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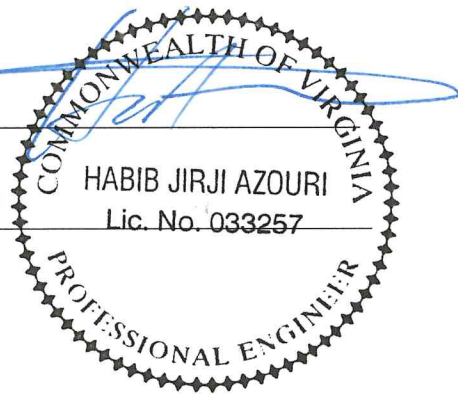
PURCHASER: EASTERN SHORE OF VA BROADBAND AUTHORITY
NAME OF PRODUCT: BLOXOM, ACCOMACK COUNTY, VIRGINIA
100 FT TAPERED STEEL POLE
FILE NUMBER: 210612
DRAWING NUMBER: 210612-01-D1 AND 210612-01-F1

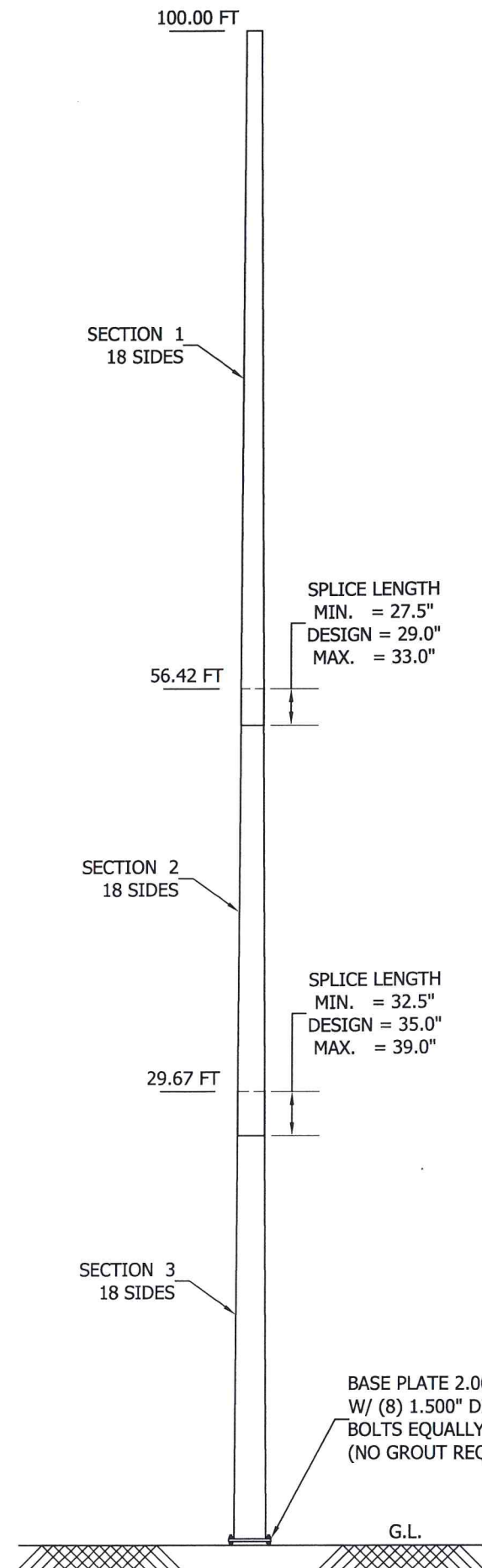
I CERTIFY THAT THE ATTACHED DRAWINGS AND CALCULATIONS WERE
PREPARED UNDER MY SUPERVISION IN ACCORDANCE WITH THE
LOADING AND SOIL CRITERIA SPECIFIED BY THE PURCHASER AND THAT
I AM A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF
THE STATE OF VIRGINIA.

CERTIFIED BY: _____

DATE: _____

6/19/14





DESIGN LOAD		
DESIGN WIND LOAD PER ANSI/TIA-222-G USING THE FOLLOWING DESIGN CRITERIA: ASCE 7-10 FACTORED WIND SPEED (NO ICE) = 122 MPH BASIC WIND SPEED (WITH ICE) = 30 MPH DESIGN ICE THICKNESS = 0.50" EXPOSURE CATEGORY = C STRUCTURE CLASSIFICATION = II TOPOGRAPHIC CATEGORY = 1 EARTHQUAKE SPECTRAL RESPONSE ACCELERATION, $S_s = 0.14$		
THIS POLE IS DESIGNED TO SUPPORT THE FOLLOWING LOADS:		
ELEVATION (FT)	ANTENNA LOAD	LINE SIZE
TOP	(4) AMS 900-120-13	(4) 7/8 in.

SEE STRESS ANALYSIS FOR A COMPLETE LISTING OF ALL LOADS ON STRUCTURE. LOADS HAVE BEEN INCREASED 50% FOR FUTURE GROWTH.


MAXIMUM FACTORED REACTIONS	
DOWNLOAD =	9.6 KIPS
SHEAR =	5.9 KIPS
O.T.M =	374.2 FT-KIPS

GENERAL NOTES

- ROHN PRODUCTS POLE DESIGNS CONFORM TO ANSI/TIA-222-G UNLESS OTHERWISE SPECIFIED UNDER POLE DESIGN LOADING.
- THE DESIGN LOADING CRITERIA INDICATED HAS BEEN PROVIDED TO ROHN. THE DESIGN LOADING CRITERIA HAS BEEN ASSUMED TO BE BASED ON SITE-SPECIFIC DATA IN ACCORDANCE WITH ANSI/TIA-222-G AND MUST BE VERIFIED BY OTHERS PRIOR TO INSTALLATION.
- ANTENNAS AND LINES LISTED IN POLE DESIGN LOADING TABLE ARE PROVIDED BY OTHERS UNLESS OTHERWISE SPECIFIED.
- POLE MEMBER DESIGN DOES NOT INCLUDE STRESSES DUE TO ERECTION SINCE ERECTION EQUIPMENT AND CONDITIONS ARE UNKNOWN. DESIGN ASSUMES COMPETENT AND QUALIFIED PERSONNEL WILL ERECT THE POLE.
- WORK SHALL BE IN ACCORDANCE WITH ANSI/TIA-222-G, "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES".
- FIELD CONNECTIONS SHALL BE BOLTED. NO FIELD WELDS SHALL BE ALLOWED.
- STRUCTURAL BOLTS SHALL CONFORM TO ASTM A-325, EXCEPT WHERE NOTED
- A NUT LOCKING DEVICE SHALL BE PROVIDED FOR ALL STRUCTURAL BOLTS ON THE POLE.
- STRUCTURAL STEEL AND CONNECTION BOLTS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION, IN ACCORDANCE WITH ANSI/TIA-222-G.
- ALL HIGH STRENGTH BOLTS ARE TO BE TIGHTENED TO A "SNUGTIGHT" CONDITION AS DEFINED IN THE JUNE 23, 2000, AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS". NO OTHER MINIMUM BOLT TENSION OR TORQUE VALUES ARE REQUIRED.
- PURCHASER SHALL VERIFY THE INSTALLATION IS IN CONFORMANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS FOR OBSTRUCTION MARKING AND LIGHTING.
- TOLERANCE ON POLE STEEL HEIGHT IS EQUAL TO PLUS 1% OR MINUS 1/2%.
- DESIGN ASSUMES THAT, AS A MINIMUM, MAINTENANCE AND INSPECTION WILL BE PERFORMED OVER THE LIFE OF THE STRUCTURE IN ACCORDANCE WITH ANSI/TIA-222-G.
- DESIGN ASSUMES LEVEL GRADE AT POLE SITE.
- FOUNDATIONS SHALL BE DESIGNED TO SUPPORT THE REACTIONS SHOWN FOR THE CONDITIONS EXISTING AT THE SITE.
- DESIGN ASSUMES ALL TRANSMISSION LINES ARE ROUTED INTERNALLY.
- POLE SHAFT CONFORMS TO ASTM A572 GRADE 65. POLE BASE PLATE STEEL CONFORMS TO ASTM A572 GRADE 50. POLE ANCHOR BOLTS CONFORM TO ASTM F1554 GRADE 105.

SECTION SCHEDULE						
SEC.	LENGTH (FT)	DIAMETER (IN)		WALL THICK (IN)	Fy (KSI)	WEIGHT (KIPS)
		BOT.	TOP			
1	46.00	18.719	12.000	0.1875	65.0	1.522
2	29.67	22.146	17.813	0.1875	65.0	1.279
3	29.67	25.500	21.167	0.2500	65.0	2.348

FOR POLYGONAL POLES, DIAMETER IS MEASURED ACROSS FLATS

FILE NO. 210612				
REVISIONS				
REV.	DESCRIPTION	DWN	CHK	APP
 PO BOX 5999 PEORIA, IL 61601-5999 TOLL FREE 800-727-ROHN				
THIS DRAWING IS THE PROPERTY OF ROHN. IT IS NOT TO BE REPRODUCED, COPIED OR TRACED IN WHOLE OR IN PART WITHOUT OUR WRITTEN CONSENT.				
EASTERN SHORE OF VA BROADBAND AUTHORITY 100' TAPERED STEEL POLE DESIGN BLOXOM, VA				
DWN:	SM	CHK'D:	HA	DATE: Jun/17/2014
ENGR:	HA	SHEET #: 1 OF 1		
PRJ. ENGR:	SM	PRJ. MANG'R:		
DRAWING NO:	210612-01-D1			REV: 0

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FILE NO. 210612

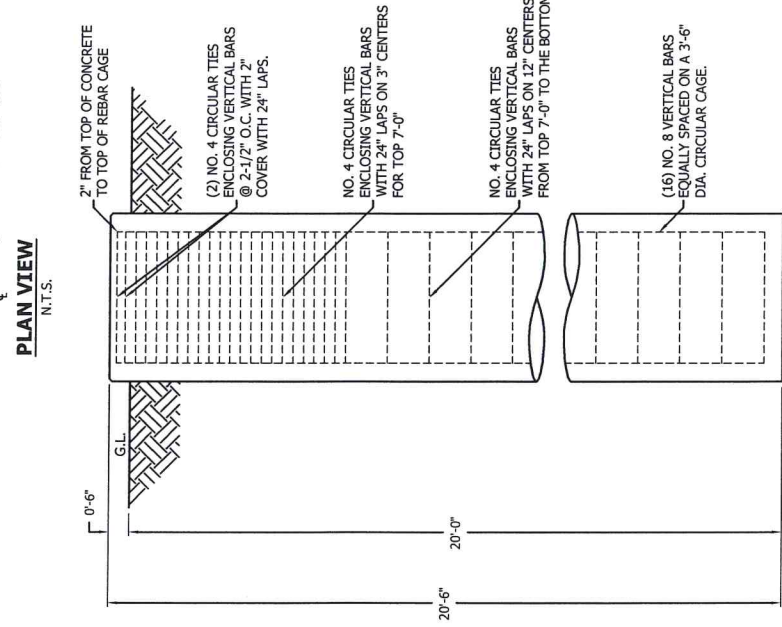
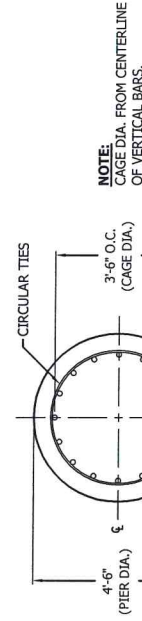
REV	DESCRIPTION	DWN	CHK	APP

GENERAL NOTES:
 FOUNDATION DESIGN HAS BEEN DEVELOPED IN ACCORDANCE WITH GENERALLY ACCEPTED PROFESSIONAL ENGINEERING PRINCIPLES AND PRACTICES WITHIN THE LIMITS OF THE SUBSURFACE DATA PROVIDED. FOUNDATION DESIGN MODIFICATIONS MAY BE REQUIRED IN THE EVENT THE FOLLOWING DESIGN PARAMETERS ARE NOT APPLICABLE FOR THE SUBSURFACE CONDITIONS ENCOUNTERED.

DEPTH (FT)	SOIL TYPE	K (PCF)	Y (PCF)	φ (DEG)	C (KSF)	ε _u (N/IN)
0.0 - 1.0	SOFT CLAY	5.0	80.0	0.0	0.100	0.035
1.0 - 3.0	SAND	30.0	115.0	29.0	0.000	0.000
3.0 - 20.0	SAND	80.0	60.0	32.0	0.000	0.000

- WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES, SAFETY REGULATIONS AND UNLESS OTHERWISE NOTED, THE LATEST REVISION OF ACT 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE". PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.
- CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE STATE REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
- PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR RESISTANCE TO LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACT 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. AS A MINIMUM CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI (31.0 MPa) IN 28 DAYS. MINIMUM SIZE OF AGGREGATE SHALL NOT EXCEED SIZE SUITABLE FOR INSTALLATION METHOD UTILIZED OR 1/3 CLEAR DISTANCE BETWEEN REINFORCING. MAXIMUM SIZE MAY BE INCREASED TO 2/3 CLEAR DISTANCE PROVIDED WORKABLE. METHODS OF CONSOLIDATION SUCH AS VIBRATING WILL PREVENT HONEYCOMBS OR VOIDS.
- REINFORCING SHALL BE PROVIDED AND CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60 UNLESS OTHERWISE NOTED. SPLICED REINFORCEMENT SHALL NOT BE ALLOWED UNLESS OTHERWISE INDICATED.
- REINFORCING CAGES SHALL BE REINFORCED WITH PROPER DIMENSIONS DURING HANDLING AND THROUGHOUT PLACEMENT OF CONCRETE. WHEN TEMPORARY CASING IS UTILIZED, BRACING SHALL BE ADEQUATE TO RESIST FORCES OCCURRING FROM FLOWING CONCRETE DURING CASING CONSTRUCTION.
- WELDING IS PROHIBITED ON REINFORCING STEEL AND BRACINGS.
- MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES (76 MM) UNLESS OTHERWISE NOTED. APPROVED SPACERS SHALL BE USED TO INSURE A 3 INCH (76 MM) MINIMUM COVER ON REINFORCEMENT.
- TO INSURE CONCENTRIC PLACEMENT OF CAGES IN EXCAVATIONS.
- FOUNDATION DESIGN HAS BEEN BASED ON GEOTECHNICAL REPORT NO. 110-6268 DATED 7/8/2013 BY **GEOTECHNICAL RESOURCES, INC.**
- FOUNDATION DEPTH INDICATED IS BASED ON THE GRADE LINE DESCRIBED IN THE REFERENCED GEOTECHNICAL REPORT. SUBSEQUENT TO THE GEOTECHNICAL INVESTIGATION.
- VERIFICATION OF SUBSURFACE CONDITIONS ARE IMPLEMENTED PRIOR TO PLACEMENT OF CONCRETE. FOUNDATION INSTALLATION SHALL BE SUPERVISED BY PERSONNEL KNOWLEDGEABLE AND EXPERIENCED WITH THE PROPOSED FOUNDATION TYPE. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GENERALLY ACCEPTED INSTALLATION PRACTICES.
- FOUNDATION DESIGN ASSUMES INSTALLATION PROCEDURES WILL INCORPORATE THE PROCEDURES RECOMMENDED IN THE REFERENCED GEOTECHNICAL REPORT.
- FOUNDATION DESIGN ASSUMES FIELD INSPECTIONS WILL BE PERFORMED TO VERIFY THAT CONSTRUCTION MATERIALS, INSTALLATION METHODS AND ASSUMED DESIGN PARAMETERS ARE ACCEPTABLE BASED ON CONDITIONS EXISTING AT THE SITE.
- FOR FOUNDATION INSTALLATION TOLERANCES SEE STRUCTURE ASSEMBLY DRAWING.
- LOOSE MATERIAL SHALL BE REMOVED FROM BOTTOM OF EXCAVATION PRIOR TO CONCRETE PLACEMENT. SIDES OF EXCAVATION SHALL BE ROUGH AND FREE OF LOOSE CUTTINGS.
- CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS, INFILTRATION OF WATER OR SOIL AND OTHER OCCURRENCES WHICH MAY DECREASE THE STRENGTH OR DURABILITY OF THE FOUNDATION.
- FREE FALL CONCRETE MAY BE USED PROVIDED FALL IS VERTICAL DOWN WITHOUT HITTING SIDES OF EXCAVATION, FORMWORK, REINFORCING BARS, FORM TIES, CAGE BRACING OR OTHER OBSTRUCTIONS. UNDER NO CIRCUMSTANCES SHALL CONCRETE FALL THROUGH WATER.
- CONSTRUCTION JOINTS, IF REQUIRED AT THE BASE OF THE PIERS, MUST BE INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF 1/4 INCH (6 MM). FOUNDATION DESIGN ASSUMES NO OTHER CONSTRUCTION JOINTS.
- TOP OF FOUNDATION OUTSIDE LIMITS OF ANCHOR BOLTS SHALL BE SLOPED TO DRAIN WITH A FLOATED FINISH. AREA INSIDE LIMITS OF ANCHOR BOLTS SHALL BE LEVEL WITH A SCRATCHED FINISH.
- EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" X 3/4" (19MM X 19MM) MINIMUM.
- PROPORTIONS OF CONCRETE MATERIALS SHALL INSURE CONCRETE WILL NOT BE ADVERSELY DISTURBED UPON CASING REMOVAL.
- DRILLING FLUID, IF USED, SHALL BE FULLY DISPLACED BY CONCRETE AND SHALL NOT BE DETRIMENTAL TO CONCRETE OR SURROUNDING SOIL. CONTAMINATED CONCRETE SHALL BE REMOVED FROM TOP OF FOUNDATION AND REPLACED WITH FRESH CONCRETE.

NOTE: SEE STRUCTURE ASSEMBLY DRAWING FOR FOUNDATION LAYOUT AND ANCHORAGE EMBEDMENT DRAWING NUMBER.



FACTORED REACTIONS
 DOWNLOAD = 9.6 KIPS
 SHEAR = 5.9 KIPS
 O.T.M. = 374.2 FT-KIPS

VOLUME OF CONCRETE
 12.1 CU. YDS

RAIN
 PRODUCTS, LLC
 PO BOX 5999
 PEORIA, IL 61601-9999
 TOLL FREE 800-727-ROHN
 OUR WEBSITE CONSIST:

EASTERN SHORE OF VA BROADBAND AUTHORITY
DRILLED PIER
 FOUNDATION DETAILS
 BLOXOM, VA

DWN:	SM	CHCKD:	HA	DATE:	6/19/2014
ENCR:	HA	SHEET #:	1	OFF 1	
PRJ. ENGR:	SM	PRJ. MNGR:			
DRAWING NO.	210612-01-F1				
REV:	0				



File: 210612 Site: 1 Cycle: 1 Design: 1 Engineer: Stevan_M
 Customer: Eastern Shore of VA Broadband Authority
 Site: Bloxom, VA
 Type: POLE-TPR
 Pole: Tapered Steel

S U M M A R Y O F A N A L Y S I S R E S U L T S

Conditions : 122 mph ASCE 7-10 Factored Wind Speed (no ice) 60 mph Operational
 : 30 mph Basic Wind Speed (0.50" radial ice)
 Building Code : EIA Revision G
 Exposure : C
 Gust response factor : 1.10
 Structural Category : II
 Topographic Category : 1
 Natural Frequency : 0.63 cps
 Resonant Velocity : 4.47 mph
 Pole Height : 100.00 ft
 Top Diameter : 12.000 in
 Bottom Diameter : 25.500 in
 Embedment Depth : 0.00 ft
 Pole Shape : 18-sided Polygon
 Joint Type : Slip
 Shaft Steel Weight : 4.788 kips

POLE SHAFT PROPERTIES:

Seq	Sect. Length (ft)	Wall Thickness (in)	Mat'l Yield [Fy] (ksi)	Top Diameter [Dt] (in)	Bottom Diameter [Db] (in)	Slip Joint Overlap (in)	Taper (in/ft)	Steel Weight (kips)
1	46.000	0.18750	65	12.000	18.720	29.00	0.1461	1.522
2	29.670	0.18750	65	17.810	22.150	35.00	0.1463	1.279
3	29.670	0.25000	65	21.170	25.500		0.1459	1.988

Design Bend Radius = 2.5 inches

POLE SHAFT SECTION MAXIMUM FORCES AND MOMENTS:

Seq	Load Case	At Base of Section					Max. Ratio Actual Allowable [Ftot/Fb]
		Sect. Elev. (ft.)	Axial Load (kips)	Bending Moment (ft-kips)	Horiz. Shear (kips)	Torsion (ft-Kips)	
1	Combo005	54.00	2.3910	108.6947	3.3519	0.0000	0.3655
2	Combo005	26.75	4.0745	217.5698	4.5939	0.0000	0.5205
3	Combo005	0.00	6.4435	374.1513	5.8027	0.0000	0.4892
DESIGN REACTIONS →			9.6029	374.1513	5.8655	0.9424 ←	
OPERATIONAL REACTIONS →			5.4721	80.9810	1.3065	0.2102 ←	

SECTION PROPERTIES:

Seq	Weight (kips)	Location	Elev (ft)	Diam Across Flats (in)	Wall Thick (in)	[W/t] Ratio	Diam/Thick [D/t] Ratio	Area (in^2)	J (in^4)	I (in^4)
1	1.522	@Top	100.00	12.000	0.1875	6.23	64.00	7.03	248.5	123.9
		@Splice	56.42	18.370		12.22	97.97	10.82	906.2	452.0
		@Bot	54.00	18.720		12.55	99.84	11.03	959.5	478.6
2	1.279	@Top	56.42	17.810	0.1875	11.69	94.99	10.49	825.0	411.5
		@Splice	29.67	21.370		15.04	113.97	12.61	1432.8	714.6
		@Bot	26.75	22.150		15.78	118.13	13.07	1597.0	796.5
3	1.988	@Top	29.67	21.170	0.2500	11.05	84.68	16.60	1840.3	917.8
		@Bot	0.00	25.500		14.11	102.00	20.04	3235.8	1613.9

Total Shaft Steel Weight = 4.788 kips



ROHN Products LLC.

File: 210612 Site: 1 Cycle: 1 Design: 1 Engineer: Stevan_M
Customer: Eastern Shore of VA Broadband Authority
Site: Bloxom, VA
Type: POLE-TPR Pole: Tapered Steel

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PROPERTIES: (@ Max Segment = 5.0 ft)

Table with 9 columns: Node No., Node Elev. (ft), Diam. Across Flats (in), Wall Thick [t] (in), [W/t] Ratio, Diam/Thick [D/t] Ratio, Area (in^2), J (in^4), I (in^4). Rows include nodes 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 230, 23I, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12O, 12I, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1.



ROHN Products LLC.

File: 210612 Site: 1 Cycle: 1 Design: 1 Engineer: Stevan_M
Customer: Eastern Shore of VA Broadband Authority
Site: Bloxom, VA
Type: POLE-TPR
Pole: Tapered Steel

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DISCRETE APPURTENANCE PROPERTIES

Elev. (ft)	Description	Weight		Az.	Offset (in)	EPA		Lines
		W/o Ice (kips)	W/ Ice (kips)			W/o Ice (ft^2)	W/ Ice (ft^2)	
100.0 (4)	AMS 900-120-13	0.20	0.44	0	6.00	21.00	28.00	(4) 7/8 in.
100.0	50% Extra	0.10	0.22	0	10.03	10.50	14.00	(2) 7/8 in.

LINEAR APPURTENANCE PROPERTIES

From (ft)	To (ft)	Description	Weight (lb/ft)	Width	
				Round (in)	Flat (in)
0.0	100.0	3/8in Safety Device	0.13	0.38	0.00



ROHN Products LLC.

File: 210612 Site: 1 Cycle: 1 Design: 1 Engineer: Stevan_M
 Customer: Eastern Shore of VA Broadband Authority
 Site: Bloxom, VA
 Type: POLE-TPR
 Pole: Tapered Steel

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PRESSURES

Seg.	Elev. (ft)	Kz	W/o Ice		With Ice		Operational	
			G _h ·qz	Cf	G _h ·qz	Cf	G _h ·qz	Cf
1-11	97.821	1.260	30.415	0.650	3.033	1.200	10.855	0.650
1-10	93.463	1.248	30.125	0.650	3.004	1.200	10.752	0.650
1-9	89.104	1.235	29.823	0.650	2.974	1.200	10.644	0.650
1-8	84.746	1.222	29.510	0.650	2.943	1.200	10.532	0.650
1-7	80.388	1.209	29.184	0.650	2.910	1.200	10.416	0.650
1-6	76.029	1.195	28.844	0.650	2.876	1.200	10.294	0.650
1-5	71.671	1.180	28.487	0.650	2.841	1.200	10.167	0.650
1-4	67.313	1.164	28.114	0.650	2.804	1.200	10.034	0.650
1-3	62.955	1.148	27.720	0.650	2.764	1.200	9.893	0.650
1-2	58.597	1.131	27.305	0.650	2.723	1.200	9.745	0.650
1-1	55.209	1.117	26.964	0.650	2.689	1.200	9.624	0.650
2-12	55.209	1.117	26.964	0.650	2.689	1.200	9.624	0.650
2-11	52.783	1.106	26.711	0.650	2.664	1.200	9.533	0.650
2-10	50.350	1.095	26.447	0.650	2.637	1.200	9.439	0.650
2-9	47.917	1.084	26.172	0.650	2.610	1.200	9.341	0.650
2-8	45.483	1.072	25.887	0.650	2.581	1.200	9.239	0.650
2-7	43.050	1.060	25.589	0.650	2.552	1.200	9.133	0.650
2-6	40.617	1.047	25.277	0.650	2.521	1.200	9.022	0.650
2-5	38.183	1.033	24.951	0.650	2.488	1.200	8.905	0.650
2-4	35.750	1.019	24.607	0.650	2.454	1.200	8.782	0.650
2-3	33.317	1.004	24.245	0.650	2.418	1.200	8.653	0.650
2-2	30.883	0.988	23.861	0.650	2.379	1.200	8.516	0.650
2-1	28.208	0.970	23.410	0.650	2.334	1.200	8.355	0.650
3-11	28.208	0.970	23.410	0.650	2.334	1.200	8.355	0.650
3-10	25.413	0.949	22.901	0.650	2.284	1.200	8.173	0.650
3-9	22.738	0.927	22.371	0.650	2.231	1.200	7.984	0.650
3-8	20.063	0.902	21.789	0.650	2.173	1.200	7.777	0.650
3-7	17.388	0.876	21.142	0.650	2.108	1.200	7.546	0.650
3-6	14.713	0.850	20.522	0.650	2.047	1.200	7.324	0.650
3-5	12.038	0.850	20.522	0.650	2.047	1.200	7.324	0.650
3-4	9.363	0.850	20.522	0.650	2.047	1.200	7.324	0.650
3-3	6.688	0.850	20.522	0.650	2.047	1.200	7.324	0.650
3-2	4.013	0.850	20.522	0.650	2.047	1.200	7.324	0.650
3-1	1.338	0.850	20.522	0.650	2.047	1.200	7.324	0.650



File: 210612 Site: 1 Cycle: 1 Design: 1 Engineer: Stevan_M
 Customer: Eastern Shore of VA Broadband Authority
 Site: Bloxom, VA
 Type: POLE-TPR
 Pole: Tapered Steel

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MOMENTS, FORCES AND DEFLECTIONS

Node	Elev.	Moment			Shear		Torsion	Operational		
		Axial (kips)	My (ft-k)	Mz (ft-k)	Vy (kips)	Vz (kips)		Deflection (in)	Twist (deg)	Sway (deg)
33	100.000	0.844	0.00	0.44	0.03	0.10	0.059	15.549	0.021	1.314
32	95.642	0.600	0.00	7.47	1.77	0.00	0.000	14.353	0.018	1.305
31	91.283	0.770	0.00	15.46	1.93	0.00	0.000	13.170	0.016	1.284
30	86.925	0.946	0.00	24.22	2.10	0.00	0.000	12.010	0.014	1.254
29	82.567	1.131	0.00	33.78	2.27	0.00	0.000	10.882	0.012	1.216
28	78.208	1.322	0.00	44.15	2.45	0.00	0.000	9.791	0.011	1.172
27	73.850	1.521	0.00	55.34	2.63	0.00	0.000	8.743	0.010	1.122
26	69.492	1.726	0.00	67.39	2.81	0.00	0.000	7.742	0.008	1.068
25	65.134	1.939	0.00	80.28	3.00	0.00	0.000	6.793	0.007	1.011
24	60.776	2.160	0.00	94.05	3.20	0.00	0.000	5.896	0.007	0.950
23	56.418	2.391	0.00	108.69	3.35	0.00	0.000	5.057	0.006	0.887
22	54.000	2.574	0.00	117.21	3.46	0.00	0.000	4.617	0.005	0.850
21	51.567	2.701	0.00	126.05	3.57	0.00	0.000	4.193	0.005	0.810
20	49.133	2.831	0.00	135.16	3.68	0.00	0.000	3.791	0.005	0.769
19	46.700	2.964	0.00	144.54	3.79	0.00	0.000	3.409	0.004	0.728
18	44.267	3.098	0.00	154.18	3.90	0.00	0.000	3.048	0.004	0.687
17	41.833	3.235	0.00	164.09	4.02	0.00	0.000	2.708	0.003	0.645
16	39.400	3.374	0.00	174.26	4.13	0.00	0.000	2.390	0.003	0.603
15	36.967	3.516	0.00	184.70	4.24	0.00	0.000	2.093	0.003	0.561
14	34.533	3.659	0.00	195.40	4.36	0.00	0.000	1.818	0.003	0.518
13	32.100	3.805	0.00	206.35	4.47	0.00	0.000	1.564	0.002	0.475
12	29.667	4.075	0.00	217.57	4.59	0.00	0.000	1.332	0.002	0.432
11	26.750	4.377	0.00	231.36	4.72	0.00	0.000	1.082	0.002	0.386
10	24.075	4.592	0.00	244.34	4.84	0.00	0.000	0.876	0.002	0.347
9	21.400	4.811	0.00	257.63	4.96	0.00	0.000	0.692	0.001	0.309
8	18.725	5.033	0.00	271.21	5.08	0.00	0.000	0.530	0.001	0.270
7	16.050	5.259	0.00	285.07	5.20	0.00	0.000	0.389	0.001	0.231
6	13.375	5.489	0.00	299.22	5.32	0.00	0.000	0.270	0.001	0.192
5	10.700	5.722	0.00	313.65	5.43	0.00	0.000	0.173	0.001	0.154
4	8.025	5.959	0.00	328.35	5.56	0.00	0.000	0.098	0.000	0.115
3	5.350	6.199	0.00	343.34	5.68	0.00	0.000	0.044	0.000	0.077
2	2.675	6.444	0.00	358.60	5.80	0.00	0.000	0.011	0.000	0.038
1	0.000	6.444	0.00	374.15	5.80	0.00	0.000	0.000	0.000	0.000



ROHN Products LLC.

File: 210612 Site: 1 Cycle: 1 Design: 1 Engineer: Stevan_M
Customer: Eastern Shore of VA Broadband Authority
Site: Bloxom, VA
Type: POLE-TPR
Pole: Tapered Steel

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ACTUAL AND ALLOWABLE STRESSES

Table with 9 columns: Node, Elevation (ft), Axial [fa] (ksi), Bending [fb] (ksi), Shear [fv] (ksi), Torsion [ft] (ksi), Combined [Ftot] (ksi), Allowable Stress [Fb] (ksi), Combined Stress Ratio. Rows include nodes 33 through 120 and 121 through 1.



File: 210612 Site: 1 Cycle: 1 Design: 1 Engineer: Stevan_M
Customer: Eastern Shore of VA Broadband Authority
Site: Bloxom, VA
Type: POLE-TPR
Pole: Tapered Steel

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S U M M A R Y O F B A S E P L A T E D E S I G N

P L A T E		A N C H O R B O L T S	
Pole Diameter at Base	= 25.50 in.	Size	= 1.50 in. X 74 in. Long
Plate Diameter	= 34.00 in.	Grade	= F1554 Gr. 105
Plate Thickness	= 2.00 in. ✓		
Plate Weight (Black)	= 339.34 lbs	No. Of Bolts	= 8
Fy	= 50.00 ksi ✓	Bolt Circle	= 30.250 in. ✓
Fu	= 65.00 ksi	Fy	= 105.00 ksi

MAXIMUM POLE REACTIONS:

Axial = 9.60 kips
Moment = 374.15 ft-kips
Shear = 5.87 kips
Torsion = 0.94 ft-kips

ANCHOR BOLTS:

Axial = 62.4 kips/bolt
Moment = 0.5 in-kips/bolt
Shear = 0.8 kips/bolt

DESIGN STRENGTH:

Axial = 141.0 kips/bolt
Moment = 45.1 in-kips/bolt
Shear = 74.6 kips/bolt

ANCHOR BOLT STRESS RATIO = 0.454 < 1.0 OK

PLATE:

Required Thickness = 1.50 in.

PLATE THICKNESS INTERACTION RATIO = 0.750 < 1.0 OK

MIN. Reinforcing WELD SIZE:

Outside = 0.3125 in.
Inside = 0.3125 in.