ENGINEERING EXHIBIT

Application for Digital Television Station Construction Permit

prepared for

Hearst Properties Inc.
WESH(DT) Daytona Beach, FL
Facility ID 25738
Ch. 11 64.6 kW 512 m

Hearst Properties Inc. ("Hearst") is the licensee of digital television station WESH(DT), Channel 11, Facility ID 25738, Daytona Beach, FL. WESH is licensed (file# BMLCDT-20040930AXX) to operate with 54.9 kW effective radiated power ("ERP") at 511 meters antenna height above average terrain ("HAAT"). *Hearst* proposes herein to increase the ERP to 64.6 kW. This application is intended to be filed during the temporary lift of the freeze on minor modification applications that expand the coverage contour.[1]

WESH will continue to employ its presently licensed directional antenna system which is top-mounted on the tower structure associated with FCC Antenna Structure Registration number 1063249. No change to overall structure height will result from this proposal. The antenna HAAT is adjusted to 512 meters[2] and the antenna's electrical beamtilt is corrected to 0.95 degree.

The antenna is a horizontally polarized Dielectric model THV-11A11 C140. The directional antenna's azimuthal pattern is supplied in Figure 1 and the elevation pattern is depicted in Figures 2 and 2A.

[1]Public Notice *"Media Bureau Temporarily Lifts the Freeze on the Filing of Minor Modification Applications that Expand the Contour of Full Power and Class A Television Stations from November 28 through December 7, 2017"* DA 17-1086, released November 6, 2017.

[2]There is no change in antenna height above ground or above mean sea level. The WESH antenna HAAT is recalculated to be 512.4 meters, based on FCC 30 meter terrain data developed by OET.

Figure 3 supplies a map that demonstrates compliance with §73.625(a)(1) regarding coverage of the entire principal community. The proposed facility's predicted population exceeds 95 percent of the Incentive Auction[3] baseline facility population.

Interference study per FCC OET Bulletin 69[4] shows that the proposal complies with the 0.5 percent limit of new interference caused to pertinent nearby post-auction full service and Class A television stations and reassignments as required by §73.616. **FCC processing of this proposal is requested using a 1 km cell size and 0.5 km terrain profile increment.** The interference study output report is provided as Table 1. TVStudy analysis also shows that the proposed power increase would not cause impermissible interference to any pre-auction facility that was reassigned or relinquished in the incentive auction.

The proposed 64.6 kW ERP exceeds the maximum allowed for the proposed antenna HAAT of 512 meters currently permitted by §73.622(f)(7). Section 73.622(f)(5) permits the maximum ERP to be exceeded in order to provide the same geographic coverage area as the largest station within the same market. The total land area within the proposed WESH 36 dBμ contour is 29,077 square kilometers, which does not exceed the coverage contour land area of WACX (29,669 sq. km, post-auction Ch. 7 Construction Permit, Leesburg FL, 0000026844) as shown in Figure 4. Thus, the 64.6 kW ERP specified herein is in compliance with §73.622(f)(5).

The nearest FCC monitoring station is 119 km distant at Vero Beach, FL. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with "quiet" zones specified in §73.1030(a) and (b). There are no authorized AM stations within 3 kilometers of the site. The site location is beyond the border areas requiring international coordination.

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[3] *Incentive Auction Closing and Channel Reassignment Public Notice*, DA 17-317, released April 13, 2017.

[4] FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). This analysis employed the FCC's current "TVStudy" software with the default application processing template settings, **1 km cell size, and 0.5 km terrain increment.** Comparisons of various results of this computer program (run on a Mac processor) to the FCCs implementation of TVStudy show excellent correlation.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 20 percent antenna relative field in downward elevations (pattern data shows less than 20 percent relative field at angles 10 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is 0.34 $\mu W/cm^2$, which is 0.2 percent of the general population/uncontrolled maximum permitted exposure limit. This is well below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

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 will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations 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. This exhibit is limited to the evaluation of exposure to RF electromagnetic field. No increase in structure height is proposed.

List of Attachments

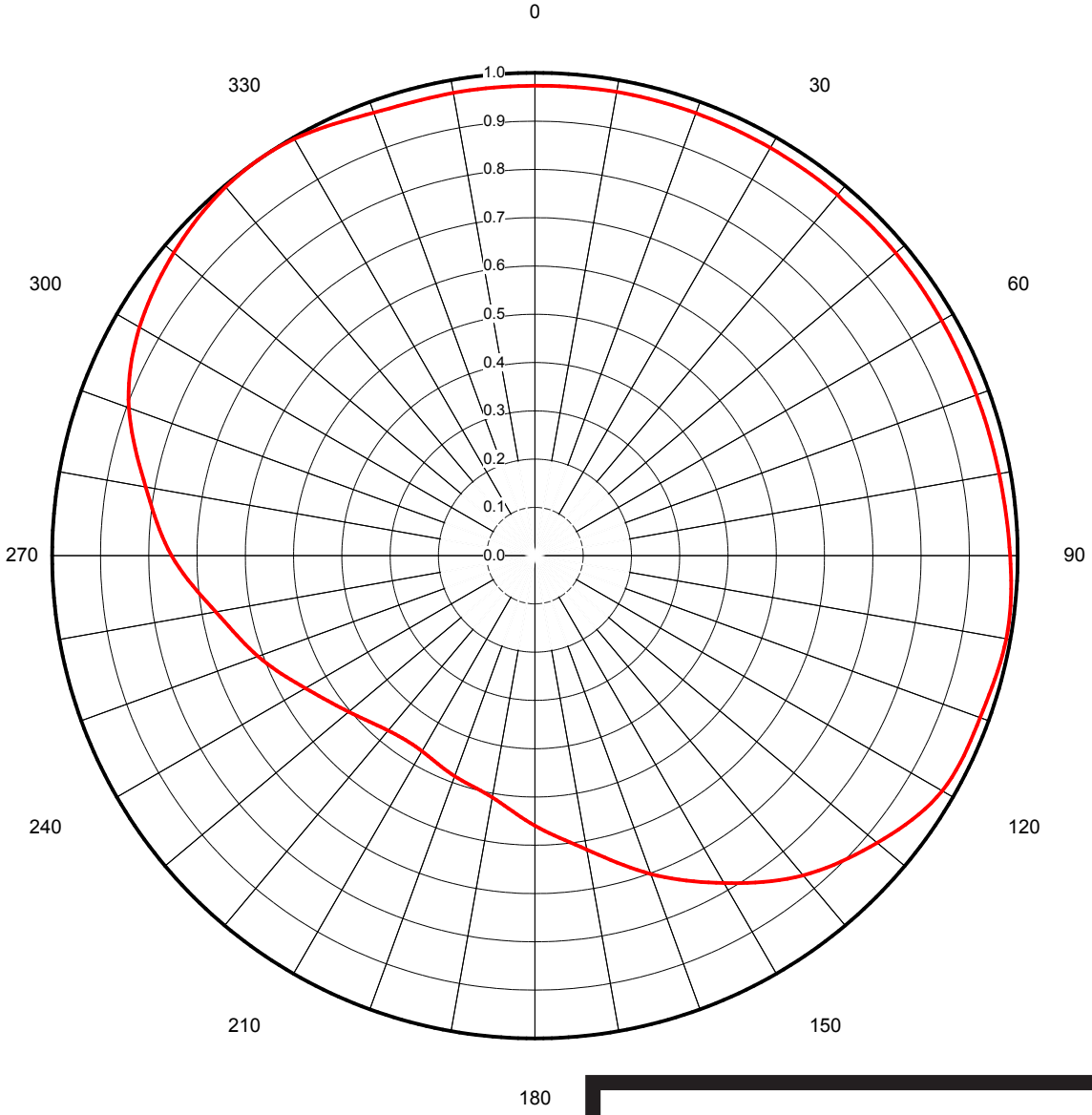
Figure 1	Antenna Azimuthal Pattern
Figure 2, 2A	Antenna Elevation Pattern
Figure 3	Proposed Coverage Contours
Figure 4	Maximum ERP per §73.622(f)
Table 1	OET Bulletin 69 Interference Study
Form 2100	Saved Version of Engineering Sections from FCC Form at Time of Upload

Chesapeake RF Consultants, LLC
Joseph M. Davis, P.E. November 27, 2017
207 Old Dominion Road Yorktown, VA 23692 703-650-9600

Proposal Number	**DCA-8259**	Revision:	**2**
Date	**16-Aug-00**		
Call Letters	**WESH-DT**	Channel	**11**
Location	**Daytona Beach, FL**		
Customer	**Hearst Argyle**		
Antenna Type	**THV-11A11 C140**		

AZIMUTH PATTERN

Gain	**1.40**	**(1.46 dB)**	Frequency	**201.00 MHz**
Calculated / Measured		**Measured**	Drawing #	**THV-C140-11**



Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 1
Antenna Azimuthal Pattern
WESH(DT) Daytona Beach, FL
Facility ID 25738
Ch. 11 64.6 kW 512 m

prepared for
Hearst Properties Inc.

November, 2017

Proposal Number	**DCA-8259**	Revision:	**2**
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Call Letters	**WESH-DT**	Channel	**11**
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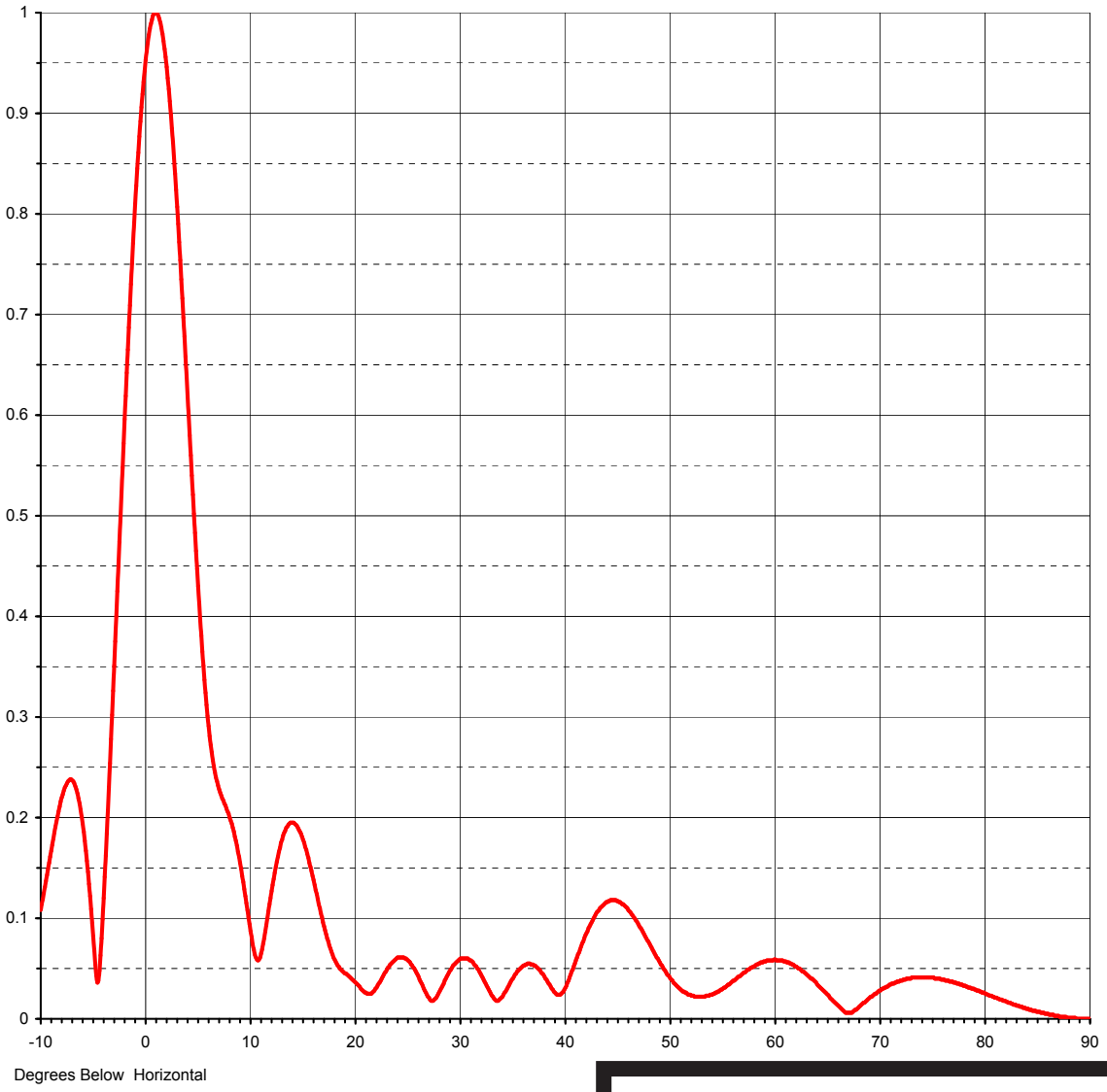
Customer	**Hearst Argyle**		
Antenna Type	**THV-11A11 C140**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**11.00 (10.41 dB)**	Beam Tilt	**0.95 deg**
RMS Gain at Horizontal	**10.00 (10.00 dB)**	Frequency	**201.00 MHz**
Calculated / Measured	**Measured**	Drawing #	**11K110095-90**



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Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 2
Antenna Elevation Pattern
WESH(DT) Daytona Beach, FL
Facility ID 25738
Ch. 11 64.6 kW 512 m

prepared for
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November, 2017

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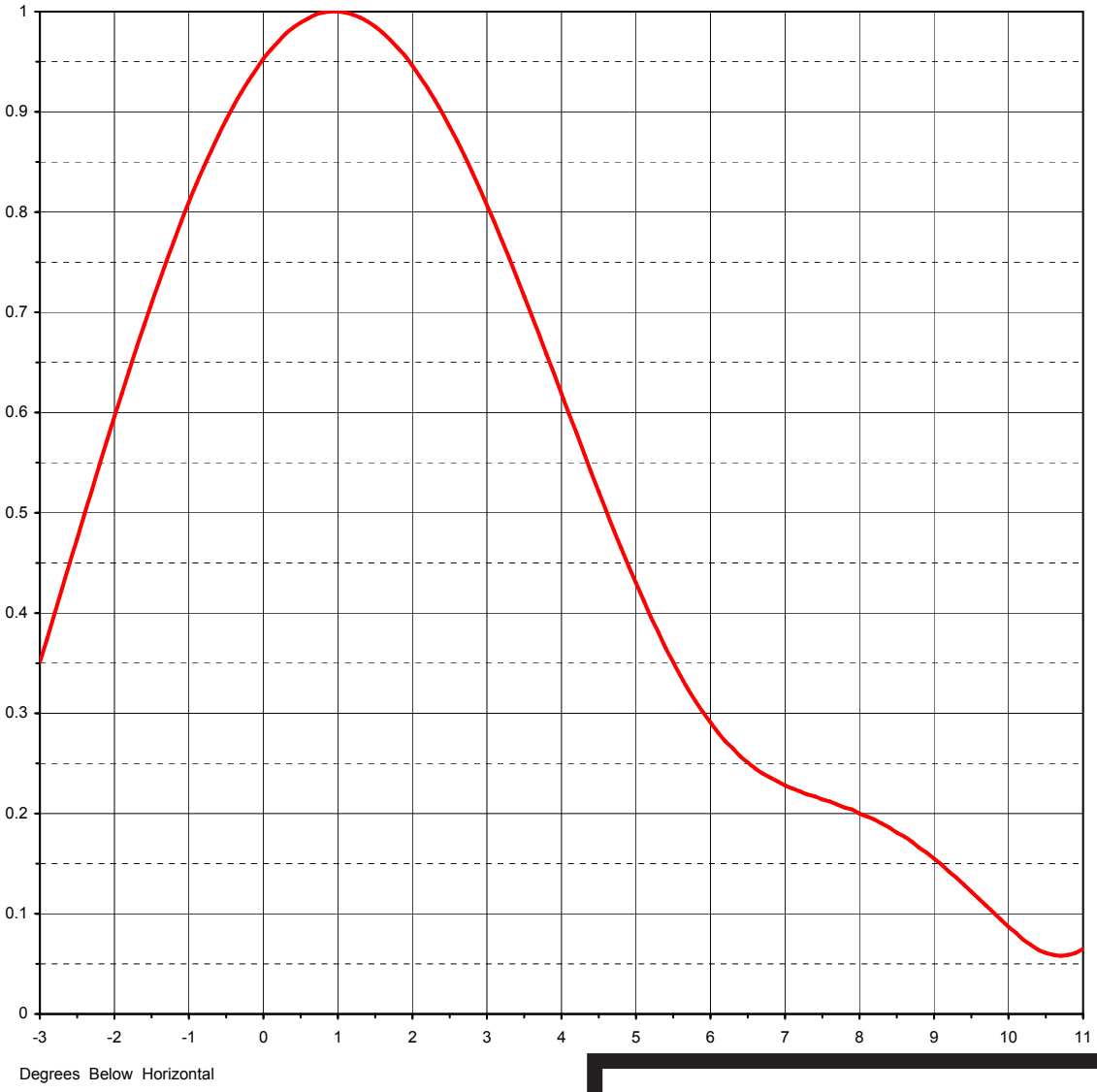
ELEVATION PATTERN

RMS Gain at Main Lobe	**11.00 (10.41 dB)**	Beam Tilt	**0.95 deg**
RMS Gain at Horizontal	**10.00 (10.00 dB)**	Frequency	**201.00 MHz**
Calculated / Measured	**Measured**	Drawing #	**11K110095**



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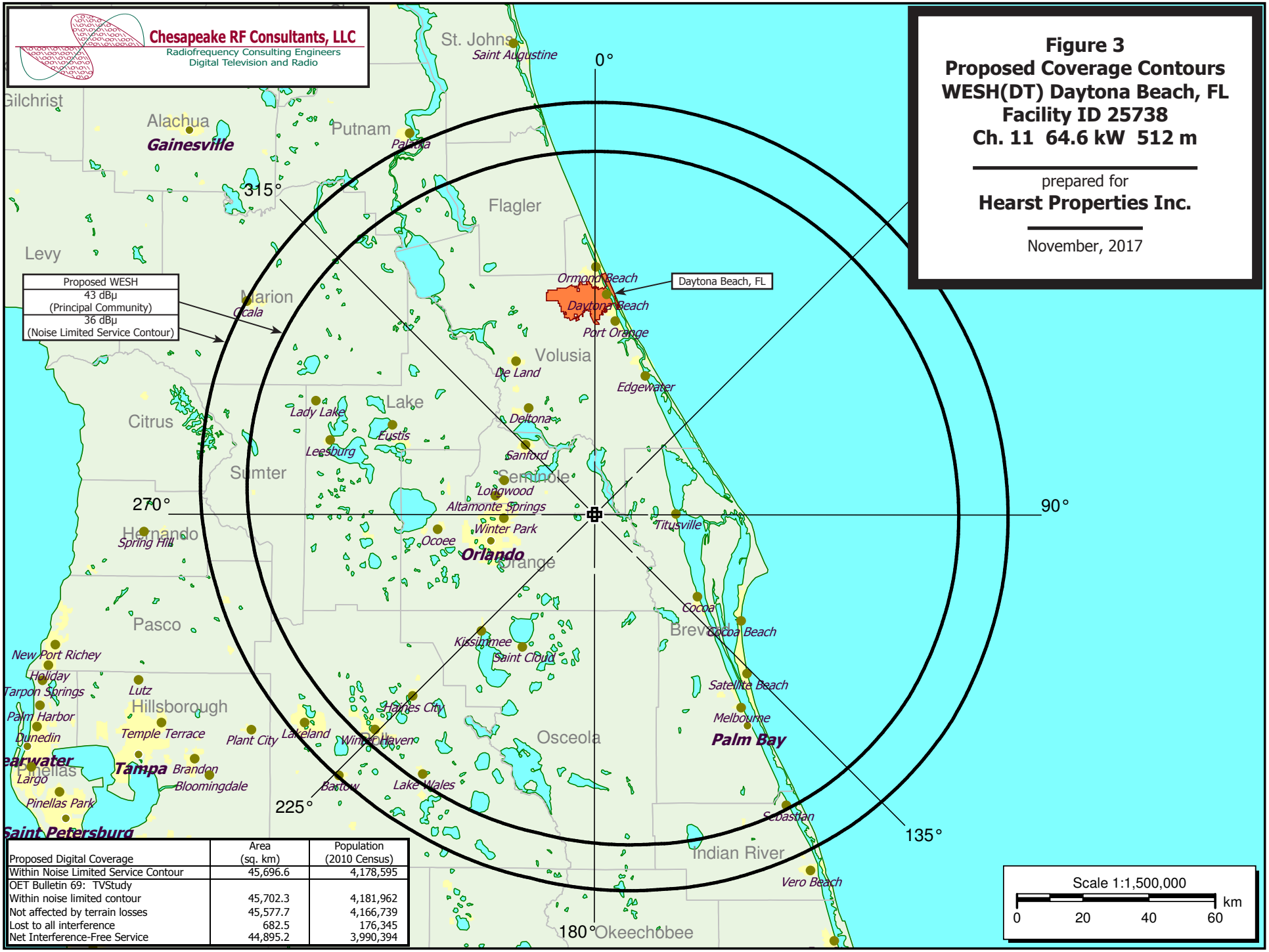
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 2A - Detail
Antenna Elevation Pattern
WESH(DT) Daytona Beach, FL
Facility ID 25738
Ch. 11 64.6 kW 512 m

prepared for
Hearst Properties Inc.

November, 2017



Proposed Digital Coverage	Area (sq. km)	Population (2010 Census)
Within Noise Limited Service Contour	45,696.6	4,178,595
OET Bulletin 69: TVStudy		
Within noise limited contour	45,702.3	4,181,962
Not affected by terrain losses	45,577.7	4,166,739
Lost to all interference	682.5	176,345
Net Interference-Free Service	44,895.2	3,990,394

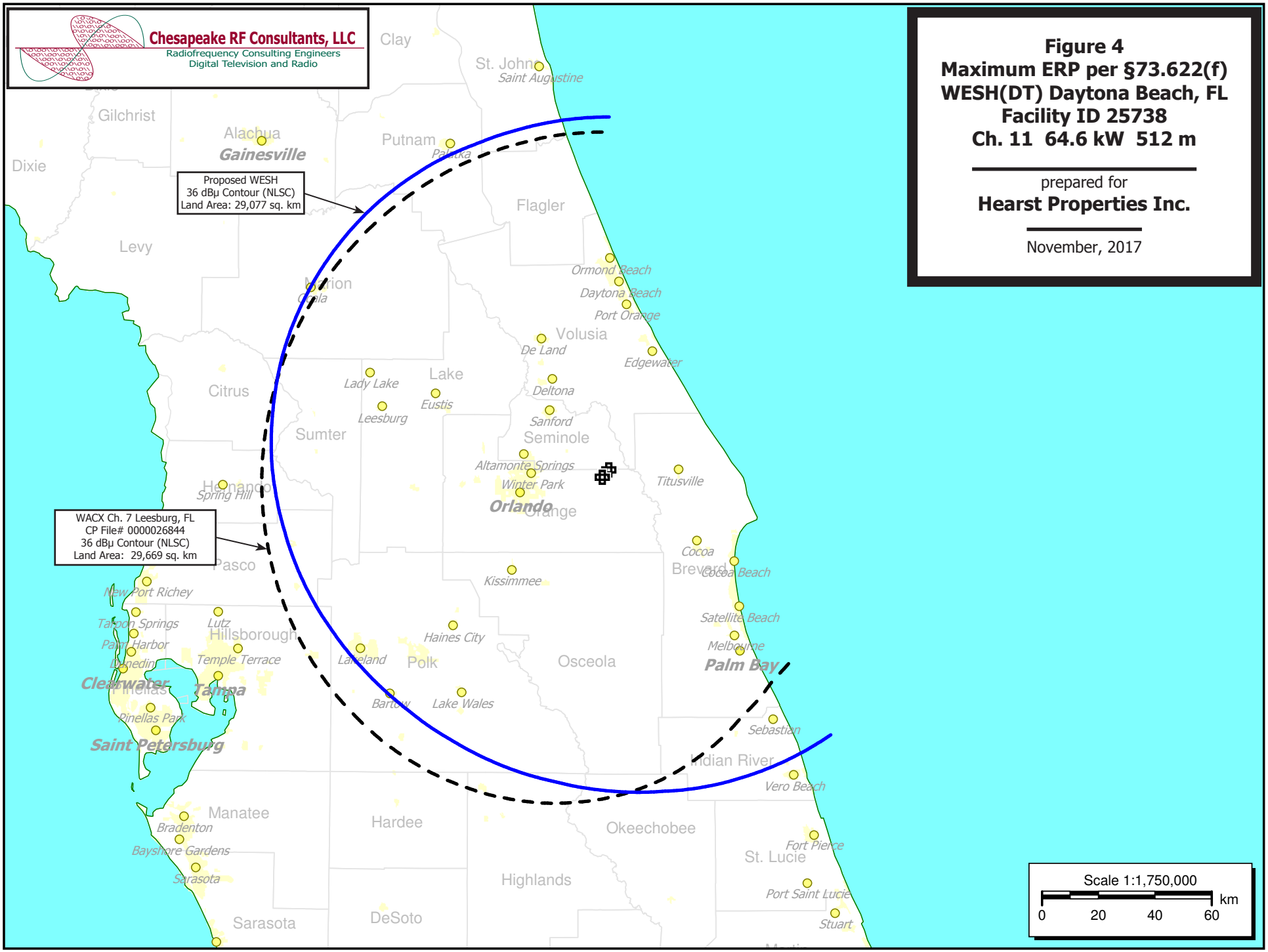

Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 4
Maximum ERP per §73.622(f)
WESH(DT) Daytona Beach, FL
Facility ID 25738
Ch. 11 64.6 kW 512 m
prepared for
Hearst Properties Inc.
November, 2017
Proposed WESH
36 dBμ Contour (NLSC)
Land Area: 29,077 sq. km
WACX Ch. 7 Leesburg, FL
CP File# 0000026844
36 dBμ Contour (NLSC)
Land Area: 29,669 sq. km
Clay
St. Johns
Saint Augustine
Gilchrist
Alachua
Gainesville
Putnam
Palatka
Dixie
Flagler
Levy
Marion
Ocala
Ormond Beach
Daytona Beach
Port Orange
Volusia
De Land
Edgewater
Lake
Lady Lake
Eustis
Deltona
Citrus
Leesburg
Sanford
Sumter
Seminole
Altamonte Springs
Winter Park
Titusville
Hernando
Spring Hill
Orlando
Orange
Cocoa
Brevard
Cocoa Beach
Pasco
Kissimmee
New Port Richey
Satellite Beach
Tarpon Springs
Lutz
Haines City
Palm Harbor
Hillsborough
Melbourne
Temple Terrace
Lakeland
Polk
Osceola
Palm Bay
Clearwater
Tampa
Bartow
Lake Wales
Pinellas Park
Sebastian
Saint Petersburg
Indian River
Vero Beach
Manatee
Hardee
Okeechobee
Bradenton
Fort Pierce
Bayshore Gardens
St. Lucie
Sarasota
Highlands
Port Saint Lucie
Sarasota
DeSoto
Stuart
Scale 1:1,750,000
km
0
20
40
60

Table 1 WESH(DT) OET Bulletin 69 Interference Study


```
tvstudy v2.2.4 (Z2Qqz3)
Database: localhost,  Study: WESH Prop_64.6kW 1.0-0.5,  Model: Longley-Rice
Start: 2017.11.27 09:56:57

Study created: 2017.11.27 09:56:57

Study build station data: LMS TV 2017-11-22 LMSTV

    Proposal: WESH D11 DT APP DAYTONA BEACH, FL
 File number: WESH Prop_64.6kW
 Facility ID: 25738
Station data: User record
   Record ID: 1546
     Country: U.S.
        Zone: III

Stations potentially affected by proposal:

IX   Call      Chan       Svc Status  City, State              File Number            Distance
No   WJXX      D10        DT  LIC     ORANGE PARK, FL          BLCDT20090702AAK       191.0 km
Yes  WTSP      D10        DT  LIC     ST. PETERSBURG, FL       BLCDT20111014AAZ       146.8
No   WWCI-CD   D10        DC  LIC     VERO BEACH, FL           BLDVA20130410ABA       129.9
No   WJKF-CD   D11        DC  APP     JACKSONVILLE, FL         BLANK0000034627        198.1
Yes  WJKF-CD   D11        DC  CP      JACKSONVILLE, FL         BLANK0000028388        192.2
Yes  WJKF-CD   D11        DC  BL      JACKSONVILLE, FL         DTVBL4754              192.3
No   WTOC-TV   D11        DT  LIC     SAVANNAH, GA             BLCDT20090622ABP       383.8
Yes  WTVT      D12        DT  LIC     TAMPA, FL                BLCDT20080410AAF       145.3
No   WPTV-TV   D12        DT  LIC     WEST PALM BEACH, FL      BLCDT20090619ACF       239.6

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

    Channel: D11
   Latitude:  28 36 36.00 N (NAD83)
  Longitude:  81  3 34.00 W
Height AMSL: 522.0 m
       HAAT: 512.4 m
   Peak ERP: 64.6 kW
    Antenna: DIE-THV-11A11 C140 (ID 41527) 0.0 deg
Elev Pattrn: Generic
  Elec Tilt: 0.95

36.0 dBu contour:
Azimuth      ERP       HAAT   Distance
  0.0 deg   61.2 kW   519.5 m  124.7 km
 45.0       61.4      519.6    124.7
 90.0       62.5      519.4    124.9
135.0       51.7      516.3    122.7
180.0       20.2      501.8    113.0
225.0       15.4      503.2    110.8
270.0       36.6      505.8    118.7
315.0       62.9      513.6    124.6

ERP exceeds maximum
ERP: 64.6 kW   ERP maximum: 48.8 kW

Distance to Canadian border: 1457.4 km

Distance to Mexican border: 1592.9 km

Conditions at FCC monitoring station: Vero Beach FL
Bearing: 159.4 degrees   Distance: 119.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 306.5 degrees   Distance: 2547.3 km

Study cell size: 1.00 km
Profile point spacing: 0.50 km
```

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

Interference to BLCDT20111014AAZ LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WTSP	D10	DT	LIC	ST. PETERSBURG, FL	BLCDT20111014AAZ	
Undesireds:	WESH	D11	DT	BL	DAYTONA BEACH, FL	DTVBL25738	146.8 km
	WESH	D11	DT	APP	DAYTONA BEACH, FL	WESH Prop_64.6kW	146.8
	WFLA-TV	D9	DT	CP	TAMPA, FL	BLANK0000027590	2.5
	WPLG	D10	DT	LIC	MIAMI, FL	BLCDT20100908AAG	289.2
	WJXX	D10	DT	LIC	ORANGE PARK, FL	BLCDT20090702AAK	281.3
	WWCI-CD	D10	DC	LIC	VERO BEACH, FL	BLDVA20130410ABA	186.2

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
43951.3	5,622,006	43799.9	5,609,035	41938.6	5,038,498	41867.0	5,013,490	0.17	0.50

Undesired	Total IX		Unique IX, before		Unique IX, after	
WESH D11 DT BL	964.4	507,941	683.9	407,461		
WESH D11 DT APP	1052.1	535,116			755.5	432,469
WPLG D10 DT LIC	451.5	17,332	349.1	5,082	349.1	5,082
WJXX D10 DT LIC	819.3	157,758	547.7	57,514	531.6	55,347
WWCI-CD D10 DC LIC	55.7	4,665	0.0	0	0.0	0

Interference to BLANK0000028388 CP scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WJKF-CD	D11	DC	CP	JACKSONVILLE, FL	BLANK0000028388	
Undesireds:	WESH	D11	DT	BL	DAYTONA BEACH, FL	DTVBL25738	192.2 km
	WESH	D11	DT	APP	DAYTONA BEACH, FL	WESH Prop_64.6kW	192.2
	WJXX	D10	DT	LIC	ORANGE PARK, FL	BLCDT20090702AAK	1.8

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
933.2	675,909	933.2	675,909	342.4	210,776	342.4	210,776	0.00	0.00

Undesired	Total IX		Unique IX, before		Unique IX, after	
WESH D11 DT BL	0.0	0	0.0	0		
WESH D11 DT APP	1.0	617			0.0	0
WJXX D10 DT LIC	590.8	465,133	590.8	465,133	589.8	464,516

Interference to DTVBL4754 BL scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WJKF-CD	D11	DC	BL	JACKSONVILLE, FL	DTVBL4754	
Undesireds:	WESH	D11	DT	BL	DAYTONA BEACH, FL	DTVBL25738	192.3 km
	WESH	D11	DT	APP	DAYTONA BEACH, FL	WESH Prop_64.6kW	192.3
	WJXX	D10	DT	LIC	ORANGE PARK, FL	BLCDT20090702AAK	1.9

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
931.2	677,546	931.2	677,546	341.4	210,538	341.4	210,538	0.00	0.00

Undesired	Total IX		Unique IX, before		Unique IX, after	
WESH D11 DT BL	0.0	0	0.0	0		
WESH D11 DT APP	1.0	617			0.0	0
WJXX D10 DT LIC	589.8	467,008	589.8	467,008	588.8	466,391

Interference to BLCDT20080410AAF LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WTVT	D12	DT	LIC	TAMPA, FL	BLCDT20080410AAF	
Undesireds:	WESH	D11	DT	BL	DAYTONA BEACH, FL	DTVBL25738	145.3 km
	WESH	D11	DT	APP	DAYTONA BEACH, FL	WESH Prop_64.6kW	145.3
	WPTV-TV	D12	DT	LIC	WEST PALM BEACH, FL	BLCDT20090619ACF	242.7

Table 1 WESH(DT) OET Bulletin 69 Interference Study
(page 3 of 3)

Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
44121.2	5,478,869	43896.3	5,463,334	41209.6	5,070,789	41146.0	5,052,565	0.15	0.36

Undesired		Total IX		Unique IX, before		Unique IX, after	
WESH D11 DT BL	847.8	371,090		434.4	270,049		
WESH D11 DT APP	912.4	389,314				498.0	288,273
WPTV-TV D12 DT LIC	2252.2	122,496		1838.9	21,455	1837.9	21,455

Interference to proposal scenario 1
4.23% interference received

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WESH	D11	DT	APP	DAYTONA BEACH, FL	WESH Prop_64.6kW	
Undesireds:	WTSP	D10	DT	LIC	ST. PETERSBURG, FL	BLCDT20111014AAZ	146.8 km
	WJKF-CD	D11	DC	APP	JACKSONVILLE, FL	BLANK0000034627	198.1
	WTOC-TV	D11	DT	LIC	SAVANNAH, GA	BLCDT20090622ABP	383.8
	WTVT	D12	DT	LIC	TAMPA, FL	BLCDT20080410AAF	145.3

Service area		Terrain-limited		IX-free		Percent IX	
45702.3	4,181,962	45577.7	4,166,739	44895.2	3,990,394	1.50	4.23

Undesired		Total IX		Unique IX		Prcnt Unique IX	
WTSP D10 DT LIC	416.2	112,830		17.9	6,875	0.04	0.16
WTOC-TV D11 DT LIC	7.1	7		7.1	7	0.02	0.00
WTVT D12 DT LIC	657.5	169,463		259.2	63,508	0.57	1.52

Channel and Facility Information

Section	Question	Response
Proposed Community of License	Facility ID	25738
	State	Florida
	City	DAYTONA BEACH
	DTV Channel	11
Facility Type	Facility Type	Commercial
	Station Type	Main
Zone	Zone	3

Antenna Location Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	Yes
	ASR Number	1063249
Coordinates (NAD83)	Latitude	28° 36' 36.0" N+
	Longitude	081° 03' 34.0" W-
	Structure Type	TOWER-A free standing or guyed struct
	Overall Structure Height	516.6 meters
	Support Structure Height	494.7 meters
	Ground Elevation (AMSL)	16.0 meters
Antenna Data	Height of Radiation Center Above Ground Level	506 meters
	Height of Radiation Center Above Average Terrain	512.4 meters
	Height of Radiation Center Above Mean Sea Level	522.0 meters
	Effective Radiated Power	64.6 kW

Antenna Technical Data

Section	Question	Response
Antenna Type	Antenna Type	Directional Custom
	Do you have an Antenna ID?	Yes
	Antenna ID	41527
Antenna Manufacturer and Model	Manufacturer:	DIE
	Model	THV-11A11 C140
	Rotation	0 degrees
	Electrical Beam Tilt	0.95
	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_A (Authorized Value)	Degree	V_A (Authorized Value)	Degree	V_A (Authorized Value)	Degree	V_A (Authorized Value)
0	0.973	**90**	0.984	**180**	0.559	**270**	0.753
10	0.975	**100**	0.991	**190**	0.508	**280**	0.819
20	0.975	**110**	0.981	**200**	0.486	**290**	0.895
30	0.975	**120**	0.974	**210**	0.468	**300**	0.946
40	0.975	**130**	0.925	**220**	0.473	**310**	0.976
50	0.975	**140**	0.864	**230**	0.503	**320**	0.997
60	0.973	**150**	0.783	**240**	0.549	**330**	0.997
70	0.973	**160**	0.702	**250**	0.61	**340**	0.976
80	0.976	**170**	0.618	**260**	0.671	**350**	0.973

Additional Azimuths

Degree	V_A
325	1

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.	Yes
	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.	No
	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.	Yes
	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.	Yes
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