

ENGINEERING EXHIBIT

Incentive Auction Channel Reassignment

Application for Digital Television Station Construction Permit

prepared for

University Of North Carolina

WUNL-TV Winston-Salem, NC

Facility ID 69360

Ch. 33 630 kW 501 m

University Of North Carolina (“UNC”) is the licensee of digital television station WUNL-TV, Channel 32, Facility ID 69360, Winston-Salem, NC. *UNC* herein proposes construction of the WUNL-TV post-auction facility on Channel 33. Reassignment of WUNL-TV from Channel 32 to Channel 33 was specified in the *Incentive Auction Closing and Channel Reassignment Public Notice (“CCRPN”, DA 17-317, released April 13, 2017)*.

The proposed Channel 33 operation will employ a new antenna system to be top-mounted on the WUNL-TV tower in lieu of the existing Channel 32 antenna. The existing tower structure corresponds to FCC Antenna Structure Registration (“ASR”) number 1014577. The proposed Channel 33 antenna has a longer length than the existing Channel 32 antenna. The structure’s overall height will increase by 1.9 meters to 108.9 meters above ground level. The FAA has been notified of the proposed height increase (2017-ASO-13913-OE) and upon receipt of an FAA Determination of No Hazard an application to modify the FCC ASR will be submitted. At that time an amendment will be supplied to this application to supply the ASR number.¹

The proposed antenna is an elliptically polarized directional Dielectric model TFU-19JSC/VP-R-C170 (33.3 percent vertical polarization). *UNC* proposes to operate WUNL-TV with an effective radiated power (“ERP”) of 630 kW at 501 meters antenna height above average terrain (“HAAT”). The maximum horizontally polarized ERP is 630 kW and the maximum

¹As discussed with FCC staff, the ASR number is omitted on the accompanying Form 2100 because the LMS electronic filing system automatically pre-fills the overall structure height from ASR data, which presently is set to the existing height of 107.0 meters AGL. By omitting the ASR number, the proposed overall height can be entered on the form.

vertically polarized ERP is 210 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 Winston-Salem, WUNL-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 dBμ contour.

The proposed noise limited service contour ("NLSC") extends beyond that of the *CCRPN* parameters of 587 kW ERP and 499 meters HAAT.² The proposal complies with §73.3700(b)(1)(ii) as described in the following.

The *CCRPN* facility specifies the directional antenna pattern corresponding to WUNL-TV's licensed Channel 32 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, WUNL-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 69³ shows that the proposal complies with the 0.5 percent limit of new interference caused to pertinent nearby post-auction full service and

²The antenna height above ground and above mean sea level is increased by 0.4 meters from licensed values. The proposed WUNL-TV antenna HAAT is recalculated to be 501.3 meters, based on FCC 30 meter terrain data developed by OET.

³FCC 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 FCC's implementation of TVStudy show excellent correlation.

Class A television stations and reassignments as required by §73.616. The interference study 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 WUNL-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 WUNL-TV facility's terrain-limited population provides a 101.6 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	2,614,144	2,660,624
Not affected by terrain losses	2,541,314	2,581,924
Match of Reassignment	---	101.60%

The proposed 630 kW ERP exceeds the maximum allowed for the proposed antenna HAAT of 501 meters permitted by §73.622(f)(8)(i). 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. As demonstrated in Figure 5, the total area within the proposed WUNL-TV NLSC is 32,714 square kilometers, which does not exceed the NLSC area of WFMY-TV (44,324 sq. km, Ch. 51, Greensboro NC, BLCDT-20050628AAB). Thus, the 630 kW ERP specified herein is in compliance with §73.622(f)(5) of the FCC's Rules.

The nearest FCC monitoring station is 440 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 7 percent antenna relative field in downward elevations (pattern data shows less than 7 percent relative field at angles 45 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 $13.9 \mu\text{W}/\text{cm}^2$, which is 3.6 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.

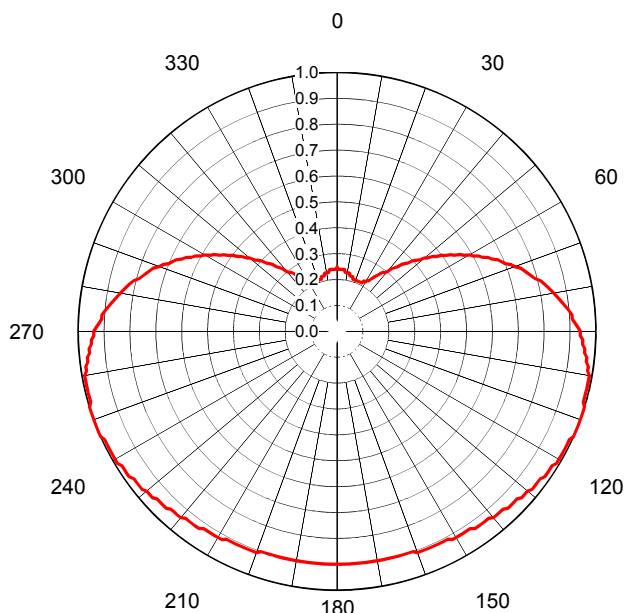
The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC’s guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power 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
Figure 5	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.	July 11, 2017	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600



AZIMUTH PATTERN Horizontal Polarization

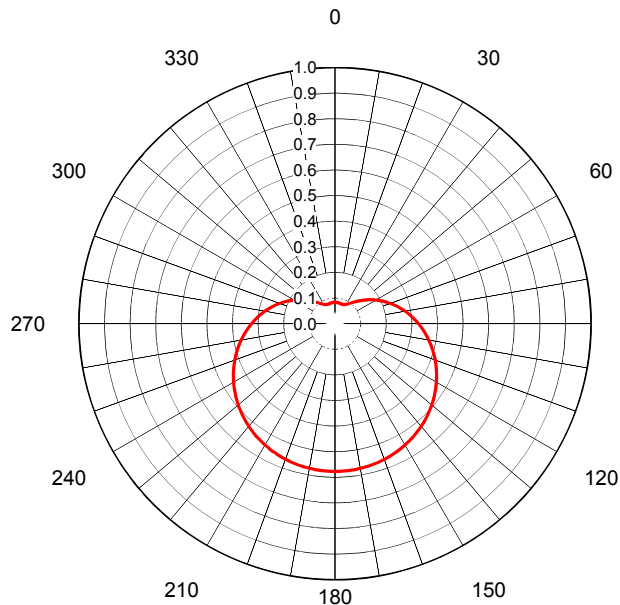
Proposal No. **C-70225-3**
 Date **19-Feb-17**
 Call Letters **WUNL**
 Frequency **587 MHz**
 Channel **33**
 Antenna Type **TFU-19JSC/VP-R-C170**
 Gain **1.7 (2.32dB)**
Calculated
 Directional
 Drawing # **C170**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.250	36	0.270	72	0.760	108	1.000	144	0.930	180	0.900	216	0.930	252	1.000	288	0.760	324	0.270
1	0.240	37	0.280	73	0.770	109	1.000	145	0.930	181	0.900	217	0.930	253	1.000	289	0.750	325	0.260
2	0.240	38	0.290	74	0.780	110	1.000	146	0.920	182	0.900	218	0.930	254	0.990	290	0.730	326	0.250
3	0.240	39	0.290	75	0.790	111	1.000	147	0.920	183	0.900	219	0.930	255	0.990	291	0.720	327	0.240
4	0.240	40	0.300	76	0.810	112	1.000	148	0.920	184	0.900	220	0.940	256	0.990	292	0.700	328	0.230
5	0.240	41	0.320	77	0.820	113	1.000	149	0.920	185	0.900	221	0.940	257	0.990	293	0.690	329	0.230
6	0.240	42	0.330	78	0.830	114	1.000	150	0.920	186	0.900	222	0.940	258	0.990	294	0.680	330	0.220
7	0.240	43	0.340	79	0.840	115	0.990	151	0.920	187	0.900	223	0.940	259	0.990	295	0.660	331	0.220
8	0.230	44	0.360	80	0.850	116	0.990	152	0.910	188	0.900	224	0.950	260	0.990	296	0.650	332	0.220
9	0.230	45	0.370	81	0.860	117	0.990	153	0.910	189	0.900	225	0.950	261	0.980	297	0.630	333	0.210
10	0.230	46	0.380	82	0.870	118	0.990	154	0.910	190	0.900	226	0.950	262	0.980	298	0.620	334	0.210
11	0.230	47	0.400	83	0.880	119	0.990	155	0.910	191	0.900	227	0.950	263	0.970	299	0.600	335	0.210
12	0.230	48	0.410	84	0.890	120	0.990	156	0.910	192	0.900	228	0.960	264	0.970	300	0.590	336	0.210
13	0.220	49	0.420	85	0.900	121	0.990	157	0.910	193	0.900	229	0.960	265	0.960	301	0.570	337	0.210
14	0.220	50	0.440	86	0.910	122	0.980	158	0.910	194	0.900	230	0.960	266	0.960	302	0.560	338	0.210
15	0.220	51	0.450	87	0.910	123	0.980	159	0.910	195	0.900	231	0.970	267	0.950	303	0.540	339	0.210
16	0.220	52	0.470	88	0.920	124	0.980	160	0.910	196	0.900	232	0.970	268	0.950	304	0.530	340	0.210
17	0.210	53	0.480	89	0.930	125	0.980	161	0.900	197	0.900	233	0.970	269	0.940	305	0.510	341	0.210
18	0.210	54	0.500	90	0.940	126	0.970	162	0.900	198	0.900	234	0.970	270	0.940	306	0.500	342	0.210
19	0.210	55	0.510	91	0.940	127	0.970	163	0.900	199	0.900	235	0.980	271	0.930	307	0.480	343	0.210
20	0.210	56	0.530	92	0.950	128	0.970	164	0.900	200	0.910	236	0.980	272	0.920	308	0.470	344	0.220
21	0.210	57	0.540	93	0.950	129	0.970	165	0.900	201	0.910	237	0.980	273	0.910	309	0.450	345	0.220
22	0.210	58	0.560	94	0.960	130	0.960	166	0.900	202	0.910	238	0.980	274	0.910	310	0.440	346	0.220
23	0.210	59	0.570	95	0.960	131	0.960	167	0.900	203	0.910	239	0.990	275	0.900	311	0.420	347	0.220
24	0.210	60	0.590	96	0.970	132	0.960	168	0.900	204	0.910	240	0.990	276	0.890	312	0.410	348	0.230
25	0.210	61	0.600	97	0.970	133	0.950	169	0.900	205	0.910	241	0.990	277	0.880	313	0.400	349	0.230
26	0.210	62	0.620	98	0.980	134	0.950	170	0.900	206	0.910	242	0.990	278	0.870	314	0.380	350	0.230
27	0.210	63	0.630	99	0.980	135	0.950	171	0.900	207	0.910	243	0.990	279	0.860	315	0.370	351	0.230
28	0.220	64	0.650	100	0.990	136	0.950	172	0.900	208	0.910	244	0.990	280	0.850	316	0.360	352	0.230
29	0.220	65	0.660	101	0.990	137	0.940	173	0.900	209	0.920	245	0.990	281	0.840	317	0.340	353	0.240
30	0.220	66	0.680	102	0.990	138	0.940	174	0.900	210	0.920	246	1.000	282	0.830	318	0.330	354	0.240
31	0.230	67	0.690	103	0.990	139	0.940	175	0.900	211	0.920	247	1.000	283	0.820	319	0.320	355	0.240
32	0.230	68	0.700	104	0.990	140	0.940	176	0.900	212	0.920	248	1.000	284	0.810	320	0.300	356	0.240
33	0.240	69	0.720	105	0.990	141	0.930	177	0.900	213	0.920	249	1.000	285	0.790	321	0.290	357	0.240
34	0.250	70	0.730	106	0.990	142	0.930	178	0.900	214	0.920	250	1.000	286	0.780	322	0.290	358	0.240
35	0.260	71	0.750	107	1.000	143	0.930	179	0.900	215	0.930	251	1.000	287	0.770	323	0.280	359	0.240

Figure 1
Antenna Azimuthal Pattern
Horizontal Polarization
WUNL-TV Winston-Salem, NC
Facility ID 69360
Ch. 33 630 kW 501 m

prepared for
University Of North Carolina

July, 2017



AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-70225-3**
 Date **19-Feb-17**
 Call Letters **WUNL**
 Frequency **587 MHz**
 Channel **33**
 Antenna Type **TFU-19JSC/VP-R-C170**
 Gain **2.42 (3.84dB)**
Calculated
 Directional
 Drawing # **V-6D-Ch33**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.084	36	0.098	72	0.240	108	0.408	144	0.534	180	0.577	216	0.534	252	0.408	288	0.240
1	0.084	37	0.100	73	0.245	109	0.412	145	0.536	181	0.577	217	0.531	253	0.404	289	0.235
2	0.084	38	0.103	74	0.250	110	0.417	146	0.539	182	0.577	218	0.529	254	0.399	290	0.231
3	0.084	39	0.105	75	0.254	111	0.421	147	0.541	183	0.577	219	0.526	255	0.395	291	0.226
4	0.083	40	0.108	76	0.259	112	0.425	148	0.543	184	0.577	220	0.523	256	0.390	292	0.221
5	0.083	41	0.111	77	0.264	113	0.429	149	0.545	185	0.577	221	0.521	257	0.386	293	0.216
6	0.083	42	0.114	78	0.269	114	0.433	150	0.547	186	0.576	222	0.518	258	0.381	294	0.212
7	0.083	43	0.117	79	0.273	115	0.437	151	0.549	187	0.576	223	0.515	259	0.377	295	0.207
8	0.083	44	0.120	80	0.278	116	0.441	152	0.551	188	0.575	224	0.512	260	0.372	296	0.203
9	0.082	45	0.124	81	0.283	117	0.446	153	0.553	189	0.575	225	0.509	261	0.368	297	0.198
10	0.082	46	0.127	82	0.288	118	0.449	154	0.555	190	0.574	226	0.506	262	0.363	298	0.193
11	0.082	47	0.131	83	0.293	119	0.453	155	0.556	191	0.573	227	0.503	263	0.359	299	0.189
12	0.082	48	0.135	84	0.297	120	0.457	156	0.558	192	0.573	228	0.500	264	0.354	300	0.184
13	0.081	49	0.138	85	0.302	121	0.461	157	0.560	193	0.572	229	0.497	265	0.349	301	0.180
14	0.081	50	0.142	86	0.307	122	0.465	158	0.561	194	0.571	230	0.493	266	0.345	302	0.175
15	0.081	51	0.146	87	0.312	123	0.469	159	0.563	195	0.570	231	0.490	267	0.340	303	0.171
16	0.081	52	0.150	88	0.316	124	0.472	160	0.564	196	0.569	232	0.487	268	0.335	304	0.167
17	0.081	53	0.154	89	0.321	125	0.476	161	0.565	197	0.568	233	0.483	269	0.331	305	0.163
18	0.080	54	0.158	90	0.326	126	0.480	162	0.567	198	0.567	234	0.480	270	0.326	306	0.158
19	0.080	55	0.163	91	0.331	127	0.483	163	0.568	199	0.565	235	0.476	271	0.321	307	0.154
20	0.080	56	0.167	92	0.335	128	0.487	164	0.569	200	0.564	236	0.472	272	0.316	308	0.150
21	0.081	57	0.171	93	0.340	129	0.490	165	0.570	201	0.563	237	0.469	273	0.312	309	0.146
22	0.081	58	0.175	94	0.345	130	0.493	166	0.571	202	0.561	238	0.465	274	0.307	310	0.142
23	0.081	59	0.180	95	0.349	131	0.497	167	0.572	203	0.560	239	0.461	275	0.302	311	0.138
24	0.082	60	0.184	96	0.354	132	0.500	168	0.573	204	0.558	240	0.457	276	0.297	312	0.135
25	0.082	61	0.189	97	0.359	133	0.503	169	0.573	205	0.556	241	0.453	277	0.293	313	0.131
26	0.083	62	0.193	98	0.363	134	0.506	170	0.574	206	0.555	242	0.449	278	0.288	314	0.127
27	0.084	63	0.198	99	0.368	135	0.509	171	0.575	207	0.553	243	0.446	279	0.283	315	0.124
28	0.085	64	0.203	100	0.372	136	0.512	172	0.575	208	0.551	244	0.441	280	0.278	316	0.120
29	0.086	65	0.207	101	0.377	137	0.515	173	0.576	209	0.549	245	0.437	281	0.273	317	0.117
30	0.087	66	0.212	102	0.381	138	0.518	174	0.576	210	0.547	246	0.433	282	0.269	318	0.114
31	0.088	67	0.216	103	0.386	139	0.521	175	0.577	211	0.545	247	0.429	283	0.264	319	0.111
32	0.090	68	0.221	104	0.390	140	0.523	176	0.577	212	0.543	248	0.425	284	0.259	320	0.108
33	0.092	69	0.226	105	0.395	141	0.526	177	0.577	213	0.541	249	0.421	285	0.254	321	0.105
34	0.094	70	0.231	106	0.399	142	0.529	178	0.577	214	0.539	250	0.417	286	0.250	322	0.103
35	0.096	71	0.235	107	0.404	143	0.531	179	0.577	215	0.536	251	0.412	287	0.245	323	0.100

Figure 1A
Antenna Azimuthal Pattern
Vertical Polarization
WUNL-TV Winston-Salem, NC
Facility ID 69360
Ch. 33 630 kW 501 m

prepared for
University Of North Carolina

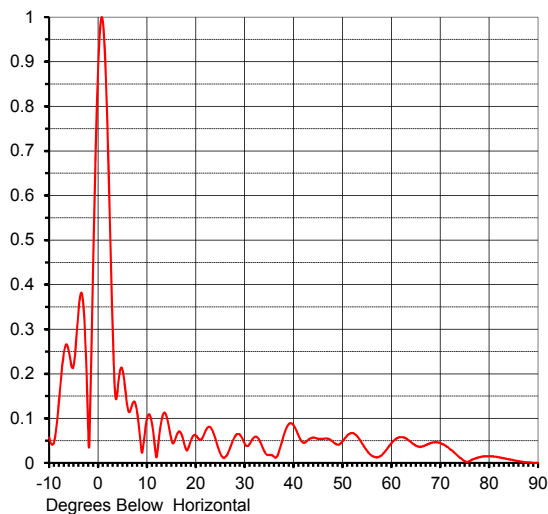
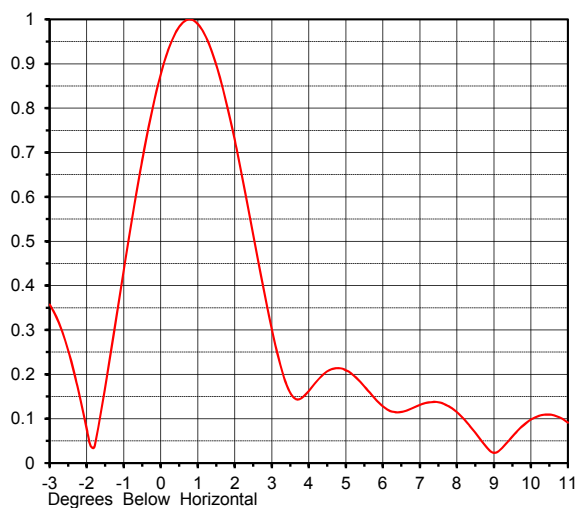
July, 2017

ELEVATION PATTERN

Proposal No. **C-70225-3**
 Date **19-Feb-17**
 Call Letters **WUNL**
 Frequency **587 MHz**
 Channel **33**
 Antenna Type **TFU-19JSC/VP-R-C170**

RMS Directivity at Main Lobe **19.00 (12.79 dB)**
 RMS Directivity at Horizontal **14.60 (11.64 dB)**
Calculated

Beam Tilt **0.75 deg**
 Drawing Number **19J190075**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.057	10.0	0.098	30.0	0.044	50.0	0.048	70.0	0.045
-9.0	0.046	11.0	0.091	31.0	0.042	51.0	0.062	71.0	0.039
-8.0	0.136	12.0	0.013	32.0	0.058	52.0	0.067	72.0	0.031
-7.0	0.245	13.0	0.096	33.0	0.051	53.0	0.060	73.0	0.022
-6.0	0.253	14.0	0.106	34.0	0.027	54.0	0.044	74.0	0.012
-5.0	0.217	15.0	0.053	35.0	0.018	55.0	0.028	75.0	0.004
-4.0	0.339	16.0	0.059	36.0	0.014	56.0	0.016	76.0	0.004
-3.0	0.357	17.0	0.066	37.0	0.025	57.0	0.012	77.0	0.009
-2.0	0.077	18.0	0.031	38.0	0.062	58.0	0.017	78.0	0.013
-1.0	0.434	19.0	0.050	39.0	0.087	59.0	0.030	79.0	0.015
0.0	0.876	20.0	0.062	40.0	0.085	60.0	0.044	80.0	0.015
1.0	0.990	21.0	0.052	41.0	0.062	61.0	0.054	81.0	0.014
2.0	0.728	22.0	0.072	42.0	0.045	62.0	0.058	82.0	0.013
3.0	0.302	23.0	0.080	43.0	0.052	63.0	0.055	83.0	0.011
4.0	0.162	24.0	0.055	44.0	0.057	64.0	0.047	84.0	0.008
5.0	0.209	25.0	0.022	45.0	0.054	65.0	0.039	85.0	0.006
6.0	0.128	26.0	0.013	46.0	0.054	66.0	0.036	86.0	0.004
7.0	0.131	27.0	0.033	47.0	0.054	67.0	0.040	87.0	0.002
8.0	0.115	28.0	0.059	48.0	0.048	68.0	0.044	88.0	0.001
9.0	0.023	29.0	0.064	49.0	0.041	69.0	0.047	89.0	0.000
								90.0	0.000

Figure 2
Antenna Elevation Pattern
WUNL-TV Winston-Salem, NC
Facility ID 69360
Ch. 33 630 kW 501 m

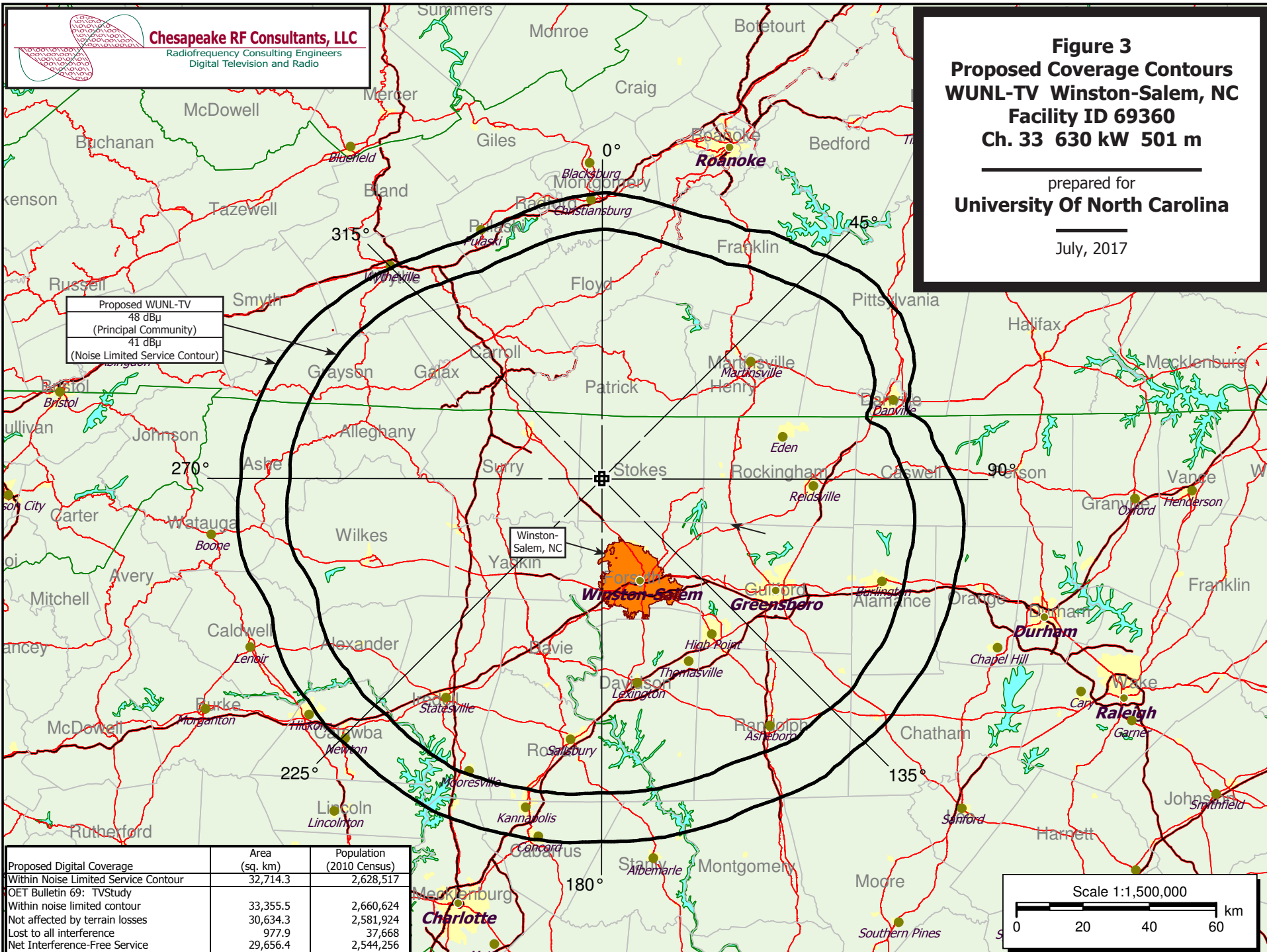
prepared for
University Of North Carolina

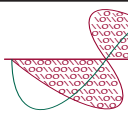
July, 2017

Figure 3
Proposed Coverage Contours
WUNL-TV Winston-Salem, NC
Facility ID 69360
Ch. 33 630 kW 501 m

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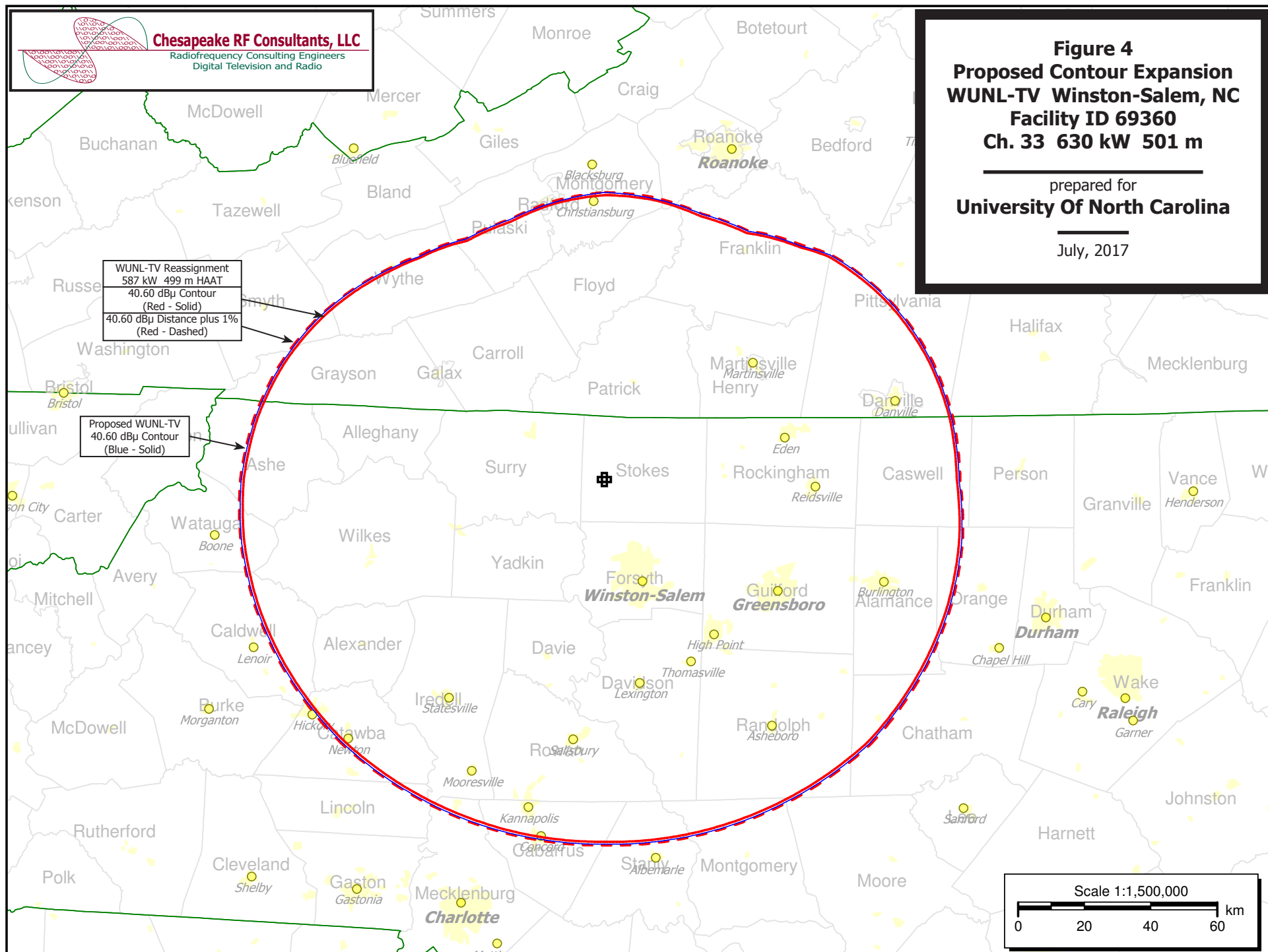
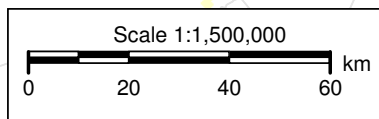
Figure 4
Proposed Contour Expansion
WUNL-TV Winston-Salem, NC
Facility ID 69360
Ch. 33 630 kW 501 m

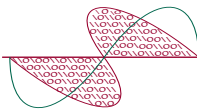
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WUNL-TV Reassignment
587 kW 499 m HAAT
40.60 dBu Contour
(Red - Solid)
40.60 dBu Distance plus 1%
(Red - Dashed)

Proposed WUNL-TV
40.60 dBu Contour
(Blue - Solid)





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Figure 5
Maximum ERP per §73.622(f)
WUNL-TV Winston-Salem, NC
Facility ID 69360
Ch. 33 630 kW 501 m

prepared for
University Of North Carolina

July, 2017

Proposed WUNL-TV
41 dBu Contour (NLSC)
Area: 32,714 sq. km

WFMY-TV Ch. 51 Greensboro, NC
BLCDT-20050628AAB
41 dBu Contour (NLSC)
Area: 44,324 sq. km

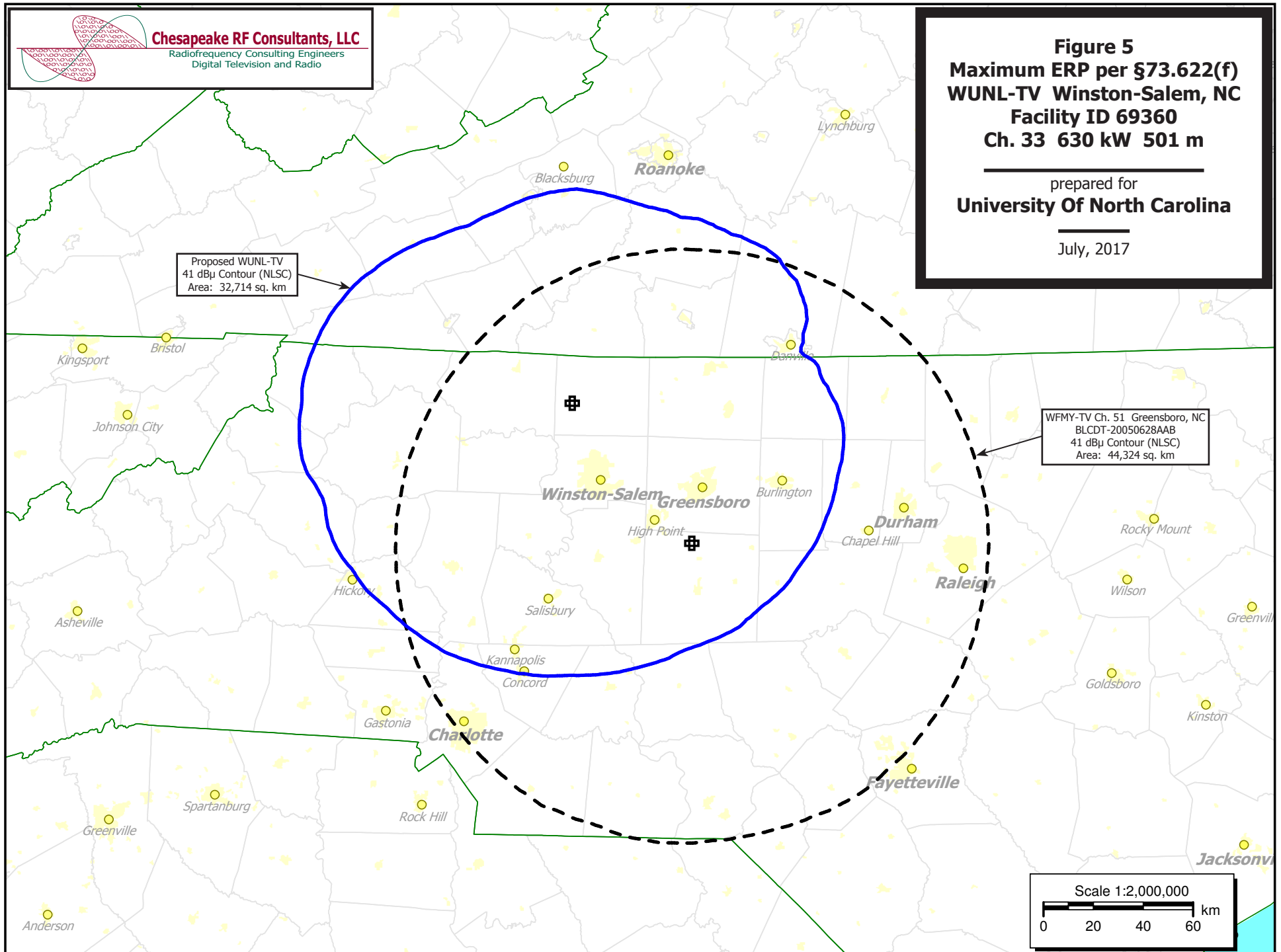
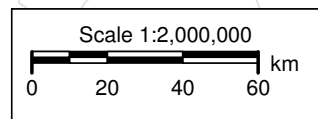
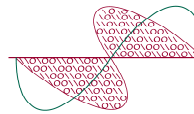


Table 1 WUNL-TV OET Bulletin 69 Interference Study
(page 1 of 6 – No IX check failures found, condensed to show first scenarios only)



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tvstudy v2.2.2

Database: localhost, Study: WUNL-TV 630KW PROP, Model: Longley-Rice
Start: 2017.07.11 10:30:15

Study created: 2017.07.11 10:29:40

Study build station data: LMS TV 2017-07-11 LMSTV

Proposal: WUNL-TV D33 DT APP WINSTON-SALEM, NC
File number: WUNL-TV 630KW
Facility ID: 69360
Station data: User record
Record ID: 831
Country: U.S.
Zone: II

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
WAXN-TV	D32	DT	CP	KANNAPOLIS, NC	BLANK0000025121	127.9 km
WAXN-TV	D32	DT	BL	KANNAPOLIS, NC	DTVBL12793	127.9
WRPX-TV	D32	DT	APP	ROCKY MOUNT, NC	BLANK0000027007	197.8
WRPX-TV	D32	DT	BL	ROCKY MOUNT, NC	DTVBL20590	197.8
WKPT-TV	D32	DT	APP	KINGSPORT, TN	BLANK0000026140	158.1
WKPT-TV	D32	DT	BL	KINGSPORT, TN	DTVBL27504	158.1
WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	245.0
WCAV	D32	DT	BL	CHARLOTTESVILLE, VA	DTVBL363	245.0
WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	407.1
WHUT-TV	D33	DT	CP	WASHINGTON, DC	BPEDT20120627AAD	407.1
WKHA	D33	DT	CP	HAZARD, KY	BLANK0000025297	266.7
WKHA	D33	DT	BL	HAZARD, KY	DTVBL34196	266.7
WLPS-CD	D33	DC	APP	LUMBERTON-PEMBROKE, NC	BLANK0000026947	218.4
WLPS-CD	D33	DC	BL	LUMBERTON-PEMBROKE, NC	DTVBL167158	218.4
WRLK-TV	D33	DT	CP	COLUMBIA, SC	BLANK0000025032	256.0
WRLK-TV	D33	DT	BL	COLUMBIA, SC	DTVBL61013	256.1
WTVZ-TV	D33	DT	LIC	NORFOLK, VA	BLCDT20090602ABA	348.5
WYBE-CD	D34	DC	APP	PINEHURST, NC	BLANK0000027048	159.5
WYBE-CD	D34	DC	BL	PINEHURST, NC	DTVBL40211	159.5
WNSC-TV	D34	DT	CP	ROCK HILL, SC	BLANK0000025025	180.4
WNSC-TV	D34	DT	BL	ROCK HILL, SC	DTVBL61009	180.4
WSLS-TV	D34	DT	BL	ROANOKE, VA	DTVBL57840	93.9

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D33
Latitude: 36 22 31.70 N (NAD83)
Longitude: 80 22 17.50 W
Height AMSL: 820.4 m
HAAT: 501.3 m
Peak ERP: 630 kW
Antenna: TFU-19JSC C170 20170710 0.0 deg

40.6 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	39.4 kW	491.7 m	86.5 km
45.0	86.2	535.5	95.7
90.0	557	462.1	106.6
135.0	569	534.9	112.4
180.0	510	509.4	109.6
225.0	569	523.8	111.7
270.0	557	493.0	109.2
315.0	86.2	460.0	90.2

ERP exceeds maximum
ERP: 630 kW ERP maximum: 510 kW

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

Table 1 WUNL-TV OET Bulletin 69 Interference Study
(page 2 of 6 – No IX check failures found, condensed to show first scenarios only)



Distance to Canadian border: 614.6 km

Distance to Mexican border: 1948.1 km

Conditions at FCC monitoring station: Laurel MD
Bearing: 44.1 degrees Distance: 439.8 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 288.5 degrees Distance: 2201.5 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 BLANK0000025121 CP, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WAXN-TV	D32	DT	CP	KANNAPOLIS, NC	BLANK0000025121	
Undesireds:	WUNL-TV	D33	DT	BL	WINSTON-SALEM, NC	DTVBL69360	127.9 km
	WUNL-TV	D33	DT	APP	WINSTON-SALEM, NC	WUNL-TV 630KW	127.9
	WGHP	D31	DT	CP	HIGH POINT, NC	BLANK0000025059	100.9
	WKTC	D31	DT	APP	SUMTER, SC	BLANK0000027544	127.4
	WSB-TV	D32	DT	APP	ATLANTA, GA	BLANK0000025134	372.1
	WRPX-TV	D32	DT	APP	ROCKY MOUNT, NC	BLANK0000027007	247.3
	WJWJ-TV	D32	DT	CP	BEAUFORT, SC	BLANK0000025030	283.4
	WMBF-TV	D32	DT	LIC	MYRTLE BEACH, SC	BLCDT20091105AAP	227.7
	WKPT-TV	D32	DT	APP	KINGSPORT, TN	BLANK0000026140	181.8
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	362.9
	WLPS-CD	D33	DC	APP	LUMBERTON-PEMBROKE, NC	BLANK0000026947	160.0
	WRLK-TV	D33	DT	CP	COLUMBIA, SC	BLANK0000025032	128.5

	Service area	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
	20649.7	2,641,429	20465.8	2,633,223	19916.5	2,612,079	19908.4 2,611,418 0.04 0.03

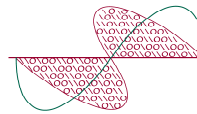
Undesired			Total IX		Unique IX, before		Unique IX, after
WUNL-TV D33 DT BL			184.9	13,371	124.6	10,293	
WUNL-TV D33 DT APP			193.0	14,032			132.6 10,954
WGHP D31 DT CP			221.6	8,721	145.2	4,898	145.2 4,898
WKTC D31 DT APP			23.9	37	8.0	5	8.0 5
WSB-TV D32 DT APP			7.9	27	7.9	27	7.9 27
WRPX-TV D32 DT APP			72.1	2,009	20.1	608	20.1 608
WMBF-TV D32 DT LIC			63.6	748	35.7	506	35.7 506
WRLK-TV D33 DT CP			103.5	742	87.6	710	87.6 710

Interference to DTVBL12793 BL, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WAXN-TV	D32	DT	BL	KANNAPOLIS, NC	DTVBL12793	
Undesireds:	WUNL-TV	D33	DT	BL	WINSTON-SALEM, NC	DTVBL69360	127.9 km
	WUNL-TV	D33	DT	APP	WINSTON-SALEM, NC	WUNL-TV 630KW	127.9
	WGHP	D31	DT	CP	HIGH POINT, NC	BLANK0000025059	100.9
	WKTC	D31	DT	APP	SUMTER, SC	BLANK0000027544	127.3
	WSB-TV	D32	DT	APP	ATLANTA, GA	BLANK0000025134	372.1
	WRPX-TV	D32	DT	APP	ROCKY MOUNT, NC	BLANK0000027007	247.3
	WJWJ-TV	D32	DT	CP	BEAUFORT, SC	BLANK0000025030	283.4
	WMBF-TV	D32	DT	LIC	MYRTLE BEACH, SC	BLCDT20091105AAP	227.7
	WKPT-TV	D32	DT	APP	KINGSPORT, TN	BLANK0000026140	181.8
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	362.9
	WLPS-CD	D33	DC	APP	LUMBERTON-PEMBROKE, NC	BLANK0000026947	160.0
	WRLK-TV	D33	DT	CP	COLUMBIA, SC	BLANK0000025032	128.5

	Service area	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
	20653.6	2,640,206	20481.7	2,632,087	19900.1	2,609,949	19892.1 2,609,288 0.04 0.03

Table 1 WUNL-TV OET Bulletin 69 Interference Study
(page 3 of 6 – No IX check failures found, condensed to show first scenarios only)



Undesired		Total IX	Unique IX, before	Unique IX, after
WUNL-TV D33 DT BL	188.9	14,033	132.6	11,077
WUNL-TV D33 DT APP	197.0	14,694		140.7
WGHP D31 DT CP	245.9	8,946	173.4	5,245
WKTC D31 DT APP	31.9	154	8.0	5
WSB-TV D32 DT APP	4.0	48	4.0	48
WRPX-TV D32 DT APP	72.1	1,928	20.0	565
WJWJ-TV D32 DT CP	8.0	34	0.0	0
WMBF-TV D32 DT LIC	71.6	813	31.8	470
WRLK-TV D33 DT CP	107.5	739	87.6	674

Interference to BLANK0000027007 APP, scenario 1
Proposal causes no interference.

Interference to DTVBL20590 BL, scenario 1
Proposal causes no interference.

Interference to BLANK0000026140 APP, scenario 1
Proposal causes no interference.

Interference to DTVBL27504 BL, scenario 1
Proposal causes no interference.

Interference to BLANK0000025088 CP, scenario 1
Proposal causes no interference.

Interference to DTVBL363 BL, scenario 1
Proposal causes no interference.

Interference to BLEDT20071018AIJ LIC, scenario 1
Proposal causes no interference.

Interference to BPEDT20120627AAD CP, scenario 1
Proposal causes no interference.

Interference to BLANK0000025297 CP, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WKHA	D33	DT	CP	HAZARD, KY	BLANK0000025297	
Undesireds:	WUNL-TV	D33	DT	BL	WINSTON-SALEM, NC	DTVBL69360	266.7 km
	WUNL-TV	D33	DT	APP	WINSTON-SALEM, NC	WUNL-TV 630KW	266.7
	WKPT-TV	D32	DT	APP	KINGSPORT, TN	BLANK0000026140	126.1
	WTIU	D33	DT	BL	BLOOMINGTON, IN	DTVBL66536	361.1
	WHIO-TV	D33	DT	CP	DAYTON, OH	BLANK0000025295	297.1
	WPGD-TV	D33	DT	LIC	HENDERSONVILLE, TN	BMLCDT20131125BGF	337.4
	WVLT-TV	D34	DT	CP	KNOXVILLE, TN	BLANK0000025085	149.7

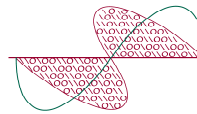
Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
19284.9	439,958	16130.4	339,272	15911.1
		334,702	15911.1	334,702
				0.00
				0.00

Undesired		Total IX	Unique IX, before	Unique IX, after
WUNL-TV D33 DT BL	8.0	0	4.0	0
WUNL-TV D33 DT APP	8.0	0		4.0
WKPT-TV D32 DT APP	40.1	173	36.1	173
WHIO-TV D33 DT CP	107.3	2,232	91.3	1,981
WPGD-TV D33 DT LIC	72.0	2,412	56.0	2,161
WVLT-TV D34 DT CP	11.9	4	11.9	4

Interference to DTVBL34196 BL, scenario 1

Call	Chan	Svc	Status	City, State	File Number	Distance
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Table 1 WUNL-TV OET Bulletin 69 Interference Study
(page 4 of 6 – No IX check failures found, condensed to show first scenarios only)



Desired:	WKHA	D33	DT	BL	HAZARD, KY	DTVBL34196		
Undesireds:	WUNL-TV	D33	DT	BL	WINSTON-SALEM, NC	DTVBL69360	266.7	km
	WUNL-TV	D33	DT	APP	WINSTON-SALEM, NC	WUNL-TV 630KW	266.7	
	WKPT-TV	D32	DT	APP	KINGSFORT, TN	BLANK0000026140	126.1	
	WTIU	D33	DT	BL	BLOOMINGTON, IN	DTVBL66536	361.1	
	WHIO-TV	D33	DT	CP	DAYTON, OH	BLANK0000025295	297.1	
	WPGD-TV	D33	DT	LIC	HENDERSONVILLE, TN	BMLCDT20131125BGF	337.4	
	WVLT-TV	D34	DT	CP	KNOXVILLE, TN	BLANK0000025085	149.7	
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
19284.9	439,958	16142.3	339,247	15938.9	335,439	15934.9	335,192	0.03 0.07

Undesired	Total IX		Unique IX, before		Unique IX, after	
WUNL-TV D33 DT BL	8.0	0	4.0	0		
WUNL-TV D33 DT APP	12.0	247			8.0	247
WKPT-TV D32 DT APP	40.1	173	36.1	173	36.1	173
WHIO-TV D33 DT CP	95.4	1,447	75.4	1,196	75.4	1,196
WPGD-TV D33 DT LIC	72.0	2,435	52.0	2,184	52.0	2,184
WVLT-TV D34 DT CP	11.9	4	11.9	4	11.9	4

Interference to BLANK0000026947 APP, scenario 1
Proposal causes no interference.

Interference to DTVBL167158 BL, scenario 1
Proposal causes no interference.

Interference to BLANK0000025032 CP, scenario 1

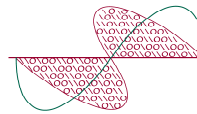
	Call	Chan	Svc	Status	City, State	File Number	Distance		
Desired:	WRLK-TV	D33	DT	CP	COLUMBIA, SC	BLANK0000025032			
Undesireds:	WUNL-TV	D33	DT	BL	WINSTON-SALEM, NC	DTVBL69360	256.0 km		
	WUNL-TV	D33	DT	APP	WINSTON-SALEM, NC	WUNL-TV 630KW	256.0		
	WAXN-TV	D32	DT	CP	KANNAPOLIS, NC	BLANK0000025121	128.5		
	WJWJ-TV	D32	DT	CP	BEAUFORT, SC	BLANK0000025030	158.1		
	WMBF-TV	D32	DT	LIC	MYRTLE BEACH, SC	BLCDT20091105AAP	177.0		
	WIRE-CD	D33	DC	CP	ATLANTA, GA	BLANK0000025104	318.4		
	WGNM	D33	DT	CP	MACON, GA	BLANK0000025320	286.0		
	WLPS-CD	D33	DC	APP	LUMBERTON-PEMBROKE, NC	BLANK0000026947	179.7		
	WYBE-CD	D34	DC	APP	PINEHURST, NC	BLANK0000027048	181.1		
	WGWG	D34	DT	LIC	CHARLESTON, SC	BLCDT20060630ADJ	175.4		
	WNSC-TV	D34	DT	CP	ROCK HILL, SC	BLANK0000025025	80.5		
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
24467.0	1,229,094	24379.3	1,228,616	23949.9	1,214,804	23941.9	1,214,731	0.03	0.01

Undesired	Total IX		Unique IX, before		Unique IX, after	
WUNL-TV D33 DT BL	139.1	2,703	99.4	1,335		
WUNL-TV D33 DT APP	143.0	2,759			107.3	1,408
WAXN-TV D32 DT CP	31.7	1,651	7.9	379	7.9	379
WGNM D33 DT CP	40.2	1,620	36.2	1,610	36.2	1,610
WLPS-CD D33 DC APP	55.8	2,461	35.8	1,910	35.8	1,910
WNSC-TV D34 DT CP	222.2	7,467	202.4	7,193	206.3	7,210

Interference to DTVBL61013 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WRLK-TV	D33	DT	BL	COLUMBIA, SC	DTVBL61013	
Undesireds:	WUNL-TV	D33	DT	BL	WINSTON-SALEM, NC	DTVBL69360	256.1 km
	WUNL-TV	D33	DT	APP	WINSTON-SALEM, NC	WUNL-TV 630KW	256.1
	WAXN-TV	D32	DT	CP	KANNAPOLIS, NC	BLANK0000025121	128.5
	WJWJ-TV	D32	DT	CP	BEAUFORT, SC	BLANK0000025030	158.1
	WMBF-TV	D32	DT	LIC	MYRTLE BEACH, SC	BLCDT20091105AAP	177.0
	WIRE-CD	D33	DC	CP	ATLANTA, GA	BLANK0000025104	318.4
	WGNM	D33	DT	CP	MACON, GA	BLANK0000025320	286.0
	WLPS-CD	D33	DC	APP	LUMBERTON-PEMBROKE, NC	BLANK0000026947	179.7
	WYBE-CD	D34	DC	APP	PINEHURST, NC	BLANK0000027048	181.1

Table 1 WUNL-TV OET Bulletin 69 Interference Study
(page 5 of 6 – No IX check failures found, condensed to show first scenarios only)



WGWG		D34	DT	LIC	CHARLESTON, SC	BLCDT20060630ADJ		175.4	
WNSC-TV		D34	DT	CP	ROCK HILL, SC	BLANK0000025025		80.5	
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent	New IX
23996.2	1,212,215	23916.4	1,211,744	23538.8	1,201,379	23530.8	1,201,218	0.03	0.01
Undesired		Total IX		Unique IX, before		Unique IX, after			
WUNL-TV	D33 DT BL	139.1	2,474	95.4	1,394				
WUNL-TV	D33 DT APP	151.0	2,720			103.3	1,555		
WAXN-TV	D32 DT CP	19.8	764	0.0	0	0.0	0		
WGNM	D33 DT CP	32.1	1,540	32.1	1,540	32.1	1,540		
WLPS-CD	D33 DC APP	39.8	2,328	23.9	1,787	23.9	1,787		
WNSC-TV	D34 DT CP	206.3	5,057	178.6	4,557	174.6	4,472		

Interference to BLCDT20090602ABA LIC, scenario 1									
Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance		
	WTVZ-TV	D33	DT	LIC	NORFOLK, VA	BLCDT20090602ABA			
Undesireds:	WUNL-TV	D33	DT	BL	WINSTON-SALEM, NC	DTVBL69360	348.5 km		
	WUNL-TV	D33	DT	APP	WINSTON-SALEM, NC	WUNL-TV 630KW	348.5		
	WBOC-TV	D32	DT	BL	SALISBURY, MD	DTVBL71218	203.1		
	WRPX-TV	D32	DT	APP	ROCKY MOUNT, NC	BLANK0000027007	170.1		
	WPXV-TV	D32	DT	APP	NORFOLK, VA	BLANK0000026979	0.0		
	WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	243.3		
	WLPS-CD	D33	DC	APP	LUMBERTON-PEMBROKE, NC	BLANK0000026947	331.9		
	WPSG	D33	DT	CP	PHILADELPHIA, PA	BLANK0000024876	375.8		
	WITN-TV	D34	DT	CP	WASHINGTON, NC	BLANK0000025116	179.2		
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent	New IX
34088.6	2,156,534	34076.7	2,156,346	33884.4	2,154,639	33884.4	2,154,639	0.00	0.00
Undesired		Total IX		Unique IX, before		Unique IX, after			
WUNL-TV	D33 DT BL	4.0	0	4.0	0				
WUNL-TV	D33 DT APP	4.0	0			4.0	0		
WHUT-TV	D33 DT LIC	27.8	410	27.8	410	27.8	410		
WITN-TV	D34 DT CP	160.4	1,297	160.4	1,297	160.4	1,297		

Interference to BLANK0000027048 APP, scenario 1									
Proposal causes no interference.									

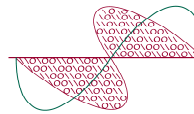
Interference to DTVBL40211 BL, scenario 1									
Proposal causes no interference.									

Interference to BLANK0000025025 CP, scenario 1									
Proposal causes no interference.									

Interference to DTVBL61009 BL, scenario 1									
Proposal causes no interference.									

Interference to DTVBL57840 BL, scenario 1									
Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance		
	WSLS-TV	D34	DT	BL	ROANOKE, VA	DTVBL57840			
Undesireds:	WUNL-TV	D33	DT	BL	WINSTON-SALEM, NC	DTVBL69360	93.9 km		
	WUNL-TV	D33	DT	APP	WINSTON-SALEM, NC	WUNL-TV 630KW	93.9		
	WRC-TV	D34	DT	APP	WASHINGTON, DC	BLANK0000026891	330.7		
	WYBE-CD	D34	DC	APP	PINEHURST, NC	BLANK0000027048	235.4		
	WITN-TV	D34	DT	CP	WASHINGTON, NC	BLANK0000025116	320.2		
	WNSC-TV	D34	DT	CP	ROCK HILL, SC	BLANK0000025025	273.9		
	WVLT-TV	D34	DT	CP	KNOXVILLE, TN	BLANK0000025085	365.3		
	WNPB-TV	D34	DT	APP	MORGANTOWN, WV	BLANK0000026236	279.3		
	WFMY-TV	D35	DT	BL	GREENSBORO, NC	DTVBL72064	150.4		
	WAHU-CD	D35	DC	CP	CHARLOTTESVILLE, VA	BLANK0000025654	170.7		
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent	New IX

Table 1 WUNL-TV OET Bulletin 69 Interference Study
 (page 6 of 6 – No IX check failures found, condensed to show first scenarios only)



38842.4	1,425,006	33017.5	1,272,199	31738.3	1,228,521	31750.3	1,228,764	-0.04	-0.02
Undesired		Total IX		Unique IX, before		Unique IX, after			
WUNL-TV D33 DT BL	682.0	28,283	279.2	10,061					
WUNL-TV D33 DT APP	678.0	28,781				267.2	9,818		
WRC-TV D34 DT APP	119.2	3,272	71.5	2,617	71.5	2,617			
WITN-TV D34 DT CP	290.7	8,604	155.3	3,882	155.3	3,882			
WNSC-TV D34 DT CP	398.8	17,464	75.7	2,407	75.7	2,407			
WVLT-TV D34 DT CP	36.0	489	36.0	489	36.0	489			
WNPB-TV D34 DT APP	47.7	177	43.7	177	43.7	177			
WFMY-TV D35 DT BL	354.9	16,688	79.7	1,962	75.7	1,817			
WAHU-CD D35 DC CP	35.8	660	23.9	569	23.9	569			

 Interference to proposal, scenario 1
 **MX: 1.46% interference

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WUNL-TV	D33	DT	APP	WINSTON-SALEM, NC	WUNL-TV 630KW	
Undesireds:	WAXN-TV	D32	DT	CP	KANNAPOLIS, NC	BLANK0000025121	127.9 km
	WRPX-TV	D32	DT	APP	ROCKY MOUNT, NC	BLANK0000027007	197.8
	WKPT-TV	D32	DT	APP	KINGSPORT, TN	BLANK0000026140	158.1
	WKHA	D33	DT	CP	HAZARD, KY	BLANK0000025297	266.7
	WLPS-CD	D33	DC	APP	LUMBERTON-PEMBROKE, NC	BLANK0000026947	218.4
	WRLK-TV	D33	DT	CP	COLUMBIA, SC	BLANK0000025032	256.0
	WTVZ-TV	D33	DT	LIC	NORFOLK, VA	BLCDT20090602ABA	348.5
	WYBE-CD	D34	DC	APP	PINEHURST, NC	BLANK0000027048	159.5
	WNSC-TV	D34	DT	CP	ROCK HILL, SC	BLANK0000025025	180.4
	WLSL-TV	D34	DT	BL	ROANOKE, VA	DTVBL57840	93.9

Service area		Terrain-limited		IX-free		Percent IX	
33355.5	2,660,624	30634.3	2,581,924	29656.4	2,544,256	3.19	1.46
Undesired		Total IX		Unique IX		Prcnt Unique IX	
WAXN-TV D32 DT CP	16.1	2,069	0.0	0	0.00	0.00	
WLPS-CD D33 DC APP	20.1	266	8.0	37	0.03	0.00	
WRLK-TV D33 DT CP	237.1	13,637	204.8	11,315	0.67	0.44	
WTVZ-TV D33 DT LIC	75.8	1,953	47.8	1,338	0.16	0.05	
WLSL-TV D34 DT BL	685.0	22,656	661.0	22,065	2.16	0.85	

Channel and Facility Information

Section	Question	Response
Proposed Community of License	Facility ID	69360
	State	North Carolina
	City	WINSTON-SALEM
	DTV Channel	33
Facility Type	Facility Type	Noncommercial Educational
	Station Type	Main
Zone	Zone	2

Antenna Location Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	No
	ASR Number	
Coordinates (NAD83)	Latitude	36° 22' 31.7" N+
	Longitude	080° 22' 17.5" W-
	Structure Type	GTOWER-Guyed Structure Used for Communication Purposes
	Overall Structure Height	108.9 meters
	Support Structure Height	95.1 meters
	Ground Elevation (AMSL)	719.0 meters
Antenna Data	Height of Radiation Center Above Ground Level	101.4 meters
	Height of Radiation Center Above Average Terrain	501.3 meters
	Height of Radiation Center Above Mean Sea Level	820.4 meters
	Effective Radiated Power	630 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-19JSC/VP-R-C170
	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)	Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)
0	0.250	90	0.940	180	0.900	270	0.940
10	0.230	100	0.990	190	0.900	280	0.850
20	0.210	110	1.000	200	0.910	290	0.730
30	0.220	120	0.990	210	0.920	300	0.590
40	0.300	130	0.960	220	0.940	310	0.440
50	0.440	140	0.940	230	0.960	320	0.300
60	0.590	150	0.920	240	0.990	330	0.220
70	0.730	160	0.910	250	1.000	340	0.210
80	0.850	170	0.900	260	0.990	350	0.230

Additional Azimuths

Degree	V _A
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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.	No
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