

**Application for Modification**  
**Post – Repack Construction Permit**  
**Engineering Exhibit**

**WRPX-TV – Rocky Mount, North Carolina**

Facility ID: 20590

Licensee “ION MEDIA RALEIGH LICENSE, INC” is currently authorized to operate on Post-Repack DTV channel 32. The Antenna Structure Registration Number is 1002781 with a Latitude of 36° 06’ 11.5” N+ and a Longitude of 78° 11’ 27.6” W-.

The purpose of this application is to request authority to modify the construction permit (0000034408) to operate from Antenna Structure Registration Number 1004438 with a Latitude of 35° 49’ 52.8” N+ and a Longitude of 78° 8’ 42.8” W-. The HAAT is 563.84 m (AGL 560.84 m) with an AMSL of 633.94 m. An ERP of 170 kW will be utilized.

**Channel Share**

WRPX-TV has an executed channel sharing agreement with WFPX-TV, Archer Lodge, North Carolina, Facility ID 21245. Accordingly, all relevant technical parameters in this application pertain to both stations. This includes, but not limited to, the RF Hazard statement and RF Coverage analysis.

**Antenna System**

A directional side mounted antenna will be utilized. It will be affixed to an existing guyed tower structure and will not increase the overall height of the structure. Any vertical component will not exceed the horizontal pattern in any direction. Elevation and Azimuth patterns are attached.

**RF Hazard (Environmental)**

Human Exposure measurements were calculated using the OET- 65 equation and the outcome is compliant with FCC 1.1310. Furthermore, the calculation is under 5% of the limit categorically excluding the application from further environmental evaluations.

<b>Calculated Maximum</b>	<b>Calculated Exposure</b>	<b>Percent of Limit</b>
mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	
0.387	0.000755	0.19%

The station will coordinate with other(s) to comply with access, antenna and/or tower issues related to RF Exposure

**Broadcast Facility**

**§73.616 Interference Caused**

A calculation using *TVStudy* version 2.2.5 using an LMS database dated 2019-02-26 indicates that there is no excessive new interference created. This study used cell spacing of 2 km and a profile spacing of .20 km.

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§73.622 Maximum ERP and Antenna Height

The application does not exceed the maximum ERP for the specified HAAT.

§73.623 DTV Allotments

The application does not change the DTV Table of Allotments.

§73.625 Coverage of Principal Community

The application's ERP will sufficiently cover Rocky Mount, North Carolina. RF coverage analysis attached.

§73.1030 Radio, Research and Receiving Locations

A calculation using *TVStudy* version 2.2.5 using an LMS database dated 2019-2-26 indicates that no excessive interference to any "protected" locations. As such, no coordination or notification is required.

§73.1650 International Agreements

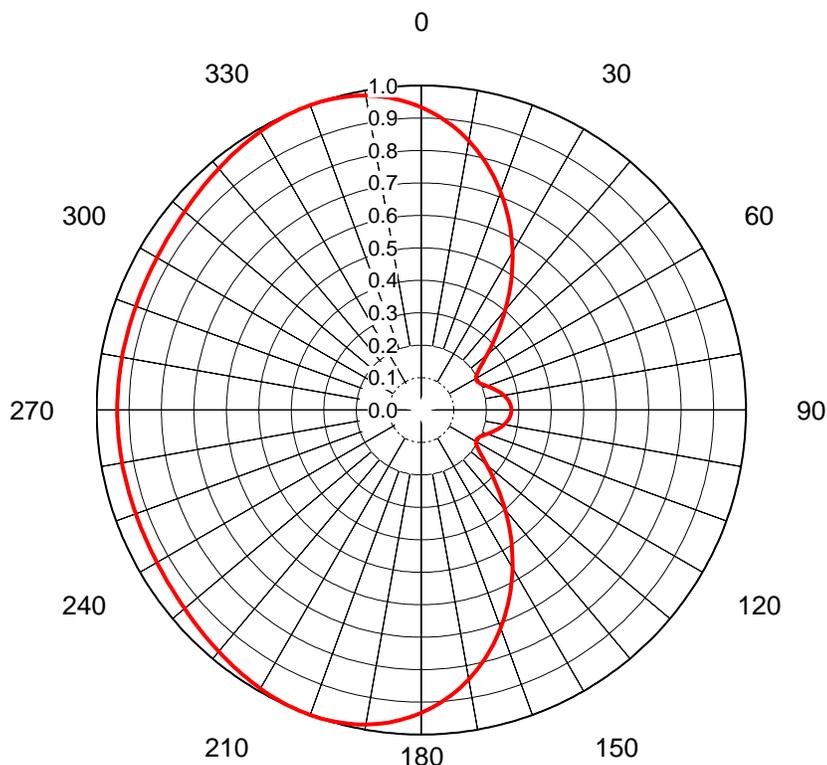
The application's transmit location is 746.7 km from Canada. As such, no coordination or notification is required.

The application's transmit location is 2093.7 km from Mexico. As such, no coordination or notification is required.

## AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-71206-1**  
 Date **1-Feb-19**  
 Call Letters **WRPX**  
 Channel **32**  
 Frequency **581 MHz**  
 Antenna Type **TFU-16DSC/VP-R C170**  
 Gain **1.68 (2.26dB)**  
 Calculated



Deg	Value																		
0	0.933	36	0.465	72	0.225	108	0.225	144	0.465	180	0.933	216	0.980	252	0.935	288	0.935	324	0.980
1	0.926	37	0.449	73	0.229	109	0.220	145	0.481	181	0.940	217	0.977	253	0.935	289	0.936	325	0.982
2	0.918	38	0.433	74	0.234	110	0.215	146	0.497	182	0.947	218	0.975	254	0.935	290	0.936	326	0.984
3	0.910	39	0.417	75	0.239	111	0.211	147	0.514	183	0.953	219	0.973	255	0.935	291	0.936	327	0.986
4	0.902	40	0.402	76	0.243	112	0.207	148	0.530	184	0.958	220	0.971	256	0.936	292	0.936	328	0.988
5	0.893	41	0.386	77	0.247	113	0.203	149	0.546	185	0.964	221	0.969	257	0.936	293	0.936	329	0.989
6	0.884	42	0.371	78	0.252	114	0.200	150	0.562	186	0.969	222	0.967	258	0.936	294	0.937	330	0.991
7	0.874	43	0.356	79	0.255	115	0.197	151	0.578	187	0.973	223	0.965	259	0.936	295	0.937	331	0.993
8	0.864	44	0.341	80	0.259	116	0.195	152	0.594	188	0.977	224	0.963	260	0.936	296	0.937	332	0.994
9	0.853	45	0.327	81	0.262	117	0.194	153	0.610	189	0.981	225	0.961	261	0.936	297	0.938	333	0.995
10	0.843	46	0.313	82	0.266	118	0.193	154	0.625	190	0.984	226	0.959	262	0.936	298	0.938	334	0.997
11	0.831	47	0.300	83	0.268	119	0.194	155	0.641	191	0.987	227	0.957	263	0.936	299	0.939	335	0.998
12	0.820	48	0.287	84	0.271	120	0.194	156	0.656	192	0.990	228	0.955	264	0.936	300	0.940	336	0.999
13	0.808	49	0.275	85	0.273	121	0.197	157	0.671	193	0.992	229	0.954	265	0.936	301	0.941	337	0.999
14	0.795	50	0.263	86	0.274	122	0.200	158	0.686	194	0.994	230	0.952	266	0.936	302	0.942	338	1.000
15	0.783	51	0.253	87	0.276	123	0.205	159	0.701	195	0.996	231	0.950	267	0.936	303	0.943	339	1.000
16	0.770	52	0.242	88	0.277	124	0.210	160	0.715	196	0.997	232	0.949	268	0.936	304	0.944	340	1.000
17	0.756	53	0.233	89	0.277	125	0.217	161	0.729	197	0.998	233	0.947	269	0.936	305	0.945	341	1.000
18	0.743	54	0.224	90	0.277	126	0.224	162	0.743	198	0.999	234	0.946	270	0.936	306	0.946	342	0.999
19	0.729	55	0.217	91	0.277	127	0.233	163	0.756	199	1.000	235	0.945	271	0.936	307	0.947	343	0.998
20	0.715	56	0.210	92	0.277	128	0.242	164	0.770	200	1.000	236	0.944	272	0.936	308	0.949	344	0.997
21	0.701	57	0.205	93	0.276	129	0.253	165	0.783	201	1.000	237	0.943	273	0.936	309	0.950	345	0.996
22	0.686	58	0.200	94	0.274	130	0.263	166	0.795	202	1.000	238	0.942	274	0.936	310	0.952	346	0.994
23	0.671	59	0.197	95	0.273	131	0.275	167	0.808	203	0.999	239	0.941	275	0.936	311	0.954	347	0.992
24	0.656	60	0.194	96	0.271	132	0.287	168	0.820	204	0.999	240	0.940	276	0.936	312	0.955	348	0.990
25	0.641	61	0.194	97	0.268	133	0.300	169	0.831	205	0.998	241	0.939	277	0.936	313	0.957	349	0.987
26	0.625	62	0.193	98	0.266	134	0.313	170	0.843	206	0.997	242	0.938	278	0.936	314	0.959	350	0.984
27	0.610	63	0.194	99	0.262	135	0.327	171	0.853	207	0.995	243	0.938	279	0.936	315	0.961	351	0.981
28	0.594	64	0.195	100	0.259	136	0.341	172	0.864	208	0.994	244	0.937	280	0.936	316	0.963	352	0.977
29	0.578	65	0.197	101	0.255	137	0.356	173	0.874	209	0.993	245	0.937	281	0.936	317	0.965	353	0.973
30	0.562	66	0.200	102	0.252	138	0.371	174	0.884	210	0.991	246	0.937	282	0.936	318	0.967	354	0.969
31	0.546	67	0.203	103	0.247	139	0.386	175	0.893	211	0.989	247	0.936	283	0.936	319	0.969	355	0.964
32	0.530	68	0.207	104	0.243	140	0.402	176	0.902	212	0.988	248	0.936	284	0.936	320	0.971	356	0.958
33	0.514	69	0.211	105	0.239	141	0.417	177	0.910	213	0.986	249	0.936	285	0.935	321	0.973	357	0.953
34	0.497	70	0.215	106	0.234	142	0.433	178	0.918	214	0.984	250	0.936	286	0.935	322	0.975	358	0.947
35	0.481	71	0.220	107	0.229	143	0.449	179	0.926	215	0.982	251	0.936	287	0.935	323	0.977	359	0.940

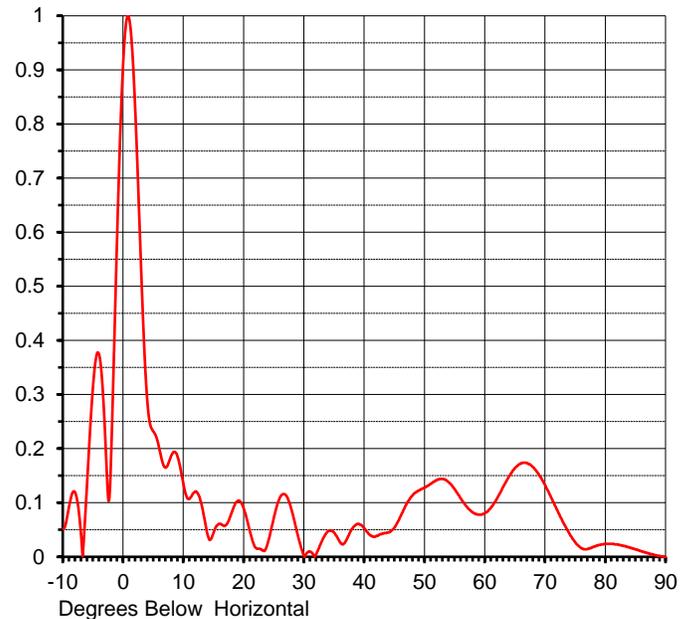
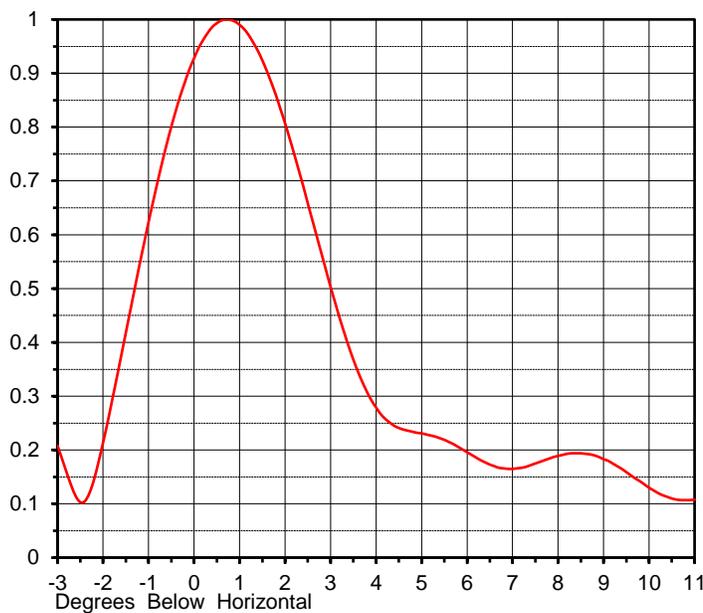
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## ELEVATION PATTERN

Proposal No. **C-71206-1**  
 Date **1-Feb-19**  
 Call Letters **WRPX**  
 Channel **32**  
 Frequency **581 MHz**  
 Antenna Type **TFU-16DSC/VP-R C170**

RMS Directivity at Main Lobe **14.1 ( 11.49 dB )**  
 RMS Directivity at Horizontal **12.1 ( 10.83 dB )**  
**Calculated**

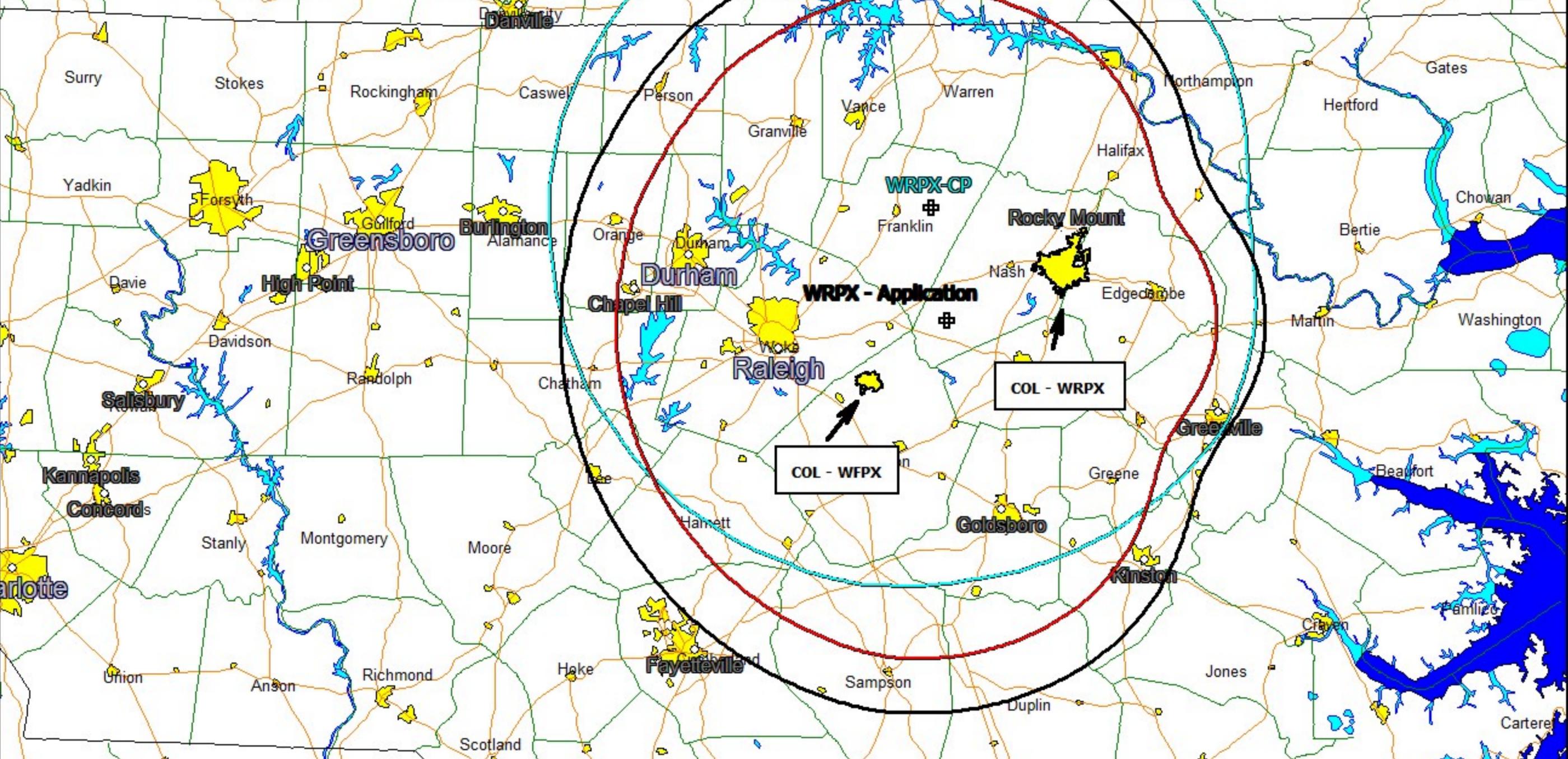
Beam Tilt **0.75 deg**  
 Pattern Number **16Q141075**



Angle	Field								
-10.0	0.052	10.0	0.130	30.0	0.000	50.0	0.128	70.0	0.131
-9.0	0.096	11.0	0.108	31.0	0.009	51.0	0.135	71.0	0.108
-8.0	0.118	12.0	0.121	32.0	0.006	52.0	0.142	72.0	0.085
-7.0	0.032	13.0	0.093	33.0	0.032	53.0	0.144	73.0	0.062
-6.0	0.148	14.0	0.038	34.0	0.048	54.0	0.137	74.0	0.042
-5.0	0.326	15.0	0.047	35.0	0.044	55.0	0.124	75.0	0.026
-4.0	0.371	16.0	0.061	36.0	0.026	56.0	0.107	76.0	0.016
-3.0	0.208	17.0	0.059	37.0	0.032	57.0	0.092	77.0	0.015
-2.0	0.214	18.0	0.084	38.0	0.053	58.0	0.082	78.0	0.019
-1.0	0.624	19.0	0.104	39.0	0.061	59.0	0.078	79.0	0.022
0.0	0.928	20.0	0.087	40.0	0.052	60.0	0.081	80.0	0.024
1.0	0.990	21.0	0.045	41.0	0.039	61.0	0.092	81.0	0.024
2.0	0.807	22.0	0.016	42.0	0.039	62.0	0.109	82.0	0.023
3.0	0.503	23.0	0.012	43.0	0.043	63.0	0.130	83.0	0.020
4.0	0.279	24.0	0.029	44.0	0.045	64.0	0.150	84.0	0.017
5.0	0.231	25.0	0.076	45.0	0.055	65.0	0.165	85.0	0.014
6.0	0.196	26.0	0.111	46.0	0.076	66.0	0.173	86.0	0.010
7.0	0.165	27.0	0.113	47.0	0.099	67.0	0.173	87.0	0.007
8.0	0.189	28.0	0.081	48.0	0.115	68.0	0.165	88.0	0.004
9.0	0.183	29.0	0.035	49.0	0.123	69.0	0.150	89.0	0.001
								90.0	0.000

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**WRPX - Application**  
 Latitude: 35-49-52.80 N  
 Longitude: 078-08-42.80 W  
 ERP: 170.00 kW  
 Channel: 32  
 Frequency: 581.0 MHz  
 AGL: 560.84 m  
 HAAT: 563.84 m  
 AMSL: 633.94 m  
 Horiz. Pattern: Directional  
 Vert. Pattern: Yes  
 Elec Tilt: 0.75  
 Prop Model: None



**Contour Legend**

- Dipole Adjusted Noise Limited (0000034408)
- Dipole Adjusted Noise Limited (App)
- 48 dBu Service (App)

COL - WRPX

COL - WFPX