



ENGINEERING EXHIBIT

Incentive Auction Channel Reassignment

Application for Digital Television Station Construction Permit

prepared for

WBOC, Inc.

WBOC-TV Salisbury, MD
Facility ID 71218
Ch. 32 920 kW 284 m

WBOC, Inc. (“*WBOC*”) is the licensee of digital television station WBOC-TV, Channel 21, Facility ID 71218, Salisbury, MD. *WBOC* herein proposes construction of the WBOC-TV post-auction facility on Channel 32. Reassignment of WBOC-TV from Channel 21 to Channel 32 was specified in the *Incentive Auction Closing and Channel Reassignment Public Notice* (“*CCRPN*”, DA 17-317, released April 13, 2017).

The proposed Channel 32 operation will employ a new antenna system to be top-mounted on the WBOC-TV tower. The new antenna will take the place of the existing top-mounted stack of two antennas, where the current WBOC-TV Channel 21 antenna is beneath WBOC-TV’s former analog Channel 16 antenna. The tower structure corresponds to FCC Antenna Structure Registration number 1301089, having an overall structure height above ground of 305.4 meters. The antenna replacement will result in a reduction in the structure’s overall height by 18.0 meters to 287.4 meters above ground level. The FAA will be notified of the reduction in height and the FCC ASR will be modified accordingly as appropriate.

The proposed antenna is an elliptically polarized directional Dielectric model TFU-24JTH/VP-R P250 (25 percent vertical polarization). *WBOC* proposes to operate WBOC-TV with an effective radiated power (“ERP”) of 920 kW at 284 meters antenna height above average terrain (“HAAT”). The maximum horizontally polarized ERP is 920 kW and the maximum vertically polarized ERP is 230 kW. The vertically polarized component will not exceed the horizontally polarized component at any azimuth. The directional antenna’s azimuthal patterns

are depicted in Figures 1 and 1A for horizontal and vertical polarization, respectively. The antenna's elevation pattern is depicted in Figure 2.

A map is supplied as Figure 3 which depicts the standard predicted coverage contours. This map includes the location of Salisbury, WBOC-TV's principal community. As demonstrated thereon, the proposed facility complies with §73.625(a)(1) as the entire principal community will be encompassed by the 48 dB μ contour.

The proposed noise limited service contour ("NLSC") extends beyond that of the *CCRPN* parameters of 934 kW ERP and 279 meters HAAT.¹ The proposal complies with §73.3700(b)(1)(ii) as described in the following.

The *CCRPN* facility specifies the directional antenna pattern corresponding to WBOC-TV's licensed Channel 21 facility. The antenna manufacturer cannot provide the exact pattern on the new channel due to the change in frequency and corresponding mechanical limitations of antenna construction. The directional pattern proposed herein replicates the reassignment pattern as closely as possible. The proposal results in a slightly larger coverage contour in some directions in an attempt to achieve the *CCRPN* coverage contour. Therefore, WBOC-TV qualifies under §73.3700(b)(1)(ii)(A) for a contour extension due to the loss of coverage area resulting from the new channel assignment.

Interference study per FCC OET Bulletin 69² 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 reassessments as required by §73.616. The interference study

¹The antenna radiation center height above ground and above mean sea level is increased by 5.5 meters. The proposed WBOC-TV antenna HAAT is recalculated to be 284.1 meters, based on FCC 30 meter terrain data developed by OET.

²FCC 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, 2 km cell size, and 1 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.

output report is provided as Table 1. This satisfies §73.3700(b)(1)(ii)(C) for the proposed NLSC extension.

The amount of NLSC extension does not exceed one percent in any direction. Figure 4 supplies a coverage contour comparison of the proposed WBOC-TV facility to the reassignment facility's contour and a one percent extension distance of the reassignment facility's contour. Here, the contour level is adjusted with the dipole factor to match FCC application processing. Table 1's results also demonstrate that the proposed contour is within the baseline contour plus one percent. Therefore the proposed contour extension complies with §73.3700(b)(1)(ii)(B).

The proposed WBOC-TV facility's terrain-limited population provides a 101.3 percent match of the CCRPN baseline facility, as detailed in the following table. The OET Bulletin 69 report summary in Table 1 also concludes that the proposed service area population is more than 95 percent of the baseline population.

Terrain Limited Population - Match of Reassignment		
Population Summary (2010 Census) OET Bulletin 69: TVStudy	Reassignment Parameters	Proposed
Within Noise Limited Contour	782,818	793,136
Not affected by terrain losses	782,818	793,136
Match of Reassignment	---	101.32%

The nearest FCC monitoring station is 126 km distant at Laurel, MD. 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). The site location is beyond the border areas requiring international coordination. There are no authorized AM stations within 3 kilometers of the site.

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 10 percent antenna relative field in downward elevations (pattern data shows less than 10 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 $5.0 \mu\text{W}/\text{cm}^2$, which is 1.3 percent of the general population/uncontrolled maximum permitted exposure limit. This is 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.

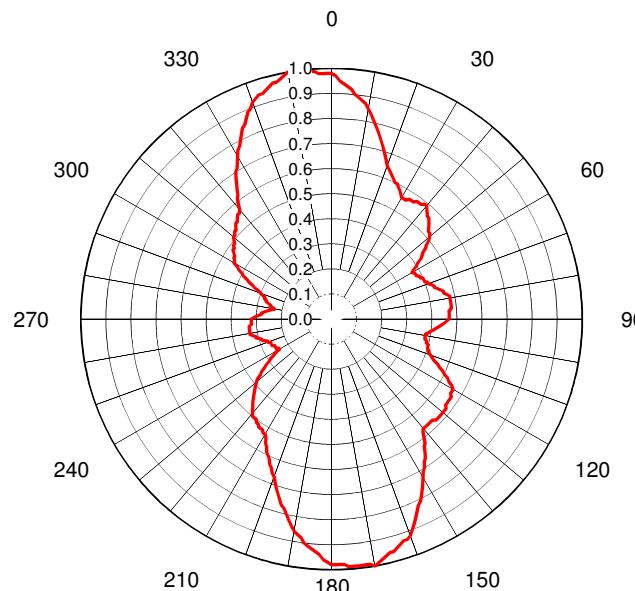
The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power 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, 1A Antenna Azimuthal Pattern
- Figure 2 Antenna Elevation Pattern
- Figure 3 Proposed Coverage Contours
- Figure 4 Proposed Contour Expansion
- 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. July 9, 2017
207 Old Dominion Road Yorktown, VA 23692 703-650-9600



AZIMUTH PATTERN Horizontal Polarization

Proposal No. C-70400-1
 Date 6-Mar-17
 Call Letters WBOC
 Channel 32
 Frequency 581 MHz
 Antenna Type TFU-24JTH/VP-R P250
 Gain 2.6 (4.14dB)
 Calculated

Drawing # WBOC-Hpol

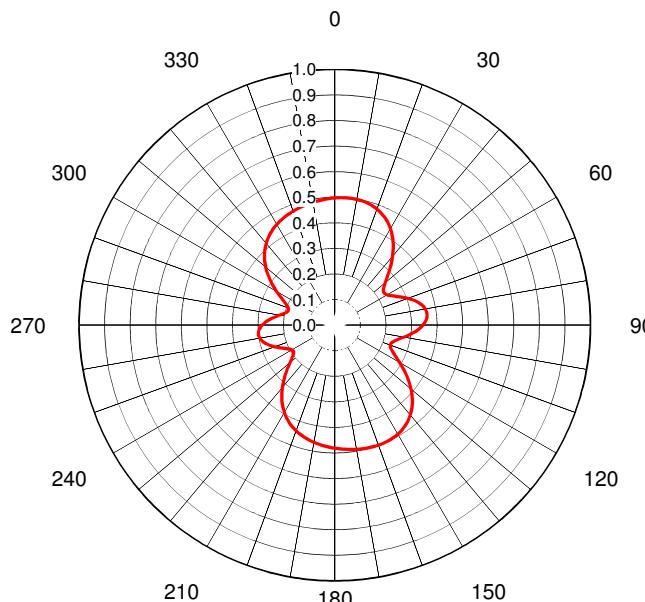
Deg	Value																		
0	0.980	36	0.580	72	0.430	108	0.410	144	0.630	180	0.980	216	0.510	252	0.280	288	0.280	324	0.640
1	0.970	37	0.580	73	0.430	109	0.410	145	0.650	181	0.970	217	0.500	253	0.290	289	0.290	325	0.660
2	0.950	38	0.580	74	0.440	110	0.420	146	0.670	182	0.960	218	0.500	254	0.290	290	0.300	326	0.680
3	0.940	39	0.590	75	0.450	111	0.430	147	0.680	183	0.940	219	0.500	255	0.300	291	0.310	327	0.700
4	0.930	40	0.590	76	0.460	112	0.440	148	0.700	184	0.930	220	0.490	256	0.310	292	0.330	328	0.710
5	0.920	41	0.580	77	0.460	113	0.460	149	0.710	185	0.920	221	0.480	257	0.310	293	0.340	329	0.730
6	0.900	42	0.570	78	0.470	114	0.470	150	0.730	186	0.910	222	0.470	258	0.320	294	0.360	330	0.750
7	0.890	43	0.560	79	0.480	115	0.490	151	0.750	187	0.900	223	0.460	259	0.330	295	0.370	331	0.770
8	0.880	44	0.560	80	0.480	116	0.500	152	0.770	188	0.880	224	0.450	260	0.330	296	0.390	332	0.780
9	0.870	45	0.550	81	0.480	117	0.520	153	0.790	189	0.870	225	0.440	261	0.330	297	0.400	333	0.800
10	0.850	46	0.540	82	0.480	118	0.530	154	0.810	190	0.860	226	0.430	262	0.330	298	0.420	334	0.820
11	0.830	47	0.530	83	0.480	119	0.550	155	0.820	191	0.840	227	0.420	263	0.330	299	0.430	335	0.840
12	0.810	48	0.520	84	0.480	120	0.560	156	0.840	192	0.820	228	0.410	264	0.330	300	0.450	336	0.850
13	0.790	49	0.520	85	0.480	121	0.560	157	0.860	193	0.800	229	0.400	265	0.330	301	0.450	337	0.870
14	0.770	50	0.510	86	0.470	122	0.560	158	0.880	194	0.780	230	0.390	266	0.320	302	0.460	338	0.890
15	0.750	51	0.500	87	0.470	123	0.570	159	0.900	195	0.770	231	0.380	267	0.320	303	0.460	339	0.900
16	0.730	52	0.480	88	0.470	124	0.570	160	0.920	196	0.750	232	0.360	268	0.320	304	0.470	340	0.920
17	0.710	53	0.470	89	0.470	125	0.570	161	0.930	197	0.730	233	0.350	269	0.320	305	0.480	341	0.930
18	0.690	54	0.450	90	0.470	126	0.570	162	0.930	198	0.710	234	0.330	270	0.320	306	0.480	342	0.940
19	0.670	55	0.440	91	0.460	127	0.570	163	0.940	199	0.690	235	0.320	271	0.310	307	0.490	343	0.940
20	0.650	56	0.430	92	0.450	128	0.580	164	0.950	200	0.670	236	0.300	272	0.300	308	0.490	344	0.950
21	0.640	57	0.410	93	0.440	129	0.580	165	0.960	201	0.660	237	0.290	273	0.290	309	0.500	345	0.960
22	0.630	58	0.400	94	0.430	130	0.580	166	0.960	202	0.640	238	0.270	274	0.280	310	0.510	346	0.970
23	0.620	59	0.380	95	0.420	131	0.580	167	0.970	203	0.630	239	0.260	275	0.280	311	0.510	347	0.970
24	0.610	60	0.370	96	0.410	132	0.580	168	0.980	204	0.610	240	0.240	276	0.270	312	0.520	348	0.980
25	0.600	61	0.380	97	0.400	133	0.580	169	0.990	205	0.600	241	0.240	277	0.260	313	0.520	349	0.990
26	0.600	62	0.380	98	0.390	134	0.580	170	1.000	206	0.590	242	0.250	278	0.250	314	0.530	350	1.000
27	0.590	63	0.380	99	0.380	135	0.570	171	0.990	207	0.570	243	0.250	279	0.240	315	0.540	351	0.990
28	0.580	64	0.390	100	0.380	136	0.570	172	0.990	208	0.560	244	0.250	280	0.230	316	0.540	352	0.990
29	0.570	65	0.390	101	0.380	137	0.570	173	0.990	209	0.540	245	0.250	281	0.240	317	0.550	353	0.990
30	0.560	66	0.400	102	0.380	138	0.570	174	0.990	210	0.530	246	0.260	282	0.250	318	0.560	354	0.990
31	0.560	67	0.400	103	0.390	139	0.570	175	0.990	211	0.530	247	0.260	283	0.250	319	0.560	355	0.990
32	0.560	68	0.400	104	0.390	140	0.570	176	0.990	212	0.520	248	0.260	284	0.260	320	0.570	356	0.990
33	0.570	69	0.410	105	0.400	141	0.580	177	0.980	213	0.520	249	0.260	285	0.270	321	0.590	357	0.980
34	0.570	70	0.410	106	0.400	142	0.600	178	0.980	214	0.520	250	0.270	286	0.270	322	0.610	358	0.980
35	0.570	71	0.420	107	0.400	143	0.620	179	0.980	215	0.510	251	0.270	287	0.280	323	0.620	359	0.980

Figure 1
Antenna Azimuthal Pattern
Horizontal Polarization
WBOC-TV Salisbury, MD
Facility ID 71218
Ch. 32 920 kW 284 m

prepared for
WBOC, Inc.



July, 2017



AZIMUTH PATTERN Vertical Polarization

Proposal No. C-70400-1
 Date 6-Mar-17
 Call Letters WBOC
 Channel 32
 Frequency 581 MHz
 Antenna Type TFU-24JTH/VP-R P250
 Gain 1.74 (2.42dB)
 Calculated

Drawing # WBOC V-POL

Deg	Value																		
0	0.497	36	0.389	72	0.320	108	0.231	144	0.477	180	0.481	216	0.352	252	0.262	288	0.190	324	0.435
1	0.498	37	0.380	73	0.327	109	0.231	145	0.480	181	0.480	217	0.344	253	0.268	289	0.191	325	0.438
2	0.499	38	0.371	74	0.334	110	0.231	146	0.483	182	0.479	218	0.336	254	0.274	290	0.193	326	0.442
3	0.499	39	0.361	75	0.340	111	0.233	147	0.486	183	0.477	219	0.327	255	0.279	291	0.196	327	0.445
4	0.500	40	0.352	76	0.345	112	0.236	148	0.488	184	0.476	220	0.318	256	0.284	292	0.201	328	0.448
5	0.500	41	0.342	77	0.350	113	0.240	149	0.491	185	0.474	221	0.309	257	0.288	293	0.206	329	0.451
6	0.500	42	0.332	78	0.354	114	0.245	150	0.493	186	0.473	222	0.300	258	0.292	294	0.212	330	0.454
7	0.500	43	0.322	79	0.357	115	0.251	151	0.494	187	0.471	223	0.291	259	0.295	295	0.219	331	0.457
8	0.500	44	0.312	80	0.360	116	0.258	152	0.496	188	0.469	224	0.282	260	0.297	296	0.227	332	0.459
9	0.500	45	0.302	81	0.362	117	0.266	153	0.497	189	0.468	225	0.272	261	0.299	297	0.235	333	0.461
10	0.499	46	0.293	82	0.363	118	0.275	154	0.498	190	0.466	226	0.263	262	0.300	298	0.244	334	0.463
11	0.499	47	0.283	83	0.364	119	0.284	155	0.499	191	0.464	227	0.254	263	0.301	299	0.253	335	0.465
12	0.498	48	0.274	84	0.363	120	0.293	156	0.499	192	0.462	228	0.245	264	0.300	300	0.262	336	0.467
13	0.497	49	0.266	85	0.362	121	0.303	157	0.499	193	0.460	229	0.236	265	0.299	301	0.271	337	0.469
14	0.496	50	0.258	86	0.360	122	0.313	158	0.500	194	0.457	230	0.228	266	0.297	302	0.281	338	0.471
15	0.494	51	0.251	87	0.357	123	0.323	159	0.500	195	0.455	231	0.221	267	0.295	303	0.290	339	0.473
16	0.492	52	0.245	88	0.354	124	0.333	160	0.500	196	0.452	232	0.214	268	0.292	304	0.299	340	0.474
17	0.490	53	0.239	89	0.350	125	0.342	161	0.499	197	0.450	233	0.207	269	0.288	305	0.309	341	0.476
18	0.488	54	0.235	90	0.345	126	0.352	162	0.499	198	0.447	234	0.202	270	0.284	306	0.318	342	0.477
19	0.486	55	0.232	91	0.340	127	0.362	163	0.499	199	0.444	235	0.198	271	0.279	307	0.327	343	0.479
20	0.483	56	0.231	92	0.334	128	0.371	164	0.498	200	0.441	236	0.195	272	0.274	308	0.335	344	0.480
21	0.480	57	0.230	93	0.327	129	0.381	165	0.497	201	0.437	237	0.193	273	0.268	309	0.344	345	0.482
22	0.476	58	0.231	94	0.320	130	0.389	166	0.497	202	0.433	238	0.192	274	0.261	310	0.352	346	0.483
23	0.472	59	0.233	95	0.313	131	0.398	167	0.496	203	0.430	239	0.192	275	0.255	311	0.360	347	0.484
24	0.468	60	0.236	96	0.305	132	0.406	168	0.495	204	0.425	240	0.194	276	0.248	312	0.368	348	0.485
25	0.464	61	0.241	97	0.297	133	0.414	169	0.494	205	0.421	241	0.196	277	0.241	313	0.375	349	0.487
26	0.459	62	0.246	98	0.289	134	0.422	170	0.493	206	0.416	242	0.200	278	0.234	314	0.382	350	0.488
27	0.453	63	0.252	99	0.282	135	0.429	171	0.492	207	0.411	243	0.204	279	0.227	315	0.389	351	0.489
28	0.448	64	0.259	100	0.274	136	0.436	172	0.491	208	0.406	244	0.209	280	0.221	316	0.395	352	0.490
29	0.442	65	0.266	101	0.266	137	0.442	173	0.490	209	0.400	245	0.215	281	0.214	317	0.401	353	0.491
30	0.435	66	0.273	102	0.259	138	0.448	174	0.489	210	0.394	246	0.221	282	0.208	318	0.407	354	0.492
31	0.429	67	0.281	103	0.252	139	0.454	175	0.488	211	0.388	247	0.228	283	0.203	319	0.412	355	0.493
32	0.421	68	0.289	104	0.246	140	0.459	176	0.486	212	0.382	248	0.235	284	0.199	320	0.417	356	0.494
33	0.414	69	0.297	105	0.241	141	0.464	177	0.485	213	0.375	249	0.242	285	0.195	321	0.422	357	0.495
34	0.406	70	0.305	106	0.237	142	0.469	178	0.484	214	0.368	250	0.249	286	0.192	322	0.426	358	0.496
35	0.398	71	0.313	107	0.234	143	0.473	179	0.483	215	0.360	251	0.255	287	0.191	323	0.431	359	0.497

Figure 1A
Antenna Azimuthal Pattern
Vertical Polarization
WBOC-TV Salisbury, MD
Facility ID 71218
Ch. 32 920 kW 284 m

prepared for
WBOC, Inc.

July, 2017



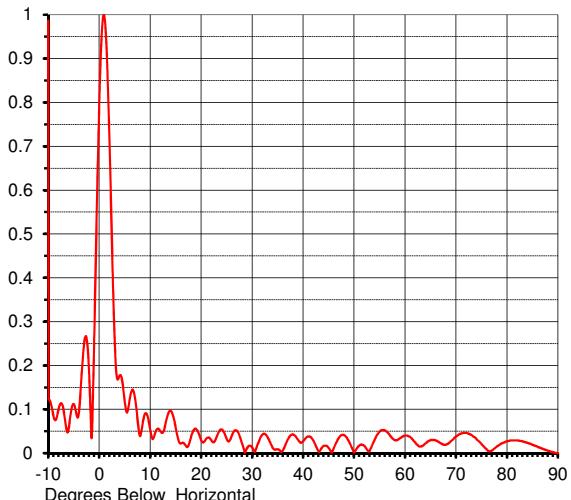
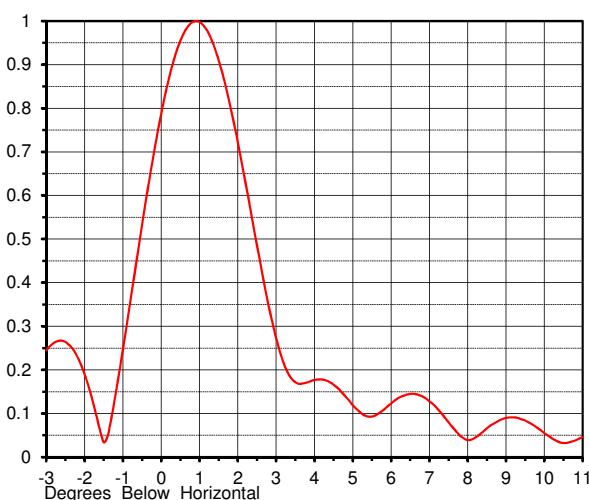
ELEVATION PATTERN

Proposal No. C-70400-1
 Date 6-Mar-17
 Call Letters WBOC
 Channel 32
 Frequency 581 MHz
 Antenna Type TFU-24JTH/VP-R P250

RMS Directivity at Main Lobe
 RMS Directivity at Horizontal

24.5 (13.89 dB)
15.2 (11.82 dB)
 Calculated

Beam Tilt 0.75 deg
 Drawing Number 24J245075



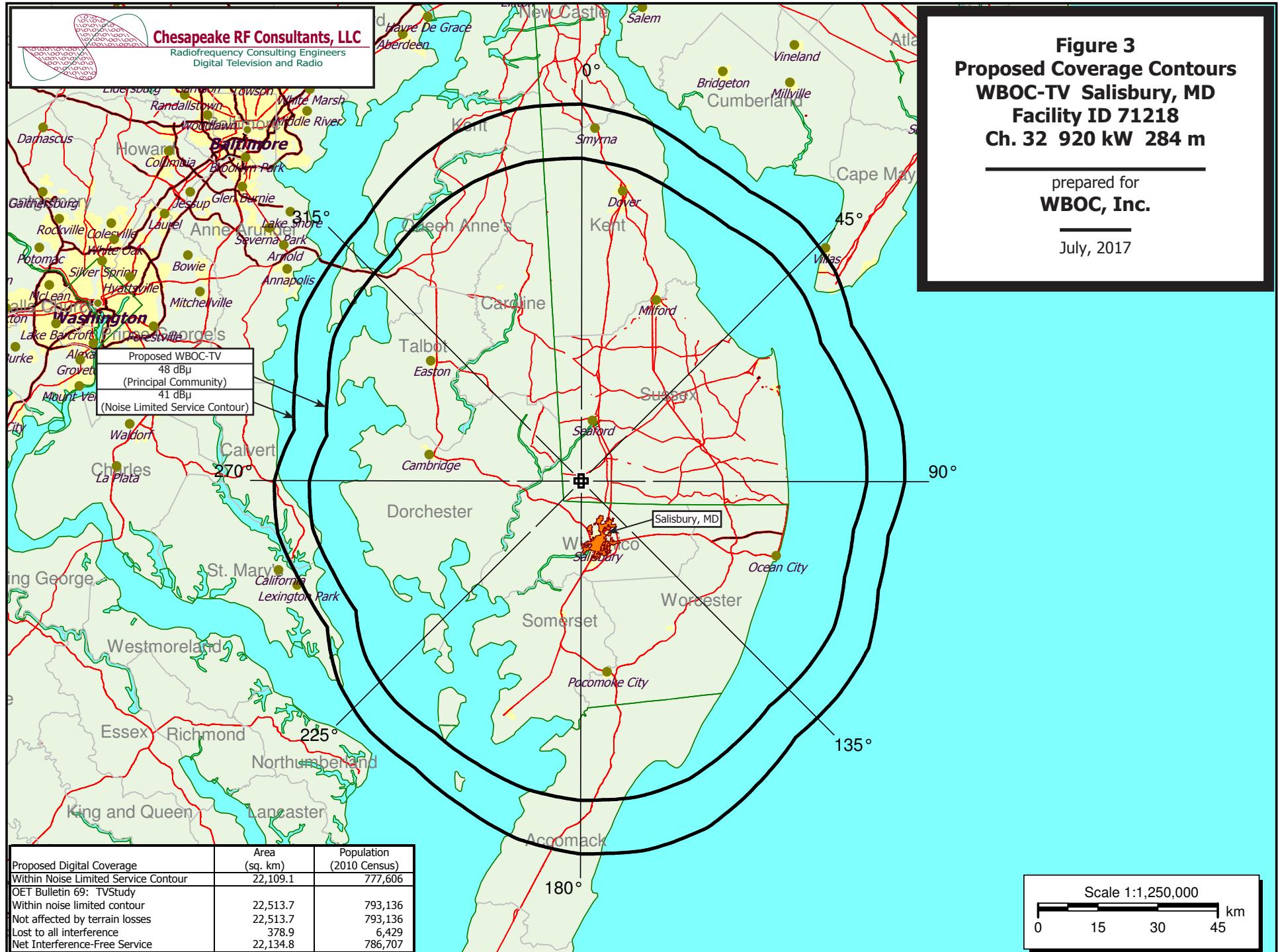
Angle	Field								
-10.0	0.987	10.0	0.055	30.0	0.013	50.0	0.002	70.0	0.038
-9.0	0.087	11.0	0.046	31.0	0.017	51.0	0.017	71.0	0.045
-8.0	0.098	12.0	0.050	32.0	0.042	52.0	0.017	72.0	0.046
-7.0	0.099	13.0	0.066	33.0	0.037	53.0	0.004	73.0	0.042
-6.0	0.055	14.0	0.097	34.0	0.013	54.0	0.029	74.0	0.033
-5.0	0.112	15.0	0.060	35.0	0.009	55.0	0.049	75.0	0.021
-4.0	0.090	16.0	0.022	36.0	0.005	56.0	0.052	76.0	0.009
-3.0	0.245	17.0	0.017	37.0	0.031	57.0	0.041	77.0	0.006
-2.0	0.190	18.0	0.036	38.0	0.043	58.0	0.030	78.0	0.015
-1.0	0.247	19.0	0.055	39.0	0.031	59.0	0.034	79.0	0.022
0.0	0.788	20.0	0.030	40.0	0.027	60.0	0.040	80.0	0.027
1.0	0.998	21.0	0.033	41.0	0.038	61.0	0.037	81.0	0.029
2.0	0.721	22.0	0.030	42.0	0.029	62.0	0.024	82.0	0.029
3.0	0.273	23.0	0.036	43.0	0.005	63.0	0.015	83.0	0.027
4.0	0.177	24.0	0.054	44.0	0.016	64.0	0.022	84.0	0.024
5.0	0.119	25.0	0.033	45.0	0.012	65.0	0.029	85.0	0.019
6.0	0.123	26.0	0.039	46.0	0.011	66.0	0.029	86.0	0.015
7.0	0.128	27.0	0.051	47.0	0.034	67.0	0.023	87.0	0.010
8.0	0.039	28.0	0.023	48.0	0.041	68.0	0.019	88.0	0.006
9.0	0.090	29.0	0.011	49.0	0.027	69.0	0.027	89.0	0.002

Figure 2
Antenna Elevation Pattern
WBOC-TV Salisbury, MD
Facility ID 71218
Ch. 32 920 kW 284 m

prepared for
WBOC, Inc.

July, 2017





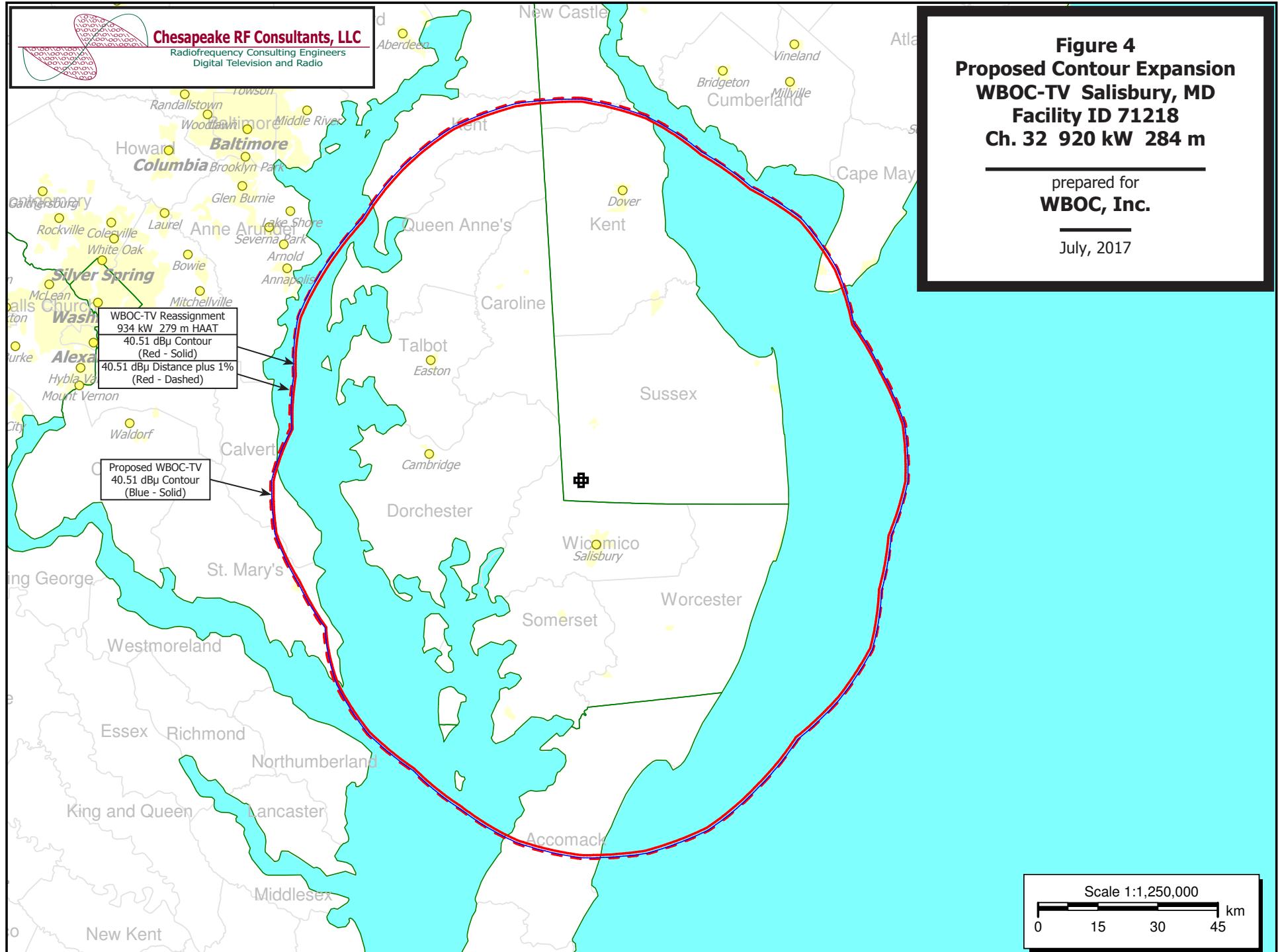


Table 1 WBOC-TV OET Bulletin 69 Interference Study
 (page 1 of 6 – condensed to show first scenarios only)



tvstudy v2.2.2
 Database: localhost, Study: WBOC PROP 920KW, Model: Longley-Rice
 Start: 2017.07.09 16:15:19

Study created: 2017.07.09 16:15:09

Study build station data: LMS TV 2017-07-08 LMSTV

Proposal: WBOC-TV D32 DT APP SALISBURY, MD
 File number: WBOC PROP 920KW
 Facility ID: 71218
 Station data: User record
 Record ID: 824
 Country: U.S.

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
WMPT	D31	DT	APP	ANNAPOLIS, MD	BLANK0000025178	100.8 km
WMPT	D31	DT	BL	ANNAPOLIS, MD	DTVBL65942	100.8
WTXF-TV	D31	DT	BL	PHILADELPHIA, PA	DTVBL51568	174.2
WHRO-TV	D31	DT	BL	HAMPTON-NORFOLK, VA	DTVBL25932	203.1
WRPX-TV	D32	DT	BL	ROCKY MOUNT, NC	DTVBL20590	349.3
WLIW	D32	DT	CP	GARDEN CITY, NY	BLANK0000025351	315.6
WLIW	D32	DT	BL	GARDEN CITY, NY	DTVBL38336	315.6
WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	230.0
WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	254.4
WCAV	D32	DT	BL	CHARLOTTESVILLE, VA	DTVBL363	254.4
WPXV-TV	D32	DT	BL	NORFOLK, VA	DTVBL67077	203.2
WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	134.0
WHUT-TV	D33	DT	CP	WASHINGTON, DC	BPEDT20120627AAD	134.0
WPSG	D33	DT	CP	PHILADELPHIA, PA	BLANK0000024876	174.3
WPSG	D33	DT	BL	PHILADELPHIA, PA	DTVBL12499	174.4
WTVZ-TV	D33	DT	LIC	NORFOLK, VA	BLCDT20090602ABA	203.1

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D32
 Latitude: 38 30 18.00 N (NAD83)
 Longitude: 75 38 36.00 W
 Height AMSL: 293.5 m
 HAAT: 284.1 m
 Peak ERP: 920 kW
 Antenna: TFU-24JTH P250 20170628 0.0 deg

40.5 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	884 kW	288.3 m	95.3 km
45.0	278	283.5	84.0
90.0	203	281.1	81.5
135.0	304	279.0	84.0
180.0	884	280.4	94.1
225.0	178	285.4	81.2
270.0	94.2	288.4	77.6
315.0	268	286.8	84.2

Proposal service area is within baseline plus 1.0%
 Proposal service area population is more than 95.0% of baseline

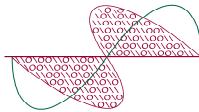
Distance to Canadian border: 554.8 km

Distance to Mexican border: 2427.7 km

Conditions at FCC monitoring station: Laurel MD
 Bearing: 306.1 degrees Distance: 125.6 km
 ERP: 218 kW Field strength: 49.5 dBu, 0.3 mV/m

Proposal is not within the West Virginia quiet zone area

Table 1 WBOC-TV OET Bulletin 69 Interference Study
(page 2 of 6 – condensed to show first scenarios only)



Chesapeake RF Consultants, LLC

Radiofrequency Consulting Engineers
Digital Television and Radio

Conditions at Table Mountain receiving zone:
Bearing: 283.5 degrees Distance: 2538.2 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%

No IX check failures found.

Interference to BLANK0000025178 APP, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMPT	D31	DT	APP	ANNAPOLIS, MD	BLANK0000025178	
Undesireds:	WBOC-TV	D32	DT	BL	SALISBURY, MD	DTVBL71218	100.8 km
	WBOC-TV	D32	DT	APP	SALISBURY, MD	WBOC PROP 920KW	100.8
	KYW-TV	D30	DT	CP	PHILADELPHIA, PA	BLANK0000024874	164.0
	WAZT-CD	D30	DC	BL	WOODSTOCK, VA	DTVBL57905	95.4
	WSKG-TV	D31	DT	BL	BINGHAMTON, NY	DTVBL74034	343.7
	WATM-TV	D31	DT	BL	ALTOONA, PA	DTVBL20287	233.6
	WTXF-TV	D31	DT	BL	PHILADELPHIA, PA	DTVBL51568	164.1
	WHRO-TV	D31	DT	BL	HAMPTON-NORFOLK, VA	DTVBL25932	244.9
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	150.1
Service area							
23985.0	7,951,360	23741.9	7,919,943	21835.7	7,800,006	21831.7	7,799,861
Percent New IX							
						0.02	0.00

Interference to DTVBL65942 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMPT	D31	DT	BL	ANNAPOLIS, MD	DTVBL65942	
Undesireds:	WBOC-TV	D32	DT	BL	SALISBURY, MD	DTVBL71218	100.8 km
	WBOC-TV	D32	DT	APP	SALISBURY, MD	WBOC PROP 920KW	100.8
	KYW-TV	D30	DT	CP	PHILADELPHIA, PA	BLANK0000024874	164.0
	WAZT-CD	D30	DC	BL	WOODSTOCK, VA	DTVBL57905	95.4
	WSKG-TV	D31	DT	BL	BINGHAMTON, NY	DTVBL74034	343.7
	WATM-TV	D31	DT	BL	ALTOONA, PA	DTVBL20287	233.6
	WTXF-TV	D31	DT	BL	PHILADELPHIA, PA	DTVBL51568	164.1
	WHRO-TV	D31	DT	BL	HAMPTON-NORFOLK, VA	DTVBL25932	244.9
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	150.1

Interference to DTVBL51568 BL, scenario 1
Proposal causes no interference.

Table 1 WBOC-TV OET Bulletin 69 Interference Study
 (page 3 of 6 – condensed to show first scenarios only)



 Interference to DTVBL25932 BL, scenario 1
 Proposal causes no interference.

 Interference to BLANK0000025351 CP, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WLIW	D32	DT	CP	GARDEN CITY, NY	BLANK0000025351	
Undesireds:	WBOC-TV	D32	DT	BL	SALISBURY, MD	DTVBL71218	315.6 km
	WBOC-TV	D32	DT	APP	SALISBURY, MD	WBOC PROP 920KW	315.6
	WVIT	D31	DT	BL	NEW BRITAIN, CT	DTVBL74170	113.8
	WGBX-TV	D32	DT	APP	BOSTON, MA	BLANK0000025427	250.1
	WTKO-CD	D32	DC	BL	ONEIDA, NY	DTVBL34341	312.4
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	292.7
	WCCT-TV	D33	DT	CP	WATERBURY, CT	BLANK0000025071	114.1
Service area					Terrain-limited	IX-free, before	IX-free, after
10816.4	14,008,719	10639.8	13,851,979	10571.9	13,753,912	10571.9	13,753,912
							Percent New IX
						0.00	0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WBOC-TV D32 DT BL	4.0	24,249	0.0
WBOC-TV D32 DT APP	4.0	24,249	0.0
WGBX-TV D32 DT APP	32.0	6,969	19.9
WHP-TV D32 DT BL	44.0	93,610	31.9
WCCT-TV D33 DT CP	4.0	0	0.0

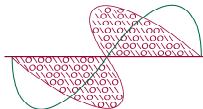
 Interference to DTVBL38336 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WLIW	D32	DT	BL	GARDEN CITY, NY	DTVBL38336	
Undesireds:	WBOC-TV	D32	DT	BL	SALISBURY, MD	DTVBL71218	315.6 km
	WBOC-TV	D32	DT	APP	SALISBURY, MD	WBOC PROP 920KW	315.6
	WVIT	D31	DT	BL	NEW BRITAIN, CT	DTVBL74170	113.8
	WGBX-TV	D32	DT	APP	BOSTON, MA	BLANK0000025427	250.1
	WTKO-CD	D32	DC	BL	ONEIDA, NY	DTVBL34341	312.4
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	292.7
	WCCT-TV	D33	DT	CP	WATERBURY, CT	BLANK0000025071	114.1
Service area					Terrain-limited	IX-free, before	IX-free, after
11065.0	14,117,670	10892.3	13,980,015	10824.5	13,873,411	10824.5	13,873,411
						Percent New IX	
						0.00	0.00
Undesired	Total IX	Unique IX, before	Unique IX, after				
WBOC-TV D32 DT BL	8.0	39,752	0.0	0			
WBOC-TV D32 DT APP	8.0	39,752	0.0	0			
WGBX-TV D32 DT APP	27.9	13,459	15.9	4,457	15.9	4,457	
WHP-TV D32 DT BL	47.9	100,337	27.9	51,583	27.9	51,583	
WCCT-TV D33 DT CP	4.0	1,810	4.0	1,810	4.0	1,810	

 Interference to DTVBL72313 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	
Undesireds:	WBOC-TV	D32	DT	BL	SALISBURY, MD	DTVBL71218	230.0 km
	WBOC-TV	D32	DT	APP	SALISBURY, MD	WBOC PROP 920KW	230.0
	WMPT	D31	DT	APP	ANNAPOLIS, MD	BLANK0000025178	150.1
	WATM-TV	D31	DT	BL	ALTOONA, PA	DTVBL20287	135.5
	WTFX-TV	D31	DT	BL	PHILADELPHIA, PA	DTVBL51568	142.5
	WNLO	D32	DT	LIC	BUFFALO, NY	BLCDT20070320AAV	343.6
	WLIW	D32	DT	CP	GARDEN CITY, NY	BLANK0000025351	292.7
	WTKO-CD	D32	DC	BL	ONEIDA, NY	DTVBL34341	318.4
	WMVH-CD	D32	DC	BL	CHARLEROI, PA	DTVBL68394	258.0
	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	230.4
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	296.9
	WPXV-TV	D32	DT	BL	NORFOLK, VA	DTVBL67077	394.4
	WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	156.1
	WPSG	D33	DT	CP	PHILADELPHIA, PA	BLANK0000024876	142.1

Table 1 WBOC-TV OET Bulletin 69 Interference Study
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Chesapeake RF Consultants, LLC

Radiofrequency Consulting Engineers

Digital Television and Radio

WQPX-TV	D33	DT	BL	SCRANTON, PA	DTVBL64690	154.6
Service area	Terrain-limited			IX-free, before	IX-free, after	Percent New IX
27883.3	3,045,798	24582.2	2,773,510	23562.4	2,666,084	23530.4
Undesired	Total IX			Unique IX, before	Unique IX, after	
WB0C-TV D32 DT BL	855.8	92,306		687.7	61,129	
WB0C-TV D32 DT APP	883.7	93,727			719.6	64,152
WMPT D31 DT APP	59.5	16,119		11.9	2,175	11.9
WATM-TV D31 DT BL	43.9	1,151		43.9	1,151	43.9
WTXF-TV D31 DT BL	112.8	15,879		20.1	2,456	20.1
WNLO D32 DT LIC	11.9	149		11.9	149	11.9
WCAV D32 DT CP	47.7	9,480		11.9	2,653	11.9
WPSG D33 DT CP	133.1	14,851		24.2	1,659	24.2
WQPX-TV D33 DT BL	7.9	242		7.9	242	7.9

Interference to BLANK0000025088 CP, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	
Undesireds:	WBOC-TV	D32	DT	BL	SALISBURY, MD	DTVBL71218	254.4 km
	WBOC-TV	D32	DT	APP	SALISBURY, MD	WBOC PROP 920KW	254.4
	WAXN-TV	D32	DT	CP	KANNAPOLIS, NC	BLANK0000025121	362.9
	WRPX-TV	D32	DT	BL	ROCKY MOUNT, NC	DTVBL20590	210.7
	WOUB-TV	D32	DT	APP	ATHENS, OH	BLANK0000025156	351.1
	WMVH-CD	D32	DC	BL	CHARLEROI, PA	DTVBL68394	267.3
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	296.9
	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	324.5
	WKPT-TV	D32	DT	APP	KINGSPORT, TN	BLANK0000026140	366.8
	WPXV-TV	D32	DT	BL	NORFOLK, VA	DTVBL67077	218.1
	WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	162.5
Service area							
20944.5	958,555	17856.2	733,735	17561.2	728,470	17557.2	728,470
Percent							
0.02	0.00						

Interference to DTVBL363 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
Undesireds:		D32	DT	BL	CHARLOTTESVILLE, VA	DTVBL363	
WBOC-TV	D32	DT	BL	SALISBURY, MD	DTVBL71218	254.4 km	
WBOC-TV	D32	DT	APP	SALISBURY, MD	WBOC PROP 920KW	254.4	
WAXN-TV	D32	DT	CP	KANNAPOLIS, NC	BLANK0000025121	362.9	
WRPX-TV	D32	DT	BL	ROCKY MOUNT, NC	DTVBL20590	210.7	
WOUB-TV	D32	DT	APP	ATHENS, OH	BLANK0000025156	351.1	
WMVH-CD	D32	DC	BL	CHARLEROI, PA	DTVBL68394	267.3	
WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	296.9	
WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	324.5	
WKPT-TV	D32	DT	APP	KINGSPORT, TN	BLANK0000026140	366.8	
WPXV-TV	D32	DT	BL	NORFOLK, VA	DTVBL67077	218.1	
WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	162.5	
Service area							
20748.5	949,732	17700.6	725,550	17389.5	720,225	17385.5	720,225
Percent							
0.02							0.00
Undesired		Total	IX	Unique IX, before		Unique IX, after	
WBOC-TV D32 DT BL	24.2	129	12.1	50		16.1	50
WBOC-TV D32 DT APP	28.2	129					
WRPX-TV D32 DT BL	191.1	3,504	159.3	3,083	159.3	3,083	
WHP-TV D32 DT BL	20.1	72	4.0	0	4.0	0	
WPXV-TV D32 DT BL	131.7	2,192	87.7	1,668	87.7	1,668	

Table 1 WBOC-TV OET Bulletin 69 Interference Study
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Interference to DTVBL67077 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WPXV-TV	D32	DT	BL	NORFOLK, VA	DTVBL67077	
Undesireds:	WBOC-TV	D32	DT	BL	SALISBURY, MD	DTVBL71218	203.1 km
	WBOC-TV	D32	DT	APP	SALISBURY, MD	WBOC PROP 920KW	203.2
	WHRO-TV	D31	DT	BL	HAMPTON-NORFOLK, VA	DTVBL25932	0.0
	WRPX-TV	D32	DT	BL	ROCKY MOUNT, NC	DTVBL20590	170.0
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	394.4
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	218.1
	WTYZ-TV	D33	DT	LIC	NORFOLK, VA	BLCDT20090602ABA	0.0
Service area					Terrain-limited	IX-free, before	
27784.9	1,905,128	27777.0	1,905,128	27064.3	1,893,721	27020.6	IX-free, after
						1,893,206	Percent New IX
					Total IX	Unique IX, before	
Undesired					4,915	405.7	Unique IX, after
WBOC-TV	D32	DT	BL	421.6	4,915	4,616	
WBOC-TV	D32	DT	APP	465.3	5,430	449.4	5,131
WHRO-TV	D31	DT	BL	19.9	82	8.0	60
WRPX-TV	D32	DT	BL	143.5	1,846	127.6	1,644
WCAV	D32	DT	CP	131.5	4,863	115.6	4,564
WTYZ-TV	D33	DT	LIC	39.9	224	12.0	0

Interference to BLEDT20071018AIJ LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	
Undesireds:	WBOC-TV	D32	DT	BL	SALISBURY, MD	DTVBL71218	134.0 km
	WBOC-TV	D32	DT	APP	SALISBURY, MD	WBOC PROP 920KW	134.0
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	156.1
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	162.5
	WPSG	D33	DT	CP	PHILADELPHIA, PA	BLANK0000024876	198.9
	WQPX-TV	D33	DT	BL	SCRANTON, PA	DTVBL64690	299.1
	WTYZ-TV	D33	DT	LIC	NORFOLK, VA	BLCDT20090602ABA	243.3
	WRC-TV	D34	DT	APP	WASHINGTON, DC	BLANK0000026891	1.2
Service area					Terrain-limited	IX-free, before	
17873.1	7,649,763	17590.4	7,617,337	17042.7	7,537,390	17042.7	IX-free, after
						7,537,390	Percent New IX
Undesired					Total IX	Unique IX, before	
WBOC-TV	D32	DT	BL	4.0	442	0.0	0
WBOC-TV	D32	DT	APP	4.0	442	0.0	0
WPSG	D33	DT	CP	343.6	60,036	271.7	41,388
WTYZ-TV	D33	DT	LIC	147.9	21,741	92.0	4,050
WRC-TV	D34	DT	APP	136.1	16,970	104.1	15,709

Interference to BPEDT20120627AAD CP, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WHUT-TV	D33	DT	CP	WASHINGTON, DC	BPEDT20120627AAD	
Undesireds:	WBOC-TV	D32	DT	BL	SALISBURY, MD	DTVBL71218	134.0 km
	WBOC-TV	D32	DT	APP	SALISBURY, MD	WBOC PROP 920KW	134.0
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	156.1
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	162.5
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	384.5
	WPSG	D33	DT	CP	PHILADELPHIA, PA	BLANK0000024876	198.9
	WQPX-TV	D33	DT	BL	SCRANTON, PA	DTVBL64690	299.1
	WTYZ-TV	D33	DT	LIC	NORFOLK, VA	BLCDT20090602ABA	243.3
	WRC-TV	D34	DT	APP	WASHINGTON, DC	BLANK0000026891	1.2
Service area					Terrain-limited	IX-free, before	
26344.4	8,298,094	25340.7	8,242,676	24440.6	8,152,376	24440.6	IX-free, after
						8,152,376	Percent New IX
Undesired					Total IX	Unique IX, before	
WBOC-TV	D32	DT	BL	56.3	2,371	4.0	1
WBOC-TV	D32	DT	APP	56.3	2,371	4.0	1
WCAV	D32	DT	CP	4.0	51	0.0	0
WPSG	D33	DT	CP	658.0	75,493	489.8	67,770

Table 1 WBOC-TV OET Bulletin 69 Interference Study
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WTVZ-TV D33 DT LIC	378.4	22,270	222.2	14,557	222.2	14,557
WRC-TV D34 DT APP	23.9	304	15.9	249	15.9	249

Interference to BLANK0000024876 CP, scenario 1
 Proposal causes no interference.

Interference to DTVBL12499 BL, scenario 1
 Proposal causes no interference.

Interference to BLCDT20090602ABA LIC, scenario 1
 Proposal causes no interference.

Interference to proposal, scenario 1
 **MX: 0.81% interference

Desired:	Call WBOC-TV	Chan D32	Svc DT	Status APP	City, State SALISBURY, MD	File Number WBOC PROP 920KW	Distance
Undesireds:	WMPT	D31	DT	APP	ANNAPOLIS, MD	BLANK0000025178	100.8 km
	WTXF-TV	D31	DT	BL	PHILADELPHIA, PA	DTVBL51568	174.2
	WRPX-TV	D32	DT	BL	ROCKY MOUNT, NC	DTVBL20590	349.3
	WLIW	D32	DT	CP	GARDEN CITY, NY	BLANK0000025351	315.6
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	230.0
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	254.4
	WPXV-TV	D32	DT	BL	NORFOLK, VA	DTVBL67077	203.2
	WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	134.0
	WPSG	D33	DT	CP	PHILADELPHIA, PA	BLANK0000024876	174.3
	Service area 22513.7	793,136	22513.7	793,136	Terrain-limited 22134.8	IX-free 786,707	Percent IX 1.68 0.81
Undesired					Total IX	Unique IX	Prcnt Unique IX
WMPT D31 DT APP		195.8		2,125	195.8	2,125	0.87 0.27
WHP-TV D32 DT BL		8.0		190	4.0	40	0.02 0.01
WCAV D32 DT CP		4.0		5	0.0	0	0.00 0.00
WPXV-TV D32 DT BL		179.1		4,264	171.1	4,109	0.76 0.52

Channel and Facility Information	Section	Question	Response
	Proposed Community of License	Facility ID	71218
		State	Maryland
		City	SALISBURY
		DTV Channel	32
	Facility Type	Facility Type	Commercial
		Station Type	Main
	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	1301089
	Coordinates (NAD83)	Latitude	38° 30' 18.0" N+
		Longitude	075° 38' 36.0" W-
		Structure Type	GTOWER-Guyed Structure Used for Communication Purposes
		Overall Structure Height	305.4 meters
		Support Structure Height	271.3 meters
		Ground Elevation (AMSL)	14.0 meters
	Antenna Data	Height of Radiation Center Above Ground Level	279.5 meters
		Height of Radiation Center Above Average Terrain	284.1 meters
		Height of Radiation Center Above Mean Sea Level	293.5 meters
		Effective Radiated Power	920 kW

Antenna Technical Data	Section	Question	Response
	Antenna Type	Antenna Type	Directional Custom
		Do you have an Antenna ID?	No
		Antenna ID	
	Antenna Manufacturer and Model	Manufacturer:	DIE
		Model	TFU-24JTH/VP-R P250
		Rotation	0 degrees
		Electrical Beam Tilt	0.75
		Mechanical Beam Tilt	Not Applicable
		toward azimuth	
		Polarization	Elliptical
	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)						
0	0.980	90	0.470	180	0.980	270	0.320
10	0.850	100	0.380	190	0.860	280	0.230
20	0.650	110	0.420	200	0.670	290	0.300
30	0.560	120	0.560	210	0.530	300	0.450
40	0.590	130	0.580	220	0.490	310	0.510
50	0.510	140	0.570	230	0.390	320	0.570
60	0.370	150	0.730	240	0.240	330	0.750
70	0.410	160	0.920	250	0.270	340	0.920
80	0.480	170	1.000	260	0.330	350	1.000

Additional Azimuths

Degree	V _A
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Construction Permit Certifications	Section	Question	Response
	Post-Incentive Auction Expedited Processing	<p>It will operate on the DTV channel for this station as established in the post-incentive auction channel reassignment public notice.</p> <p>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.</p> <p>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.</p> <p>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.</p>	Yes No Yes 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