

COMMUNICATION TECHNOLOGY

State of West Virginia Connie Oswald 2019 Washington Street East P.O. Box 50130 Charleston, WV 25305-0130

Response to Solicitation EBA427

Ms. Oswald,

Thank you for the opportunity to respond to the referenced solicitation. We are pleased to offer the following proposal for your review.

Since our inception in 1942, SPX Communication Technology (Dielectric Communications) has considered itself a solution-oriented engineering company, with pride in our depth of scientific knowledge, and our experience in both TV and FM. We are the nation's largest manufacturer of high power broadcast systems, with over 60 years of continuous service, and equipment installed in thousands of transmission sites worldwide.

We have not taken exception to any Terms and Conditions of the Solicitation. We are quoting only those items as indicated within our attached price proposal. We have also included our standard Terms and Conditions of Sale including Warranty, which would apply to the extent they are not in conflict with solicitation documents.

Replacement parts and technical bulletins are available and updated as needed. Technical assistance by phone is available free-of-charge, and field service personnel are available as required on a perdiem basis as noted (requested option) within the price proposal.

If any information is missing it is not intentional. Any additional questions are welcome and an opportunity for any further clarification if needed is appreciated.

Kind regards,

David Stout

Quotes Representative

RECENED

2012 OCT -3 A1110: 23

WV FURCHASING DIVISION



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State of West Virginia Department of Administration Purchasing Division

NOTICE

Due to the size of this bid, it was impractical to scan every page for online viewing. We have made an attempt to scan and publish all pertinent bid information. However, it is important to note that some pages were necessarily omitted.

If you would like to review the bid in its entirety, please contact the buyer. Thank you.



State of West Virginia Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

Solicitation

P

O

NUMBER

EBA427

PAGE

ADDRESS CORRESPONDENCE TO ATTENTION OF

ADDRESS CHANGES TO BE NOTED ABOVE

CONNIE OSWALD 304-558-2157

DOR

*C20082552 01 207-655-8137 SPX COMMUNICATION TECHNOLOGY 22 TOWER RD

RAYMOND ME 04071 EDUCATIONAL BROADCASTING AUTHORITY VARIOUS LOCALES AS INDICATED BY ORDER

DATE PRINTED 09/06/2012 BID OPENING DATE: 10/04/2012 BID OPENING TIME 1:30PM CAT. LINE QUANTITY UOP ITEM NUMBER UNIT PRICE AMOUNT THE STATE OF WEST VIRGINIA AND ITS AGENCY THE WEST VIRGINIA EDUCATIONAL BROADCASTING AUTHORITY (WVEBA) REQUEST A QUOTE TO PROVIDE A CHANNEL \$8 DIGITAL TELEVISION ANTENNA SYSTEM AND ACCESSORIES FOR THE CEDARVILLE, WV AREA ACCORDING TO THE ATTACHED SPECIFICATIONS. BID OPENING OCTOBER 4, 2012 AT 1:30 REFERENCE ATTACHED INSTRUCTIONS TO BIDDERS. 0001 EA 840-10 ANTENNAS AND ACCESSORIES, TELEVISION TO PROVIDE A CHANNEL 28 DIGITAL TELEVISION ANTENNA SYSTEM AND ASSOCIATED HARDWARE FOR THE CEDARVILLE, WEST VIRGINIA AREA ACCORDING TO THE ATTACHED SPECIFICATIONS. REFERENCE ATTACHED INSTRUCTIONS TO BIDDERS. SIGNATURE TELEPHONE 207-655-8137 DATE 9-28-12 Quotes Representative

38-1016240



VEZDOR

DATE PRINTED

State of West Virginia Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

Solicitation

NUMBER

PAGE

EBA427

ADDRESS CORRESPONDENCE TO ATTENTION OF:

CONNIE OSWALD

*C20082552 01 207-655-8137 SPX COMMUNICATION TECHNOLOGY 22 TOWER RD

RAYMOND ME 04071

SHIPTO

EDUCATIONAL BROADCASTING
AUTHORITY
VARIOUS LOCALES AS INDICATED
BY ORDER

09/0	6/2012 E: 10/0	4/2012,			BTD	OPENING TIM	no i.	30PM
LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER		UNIT PRICE		AMOUNT
	***** TH	IS IS 1	THE END	OF RFQ	EBA	427 *****	TOTAL	
IGNATURE (<u> </u>				1			
1//	M. Stout	FEIN 00 10		TELEPH	10NE 20'	7-655-8137		9-28-12
Quotes Rej	presentative	38-10	16240			ADDRESS C	HANGES TO	O BE NOTED ABOVE

10'-0"

12'-0"

16'-0"

20'-0" ELEVATION

APPURTENANCE LOADING

.201	DESCRIPTION	MA	HOLLYANDY	HOLKT TYPE
1	18'x3 Drd	4	190.00 Ft	12 PSG
2	18'x3 Dvd	4	190.00 F4	12' PSG
3	18,×3 D-4	4	190.00 ft	15. 120
4	PLB W/o radone	1	18000 11	Pipe Hount
5	PLE W/o redome	1	180.00 ft	Pipe Mount
6	18'x3 Drd	1	170.00 ft	6' Side Arm
7	18'x3 Crv1	1	157,75 ft	6' Side Arm
8	PLB w/o riadone	1	150.00 ft	Mpe Hount
,	PL6 w/o radone	1	130.00 f4	Pipe Hount
10	18'v2 Dwd	1	14550 Ft	6' Side Arm
11	18'x3 Droit	-1	13325 /1	6' Slide Arn
12	18'x3 Dryl	1	121.00 ft	6' Stole Arm
13	PLB W/o radone	1	120.00 ft	Pipe Hount
14	PLE e/o redone	1	120.00 Ft	Pipe Hount
15	18'x3 Drvi	1	99.75 ft	6' Side Arm
16	18'x3 Dref	1	87.50 ft	6' Side Arm
17	PLB 1/0 radone	1	80.00 Ft	Pipe Mount
18	PL6 4/0 radone	1	BOLOO FT	Pipe Hount
19	18×3 Drvl	1	75.25 11	e, Zige yeu
20	18.43 D-41	1	72.00 44	6' 5'd+ Arn
51	18"x3 Dvv3	1	50.00 Ft	6' Side Arm

TOWER DESIGN LOADING

- 1. TOWER IS DESIGNED PER EU/TIA-222F FOR 70 MPH WIND LOAD WITH 1/2° ICE, 90 MPH (3) SEC. GUST.
- 2. TRANSMISSION LADDERS AND LINES MUST BE EVENLY DISTRIBUTED ON ALL (3) FACES.

REFERENCE DRAWINGS

KEFEKEINGE DIVANTING	3
1. FOUNDATION DRAWINGS	A-AB20
TOWER BASE	N-NDZU
ANCHOR BOLT	
BASE GROUT	A-SSTGRT1
GROUNDING	N/A
2. CELL MOUNT	N/A
J. DISH MOUNTS	N/A
4. BRACING LAGING	A-INST1
5. SAFETY CLIMB	B-SAFETY
	N/A
6. ICE SHIELD 7. LIGHTNING ROD	A-LTROD71
8. WAVEGUIDE LADDER	N/A
9. TX-LINE GROUNDING	B-COAX-SST
	N/A
IO. WAVEGUIDE BRIDGE	N/A
1. BEACON MOUNT	11/4
12. LIGHTING DIAGRAM	N/A
13. SIDE LIGHTS	N/A
 FOR SECTION ASSEMBLE DRAWING A—"ASS'Y NO. 	IES SEE

50.-0, 10.

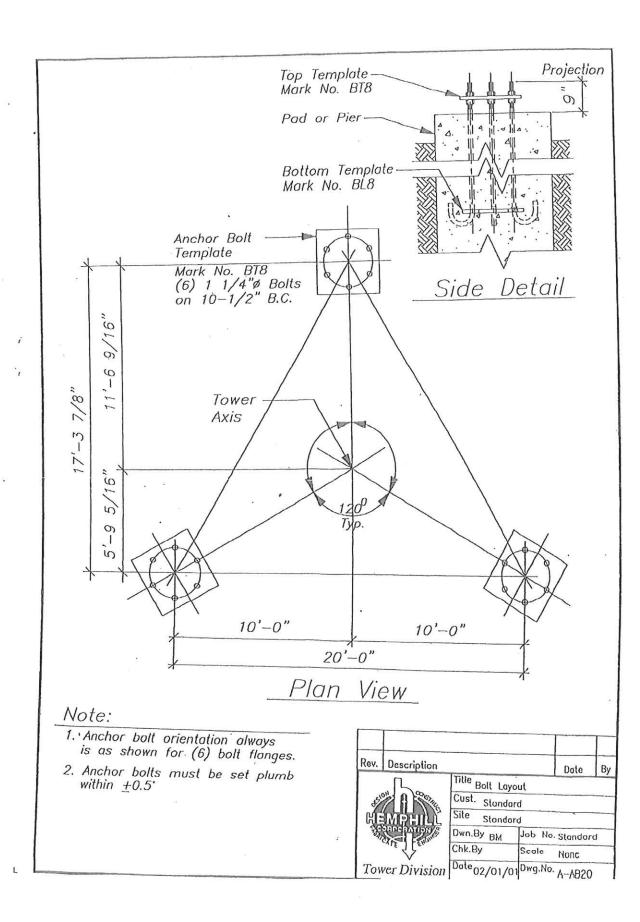
BASE REACTIONS

Overturn	K-FT
Shear	KIPS
Weight	KIPS
Uplift	KIPS
Compression	KIPS

PLAN VIEW

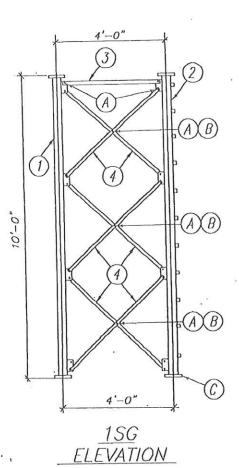
	Γ				Т
Rev.	Description			Deta	9,
	111	1184 190' SST			-
	JA	Curt West Kirp	lon		
1	AHK	Site Butwood	M		
HIE	MPHI	1) Ome by By	Hote Ho.	11545	
1,	\III	CHLO	Scole	none	_
- 25	-	0010 0/1/05	Unglis	P-1164	

51 18	rx3 D	m		1	50.00	ft	6,	Side Arm	J		
								156	190'		
	*						2,240		185'		
			1 8				-	33	180'		
						3/6	3" SCH 40	21	175' 170'		
			i			LI私×135×36	٠ <u>٠</u>	ж	160'.		
			,			x 1/4 x	04	31	150'		
							SCH	31	140'		
							3 1/2" 504 40	4T	130'		
								36	120'		
							\$		113.5'		
e)(e	Not Applicable	2/6	10	0 0		4. SCH 40	51				
plical		Not Applicat	plical	plicab	plicab	ot Applicabl	*	35	100'		
Not Applicable			Not Ap	Not Ap	Not Ap	Not A	Not Applicable	Not Applicable	Not Applicable	22	
							F A	31	80'		
						Ux3xK UBx2BxR	5° SCH 40	π			
						3		38	60'		
					÷.	3 x 2 x Z		вт [°]			
						7		я	40'		
						. %×	6" SCH 40	97			
						3 1/2		36	20'		
						13 x 3 1/2 x 1/2 x 1/2 .		10113			
								У	0'		
מאבואסח	PAINT	MIND BR.	2nd Horiz.	2nd Diag.	CIRTS	DAGONALS	TECS	SECTION ASS'Y NO.			



PLAN VIEW

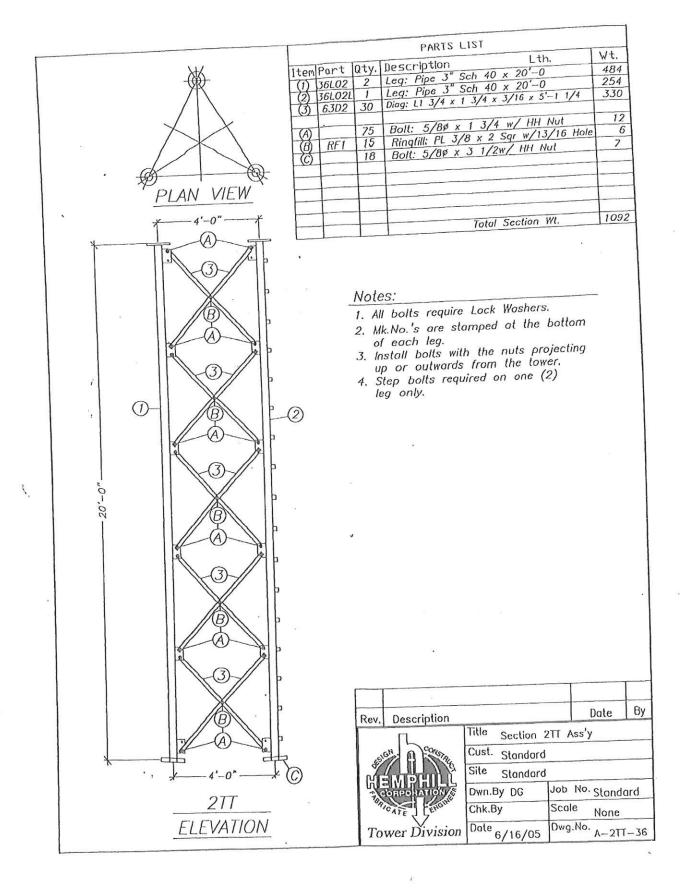
			PARTS LIST	Wt.
Item	Part	Qty.	Description Lth. Leg: Pipe 2" Sch 40 x 10'-0"	192
(1)	33L01	2	Leg: Pipe 2 Sch 40 x 10'-0"	98
(2)	33L01L	1	Leg: Pipe 2 SCH 40 x 10 5	24
(3)	70G1	3	Girt: L1 3/4 x 1 3/4 x 3/16 x 3'-6 7/8' Diag: L1 3/4 x 1 3/4 x 3/16 x 4'-6 3/4"	180
(4)	70D1A	18	Diag: L1 3/4 x 1 3/4 x 3/10 x 1 2 = 1	
			Bolt: 5/80 x 1 3/4 w/ HH Nut	8
(A)		51	Bolt: 5/89 x 1 5/1 11/16 Hole	4
(B)	RF1	9	Ringfill: PL3/8x2sqr w/ 13/16 Hole	6
(0)		18	Bolt: 5/80 x 3 1/4 w/ HH Nut	
			Total Section Wt.	512

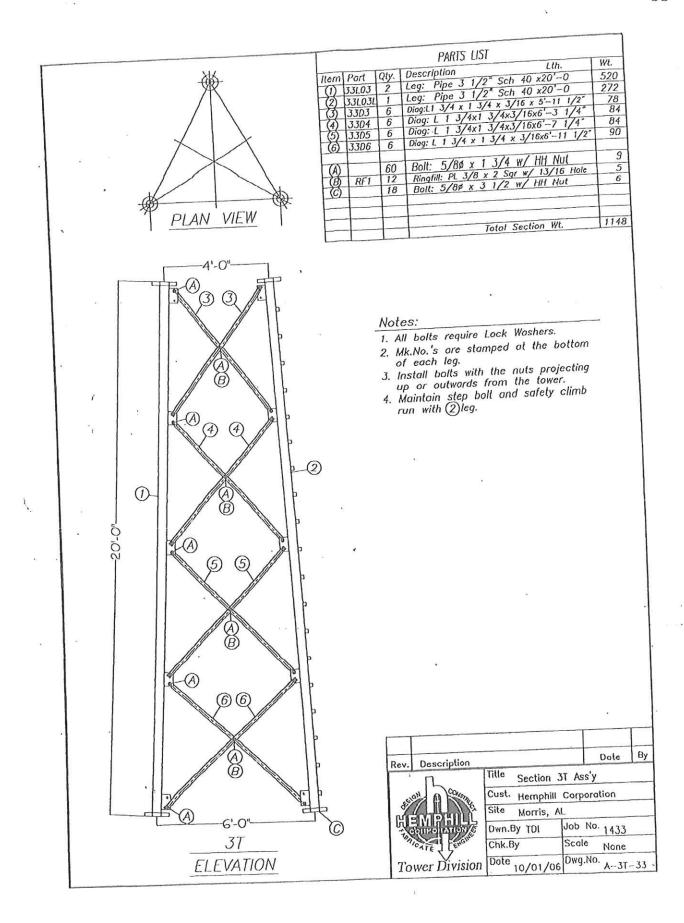


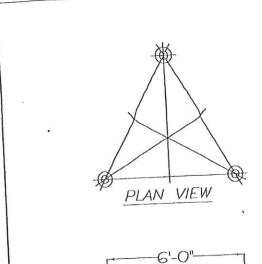
Notes:

- 1. All bolts require Lock Washers.
- 2. Mk.No.'s are stamped at the bottom of each leg.
 3. Install bolts with the nuts projecting up or outwards from the tower.
- 4. Step bolts required on one (2) leg only.

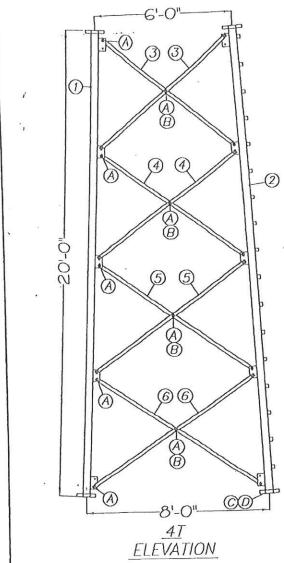
Rev.	Description			Dote	Ву		
	П	Title Section	1SG Ass	'y			
451	A COURT	Cust. Standard					
TUIT.		Site Standar	ď				
170	A CONTRACTOR	Dwn.By TDB	Job No	b No. 1433			
4/	CATE EHOMES	Chk.By	Scale	None			
	wer Division	Date 9/26/06	Dwg.No	A-1SG	33		







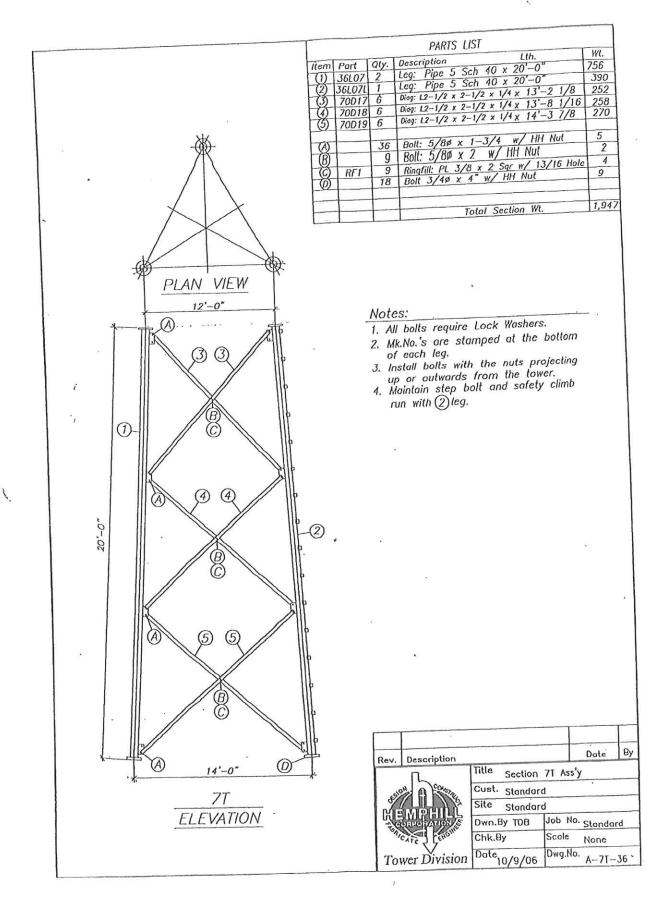
			PARTS LIST	Wt.
em	Port	Qty.	Description 7 1/2" Sch 40 x 20'-0"	532
(1)	36L04	2	Leg. 11/2" Sch 40 x 20'-0	278
2	36L04L	1	Leg. 1100 - 1/16 x 7'-4 11/16"	90
3	69D7	6	010g.L . 3/16 x 7-8	96
(4)	6908	6	0104.2 1 1/16 x 8-0 11/10	102
(5)	6909	6	Diag:L 1 3/4 x 1 3/4 x 3/16 x 8'-6 11/16"	108
(6)	69010	6	Diag:L 1 3/4 x 1 3/4 x	-
	1		5 4 5 /04 × 1 3/4 w/ HH Nut	9
(A)	1	60	Bolt: 3/08 X 1 S/	1
(B)	RF1	12	Ringfill: PL 3/0 x 2 3	5
(c)		17	Bolt: 5/8¢ x 3 1/2 w/ HH Nut Bolt: 5/8¢ x 3 3/4 w/ HH Nut	1
(0)		1	Bolt: 5/86 x 3 3/1 11/	1-
			Total Section Wt.	122

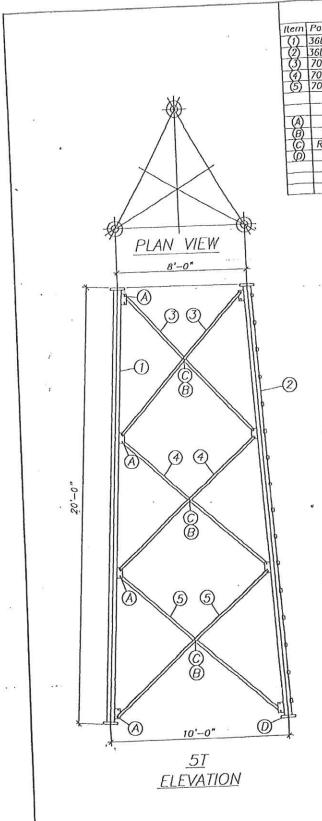


Notes:

- 1. All bolts require Lock Washers.
- 2. Mk.No.'s are stamped at the bottom of each leg.
- 3. Install bolts with the nuts projecting up or outwards from the tower.
- Maintain step bolt and safety climb run with (2) leg.

Date Rev. Description Title Section 4T Ass'y Cust. Standard Standard Job No. Standard Dwn.By TDB Chk.By Scale None Dwg.No. A-41-36 Date 10/9/06 Tower Division



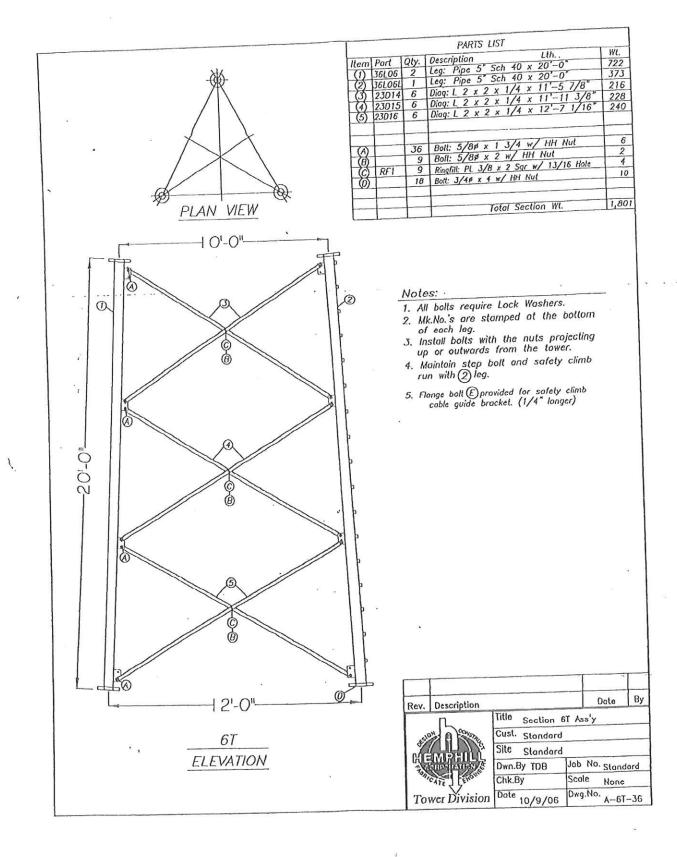


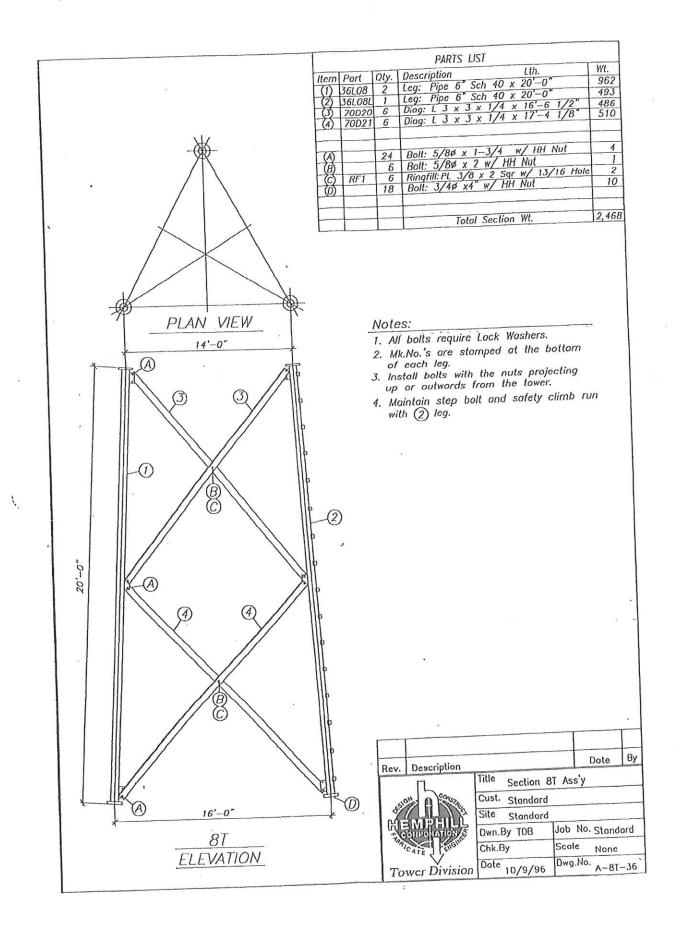
			PARTS LIST	Wt.
tem	Port	Qty.	Description	580
(1)	36L05	2	1 C- h 10 V 70 - U	302
(2)	36L05L	1	Leg. 110 0 1/4 y 9-11 3/8	192
(3)	70D11	6	Diag: L 2 x 2 x 1/4 x 10-4 1/4	198
(4)	70D12	6	Diag: L 2 x 2 x 1/4 x 10-4 17 Diag: L 2 x 2 x 1/4 x 10'-11 5/8	204
(5)	70D13	6	Diag: L Z X Z X 17 1	-
		70	Bolt: 5/8ø x 1 3/4 w/ HH Nut	5
(A)		36	t = v c/od v 2 w/ HH NUL	2
(B)		9	Ringfill: PL 3/8 x 2 Sqr w/ 13/16 Hole Bolt: 5/8ø x 3 3/4° w/ HH Nut	4
(c)	RF1	9	Ringfill: PL S/O X 2 3/4" W/ HH Nut	6
(Q)	-	18	Bolt: 5/68 x 3 3/1 11/	-
	1		Total Section Wt.	149

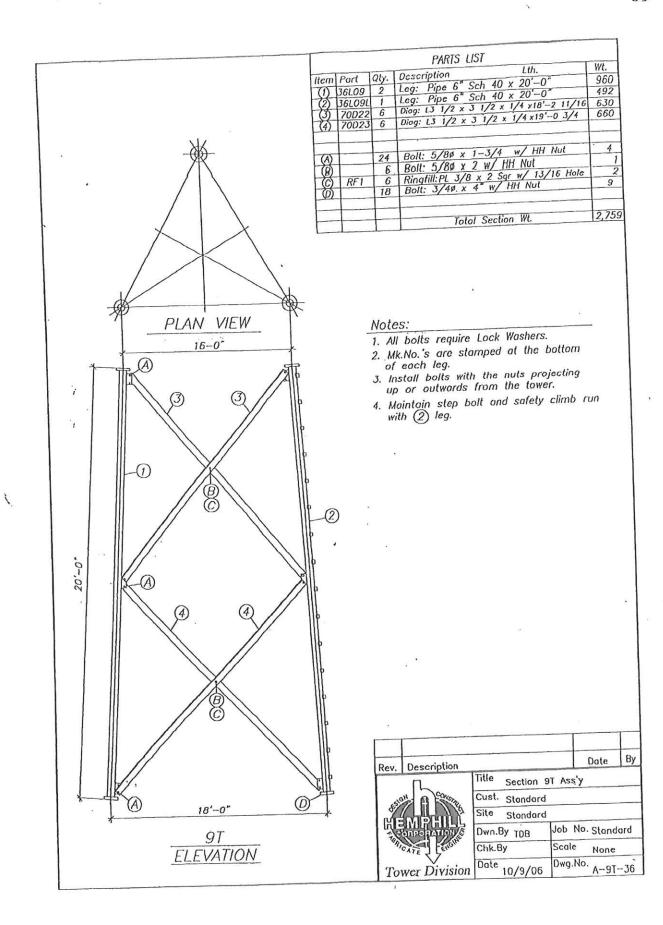
Notes:

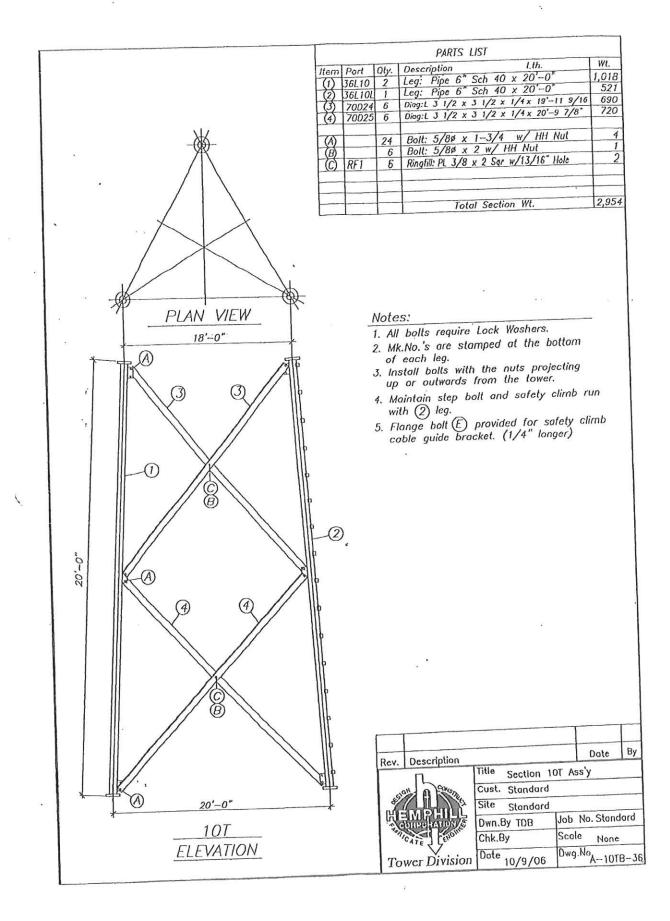
- 1. All bolts require Lock Woshers.
- 2. Mk.No.'s are stamped at the bottom of each leg.
- 3. Install bolts with the nuts projecting up or autwards from the tower.
- 4. Maintain step bolt and safety climb run with 2 leg.

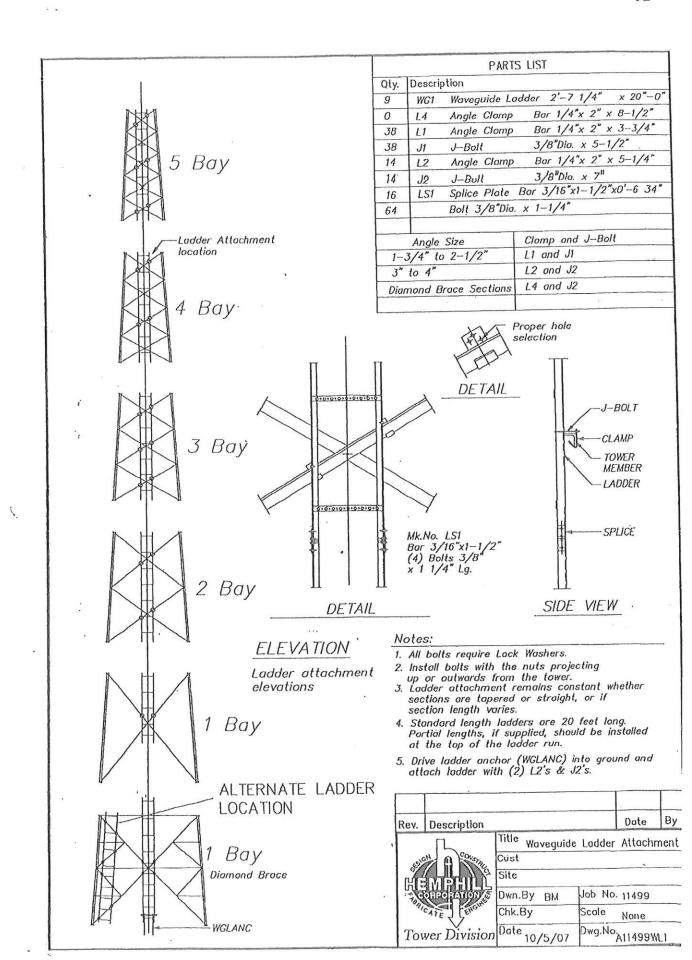
Dote Description Title Section 5T Ass'y Cust. Standard Site Standard Job No. Standard Dwn.By TDB Scole Chk.By None Dwg.No. A-5T-36 Date 10/9/06 Tower Division











MECHANICAL SPECIFICATIONS

Antenna:

Type: Channel: 28

Location:

Antenna Length (H2):

23.0 ft

Center of Radiation (H3):

11.5 ft

Weight:

130 lbs

RS-222C Specification per RS-222-C

EIA-222F Specification per EIA 222-F

Area of Flats:

12.9 ft²

Force Coef x Projected Area:

18.2 ft²

Exhibit No.

Date Call Letters Location Customer Antenna Type

Channel 28

AZIMUTH PATTERN

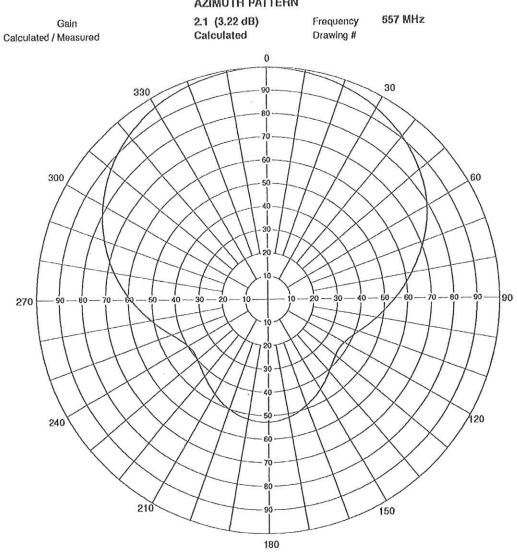


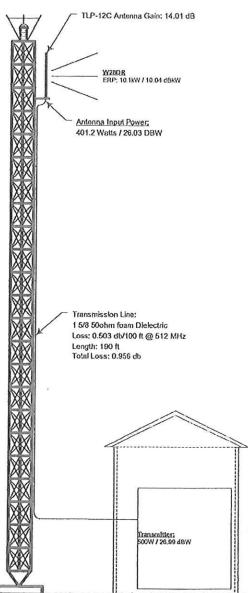
EXHIBIT \$

W28DR-D

Cedarville, West Virginia

Engineering Specifications

A.	Transmitter Site (NAD 27)				
		North Latitude	38° 43	42.7"	
		West Longitude	80° 39	49.0"	
	Tower Registration Number		12645	09	
	FAA Study Number:	(6)	2008-AEA-2	2820-OE	
В.	Proposed Facility				
	DTV Channel				
		Number	28		
		Frequency	554 - 56	O MHZ	
		Emission Mask	Stringe	ent	
C.	Elevations				
	Height of Site Above Mean Sea	a Level (AMSL)	503.8 m		
	Overall height of Structure abo	ve Ground	58.7 m	1	
	(including all appurtenance	s)			
	Overall Height of Structure Ab	ove Mean Sea Level	562.5	m	
	(including all appurtenance	s)			
	Effective Height of Antenna Al	bove Ground	45.7 m	1	
	Effective Height of Antenna Al	bove Average Terrain	192.0	m	
	Effective Height of Antenna Al	bove Mean Sea Level	549.5	m	
D.	Antenna Parameters: -Horizont	al Polarization			
	Antenna RMS At Main Lobe		10.79	dB	
	Maximum Antenna Peak Gain		14.01	dB	



Ground Level 503.8 m

NAD 27 Coordinates:

N. Latitude:

38° 43' 42.7"

W. Longitude:

80° 39' 49.0"

FAA Aeronautical Study Number:

2008-AEA-2820-OE

FCC Tower Registration Number:

1264509

NOTE: NOT TO SCALE

ECOMMUNICATIONS CONSULTING ENGINEERS
507 M.W. 60th Street, Suite C.
Gainesville, Florida 32607

W28DR

CEDARVILLE, WV

20120525

Exhibit No.

Date
Call Letters
Location
Customer
Antenna Type

Channel 28

TABULATION OF AZIMUTH PATTERN

Azlmuth Pattern Drawing #

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	1.000	45	0.884	90	0.547	135	0.390	180	0.527	225	0.413	270	0.590	315	0.902
1	0.999	46	0.878	91	0.539	136	0.394	181	0.528	226	0.410	271	0.598	316	0.907
2	0.998	47	0.873	92	0.532	137	0.397	182	0.528	227	0.407	272	0.606	317	0,911
3	0.997	48	0.868	93	0.524	138	0.401	183	0.528	228	0.405	273	0.614	318	0.916
4	0.996	49	0.862	94	0.517	139	0.404	184	0.527	229	0.402	274	0.622	319	0.920
5	0.995	50	0.857	95	0.510	140	0.408	185	0.527	230	0.400	275	0.630	320	0.924
6	0,995	51	0.851	96	0.502	141	0.412	186	0.526	231	0.398	276	0.638	321	0.928
7	0.994	52	0.845	97	0.495	142	0.416	187	0.525	232	0.396	277	0.646	322	0.932
8	0.993	53	0.839	98	0.488	143	0.420	188	0.524	233	0.395	278	0.654	323	0.935
9	0.992	54	0.833	99	0.481	144	0.424	189	0.523	234	0.394	279	0.663	324	0.939
10	0.990	55	0.826	100	0.474	145	0.428	190	0.522	235	0,393	280	0.671	325	0.942
11	0.989	56	0.820	101	0.468	146	0.432	191	0.520	236	0.393	281	0,679	326	0.946
12	0.988	57	0.813	102	0.461	147	0.437	192	0.518	237	0.394	282	0,686	327	0.949
13	0,986	58	0.806	103	0.455	148	0.441	193	0.517	238	0.395	283	0.694	328	0.952
14	0.985	59	0.799	104	0.448	149	0.445	194	0,515	239	0.396	284	0.702	329	0.955
15	0,983	60	0.792	105	0.442	150	0.449	195	0.512	240	0.398	285	0.710	330	0.958
16	0.981	61	0.784	106	0.436	151	0.453	196	0.510	241	0.400	286	0.718	331	0.960
17	0.980	62	0.777	107	0.430	152	0.457	197	0.508	242	0.403	287	0.725	332	0.963
18	0.978	63	0.769	108	0.425	153	0.461	198	0.505	243	0.406	288	0.733	333	0.965
19	0.976	64	0.761	109	0.420	154	0.465	199	0.503	244	0.410	289	0.741	334	0.968
20	0.973	65	0.754	110	0.414	155	0.469	200	0.500	245	0.414	290	0.748	335	0.970
21	0.971	66	0.746	111	0.410	156	0.472	201	0.497	246	0.419	291	0.755	336	0.972
22	0.969	67	0.737	112	0.405	157	0.476	202	0.494	247	0.423	292	0.763	337	0.974
23	0.966	68	0.729	113	0.401	158	0.480	203	0.491	248	0.429	293	0.770	338	0.976
24	0.964	69	0.721	114	0.396	159	0.483	204	0.488	249	0.434	294	0.777	339	0.978
25	0.961	70	0.713	115	0.393	160	0.487	205	0.484	250	0.440	295	0.784	340	0.980
26	0.958	71	0.704	116	0.389	161	0.490	206	0.481	251	0.446	296	0.791	341	0.982
27	0.955	72	0.696	117	0.386	162	0.493	207	0.477	252	0.452	297	0.798	342	0.983
28	0.952	73	0.687	118	0.383	163	0.497	208	0.474	253	0.459	298	0.804	343	0.985
29	0.949	74	0.679	119	0.381	164	0.500	209	0.470	254	0.465	299	0.811	344	0.986
30	0.946	75	0.670	120	0.378	165	0.502	210	0.467	255	0.472	300	0.818	345	0.988
31	0.942	76	0.662	121	0.377	166	0.505	211	0.463	256	0.479	301	0.824	346	0.989
32	0.939	77	0.653	122	0.375	167	0.508	212	0.459	257	0.487	302	0,830	347	0.990
33	0.935	78	0.645	123	0.374	168	0.510	213	0.455	258	0.494	303	0.837	348	0.991
34	0.932	79	0.637	124	0.373	169	0.513	214	0.452	259	0.502	304	0.843	349	0.993
35	0.928	80	0.628	125	0.373	170	0.515	215	0.448	260	0.510	305	0.849	350	0.994
36	0.924	81	0,620	126	0.373	171	0.517	216	0.444	261	0.517	306	0.855	351	0.995
37	0.920	82	0.611	127	0.374	172	0.519	217	0.440	262	0.525	307	0.860	352	0.995
38	0.916	83	0.603	128	0.375	173	0.520	218	0.437	263	0.533	308	0.866	353	0.996
39	0.912	84	0.595	129	0.376	174	0.522	219	0.433	264	0.541	309	0.872	354	0.997
40	0.907	85	0.587	130	0.378	175	0.523	220	0.430	265	0.549	310	0.877	355	0.998
41	0.903	86	0.579	131	0.380	176	0.524	221	0.426	266	0.557	311	0.882	356	0.998
42	0.898	87	0.571	132	0.382	177	0.525	222	0,423	267	0.565	312	0.887	357	0.999
43	0.893	88	0.563	133	0.385	178	0.526	223	0.419	268	0.573	313	0.892	358	0.999
44	0.889	89	0.555	134	0.387	179	0.527	224	0.416	269	0.581	314	0.897	359	0.999
44	0.000	00	0.000	101	0.001	1110	3,01.1	Tana .	00	1		1		-	

Exhibit No.

Channel 28

Date

Call Letters

Location

Customer

Antenna Type

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #

TLP-C

Angle	Field	ERP (kW)	ERP (dBk)
0	1.000	126.0	21.00
10	0.990	123.5	20.92
20	0.973	119.3	20.77
30	0.946	112.8	20.52
40	0.907	103.7	20.16
50	0.857	92.5	19.66
60	0.792	79.0	18.98
70	0.713	64.1	18.07
80	0.628	49.7	16.96
90	0.547	37.7	15.76
100	0.474	28.3	14.52
110	0.414	21.6	13.34
120	0.378	18.0	12.55
130	0.378	18.0	12.55
140	0.408	21.0	13.22
150	0.449	25.4	14.05
160	0.487	29.9	14.75
170	0.515	33.4	15.24
180	0.527	35.0	15.44
190	0.522	34.3	15.36
200	0.500	31.5	14.98
210	0.467	27.5	14.39
220	0.430	23.3	13.67
230	0.400	20.2	13.04
240	0.398	20.0	13.00
250	0.440	24.4	13.87
260	0.510	32.8	15.16
270	0.590	43.9	16.42
280	0.671	56.7	17.54
290	0.748	70.5	18.48
300	0.818	84.3	19.26
310	0.877	96.9	19.86
320	0.924	107.6	20.32
330	0.958	115.6	20.63
340	0.980	121.0	20.83
350	0.994	124.5	20.95

Maxima

Angle	Field	ERP (kW)	ERP (dBk)
0	1.000	126.0	21.00
182	0.528	35.1	15,46

Minima

Angle	Field	ERP (kW)	ERP (dBk)
125	0,373	17.5	12.44
236	0.393	19.5	12.89

Exhibit No.

Date
Call Letters
Location
Customer
Antenna Type

Channel 28

ELEVATION PATTERN

RMS Gain at Main Lobe RMS Gain at Horizontal Calculated / Measured 12.0 (10.79 dB) 10.1 (10.04 dB)

Beam Tilt Frequency Drawing # 1.00 Degrees 557,00 MHz

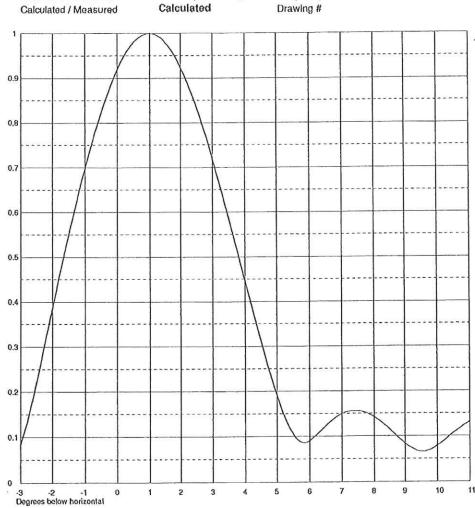


Exhibit No.

Date Call Letters Location Customer Antenna Type

Beam Tilt

Channel 28

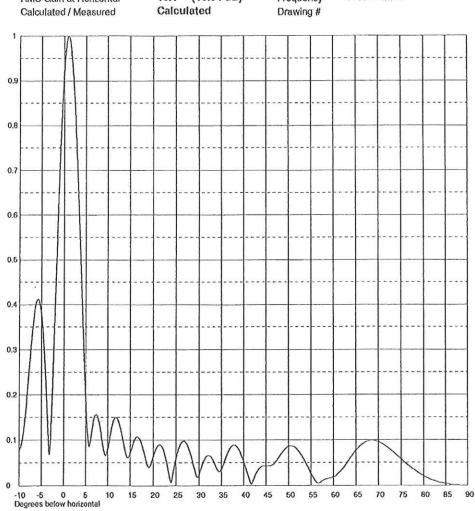
ELEVATION PATTERN

RMS Gain at Maln Lobe RMS Gain at Horizontal

12.0 (10.79 dB) 10.1 (10.04 dB)

Frequency

1.00 Degrees 557.00 MHz



Date

Channel

28

Call Letters Location Customer Antenna Type

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
10.0	0.076	2.4	0.854	10.6	0.112	30.5	0.037	51.0	0,086	71.5	0.088
-9.5	0.089	2,6	0.812	10.8	0.123	31.0	0.051	51.5	0.083	72.0	0.084
-9.0	0.117	2.8	0.767	11.0	0.132	31.5	0.061	52.0	0.078	72.5	0.080
-8.5	0.163	3.0	0.718	11.5	0.147	32.0	0.066	52.5	0.072	73.0	0.076
-8.0	0.221	3.2	0,667	12.0	0.149	32.5	0.065	53.0	0.064	73.5	0.072
-7.5	0.282	3.4	0.614	12.5	0.139	33.0	0.059	53.5	0.055	74.0	0.067
-7.0	0.339	3.6	0.559	13.0	0.120	33.5	0.049	54.0	0.045	74.5	0.063
-6.5	0.384	3.8	0.503	13.5	0.094	34.0	0.038	54.5	0.036	75.0	0.058
-6.0	0,409	4.0	0.447	14.0	0.071	34.5	0.031	55.0	0.026	75.5	0.054
-5.5	0.409	4.2	0.392	14.5	0.061	35.0	0.034	55.5	0.018	76.0	0.049
-5.0	0.379	4.4	0.338	15.0	0.070	35.5	0.046	56.0	0.010	76.5	0.045
-4.5	0.317	4.6	0.286	15.5	0.087	36.0	0.060	56.5	0.005	77.0	0.041
-4.0	0.227	4.8	0.237	16.0	0.101	36.5	0.073	57.0	0.006	77.5	0.037
-3.5	0.116	5.0	0.192	16.5	0.107	37.0	0.082	57,5	0.010	78.0	0.034
-3.0	0.084	5.2	0.151	17.0	0.104	37.5	0.088	58.0	0.013	78.5	0.030
-2.8	0.132	5.4	0.118	17.5	0.092	38.0	0.089	58.5	0.015	79.0	0.027
-2.6	0.191	5.6	0.095	18.0	0.074	38.5	0.085	59.0	0.016	79.5	0.024
-2.4	0.254	5.8	0.086	18.5	0.054	39.0	0.078	59.5	0.017	80.0	0.021
-2.2	0.319	6.0	0.090	19.0	0.041	39.5	0.067	60.0	0.018	80.5	0.018
-2.0	0.385	6.2	0.102	19.5	0.045	40.0	0.053	60.5	0.021	81.0	0.016
-1.8	0.451	6.4	0.116	20.0	0.062	40.5	0.038	61.0	0.025	81.5	0.014
-1.6	0.515	6.6	0.130	20.5	0.077	41.0	0.023	61.5	0.030	82.0	0.012
-1.4	0.578	6.8	0.141	21.0	0.087	41.5	0.007	62.0	0.036	82.5	0.010
-1.2	0.639	7.0	0.150	21.5	0.089	42.0	0.008	62.5	0.043	83.0	0.009
-1.0	0.696	7.2	0.155	22.0	0.083	42.5	0.020	63.0	0.050	83,5	0.007
-0.8	0.750	7.4	0.156	22.5	0.069	43.0	0.030	63.5	0.057	84.0	0.006
-0.6	0.800	7.6	0.155	23.0	0.049	43.5	0.037	64.0	0.064	84.5	0.005
-0.4	0.845	7.8	0.150	23.5	0.024	44.0	0.041	64.5	0.071	85.0	0.004
-0.2	0.885	8.0	.0.143	24.0	0.008	44.5	0.043	65.0	0.077	85,5	0.003
0.0	0.919	8.2	0.133	24.5	0.032	45.0	0.043	65.5	0.082	86,0	0.002
0.2	0.948	8.4	0.122	25.0	0.056	45.5	0,043	66.0	0.087	86.5	0.002
0.4	0.971	8.6	0.109	25.5	0.076	46.0	0,043	66.5	0.091	87.0	0.001
0.6	0.987	8.8	0.096	26.0	0.090	46.5	0.045	67.0	0.094	87.5	0.001
0.8	0.997	9.0	0.084	26.5	0.097	47.0	0.050	67.5	0.097	88.0	0.001
1.0	1.000	9.2	0.074	27.0	0.096	47.5	0.056	68.0	0.098	88.5	0.000
1.2	0.997	9.4	0.067	27.5	0.089	48.0	0.063	68.5	0.099	89.0	0.000
1.4	0.988	9.6	0,066	28.0	0.075	48.5	0.071	69.0	0.099	89.5	0.000
1.6	0.972	9.8	0.070	28.5	0.057	49.0	0.077	69.5	0.098	90.0	0.000
1.8	0.950	10.0	0.079	29.0	0.037	49.5	0.082	70.0	0.096	1	
2.0	0.923	10.2	0.089	29.5	0.020	50.0	0.086	70.5	0.094	1	
2.2	0.891	10.4	0.101	30.0	0.022	50.5	0.087	71.0	0.091	1	

PRICING PAGE

Basis for Award: The Contract shall be awarded to the Vendor with the lowest overall cost meeting the specifications.

EBA427 Channel 27 Digital Television Antenna System and Associated Hardware for Cedarville, WV

NOTE: Shipping and delivery costs shall be included in price.

TEM NUMBER	QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE	
1	1	Antenna & Accessories	\$14,972	\$17,740	(Includes shipping
2	1	Miscellaneous Hardware (nuts, bolts, washers, etc.)		\$0	
3	1	Mounting Adapters		\$1,930	
4	1	Dehydrator		\$1,674.31	
5	1 ,	Transmission Line & Connectors		\$5,144.37	
TOTAL				\$26,488.68	

	ystem check of d Transmission line	\$3,500
NOTE: Option Item price will not be fa	actored into bid award.	
D. M. Stout	9-28-12	
Signature	Date	
SPX Communication Technology		
Company Name		34 340
1-800-341-9678		
Phone		
207-655-8173		
Fax		
david.stout@spx.com		
Email		

(Includes shipping

OPTIONAL ANTENNA TLP12C SLOT COVER RADOMES

UNIT PRICE

\$13,543

EXTENDED

PRICE

\$16,311

\$0

PRICING PAGE

ITEM NUMBER

1

2

Basis for Award: The Contract shall be awarded to the Vendor with the lowest overall cost meeting the specifications.

EBA427 Channel 27 Digital Television Antenna System and Associated Hardware for Cedarville, WV

Antenna & Accessories

Miscellaneous Hardware

(nuts, bolts, washers, etc.)

Optional Antenna TLP12C

NOTE: Shipping and delivery costs shall be included in price.

QUANTITY DESCRIPTION

3	1	Mounting Adapters		\$1,930
4	1	Dehydrator		\$1,674.31
5	1 ,	Transmission Line & Connect	ors	\$5,144.37
TOTAL				\$25,059.68
OPTION I	 ГЕМ 1	Electrical System check	of	
		Antenna and Transmission	on line	\$3,500
NOTE: Op	tion Item pric	ce will not be factored into b	oid award.	
David	Stout	10-1-12		
Signature			Date	
SPX Comm	nunication Tec	hnology		
Company N	lame			\$ G
1-800-341-	9678			
Phone				
207-655-81	73			
Fax				
david.stout@	vspx.com			
Email				

State of West Virginia

VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with West Virginia Code, §5A-3-37. (Does not apply to construction contracts). West Virginia Code, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the West Virginia Code. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

1.	Application is made for 2.5% resident vendor preference for the reason checked: Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
-	Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
	Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2.	Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3.	Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4.	Application is made for 5% resident vendor preference for the reason checked: Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5.	Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6.	Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.
	Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules. Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.
requiren against	inderstands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the nents for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency cted from any unpaid balance on the contract or purchase order.
authorize the requi	nission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and es the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid ired business taxes, provided that such information does not contain the amounts of taxes paid nor any other information by the Tax Commissioner to be confidential.
and acc	enalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true urate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate s during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.
Bidder:_	Signed:
Data	Title

RFQ No.	EBA427
1 11 G 140.	

STATE OF WEST VIRGINIA Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE: Vendor's Name: SPX Communication Technology Authorized Signature: Did. Italian Date: 9-28-12 State of Maine County of Cumberland to to-wit: Taken, subscribed, and sworn to before me this day of the permission expires 14 , 2015. My Commission expires 14 , 2015. AFFIX SEAL HERE NOTARY PUBLIC 1 Amara Gara Whether 1 and 1

Purchasing Affidavit (Revised 07/01/2012)

TAMARA JEAN WHITE Notary Public, Maine My Commission Expires November 14, 2015

CERTIFICATION AND SIGNATURE PAGE

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

SPX Communication	Technology
(Company) M. Sto	ut
(Authorized Signature)	
David Stout	
(Representative Name, Title)
207-655-8137	207-655-8173
(Phone Number)	(Fax Number)
9-28-12	
(Date)	

ADDENDUM ACKNOWLEDGEMENT FORM SOLICITATION NO.: EBA427

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

	Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.									
			Numbers Received: ox next to each addendum rece	ived)					
	[X]	Addendum No. 1]]	Addendum No. 6				
	[]	Addendum No. 2	[]	Addendum No. 7				
	[]	Addendum No. 3	[]	Addendum No. 8				
]]	Addendum No. 4	[]	Addendum No. 9				
	[]	Addendum No. 5	[]	Addendum No. 10				
further discus:	understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.									
				SF	X (Communication Technology				
						Company				
					1	I M. Stont				
						Authorized Signature				
						9-28-12				
						Date				

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.



State of West Virginia
Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

Solicitation

NUMBER **EBA427** PAGE

ADDRESS CORRESPONDENCE TO ATTENTION OF:

CONNIE OSWALD

304-558-2157

VENDOR

RFQ COPY TYPE NAME/ADDRESS HERE

EDUCATIONAL BROADCASTING AUTHORITY VARIOUS LOCALES AS INDICATED BY ORDER

ADDRESS CHANGES TO BE NOTED ABOVE

09/2 BID OPENING DA	1.0/04	2012 CAT			OPENING TIME	
LINE	QUANTITY	UOP CAT	. ITEM NUM	BER	UNIT PRICE	AMOUNT
		ADD	ENDUM NO. 1	i .		
	1. TO PROVI		S TO QUESTI	ONS REC	EIVED FOR THIS	
	2. TO PROVI	DE ADDENI			THIS DOCUMENT	
					YOUR BID, FAILU SQUALIFICATION	RIE
	OF YOUR	BID.				
			T approximation	4		
		END	FADDENDUM	NO. 1		
	ľ					
GNATURE J	VIII.			TELEPHONE	DAT	9-28-12
	MISNOW		1	2	07-655-8137	1-2012

FEIN

SOLICITATION NUMBER: EBA427 Addendum Number: 01

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

pplic	eable	e A	ddendum Category:
	I]	Modify bid opening date and time
	l	1	Modify specifications of product or service being sought
	1	1	Attachment of vendor questions and responses
	ĺ	Ì	Attachment of pre-bid sign-in sheet
	I]	Correction of error
	1	1	Other

Description of Modification to Solicitation:

To provide answers to questions received for this solicitation. To provide addendum acknowledgment.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

- 1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
- Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

A

ATTACHMENT A

EBA427 Cedarville Antenna: Questions and Answers

Question 1: Section 4.21 says the antenna beam tilt shall be 1.5 degrees. The patterns shown in Exhibits 8 and 9 show the beam tilt as 1.0 degree. Please clarify

Answer: The requested beam tilt is 1.5 degrees. An elevation drawing showing a 1.5 degree tilt was not available at the time the specs were released but was included to show the general elevation pattern.

Question 2: Section 5.15.5 says the line run shall be 235 feet.

Section 5.15.6 says the Vertical shall be 200 feet and the horizontal shall be 35 feet. It says to See Exhibit E-5.

Exhibit 4 shows the antenna centerline to be at 45.7 meters (149.9 feet) above Ground. And Exhibit 5 shows the transmission line to be a total of 190 foot long (ie 140'V + 50' H approx.).

Please clarify these conflicting sections.

Answer: In the request for total length of transmission line extra was included beyond what was shown in the exhibit to account for unexpected issues with routing of the line that may come up at the time of installation. Total length of transmission line requested is 235 feet.

This is the end of the Questions and Answers.

ADDENDUM ACKNOWLEDGEMENT FORM SOLICITATION NO.: EBA427

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:									
(Check the	bo	x next to each addendum rece	ived)					
[X]	Addendum No. 1	[]	Addendum No. 6				
£.]	Addendum No. 2]]	Addendum No. 7				
[]	Addendum No. 3	[]	Addendum No. 8				
[]	Addendum No. 4	1]	Addendum No. 9				
[]	Addendum No. 5	I]	Addendum No. 10				
further unde discussion l	understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral liscussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.								
				SP	X Communication Technology				
					Company				
				1	July DA				

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

Revised 6/8/2012

Authorized Signature

RFQ # EBA427 West Virginia Educational Broadcasting Authority Ch. 28 Cedarville, WV

SPX Communications Technology Point-by-Point Response

Section 1. SPECIFICATIONS

1.0 Understood

Section 2, DEFINITIONS

- 2.1 Understood
- 2.2 Understood
- 2.3 Understood

Section 3, GENERAL REQUIREMENTS

- 3.1 Comply See Tab 4 of bid response.
- 3.2 Understood
- Comply. A copy of our warranty is included.
- 3.4 Comply
- 3.5 Comply

Section 4, GENERAL MECHANICAL REQUIREMENTS

- 4.1 Comply
- 4.2.1 Comply
- 4.2.2 Comply
- 4.2.3 Comply
- 4.2.4 Understood. The major components involved with the antenna construction are the pole and inner conductor. SPX-Dielectric utilizes a thick wall, 6061 aluminum material pole for the antenna structure. The antenna inner conductor is copper. Other components used in the construction of the antenna include pattern shaping fins, couplers, centering pins, radome supports, end seals, and flanges. Attempts are made to avoid contact of dissimilar materials spaced too far apart from each other regarding galvanic content.
- 4.3.1 Comply
- 4.3.2 Understood, if any additional information is required to design/build the mounting brackets, it is the responsibility of WVEBA to obtain and provide that information.
- 4.4 Comply
- 4.5 Comply
- 4.6 Comply
- 4.7 Comply with the option for a slot cover radome (not full radome). The main bid is for an antenna with no external pattern shaping elements, and with full cylindrical radome. Loads for the full radome antenna slightly exceed those in the solicitation.

Section 4.8 Transmission Line

- 4.9 Comply
- 4.10 Comply

- 4.11 Comply
- 4.12 Comply

Section 4.13 Antenna

- 4.14 Comply
- 4.15 Comply
- 4.16 Comply. A FULL Radome is included for weather protection, not simply a slot cover type.
- 4.17 Comply
- 4.18 Comply. A FULL Radome is included for weather protection, not simply a slot cover type. Directional pattern shapers are inside the radome, not external.
- 4.19 Comply
- 4.20 Comply
- 4.21 Comply
- 4.22 Comply
- 4.23 Comply with the option for a slot cover radome (not full radome). The main bid is for an antenna with no external pattern shaping elements, and with full cylindrical radome. Loads for the full radome antenna slightly exceed those in the solicitation.
- 4.24 Comply
- 4.25 Comply

Section 5. SPECIFIC SITE REQUIREMENTS

- 5.15 Comply
- 5.16 Comply
- 5.17 Comply

Section 6. SHIPPING AND DELIVERY

- 6.15 Understood
- 6.16 Comply
- 6.17 Understood This item will be included, but an optional deduct is shown within the shipping Item Number of our proposal. Normally the installation crew will offload as part of the installation. The optional deduct can apply should the installer perform this function for WVEBA.
- 6.18 Comply
- 6.19 Comply
- 6.20 Understood
- 6.21 Understood

Section 7. CONTRACT AWARD

- 7.1 Understood
- 7.2 Understood
- 7.3 Understood

Section 8, SITE CONTACT

8.1 Understood

Section 9, PAYMENT

9.1 Understood

RFQ #EBA343 West Virginia Educational Broadcasting Authority - Ch 29 Welch, WV

Section 10. INVOICING

10.1 Understood10.2 Understood10.3 Understood



22 Tower Road Raymond, Maine 04071 Tel: 207-655-4555

September 28, 2012

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Dear Ms. Oswald,

In reference to State of West Virginia Solicitation Number EBA427 Section 3.1.2, SPX Communication Technology does not employ any West Virginia residents.

Sincerely,

David Stout

Quotes Representative

SPX Communication Technologies

22 Tower Road

Raymond, Maine USA 04071

TEL 207-655-8137

FAX 207-655-8173

david.stout@spx.com

www.spxcomtech.com



COMMUNICATION TECHNOLOGY

22 Tower Road Raymond, ME 04071 Phone: 207-655-4555

Fax: 207-655-8173 Internet: www.spxcomtech.com



Quotation

Customer

STATE OF WEST VIRGINIA EDUCATIONAL BROADCASTING AUTHORITY 600 CAPITOL STREET CHARLESTON WV 25301-1223 USA

Ship-To-Party

STATE OF WEST VIRGINIA
EDUCATIONAL BROADCASTING AUTHORITY
600 CAPITOL STREET
CHARLESTON WV 25301-1223
USA

Information	
Quote Number	2030467
Quote Date	09/25/2012
Customer No.	110148
Currency	USD
Validity Start Date	09/25/2012
Validity End Date	11/25/2012

Header Information

Terms of payment:

Net due in 30 days

** PAYMENT TERMS ARE SUBJECT TO CHANGE PENDING CREDIT APPROVAL **

Incoterms:

FOB DESTINATION PPD

LEAD TIME:45 TO 60 DAYS ARO FROM OUR FACTORY.

Item	Material Number / Cat. Num / Description	Quar	ntity	Unit Price	Amount
10	11000000077/ ANT TLP-12C/R W25DR D28	1	EA	14,972.00	14,972.00
	INCLUDES FULL RADOMES. SPECIFICATIONS PER TECHNICA	L PROPOS	SAL C-0	5141	
	11000000077/ MOUNTS CUSTOM TLP12C	1	EA	1,930.00	1,930.00
30	RFLEX/ FLEX LINE RUN 1-5/8 AIR 235FT	1	EA		
	With the following configuration FACTORY INSTALL BOT CONN?: NO SELECT TOP CONNECTOR: 1 5/8" MALE GPASS CONN EIA 1" SELECT BOTTOM CONNECTOR: 1 5/8" MALE GSTOP CONN EIA ENTER VERTICAL LENGTH: 200 Foot ENTER HORIZONTAL LENGTH: 35 Foot SELECT CHANNEL: Channel 28 ENTER DESIRED FREQUENCY: 557.0 MHz ARE MOUNTING REQMTS KNOWN?: NO ATTENUATION (dB): 1.19 dB EFFICIENCY (%): 76.02 %	A 1"			
40	SYSTEM MAX AVG PWR (KW): 6.6 KW 11000006463/ FLEXLINE 1-50 ANDREW HJ7-50A	235	FT	16.52	3,882.20
	FL-46 1 5/8" AIR FLEXLINE, 50 OHM TRANSMISSION LINE			. 3.02	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
50	11000002341/ FLEXLINE CONN 1-5/8 MALE GAS PASS 87R	1	EA	257.63	257.63
	1 5/8" EIA MALE GAS PASS CONNECTOR FOR 1-5/8" LINE				
60	11000002342/ FLEXLINE CONN 1-50 EIA GAS BLOCK 87G	1	EA	297.60	297.60
	1 5/8" EIA MALE GAS BLOCK CONNECTOR FOR 1-5/8" LINE				

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22 Tower Road Raymond, ME 04071 Phone: 207-655-4555 Fax: 207-655-8173

Internet: www.spxcomtech.com



Quotation

Quote Number 2030467

Quote Date 09/25/2012

Customer No. 110148

Item	Material Number / Cat. Num / Description	Quantity	Unit Price	Amount
70	11000006622/ FLEXLINE CONN INSTALL 7/8 & 1 5/8" AIR	1 EA	24.50	24.50
80	11000002346/ FLEX 1-5/8 BTFLY HNGR 10PK 42396A-2	8 EA	22.50	180.00
100	1-5/8" FLEXLINE BUTTERFLY HANGER 11000002449/ FLEXLINE HRDW KIT 31769-1 3/8 X 1" 10PK	2 EA	7.55	15.10
110	HW1:3/8"X 1 BOLT KIT FOR HANGER ATTACHMENT 11000002345/ FLEXLINE 1-5/8WALL/ROOF FEEDTHRU40656A-2	1 EA	62.19	62.19
120	1 5/8" FLEXLINE SINGLE PORT 11000002344/ FLEXLINE 1-5/8 HOISTING GRIP 24312A	2 EA	28.88	57.76
130	1 5/8" FLEXLINE HOISTING GRIP 11000002343/ FLEXLINE 1-5/8 GROUNDING KIT 204989-4	3 EA	21.77	65.31
140	1 5/8" FLEXLINE GROUNDING KIT 11000002385/ FLEXLINE WEATHERPROOF KIT - 221213	1 EA	18.32	18.32
150	WPKIT: CONNECTOR WEATHERPROOF KIT R96604/ GASSING KIT W/1/8 BSPT/NPT AD	4 54	405.00	105.00
160	R66788 / 300TLS 115 / DEHYDRATOR 300TLS 115 VAC	1 EA 1 EA	105.32 1,674.31	105.32 1,674.31
170	11000002442/ FLEXLINE RMA2 31670-2 10PK RMA2: ROUND MEMBER ADAPTER FOR 2-3" DIA LEG/POLE	1 EA	15.40	15.40
180	11000002443/ 3010FLEXLINE RMA3 10PK RMA3: ROUND MEMBER ADAPTER FOR 3-4" DIA LEG/POLE	2 EA	17.32	34.64
190	11000002446/ FLEXLINE RMA6 31670-6 10PK RMA6: ROUND MEMBER ADAPTER FOR 6-8" DIA LEG/POLE	4 EA	32.10	128.40
	"NOTE" ASSUMED LEG DIAMETER, MAKE CERTAIN OF CORR BEFORE ORDERING THE ROUND MEMBER ADAPTERS. MOST SIZES AT DIFFERENT LEVELS OF TOWER			
200	/ OPTIONAL SYSTEM CHECKOUT	0.000		
	On site system checkout to be conducted from a dry, accessible spot checkout requires one man for one day on site. Customer/station to perform final tuning and VSWR sweep. Estimated Net price of \$3,50 expenses (expenses x 1.15).	supply tower clim	bers as necessary to	
	IF THIS OPTION IS REQUESTED PLEASE SIGN AND DATE THIS	LINE ITEM AND	ADD \$3,500 TO THE NET	

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22 Tower Road Raymond, ME 04071 Phone: 207-655-4555

Fax: 207-655-8173

Internet: www.spxcomtech.com



Quotation

Quote Number 2030467

Quote Date 09/25/2012

Customer No. 110148

Item	Material Number / Cat. Num / Description	Quantity	Unit Price	Amount
	PRICE OF THE QUOTE.	-		
210	RFREIGHT/ FREIGHT, SHIPPING, AND HANDLING Note: The quoted price is subject to change to reflect increases in fuel costs, shipper surcharges, etc.	1 EA	2,768.00	2,768.00
	TO PROTECT THE MATERIALS FROM DAMAGE THIS FREIGHT SHIPPING FROM RAYMOND ME 04071 DIRECTLY TO CEDARVI ALSO INCLUDES OFF-LOADING AND ANY EQUIPMENT REQUIF THE CUSTOMER OR RIGGERS PERFORM THE OFF-LOADING, THE TOTAL NET PRICE OF THE QUOTE.	LLE, WV 26611. RED TO PERFOR	M THE OFF-LOADING. IF	
			Items total: Total Tax	26,488.68
			Final amount:	26,488.68
By exect services P)("SPX Technolo of the SF SPX Cor as a wain conflictin	PTANCE: ution below, or by sending a Purchase Order referencing this proposal, the on this schedule subject to the Terms and Conditions of Sale for Broadd Communication Technology Terms") attached hereto and/or incorporate by the proceed with the procurement and fabrication of this equipment. Yeld Communication Technology Terms and your agreement to be bound immunication Technology's failure to object to provisions contained in any over by SPX Communication Technology of the SPX Communication Technology of the SPX Communication Technology or additional terms or conditions set forth in a Purchase Order or other by the set of the second sec	ast, Lighting, Mon d by reference her our acceptance of by and comply with Purchase Order of nnology Terms or document from yo	itoring and Related Products rein, and authorizes SPX Cor this proposal is conditioned in the SPX Communication To other document from you san acceptance of any such p	and Services (Rev mmunication upon your acceptance echnology Terms. shall not be construed rovisions. Any
Signatı	ure	Date		
Reque	sted Ship Date:			
mutually	uested ship date is subject to review by Dielectric. If Dielectric can not m acceptable shipment date. Dielectric requires that the customer take ow pon ship date.			



COMMUNICATION TECHNOLOGY

22 Tower Road Raymond, ME 04071 Phone: 207-655-4555

Fax: 207-655-8173 Internet: www.spxcomtech.com



Quotation

Customer

STATE OF WEST VIRGINIA EDUCATIONAL BROADCASTING AUTHORITY 600 CAPITOL STREET CHARLESTON WV 25301-1223 USA

Ship-To-Party

STATE OF WEST VIRGINIA EDUCATIONAL BROADCASTING AUTHORITY 600 CAPITOL STREET CHARLESTON WV 25301-1223 USA

Information	
Quote Number	2030540
Quote Date	10/01/2012
Customer No.	110148
Currency	USD
Validity Start Date	10/01/2012
Validity End Date	12/01/2012

Header Information

Terms of payment:

Net due in 30 days

** PAYMENT TERMS ARE SUBJECT TO CHANGE PENDING CREDIT APPROVAL **

Incoterms:

FOB DESTINATION PPD

Item	Material Number / Cat. Num / Description	Quantity	Unit Price	Amount
5	/ OPTIONAL ANTENNA	0.000		
10	11000000077/ ANT TLP-12C W25DR D28	1 EA	13,543.00	13,543.00
	INCLUDES SLOT COVER RADOME.			5 SSTAR WERROOM
	SPECIFICATIONS PER TECHNICAL PROPOSAL C-05140			
	11000000077/ MOUNTS CUSTOM TLP12C	1 EA	1,930.00	1,930.00
30	RFLEX/ FLEX LINE RUN 1-5/8 AIR 235FT	1 EA		
	With the following configuration			
	FACTORY INSTALL BOT CONN?: NO			
	SELECT TOP CONNECTOR: 1 5/8" MALE GPASS CONN EIA 1"			
	SELECT BOTTOM CONNECTOR: 1 5/8" MALE GSTOP CONN EIA 1"			
	ENTER VERTICAL LENGTH: 200 Foot			
	ENTER HORIZONTAL LENGTH: 35 Foot			
	SELECT CHANNEL: Channel 28			
	ENTER DESIRED FREQUENCY: 557.0 MHz			
	ARE MOUNTING REQMTS KNOWN?: NO			
	ATTENUATION (dB): 1.19 dB			
	EFFICIENCY (%): 76.02 %			
	SYSTEM MAX AVG PWR (KW): 6.6 KW			
40	11000006463/ FLEXLINE 1-50 ANDREW HJ7-50A	235 FT	16.52	3,882.20
	FL-46 1 5/8" AIR FLEXLINE, 50 OHM TRANSMISSION LINE			
50	11000002341/ FLEXLINE CONN 1-5/8 MALE GAS	1 EA	257.63	257.63
	PASS 87R			
	1 5/8" EIA MALE GAS PASS CONNECTOR FOR 1-5/8" LINE			
60	11000002342/ FLEXLINE CONN 1-50 EIA GAS	1 EA	297.60	297.60
	BLOCK 87G			5/30/00/11 Activity
	1 5/8" EIA MALE GAS BLOCK CONNECTOR FOR 1-5/8" LINE			

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22 Tower Road Raymond, ME 04071 Phone: 207-655-4555

Fax: 207-655-8173

Internet: www.spxcomtech.com



Quotation

Quote Number 2030540

Quote Date 10/01/2012

Customer No. 110148

Item	Material Number / Cat. Num / Description	Quan	tity	Unit Price	Amount
70	11000006622/ FLEXLINE CONN INSTALL 7/8 & 1 5/8" AIR	1	EA	24.50	24.50
80	11000002346/ FLEX 1-5/8 BTFLY HNGR 10PK 42396A-2	8	EA	22.50	180.00
	1-5/8" FLEXLINE BUTTERFLY HANGER				
100	11000002449/ FLEXLINE HRDW KIT 31769-1 3/8 X 1" 10PK	2	EA	7.55	15.10
110	HW1:3/8"X 1 BOLT KIT FOR HANGER ATTACHMENT 11000002345/ FLEXLINE 1-5/8WALL/ROOF FEEDTHRU40656A-2	1	EA	62.19	62.19
	1 5/8" FLEXLINE SINGLE PORT				
120	11000002344/ FLEXLINE 1-5/8 HOISTING GRIP 24312A	2	EA	28.88	57.76
	1 5/8" FLEXLINE HOISTING GRIP				
130	11000002343/ FLEXLINE 1-5/8 GROUNDING KIT 204989-4	3	EA	21.77	65.31
	1 5/8" FLEXLINE GROUNDING KIT				
140	11000002385/ FLEXLINE WEATHERPROOF KIT - 221213	1	EA	18.32	18.32
	WPKIT: CONNECTOR WEATHERPROOF KIT				
150	R96604/ GASSING KIT W/1/8 BSPT/NPT AD		EA	105.32	105.32
160	R66788 / 300TLS 115 / DEHYDRATOR 300TLS 115 VAC	1	EA	1,674.31	1,674.31
170	11000002442/ FLEXLINE RMA2 31670-2 10PK	1	EA	15.40	15.40
	RMA2: ROUND MEMBER ADAPTER FOR 2-3" DIA LEG/POLE				
180	11000002443/ 3010FLEXLINE RMA3 10PK	2	EA	17.32	34.64
	RMA3: ROUND MEMBER ADAPTER FOR 3-4" DIA LEG/POLE				
190	11000002446/ FLEXLINE RMA6 31670-6 10PK	4	EA	32.10	128.40
	RMA6: ROUND MEMBER ADAPTER FOR 6-8" DIA LEG/POLE				
	"NOTE" ASSUMED LEG DIAMETER, MAKE CERTAIN OF CORR BEFORE ORDERING THE ROUND MEMBER ADAPTERS. MOST SIZES AT DIFFERENT LEVELS OF TOWER				
200	/ OPTIONAL SYSTEM CHECKOUT	0.00	00		
	On site system checkout to be conducted from a dry, accessible specified checkout requires one man for one day on site. Customer/station to perform final tuning and VSWR sweep. Estimated Net price of \$3,50 expenses (expenses x 1.15).	supply tow	er climl	bers as necessary to	
	IF THIS OPTION IS REQUESTED PLEASE SIGN AND DATE THIS	LINE ITEN	M AND	ADD \$3,500 TO THE NET	

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22 Tower Road Raymond, ME 04071 Phone: 207-655-4555 Fax: 207-655-8173

Internet: www.spxcomtech.com



Quote Number 2030540

Quote Date 10/01/2012

Customer No. 110148

Item	Material Number / Cat. Num / Description	Quantity	Unit Price	Amount
	PRICE OF THE QUOTE.			
210	RFREIGHT/ FREIGHT, SHIPPING, AND HANDLING Note: The quoted price is subject to change to reflect increases in fuel costs, shipper surcharges, etc.	1 EA	2,768.00	2,768.00
	TO PROTECT THE MATERIALS FROM DAMAGE THIS FREIGHT QUESTIPPING FROM RAYMOND ME 04071 DIRECTLY TO CEDARVILLE ALSO INCLUDES OFF-LOADING AND ANY EQUIPMENT REQUIRED THE CUSTOMER OR RIGGERS PERFORM THE OFF-LOADING, CUTHE TOTAL NET PRICE OF THE QUOTE.	E, WV 26611. O TO PERFORM	THE OFF-LOADING. IF	
			Items total:	25,059.68
1			Total Tax	
			Final amount:	25,059.68
By execu services P)("SPX Technolo of the SP SPX Con as a waiv conflicting	PTANCE: Ition below, or by sending a Purchase Order referencing this proposal, the upon this schedule subject to the Terms and Conditions of Sale for Broadcast Communication Technology Terms") attached hereto and/or incorporated by gy to proceed with the procurement and fabrication of this equipment. Your X Communication Technology Terms and your agreement to be bound by a munication Technology's failure to object to provisions contained in any Purer by SPX Communication Technology of the SPX Communication Technology or additional terms or conditions set forth in a Purchase Order or other do gy, and SPX Communication Technology hereby expressly objects thereto.	, Lighting, Monity reference here acceptance of the acceptance of the acceptance of the archase Order or alogy Terms or accument from you	oring and Related Products in, and authorizes SPX Con his proposal is conditioned the SPX Communication T other document from you a n acceptance of any such p	and Services (Rev mmunication upon your acceptance echnology Terms. shall not be construed provisions. Any
Signatu	re	Date _		
	ested Ship Date:ested ship date is subject to review by Dielectric. If Dielectric can not meet	the requested s	thin date, you will be contoo	sted to work out o
mutually a	acceptable shipment date. Dielectric requires that the customer take owner own ship date.			



Terms and Conditions of Sale for Broadcast, Lighting, Monitoring and Related Products Rev P (Products)

General Terms and Conditions

DEFINITIONS.

- a) Terms means these Terms and Conditions of Sale for Broadcast, Lighting, Monitoring and Related Products;
- b) Proposal means the proposal or quotation document provided to Customer by SPX into which these Terms are incorporated by reference;
- c) Customer means the purchaser to whom the Proposal is addressed and to whom these Terms apply, including, where applicable, all individual and/or corporate guarantors;
- d) SPX means SPX Communication Technology (a division of SPX Corporation);
- e) Custom-built means equipment set forth in the Proposal which is built by SPX to Customer's specifications;
- f) Product means the applicable broadcast, lighting, monitoring and related equipment to be sold by SPX to Customer as set forth in the Proposal;
- g) Price means the price to be paid by Customer for the Products and/or Services listed in the Proposal, including any changes agreed to in writing by the parties.
- h) Shipping Date means the shipping date(s) that SPX has communicated to customer
- i) Services means any consulting services to be furnished by SPX to Customer as set forth in the Proposal;
- i) Rigging means the labor, materials and machinery required to remove or install any Products.
- k) Low-Power Broadcast Product means any Broadcast Product identified as a Low Power Product in the Proposal or in SPX's Product Catalog.

PROPOSAL, ACCEPTANCE AND GOVERNING PROVISIONS. A Proposal will automatically expire if not accepted by Customer within sixty (60) days from its date or any extension of such date approved in writing by SPX, and Customer's acceptance of the Proposal, by purchase order or signature, shall constitute Customer's offer and will evidence Customer's intent that the sale of the Products and the furnishing of any Services shall be governed by the Proposal and the Terms. SPX's acceptance of Customer's offer is conditioned upon Customer's acceptance of the Terms set forth herein and Customer's agreement to be bound by and comply with the Terms. The Terms, the Proposal, and all referenced attachments constitute the entire agreement between Customer and SPX ("Agreement"), and no amendment or modification shall be binding on SPX unless in writing and signed by an officer of SPX. The failure of SPX to object to provisions contained in any purchase order or other document of Customer's shall not be construed as a waiver by SPX of the Terms or an acceptance of any such provisions. Any conflicting or additional terms or conditions set forth by Customer in a purchase order or other document are not binding upon SPX, and SPX hereby expressly objects thereto. No purchase order shall be binding upon SPX until accepted by a written acknowledgment by an authorized representative of the company.

- 2. PRICES. All Prices are subject to adjustment by SPX if: (a) the required down payment has not been made with Customer's acceptance of the Proposal, or (b) shipment is delayed by Customer beyond the Shipping Date(s). Prices for Products do not include any special packing or crating materials, which may be required for Custom-built equipment. All costs of special packing shall be paid by Customer and shall be paid prior to shipment or as soon as all packing costs are determined.
- 3. TAXES. The Prices do not include any applicable foreign, federal, state or local taxes. The amount of such taxes payable or paid by or assessed against SPX will be billed to, and shall be paid by, Customer. No tax exemption shall be recognized unless Customer has completed and returned to SPX the Tax Questionnaire provided with the Proposal.
- 4. PAYMENT TERMS. (a) The Price for all Products shall be paid to SPX in accordance with the payment schedule shown in the Proposal. Absent specific agreement to the contrary, all amounts owed to SPX, including but not limited to the Price for Services hereunder, shall be payable within 30 days after shipment; provided, however, that if shipment of the Products is delayed beyond the Shipping Date by the action or inaction of Customer, payment will be due 30 days after the Shipping Date. (b) Overdue payments shall accrue interest at the rate of 16% per annum (or the maximum percentage allowed by applicable law, if lower) from the due date. Customer shall also be required to pay SPX any and all collection costs and expenses SPX incurs (including without limitation reasonable attorneys' fees) to collect overdue payments. (c) SPX may make partial shipments of Products, and pro-rata payments shall be due for such partial shipments of Products. (d) All down payments shall be made to SPX Communication Technology, P.O. Box 277883, Atlanta, GA 30384-7883, unless otherwise directed in writing by SPX. SPX may, at its option, decline to deliver Products or to provide Services, or may stop shipment of Products in transit, whenever, for any reason, SPX has concerns about a Customer's financial status. In such event, SPX may require payment in full prior to shipping a Product or providing any Services.
- 5. DELIVERY. (a) SPX will deliver Products FOB point of shipment, with delivery to the initial carrier constituting delivery to Customer. All transportation charges will be Customer's responsibility; however, upon Customer's request, SPX will prepay transportation charges for which Customer shall reimburse SPX (together with an administrative fee payable to SPX). Customer shall have sole responsibility for filing any claims with any carrier for delay, loss or damage. (b) Any Shipping Dates are predictions made by SPX of the times within which it is likely the Products will be shipped; however, due to the difficulties inherent in predicting future delivery dates or periods, SPX does not promise, guarantee or otherwise obligate itself to have the Products shipped on or before that time. SPX will endeavor to meet the Shipping Date(s), but shall not be liable in damages or otherwise, nor shall Customer be relieved of performance, because of failure to meet them. However, as to Products which, without Customer's fault, have not been shipped to Customer within three (3) months after the Shipping Date(s) applicable to such Products, Customer may, by providing written notice to SPX, delete from this Agreement any such Products that have not been shipped to Customer before SPX receives Customer's written notice of deletion, and the Price shall be proportionately reduced. The foregoing right is Customer's exclusive remedy for any delays in shipment. SPX may, in its discretion, accept standard Products returned for credit (shipping prepaid) within 60 days of receipt subject to a restocking fee.
- 6. DELIVERY TO STORAGE. Customer agrees to authorize and accept shipment of Products on the Shipping Date(s). To the extent Customer is unable or otherwise fails to accept shipment of Products on the Shipping Date(s), or if Customer has failed to timely provide SPX with payment due and delivery instructions, Customer agrees that SPX is authorized to deliver the Products into storage and bill Customer as though shipment had been made to Customer, subject to SPX's security interest. Title to such Product(s) and the risk or loss thereof or damage thereto shall pass to Customer when placed in storage. Customer shall be responsible for all storage charges and expenses and, to the extent any storage charges and expenses are incurred by SPX, Customer shall reimburse SPX for such storage charges and expenses (together with an administrative fee payable to SPX).

- 7. TITLE, INSURANCE AND RISK OF LOSS. Subject to SPX's security interest, and except as provided in Section 6, both title to the Products and risk of loss or damage passes to Customer upon delivery to the initial carrier.
 - SECURITY INTEREST. Until the Price has been paid in full, SPX reserves, and Customer hereby grants to SPX, a first priority security interest under the Uniform Commercial Code in the Products. Customer also agrees to execute such documents and to take such other actions as are reasonably requested by SPX to perfect its security interest in the Products. SPX further retains a right of set-off against any obligations owing by Customer, whether or not related to this order.
- PATENT LIABILITY. Customer agrees that SPX has the right to defend, or at its option to settle, and SPX agrees, at its own expense to defend or, at its option, to settle, any claim, suit or proceeding brought against Customer on the issue of infringement of any United States patent by any Product, or any part thereof, supplied by SPX to Customer under this Agreement. SPX agrees to pay, subject to the limitations hereinafter set forth in this paragraph, any final judgment entered against Customer on such issue in any such suit or proceeding defended by SPX. Customer agrees that SPX at its sole option shall be relieved of the foregoing obligations unless Customer notifies SPX promptly in writing of any such claim, suit or proceeding, and at SPX's expense gives SPX proper and full information and assistance to settle and/or defend any such claim, suit or proceeding. If the Product, or any part thereof furnished by SPX to Customer hereunder becomes, or in the opinion of SPX may become, the subject of any claim, suit or proceeding for the infringement of any United States patent, or in the event of any adjudication that such Product or part infringes any United States patent, or if the use, lease or sale of such Product or part is enjoined, SPX may at its option and its expense: (a) procure for Customer the right under such patent to use, lease or sell, as appropriate, such Product or part, or (b) replace such Product or part, or (c) modify such Product or part, or (d) remove such Product or part and refund the aggregate payments and transportation costs paid therefore by Customer, less a reasonable sum for use, damage and obsolescence. SPX shall not be liable for any costs or expenses incurred without SPX's written authorization. The foregoing constitutes the entire liability of SPX and Customer's sole and exclusive remedy for intellectual property infringement related to the Products. Notwithstanding the foregoing, the remedy described in this paragraph shall not apply to any suit or proceeding alleging infringement resulting from or related to SPX's compliance with Customer's specifications or design or the use of Products in combination with other goods or materials. In no event shall SPX's total liability to Customer under, or as a result of compliance with, the provisions of this section exceed the aggregate sum paid to SPX by Customer for the allegedly infringing Product or part.
- 10. WARRANTY. Except as otherwise specified in the Proposal or other written material provided to Customer, SPX warrants new Products purchased by Customer hereunder to be free from defects in material and workmanship, as follows:
 - a) Broadcast Products –The warranty period for any Broadcast Product, except for Low-Power products, is five (5) years from the date of shipment. The warranty period for any Low-Power Broadcast Product is one (1) year from the date of shipment.
 - b) Lighting Products The warranty period for lighting Products is one (1) year from the date of shipment for halogen/incandescent light source equipment, two (2) years from date of shipment for control devices and strobe light source equipment, or five (5) years from the date of shipment for LED light source equipment.
 - c) Monitoring Products The warranty period for monitoring Products shall be one (1) year from the date of shipment.
 - d) Repaired or Refurbished Products The warranty period for repaired or refurbished Products (other than Products repaired under warranty) shall be ninety (90) days from date of shipment, unless otherwise provided in the applicable Proposal.

All Products -

SPX shall, during the applicable warranty period and subject to the right to inspect such Product, repair or replace, at SPX's sole discretion, such warranted Product as is found to be defective, subject to the conditions of these Terms. For returns, the warranted Product must be properly authorized for return (with a Return Materials Authorization (RMA) number), packed and returned to SPX, transportation prepaid. Replacement parts will be sent only upon receipt of a valid purchase order. If determined by SPX to be a valid warranty claim, the purchase order obligation will be voided; otherwise, Customer shall be responsible for the purchase order obligation.

For products that cannot reasonably be returned, Customer has the obligation to provide photographic or other evidence to document a claim. SPX may agree to send a representative to the Customer's site to inspect the warranted Product if Customer has demonstrated a sufficient basis for concluding that there is, in fact, a Product defect. In the event that SPX sends such a representative, and in the event that the inspection determines that the Product is not, in fact, defective, then Customer shall compensate SPX at its standard rates for all of its direct and indirect costs for the inspection.

Replacement of any original SPX parts with non-SPX parts will take the Products out of compliance and void this warranty.

If SPX fails to repair or replace any defective Product, Customer agrees that the exclusive measure of damages shall be the reasonable cost of the repair or replacement of the defective product at the time. SPX's warranty obligation is conditioned on Customer's payment of all amounts due under these terms as well as Customer's compliance with its obligations hereunder.

Repair or replacement of defective Products does not re-start the warranty periods defined above; the warranty period commences upon initial delivery or installation of the original Product, as described above.

The Customer's warranty rights under these Terms shall apply only if SPX receives prompt written notice of any alleged defect within the applicable warranty period defined above, the Product has been operated in accordance with SPX's written instructions, and SPX's examination discloses that such Product has not been damaged through accident or negligence, misuse, alteration, or improper maintenance, repair, or installation.

No warranty shall apply: (a) to any Products that have been repaired, worked upon, disassembled or altered by persons not authorized by SPX in such a manner as to injure the stability or reliability of such Products, (b) to any Products that have been subject to misuse, negligence or accident other than by DC, (c) to any Products that have not been connected, installed, used, maintained, inspected or adjusted by appropriately qualified personnel in accordance with the written instructions furnished by SPX, (d) with respect to any Product that has had its serial number altered, effaced or removed, (e) to damage resulting from: Force Majeure; intentional acts, such as sabotage, terrorism, or vandalism; accidents; extreme weather, the impact of ambient chemicals, and/or flying objects, (f) to ordinary wear and tear resulting from use and exposure or (g) to any party other than the original purchaser of the Products.

The foregoing warranties are in lieu of, and SPX expressly disclaims, all other warranties, express or implied in fact or by law, including without limitation all warranties of merchantability or fitness for a particular purpose or otherwise, and the foregoing warranties state SPX's entire and exclusive liability, and Customer's sole and exclusive remedy, in connection with the sale or furnishing of service, products or parts, their design, suitability for use, installation or operation. Without limiting the foregoing, SPX shall in no event be liable for rigging charges connected with repair or replacement of defective Products or Services covered by these warranties, or for any third party

engineering or consulting fees. Equipment furnished by SPX but not bearing its trademark or trade name shall carry no warranties, except those, if any, extended by and enforceable against the manufacturer at the time of delivery to SPX.

- 1. LIMITATION OF LIABILITY. SPX shall not be liable under any theory of relief, including without limitation breach of warranty, breach of contract, tort (including negligence), strict liability, or otherwise, arising out of or related to these Terms or products or services provided hereunder or SPX's acts or omissions for: (i) any indirect, incidental, special or consequential damages whatsoever (including without limitation, loss of anticipated value of a business or its reputation) or (ii) any damage or loss in excess of the price actually paid by Customer. Any action by Customer must be commenced within one year after the cause of action has accrued.
- 12. FORCE MAJEURE. SPX shall not be liable for delay in performance or failure to perform any of its obligations, if the delay or failure results directly or indirectly from Force Majeure. Force Majeure means any law, order, regulation, direction, request, action or failure to act of Customer or of any government having jurisdiction over SPX, its subcontractors and/or its suppliers, or of any department, agency or corporation of one or more of such governments; failure or delay of transportation; suspension or cancellation of any required license; insurrection; riots, national emergencies; war; acts of public enemies, strikes or other labor difficulties; inability to obtain necessary labor, manufacturing facilities, materials or components from SPX's usual sources; fires, floods, earthquakes, lightning or other catastrophes; acts of God; extreme weather conditions; or any cause of like or different kind beyond the control of SPX. SPX shall notify Customer in writing if performance of any of its obligations under this Agreement is delayed by reasons of Force Majeure.
- 13. PROPRIETARY INFORMATION. SPX retains title to and ownership of all engineering and production prints, drawings, technical data, and other information and documents that relate to the Products and Services sold to Customer and any intellectual property rights embodied therein. Unless advised by SPX in writing to the contrary, all such information and documents disclosed or delivered by SPX to Customer are to be deemed proprietary to SPX and shall be used by Customer solely for the purpose of inspection, installation, maintenance and use of the Products purchased hereunder and not used by Customer for any other purpose. Customer shall maintain such proprietary information with a standard of care no less stringent than it uses with its own confidential information.
- 14. TERMINATION/SUSPENSION. Without prejudice to its other rights, SPX may immediately terminate this Agreement by giving notice to Customer or suspend the performance of SPX's obligations if Customer:

a) Breaches this Agreement and fails to remedy that breach within 14 days of a request by SPX; or

b) Ceases business operations, is unable to pay Customer's debts as they fall due, makes an assignment for the benefit of creditors, commences winding-up, has a receiver or liquidator appointed over any of Customer's assets, or becomes subject to a bankruptcy or insolvency proceeding.

OTHER CONDITIONS.

a) Modifications of Products may be made by SPX or its suppliers prior to delivery for reasons such as improvement in performance, simplifications in design, availability of materials, etc., but not to such an extent that the performance will be materially affected.

b) Customer shall not assign this Agreement, or any rights thereunder, without the prior written consent of SPX.

c) SPX shall not be deemed to have waived any term or condition of this Agreement or to have assented to any exception to or modification of such terms and conditions unless such waiver or assent is in writing and signed by an authorized officer of SPX. SPX's failure at any time to require strict performance by Customer of any provision in this Agreement shall not waive or diminish SPX's right thereafter to demand strict performance therewith or with any other provision. Waiver of any default shall not waive any other default.

d) In the event that any part of this Agreement is or becomes invalid or illegal in whole or in part, such part shall be deemed amended so as to, as nearly as possible, be consistent with the intent expressed in the Agreement. If this is impossible, such part shall be deemed to be deleted, but

shall not in any way invalidate any of the remaining provisions of this Agreement.

e) Notices shall be mailed, certified mail, or sent by or fax to Customer at the address given on the cover sheet of the Proposal and to SPX, Attention: Director of Contracts, PO Box 949, 22 Tower Road, Raymond, Maine 04071, fax: 207-655-8174. Notice shall be effective from date of receipt by addressee.

- f) This Agreement, including without limitation the Proposal and all schedules attached hereto and/or incorporated herein by reference, expresses the entire agreement between the parties regarding the subject matter contained herein, and conclusively supersedes all prior agreements, writings and negotiations with respect to the subject matter hereof, and any such previous agreement is modified by the deletion of the items listed herein.
- g) The rights and duties of the parties to this Agreement shall be governed by and construed in accordance with the laws of the State of Maine.
- All disputes, differences, or questions arising out of or relating to this Agreement, or the validity, interpretation, breach, violation, or termination of this Agreement shall be resolved solely by arbitration through the CPR Institute for Dispute Resolution ("CPR") by a sole arbitrator in the city of Portland, Maine. The arbitration proceedings shall be governed by and decided in accordance with the CPR Rules for Non-Administered Arbitration then in effect, unless the parties shall mutually agree otherwise in writing. Any evidentiary rules not expressly provided by the CPR Rules shall be determined in accordance with the Federal Rules of Evidence. Notwithstanding anything to the contrary provided in this Agreement, the arbitration shall be governed by the United States Arbitration Act, 9 U.S.C. § 1, et seq. The arbitration proceeding must be completed through the rendering of the award within six months of the selection of the arbitrator. The award of the arbitrator may be monetary damages, an order requiring performance of obligations under this Agreement or an award of injunctive, declaratory, or equitable relief or any other appropriate award or remedy. However, in no event may the arbitrator issue an award of any form of exemplary or punitive damages, nor may the arbitrator make any ruling, finding or award that does not conform to the terms and conditions of this Agreement. The award rendered by the arbitrator shall be final and binding upon the parties, and judgment may be entered by any competent court having jurisdiction. The award of the arbitrator shall be accompanied by a written explanation of the basis for the award. Notwithstanding anything to the contrary provided in this paragraph and without prejudice to the above procedures, any of the parties may apply to any court of competent jurisdiction for injunctive or other equitable relief if such action is necessary to avoid irreparable damage or to preserve the status quo.

CONSULTING SERVICES. SPX will, at Customer's request, furnish a representative to consult regarding the installation of the Products. Charges for furnishing such representative shall be at SPX's per diem rate in effect at the time, plus transportation and reasonable living expenses, including standard general and administrative charges. Such consulting service shall not include the furnishing or arranging for the furnishing of any equipment, materials or services required for the actual installation of Products.



Proposal #:

C-05141

Antenna Type:

TLP-12C-R

Channel:

28 DTV

Call Letters:

W28DR-D

Location:

Cedarville, WV

Electrical Spec	ifications		Val			-	Remarks	
			Ratio	dE	Bd			
RMS Gain at M	lain Lobe	Hpol						
over Halfwave		Прог						
	· · · · · · · · · · · · · · · · · · ·	Vpol						
RMS Gain at H	orizontal	Unal						
over Halfwave		Hpol						
orei munuto	o i pore	Vpol						
n 1 n' .'	10.		252					
Peak Directiona over Halfwave		Hpol	25.2	14.01				
over manwave	Бірліс	Vpol						
Peak Directiona	l Gain			W. C. C. C. C.				
at Horizontal	The World State of the Co.	Hpol	17.1	12.33				
over Halfwave	Dipole	Vpol						
Circularity	Directional		dB					
Axial Ratio			dB					
Beam Tilt			1.50 deg					
Average Power			5 kW	6.99	dBk			
Antenna Input:	T/L		1-5/8 in	50.0	ohm	Type:	EIA/DC/	Α
			Channel	1.10:1		Notes: 5 psi dry air or Nitroger	v roquirod	
Maximum Ante	nna Input VSWR		Chamici	1.10 . 1		Full Radome option	r required.	
	Azimuth		TLP-C					
Patterns	Elevation		12L120150	12L12015	0-90	-		
Mechanica	l Specifications		Metric	Engl	ish		Preliminary	
	htning Protector	H4	m		ft	Side mounted		
	htning Protector	H2	7.0 m	23.0	ft	TIA/EIA-222-F.		
Height of Cente		Н3	4.0 m	11.5	ft			
Basic Wind Spe		V	112.7 km/h		mi/h			
Force Coeff, x	Projected Area	CaAc	2.3 m ²	24.5	ft²	Excludes Mount	S	
Moment Arm		D1	m		ft			
Force Coeff, x Projected Area CaAc		CaAc	m²		ft²			
Moment Arm		D3	m		ft			
Pole Bury Leng	th	D2	m		ft			
Weight W			0.1 t	150	Owner Co.	Excludes Mount	810	

Antenna designed in accordance with AISC specifications for design of structural steel for building as prescribed by TIA/EIA-222-F. **Mechanical Loads Exclude Mounts**

NOTE:

Prepared By: cab

Original Date:

1-Oct-12

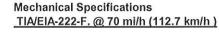
RMS Rmart@s Approved By:

schadl scholer gay com DN complets scheder gay com DN complets scheder gay com DN complets Scholer gay Complete Scholer Schole

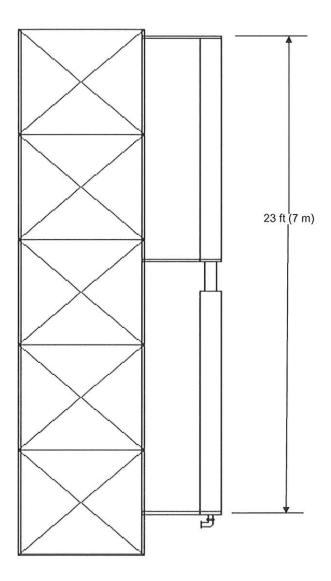


Proposal #: Call Letters: C-05141 W28DR-D Antenna Type: Location: TLP-12C-R Cedarville, WV Channel:

28 DTV



CaAc = $24.53 \text{ ft}^2(2.3 \text{ m}^2)$ W = 150 lbs(0.1 t)



TLP-12C-R Channel: D28

SWB-080606-4

Not to Scale



C-05141

Date

1-Oct-12

Call Letters

W28DR-D

28 Channel

Location

Cedarville, WV

Customer

Antenna Type

TLP-12C-R

SYSTEM SUMMARY

Antenna:

H Pol

Type: Channel: TLP-12C-R

ERP:

Peak Gain*:

10.1 kW (10.04 dBk) 25.2

Location:

28

Cedarville, WV Input Power: 0.4 kW

(14.01 dB) -(3.97 dBk)

Transmission Line:

Type:

EIA/DCA

Attenuation:

1.19 dB

Size:

1-5/8 in

Efficiency:

76.0%

Impedance:

50 ohm

Length: 235 ft 71.6 m

Transmitter:

Power Required:

0.5 kW

-(2.78 dBk)

* Gain is with respect to half wave dipole.



Date

C-05141

Call Letters

1-Oct-12 W28DR-D

Cedarville, WV

Channel 28

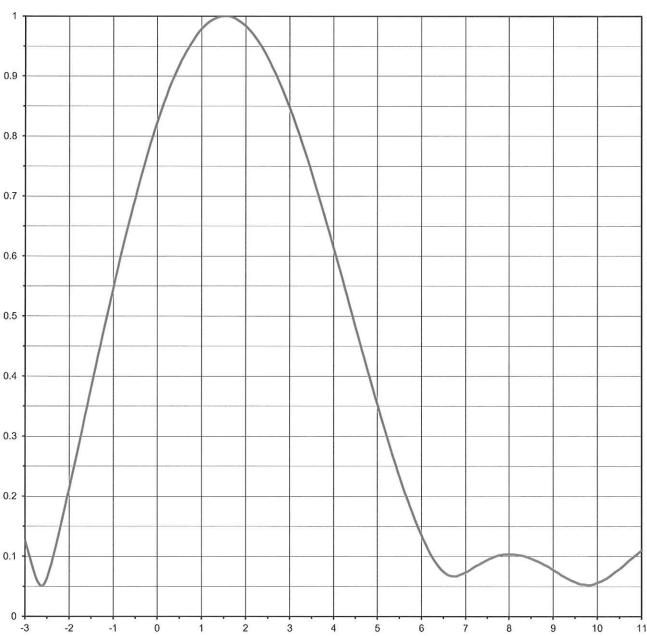
Location

Customer Antenna Type

TLP-12C-R

ELEVATION PATTERN

RMS Gain at Main Lobe 12.00 (10.79 dB) Beam Tilt 1.50 deg
RMS Gain at Horizontal 8.10 (9.08 dB) Frequency 557.00 MHz
Calculated / Measured Calculated Drawing # 12L120150



Degrees Below Horizontal



C-05141

Date Call Letters

1-Oct-12 W28DR-D

TLP-12C-R

Channel

28

Location Customer

Antenna Type

Cedarville, WV

ELEVATION PATTERN

RMS Gain at Main Lobe RMS Gain at Horizontal Calculated / Measured

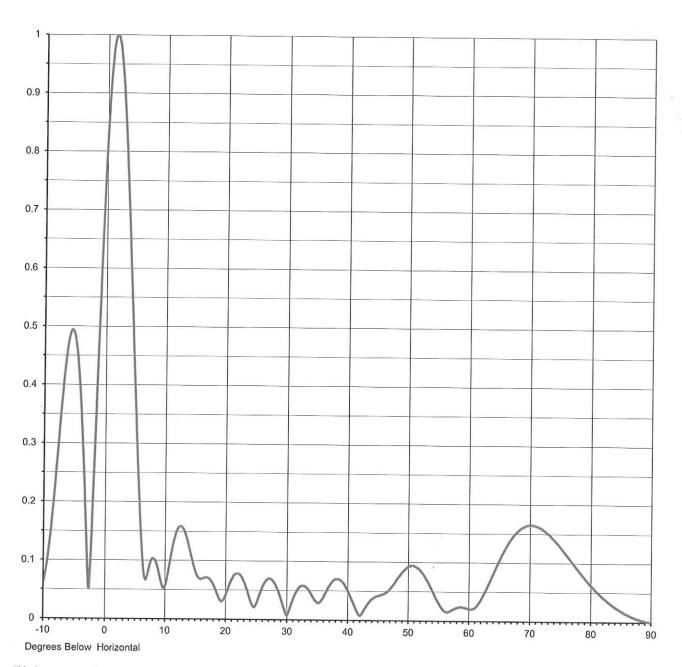
12.00 8.10

Calculated

(10.79 dB) (9.08 dB)

Beam Tilt Frequency Drawing #

1.50 deg 557.00 MHz 12L120150-90





2.2

0.966

10.4

0.068

Proposal Number

C-05141

Date

1-Oct-12

W28DR-D

Call Letters Location

Cedarville, WV

Channel

28

Customer

Antenna Type

TLP-12C-R

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #:

12L120150-90

Angle	Field										
-10.0	0.061	2.4	0.943	10.6	0.079	30.5	0.019	51.0	0.094	71.5	0.161
-9.5	0.090	2.6	0.915	10.8	0.092	31.0	0.034	51.5	0.091	72.0	0.158
-9.0	0.133	2.8	0.883	11.0	0.104	31.5	0.046	52.0	0.087	72.5	0.154
-8.5	0.188	3.0	0.846	11.5	0.131	32.0	0.054	52.5	0.080	73.0	0.150
-8.0	0.253	3.2	0.805	12.0	0.150	32.5	0.058	53.0	0.072	73.5	0.144
-7.5	0.321	3.4	0.761	12.5	0.158	33.0	0.057	53.5	0.063	74.0	0.139
-7.0	0.386	3.6	0.713	13.0	0.156	33.5	0.053	54.0	0.053	74.5	0.133
-6.5	0.441	3.8	0.664	13.5	0.144	34.0	0.045	54.5	0.042	75.0	0.127
-6.0	0.479	4.0	0.613	14.0	0.125	34.5	0.036	55.0	0.032	75.5	0.120
-5.5	0.494	4.2	0.561	14.5	0.104	35.0	0.030	55.5	0.024	76.0	0.113
-5.0	0.481	4.4	0.508	15.0	0.085	35.5	0.031	56.0	0.017	76.5	0.107
-4.5	0.436	4.6	0.455	15.5	0.072	36.0	0.038	56.5	0.015	77.0	0.100
-4.0	0.360	4.8	0.403	16.0	0.068	36.5	0.049	57.0	0.017	77.5	0.093
-3.5	0.255	5.0	0.352	16.5	0.070	37.0	0.058	57.5	0.020	78.0	0.087
-3.0	0.126	5.2	0.303	17.0	0.071	37.5	0.066	58.0	0.022	78.5	0.080
-2.8	0.075	5.4	0.256	17.5	0.068	38.0	0.070	58.5	0.024	79.0	0.074
-2.6	0.051	5.6	0.211	18.0	0.060	38.5	0.070	59.0	0.024	79.5	0.068
-2.4	0.088	5.8	0.171	18.5	0.048	39.0	0.067	59.5	0.022	80.0	0.062
-2.2	0.147	6.0	0.135	19.0	0.035	39.5	0.061	60.0	0.021	80.5	0.056
-2.0	0.213	6.2	0.104	19.5	0.031	40.0	0.052	60.5	0.020	81.0	0.051
-1.8	0.280	6.4	0.082	20.0	0.040	40.5	0.040	61.0	0.022	81.5	0.046
-1.6	0.348	6.6	0.069	20.5	0.054	41.0	0.028	61.5	0.027	82.0	0.041
-1.4	0.415	6.8	0.067	21.0	0.067	41.5	0.016	62.0	0.035	82.5	0.037
-1.2	0.482	7.0	0.073	21.5	0.076	42.0	0.008	62.5	0.045	83.0	0.033
-1.0	0.546	7.2	0.082	22.0	0.078	42.5	0.014	63.0	0.056	83.5	0.029
-0.8	0.609	7.4	0.090	22.5	0.075	43.0	0.022	63.5	0.067	84.0	0.025
-0.6	0.668	7.6	0.097	23.0	0.065	43.5	0.030	64.0	0.079	84.5	0.022
-0.4	0.724	7.8	0.102	23.5	0.051	44.0	0.036	64.5	0.093	85.0	0.018
-0.2	0.776	8.0	0.103	24.0	0.034	44.5	0.039	65.0	0.104	85.5	0.015
0.0	0.823	8.2	0.102	24.5	0.022	45.0	0.042	65.5	0.115	86.0	0.013
0.2	0.865	8.4	0.099	25.0	0.026	45.5	0.043	66.0	0.125	86.5	0.010
0.4	0.902	8.6	0.093	25.5	0.040	46.0	0.045	66.5	0.134	87.0	0.008
0.6	0.934	8.8	0.086	26.0	0.054	46.5	0.048	67.0	0.142	87.5	0.006
8.0	0.959	9.0	0.077	26.5	0.064	47.0	0.053	67.5	0.149	88.0	0.004
1.0	0.979	9.2	0.068	27.0	0.069	47.5	0.060	68.0	0.154	88.5	0.003
1.2	0.992	9.4	0.060	27.5	0.069	48.0	0.067	68.5	0.159	89.0	0.002
1.4	0.999	9.6	0.054	28.0	0.062	48.5	0.075	69.0	0.162	89.5	0.001
1.6	1.000	9.8	0.053	28.5	0.051	49.0	0.082	69.5	0.164	90.0	0.000
1.8	0.994	10.0	0.053	29.0	0.037	49.5	0.087	70.0	0.165		
2.0	0.983	10.2	0.059	29.5	0.020	50.0	0.092	70.5	0.164		
0.0	0.000	40.4	0.000	000	0.000	50 F	0.004	740	0.400	ı	

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0.008

50.5

0.094

71.0

0.163

30.0



Proposal Number C-05141
Date 1-Oct-12

Call Letters W28DR-D

W28DR-D Channel Cedarville, WV

28

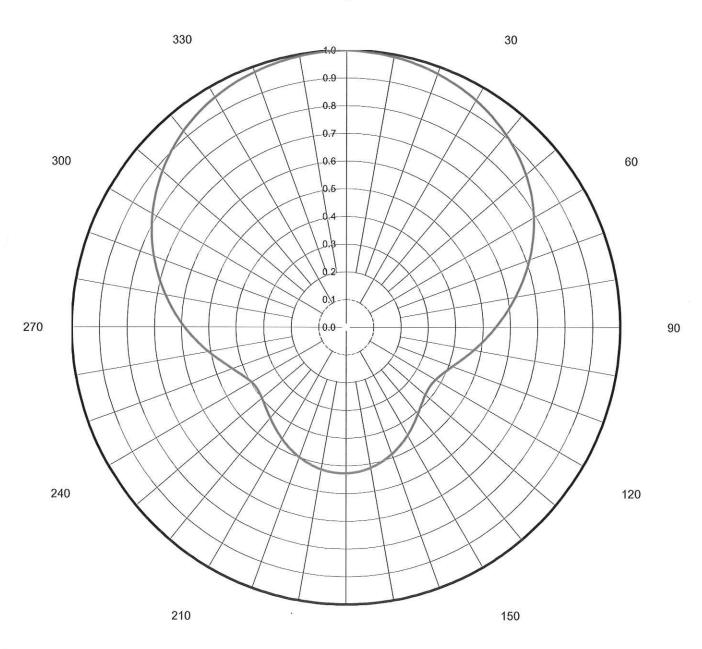
Location Customer

Antenna Type TLP-12C-R

AZIMUTH PATTERN

Gain 2.10 (3.22 dB) Frequency 557.00 MHz
Calculated / Measured Calculated Drawing # TLP-C

0



180



C-05141

Date

1-Oct-12

Call Letters

W28DR-D

Cedarville, WV

Channel

28

Location Customer

Antenna Type

TLP-12C-R

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: TLP-C

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field		Eiold	Angle	Ciald	Am ala	Clata
0	1.000	45	0.884	90	0.547	135	0.390	180	0.527	Angle	Field	Angle	Field	Angle	Field
1	0.999	46	0.878	91	0.539	136	0.394	181	0.527	225 226	0.413	270	0.590	315	0.902
2	0.998	47	0.873	92	0.532	137	0.397	182		227	0.410	271	0.598	316	0.907
3	0.997	48	0.868	93	0.524	138	0.401	183	0.528		0.407	272	0.606	317	0.911
4	0.996	49	0.862	94	0.524	139	0.401		0.528	228	0.405	273	0.614	318	0.916
5	0.995	50	0.857	95	0.517	140	0.404	184	0.527	229	0.402	274	0.622	319	0.920
6	0.995	51	0.851	96	0.502	- 100 March 1	200101000000000	185	0.527	230	0.400	275	0.630	320	0.924
7	0.994	52	0.845	97		141	0.412	186	0.526	231	0.398	276	0.638	321	0.928
8	0.993	53	0.839	98	0.495	142	0.416	187	0.525	232	0.396	277	0.646	322	0.932
9	0.993	54				143	0.420	188	0.524	233	0.395	278	0.654	323	0.935
10	0.992		0.833	99	0.481	144	0.424	189	0.523	234	0.394	279	0.663	324	0.939
11		55	0.826	100	0.474	145	0.428	190	0.522	235	0.393	280	0.671	325	0.942
	0.989	56	0.820	101	0.468	146	0.432	191	0.520	236	0.393	281	0.679	326	0.946
12	0.988	57	0.813	102	0.461	147	0.437	192	0.518	237	0.394	282	0.686	327	0.949
13	0.986	58	0.806	103	0.455	148	0.441	193	0.517	238	0.395	283	0.694	328	0.952
14	0.985	59	0.799	104	0.448	149	0.445	194	0.515	239	0.396	284	0.702	329	0.955
15	0.983	60	0.792	105	0.442	150	0.449	195	0.512	240	0.398	285	0.710	330	0.958
16	0.981	61	0.784	106	0.436	151	0.453	196	0.510	241	0.400	286	0.718	331	0.960
17	0.980	62	0.777	107	0.430	152	0.457	197	0.508	242	0.403	287	0.725	332	0.963
18	0.978	63	0.769	108	0.425	153	0.461	198	0.505	243	0.406	288	0.733	333	0.965
19	0.976	64	0.761	109	0.420	154	0.465	199	0.503	244	0.410	289	0.741	334	0.968
20	0.973	65	0.754	110	0.414	155	0.469	200	0.500	245	0.414	290	0.748	335	0.970
21	0.971	66	0.746	111	0.410	156	0.472	201	0.497	246	0.419	291	0.755	336	0.972
22	0.969	67	0.737	112	0.405	157	0.476	202	0.494	247	0.423	292	0.763	337	0.974
23	0.966	68	0.729	113	0.401	158	0.480	203	0.491	248	0.429	293	0.770	338	0.976
24	0.964	69	0.721	114	0.396	159	0.483	204	0.488	249	0.434	294	0.777	339	0.978
25	0.961	70	0.713	115	0.393	160	0.487	205	0.484	250	0.440	295	0.784	340	0.980
26	0.958	71	0.704	116	0.389	161	0.490	206	0.481	251	0.446	296	0.791	341	0.982
27	0.955	72	0.696	117	0.386	162	0.493	207	0.477	252	0.452	297	0.798	342	0.983
28	0.952	73	0.687	118	0.383	163	0.497	208	0.474	253	0.459	298	0.804	343	0.985
29	0.949	74	0.679	119	0.381	164	0.500	209	0.470	254	0.465	299	0.811	344	0.986
30	0.946	75	0.670	120	0.378	165	0.502	210	0.467	255	0.472	300	0.818	345	0.988
31	0.942	76	0.662	121	0.377	166	0.505	211	0.463	256	0.479	301	0.824	346	0.989
32	0.939	77	0.653	122	0.375	167	0.508	212	0.459	257	0.487	302	0.830	347	0.990
33	0.935	78	0.645	123	0.374	168	0.510	213	0.455	258	0.494	303	0.837	348	0.991
34	0.932	79	0.637	124	0.373	169	0.513	214	0.452	259	0.502	304	0.843	349	0.993
35	0.928	80	0.628	125	0.373	170	0.515	215	0.448	260	0.510	305	0.849	350	0.994
36	0.924	81	0.620	126	0.373	171	0.517	216	0.444	261	0.517	306	0.855	351	0.995
37	0.920	82	0.611	127	0.374	172	0.519	217	0.440	262	0.525	307	0.860	352	0.995
38	0.916	83	0.603	128	0.375	173	0.520	218	0.437	263	0.533	308	0.866	353	0.996
39	0.912	84	0.595	129	0.376	174	0.522	219	0.433	264	0.541	309	0.872	354	0.997
40	0.907	85	0.587	130	0.378	175	0.523	220	0.430	265	0.549	310	0.877	355	0.998
41	0.903	86	0.579	131	0.380	176	0.524	221	0.426	266	0.557	311	0.882	356	0.998
42	0.898	87	0.571	132	0.382	177	0.525	222	0.423	267	0.565	312	0.887	357	0.999
43	0.893	88	0.563	133	0.385	178	0.526	223	0.419	268	0.573	313	0.892	358	0.999
44	0.889	89	0.555	134	0.387	179	0.527	224	0.416	269	0.581	314	0.897	359	0.999



C-05140

Antenna Type:

TLP-12C

Channel:

28 DTV

Call Letters:

W28DR-D

Location:

Cedarville, WV

Electrical Speci	ifications		Val				Remarks			
			Ratio	dE	Bd					
RMS Gain at M	ain Lobe	Hpol								
over Halfwave I	Dipole									
		Vpol				,				
RMS Gain at He	orizontal	Hpol								
over Halfwave I		Прог								
		Vpol								
B. J. Di	1.0.1.		25.2	1401						
Peak Directiona over Halfwave I		Hpol	25.2	14.01						
over Harryave I	Sipole	Vpol								
Peak Directiona	l Gain	47340274 474	NAMES :	Vera 1864						
at Horizontal		Hpol	17.1	12.33						
over Halfwave I	Dipole	Vpol								
Circularity	Directional		dB							
Axial Ratio			dB							
Beam Tilt			1.50 deg							
Average Power			5 kW 1-5/8 in		dBk					
Antenna Input:	ntenna Input: T/L			50.0	ohm	Type: Notes:	EIA/DC	4		
Mavimum Anta	nna Input VSWR		Channel	1.10 : 1		5 psi dry air or Nitroge	en required.			
Maximum Amer	ina input v 5 w K			3.00.000.000.000						
	Azimuth		TLP-C							
Patterns	Elevation		12L120150	12L12015	0-90	_				
Mechanica	l Specifications		Metric	Engl	ish		Preliminary			
Height with Lig		H4	m		ft	Side mounted				
Height Less Lig		H2	7.0 m	23.0	ft	TIA/EIA-222-F.				
Height of Cente		НЗ	4.0 m	11.5	fì					
Basic Wind Spe		V	112.7 km/h	1	mi/h			**		
•			•		-					
Force Coeff, x	Projected Area	CaAc	1.7 m ²	18.2	ſt²	Excludes Mour	nts			
Force Coeff. x Projected Area CaAc Moment Arm D1			m		ft					
Force Coeff. x Projected Area CaAc			m²		ſt²					
			m		ft					
Moment Arm	Pole Bury Length D2			i e						
	th	D2	m	1	ft	1		1		

Antenna designed in accordance with AISC specifications for design of structural steel for building as prescribed by

TIA/EIA-222-F. Mechanical Loads Exclude Mounts

NOTE:

cab

schadl schader@spx
On complan
er@sp on balader@spx
X.com 2012 1002
06.06.07 0400

Prepared By: Original Date:

1-Oct-12

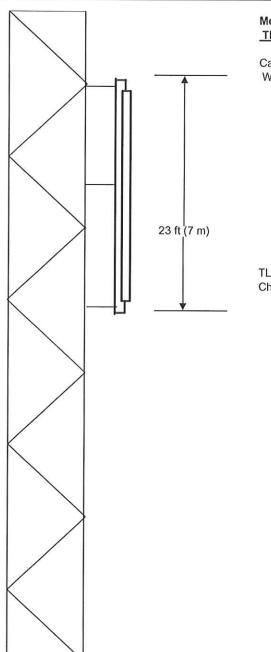
rick. s¶AM®sp x.com

Approved By:



Proposal #: Call Letters: C-05140 W28DR-D Antenna Type: Location: TLP-12C Cedarville, WV Channel:

28 DTV



Mechanical Specifications TIA/EIA-222-F. @ 70 mi/h (112.7 km/h)

CaAc = $18.24 \text{ ft}^2(1.7 \text{ m}^2)$ W = 125 lbs(0.1 t)

TLP-12C Channel: D28

SWB-080606-4

Not to Scale



C-05140

Date

1-Oct-12

Call Letters

W28DR-D

Channel 28

Location

Cedarville, WV

Customer

Antenna Type

TLP-12C

SYSTEM SUMMARY

Antenna:

TLP-12C

H Pol

Type: Channel:

ERP:

10.1 kW

76.0%

(10.04 dBk)

Location:

28 Cedarville, WV Peak Gain*: Input Power: 25.2 0.4 kW

(14.01 dB) -(3.97 dBk)

Transmission Line:

Type:

EIA/DCA

Attenuation: Efficiency:

1.19 dB

Size: Impedance: 1-5/8 in

50 ohm

Length: 235 ft 71.6 m

Transmitter:

Power Required:

-(2.78 dBk) 0.5 kW

* Gain is with respect to half wave dipole.



Date

C-05140

Call Letters

1-Oct-12

W28DR-D Channel Cedarville, WV

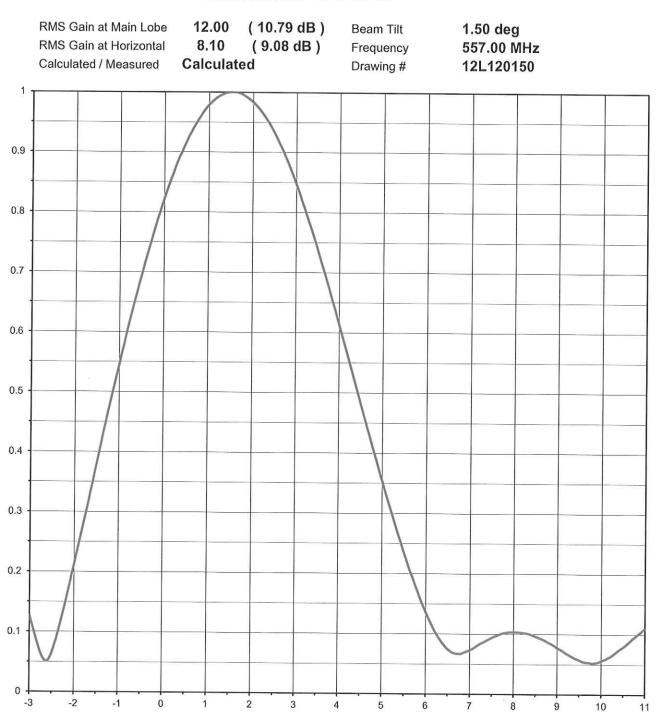
28

Location Customer

Antenna Type

TLP-12C

ELEVATION PATTERN



Degrees Below Horizontal



Date

C-05140 1-Oct-12

Call Letters

W28DR-D

Cedarville, WV

Channel 28

Location

Customer Antenna Type

TLP-12C

ELEVATION PATTERN

RMS Gain at Main Lobe RMS Gain at Horizontal Calculated / Measured

12.00 8.10

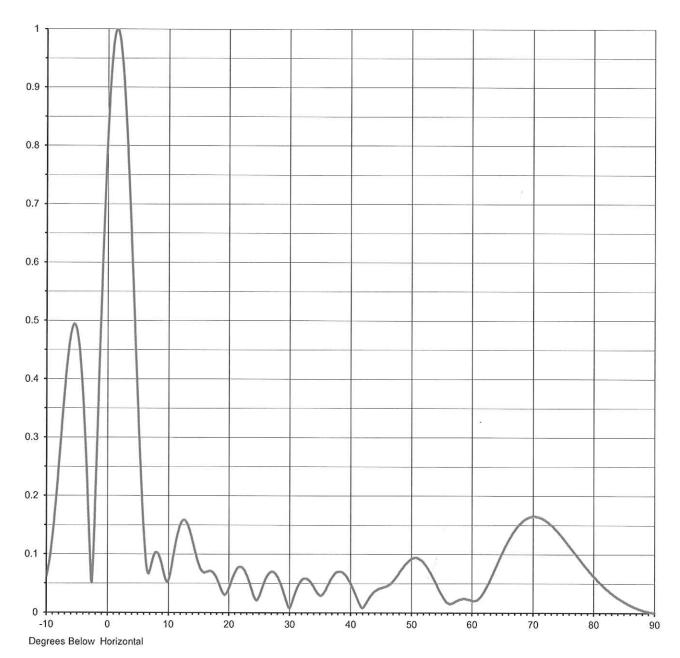
Calculated

(10.79 dB) (9.08 dB)

Beam Tilt Frequency 1.50 deg 557.00 MHz

Drawing #

12L120150-90





C-05140

Date

1-Oct-12 W28DR-D

28 Channel

Call Letters Location

Cedarville, WV

Customer

Antenna Type

TLP-12C

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #:

12L120150-90

Angle	Field										
-10.0	0.061	2.4	0.943	10.6	0.079	30.5	0.019	51.0	0.094	71.5	0.161
-9.5	0.090	2.6	0.915	10.8	0.092	31.0	0.034	51.5	0.091	72.0	0.158
-9.0	0.133	2.8	0.883	11.0	0.104	31.5	0.046	52.0	0.087	72.5	0.154
-8.5	0.188	3.0	0.846	11.5	0.131	32.0	0.054	52.5	0.080	73.0	0.150
-8.0	0.253	3.2	0.805	12.0	0.150	32.5	0.058	53.0	0.072	73.5	0.144
-7.5	0.321	3.4	0.761	12.5	0.158	33.0	0.057	53.5	0.063	74.0	0.139
-7.0	0.386	3.6	0.713	13.0	0.156	33.5	0.053	54.0	0.053	74.5	0.133
-6.5	0.441	3.8	0.664	13.5	0.144	34.0	0.045	54.5	0.042	75.0	0.127
-6.0	0.479	4.0	0.613	14.0	0.125	34.5	0.036	55.0	0.032	75.5	0.120
-5.5	0.494	4.2	0.561	14.5	0.104	35.0	0.030	55.5	0.024	76.0	0.113
-5.0	0.481	4.4	0.508	15.0	0.085	35.5	0.031	56.0	0.017	76.5	0.107
-4.5	0.436	4.6	0.455	15.5	0.072	36.0	0.038	56.5	0.015	77.0	0.100
-4.0	0.360	4.8	0.403	16.0	0.068	36.5	0.049	57.0	0.017	77.5	0.093
-3.5	0.255	5.0	0.352	16.5	0.070	37.0	0.058	57.5	0.020	78.0	0.087
-3.0	0.126	5.2	0.303	17.0	0.071	37.5	0.066	58.0	0.022	78.5	0.080
-2.8	0.075	5.4	0.256	17.5	0.068	38.0	0.070	58.5	0.024	79.0	0.074
-2.6	0.051	5.6	0.211	18.0	0.060	38.5	0.070	59.0	0.024	79.5	0.068
-2.4	0.088	5.8	0.171	18.5	0.048	39.0	0.067	59.5	0.022	80.0	0.062
-2.2	0.147	6.0	0.135	19.0	0.035	39.5	0.061	60.0	0.021	80.5	0.056
-2.0	0.213	6.2	0.104	19.5	0.031	40.0	0.052	60.5	0.020	81.0	0.051
-1.8	0.280	6.4	0.082	20.0	0.040	40.5	0.040	61.0	0.022	81.5	0.046
-1.6	0.348	6.6	0.069	20.5	0.054	41.0	0.028	61.5	0.027	82.0	0.041
-1.4	0.415	6.8	0.067	21.0	0.067	41.5	0.016	62.0	0.035	82.5	0.037
-1.2	0.482	7.0	0.073	21.5	0.076	42.0	0.008	62.5	0.045	83.0	0.033
-1.0	0.546	7.2	0.082	22.0	0.078	42.5	0.014	63.0	0.056	83.5	0.029
-0.8	0.609	7.4	0.090	22.5	0.075	43.0	0.022	63.5	0.067	84.0	0.025
-0.6	0.668	7.6	0.097	23.0	0.065	43.5	0.030	64.0	0.079	84.5	0.022
-0.4	0.724	7.8	0.102	23.5	0.051	44.0	0.036	64.5	0.093	85.0	0.018
-0.2	0.776	8.0	0.103	24.0	0.034	44.5	0.039	65.0	0.104	85.5	0.015
0.0	0.823	8.2	0.102	24.5	0.022	45.0	0.042	65.5	0.115	86.0	0.013
0.2	0.865	8.4	0.099	25.0	0.026	45.5	0.043	66.0	0.125	86.5	0.010
0.4	0.902	8.6	0.093	25.5	0.040	46.0	0.045	66.5	0.134	87.0	0.008
0.6	0.934	8.8	0.086	26.0	0.054	46.5	0.048	67.0	0.142	87.5	0.006
8.0	0.959	9.0	0.077	26.5	0.064	47.0	0.053	67.5	0.149	88.0	0.004
1.0	0.979	9.2	0.068	27.0	0.069	47.5	0.060	68.0	0.154	88.5	0.003
1.2	0.992	9.4	0.060	27.5	0.069	48.0	0.067	68.5	0.159	89.0	0.002
1.4	0.999	9.6	0.054	28.0	0.062	48.5	0.075	69.0	0.162	89.5	0.001
1.6	1.000	9.8	0.053	28.5	0.051	49.0	0.082	69.5	0.164	90.0	0.000
1.8	0.994	10.0	0.053	29.0	0.037	49.5	0.087	70.0	0.165		
2.0	0.983	10.2	0.059	29.5	0.020	50.0	0.092	70.5	0.164		
2.2	0.966	10.4	0.068	30.0	0.008	50.5	0.094	71.0	0.163		



Date 1-Oct-12

Call Letters W28DR-D Channel Location Cedarville, WV

28

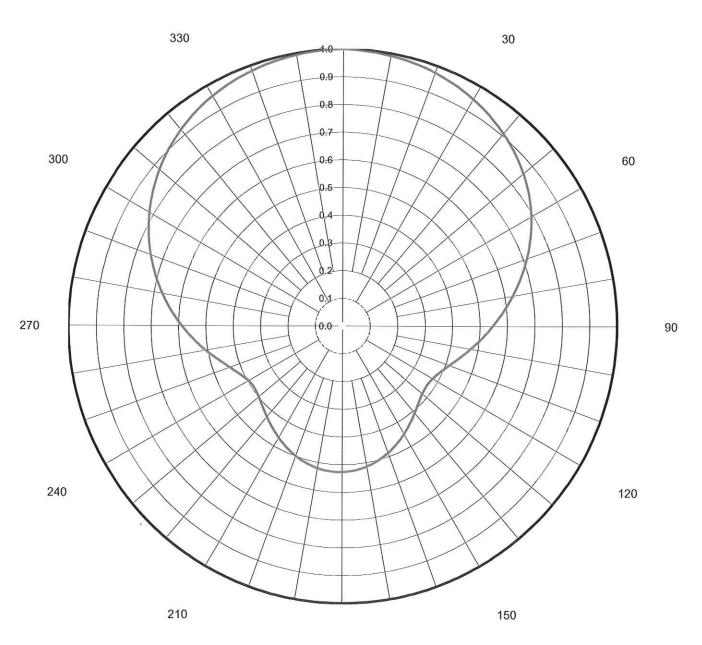
Customer

Antenna Type TLP-12C

AZIMUTH PATTERN

Gain 2.10 (3.22 dB) Frequency 557.00 MHz
Calculated / Measured Calculated Drawing # TLP-C

0



180



C-05140

Date Call Letters 1-Oct-12 W28DR-D

Cedarville, WV

Channel

28

Location Customer

Antenna Type

TLP-12C

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: TLP-C

Angle	Field														
0	1.000	45	0.884	90	0.547	135	0.390	180	0.527	225	0.413	270	0.590	315	0.902
1	0.999	46	0.878	91	0.539	136	0.394	181	0.528	226	0.410	271	0.598	316	0.907
2	0.998	47	0.873	92	0.532	137	0.397	182	0.528	227	0.407	272	0.606	317	0.911
3	0.997	48	0.868	93	0.524	138	0.401	183	0.528	228	0.405	273	0.614	318	0.916
4	0.996	49	0.862	94	0.517	139	0.404	184	0.527	229	0.402	274	0.622	319	0.920
5	0.995	50	0.857	95	0.510	140	0.408	185	0.527	230	0.400	275	0.630	320	0.924
6	0.995	51	0.851	96	0.502	141	0.412	186	0.526	231	0.398	276	0.638	321	0.928
7	0.994	52	0.845	97	0.495	142	0.416	187	0.525	232	0.396	277	0.646	322	0.932
8	0.993	53	0.839	98	0.488	143	0.420	188	0.524	233	0.395	278	0.654	323	0.935
9	0.992	54	0.833	99	0.481	144	0.424	189	0.523	234	0.394	279	0.663	324	0.939
10	0.990	55	0.826	100	0.474	145	0.428	190	0.522	235	0.393	280	0.671	325	0.942
11	0.989	56	0.820	101	0.468	146	0.432	191	0.520	236	0.393	281	0.679	326	0.946
12	0.988	57	0.813	102	0.461	147	0.437	192	0.518	237	0.394	282	0.686	327	0.949
13	0.986	58	0.806	103	0.455	148	0.441	193	0.517	238	0.395	283	0.694	328	0.952
14	0.985	59	0.799	104	0.448	149	0.445	194	0.515	239	0.396	284	0.702	329	0.955
15	0.983	60	0.792	105	0.442	150	0.449	195	0.512	240	0.398	285	0.710	330	0.958
16	0.981	61	0.784	106	0.436	151	0.453	196	0.510	241	0.400	286	0.718	331	0.960
17	0.980	62	0.777	107	0.430	152	0.457	197	0.508	242	0.403	287	0.725	332	0.963
18	0.978	63	0.769	108	0.425	153	0.461	198	0.505	243	0.406	288	0.733	333	0.965
19	0.976	64	0.761	109	0.420	154	0.465	199	0.503	244	0.410	289	0.741	334	0.968
20	0.973	65	0.754	110	0.414	155	0.469	200	0.500	245	0.414	290	0.748	335	0.970
21	0.971	66	0.746	111	0.410	156	0.472	201	0.497	246	0.419	291	0.755	336	0.972
22	0.969	67	0.737	112	0.405	157	0.476	202	0.494	247	0.423	292	0.763	337	0.974
23	0.966	68	0.729	113	0.401	158	0.480	203	0.491	248	0.429	293	0.770	338	0.976
24	0.964	69	0.721	114	0.396	159	0.483	204	0.488	249	0.434	294	0.777	339	0.978
25	0.961	70	0.713	115	0.393	160	0.487	205	0.484	250	0.440	295	0.784	340	0.980
26	0.958	71	0.704	116	0.389	161	0.490	206	0.481	251	0.446	296	0.791	341	0.982
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35	0.928	80	0.628	125	0.373	170	0.515	215	0.448	260	0.510	305	0.849	350	0.994
36	0.924	81	0.620	126	0.373	171	0.517	216	0.444	261	0.517	306	0.855	351	0.995
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39	0.912	84	0.595	129	0.376	174	0.522	219	0.433	264	0.541	309	0.872	354	0.997
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41	0.903	86	0.579	131	0.380	176	0.524	221	0.426	266	0.557	311	0.882	356	0.998
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43	0.893	88	0.563	133	0.385	178	0.526	223	0.419	268	0.573	313	0.892	358	0.999
44	0.889	89	0.555	134	0.387	179	0.527	224	0.416	269	0.581	314	0.897	359	0.999