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ENGINEERING STATEMENT IN SUPPORT OF SPECIAL TEMPORARY AUTHORITY (STA) REQUEST

PRESS COMMUNICATIONS, LLC
RADIO STATION WBHX (FM)
CH 259A - 99.7 MHZ
FCC Facility ID: 56233
TUCKERTON, NEW JERSEY

Engineering Narrative

This engineering statement supports a request by FM Radio Station WBHX (FM), Tuckerton, New Jersey, to operate from a temporary location with a simple 2-bay full-wave spaced directional antenna system with a maximum power of 2.5 kilowatts (2.5 kW). This STA requests operation using circular polarization.

The technical details of the STA proposal (facility parameters) are as follows; all elevations are rounded to the nearest meter:

Channel:	259A (99.7 MHZ)
NAD27 Latitude:	39-37-53.0 N
NAD27 Longitude:	74-21-11.6 W
Maximum ERP:	2.5 kW - Directional
Polarization:	Circular
Antenna Type:	Shively Labs - Model SLV-2
RCAMSL:	102.1 meters
Antenna AGL:	91.4 meters (300 feet)
HAAT:	94 meters (rounded)
ASR #:	1210613
Site Elevation:	10.7 meters Above Sea Level
Supporting Structure:	304.8 meters Overall Height

WBHX, Tuckerton, New Jersey has been operating from a temporary site due to the lost of its licensed site under authority granted in BESTA-20180524AAR. However, that site must be vacated as soon as possible in preparation of seasonal storms (i.e., coastal thunder storms and possible hurricane force winds) that occur from time to time. A less exposed site, (a developed/established site) is being proposed herein.

The current STA uses a trailer-mounted push-up antenna mast that must be removed or lowered for safety reasons during those times when the importance of broadcasting storm or other safety information to the public is at its highest priority. ¹

The authority requested herein is for an initial period of 180-days, which will allow the licensee to continue to seek and search for a permanent site for the facility in a very difficult restrictive land-use area.

Proposed Supporting Structure, FCC ASR number 1210613:

The supporting structure is an existing communication tower that has been registered and issued FCC ASR number:1210613.

Registration Detail			
Reg Number	1210613	Status	Constructed
File Number	A0854842	Constructed	12/20/2000
EMI	No	Dismantled	
NEPA	No		
Antenna Structure			
Structure Type	TOWER - Free standing or Guyed Structure used for Commu		
Location (in NAD83 Coordinates)			
Lat/Long	39-37-53.4 N 074-21-10.1 W	Address	3.3 KM NORTH OF
City, State	TUCKERTON , NJ		
Zip	08087	County	OCEAN
Center of AM Array		Position of Tower in Array	
Heights (meters)			
Elevation of Site Above Mean Sea Level		Overall Height Above Ground (AGL)	
10.7		304.8	
Overall Height Above Mean Sea Level		Overall Height Above Ground w/o Appurtenances	
315.5		303.6	

Proposed Service Contour , Site Details and Channel Study:

Figure 1 demonstrates that the proposed STA facility will not extend the service contour beyond that available to a maximum allowable facility at the current licensed site, i.e., 3-kilowatts at 100 meters HAAT toward any station of concern.

Figure 2 is a polar plot and tabulation of the proposed 2-bay directional antenna as provided by the manufacturer.

Figure 3 is an FM channel study / contour overlap study that shows that this proposal is clear of any prohibitive contour overlap with the exception of 2nd adjacent channel WJRZ-FM, Channel 261A, Manahawkin, New Jersey.

WJRZ-FM is located 22.58 kilometers distant from this proposal. The signal level at the STA site from WJRZ-FM is predicted to be 58.7 dBu, the interference contour from this proposal is the 98.7 dBu

¹ The push-up mast arrangement on a trailer is more closely associated with the wireless industry term “COW” i.e., a cellular site on wheels primarily used to restore cellular phone service during emergencies or increase call-handing capacity during large public events.

contour when a desired to undesired signal ratio of 40 dB is applied. As noted above, the proposed STA site lies beyond the predicted 60 dBu service contour of WJRZ-FM and the signal level at the site is predicted to be below the protected level.

Due to the proposed antenna height above ground; and the second adjacent channel relationship; and the location of its proposed STA facility in a sparsely populated (if any) area; interference to WJRZ-FM is not expected to be an issue. The immediate area within 1-kilometers (3280 feet) of the site has little or no structures as shown in the satellite photo from Google Earth included herein as Figure 4.

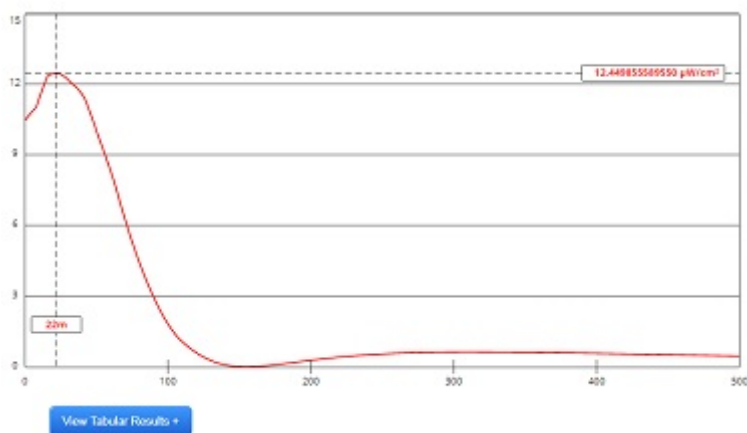
WBHX realizes the very special nature of its STA request and that this request is temporary. WBHX will reduce power or cease operation if objectionable interference complaints are received and are unable to be resolved as a result of its operation. No interference is predicted to occur.

Safety & Other Considerations:

The proposal was evaluated using the antenna parameters outlined herein using the on-line FCC FM Model software program. A "Type 1 EPA (other) antenna," with 2-bay/elements and 1.0 wave spacing between elements was specified. The maximum power density is predicted to be 0.01215 mW/cm² occurring within a horizontal distance of 22 meters from the antenna.

As the predicted worst-case EPA type 1 antenna value is well below the worker limit of 1.0 mW/cm² and is 6.1 percent of the 0.2 mW/cm² for the general public, this proposal is in compliance with the Commission's rules and no further study is warranted. Suitable warning sign(s) have been placed on the supporting structure. The public has no access to this tower site.

FCC FM MODEL OUTPUT POWER DENSITY - EPA TYPE 1 ANTENNA Shively Labs - Model SLV-2



Channel Selection	Channel 259 (99.7 MHz)		
Antenna Type *	EPA Type 1: Ring-and-Stub or "Other"		
Height (m)	91.4	Distance (m)	500
ERP-H (W)	2500	ERP-V (W)	2500
Num of Elements	2	Element Spacing (λ)	1.0
Num of Points	500	Apply	

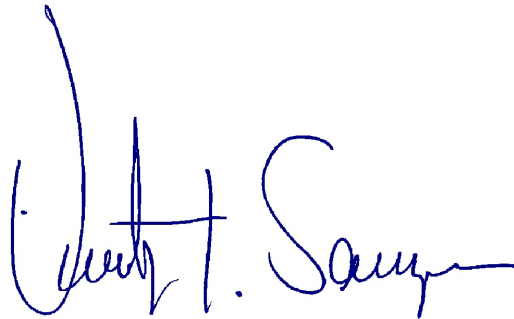
Public Interest:

WBHX seeks this STA in order to provide a more stable and useable service to its community of license and the surrounding area. One that is especially important during times of severe weather or other natural causes.

The site proposed is a well developed communications facility, located away from the immediate coastal area, with an on-site backup power source (AC generation equipment), as well as fiber optic cable for reliable program source delivery.

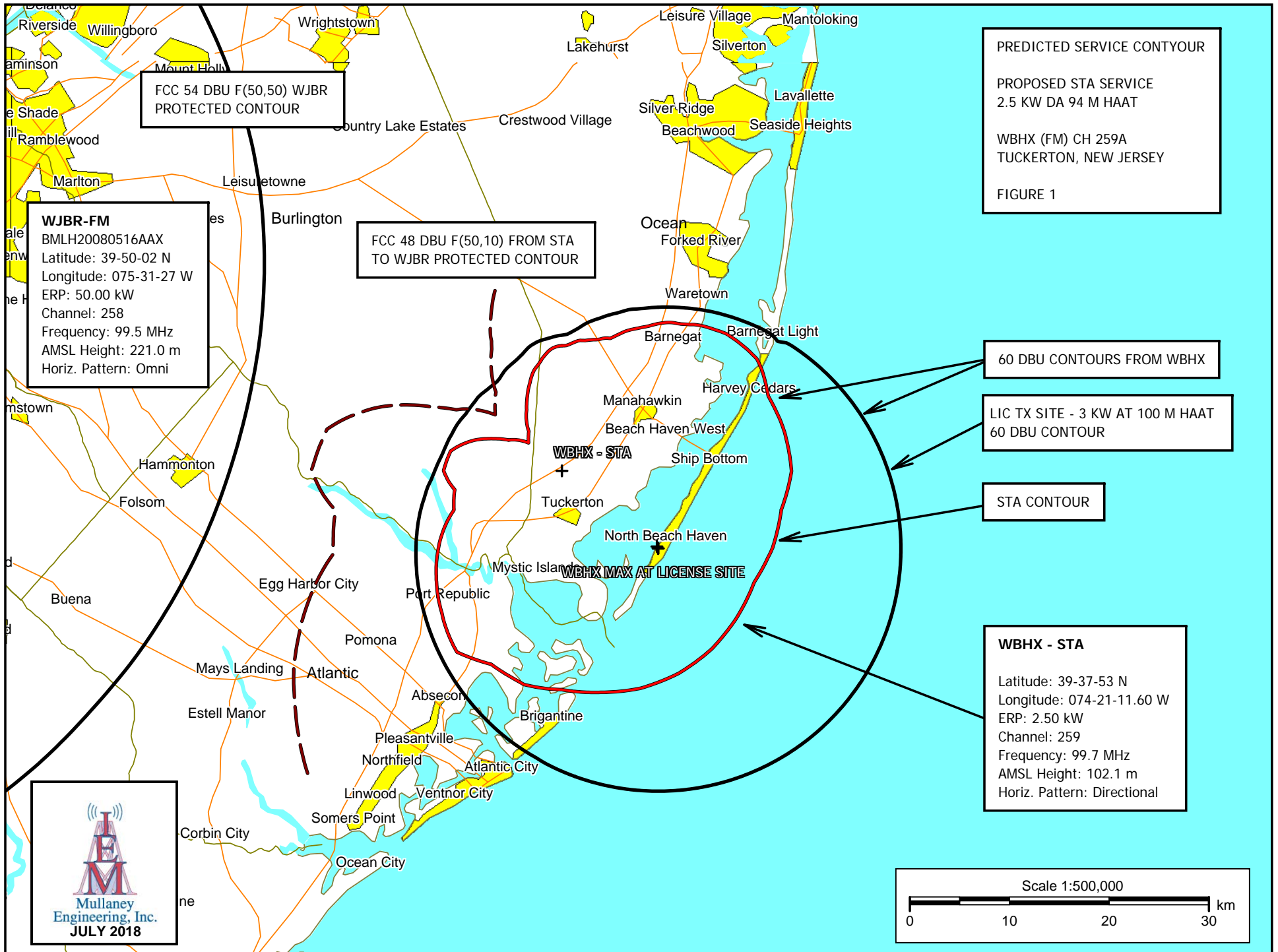
No interference to other facilities is likely to occur as a result of a grant of this request, and should any reported interference occur, WBHX will reduce power or cease operation as necessary.

July 27, 2018

A handwritten signature in blue ink, reading "Timothy Z. Sawyer". The signature is fluid and cursive, with the first name "Timothy" and last name "Sawyer" clearly legible.

Timothy Z. Sawyer, Consulting Engineer
Mullaney Engineering, Inc.
Tel: (703) 848-2130

Attachments: Figure 1: Proposed STA Service Contour Map
Figure 2: Proposed directional antenna pattern and tabulation (Manufacturers Data)
Figure 3: FM Channel/Contour Overlap Study
Figure 4: Satellite Site Photo to show rural and unpopulated nature of the area within 1-kilometer of the site with regards to 2nd adjacent channel interference.



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**WBHX (FM) TUCKERTON NJ
STA ANTENNA SLV-2
FIGURE 2**

**WBHX (FM) TUCKERTON NJ
STA ANTENNA SLV-2
99.7 MHZ MAX ERP 2.5 KW**

TOWER:
MOUNT:
MOUNT REMARKS:
A-DIMENSION INCHES

**CENTRAL 7-FT
POLE-LEG MT
SEE SKETCH
N/A**

HORIZONTAL PARASITIC:
B-DIMENSION:
C-DIMENSION
PARASITIC LENGTH:

**2-PLCS
FEED LINE BACK
1/4-W/L UP&DOWN
11.750**

VERTICAL PARASITIC
D-DIMENSION:
E-DIMENSION:
F-DIMENSION
PARASITIC LENGTH:

N/A

1st LEG AZIMUTH:
ANTENNA HEADING:
LADDER:

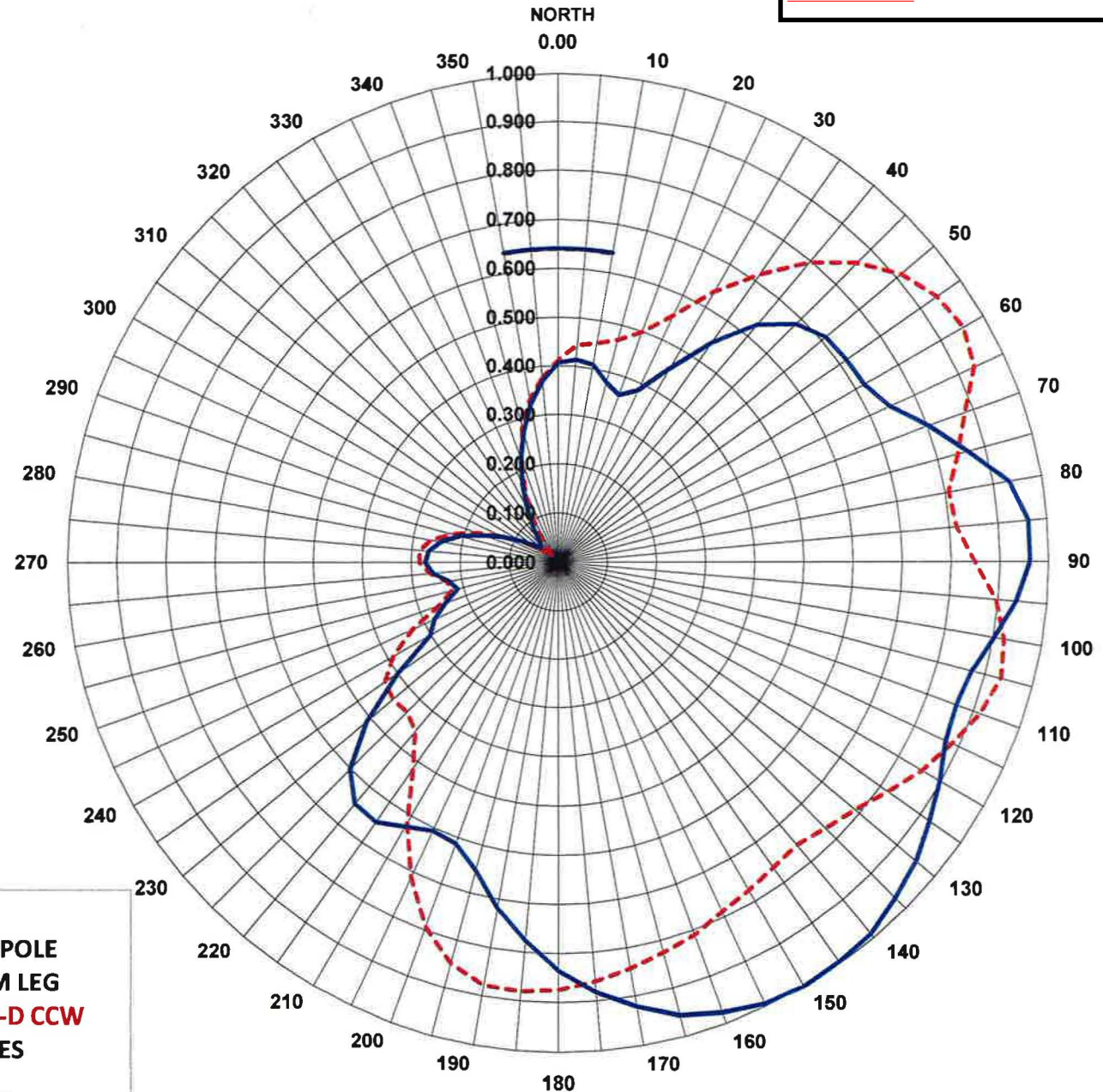
**39-DEGREES
119-DEGREES
N/A**

PATTERN NUMBER:

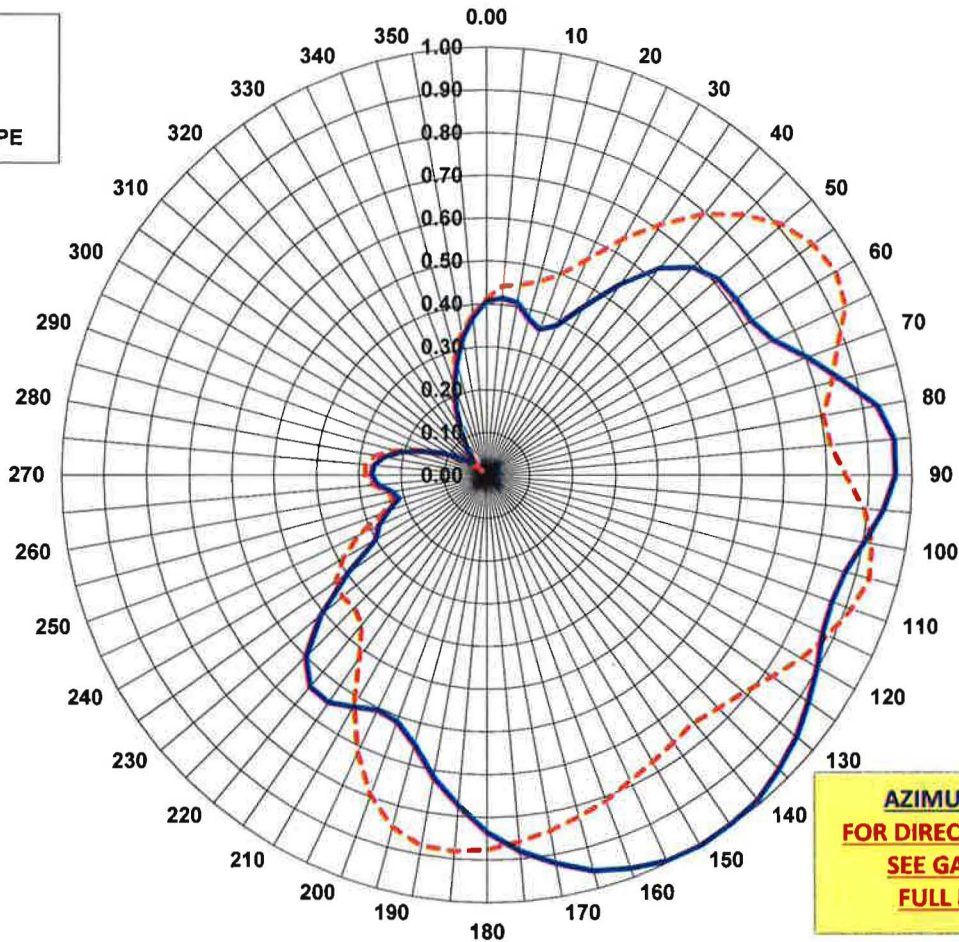
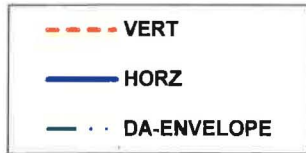
04-BB

VERTICAL RMS:
63.96%
HORIZONTAL RMS:
64.06%

**SLV-2 ANTENNA
MOUNTED ON 2.5-INCH POLE
OFF SET 27-INCHES FROM LEG
POLE MOUNT ROTATED 40-D CCW
AZIMUTH 119-DEGREES**



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AZIMUTH GAIN ONLY
 FOR DIRECTIONAL ANTENNA
 SEE GAIN SHEET FOR
 FULL POWER GAIN

SHOP ORDER SALES
 STATION N/A
 PATTERN 04-BB

V-RMS 63.96%
 H-RMS 64.06%

DA-RMS 0.00%
 DA 85% 0.00%

COMP HORZ
 RMS AZIMUTH
 68.781% 2.437

DEGREE	VERT	HORZ	DEGREE	VERT	HORZ	DEGREE	VERT	HORZ	DEGREE	VERT	HORZ
0	0.412	0.406	90	0.849	0.962	180	0.875	0.836	270	0.283	0.271
5	0.444	0.414	95	0.896	0.937	185	0.881	0.776	275	0.283	0.266
10	0.452	0.409	100	0.923	0.902	190	0.878	0.718	280	0.264	0.244
15	0.468	0.378	105	0.935	0.873	195	0.849	0.653	285	0.223	0.208
20	0.498	0.361	110	0.915	0.864	200	0.793	0.613	290	0.176	0.162
25	0.553	0.385	115	0.886	0.871	205	0.712	0.606	295	0.125	0.122
30	0.636	0.454	120	0.856	0.897	210	0.617	0.625	300	0.082	0.086
35	0.715	0.544	125	0.820	0.923	215	0.517	0.649	305	0.047	0.059
40	0.795	0.630	130	0.789	0.951	220	0.453	0.646	310	0.025	0.046
45	0.860	0.685	135	0.770	0.971	225	0.436	0.601	315	0.014	0.051
50	0.911	0.711	140	0.755	0.991	230	0.440	0.511	320	0.026	0.065
55	0.941	0.716	145	0.763	0.997	235	0.430	0.398	325	0.062	0.091
60	0.953	0.720	150	0.775	1.000	240	0.388	0.302	330	0.104	0.128
65	0.935	0.745	155	0.789	0.995	245	0.328	0.280	335	0.159	0.172
70	0.882	0.803	160	0.811	0.978	250	0.257	0.246	340	0.222	0.223
75	0.844	0.864	165	0.826	0.958	255	0.224	0.213	345	0.283	0.273
80	0.808	0.933	170	0.844	0.922	260	0.230	0.225	350	0.335	0.326
85	0.815	0.963	175	0.860	0.883	265	0.262	0.257	355	0.375	0.370

PROPOSED PATTERN WBHX (FM)
DA PATTERN TABULATION
MAX COMPOSITE FIELD

RELATIVE FIELD PATTERN								
AZ	VERT	HORIZ	MAX COMPOSITE		AZ	VERT	HORIZ	MAX COMPOSITE
0	0.412	0.406	0.412		180	0.875	0.836	0.875
10	0.452	0.409	0.452		190	0.878	0.718	0.878
20	0.498	0.361	0.498		200	0.793	0.613	0.793
30	0.636	0.454	0.636		210	0.817	0.625	0.817
40	0.795	0.630	0.795		220	0.453	0.646	0.646
50	0.911	0.711	0.911		230	0.440	0.511	0.511
60	0.953	0.720	0.953		240	0.388	0.302	0.388
70	0.882	0.803	0.882		250	0.257	0.246	0.257
80	0.808	0.933	0.933		260	0.230	0.225	0.230
90	0.849	0.962	0.962		270	0.283	0.271	0.283
100	0.823	0.902	0.902		280	0.264	0.244	0.264
110	0.915	0.864	0.915		290	0.176	0.162	0.176
120	0.856	0.897	0.897		300	0.082	0.086	0.086
130	0.789	0.951	0.951		310	0.025	0.046	0.046
140	0.755	0.991	0.991		320	0.026	0.065	0.065
150	0.775	1.000	1.000		330	0.104	0.128	0.128
160	0.811	0.978	0.978		340	0.220	0.223	0.223
170	0.844	0.922	0.922		350	0.335	0.326	0.335

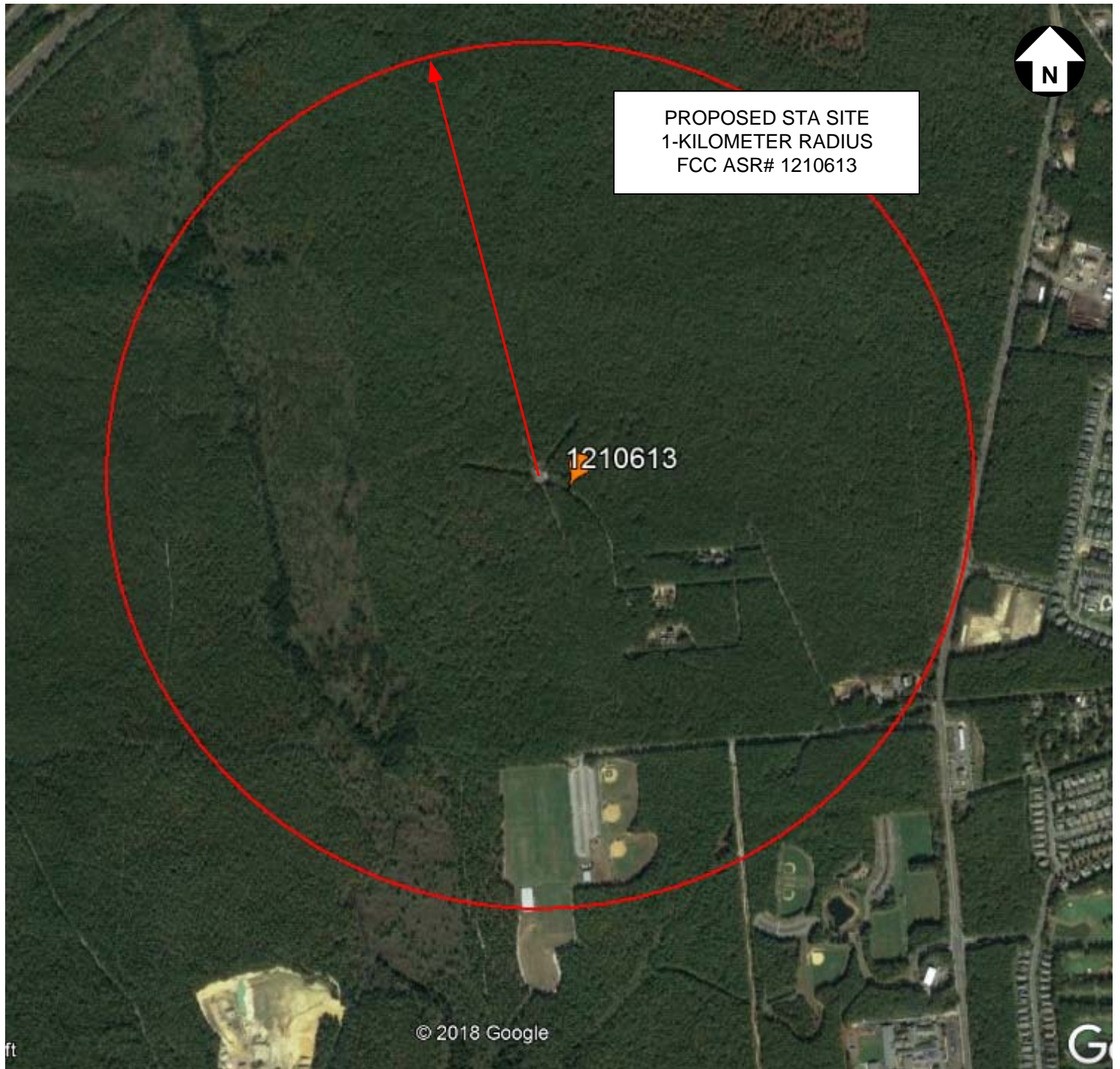
FIGURE 3

STA CHANNEL STUDY - CONTOUR STUDY											
WBHX (FM) TUCKERTON, NJ											
REFERENCE		CH# 259A - 99.7 MHz, Pwr= 2.5 kW DA, HAAT= 93.9 M, COR= 102 M								DISPLAY DATES	
39 37 53.0 N.		Average Protected F(50-50)= 22.5 km								DATA 07-23-18	
74 21 11.6 W.		Standard Directional								SEARCH 07-26-18	
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kW)	INT(km)	PRO(km)	*IN*	*OUT*
CITY			STATE	<--	FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)	
261A	WJRZ-FM	LIC	CX	34.7	22.58	39 47 54.0	1.700	2.1	24.0	3.8	-3.0 **
Manahawkin			NJ	214.8	BMLH20070910ACP	74 12 10.0	133	149	Beasley Media Group	Licens	
257A	WZBZ	LIC	CX	196.7	29.56	39 22 35.0	3.000	2.3	24.7	5.5	2.9
Pleasantville			NJ	16.6	BMLH20100420ABD	74 27 08.0	100	104	Equity Communications, L.p		
258B	WJBR-FM	LIC	CX	283.0	102.86	39 50 02.0	50.000	85.1	70.5	5.2	7.5
Wilmington			DE	102.3	BMLH20080516AAX	75 31 27.0	152	221	Beasley Media Group	Licens	
258B	WBAI	LIC	CN	14.0	127.90	40 44 54.0	4.300	74.1	62.9	113.0R	14.9M
New York			NY	194.2	BLH19940204KK	73 59 10.0	415	429	Pacifica Foundation, Inc.		
258B	WBAI	CP	CX	13.9	128.72	40 45 22.0	10.000	72.5	62.6	113.0R	15.7M
New York			NY	194.1	BPED20170803ABU	73 59 12.0	282	297	Pacifica Foundation, Inc.		

Terrain database is NGDC 30 SEC, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM
In & Out distances between contours are shown at closest points. Reference Zone= - Zone 1, Co to 3rd adjacent.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
**"affixed to 'IN' or 'OUT' values = site inside restricted contour.

** OVERLAP OF THE 2ND ADJACENT CHANNEL (WJRZ) 60DBU WITH 100 DBU CONTOUR FROM THIS PROPOSAL IS NOT EXPECTED TO CAUSE INTERFERENCE DUE TO THE NATURE OF THE SURROUNDING AREA, THE HEIGHT OF THE PROPOSED 2-BAY ANTENNA AT 91.4 METERS (300 FEET) AGL, AND THE SELECTIVE TUNING OF MODERN RADIOS.

SEE SITE PHOTO INCLUDED IN FIGURE 4. APPROPRIATE WAIVER(S) AS NECESSARY ARE REQUESTED DUE TO THE PUBLIC BENEFIT/INTEREST RESULTING IN A GRANT OF THIS STA PROPOSAL, AND THE LACK OF ANY ACTUAL INTERFERENCE TO OTHER FACILITIES. SEE FULL NARRATIVE STATEMENT.



WBHX (FM) STA SITE PHOTO

WBHX (FM) STA
TUCKERTON, NEW JERSEY

**FIGURE
4**

MONROVIA, MARYLAND U.S.A

SIZE
A

FSCM NO
N/A

DWG NO
20180727WBHX.F4

REV
NONE

(c) 2018, ALL RIGHTS RESERVED

SCALE
N/A

JULY 2018

SHEET