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## Header 2

## General Information

Contact

Default Values

Discount

Document Information

Procurement Folder: 576950

Procurement Type: Central Purchase Order

Vendor ID: VS0000019029

Legal Name: Dielectric LLC

Alias/DBA:

Total Bid: \$223,811.00

Response Date: 05/20/2019

Response Time: 11:08

SO Doc Code: CRFQ

SO Dept: 0439

SO Doc ID: EBA1900000015

Published Date: 5/10/19

Close Date: 5/23/19

Close Time: 13:30

Status: Closed

Solicitation Description: HIGH POWER UHF TELEVISION  
TRANSMIT ANTENNA 

Total of Header Attachments: 2

Total of All Attachments: 2



Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**State of West Virginia  
 Solicitation Response**

**Proc Folder :** 576950  
**Solicitation Description :** HIGH POWER UHF TELEVISION TRASMIT ANTENNA  
**Proc Type :** Central Purchase Order

Date issued	Solicitation Closes	Solicitation Response	Version
	2019-05-23 13:30:00	SR 0439 ESR05171900000005287	1

<b>VENDOR</b>
VS0000019029 Dielectric LLC

**Solicitation Number:** CRFQ 0439 EBA1900000015

**Total Bid :** \$223,811.00      **Response Date:** 2019-05-20      **Response Time:** 11:08:32

**Comments:** Our standard terms for orders that are made specifically for a station over \$ 100,000.00 are  
 45% with order  
 45% prior to shipment  
 Balance net 30  
 If you require different terms, we can discuss at order placement.

**FOR INFORMATION CONTACT THE BUYER**  
 Stephanie L Gale  
 (304) 558-8801  
 stephanie.l.gale@wv.gov

<b>Signature on File</b>	<b>FEIN #</b>	<b>DATE</b>
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All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	HIGH POWER UHF TV TRANSMIT ANTENNA	1.00000	EA	\$223,811.000000	\$223,811.00

Comm Code	Manufacturer	Specification	Model #
43221703			

<b>Extended Description :</b>	HIGH POWER UHF TV TRANSMIT ANTENNA
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**Comments:** Bid includes Top mounted TV Antenna with Horizontal & Vertical polarization, elbow complex & transmission line for Antenna input,with a test transition, sweep of array after installation and all shipping.



## Quote Document

22 Tower Road  
 Raymond, ME 04071  
 Tel: +1 207.855.8100  
 Fax: +1 2 7.855.8173  
[www.dielectric.com](http://www.dielectric.com)

**Bill to:**  
 WEST VIRGINIA EDUCATIONAL  
 BROADCAST AUTHORITY  
 600 CAPITOL ST.  
 CHARLESTON, WV 25301

**Ship to:**  
 WNPB  
 Name and telephone number  
 Street Address  
 City, State, Zip

Quote Number	800261CMZ-1
Facility ID	71676
Quote Date	5/15/2019
Sales Person	ZUBA
Currency	USD

Payments	45/45/10 **Payment terms subject to change pending credit approval**
Incoterms	
Freight Carrier	
Shipping Instructions	
Packing Instructions	
Governing Terms	Terms and Conditions of Sales for Broadcast or Engineering Services (Rev C. 1 January 2016)

FOR WNPB MORGANTOWN, WV FOB SITE

Line	Item	Item Description	Qty	Unit	Net Price	Extended Price
1	1100000077	**** ANTENNA - UHF TOP MOUNT ONE STATION HORIZONTALLY POLARIZED. TOP MOUNT TFU-21ETT-R 4C170 DIRECTIONAL ANTENNA FOR D34. INCLUDES FULL NON-PRESSURIZED RADOME OF COLOR IMPREGNATED MATERIAL.	1	EA	\$ 181,815.00	\$181,815.00
2	1100000077	**** VPOL **** ADD FOR VPOL PER C-70898-2.	1	EA	\$ 17,290.00	\$17,290.00
3	1100000077	**** OTHER - ELBOW COMPLEX KIT, SINGLE CHANNEL AT ANTENNA INPUT FOR 6-1/8" 75 OHM . INCLUDES QTY 4, UNEQUAL LEG, BROADBAND DIGITLINE ELBOWS AND UP TO QTY. 2, RTLSCR675-5 CUT LENGTHS (LENGTH TBD). CONFIGURATION TO BE FIELD DETERMINED BY INSTALLATION CREW.	1	EA	\$ 9,996.00	\$9,996.00
4	RTLSCR675-20	T/L 6-75 EIA LENGTH 15' TO 20' FIXED FLG 1 END/ SWIVEL FLG 1 END	1	EA	\$ 1,841.00	\$1,841.00
5	RTT675	TEST TRANSITION 6-75	1	EA	\$ 2,269.00	\$2,269.00
6	REPACK SWEEP	INCLUDES ONE FIELD ENGINEER ON-SITE FOR ONE DAY, TRAVEL, EXPENSES AND REPORT	1	EA	\$ 6,400.00	\$6,400.00
7	RFREIGHT	SHIPPING - HANDLING, ESTIMATED TO SITE. INCLUDES CUT LENGTH SHIPPING	1	EA	\$ 4,400.00	\$4,400.00

**Total Net Price \$223,811.00**

### Acceptance of Quotation

By execution below, or by sending a Purchase Order referencing this proposal, the undersigned accepts this proposal to furnish equipment and services on this schedule subject to the Terms and Conditions of Sale for Broadcast and Engineering Services attached hereto and/or incorporated by reference herein, and authorizes Dielectric LLC to proceed with the procurement and fabrication of this equipment. Your acceptance of this proposal is conditioned upon your acceptance of the Dielectric LLC terms and your agreement to be bound by and comply with the Dielectric LLC terms. Dielectric LLC's failure to object to provisions contained in any Purchase Order or other document from you shall not be construed as a waiver by Dielectric LLC of the Dielectric LLC Terms or an acceptance of any such provisions. Any conflicting or additional terms or conditions set forth in a Purchase Order or other document from you are not binding upon Dielectric LLC, and Dielectric LLC hereby expressly objects thereto. If for any reason this proposal is not accepted by Dielectric LLC any condition to an accepted order is removed. ONLY SUCH PORTION OF THE DOWN PAYMENT THAT HAS NOT BEEN COMMITTED OR SPENT WILL BE REFUNDED.

Company Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Requested Date: \_\_\_\_\_

This requested ship date is subject to review by Dielectric. If Dielectric cannot meet the requested ship date, you will be contacted to work out a mutually acceptable shipment date. Dielectric requires that the customer take ownership of the product no later than 14 calendar days after the agreed-upon ship date.



**Antenna Model: TFU-21ETT/VP-R 4C170**

**Proposal Number: C-70698-3**  
**Date: 16-May-19**  
**Customer: WV Public Broadcasting**  
**Location: Morgantown, WV**

**Electrical Specifications**

**Polarization: Elliptical**  
**Azimuth Pattern: Directional**  
**Antenna Input: 6-1/8" 75 Ohm EIA/DCA**  
**VSWR: Channel 1.08 : 1 Band**  
**Bandwidth: 6 MHz**  
**Rated Input Power: 35 kW (15.44 dBk) Maximum Average Power**

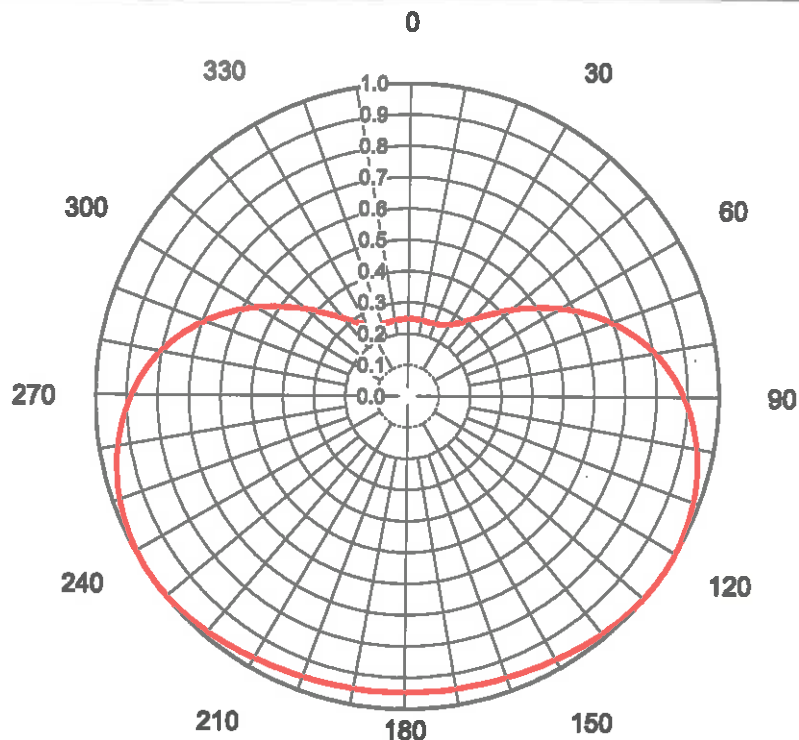
**Mechanical Specifications**

**Mounting: Top Mounted**  
**Environmental Protection: Full Radome**  
**Height: 39.7 ft (12.1m) less Lightning Protector 42.7 ft (13m) with Lightning Protector**  
**Weight: 4750 lb (2.2t)**  
**Effective Projected Area: 38.9 ft² (3.6m²) TIA-222-G Basic Wind Speed: 90 m/h (144.8 km/h)**

**Channel Specifications**

Call	CH	Freq	Hpol ERP	Vpol ERP	TPO	Peak Main Lobe Hpol Gain	Peak Main Lobe Vpol Gain	Peak at Horizontal Hpol Gain	Peak at Horizontal Vpol Gain
WNPB	34	593 MHz	680 kW (28.20 dBk)	165 kW (22.17 dBk)	28.5 kW (14.23 dBk)	28.71 (14.58dB)	7.18 (8.56dB)	18.69 (12.72dB)	4.67 (6.70dB)

## AZIMUTH PATTERN Horizontal Polarization



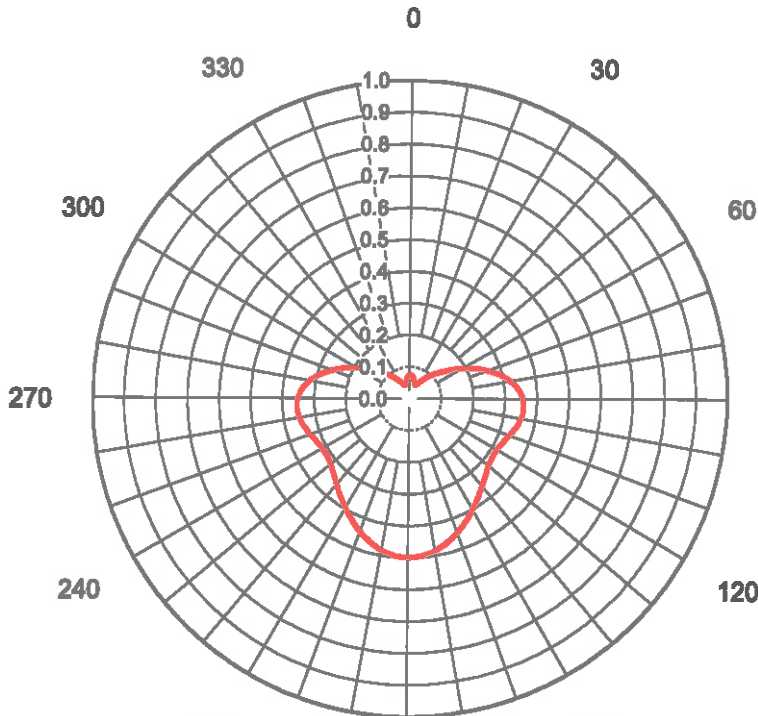
Proposal No. **C-70698-3**  
 Date **16-May-19**  
 Call Letters **WNPB**  
 Channel **34**  
 Frequency **593 MHz**  
 Antenna Type **TFU-21ETT/VP-R 4C170**  
 Gain **1.67 (2.24dB)**  
 Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.248	36	0.294	72	0.719	108	0.973	144	0.978	180	0.947	216	0.978	252	0.973	288	0.719	324	0.294
1	0.248	37	0.301	73	0.731	109	0.976	145	0.976	181	0.947	217	0.980	253	0.970	289	0.707	325	0.288
2	0.248	38	0.308	74	0.743	110	0.979	146	0.974	182	0.947	218	0.981	254	0.968	290	0.695	326	0.282
3	0.248	39	0.316	75	0.754	111	0.981	147	0.972	183	0.947	219	0.983	255	0.963	291	0.683	327	0.277
4	0.247	40	0.324	76	0.765	112	0.984	148	0.970	184	0.947	220	0.985	256	0.959	292	0.670	328	0.273
5	0.247	41	0.333	77	0.775	113	0.986	149	0.969	185	0.947	221	0.987	257	0.955	293	0.657	329	0.268
6	0.247	42	0.342	78	0.786	114	0.988	150	0.967	186	0.947	222	0.988	258	0.951	294	0.644	330	0.264
7	0.247	43	0.352	79	0.796	115	0.990	151	0.965	187	0.947	223	0.990	259	0.947	295	0.631	331	0.261
8	0.247	44	0.362	80	0.805	116	0.992	152	0.964	188	0.947	224	0.991	260	0.943	296	0.618	332	0.258
9	0.246	45	0.372	81	0.815	117	0.994	153	0.962	189	0.947	225	0.993	261	0.938	297	0.604	333	0.256
10	0.246	46	0.383	82	0.824	118	0.995	154	0.961	190	0.948	226	0.994	262	0.933	298	0.591	334	0.253
11	0.246	47	0.395	83	0.833	119	0.998	155	0.959	191	0.948	227	0.995	263	0.928	299	0.577	335	0.252
12	0.246	48	0.408	84	0.841	120	0.997	156	0.958	192	0.948	228	0.997	264	0.923	300	0.563	336	0.250
13	0.246	49	0.418	85	0.850	121	0.998	157	0.957	193	0.949	229	0.997	265	0.918	301	0.550	337	0.249
14	0.245	50	0.431	86	0.858	122	0.999	158	0.956	194	0.949	230	0.998	266	0.912	302	0.536	338	0.248
16	0.245	51	0.443	87	0.865	123	1.000	159	0.955	195	0.950	231	0.999	267	0.908	303	0.522	339	0.247
18	0.245	52	0.458	88	0.873	124	1.000	160	0.954	196	0.950	232	0.999	268	0.900	304	0.509	340	0.246
17	0.245	53	0.469	89	0.880	125	1.000	161	0.953	197	0.951	233	1.000	269	0.893	305	0.495	341	0.246
18	0.246	54	0.482	90	0.887	126	1.000	162	0.952	198	0.952	234	1.000	270	0.887	306	0.482	342	0.246
19	0.246	55	0.495	91	0.893	127	1.000	163	0.951	199	0.953	235	1.000	271	0.880	307	0.469	343	0.245
20	0.246	56	0.509	92	0.900	128	0.999	164	0.950	200	0.954	236	1.000	272	0.873	308	0.456	344	0.245
21	0.247	57	0.522	93	0.906	129	0.999	165	0.950	201	0.955	237	1.000	273	0.865	309	0.443	345	0.245
22	0.248	58	0.536	94	0.912	130	0.998	166	0.949	202	0.956	238	0.999	274	0.858	310	0.431	346	0.245
23	0.249	59	0.550	95	0.917	131	0.997	167	0.949	203	0.957	239	0.998	275	0.850	311	0.418	347	0.246
24	0.250	60	0.563	96	0.923	132	0.996	168	0.948	204	0.958	240	0.997	276	0.841	312	0.406	348	0.246
25	0.252	61	0.577	97	0.928	133	0.995	169	0.948	205	0.959	241	0.996	277	0.833	313	0.395	349	0.246
26	0.253	62	0.591	98	0.933	134	0.994	170	0.948	206	0.961	242	0.995	278	0.824	314	0.383	350	0.246
27	0.256	63	0.604	99	0.938	135	0.993	171	0.947	207	0.962	243	0.994	279	0.815	315	0.372	351	0.246
28	0.258	64	0.618	100	0.943	136	0.991	172	0.947	208	0.964	244	0.992	280	0.805	316	0.362	352	0.247
29	0.261	65	0.631	101	0.947	137	0.990	173	0.947	209	0.965	245	0.990	281	0.796	317	0.352	353	0.247
30	0.264	66	0.644	102	0.951	138	0.988	174	0.947	210	0.967	246	0.988	282	0.788	318	0.342	354	0.247
31	0.268	67	0.657	103	0.955	139	0.987	175	0.947	211	0.969	247	0.986	283	0.775	319	0.333	355	0.247
32	0.272	68	0.670	104	0.959	140	0.985	176	0.947	212	0.970	248	0.984	284	0.765	320	0.324	356	0.247
33	0.277	69	0.683	105	0.963	141	0.983	177	0.947	213	0.972	249	0.982	285	0.754	321	0.316	357	0.248
34	0.282	70	0.695	106	0.966	142	0.981	178	0.947	214	0.974	250	0.979	286	0.743	322	0.308	358	0.248
35	0.288	71	0.707	107	0.970	143	0.980	179	0.947	215	0.976	251	0.976	287	0.731	323	0.301	359	0.248

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## AZIMUTH PATTERN Vertical Polarization

**Proposal No.** C-70698-3  
**Date** 16-May-19  
**Call Letters** WNPB  
**Channel** 34  
**Frequency** 593 MHz  
**Antenna Type** TFU-21ETT/VP-R 4C170  
**Gain** 2.72 (4.34dB)  
 Calculated



210		180		150																	
Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.074	36	0.078	72	0.272	108	0.338	144	0.373	180	0.500	216	0.373	252	0.338	288	0.272	324	0.078		
1	0.074	37	0.081	73	0.278	109	0.336	145	0.377	181	0.500	217	0.368	253	0.341	289	0.266	325	0.076		
2	0.073	38	0.085	74	0.285	110	0.334	146	0.382	182	0.499	218	0.364	254	0.343	290	0.258	326	0.072		
3	0.073	39	0.088	75	0.291	111	0.331	147	0.386	183	0.499	219	0.360	255	0.345	291	0.251	327	0.069		
4	0.072	40	0.091	76	0.297	112	0.329	148	0.391	184	0.498	220	0.358	256	0.347	292	0.244	328	0.065		
5	0.071	41	0.095	77	0.303	113	0.327	149	0.395	185	0.498	221	0.352	257	0.349	293	0.237	329	0.062		
6	0.069	42	0.098	78	0.309	114	0.325	150	0.400	186	0.495	222	0.348	258	0.351	294	0.230	330	0.059		
7	0.068	43	0.102	79	0.314	115	0.323	151	0.405	187	0.493	223	0.345	259	0.353	295	0.222	331	0.057		
8	0.066	44	0.105	80	0.319	116	0.321	152	0.410	188	0.490	224	0.341	260	0.354	296	0.215	332	0.054		
9	0.064	45	0.109	81	0.324	117	0.320	153	0.414	189	0.488	225	0.338	261	0.355	297	0.208	333	0.052		
10	0.062	46	0.113	82	0.329	118	0.319	154	0.419	190	0.485	226	0.335	262	0.356	298	0.201	334	0.050		
11	0.060	47	0.117	83	0.333	119	0.318	155	0.424	191	0.482	227	0.332	263	0.357	299	0.195	335	0.048		
12	0.058	48	0.121	84	0.337	120	0.317	156	0.429	192	0.479	228	0.329	264	0.357	300	0.188	336	0.046		
13	0.056	49	0.126	85	0.341	121	0.316	157	0.433	193	0.476	229	0.327	265	0.358	301	0.181	337	0.045		
14	0.054	50	0.130	86	0.344	122	0.316	158	0.438	194	0.472	230	0.324	266	0.357	302	0.175	338	0.045		
15	0.052	51	0.135	87	0.347	123	0.316	159	0.443	195	0.468	231	0.322	267	0.357	303	0.169	339	0.045		
16	0.050	52	0.140	88	0.349	124	0.317	160	0.447	196	0.464	232	0.321	268	0.356	304	0.162	340	0.045		
17	0.048	53	0.146	89	0.351	125	0.317	161	0.452	197	0.460	233	0.319	269	0.355	305	0.157	341	0.046		
18	0.047	54	0.151	90	0.353	126	0.318	162	0.456	198	0.456	234	0.318	270	0.353	306	0.151	342	0.047		
19	0.046	55	0.157	91	0.355	127	0.319	163	0.460	199	0.452	235	0.317	271	0.351	307	0.146	343	0.048		
20	0.045	56	0.162	92	0.358	128	0.321	164	0.464	200	0.447	236	0.317	272	0.349	308	0.140	344	0.050		
21	0.045	57	0.169	93	0.357	129	0.322	165	0.468	201	0.443	237	0.316	273	0.347	309	0.135	345	0.052		
22	0.045	58	0.175	94	0.357	130	0.324	166	0.472	202	0.438	238	0.316	274	0.344	310	0.130	346	0.054		
23	0.045	59	0.181	95	0.358	131	0.327	167	0.476	203	0.433	239	0.316	275	0.341	311	0.126	347	0.056		
24	0.046	60	0.188	96	0.357	132	0.329	168	0.479	204	0.429	240	0.317	276	0.337	312	0.121	348	0.058		
25	0.048	61	0.195	97	0.357	133	0.332	169	0.482	205	0.424	241	0.318	277	0.333	313	0.117	349	0.060		
26	0.050	62	0.201	98	0.356	134	0.335	170	0.485	206	0.419	242	0.319	278	0.329	314	0.113	350	0.062		
27	0.052	63	0.208	99	0.355	135	0.338	171	0.488	207	0.414	243	0.320	279	0.324	315	0.109	351	0.064		
28	0.064	64	0.215	100	0.354	136	0.341	172	0.490	208	0.410	244	0.321	280	0.319	316	0.105	352	0.066		
29	0.057	65	0.222	101	0.353	137	0.345	173	0.493	209	0.405	245	0.323	281	0.314	317	0.102	353	0.068		
30	0.059	66	0.230	102	0.351	138	0.348	174	0.495	210	0.400	246	0.325	282	0.309	318	0.098	354	0.069		
31	0.062	67	0.237	103	0.349	139	0.352	175	0.498	211	0.395	247	0.327	283	0.303	319	0.095	355	0.071		
32	0.065	68	0.244	104	0.347	140	0.356	176	0.498	212	0.391	248	0.329	284	0.297	320	0.091	356	0.072		
33	0.069	69	0.251	105	0.345	141	0.360	177	0.499	213	0.386	249	0.331	285	0.291	321	0.088	357	0.073		
34	0.072	70	0.258	106	0.343	142	0.364	178	0.499	214	0.382	250	0.334	286	0.285	322	0.085	358	0.073		
35	0.075	71	0.265	107	0.341	143	0.368	179	0.500	215	0.377	251	0.336	287	0.278	323	0.081	359	0.074		

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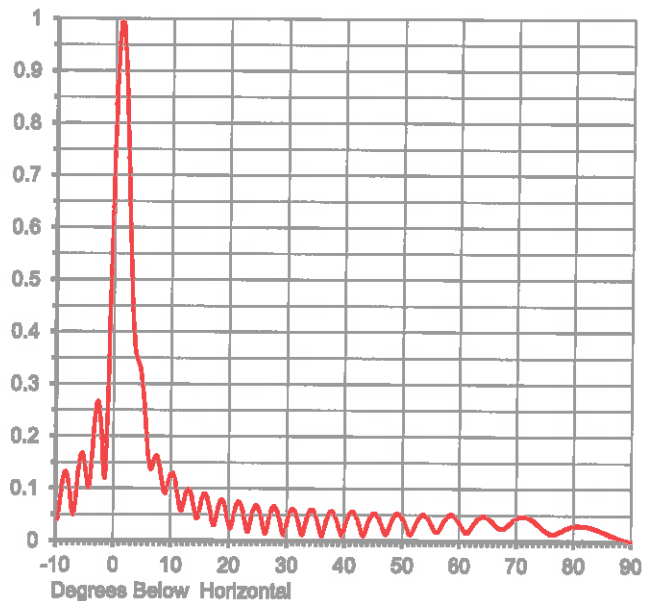
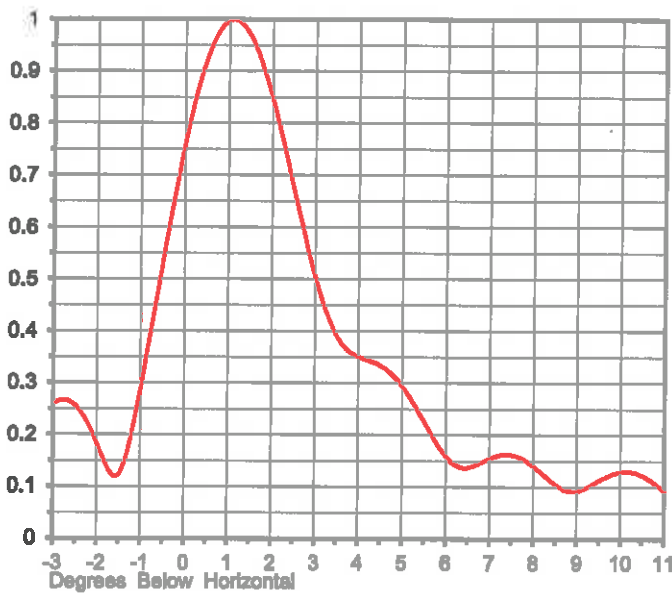


## ELEVATION PATTERN

Proposal No. **C-70698-3**  
 Date **16-May-19**  
 Call Letters **WNPB**  
 Channel **34**  
 Frequency **593 MHz**  
 Antenna Type **TFU-21ETT/VP-R 4C170**

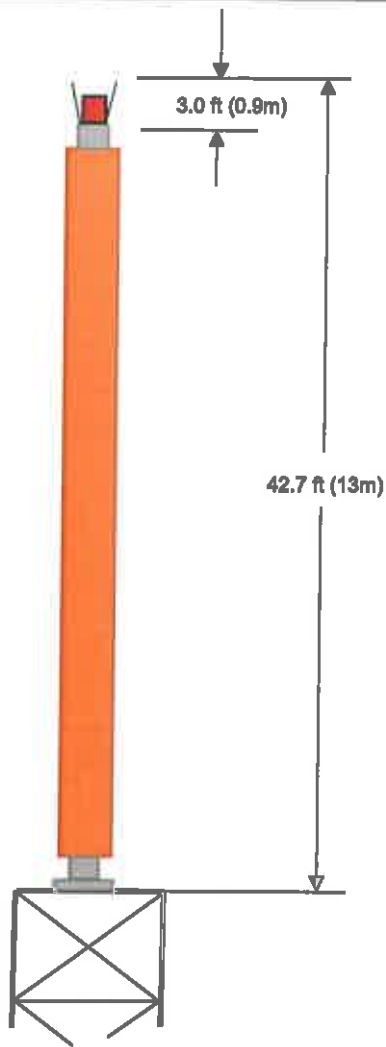
RMS Directivity at Main Lobe **19.8 ( 12.96 dB )**  
 RMS Directivity at Horizontal **12.9 ( 11.11 dB )**  
**Calculated**

Beam Tilt **1.00 deg**  
 Pattern Number **21E198100**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.041	10.0	0.131	30.0	0.041	50.0	0.041	70.0	0.045
-9.0	0.112	11.0	0.085	31.0	0.081	51.0	0.015	71.0	0.048
-8.0	0.117	12.0	0.071	32.0	0.030	52.0	0.029	72.0	0.046
-7.0	0.054	13.0	0.100	33.0	0.030	53.0	0.048	73.0	0.039
-6.0	0.156	14.0	0.052	34.0	0.060	54.0	0.048	74.0	0.029
-5.0	0.137	15.0	0.071	35.0	0.043	55.0	0.030	75.0	0.020
-4.0	0.142	16.0	0.087	36.0	0.012	56.0	0.018	76.0	0.014
-3.0	0.285	17.0	0.035	37.0	0.049	57.0	0.036	77.0	0.016
-2.0	0.159	18.0	0.084	38.0	0.053	58.0	0.050	78.0	0.022
-1.0	0.345	19.0	0.073	39.0	0.021	59.0	0.048	79.0	0.027
0.0	0.807	20.0	0.025	40.0	0.031	60.0	0.033	80.0	0.030
1.0	1.000	21.0	0.084	41.0	0.055	61.0	0.017	81.0	0.030
2.0	0.811	22.0	0.068	42.0	0.044	62.0	0.026	82.0	0.029
3.0	0.472	23.0	0.018	43.0	0.011	63.0	0.042	83.0	0.027
4.0	0.347	24.0	0.057	44.0	0.038	64.0	0.048	84.0	0.023
5.0	0.281	25.0	0.062	45.0	0.053	65.0	0.045	85.0	0.018
6.0	0.149	26.0	0.017	46.0	0.038	66.0	0.035	86.0	0.014
7.0	0.159	27.0	0.052	47.0	0.013	67.0	0.025	87.0	0.009
8.0	0.133	28.0	0.063	48.0	0.039	68.0	0.027	88.0	0.005
9.0	0.096	29.0	0.021	49.0	0.053	69.0	0.037	89.0	0.002
						90.0	0.000		

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## MECHANICAL SPECIFICATIONS

**Proposal No.** C-70698-3  
**Date** 16-May-19  
**Call Letters** WNPB  
**Channel** 34  
**Frequency** 593 MHz  
**Antenna Type** TFU-21ETT/VP-R 4C170

### Preliminary Specifications

#### Top Mounted

##### With Ice TIA-222-G

**Height AGL(z)** 450 ft (137.2 m)  
**Basic Wind Speed** 90 m/h (144.8 km/h)

**Structure Class** II  
**Exposure Category** C  
**Topography Category** 1

**Design Ice** 0.5 in  $t_{12} = 1.30$  in  
**Wind Speed w/ice** 40 m/h (64.4 km/h)

#### Mechanical Specifications

		without ice	with ice
Height with Lightning Protector	H4	42.7 ft (13m)	
Height less Lightning Protector	H2	39.7 ft (12.1m)	
Height of Center of Radiation	H3	19.8 ft (6m)	
Effective Projected Area	(EPA) <sub>S</sub>	38.9 ft <sup>2</sup> (3.6m <sup>2</sup> )	95.3 ft <sup>2</sup> (8.9m <sup>2</sup> )
Moment Arm	D1	21.7 ft (6.6m)	22.3 ft (6.8m)

**Weight** W 4750 lb (2.2t) 6300 lb (2.9t)

Antenna designed in accordance with AISC specifications for design of structural steel as prescribed by TIA-222-G

Prepared by: DLS

Date: 8-May-17

ME:

EE:

Rev. No.3 by: JBC

Date: 16-May-19

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## Summary

Proposal No.	<b>C-70698-3</b>
Date	<b>16-May-19</b>
Call Letters	<b>WNPB</b>
Channel	<b>34</b>
Frequency	<b>593 MHz</b>
Antenna Type	<b>TFU-21ETT/VP-R 4C170</b>

## Antenna

	Hpol		Vpol	
ERP:	<b>660 kW</b>	<b>( 28.20 dBk )</b>	<b>165 kW</b>	<b>( 22.17 dBk )</b>
Peak Gain*	<b>28.71</b>	<b>( 14.58 dB )</b>	<b>7.18</b>	<b>( 8.56 dB )</b>

<b>Antenna Input Power</b>	<b>23.0 kW</b>	<b>( 13.62 dBk )</b>
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## Transmission Line

Type:	<b>Rigid</b>	Attenuation:	<b>( 0.61 dB )</b>
Size:	<b>6-1/8"</b>	Efficiency:	<b>86.8%</b>
Impedance:	<b>75 Ohm</b>		
Length:	<b>515 ft</b>	<b>157.0 m</b>	

## **Transmitter Output**

<b>26.5 kW</b>	<b>( 14.23 dBk )</b>
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Transmitter filter losses not included

\* Directivity and Gain are with respect to half wave dipole. The gain includes feed system losses

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Department of Administration, Purchasing Division  
2019 Washington Street East  
Charleston, WV 25305-0130

May 20, 2019

Attention: Stephanie Gale  
RE: RFQ# EBar67877 – High Power UHF Television Transmit Antenna

Ms. Gale,

Thank you for the opportunity to respond to the West Virginia, WNPB Antenna Project. We are pleased to offer the following proposal for your review.

Since our inception in 1942, Dielectric has considered itself a solution-oriented engineering company, with pride in our depth of knowledge and our experience in both FM and TV. Our Corporate parent Sinclair Broadcasting is one of the nation's largest TV station owners and like Dielectric, an industry leader with respect to current and future broadcast technologies.

We have included a list of any clarifications with our response. Unless specifically addressed, Dielectric takes no exception to the RFQ specifications. If any information is missing it is not intentional. We have included Dielectric's standard Terms and Conditions of Sale and Warranty, however the terms of West Virginia stated within the RFQ will take precedent.

We welcome any questions and an opportunity for any further clarification if necessary.

Kind regards,

A handwritten signature in black ink, appearing to read "Jay Martin".

Jay Martin

Vice President, Sales

Cc: Christine Zuba



**CLARIFICATIONS TO WEST VIRGINIA REQUEST FOR QUOTATION RFQ# EBAr67877  
SPECIFICATIONS**

**Sections 1 and 2**

Understood

**3.1.1 Comply, except where clarified as follows:**

**3.1.1.1.3 The proposed Dielectric TFU-21ETT/VP-R 4C170 meets all the physical attributes of this section.**

**3.1.1.2.2 The proposed Dielectric TFU-21ETT/VP-R 4C170 Horizontal Azimuth Pattern meets the parameters as defined.**

**3.1.1.3. No transmission line is included except for a new antenna input complex and a cut section (to be called into the factory by the installation crew and shipped overnight) to mate with the existing run of 6-1/8" 75 ohm transmission line.**

**Sections 4 and 5**

Understood and Comply

**Section 6**

**6.1. Antenna Shipment would be 150 days after order.**

**Section 7**

Understood