

Application for Modification
Post – Repack Construction Permit
Engineering Exhibit

WWPX-TV – Martinsburg, WV

Facility ID: 23264

Licensee "ION MEDIA MARTINSBURG LICENSE, INC" is currently authorized to operate on Post-Repack DTV channel 13. The Antenna Structure Registration Number is 1062556 with a Latitude of 39° 27' 27.6" N+ and a Longitude of 078° 03' 51.5" W-.

The purpose of this application is to request authority to modify the application (0000034933) to operate from the same guyed tower utilizing an ERP of 27.2 kW. The HAAT is 314 m (AGL 70.6 m) and the AMSL is 520.4 m.

Antenna System

An Omni-directional top 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.

Calculated Maximum	Calculated Exposure	Percent of Limit
mW/cm ²	mW/cm ²	
0.200	0.005126	2.56%

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 2018-04-01 indicates that there is no excessive new interference created. This study used cell spacing of 2 km and a profile spacing of 1 km.

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MX Interference Received Cases

Please see attached “Supplemental Engineering Statement Regarding Received Interference”.

§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 Martinsburg, West Virginia. RF coverage analysis attached.

§73.1030 Radio, Research and Receiving Locations

A calculation using *TVStudy* version 2.2.5 using an LMS database dated 2018-04-01 indicates that no excessive interference to any “protected” locations. As such, no coordination or notification is required.

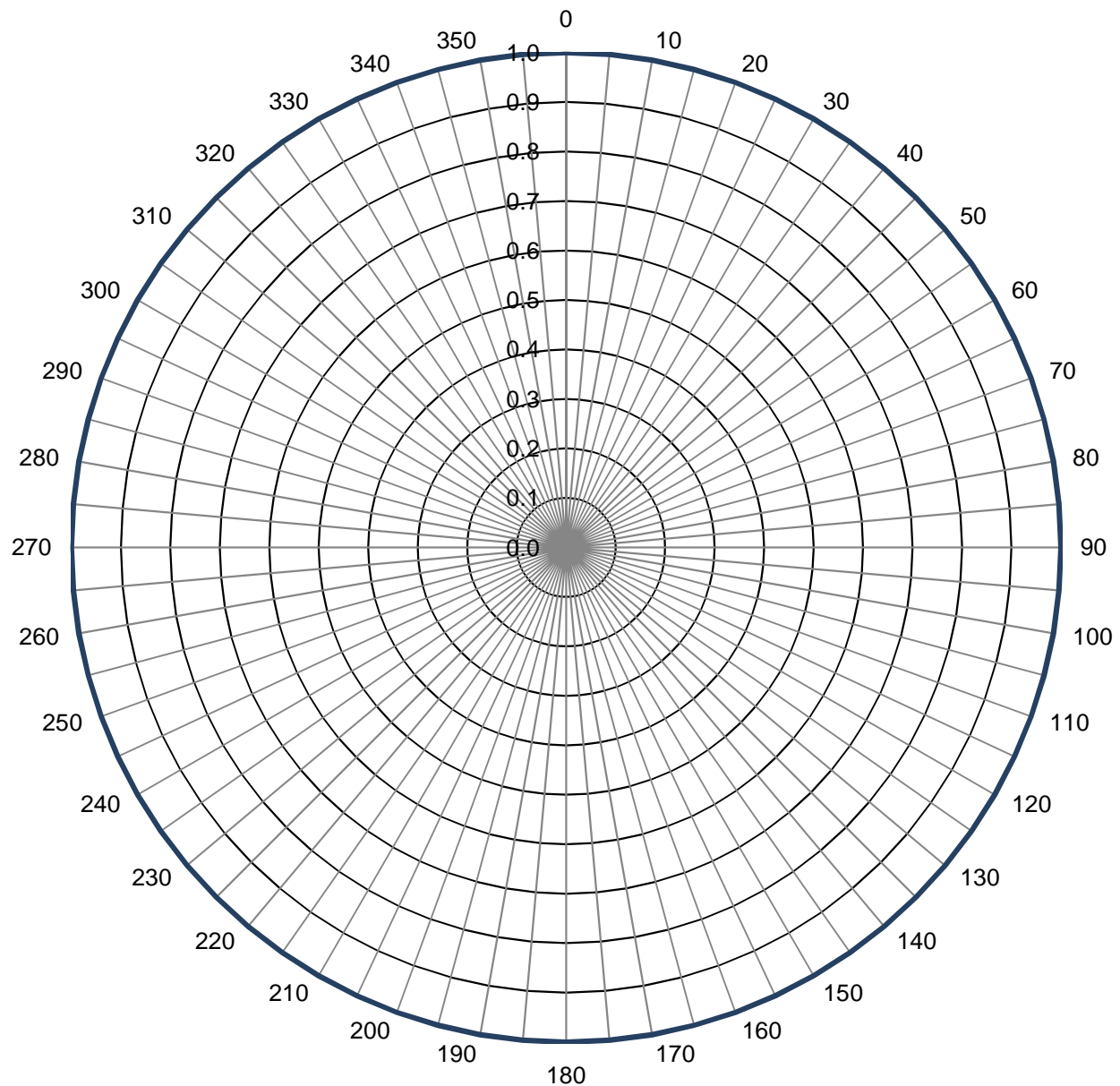
§73.1650 International Agreements

The application’s transmit location is 367.6 km from Canada. As such, no coordination or notification is required.

The application’s transmit location is 2305.6 km from Mexico. As such, no coordination or notification is required.

Azimuth Pattern

Type:	ATW-O	Polarization:	Horizontal
Directivity:	1.00 numeric (0.00 dB)	Frequency:	13 (ATSC)
Peak(s) at:		Location:	Martinsburg, WV
		NOTE: Pattern shape and directivity may vary with channel and mounting configuration.	

Relative Field

Tabulated Data for Azimuth PatternType: ATW-O

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	1.000	0.00	100	1.000	0.00	200	1.000	0.00	300	1.000	0.00
2	1.000	0.00	102	1.000	0.00	202	1.000	0.00	302	1.000	0.00
4	1.000	0.00	104	1.000	0.00	204	1.000	0.00	304	1.000	0.00
6	1.000	0.00	106	1.000	0.00	206	1.000	0.00	306	1.000	0.00
8	1.000	0.00	108	1.000	0.00	208	1.000	0.00	308	1.000	0.00
10	1.000	0.00	110	1.000	0.00	210	1.000	0.00	310	1.000	0.00
12	1.000	0.00	112	1.000	0.00	212	1.000	0.00	312	1.000	0.00
14	1.000	0.00	114	1.000	0.00	214	1.000	0.00	314	1.000	0.00
16	1.000	0.00	116	1.000	0.00	216	1.000	0.00	316	1.000	0.00
18	1.000	0.00	118	1.000	0.00	218	1.000	0.00	318	1.000	0.00
20	1.000	0.00	120	1.000	0.00	220	1.000	0.00	320	1.000	0.00
22	1.000	0.00	122	1.000	0.00	222	1.000	0.00	322	1.000	0.00
24	1.000	0.00	124	1.000	0.00	224	1.000	0.00	324	1.000	0.00
26	1.000	0.00	126	1.000	0.00	226	1.000	0.00	326	1.000	0.00
28	1.000	0.00	128	1.000	0.00	228	1.000	0.00	328	1.000	0.00
30	1.000	0.00	130	1.000	0.00	230	1.000	0.00	330	1.000	0.00
32	1.000	0.00	132	1.000	0.00	232	1.000	0.00	332	1.000	0.00
34	1.000	0.00	134	1.000	0.00	234	1.000	0.00	334	1.000	0.00
36	1.000	0.00	136	1.000	0.00	236	1.000	0.00	336	1.000	0.00
38	1.000	0.00	138	1.000	0.00	238	1.000	0.00	338	1.000	0.00
40	1.000	0.00	140	1.000	0.00	240	1.000	0.00	340	1.000	0.00
42	1.000	0.00	142	1.000	0.00	242	1.000	0.00	342	1.000	0.00
44	1.000	0.00	144	1.000	0.00	244	1.000	0.00	344	1.000	0.00
46	1.000	0.00	146	1.000	0.00	246	1.000	0.00	346	1.000	0.00
48	1.000	0.00	148	1.000	0.00	248	1.000	0.00	348	1.000	0.00
50	1.000	0.00	150	1.000	0.00	250	1.000	0.00	350	1.000	0.00
52	1.000	0.00	152	1.000	0.00	252	1.000	0.00	352	1.000	0.00
54	1.000	0.00	154	1.000	0.00	254	1.000	0.00	354	1.000	0.00
56	1.000	0.00	156	1.000	0.00	256	1.000	0.00	356	1.000	0.00
58	1.000	0.00	158	1.000	0.00	258	1.000	0.00	358	1.000	0.00
60	1.000	0.00	160	1.000	0.00	260	1.000	0.00	360	1.000	0.00
62	1.000	0.00	162	1.000	0.00	262	1.000	0.00			
64	1.000	0.00	164	1.000	0.00	264	1.000	0.00			
66	1.000	0.00	166	1.000	0.00	266	1.000	0.00			
68	1.000	0.00	168	1.000	0.00	268	1.000	0.00			
70	1.000	0.00	170	1.000	0.00	270	1.000	0.00			
72	1.000	0.00	172	1.000	0.00	272	1.000	0.00			
74	1.000	0.00	174	1.000	0.00	274	1.000	0.00			
76	1.000	0.00	176	1.000	0.00	276	1.000	0.00			
78	1.000	0.00	178	1.000	0.00	278	1.000	0.00			
80	1.000	0.00	180	1.000	0.00	280	1.000	0.00			
82	1.000	0.00	182	1.000	0.00	282	1.000	0.00			
84	1.000	0.00	184	1.000	0.00	284	1.000	0.00			
86	1.000	0.00	186	1.000	0.00	286	1.000	0.00			
88	1.000	0.00	188	1.000	0.00	288	1.000	0.00			
90	1.000	0.00	190	1.000	0.00	290	1.000	0.00			
92	1.000	0.00	192	1.000	0.00	292	1.000	0.00			
94	1.000	0.00	194	1.000	0.00	294	1.000	0.00			
96	1.000	0.00	196	1.000	0.00	296	1.000	0.00			
98	1.000	0.00	198	1.000	0.00	298	1.000	0.00			

Elevation Pattern

Type: ATW8H5H

Polarization: Horizontal

Directivity:

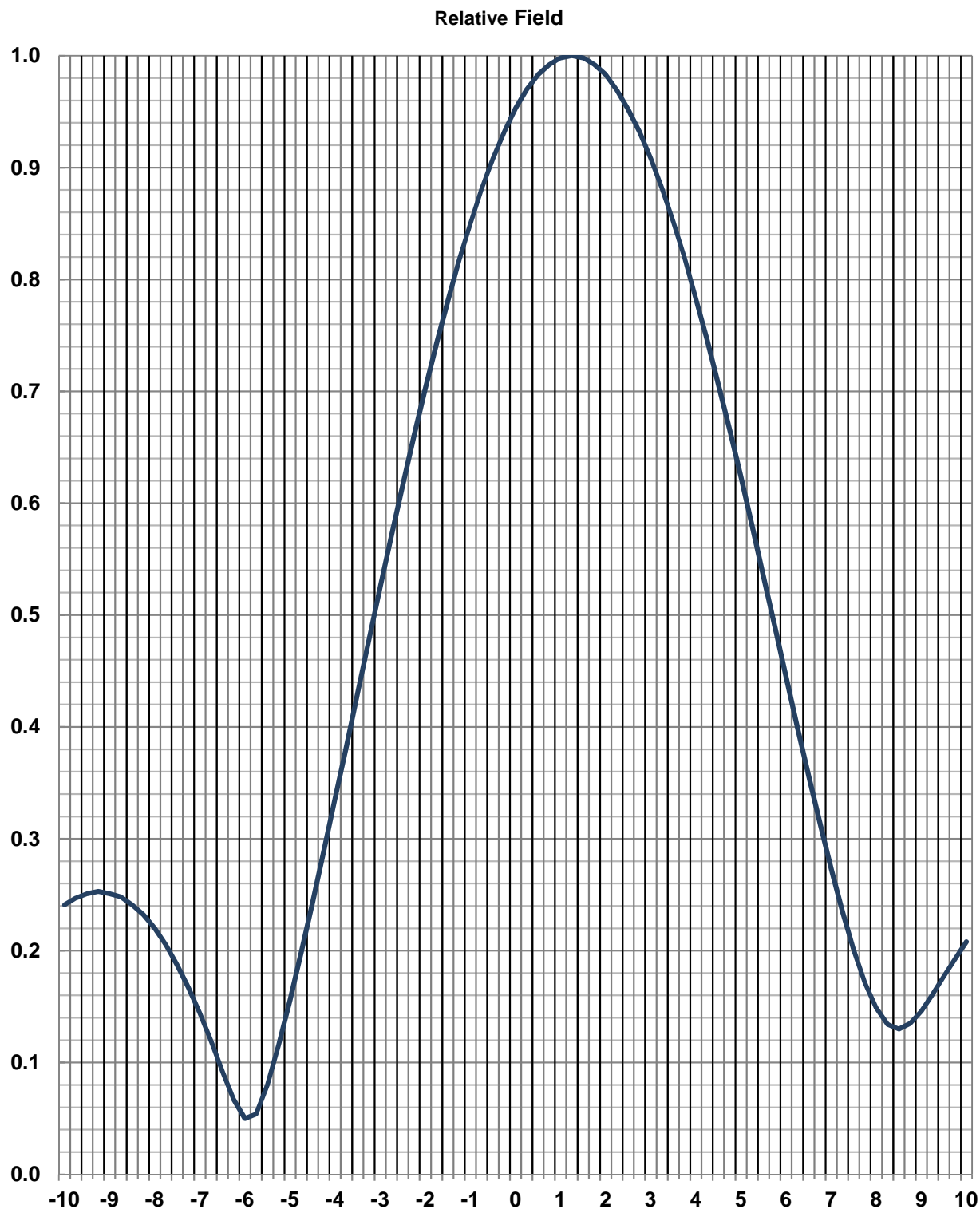
Frequency: 13 (ATSC)

Main Lobe: 8.00 numeric (9.03 dB)

Location: Martinsburg, WV

Horizontal: 7.27 numeric (8.61 dB)

Beam Tilt: 1.25 degrees



Tabulated Data for Elevation PatternType: ATW8H5H

-10 to 10 degrees in 0.25 degree increments.

10 to 90 degrees in 0.50 degree increments.

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-10.00	0.241	-12.36	2.25	0.969	-0.27	19.00	0.154	-16.25	43.50	0.066	-23.61	68.00	0.020	-33.98
-9.75	0.247	-12.15	2.50	0.952	-0.43	19.50	0.158	-16.03	44.00	0.076	-22.38	68.50	0.028	-31.06
-9.50	0.251	-12.01	2.75	0.932	-0.61	20.00	0.156	-16.14	44.50	0.086	-21.31	69.00	0.037	-28.64
-9.25	0.253	-11.94	3.00	0.908	-0.84	20.50	0.149	-16.54	45.00	0.093	-20.63	69.50	0.045	-26.94
-9.00	0.251	-12.01	3.25	0.881	-1.10	21.00	0.136	-17.33	45.50	0.099	-20.09	70.00	0.052	-25.68
-8.75	0.248	-12.11	3.50	0.851	-1.40	21.50	0.120	-18.42	46.00	0.102	-19.83	70.50	0.059	-24.58
-8.50	0.241	-12.36	3.75	0.819	-1.73	22.00	0.101	-19.91	46.50	0.103	-19.74	71.00	0.066	-23.61
-8.25	0.232	-12.69	4.00	0.783	-2.12	22.50	0.080	-21.94	47.00	0.102	-19.83	71.50	0.072	-22.85
-8.00	0.220	-13.15	4.25	0.746	-2.55	23.00	0.059	-24.58	47.50	0.099	-20.09	72.00	0.078	-22.16
-7.75	0.205	-13.76	4.50	0.706	-3.02	23.50	0.042	-27.54	48.00	0.095	-20.45	72.50	0.083	-21.62
-7.50	0.187	-14.56	4.75	0.665	-3.54	24.00	0.038	-28.40	48.50	0.088	-21.11	73.00	0.087	-21.21
-7.25	0.167	-15.55	5.00	0.623	-4.11	24.50	0.048	-26.38	49.00	0.080	-21.94	73.50	0.091	-20.82
-7.00	0.144	-16.83	5.25	0.579	-4.75	25.00	0.065	-23.74	49.50	0.070	-23.10	74.00	0.095	-20.45
-6.75	0.119	-18.49	5.50	0.534	-5.45	25.50	0.082	-21.72	50.00	0.060	-24.44	74.50	0.097	-20.26
-6.50	0.092	-20.72	5.75	0.490	-6.20	26.00	0.097	-20.26	50.50	0.049	-26.20	75.00	0.100	-20.00
-6.25	0.067	-23.48	6.00	0.445	-7.03	26.50	0.109	-19.25	51.00	0.037	-28.64	75.50	0.101	-19.91
-6.00	0.050	-26.02	6.25	0.400	-7.96	27.00	0.117	-18.64	51.50	0.027	-31.37	76.00	0.102	-19.83
-5.75	0.054	-25.35	6.50	0.356	-8.97	27.50	0.121	-18.34	52.00	0.020	-33.98	76.50	0.103	-19.74
-5.50	0.080	-21.94	6.75	0.314	-10.06	28.00	0.122	-18.27	52.50	0.021	-33.56	77.00	0.103	-19.74
-5.25	0.116	-18.71	7.00	0.273	-11.28	28.50	0.118	-18.56	53.00	0.029	-30.75	77.50	0.103	-19.74
-5.00	0.156	-16.14	7.25	0.235	-12.58	29.00	0.111	-19.09	53.50	0.040	-27.96	78.00	0.102	-19.83
-4.75	0.199	-14.02	7.50	0.201	-13.94	29.50	0.100	-20.00	54.00	0.051	-25.85	78.50	0.101	-19.91
-4.50	0.243	-12.29	7.75	0.171	-15.34	30.00	0.087	-21.21	54.50	0.062	-24.15	79.00	0.099	-20.09
-4.25	0.289	-10.78	8.00	0.149	-16.54	30.50	0.072	-22.85	55.00	0.072	-22.85	79.50	0.097	-20.26
-4.00	0.336	-9.47	8.25	0.134	-17.46	31.00	0.056	-25.04	55.50	0.081	-21.83	80.00	0.095	-20.45
-3.75	0.383	-8.34	8.50	0.130	-17.72	31.50	0.041	-27.74	56.00	0.089	-21.01	80.50	0.092	-20.72
-3.50	0.431	-7.31	8.75	0.135	-17.39	32.00	0.030	-30.46	56.50	0.096	-20.35	81.00	0.089	-21.01
-3.25	0.478	-6.41	9.00	0.146	-16.71	32.50	0.030	-30.46	57.00	0.102	-19.83	81.50	0.086	-21.31
-3.00	0.525	-5.60	9.25	0.161	-15.86	33.00	0.041	-27.74	57.50	0.106	-19.49	82.00	0.082	-21.72
-2.75	0.571	-4.87	9.50	0.177	-15.04	33.50	0.055	-25.19	58.00	0.109	-19.25	82.50	0.079	-22.05
-2.50	0.616	-4.21	9.75	0.193	-14.29	34.00	0.069	-23.22	58.50	0.111	-19.09	83.00	0.075	-22.50
-2.25	0.660	-3.61	10.00	0.208	-13.64	34.50	0.081	-21.83	59.00	0.111	-19.09	83.50	0.070	-23.10
-2.00	0.703	-3.06	10.50	0.233	-12.65	35.00	0.091	-20.82	59.50	0.111	-19.09	84.00	0.066	-23.61
-1.75	0.743	-2.58	11.00	0.249	-12.08	35.50	0.099	-20.09	60.00	0.109	-19.25	84.50	0.061	-24.29
-1.50	0.781	-2.15	11.50	0.255	-11.87	36.00	0.104	-19.66	60.50	0.105	-19.58	85.00	0.056	-25.04
-1.25	0.817	-1.76	12.00	0.252	-11.97	36.50	0.106	-19.49	61.00	0.101	-19.91	85.50	0.051	-25.85
-1.00	0.850	-1.41	12.50	0.241	-12.36	37.00	0.105	-19.58	61.50	0.096	-20.35	86.00	0.046	-26.74
-0.75	0.881	-1.10	13.00	0.221	-13.11	37.50	0.101	-19.91	62.00	0.089	-21.01	86.50	0.041	-27.74
-0.50	0.908	-0.84	13.50	0.195	-14.20	38.00	0.095	-20.45	62.50	0.083	-21.62	87.00	0.036	-28.87
-0.25	0.932	-0.61	14.00	0.165	-15.65	38.50	0.086	-21.31	63.00	0.075	-22.50	87.50	0.030	-30.46
0.00	0.953	-0.42	14.50	0.132	-17.59	39.00	0.076	-22.38	63.50	0.067	-23.48	88.00	0.025	-32.04
0.25	0.970	-0.26	15.00	0.099	-20.09	39.50	0.064	-23.88	64.00	0.058	-24.73	88.50	0.019	-34.42
0.50	0.983	-0.15	15.50	0.071	-22.97	40.00	0.051	-25.85	64.50	0.049	-26.20	89.00	0.014	-37.08
0.75	0.992	-0.07	16.00	0.058	-24.73	40.50	0.038	-28.40	65.00	0.039	-28.18	89.50	0.008	-41.94
1.00	0.998	-0.02	16.50	0.066	-23.61	41.00	0.027	-31.37	65.50	0.030	-30.46	90.00	0.003	-50.46
1.25	1.000	0.00	17.00	0.087	-21.21	41.50	0.024	-32.40	66.00	0.021	-33.56			
1.50	0.998	-0.02	17.50	0.109	-19.25	42.00	0.030	-30.46	66.50	0.012	-38.42			
1.75	0.992	-0.07	18.00	0.129	-17.79	42.50	0.041	-27.74	67.00	0.007	-43.10			
2.00	0.983	-0.15	18.50	0.144	-16.83	43.00	0.054	-25.35	67.50	0.012	-38.42			

WWPX-TV

Latitude: 39-27-27.60 N
Longitude: 078-03-51.50 W
ERP: 27.20 kW
Channel: 13
Frequency: 213.0 MHz
AMSL Height: 520.4 m
Elevation: 449.8 m
Horiz. Pattern: Omni
Vert. Pattern: Yes
Elec Tilt: 0.75
Prop Model: None

Calculation by Clark, S.

