0.127	56.0	0.086	76.0	0.010
-3.0	0.326	17.0	0.219	37.0	0.156	57.0	0.053	77.0	0.010
-2.0	0.190	18.0	0.153	38.0	0.140	58.0	0.083	78.0	0.010
-1.0	0.583	19.0	0.041	39.0	0.100	59.0	0.140	79.0	0.010
0.0	0.938	20.0	0.047	40.0	0.071	60.0	0.187	80.0	0.009
1.0	0.967	21.0	0.082	41.0	0.066	61.0	0.214	81.0	0.008
2.0	0.684	22.0	0.097	42.0	0.078	62.0	0.218	82.0	0.007
3.0	0.345	23.0	0.105	43.0	0.111	63.0	0.204	83.0	0.006
4.0	0.218	24.0	0.083	44.0	0.136	64.0	0.176	84.0	0.004
5.0	0.164	25.0	0.035	45.0	0.127	65.0	0.142	85.0	0.003
6.0	0.264	26.0	0.000	46.0	0.077	66.0	0.107	86.0	0.002
7.0	0.397	27.0	0.005	47.0	0.011	67.0	0.076	87.0	0.001
8.0	0.353	28.0	0.043	48.0	0.083	68.0	0.053	88.0	0.000
9.0	0.156	29.0	0.083	49.0	0.140	69.0	0.037	89.0	0.000
								90.0	0.000

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APPENDIX A

**SUMMARY OF RADIOFREQUENCY  
RADIATION STUDY**  
WHDH, Boston, MA  
Channel 42, 900 kW, 233.7 m HAAT  
Auxiliary Antenna - Dielectric model TFU-16WB C160  
April, 2018

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLAR- IZATION</u>	<u>ANTENNA HEIGHT</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR</u>	<u>WORST-CASE PREDICTED POWER DENSITY (<math>\mu\text{W}/\text{cm}^2</math>)</u>	<u>FCC UNCONTROLLED LIMIT (<math>\mu\text{W}/\text{cm}^2</math>)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WHDH-Aux	DT	42	641	H	243	900.000	0.300	46.593	427.33	10.90%
WHDH-main**	DT	42	641	H	313.4	1000.000	0.300	31.008	427.33	7.26%
WHDH-repack**	DT	35	599	H & V	313.4	1000.000	0.300	62.017	399.33	15.53%
<b>TOTAL PERCENTAGE OF FCC GUIDELINE VALUE =</b>										<b>33.69%</b>

\* For television stations a very conservative vertical relative field factor of 0.3 was assumed pursuant to OET Bulletin 65.

\*\* The WHDH ch 42 auxiliary facility will be active only when the main ch 42 facility is inactive. The main ch 35 facility will be active only during testing and after transition phase 8.



## WHDH - BOSTON, MASSACHUSETTS Longley-Rice Interference Analysis April 2018

tvstudy v2.2.5 (4uoc83)  
Database: localhost, Study: WHDH Aux C160 900K p55, Model: Longley-Rice  
Start: 2018.04.30 15:07:01

Study created: 2018.04.30 15:07:01

Study build station data: LMS TV 2018-04-30

Proposal: WHDH D42 DT APP BOSTON, MA  
File number: WHDH Aux C160 900K p55  
Facility ID: 72145  
Station data: User record  
Record ID: 276  
Country: U.S.  
Zone: I

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

Search options:  
Non-U.S. records included  
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WEDY	D41	DT	LIC	NEW HAVEN, CT	BLANK0000001041	177.6 km
No	WSKG-TV	D42	DT	LIC	BINGHAMTON, NY	BLEDT20050526ACA	390.5
No	WTFX-TV	D42	DT	LIC	PHILADELPHIA, PA	BLCDT20120511ADN	420.6
Yes	WGBX-TV	D43	DT	LIC	BOSTON, MA	BLANK0000040354	1.7
No	WPXT	D43	DT	LIC	PORTLAND, ME	BLCDT20060714ABB	185.8
No	WCWN	D43	DT	LIC	SCHENECTADY, NY	BLCDT20110504ABZ	231.7
No	WFFF-TV	D43	DT	LIC	BURLINGTON, VT	BLCDT20070629AAM	277.9

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D42  
Latitude: 42 18 41.00 N (NAD83)  
Longitude: 71 12 58.00 W  
Height AMSL: 278.1 m  
HAAT: 288.0 m  
Peak ERP: 900 kW  
Antenna: DIE TFU16 WB C160 Rtd 90 dgs 0.0 deg  
Elev Pattern: Generic  
Elec Tilt: 0.55

41.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	661 kW	230.0 m	82.6 km
45.0	850	260.0	88.3
90.0	681	246.4	84.4
135.0	843	232.2	84.5
180.0	659	217.8	81.6
225.0	175	226.9	75.1
270.0	307	225.1	77.9
315.0	177	229.2	75.3



# **Appendix B - Interference Analysis** **WHDH - Boston, Massachusetts** **Channel 42 - 900 kW - Page 2**

Database HAAT does not agree with computed HAAT  
Database HAAT: 288 m    Computed HAAT: 233 m

Proposal 26.36 dBu contour does not cross Canadian border  
Distance to Canadian border: 301.2 km

Distance to Mexican border: 2961.3 km

Conditions at FCC monitoring station: Belfast ME  
Bearing: 35.3 degrees    Distance: 293.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 276.7 degrees    Distance: 2834.0 km

Study cell size: 2.00 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%

## ----- Interference to BLANK0000040354 LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance		
Desired:	WGBX-TV	D43	DT	LIC	BOSTON, MA	BLANK0000040354			
Undesireds:	WHDH	D42	DT	APP	BOSTON, MA	WHDH Aux C160 900K p55	1.7 km		
	WPXT	D43	DT	LIC	PORTLAND, ME	BLCDT20060714ABB	186.6		
	WCWN	D43	DT	LIC	SCHENECTADY, NY	BLCDT20110504ABZ	230.1		
	WFFF-TV	D43	DT	LIC	BURLINGTON, VT	BLCDT20070629AAM	277.3		
	WCSH	D44	DT	LIC	PORTLAND, ME	BLCDT20050705AAH	177.3		
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
30243.2	7,476,751	28857.4	7,378,958	28026.3	7,335,034	28018.3	7,332,502	0.03	0.03
Undesired				Total IX	Unique IX, before		Unique IX, after		
WHDH D42 DT APP			8.0	2,532			8.0	2,532	
WPXT D43 DT LIC			698.9	35,385	626.6	31,613	626.6	31,613	
WCWN D43 DT LIC			196.6	11,326	128.3	8,505	128.3	8,505	
WFFF-TV D43 DT LIC			24.0	530	0.0	0	0.0	0	
WCSH D44 DT LIC			4.0	933	0.0	0	0.0	0	

## ----- Interference to proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number				Distance	
Desired:	WHDH	D42	DT	APP	BOSTON, MA	WHDH	Aux	C160	900K	p55	
-----											
	Service area		Terrain-limited		IX-free		Percent IX				
	20675.8	6,909,055	20343.6	6,851,340	20343.6	6,851,340	0.00	0.00			



#### WHDH-D.C35

Boston, MA  
0000024842  
Channel: 35  
Latitude: 42-18-40.65 N  
Longitude: 071-12-59.80 W  
ERP: 1000.00 kW  
HAAT 304.1 m  
Frequency: 599.0 MHz  
AMSL Height: 348.5 m  
Elevation: 33.1 m  
Horiz. Pattern: Omni  
Study Date: 6/18/2018

#### Population Report for All Contours

2010 US Census

	Population	Housing Units	Area (sq. km)
WHDH.A42 (42) [ Boston, MA ]			
FCC F(50-90) 41.36 dBu	6,906,275	2,866,673	20942.0
WHDH-D.C35 (35) [ Boston, MA ]			
FCC F(50-90) 40.77 dBu	7,446,622	3,113,358	30176.9

#### STA Temporary Loss Area

Population	Area
540,347 people	9,234.9 km

WHDH.A42  
WHDH-D.C35

#### WHDH.A42

Boston, MA  
0000053795  
Channel: 42  
Latitude: 42-18-40.65 N  
Longitude: 071-12-59.80 W  
ERP: 900.00 kW  
HAAT 233.7 m  
Frequency: 641.0 MHz  
AMSL Height: 278.1 m  
Elevation: 33.1 m  
Horiz. Pattern: Directional  
Study Date: 6/18/2018

Scale 1:1,750,000

