



STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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[www.ct.gov/csc](http://www.ct.gov/csc)

July 2, 2013

Wes Webber  
Crown Castle  
3530 Toringdon Way  
Suite 300  
Charlotte, NC 28277

RE: **TS-L2-004-130520** – Lightsquared (L2) request for an order to approve the shared use of an existing telecommunications facility located at 376 Deercliff Road, Avon, Connecticut.

Dear Mr. Webber:

At a public meeting held June 27, 2013, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the following conditions:

- Any deviation from the proposed installation as specified in the original tower share request and supporting materials with the Council shall render this decision invalid;
- Any material changes to the proposed installation as specified in the original tower share request and supporting materials filed with the Council shall require an explicit request for modification to the Council pursuant to Connecticut General Statutes § 16-50aa, including all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65;
- Not less than 45 days after completion of the proposed installation, the Council shall be notified in writing that the installation has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

This decision is under the exclusive jurisdiction of the Council. This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated May 20, 2013, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

Very truly yours,

Robert Stein  
Chairman

RS/CDM/jb

c: The Honorable Mark W. Zacchio, Chairman, Town of Avon  
Brandon Robertson, Town Manager, Town of Avon  
Steven V. Kushner, Town Planner, Town of Avon



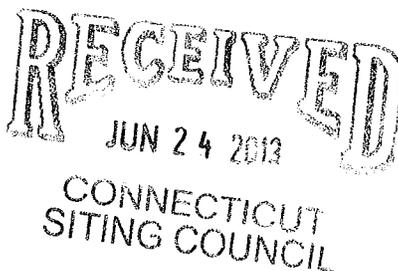


Crown Castle  
3530 Toringdon Way Suite 300  
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Wes Webber  
Tel (704) 405-6591  
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June 21, 2013

Melanie Bachman  
Acting Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051



**RE: Lightsquared Request for Tower Share– Crown Site BU:870800  
Located at 376 Deercliff Rd. Avon, CT 06001**

Ms. Bachman,

Pursuant to Connecticut General Statutes §16-50aa, as amended, Crown Castle hereby requests an order from the Connecticut Siting Council (“Council”) to approve the shared use by Lightsquared of an existing telecommunications tower, owned by Crown Castle, at 376 Deercliff Rd. Avon, CT 06001. Crown Castle requests that the Council find that the proposed shared use of the tower satisfies the criteria of Connecticut General Statutes §16-50aa and issue an order approving the proposed shared use. A copy of this letter is being sent to the Avon Town Manager, Brandon Roberston.

### **Background**

The existing Crown Castle facility consists of a 557-foot guyed-lattice tower with several equipment cabinets and shelters located near the base of the tower. According to the Council’s radio frequency (“RF”) database, the tower is currently shared by T-Mobile at the 76-foot level and 237-foot level, Sprint PCS at the 250-foot level, and USA Mobility and Marcus Communications with multiple installations on the tower.

Lightsquared is licensed by the Federal Communications Commission (“FCC”) to provide wireless services throughout the State of Connecticut. Crown Castle and Lightsquared have agreed to the proposed shared use of the Deercliff Rd. tower pursuant to mutually acceptable terms and conditions and Crown Castle is applying for all necessary permits and approvals that may be required for shared use of this tower.

Lightsquared proposes to install three (3) panel-type antennas at the 557-foot level on the tower. Equipment associated with Lightsquared’s antennas will be located in a 5’ x 5’ lease area. Lightsquared’s concrete pad will be located within this lease area adjacent to the tower. Included with this package are Lightsquared’s project plans showing the location of all site improvements as well as specifications for Lightsquared’s antennas and equipment.

C.G.S. §16-50aa(c)(1) provides that “if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such shared use. Crown Castle respectfully submits that the shared use of the tower satisfies these criteria.

- A. **Technical Feasibility.** The existing tower is structurally capable of supporting Lightsquared’s antennas. The proposed shared use of this tower therefore is technically feasible. A Structural Analysis verifying the structural integrity of the existing tower, including Lightsquared’s antennas and related equipment is attached to this filing.
- B. **Legal Feasibility.** Under C.G.S. §16-50aa, the Council has been authorized to issue orders approving the proposed shared use of an existing tower such as the CDT tower in Stafford. This authority complements the Council’s prior-existing authority under C.G.S. §16-50p to issue orders approving the construction of new towers that are subject to the Council’s jurisdiction. In addition, §16-50x(a) directs the Council to “give such consideration to other state laws and municipal regulations as it shall deem appropriate” in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.
- C. **Environmental Feasibility.** The proposed shared use of the tower would have a minimal environmental effect, for the following reasons:
  - a. The proposed installation would have an insignificant incremental visual impact on the area surrounding the tower. Likewise, the installation of Lightsquared’s equipment would not cause any significant change or alteration in the physical or environmental characteristics of the site. The installation of Lightsquared’s equipment would not require the expansion of the developed portion of the facility compound.
  - b. The proposed installations would not increase the noise levels at the existing facility by six decibels or more.
  - c. Operation of the existing antennas and Lightsquared’s proposed antennas on the tower would not exceed the RF emissions standards adopted by the Federal Communications Commission. The cumulative “worst-case” RF emissions for the operation of the existing Sprint, T-Mobile, USA Mobility and Marcus Communications would be 4.257% of the FCC Standard.
  - d. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or discharges to sanitary facilities on or off the property. After construction is complete, the proposed Lightsquared installations would generate minimal increased traffic to the property, requiring only monthly maintenance visits.

The proposed shared use of the Deerfield Rd. tower would, therefore, have a minimal environmental effect, and is, therefore, environmentally feasible.

- D. **Economic Feasibility.** As previously mentioned, Crown Castle and Lightsquared have entered into an agreement to share the existing tower on mutually agreeable terms. The proposed tower sharing is therefore economically feasible.
- E. **Public Safety Concerns.** As stated above, the tower is structurally capable of supporting all existing antennas, as well as Lightsquared's proposed antennas and related equipment. The provision of new or improved wireless service through shared use of the existing tower is expected to enhance the safety and welfare of area residents.

**Conclusion**

For the reasons discussed above, the proposed shared use of the existing Crown Castle tower at 376 Deerfield Rd. in Avon satisfies the criteria stated in C.G.S. §16-50aa and advances the General Assembly's and the Siting Council's goal of preventing the unnecessary proliferation of tower in Connecticut. The Applicant, therefore, requests that the Council issue an order approving the proposed shared use of the tower.

Thank you for your consideration of this matter.



Wes Webber  
Crown Castle

Copy To:  
Brandon Robertson, Town Manager



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May 20, 2013

Melanie Bachman  
Acting Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

RECEIVED  
MAY 22 2013

CONNECTICUT  
SITING COUNCIL

**RE: Lightsquared Request for Tower Share– Crown Site BU:870800  
Located at 376 Deercliff Rd. Avon, CT 06001**

Ms. Bachman,

Please accept the attachments as an addendum to my submittal received by your office May 20, 2013 for a co-location on behalf of Lightsquared (L2). I erred in submitting an Exempt Modification Package, rather than a Request for Tower Share. Please accept these 12 copies of said application packet to bring my total to Fifteen (15) total sets submitted, per the Request for Tower Share guidelines. Based on my discussion with David Martin, nothing else would be needed to change the application and enter us onto the May 30<sup>th</sup> meeting agenda. Should you need anything else, please do not hesitate to let me know.

This letter and exhibits are submitted on behalf of L2. L2 is co-locating on this site in Connecticut in order to deploy their technology. A copy of this letter and exhibits has been sent to The Honorable Brandon Robertson, Town Manager of the Town of Avon. L2 plans to co-locate on the existing wireless communications facility owned by Crown Castle and located at **376 Deercliff Rd., Avon, CT 06001**. Attached are a compound plan and elevation depicting the planned changes (Exhibit-3), and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration (Exhibit-1). Also included is a power density table report reflecting the modification to L2's operations at the site (Exhibit-2).

Thank you,

Wes Webber  
Crown Castle

- Tab 1: Exhibit-1: Structural Modification Report
- Tab 2: Exhibit-2: General Power Density Table Report (RF Emissions Analysis Report)
- Tab 3: Exhibit-3: Compound plan and elevation depicting the planned changes



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May 20, 2013

The Honorable Mark W. Zacchio  
Chairman Town Council  
Town of Avon  
60 West Main Street  
Avon, CT 06001-3743

RE: **TS-L2-004-130520** – Lightsquared (L2) request for an order to approve the shared used of an existing telecommunications facility located at 376 Deercliff Road, Avon, Connecticut.

Dear Chairman Zacchio:

The Connecticut Siting Council (Council) received a request for tower sharing, pursuant to Connecticut General Statutes § 16-50aa, a copy of which has already been provided to you.

The Council will consider this item at the next meeting scheduled for Thursday, May 30, 2013 at 3:00 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding the proposal, please call me or inform the council by May 29, 2013.

Thank you for your cooperation and consideration.

Very truly yours,

Melanie Bachman  
Acting Executive Director

MAB/CDM/laf

c: Brandon Robertson, Town Manager, Town of Avon  
Steven V. Kushner, Town Planner, Town of Avon



Crown Castle  
3530 Toringdon Way Suite 3C  
Charlotte NC 28277

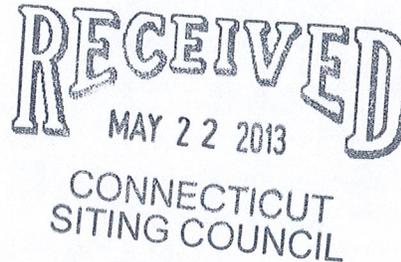
Wes Webber  
Tel (704) 405-6591

TS-L2-004-130520

.com

May 20, 2013

Melanie Bachman  
Acting Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051



**RE: Lightsquared Request for Tower Share– Crown Site BU:870800  
Located at 376 Deercliff Rd. Avon, CT 06001**

Ms. Bachman,

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Thank you,

Wes Webber  
Crown Castle

- Tab 1: Exhibit-1: Structural Modification Report
- Tab 2: Exhibit-2: General Power Density Table Report (RF Emissions Analysis Report)
- Tab 3: Exhibit-3: Compound plan and elevation depicting the planned changes

Exhibit 1  
Structural Analysis Report

Date: **April 26, 2013**

Veronica Harris  
Crown Castle  
1200 McArthur Blvd  
Mahwah, NJ 07430  
(201) 236-9094



GPD Group  
520 South Main Street, Suite 2531  
Akron, OH 44311  
(614) 859-1607  
dpalkovic@gpdgroup.com

**Subject: Structural Analysis Report**

**Carrier Designation:** **LightSquared Co-Locate**  
**Carrier Site Number:** TMUSCNCONN0001  
**Carrier Site Name:** Connecticut I

**Crown Castle Designation:** **Crown Castle BU Number:** 870800  
**Crown Castle Site Name:** Avon (Deercliff Rd.)  
**Crown Castle JDE Job Number:** 229525  
**Crown Castle Work Order Number:** 604037  
**Crown Castle Application Number:** 184970 Rev. 5

**Engineering Firm Designation:** **GPD Group Project Number:** 2013775.870800.04

**Site Data:** **376 Deercliff Road, Avon, CT 06001, Hartford County**  
**Latitude 41° 46' 29.95", Longitude -72° 48' 2.07"**  
**560 Foot – Modified Stainless Guyed Tower**

Dear Ms. Veronica Harris,

GPD Group is pleased to submit this "**Structural Analysis Report**" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 541191, in accordance with application 184970, revision 5.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**  
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code based upon a wind speed of 80 mph fastest mile.

We at GPD Group appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

John N. Kabak, P.E.  
Connecticut #: PEN.0028336

4/26/2013

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## 1) INTRODUCTION

The existing tower is supported on a tapered base and has twenty-two major sections. It has a triangular cross section made of bolted connections, with an "X" frame configuration. The tower is fabricated with solid round legs and diagonals and angle horizontals. It has three guy elevations for a total of nine guy wires.

This tower is a 560 ft Guyed tower designed by STAINLESS INC. in November of 1986. The tower was originally designed for a wind speed of 50 mph per EIA-222-C.

All modifications designed by GPD (Project #: 2007282.88, dated 10/17/2007) were considered in this analysis.

## 2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 37 mph with 1 inch ice thickness and 50 mph under service loads.

**Table 1 - Proposed Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (In)	Note
557.0	557.0	1		Pipe Mount [PM 601-3]	1	1-5/8	1
		3	Kathrein	AP19-1670/090D/DT2			
		1	RFS Celwave	PDS3DE-698/2700			

Notes:

- 1) See Appendix B for proposed coax layout.

**Table 2 - Existing and Reserved Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (In)	Note
518.0	528.0	1	Telewave	ANT150F6	1	1-1/4	
	518.0	1		Side Arm Mount [SO 308-1]			
515.0	515.0	1		Side Arm Mount [SO 307-1]	1	1-5/8	
		1	Andrew	PG1NOF-0093-8			
505.0	505.0	1	Telewave	ANT150F2			
500.0	508.0	1	TX RX Systems	101-68-10-0-03N	1	1-1/4	
	500.0	1		Side Arm Mount [SO 308-1]			
490.0	490.0	1	Andrew	ATW25HS3-HSO-46H	1	4-1/16	
470.0	480.0	1	Telewave	ANT150F6	1	7/8	
	470.0	1		Side Arm Mount [SO 308-1]			
445.0	452.0	1	TX RX Systems	101-68-10-0-03N	1	1-1/4	
	445.0	1		Side Arm Mount [SO 310-1]			
442.0	452.0	2	Telewave	ANT150F6	1	7/8	
	442.0	2		Side Arm Mount [SO 308-1]	1	1-1/4	
422.0	427.0	1	Swedcom	800/1850	1	1-1/4	
		1	TX RX Systems	101D-90-06-0-03			
	422.0	1		Side Arm Mount [SO 308-1]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (In)	Note
395.0	402.0	1	Sinclair	SC233	1	1-1/4	
	395.0	1		Side Arm Mount [SO 304-1]			
330.0	335.0	2	Decibel	DB636-C	2	1-1/4	
	330.0	2		Side Arm Mount [SO 306-1]			
294.0	299.0	1	Decibel	DB636-C	1	7/8	
	294.0	1		Side Arm Mount [SO 306-1]			
289.0	294.0	1	Decibel	DB636-C	1	1-1/4	
	289.0	1		Side Arm Mount [SO 301-1]			
		1		Side Arm Mount [SO 309-1]			
		1	Radiowaves	SPD2-5.8			
271.0	276.0	1	Decibel	DB636-C	1	1-1/4	
	271.0	1		Side Arm Mount [SO 306-1]			
254.0	259.0	1	Decibel	DB810M-XC			
	254.0	1		Side Arm Mount [SO 306-1]			
250.0	251.0	4	Celwave	AP859012-42T0	8	1-5/8	
		4	Decibel	844G65VTZASX			
	250.0	2		Sector Mount [SM 504-1]			
237.0	238.0	2	RFS Celwave	APX16DWV-16DWV-S-E-A20	4	1-5/8	1
		2	RFS Celwave	ATMAA1412D-1A20			
		2	RFS Celwave	ATMPP1412D-1CWA			
		2	EMS Wireless	FR90-16-02DP			
	237.0	2		Sector Mount [SM 401-1]	4	7/8	
219.0	229.0	1	Telewave	ANT150F6	1	7/8	
	219.0	1		Side Arm Mount [SO 307-1]			
214.0	214.0	3	Kathrein	742-213	6	1-5/8	
177.0	187.0	1	Telewave	ANT150F6	1	7/8	
	177.0	1		Side Arm Mount [SO 308-1]			
145.0	145.0	1		Side Arm Mount [SO 202-1]			2
140.0	140.0	1		Side Arm Mount [SO 301-1]	1	1/2	
		1	Radiowaves	SPD2-5.8			
135.0	135.0	1		Side Arm Mount [SO 601-1]	1	1/2	
		1	Radiowaves	SPD2-5.8			
116.0	120.0	1	Celwave	201-8	1	3/8	
91.0	94.0	1	Telewave	ANT150F2	1	1/2	
	91.0	1		Side Arm Mount [SO 309-1]			
76.0	76.0	1	Trimble	Acutime 2000	1	1/2	

- Notes:  
 1) Reserved loading.  
 2) Abandoned.

**Table 3 - Design Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (In)
560	560	1	Andrew	Ch. 18 Wavestar	1	6-1/8
		1	Harris	Ch. 18 Wavestar	1	WR1800
550	550	6		2-Way Antennas	6	7/8
490	490	1		8' Microwave Parabolic Antenna	1	EW64
480	480	6		2-Way Antennas	6	7/8
320	320	1		8' Microwave Parabolic Antenna	1	EW64
315	315	1		4' Microwave Parabolic Antenna	1	EW64
300	300	1		2-Bay FM Antenna	1	3
200	200	1		PR450	1	7/8

### 3) ANALYSIS PROCEDURE

**Table 4 - Documents Provided**

Document	Remarks	Reference	Source
Tower Manufacturer Drawings	Report #: 3290, dated 11/5/86	Doc ID #: 1579694	Crown DMZ
Tower Mapping	Pinnacle Acquisition #: 0236-001, dated 4/14/99	Doc ID #: 1579694	Crown DMZ
Geotechnical Report	United Consulting Project #: 20004476-01, dated 2/8/01	Doc ID #: 1579662	Crown DMZ
Modification Drawings	GPD Associates Project #: 2007282.88, dated 10/11/07	Doc ID #: 2124272	Crown DMZ
Foundation Mapping	Pinnacle Tower Acquisition #: 0263-001, dated 7/30/1999	Doc ID #: 2899235	Crown DMZ
Post Modification Inspection	GPD, Project #: 2007287.82, dated 4/3/2008	Doc ID #: 2899235	Crown DMZ
Previous Analysis	GPD, Project #: 2012775.870800.01, dated 2/1/2012	Doc ID #: 2899235	Crown DMZ

#### 3.1) Analysis Method

tnxTower (version 6.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

### 3.2) Assumptions

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
- 5) Mount sizes, weights, and manufacturers are best estimates based on photos provided and determined without the benefit of a site visit by GPD.
- 6) All member connections and foundation steel reinforcing are assumed designed to meet or exceed the load carrying capacity of the connected member and surrounding soils respectively unless otherwise specified in this report.
- 7) All equipment model numbers, quantities, and centerline elevations are as provided in the CCI CAD package dated 4/23/2013 with any adjustments as noted below.

This analysis may be affected if any assumptions are not valid or have been made in error. GPD Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P allow (K)	% Capacity	Pass / Fail
T1	560 - 535	Leg	4	1	-11.09	336.52	3.3 6.1 (b)	Pass
T2	535 - 510	Leg	4	43	-35.11	336.52	10.4 23.5 (b)	Pass
T3	510 - 485	Leg	4 1/2	85	-66.22	458.51	14.4	Pass
T4	485 - 460	Leg	4 1/2	127	-60.02	458.51	13.1	Pass
T5	460 - 435	Leg	4 1/4	171	-42.12	296.72	14.2	Pass
T6	435 - 410	Leg	4 1/4	213	-45.38	296.72	15.3	Pass
T7	410 - 385	Leg	4 1/4	253	-77.81	395.53	19.7	Pass
T8	385 - 360	Leg	4 1/4	295	-117.95	395.53	29.8	Pass
T9	360 - 335	Leg	4 3/4	337	-172.06	525.46	32.7	Pass
T10	335 - 310	Leg	5 1/4	379	-224.22	671.27	33.4	Pass
T11	310 - 285	Leg	4 3/4	422	-212.55	525.46	40.5	Pass
T12	285 - 260	Leg	4 3/4	464	-169.79	525.46	32.3	Pass
T13	260 - 235	Leg	4 3/4	506	-141.33	525.46	26.9	Pass
T14	235 - 210	Leg	4 3/4	548	-145.88	525.46	27.8	Pass
T15	210 - 185	Leg	5	590	-176.49	596.38	29.6	Pass
T16	185 - 160	Leg	5 1/4	632	-222.34	671.27	33.1	Pass
T17	160 - 135	Leg	5 1/2	674	-242.59	750.12	32.3	Pass
T18	135 - 110	Leg	5 1/4	715	-153.99	503.58	30.6	Pass
T19	110 - 85	Leg	5 1/4	757	-158.83	503.58	31.5	Pass
T20	85 - 60	Leg	5 1/4	799	-163.25	503.58	32.4	Pass
T21	60 - 35	Leg	5 1/4	841	-167.59	503.58	33.3	Pass
T22	35 - 10	Leg	5 1/4	883	-172.08	503.58	34.2	Pass
T23	10 - 0	Leg	5 1/4	925	-191.07	527.35	36.2	Pass
T1	560 - 535	Diagonal	1	10	3.37	22.61	14.9	Pass
T2	535 - 510	Diagonal	1	57	6.04	22.61	26.7	Pass
T3	510 - 485	Diagonal	1 1/4	94	8.17	35.33	23.1 33.0 (b)	Pass
T4	485 - 460	Diagonal	1	163	7.88	22.61	34.8	Pass
T5	460 - 435	Diagonal	5/8	205	4.32	8.83	48.9	Pass
T6	435 - 410	Diagonal	5/8	225	4.41	8.83	49.9	Pass
T7	410 - 385	Diagonal	5/8	267	6.91	8.83	78.2	Pass
T8	385 - 360	Diagonal	3/4	309	9.37	12.72	73.7	Pass
T9	360 - 335	Diagonal	1	346	12.62	22.61	55.8 73.5 (b)	Pass
T10	335 - 310	Diagonal	1 1/4	406	14.64	35.33	41.4 59.2 (b)	Pass
T11	310 - 285	Diagonal	1	457	12.80	22.61	56.6	Pass
T12	285 - 260	Diagonal	5/8	499	8.83	8.83	99.9	Pass
T13	260 - 235	Diagonal	5/8	541	6.05	8.83	68.5	Pass
T14	235 - 210	Diagonal	5/8	556	5.25	8.83	59.5	Pass
T15	210 - 185	Diagonal	7/8	598	9.14	17.31	52.8 83.2 (b)	Pass
T16	185 - 160	Diagonal	1	640	12.91	22.61	57.1	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
							75.2 (b)	
T17	160 - 135	Diagonal	1 1/4	695	12.83	35.33	36.3 51.9 (b)	Pass
T18	135 - 110	Diagonal	1	753	10.95	22.61	48.4	Pass
T19	110 - 85	Diagonal	7/8	795	8.08	17.31	46.7	Pass
T20	85 - 60	Diagonal	7/8	837	5.63	17.31	32.5	Pass
T21	60 - 35	Diagonal	7/8	879	3.28	17.31	18.9	Pass
T22	35 - 10	Diagonal	7/8	893	5.33	17.31	30.8	Pass
T1	560 - 535	Horizontal	2L2 1/2x2 1/2x1/4x3/8	16	-2.31	32.79	7.0	Pass
T2	535 - 510	Horizontal	2L2 1/2x2 1/2x1/4x3/8	59	-4.37	32.79	13.3	Pass
T3	510 - 485	Horizontal	2L2 1/2x2 1/2x1/4x3/8	111	-6.08	33.08	18.4 24.5 (b)	Pass
T4	485 - 460	Horizontal	2L2 1/2x2 1/2x1/4x3/8	160	-5.91	33.08	17.9	Pass
T5	460 - 435	Horizontal	2L2x2x3/16x3/8	202	-3.22	12.87	25.0	Pass
T6	435 - 410	Horizontal	2L2x2x3/16x3/8	228	-3.16	12.87	24.5	Pass
T7	410 - 385	Horizontal	2L2x2x3/16x3/8	270	-5.18	12.87	40.2	Pass
T8	385 - 360	Horizontal	2L2x2x1/4x3/8	312	-7.20	16.49	43.7	Pass
T9	360 - 335	Horizontal	2L2 1/2x2 1/2x1/4x3/8	352	-9.63	33.23	29.0	Pass
T10	335 - 310	Horizontal	2L2 1/2x2 1/2x1/4x3/8	412	-11.38	33.52	34.0 36.0 (b)	Pass
T11	310 - 285	Horizontal	2L2 1/2x2 1/2x1/4x3/8	454	-9.80	33.23	29.5	Pass
T12	285 - 260	Horizontal	2L2 1/2x2x3/16x3/8	496	-6.84	22.90	29.9 31.1 (b)	Pass
T13	260 - 235	Horizontal	2L2 1/2x2x3/16x3/8	540	-3.86	22.90	16.9 17.6 (b)	Pass
T14	235 - 210	Horizontal	2L2 1/2x2x3/16x3/8	562	-3.71	22.90	16.2 16.9 (b)	Pass
T15	210 - 185	Horizontal	2L2 1/2x2x3/16x3/8	604	-6.81	23.00	29.6 31.0 (b)	Pass
T16	185 - 160	Horizontal	2L2 1/2x2 1/2x1/4x3/8	646	-9.91	33.52	29.6	Pass
T17	160 - 135	Horizontal	2L2 1/2x2 1/2x1/4x3/8	707	16.88	42.25	40.0 50.9 (b)	Pass
T18	135 - 110	Horizontal	2L2 1/2x2 1/2x1/4x3/8	749	-8.33	33.52	24.9	Pass
T19	110 - 85	Horizontal	2L2x2x1/4x3/8	791	-6.05	16.85	35.9	Pass
T20	85 - 60	Horizontal	2L2x2x3/16x3/8	833	-4.17	13.16	31.7	Pass
T21	60 - 35	Horizontal	2L2x2x3/16x3/8	865	-2.90	9.87	29.4	Pass
T22	35 - 10	Horizontal	2L2x2x3/16x3/8	898	-2.98	9.87	30.2	Pass
T23	10 - 0	Horizontal	2L3x5x1/2x3/8	929	37.98	162.00	23.4	Pass
T1	560 - 535	Top Girt	2L2 1/2x2 1/2x1/4x3/8	4	-0.36	32.79	1.1	Pass
T2	535 - 510	Top Girt	2L2 1/2x2 1/2x1/4x3/8	46	-1.47	32.79	4.5	Pass
T3	510 - 485	Top Girt	2L2 1/2x2 1/2x1/4x3/8	90	-2.58	33.08	7.8	Pass
T4	485 - 460	Top Girt	2L2 1/2x2 1/2x1/4x3/8	130	-3.22	33.08	9.7	Pass
T5	460 - 435	Top Girt	2L2x2x3/16x3/8	172	-1.50	12.87	11.7	Pass
T6	435 - 410	Top Girt	2L2x2x3/16x3/8	216	-0.82	12.87	6.4	Pass
T7	410 - 385	Top Girt	2L2x2x3/16x3/8	258	-1.90	12.87	14.8	Pass
T8	385 - 360	Top Girt	2L2x2x3/16x3/8	300	-2.95	12.87	22.9	Pass
T9	360 - 335	Top Girt	2L2 1/2x2 1/2x1/4x3/8	340	-4.98	33.23	15.0 22.6 (b)	Pass
T10	335 - 310	Top Girt	2L2 1/2x2 1/2x1/4x3/8	382	-5.39	33.52	16.1	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T11	310 - 285	Top Girt	2L2 1/2x2 1/2x1/4x3/8	424	-5.11	33.23	15.4	Pass
T12	285 - 260	Top Girt	2L2x2 1/2x3/16x3/8	466	-3.25	13.94	23.3	Pass
T13	260 - 235	Top Girt	2L2x2 1/2x3/16x3/8	508	-2.55	13.94	18.3	Pass
T14	235 - 210	Top Girt	2L2x2 1/2x3/16x3/8	552	-0.72	13.94	5.1	Pass
T15	210 - 185	Top Girt	2L2x2 1/2x3/16x3/8	592	-2.50	14.02	17.9	Pass
T16	185 - 160	Top Girt	2L2 1/2x2 1/2x1/4x3/8	634	-4.66	33.52	13.9	Pass
T17	160 - 135	Top Girt	2L2 1/2x2 1/2x1/4x3/8	676	-4.80	33.67	14.3	Pass
T18	135 - 110	Top Girt	2L2 1/2x2 1/2x1/4x3/8	720	-4.66	33.52	13.9	Pass
T19	110 - 85	Top Girt	2L2x2x1/4x3/8	761	-3.05	16.85	18.1	Pass
T20	85 - 60	Top Girt	2L2x2x3/16x3/8	803	-2.10	13.16	15.9	Pass
T21	60 - 35	Top Girt	2L2x2x3/16x3/8	845	-1.47	13.16	11.1	Pass
T22	35 - 10	Top Girt	2L2x2x3/16x3/8	886	-1.23	13.16	9.3	Pass
T1	560 - 535	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	7	-1.43	32.79	4.4	Pass
T2	535 - 510	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	51	-2.53	32.79	7.7	Pass
T3	510 - 485	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	91	-3.07	33.08	9.3	Pass
T4	485 - 460	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	133	-2.46	33.08	7.4	Pass
T5	460 - 435	Bottom Girt	2L2x2x3/16x3/8	177	-0.79	12.87	6.2	Pass
T6	435 - 410	Bottom Girt	2L2x2x3/16x3/8	219	-1.87	12.87	14.5	Pass
T7	410 - 385	Bottom Girt	2L2x2x3/16x3/8	261	-2.94	12.87	22.8	Pass
T8	385 - 360	Bottom Girt	2L2x2x3/16x3/8	303	-3.03	12.87	23.5	Pass
T9	360 - 335	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	343	-5.32	33.23	16.0 24.2 (b)	Pass
T10	335 - 310	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	385	-4.84	33.52	14.4	Pass
T11	310 - 285	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	427	-4.72	33.23	14.2	Pass
T12	285 - 260	Bottom Girt	2L2x2 1/2x3/16x3/8	469	-2.59	13.94	18.6	Pass
T13	260 - 235	Bottom Girt	2L2x2 1/2x3/16x3/8	513	-0.74	13.94	5.3	Pass
T14	235 - 210	Bottom Girt	2L2x2 1/2x3/16x3/8	553	-2.45	13.94	17.6	Pass
T15	210 - 185	Bottom Girt	2L2x2 1/2x3/16x3/8	595	-3.21	14.02	22.9	Pass
T16	185 - 160	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	637	-5.17	33.52	15.4	Pass
T17	160 - 135	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	681	-4.70	33.67	14.0	Pass
T18	135 - 110	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	722	-3.86	33.52	11.5	Pass
T19	110 - 85	Bottom Girt	2L2x2x1/4x3/8	764	-2.76	16.85	16.4	Pass
T20	85 - 60	Bottom Girt	2L2x2x3/16x3/8	806	-1.49	13.16	11.3	Pass
T21	60 - 35	Bottom Girt	2L2x2x3/16x3/8	847	-1.21	13.16	9.2	Pass
T22	35 - 10	Bottom Girt	2L2x2x3/16x3/8	890	7.85	23.97	32.7 33.1 (b)	Pass
T3	510 - 485	Guy A@491.292	1 1/4	939	59.92	96.00	62.4	Pass
T10	335 - 310	Guy A@316.292	1 1/2	945	67.36	138.00	48.8	Pass
T17	160 - 135	Guy A@153.708	1 3/4	951	62.01	188.00	33.0	Pass
T3	510 - 485	Guy B@491.292	1 1/4	938	59.28	96.00	61.8	Pass
T10	335 - 310	Guy B@316.292	1 1/2	944	66.44	138.00	48.1	Pass
T17	160 - 135	Guy B@153.708	1 3/4	950	61.06	188.00	32.5	Pass
T3	510 - 485	Guy C@491.292	1 1/4	934	60.82	96.00	63.3	Pass
T10	335 - 310	Guy C@316.292	1 1/2	940	68.54	138.00	49.7	Pass
T17	160 - 135	Guy C@153.708	1 3/4	946	63.39	188.00	33.7	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T3	510 - 485	Top Guy Pull-Off@491.292	L2 1/2x2 1/2x1/4	936	2.16	25.70	24.3	Pass
T10	335 - 310	Top Guy Pull-Off@316.292	L2 1/2x2 1/2x1/4	942	4.35	25.70	32.0	Pass
T17	160 - 135	Top Guy Pull-Off@153.708	L2 1/2x2 1/2x1/4	948	8.44	25.70	46.8	Pass
						Summary	ELC:	Load Case 7
						Leg (T11)	40.5	Pass
						Diagonal (T12)	99.9	Pass
						Horizontal (T17)	50.9	Pass
						Top Girt (T12)	23.3	Pass
						Bottom Girt (T22)	33.1	Pass
						Guy A (T3)	62.4	Pass
						Guy B (T3)	61.8	Pass
						Guy C (T3)	63.3	Pass
						Top Guy Pull-Off (T17)	46.8	Pass
						Bolt Checks	83.2	Pass
						Rating =	99.9	Pass

**Table 6 - Tower Component Stresses vs. Capacity – LC7**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Base Foundation	0	46.7	Pass
1, 2	Guy Anchor Foundation	0	50.8	Pass

<b>Structure Rating (max from all components) =</b>	<b>99.9%</b>
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Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) Foundation capacity determined by comparing analysis reactions to original design reactions.

**4.1) Recommendations**

The existing tower and foundations designs are sufficient for the proposed loading and will not require modification.

## 5) DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

**APPENDIX A**  
**TNXTOWER OUTPUT**





<b>tnxTower</b>  <b>GPD Group</b> 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 573-2100 FAX: (330) 573-2101	<b>Job</b> Avon (Deercliff Rd.) - BU #: 870800	<b>Page</b> 1 of 31
	<b>Project</b> 2013775.870800.04	<b>Date</b> 12:53:13 04/26/13
	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

## Tower Input Data

The main tower is a 3x guyed tower with an overall height of 560.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 8.00 ft at the top and tapered at the base.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in Hartford County, Connecticut.

Basic wind speed of 80 mph.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 37 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 50 mph.

Pressures are calculated at each section.

Safety factor used in guy design is 2.

Stress ratio used in tower member design is 1.333.

Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

## Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	√ Assume Rigid Index Plate	√ Calculate Redundant Bracing Forces
Use Moment Magnification	√ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	√ All Leg Panels Have Same Allowable
√ Escalate Ice	Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	√ Include Angle Block Shear Check
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	SR Members Have Cut Ends	Include Shear-Torsion Interaction
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Always Use Sub-Critical Flow
√ Use Diamond Inner Bracing (4 Sided)	√ Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination		

## Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow or Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
MACX450-1(4-1/16)	A	Yes	Ar (CfAe)	495.00 - 8.00	-8.0000	0.1	1	1	4.0620	4.0620		4.16
T-Bracket	A	Yes	Af (CfAe)	250.00 - 8.00	-4.0000	0.43	1	1	0.5000	2.0000	6.0000	10.00
LDF7-50A (1-5/8 FOAM)	A	Yes	Ar (CfAe)	250.00 - 8.00	-4.0000	0.43	8	4	0.5000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	B	Yes	Ar (CfAe)	515.00 - 8.00	-8.0000	0.12	1	1	0.5000	1.9800		0.82
T-Bracket	B	Yes	Af (CfAe)	500.00 - 8.00	-4.0000	0.43	1	1	0.5000	2.0000	6.0000	10.00
CR 50 1873 (1-5/8 FOAM)	B	Yes	Ar (CfAe)	214.00 - 8.00	-4.0000	0.43	6	3	0.5000	1.9800		0.83
FXL 1873 PE (1-5/8")	B	Yes	Ar (CfAe)	557.00 - 8.00	-3.0000	0.42	1	1	1.0000	1.9800		0.67
FSJ4-50B (1/2	B	Yes	Ar (CfAe)	135.00 - 8.00	-6.0000	0.4	2	2	0.5200	0.5200		0.14

<b><i>tnxTower</i></b>  <b>GPD Group</b> 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 573-2100 FAX: (330) 573-2101	<b>Job</b>	Avon (Deercliff Rd.) - BU #: 870800	<b>Page</b>	2 of 31
	<b>Project</b>	2013775.870800.04	<b>Date</b>	12:53:13 04/26/13
	<b>Client</b>	Crown Castle USA, Inc.	<b>Designed by</b>	jhuffine

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
SUFERFLEX. FOAM)												
FSJ4-50B (1/2 SUFERFLEX. FOAM)	B	Yes	Ar (CfAe)	300.00 - 135.00	-6.0000	0.4	1	1	0.5200	0.5200		0.14
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	422.00 - 8.00	-1.0000	-0.33	3	3	1.0000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	445.00 - 422.00	-1.0000	-0.33	2	2	1.0000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	500.00 - 445.00	-1.0000	-0.33	1	1	1.0000	1.5500		0.66
Climbing Ladder (CCI)	C	Yes	Af (CfAe)	560.00 - 8.00	-15.0000	-0.3	1	1	3.8400	3.8400	15.3600	4.81
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	395.00 - 8.00	-1.0000	-0.15	1	1	1.0000	1.5500		0.66
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	177.00 - 8.00	-1.0000	-0.1	2	2	1.0000	1.0900		0.33
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	442.00 - 177.00	-1.0000	-0.1	1	1	1.0000	1.0900		0.33
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	518.00 - 8.00	-8.0000	-0.1	1	1	1.0000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	442.00 - 8.00	-6.0000	-0.08	1	1	1.0000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	300.00 - 8.00	-5.0000	-0.02	3	1	1.0000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	330.00 - 300.00	-5.0000	-0.02	2	1	1.0000	1.5500		0.66
LDF4-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	91.00 - 8.00	-2.0000	0.02	1	1	0.6300	0.6300		0.15
EW52	C	Yes	Af (CfAe)	145.00 - 8.00	-4.0000	0.04	1	1	1.0000	1.7426	5.5505	0.59
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	219.00 - 8.00	-2.0000	0.15	2	1	1.0000	1.0900		0.33
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	303.00 - 219.00	-1.0000	0.15	1	1	1.0000	1.0900		0.33
1" Rigid Conduit	C	Yes	Ar (CfAe)	560.00 - 8.00	-1.0000	0.18	1	1	1.0000	1.0000		0.50
LDF4P-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	140.00 - 8.00	-4.0000	0.16	4	4	0.6300	0.6300		0.15
LDF4P-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	163.00 - 140.00	-4.0000	0.16	3	3	0.6300	0.6300		0.15
LDF4P-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	422.00 - 163.00	-4.0000	0.16	2	2	0.6300	0.6300		0.15
LDF4P-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	463.00 - 422.00	-4.0000	0.16	1	1	0.6300	0.6300		0.15
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	470.00 - 8.00	-2.0000	0.43	1	1	1.0900	1.0900		0.33
LDF2-50 (3/8 FOAM)	C	Yes	Ar (CfAe)	116.00 - 8.00	-2.0000	0.43	1	1	0.4400	0.4400		0.08
T-Bracket	C	Yes	Af (CfAe)	470.00 - 8.00	-4.0000	0.43	1	1	0.5000	2.0000	6.0000	10.00
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	237.00 - 8.00	-4.0000	0.4	4	4	0.5000	1.0900		0.33
LDF4-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	76.00 - 8.00	-6.0000	0.4	1	1	0.6300	0.6300		0.15
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CfAe)	237.00 - 8.00	-5.0000	0.4	4	4	0.5000	1.9800		0.82

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	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>A</sub> Front	C <sub>A</sub> A <sub>A</sub> Side	Weight
			Horz	Lateral					
4' Lightning Rod	C	From Leg	0.00	0.00	0.0000	560.00	No Ice	0.10	0.11
							1/2" Ice	0.51	0.11
							1" Ice	0.89	0.11
							2" Ice	1.41	0.13
							4" Ice	2.57	0.20
Flash Beacon Lighting	C	From Leg	0.00	0.00	0.0000	560.00	No Ice	2.70	0.05
							1/2" Ice	3.10	0.07
							1" Ice	3.50	0.09
							2" Ice	4.30	0.13
							4" Ice	5.90	0.21
Pipe Mount [PM 601-3]	C	None			0.0000	557.00	No Ice	4.39	0.20
							1/2" Ice	5.48	0.24
							1" Ice	6.57	0.28
							2" Ice	8.75	0.36
							4" Ice	13.11	0.53
AP19-1670/090D/DT2	A	From Leg	1.00	0.00	0.0000	557.00	No Ice	7.44	0.02
							1/2" Ice	8.06	0.05
							1" Ice	8.68	0.09
							2" Ice	9.96	0.19
							4" Ice	12.59	0.49
AP19-1670/090D/DT2	B	From Leg	1.00	0.00	0.0000	557.00	No Ice	7.44	0.02
							1/2" Ice	8.06	0.05
							1" Ice	8.68	0.09
							2" Ice	9.96	0.19
							4" Ice	12.59	0.49
AP19-1670/090D/DT2	C	From Leg	1.00	0.00	0.0000	557.00	No Ice	7.44	0.02
							1/2" Ice	8.06	0.05
							1" Ice	8.68	0.09
							2" Ice	9.96	0.19
							4" Ice	12.59	0.49
PDS3DE-698/2700	A	From Leg	1.00	0.00	0.0000	557.00	No Ice	0.24	0.00
							1/2" Ice	0.32	0.00
							1" Ice	0.42	0.01
							2" Ice	0.62	0.01
							4" Ice	1.15	0.05
Platform w/ Handrail	B	From Face	0.00	0.00	0.0000	545.00	No Ice	12.00	0.05
							1/2" Ice	17.00	0.08
							1" Ice	22.00	0.11
							2" Ice	32.00	0.17
							4" Ice	52.00	0.29
Side Arm Mount [SO 308-1]	A	From Leg	3.00	0.00	0.0000	518.00	No Ice	0.98	0.05
							1/2" Ice	1.70	0.08
							1" Ice	2.42	0.10
							2" Ice	3.86	0.16
							4" Ice	6.74	0.26
ANT150F6	A	From Leg	6.00	0.00	0.0000	518.00	No Ice	4.80	0.03
							1/2" Ice	6.83	0.07
							1" Ice	8.87	0.11
							2" Ice	13.01	0.25
							4" Ice	21.03	0.68
Side Arm Mount [SO 307-1]	C	From Leg	2.00	0.00	0.0000	515.00	No Ice	0.98	0.05
							1/2" Ice	1.70	0.07
							1" Ice	2.42	0.09
							2" Ice	3.86	0.14

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	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>A</sub>		Weight
			Horz	Lateral			Front	Side	
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K
PG1NOF-0093-8	C	From Leg	4.00	0.0000	515.00	4" Ice	6.74	17.80	0.23
			0.00	No Ice		2.98	2.98	0.03	
			0.00	1/2" Ice		4.01	4.01	0.05	
			0.00	1" Ice		4.99	4.99	0.08	
			0.00	2" Ice		6.22	6.22	0.15	
ANT150F2	A	From Leg	2.00	0.0000	505.00	4" Ice	8.78	8.78	0.39
			0.00	No Ice		1.29	1.29	0.01	
			0.00	1/2" Ice		1.60	1.60	0.02	
			0.00	1" Ice		1.91	1.91	0.04	
			0.00	2" Ice		2.57	2.57	0.07	
Side Arm Mount [SO 308-1]	C	From Leg	3.00	0.0000	500.00	4" Ice	4.06	4.06	0.20
			0.00	No Ice		0.98	3.03	0.05	
			0.00	1/2" Ice		1.70	5.22	0.08	
			0.00	1" Ice		2.42	7.41	0.10	
			0.00	2" Ice		3.86	11.79	0.16	
101-68-10-0-03N	C	From Leg	6.00	0.0000	500.00	4" Ice	6.74	20.55	0.26
			0.00	No Ice		5.48	5.48	0.07	
			0.00	1/2" Ice		7.09	7.09	0.11	
			8.00	1" Ice		8.71	8.71	0.16	
			0.00	2" Ice		12.00	12.00	0.29	
ATW25HS3-HSO-46H	A	From Leg	1.00	0.0000	490.00	4" Ice	16.02	16.02	0.67
			0.00	No Ice		36.16	36.16	0.48	
			0.00	1/2" Ice		40.42	40.42	0.72	
			0.00	1" Ice		44.69	44.69	0.98	
			0.00	2" Ice		53.30	53.30	1.58	
Side Arm Mount [SO 308-1]	C	From Leg	3.00	0.0000	470.00	4" Ice	70.71	70.71	3.12
			0.00	No Ice		0.98	3.03	0.05	
			0.00	1/2" Ice		1.70	5.22	0.08	
			0.00	1" Ice		2.42	7.41	0.10	
			0.00	2" Ice		3.86	11.79	0.16	
ANT150F6	C	From Leg	6.00	0.0000	470.00	4" Ice	6.74	20.55	0.26
			0.00	No Ice		4.80	4.80	0.03	
			10.00	1/2" Ice		6.83	6.83	0.07	
			0.00	1" Ice		8.87	8.87	0.11	
			0.00	2" Ice		13.01	13.01	0.25	
Side Arm Mount [SO 310-1]	C	From Leg	3.00	0.0000	445.00	4" Ice	21.03	21.03	0.68
			0.00	No Ice		2.97	2.99	0.06	
			0.00	1/2" Ice		4.40	4.58	0.08	
			0.00	1" Ice		5.83	6.17	0.11	
			0.00	2" Ice		8.69	9.35	0.17	
101-68-10-0-03N	C	From Leg	6.00	0.0000	445.00	4" Ice	14.41	15.71	0.28
			0.00	No Ice		5.48	5.48	0.07	
			0.00	1/2" Ice		7.09	7.09	0.11	
			7.00	1" Ice		8.71	8.71	0.16	
			0.00	2" Ice		12.00	12.00	0.29	
Side Arm Mount [SO 308-1]	A	From Leg	2.00	0.0000	442.00	4" Ice	16.02	16.02	0.67
			0.00	No Ice		0.98	3.03	0.05	
			0.00	1/2" Ice		1.70	5.22	0.08	
			0.00	1" Ice		2.42	7.41	0.10	
			0.00	2" Ice		3.86	11.79	0.16	
Side Arm Mount [SO 308-1]	B	From Leg	2.00	0.0000	442.00	4" Ice	6.74	20.55	0.26
			0.00	No Ice		0.98	3.03	0.05	
			0.00	1/2" Ice		1.70	5.22	0.08	
			0.00	1" Ice		2.42	7.41	0.10	
			0.00	2" Ice		3.86	11.79	0.16	
ANT150F6	A	From Leg	4.00	0.0000	442.00	4" Ice	6.74	20.55	0.26
			0.00	No Ice		4.80	4.80	0.03	
			0.00	No Ice		4.80	4.80	0.03	

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	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
			0.00			1/2" Ice 6.83	6.83	0.07
			10.00			1" Ice 8.87	8.87	0.11
						2" Ice 13.01	13.01	0.25
						4" Ice 21.03	21.03	0.68
ANT150F6	B	From Leg	4.00	0.0000	442.00	No Ice 4.80	4.80	0.03
			0.00			1/2" Ice 6.83	6.83	0.07
			10.00			1" Ice 8.87	8.87	0.11
						2" Ice 13.01	13.01	0.25
						4" Ice 21.03	21.03	0.68
Side Arm Mount [SO 308-1]	C	From Leg	3.00	0.0000	422.00	No Ice 0.98	3.03	0.05
			0.00			1/2" Ice 1.70	5.22	0.08
			0.00			1" Ice 2.42	7.41	0.10
						2" Ice 3.86	11.79	0.16
						4" Ice 6.74	20.55	0.26
101D-90-06-0-03 w/Mount Pipe	C	From Leg	6.00	0.0000	422.00	No Ice 5.83	7.50	0.07
			0.00			1/2" Ice 6.98	9.37	0.12
			5.00			1" Ice 8.15	10.97	0.18
						2" Ice 9.61	13.32	0.33
						4" Ice 12.61	18.18	0.82
SFCP 800/1850 TMA	C	From Leg	6.00	0.0000	422.00	No Ice 1.02	0.29	0.00
			0.00			1/2" Ice 1.16	0.39	0.01
			5.00			1" Ice 1.31	0.50	0.02
						2" Ice 1.63	0.74	0.04
						4" Ice 2.37	1.32	0.11
Side Arm Mount [SO 304-1]	B	From Leg	1.00	0.0000	395.00	No Ice 0.63	0.94	0.02
			0.00			1/2" Ice 1.00	1.45	0.03
			0.00			1" Ice 1.37	1.96	0.04
						2" Ice 2.11	2.98	0.06
						4" Ice 3.59	5.02	0.09
SC233	B	From Leg	2.00	0.0000	395.00	No Ice 1.81	1.81	0.00
			0.00			1/2" Ice 3.04	3.04	0.02
			7.00			1" Ice 4.29	4.29	0.04
						2" Ice 6.83	6.83	0.11
						4" Ice 10.12	10.12	0.35
Side Arm Mount [SO 306-1]	A	From Leg	1.00	0.0000	330.00	No Ice 0.98	2.18	0.04
			0.00			1/2" Ice 1.70	3.80	0.06
			0.00			1" Ice 2.42	5.42	0.08
						2" Ice 3.86	8.66	0.12
						4" Ice 6.74	15.14	0.20
Side Arm Mount [SO 306-1]	C	From Leg	1.00	0.0000	330.00	No Ice 0.98	2.18	0.04
			0.00			1/2" Ice 1.70	3.80	0.06
			0.00			1" Ice 2.42	5.42	0.08
						2" Ice 3.86	8.66	0.12
						4" Ice 6.74	15.14	0.20
DB636-C	A	From Leg	2.00	0.0000	330.00	No Ice 2.51	2.51	0.03
			0.00			1/2" Ice 3.59	3.59	0.05
			5.00			1" Ice 4.68	4.68	0.07
						2" Ice 6.30	6.30	0.15
						4" Ice 8.97	8.97	0.38
DB636-C	C	From Leg	2.00	0.0000	330.00	No Ice 2.51	2.51	0.03
			0.00			1/2" Ice 3.59	3.59	0.05
			5.00			1" Ice 4.68	4.68	0.07
						2" Ice 6.30	6.30	0.15
						4" Ice 8.97	8.97	0.38
Flash Beacon Lighting	A	From Leg	0.00	0.0000	312.00	No Ice 2.70	2.70	0.05
			0.00			1/2" Ice 3.10	3.10	0.07
			0.00			1" Ice 3.50	3.50	0.09

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	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>A</sub> Front	C <sub>A</sub> A <sub>A</sub> Side	Weight
			Horz Lateral	Vert					
Flash Beacon Lighting	B	From Leg	0.00	0.0000	312.00	2" Ice	4.30	4.30	0.13
						4" Ice	5.90	5.90	0.21
						No Ice	2.70	2.70	0.05
						1/2" Ice	3.10	3.10	0.07
						1" Ice	3.50	3.50	0.09
Flash Beacon Lighting	C	From Leg	0.00	0.0000	312.00	2" Ice	4.30	4.30	0.13
						4" Ice	5.90	5.90	0.21
						No Ice	2.70	2.70	0.05
						1/2" Ice	3.10	3.10	0.07
						1" Ice	3.50	3.50	0.09
Side Arm Mount [SO 306-1]	C	From Leg	1.00	0.0000	294.00	2" Ice	4.30	4.30	0.13
						4" Ice	5.90	5.90	0.21
						No Ice	0.98	2.18	0.04
						1/2" Ice	1.70	3.80	0.06
						1" Ice	2.42	5.42	0.08
DB636-C	C	From Leg	2.00	0.0000	294.00	2" Ice	3.86	8.66	0.12
						4" Ice	6.74	15.14	0.20
						No Ice	2.51	2.51	0.03
						1/2" Ice	3.59	3.59	0.05
						1" Ice	4.68	4.68	0.07
Side Arm Mount [SO 301-1]	A	From Leg	1.00	0.0000	289.00	2" Ice	6.30	6.30	0.15
						4" Ice	8.97	8.97	0.38
						No Ice	1.00	0.90	0.02
						1/2" Ice	1.39	1.42	0.03
						1" Ice	1.78	1.94	0.04
DB636-C	A	From Leg	2.00	0.0000	289.00	2" Ice	2.56	2.98	0.06
						4" Ice	4.12	5.06	0.10
						No Ice	2.51	2.51	0.03
						1/2" Ice	3.59	3.59	0.05
						1" Ice	4.68	4.68	0.07
Side Arm Mount [SO 309-1]	C	From Leg	1.00	0.0000	289.00	2" Ice	6.30	6.30	0.15
						4" Ice	8.97	8.97	0.38
						No Ice	2.82	2.20	0.04
						1/2" Ice	4.07	3.16	0.06
						1" Ice	5.32	4.12	0.08
Side Arm Mount [SO 306-1]	C	From Leg	1.00	0.0000	271.00	2" Ice	7.82	6.04	0.13
						4" Ice	12.82	9.88	0.22
						No Ice	0.98	2.18	0.04
						1/2" Ice	1.70	3.80	0.06
						1" Ice	2.42	5.42	0.08
DB636-C	C	From Leg	2.00	0.0000	271.00	2" Ice	3.86	8.66	0.12
						4" Ice	6.74	15.14	0.20
						No Ice	2.51	2.51	0.03
						1/2" Ice	3.59	3.59	0.05
						1" Ice	4.68	4.68	0.07
Side Arm Mount [SO 306-1]	A	From Leg	2.00	0.0000	254.00	2" Ice	6.30	6.30	0.15
						4" Ice	8.97	8.97	0.38
						No Ice	0.98	2.18	0.04
						1/2" Ice	1.70	3.80	0.06
						1" Ice	2.42	5.42	0.08
DB810M-XC	A	From Leg	4.00	0.0000	254.00	2" Ice	3.86	8.66	0.12
						4" Ice	6.74	15.14	0.20
						No Ice	2.12	2.12	0.03
						1/2" Ice	3.14	3.14	0.05
						1" Ice	4.18	4.18	0.07
						2" Ice	5.77	5.77	0.13
						4" Ice	8.32	8.32	0.35

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>A</sub> A <sub>1</sub> Front ft <sup>2</sup>	C <sub>A</sub> A <sub>2</sub> Side ft <sup>2</sup>	Weight K	
Sector Mount [SM 504-1]	B	From Leg	2.00	0.0000	250.00	No Ice	16.44	14.00	0.57
			0.00			1/2" Ice	22.73	20.81	0.76
			0.00			1" Ice	29.02	27.62	0.95
						2" Ice	41.60	41.24	1.34
						4" Ice	66.76	68.48	2.11
Sector Mount [SM 504-1]	C	From Leg	2.00	0.0000	250.00	No Ice	16.44	14.00	0.57
			0.00			1/2" Ice	22.73	20.81	0.76
			0.00			1" Ice	29.02	27.62	0.95
						2" Ice	41.60	41.24	1.34
						4" Ice	66.76	68.48	2.11
(4) 844G65VTZASX w/Mount Pipe	B	From Leg	4.00	0.0000	250.00	No Ice	6.55	5.63	0.04
			0.00			1/2" Ice	7.25	6.73	0.10
			1.00			1" Ice	7.85	7.54	0.16
						2" Ice	9.06	9.21	0.31
						4" Ice	11.64	12.75	0.74
(4) AP859012-42T0 w/Mount Pipe	C	From Leg	4.00	0.0000	250.00	No Ice	3.58	5.40	0.03
			0.00			1/2" Ice	4.20	6.49	0.07
			1.00			1" Ice	4.73	7.30	0.12
						2" Ice	5.86	8.96	0.25
						4" Ice	8.27	12.49	0.61
Sector Mount [SM 401-1]	A	From Leg	2.00	0.0000	237.00	No Ice	8.83	7.05	0.27
			0.00			1/2" Ice	12.37	10.13	0.39
			0.00			1" Ice	15.91	13.21	0.51
						2" Ice	22.99	19.37	0.75
						4" Ice	37.15	31.69	1.23
Sector Mount [SM 401-1]	C	From Leg	2.00	0.0000	237.00	No Ice	8.83	7.05	0.27
			0.00			1/2" Ice	12.37	10.13	0.39
			0.00			1" Ice	15.91	13.21	0.51
						2" Ice	22.99	19.37	0.75
						4" Ice	37.15	31.69	1.23
FR90-16-02DP w/Mount Pipe	A	From Leg	4.00	0.0000	237.00	No Ice	4.91	3.64	0.04
			0.00			1/2" Ice	5.57	4.70	0.08
			1.00			1" Ice	6.14	5.48	0.13
						2" Ice	7.32	7.08	0.25
						4" Ice	9.81	10.47	0.61
FR90-16-02DP w/Mount Pipe	C	From Leg	4.00	0.0000	237.00	No Ice	4.91	3.64	0.04
			0.00			1/2" Ice	5.57	4.70	0.08
			1.00			1" Ice	6.14	5.48	0.13
						2" Ice	7.32	7.08	0.25
						4" Ice	9.81	10.47	0.61
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	A	From Leg	4.00	0.0000	237.00	No Ice	6.84	3.19	0.06
			0.00			1/2" Ice	7.31	3.82	0.10
			1.00			1" Ice	7.78	4.46	0.15
						2" Ice	8.77	5.80	0.28
						4" Ice	10.85	8.73	0.63
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	C	From Leg	4.00	0.0000	237.00	No Ice	6.84	3.19	0.06
			0.00			1/2" Ice	7.31	3.82	0.10
			1.00			1" Ice	7.78	4.46	0.15
						2" Ice	8.77	5.80	0.28
						4" Ice	10.85	8.73	0.63
ATMAA1412D-1A20	A	From Leg	4.00	0.0000	237.00	No Ice	1.17	0.47	0.01
			0.00			1/2" Ice	1.31	0.57	0.02
			1.00			1" Ice	1.47	0.69	0.03
						2" Ice	1.81	0.95	0.06
						4" Ice	2.58	1.57	0.14
ATMAA1412D-1A20	C	From Leg	4.00	0.0000	237.00	No Ice	1.17	0.47	0.01
			0.00			1/2" Ice	1.31	0.57	0.02

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	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight
			Horz	Lateral					
			ft	ft					
			1.00				1" Ice 1.47	0.69	0.03
							2" Ice 1.81	0.95	0.06
							4" Ice 2.58	1.57	0.14
ATMPP1412D-1CWA	A	From Leg	4.00	0.0000	237.00	No Ice 1.17	0.47	0.01	
			0.00			1/2" Ice 1.31	0.57	0.02	
			1.00			1" Ice 1.47	0.69	0.03	
						2" Ice 1.81	0.95	0.06	
						4" Ice 2.58	1.57	0.14	
ATMPP1412D-1CWA	C	From Leg	4.00	0.0000	237.00	No Ice 1.17	0.47	0.01	
			0.00			1/2" Ice 1.31	0.57	0.02	
			1.00			1" Ice 1.47	0.69	0.03	
						2" Ice 1.81	0.95	0.06	
						4" Ice 2.58	1.57	0.14	
Side Arm Mount [SO 307-1]	C	From Leg	1.00	0.0000	219.00	No Ice 0.98	2.60	0.05	
			0.00			1/2" Ice 1.70	4.50	0.07	
			0.00			1" Ice 2.42	6.40	0.09	
						2" Ice 3.86	10.20	0.14	
						4" Ice 6.74	17.80	0.23	
ANT150F6	C	From Leg	2.00	0.0000	219.00	No Ice 4.80	4.80	0.03	
			0.00			1/2" Ice 6.83	6.83	0.07	
			10.00			1" Ice 8.87	8.87	0.11	
						2" Ice 13.01	13.01	0.25	
						4" Ice 21.03	21.03	0.68	
742-213 w/Mount Pipe	A	From Leg	2.00	0.0000	214.00	No Ice 5.42	4.63	0.05	
			0.00			1/2" Ice 5.95	6.02	0.09	
			0.00			1" Ice 6.47	6.93	0.14	
						2" Ice 7.54	8.78	0.27	
						4" Ice 9.76	12.68	0.68	
742-213 w/Mount Pipe	B	From Leg	2.00	0.0000	214.00	No Ice 5.42	4.63	0.05	
			0.00			1/2" Ice 5.95	6.02	0.09	
			0.00			1" Ice 6.47	6.93	0.14	
						2" Ice 7.54	8.78	0.27	
						4" Ice 9.76	12.68	0.68	
742-213 w/Mount Pipe	C	From Leg	2.00	0.0000	214.00	No Ice 5.42	4.63	0.05	
			0.00			1/2" Ice 5.95	6.02	0.09	
			0.00			1" Ice 6.47	6.93	0.14	
						2" Ice 7.54	8.78	0.27	
						4" Ice 9.76	12.68	0.68	
Side Arm Mount [SO 308-1]	B	From Leg	2.00	0.0000	177.00	No Ice 0.98	3.03	0.05	
			0.00			1/2" Ice 1.70	5.22	0.08	
			0.00			1" Ice 2.42	7.41	0.10	
						2" Ice 3.86	11.79	0.16	
						4" Ice 6.74	20.55	0.26	
ANT150F6	B	From Leg	4.00	0.0000	177.00	No Ice 4.80	4.80	0.03	
			0.00			1/2" Ice 6.83	6.83	0.07	
			10.00			1" Ice 8.87	8.87	0.11	
						2" Ice 13.01	13.01	0.25	
						4" Ice 21.03	21.03	0.68	
Side Light	A	From Leg	0.00	0.0000	157.00	No Ice 0.33	0.33	0.01	
			0.00			1/2" Ice 0.47	0.47	0.01	
			0.00			1" Ice 0.60	0.60	0.01	
						2" Ice 0.87	0.87	0.01	
						4" Ice 1.40	1.40	0.01	
Side Light	B	From Leg	0.00	0.0000	157.00	No Ice 0.33	0.33	0.01	
			0.00			1/2" Ice 0.47	0.47	0.01	
			0.00			1" Ice 0.60	0.60	0.01	
						2" Ice 0.87	0.87	0.01	

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	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>A</sub> Front	C <sub>A</sub> A <sub>A</sub> Side	Weight
			Horz	Lateral					
			ft	ft					
Side Arm Mount [SO 202-1]	B	From Leg	1.00	0.0000	145.00	4" Ice	1.40	1.40	0.01
			0.00			No Ice	2.96	2.53	0.11
			0.00			1/2" Ice	4.10	3.51	0.13
						1" Ice	5.24	4.49	0.16
						2" Ice	7.52	6.45	0.20
Side Arm Mount [SO 301-1]	A	From Leg	2.00	0.0000	140.00	4" Ice	12.08	10.37	0.30
			0.00			No Ice	1.00	0.90	0.02
			0.00			1/2" Ice	1.39	1.42	0.03
						1" Ice	1.78	1.94	0.04
						2" Ice	2.56	2.98	0.06
Side Arm Mount [SO 601-1]	C	From Leg	2.00	0.0000	135.00	4" Ice	4.12	5.06	0.10
			0.00			No Ice	1.22	6.30	0.16
			0.00			1/2" Ice	1.85	8.61	0.20
						1" Ice	2.48	10.92	0.23
						2" Ice	3.74	15.54	0.31
201-8 W/ Pipe Mount	C	From Leg	0.00	0.0000	116.00	4" Ice	6.26	24.78	0.46
			0.00			No Ice	2.72	2.72	0.03
			4.00			1/2" Ice	4.28	4.28	0.05
						1" Ice	5.55	5.55	0.09
						2" Ice	7.68	7.68	0.19
Side Arm Mount [SO 309-1]	C	From Leg	1.00	0.0000	91.00	4" Ice	11.65	11.65	0.51
			0.00			No Ice	2.82	2.20	0.04
			0.00			1/2" Ice	4.07	3.16	0.06
						1" Ice	5.32	4.12	0.08
						2" Ice	7.82	6.04	0.13
ANT150F2	C	From Leg	2.00	0.0000	91.00	4" Ice	12.82	9.88	0.22
			0.00			No Ice	1.29	1.29	0.01
			3.00			1/2" Ice	1.60	1.60	0.02
						1" Ice	1.91	1.91	0.04
						2" Ice	2.57	2.57	0.07
Acutime 2000	C	From Leg	0.00	0.0000	76.00	4" Ice	4.06	4.06	0.20
			0.00			No Ice	0.30	0.30	0.00
			0.00			1/2" Ice	0.37	0.37	0.00
						1" Ice	0.46	0.46	0.01
						2" Ice	0.65	0.65	0.02
			4" Ice	1.15	1.15	0.08			

### Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				Horz	Lateral						
				ft	ft						
SPD2-5.8	C	Paraboloid w/Radome	From Leg	1.97	0.0000	289.00	2.00	No Ice	3.14	0.02	
				0.65				1/2" Ice	3.41	0.04	
				0.00				1" Ice	3.67	0.06	
								2" Ice	4.21	0.09	
								4" Ice	5.28	0.16	
SPD2-5.8	A	Paraboloid w/Radome	From Leg	1.73	30.0000	140.00	2.04	No Ice	3.27	0.03	
				1.00				1/2" Ice	3.55	0.05	
				0.00				1" Ice	3.82	0.03	
								2" Ice	4.37	0.03	
								4" Ice	5.46	0.03	
SPD2-5.8	C	Paraboloid	From	1.97	-10.0000	135.00	2.04	No Ice	3.27	0.03	

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Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				ft	°	°	ft	ft	ft <sup>2</sup>	K
	w/Radome		Leg	-0.35				1/2" Ice	3.55	0.05
				0.00				1" Ice	3.82	0.03
								2" Ice	4.37	0.03
								4" Ice	5.46	0.03

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	560 - 535	9.797	29	0.1299	0.5568
T2	535 - 510	9.092	29	0.1291	0.5556
T3	510 - 485	8.370	29	0.1235	0.5574
T4	485 - 460	7.720	29	0.1147	0.5622
T5	460 - 435	7.204	29	0.1140	0.6068
T6	435 - 410	6.681	29	0.1180	0.6788
T7	410 - 385	6.007	29	0.1226	0.7334
T8	385 - 360	5.211	29	0.1240	0.7453
T9	360 - 335	4.399	29	0.1184	0.7266
T10	335 - 310	3.669	29	0.1053	0.7313
T11	310 - 285	3.104	29	0.0870	0.7330
T12	285 - 260	2.853	31	0.0735	0.7421
T13	260 - 235	2.748	31	0.0682	0.7903
T14	235 - 210	2.491	31	0.0677	0.7271
T15	210 - 185	2.018	31	0.0668	0.6195
T16	185 - 160	1.526	31	0.0624	0.5428
T17	160 - 135	1.060	31	0.0513	0.5078
T18	135 - 110	0.897	31	0.0397	0.4866
T19	110 - 85	0.861	31	0.0353	0.4497
T20	85 - 60	0.812	31	0.0366	0.3983
T21	60 - 35	0.683	31	0.0409	0.3258
T22	35 - 10	0.441	31	0.0457	0.1930
T23	10 - 0	0.104	30	0.0487	0.0794

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
560.00	4' Lightning Rod	29	9.797	0.1299	0.5568	742320
557.00	Pipe Mount [PM 601-3]	29	9.713	0.1300	0.5565	742320
545.00	Platform w/ Handrail	29	9.377	0.1298	0.5556	247436
518.00	Side Arm Mount [SO 308-1]	29	8.599	0.1259	0.5572	188511
515.00	Side Arm Mount [SO 307-1]	29	8.512	0.1251	0.5574	134598
505.00	ANT150F2	29	8.230	0.1216	0.5572	68400
500.00	Side Arm Mount [SO 308-1]	29	8.095	0.1197	0.5570	54737
491.29	Guy	29	7.870	0.1165	0.5584	40610
490.00	ATW25HS3-HSO-46H	29	7.838	0.1160	0.5590	39113
470.00	Side Arm Mount [SO 308-1]	29	7.401	0.1133	0.5838	82195
445.00	Side Arm Mount [SO 310-1]	29	6.903	0.1161	0.6496	57825
442.00	Side Arm Mount [SO 308-1]	29	6.839	0.1167	0.6585	48101
422.00	Side Arm Mount [SO 308-1]	29	6.350	0.1205	0.7117	40566
395.00	Side Arm Mount [SO 304-1]	29	5.537	0.1241	0.7457	86254

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Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
330.00	Side Arm Mount [SO 306-1]	29	3.537	0.1017	0.7320	41219
316.29	Guy	29	3.220	0.0915	0.7332	22065
312.00	Flash Beacon Lighting	29	3.138	0.0884	0.7331	19426
294.00	Side Arm Mount [SO 306-1]	29	2.907	0.0774	0.7316	32778
289.00	SPD2-5.8	31	2.873	0.0751	0.7328	42285
271.00	Side Arm Mount [SO 306-1]	31	2.799	0.0697	0.7773	142017
254.00	Side Arm Mount [SO 306-1]	31	2.707	0.0679	0.7857	36060
250.00	Sector Mount [SM 504-1]	31	2.673	0.0677	0.7781	33096
237.00	Sector Mount [SM 401-1]	31	2.521	0.0677	0.7354	24350
219.00	Side Arm Mount [SO 307-1]	31	2.200	0.0674	0.6564	87181
214.00	742-213 w/Mount Pipe	31	2.099	0.0671	0.6352	303201
177.00	Side Arm Mount [SO 308-1]	31	1.360	0.0594	0.5270	84676
157.00	Side Light	31	1.023	0.0497	0.5050	18182
153.71	Guy	31	0.990	0.0480	0.5023	20594
145.00	Side Arm Mount [SO 202-1]	31	0.931	0.0438	0.4955	32397
140.00	SPD2-5.8	31	0.911	0.0416	0.4914	47954
135.00	SPD2-5.8	31	0.897	0.0397	0.4866	80242
116.00	201-8 W/ Pipe Mount	31	0.867	0.0357	0.4603	591499
91.00	Side Arm Mount [SO 309-1]	31	0.829	0.0359	0.4112	92688
76.00	Acutime 2000	31	0.776	0.0379	0.3779	71588

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	560 - 535	46.356	6	0.6747	1.0150
T2	535 - 510	42.761	6	0.6716	1.0124
T3	510 - 485	39.116	6	0.6550	1.0237
T4	485 - 460	35.666	6	0.6290	1.0428
T5	460 - 435	32.568	6	0.6226	1.1514
T6	435 - 410	29.418	6	0.6253	1.3334
T7	410 - 385	25.935	6	0.6257	1.4669
T8	385 - 360	22.210	6	0.6120	1.5498
T9	360 - 335	18.569	6	0.5737	1.5704
T10	335 - 310	15.284	6	0.5154	1.5644
T11	310 - 285	12.576	6	0.4441	1.5638
T12	285 - 260	10.825	6	0.3797	1.6064
T13	260 - 235	9.556	6	0.3386	1.6744
T14	235 - 210	8.106	6	0.3114	1.5630
T15	210 - 185	6.313	6	0.2839	1.3282
T16	185 - 160	4.590	6	0.2480	1.1980
T17	160 - 135	3.049	6	0.1977	1.0977
T18	135 - 110	2.334	6	0.1480	1.0551
T19	110 - 85	2.028	6	0.1183	0.9867
T20	85 - 60	1.788	6	0.1070	0.8756
T21	60 - 35	1.457	4	0.1075	0.7281
T22	35 - 10	0.955	2	0.1131	0.4897
T23	10 - 0	0.250	6	0.1179	0.2338

### Critical Deflections and Radius of Curvature - Design Wind

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	<b>Client</b>	Crown Castle USA, Inc.	<b>Designed by</b>	jhuffine

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
560.00	4' Lightning Rod	6	46.356	0.6747	1.0150	297271
557.00	Pipe Mount [PM 601-3]	6	45.927	0.6747	1.0141	297271
545.00	Platform w/ Handrail	6	44.207	0.6739	1.0117	99090
518.00	Side Arm Mount [SO 308-1]	6	40.277	0.6622	1.0203	76333
515.00	Side Arm Mount [SO 307-1]	6	39.840	0.6597	1.0218	54405
505.00	ANT150F2	6	38.401	0.6496	1.0250	28206
500.00	Side Arm Mount [SO 308-1]	6	37.695	0.6439	1.0265	22870
491.29	Guy	6	36.499	0.6344	1.0327	17202
490.00	ATW25HS3-HSO-46H	6	36.326	0.6332	1.0343	16592
470.00	Side Arm Mount [SO 308-1]	6	33.785	0.6229	1.0950	46265
445.00	Side Arm Mount [SO 310-1]	6	30.710	0.6240	1.2603	25879
442.00	Side Arm Mount [SO 308-1]	6	30.328	0.6244	1.2829	22634
422.00	Side Arm Mount [SO 308-1]	6	27.650	0.6265	1.4100	20394
395.00	Side Arm Mount [SO 304-1]	6	23.710	0.6201	1.5255	61539
330.00	Side Arm Mount [SO 306-1]	6	14.681	0.5017	1.5629	12097
316.29	Guy	6	13.173	0.4623	1.5617	7347
312.00	Flash Beacon Lighting	6	12.758	0.4498	1.5629	6602
294.00	Side Arm Mount [SO 306-1]	6	11.362	0.4007	1.5825	9826
289.00	SPD2-5.8	6	11.054	0.3886	1.5942	11995
271.00	Side Arm Mount [SO 306-1]	6	10.103	0.3541	1.6579	89960
254.00	Side Arm Mount [SO 306-1]	6	9.242	0.3314	1.6620	18027
250.00	Sector Mount [SM 504-1]	6	9.022	0.3270	1.6502	16768
237.00	Sector Mount [SM 401-1]	6	8.238	0.3134	1.5788	12972
219.00	Side Arm Mount [SO 307-1]	6	6.969	0.2944	1.4117	61498
214.00	742-213 w/Mount Pipe	6	6.603	0.2887	1.3637	53420
177.00	Side Arm Mount [SO 308-1]	6	4.046	0.2332	1.1647	23476
157.00	Side Light	6	2.918	0.1913	1.0897	6974
153.71	Guy	6	2.792	0.1843	1.0827	7782
145.00	Side Arm Mount [SO 202-1]	6	2.534	0.1663	1.0691	11428
140.00	SPD2-5.8	6	2.425	0.1568	1.0625	15635
135.00	SPD2-5.8	6	2.334	0.1480	1.0551	23136
116.00	201-8 W/ Pipe Mount	6	2.087	0.1235	1.0078	66853
91.00	Side Arm Mount [SO 309-1]	6	1.850	0.1084	0.9045	54705
76.00	Acutime 2000	6	1.684	0.1061	0.8301	41500

### Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	560	Leg	A325N	0.6250	6	1.10	13.48	0.082	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	1.68	9.28	0.181	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	1.16	18.56	0.062	1.333	Bolt Shear
		Top Girt	A325N	0.7500	2	0.18	18.56	0.010	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	0.72	18.56	0.039	1.333	Bolt Shear
T2	535	Leg	A325N	0.6250	6	4.22	13.45	0.313	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	3.02	9.28	0.326	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	2.18	18.56	0.118	1.333	Bolt Shear
		Top Girt	A325N	0.7500	2	0.73	18.56	0.040	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	1.27	18.56	0.068	1.333	Bolt Shear

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T3	510	Leg	A325N	0.6250	6	0.00	13.43	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	4.08	9.28	0.440 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	4.56	13.96	0.326 ✓	1.333	Member Block Shear
		Top Girt	A325N	0.7500	2	1.29	18.56	0.069 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	1.54	18.56	0.083 ✓	1.333	Bolt Shear
T4	485	Leg	A325N	0.6250	6	0.00	13.47	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.8750	2	3.94	12.63	0.312 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.8750	2	2.96	25.26	0.117 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.8750	2	1.61	25.26	0.064 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.8750	2	1.23	25.26	0.049 ✓	1.333	Bolt Shear
T5	460	Leg	A325N	0.6250	6	0.00	13.50	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	2.16	9.28	0.233 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	1.61	18.56	0.087 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.7500	2	0.75	18.56	0.041 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	0.40	18.56	0.021 ✓	1.333	Bolt Shear
T6	435	Leg	A325N	0.6250	6	0.00	13.47	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	2.21	4.12	0.535 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.5000	2	1.58	8.25	0.192 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	0.41	8.25	0.050 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.5000	2	0.93	8.25	0.113 ✓	1.333	Bolt Shear
T7	410	Leg	A325N	0.6250	6	0.00	13.40	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	3.45	4.12	0.838 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.5000	2	2.59	8.25	0.314 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	0.95	8.25	0.115 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.5000	2	1.47	8.25	0.178 ✓	1.333	Bolt Shear
T8	385	Leg	A325N	0.6250	6	1.08	13.32	0.081 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	2	4.69	6.44	0.727 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.5000	2	3.60	8.25	0.437 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.48	8.25	0.179 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.5000	2	1.52	8.25	0.184 ✓	1.333	Bolt Shear
T9	360	Leg	A325N	1.0000	6	8.24	34.48	0.239 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	2	6.31	6.44	0.979 ✓	1.333	Bolt Shear
		Horizontal	SAEGR-8	0.5000	2	4.81	15.71	0.306 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	2.49	8.25	0.302 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.5000	2	2.66	8.25	0.322 ✓	1.333	Bolt Shear
T10	335	Leg	A325N	1.0000	6	3.94	34.48	0.114 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	7.32	9.28	0.789 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	6.70	13.96	0.480 ✓	1.333	Member Block Shear
		Top Girt	A325N	0.7500	2	2.69	18.56	0.145 ✓	1.333	Bolt Shear

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria	
T11	310	Bottom Girt	A325N	0.7500	2	2.42	18.56	0.130	✓	1.333	Bolt Shear
		Leg	A325N	0.6250	6	0.00	13.36	0.000	✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	2	6.40	16.49	0.388	✓	1.333	Bolt Shear
		Horizontal	A325N	1.0000	2	4.90	32.99	0.149	✓	1.333	Bolt Shear
		Top Girt	A325N	1.0000	2	2.56	32.99	0.077	✓	1.333	Bolt Shear
T12	285	Bottom Girt	A325N	1.0000	2	2.36	32.99	0.072	✓	1.333	Bolt Shear
		Leg	A325N	0.6250	6	0.00	13.43	0.000	✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	4.41	4.12	1.071	✓	1.333	Bolt Shear
		Horizontal	A325N	0.5000	2	3.42	8.25	0.415	✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.62	8.25	0.197	✓	1.333	Bolt Shear
T13	260	Bottom Girt	A325N	0.5000	2	1.29	8.25	0.157	✓	1.333	Bolt Shear
		Leg	A325N	0.6250	6	0.00	13.50	0.000	✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	3.02	4.12	0.733	✓	1.333	Bolt Shear
		Horizontal	A325N	0.5000	2	1.93	8.25	0.234	✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.28	8.25	0.155	✓	1.333	Bolt Shear
T14	235	Bottom Girt	A325N	0.5000	2	0.37	8.25	0.045	✓	1.333	Bolt Shear
		Leg	A325N	0.6250	6	0.00	13.45	0.000	✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	2.63	4.12	0.637	✓	1.333	Bolt Shear
		Horizontal	A325N	0.5000	2	1.86	8.25	0.225	✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	0.36	8.25	0.043	✓	1.333	Bolt Shear
T15	210	Bottom Girt	A325N	0.5000	2	1.22	8.25	0.148	✓	1.333	Bolt Shear
		Leg	A325N	1.0000	6	0.00	34.51	0.000	✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	4.57	4.12	1.109	✓	1.333	Bolt Shear
		Horizontal	A325N	0.5000	2	3.40	8.25	0.413	✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.25	8.25	0.152	✓	1.333	Bolt Shear
T16	185	Bottom Girt	A325N	0.5000	2	1.60	8.25	0.194	✓	1.333	Bolt Shear
		Leg	A325N	1.0000	6	0.51	34.49	0.015	✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	2	6.46	6.44	1.002	✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	4.95	12.89	0.384	✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	2.33	12.89	0.181	✓	1.333	Bolt Shear
T17	160	Bottom Girt	A325N	0.6250	2	2.58	12.89	0.200	✓	1.333	Bolt Shear
		Leg	A325N	1.0000	6	0.00	34.46	0.000	✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	6.41	9.28	0.691	✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	9.46	13.96	0.678	✓	1.333	Member Block Shear
		Top Girt	A325N	0.7500	2	2.40	18.56	0.129	✓	1.333	Bolt Shear
T18	135	Bottom Girt	A325N	0.7500	2	2.35	18.56	0.127	✓	1.333	Bolt Shear
		Leg	A325N	1.0000	6	0.00	34.52	0.000	✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	2	5.48	16.49	0.332	✓	1.333	Bolt Shear
		Horizontal	A325N	1.0000	2	4.17	32.99	0.126	✓	1.333	Bolt Shear

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load/Allowable	Allowable Ratio	Criteria
T19	110	Top Girt	A325N	1.0000	2	2.33	32.99	0.071	1.333	Bolt Shear
		Bottom Girt	A325N	1.0000	2	1.93	32.99	0.058	1.333	Bolt Shear
		Leg	A325N	1.0000	6	0.00	34.54	0.000	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	4.04	9.28	0.436	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	3.03	18.56	0.163	1.333	Bolt Shear
T20	85	Top Girt	A325N	0.7500	2	1.53	18.56	0.082	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	1.38	18.56	0.074	1.333	Bolt Shear
		Leg	A325N	1.0000	6	0.00	34.55	0.000	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	2.81	9.28	0.303	1.333	Bolt Shear
T21	60	Horizontal	A325N	0.7500	2	1.57	9.11	0.172	1.333	Member Block Shear
		Top Girt	A325N	0.7500	2	1.05	18.56	0.057	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	0.75	18.56	0.040	1.333	Bolt Shear
		Leg	A325N	1.0000	6	0.00	34.56	0.000	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	1.64	9.28	0.177	1.333	Bolt Shear
T22	35	Horizontal	A325N	0.7500	2	1.59	9.11	0.175	1.333	Member Block Shear
		Top Girt	A325N	0.7500	2	0.73	18.56	0.040	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	0.61	18.56	0.033	1.333	Bolt Shear
		Leg	A325N	0.6250	6	0.00	12.13	0.000	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	2.67	9.28	0.287	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	1.59	9.11	0.174	1.333	Member Block Shear
		Top Girt	A325N	0.7500	2	0.61	18.56	0.033	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	4.02	9.11	0.441	1.333	Member Block Shear

### Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T K	Allowable T <sub>a</sub> K	Required S.F.	Actual S.F.
T3	491.29 (A) (939)	1 1/4 BS	19.20	192.00	59.92	96.00	2.000	3.204
	491.29 (B) (938)	1 1/4 BS	19.20	192.00	59.28	96.00	2.000	3.239
	491.29 (C) (934)	1 1/4 BS	19.20	192.00	60.82	96.00	2.000	3.157
T10	316.29 (A) (945)	1 1/2 BS	27.60	276.00	67.36	138.00	2.000	4.097
	316.29 (B) (944)	1 1/2 BS	27.60	276.00	66.44	138.00	2.000	4.154
	316.29 (C) (940)	1 1/2 BS	27.60	276.00	68.54	138.00	2.000	4.027
T17	153.71 (A)	1 3/4 BS	37.60	376.00	62.01	188.00	2.000	6.063

**tnxTower**

**GPD Group**  
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Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T K	Allowable T <sub>a</sub> K	Required S.F.	Actual S.F.
	(951)							
	153.71 (B) (950)	1 3/4 BS	37.60	376.00	61.06	188.00	2.000	6.158 ✓
	153.71 (C) (946)	1 3/4 BS	37.60	376.00	63.39	188.00	2.000	5.932 ✓

### Compression Checks

### Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	Mast Stability Index	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio $\frac{P}{P_a}$
T1	560 - 535	4	25.00	6.21	74.5 K=1.00	1.00	20.090	12.5664	-11.09	252.45	0.044
T2	535 - 510	4	25.00	6.21	74.5 K=1.00	1.00	20.090	12.5664	-35.11	252.45	0.139 ✓
T3	510 - 485	4 1/2	25.00	6.21	66.2 K=1.00	1.00	21.627	15.9043	-66.22	343.97	0.193 ✓
T4	485 - 460	4 1/2	25.00	6.21	66.2 K=1.00	1.00	21.627	15.9043	-60.02	343.97	0.174 ✓
T5	460 - 435	4 1/4	25.00	6.21	70.1 K=1.00	1.00	20.916	14.1863	-42.12	296.72	0.142* ✓
T6	435 - 410	4 1/4	25.00	6.21	70.1 K=1.00	1.00	20.916	14.1863	-45.38	296.72	0.153* ✓
T7	410 - 385	4 1/4	25.00	6.21	70.1 K=1.00	1.00	20.916	14.1863	-77.81	296.72	0.262 ✓
T8	385 - 360	4 1/4	25.00	6.21	70.1 K=1.00	1.00	20.916	14.1863	-117.95	296.72	0.398 ✓
T9	360 - 335	4 3/4	25.00	6.21	62.7 K=1.00	1.00	22.245	17.7205	-172.06	394.19	0.436 ✓
T10	335 - 310	5 1/4	25.00	6.21	56.8 K=1.00	1.00	23.262	21.6475	-224.22	503.58	0.445 ✓
T11	310 - 285	4 3/4	25.00	6.21	62.7 K=1.00	1.00	22.245	17.7205	-212.55	394.19	0.539 ✓
T12	285 - 260	4 3/4	25.00	6.21	62.7 K=1.00	1.00	22.245	17.7205	-169.79	394.19	0.431 ✓
T13	260 - 235	4 3/4	25.00	6.21	62.7 K=1.00	1.00	22.245	17.7205	-141.33	394.19	0.359 ✓
T14	235 - 210	4 3/4	25.00	6.21	62.7 K=1.00	1.00	22.245	17.7205	-145.88	394.19	0.370 ✓
T15	210 - 185	5	25.00	6.21	59.6 K=1.00	1.00	22.786	19.6350	-176.49	447.39	0.394 ✓
T16	185 - 160	5 1/4	25.00	6.21	56.8 K=1.00	1.00	23.262	21.6475	-222.34	503.58	0.442 ✓
T17	160 - 135	5 1/2	25.00	6.21	54.2 K=1.00	1.00	23.686	23.7583	-242.59	562.73	0.431 ✓
T18	135 - 110	5 1/4	25.00	6.21	56.8	1.00	23.262	21.6475	-153.99	503.58	0.306* ✓

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	Mast Stability Index	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T19	110 - 85	5 1/4	25.00	6.21	K=1.00 56.8	1.00	23.262	21.6475	-158.83	503.58	0.315* ✓
T20	85 - 60	5 1/4	25.00	6.21	K=1.00 56.8	1.00	23.262	21.6475	-163.25	503.58	0.324* ✓
T21	60 - 35	5 1/4	25.00	6.21	K=1.00 56.8	1.00	23.262	21.6475	-167.59	503.58	0.333* ✓
T22	35 - 10	5 1/4	25.00	6.21	K=1.00 56.8	1.00	23.262	21.6475	-172.08	503.58	0.342* ✓
T23	10 - 0	5 1/4	11.02	5.46	K=1.00 49.9	1.00	24.361	21.6475	-191.07	527.35	0.362* ✓

\* DL controls

### Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T1	560 - 535	2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6 K=1.00	10.335	2.3800	-2.31	24.60	0.094 ✓
T2	535 - 510	2L 'a' > 44.0559 in - 16 2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6 K=1.00	10.335	2.3800	-4.37	24.60	0.178 ✓
T3	510 - 485	2L 'a' > 44.0559 in - 59 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0 K=1.00	10.427	2.3800	-6.08	24.82	0.245 ✓
T4	485 - 460	2L 'a' > 43.8165 in - 111 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0 K=1.00	10.427	2.3800	-5.91	24.82	0.238 ✓
T5	460 - 435	2L 'a' > 43.8165 in - 160 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-3.22	9.66	0.334 ✓
T6	435 - 410	2L 'a' > 43.9419 in - 202 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-3.16	9.66	0.327 ✓
T7	410 - 385	2L 'a' > 43.9419 in - 228 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-5.18	9.66	0.536 ✓
T8	385 - 360	2L 'a' > 43.9419 in - 270 2L2x2x1/4x3/8	8.00	7.65	150.7 K=1.00	6.579	1.8800	-7.20	12.37	0.582 ✓
T9	360 - 335	2L 'a' > 44.1801 in - 312 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7 K=1.00	10.474	2.3800	-9.63	24.93	0.386 ✓
T10	335 - 310	2L 'a' > 43.6968 in - 352 2L2 1/2x2 1/2x1/4x3/8  2L 'a' > 43.4573 in - 412	8.00	7.56	118.0 K=1.00	10.566	2.3800	-11.38	25.15	0.453 ✓

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T11	310 - 285	2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7 K=1.00	10.474	2.3800	-9.80	24.93	0.393 ✓
T12	285 - 260	2L 'a' > 43.6968 in - 454 2L2 1/2x2x3/16x3/8	8.00	7.60	117.7 K=0.50	10.605	1.6200	-6.84	17.18	0.398 ✓
T13	260 - 235	2L 'a' > 36.8510 in - 496 2L2 1/2x2x3/16x3/8	8.00	7.60	117.7 K=0.50	10.605	1.6200	-3.86	17.18	0.225 ✓
T14	235 - 210	2L 'a' > 36.8510 in - 540 2L2 1/2x2x3/16x3/8	8.00	7.60	117.7 K=0.50	10.605	1.6200	-3.71	17.18	0.216 ✓
T15	210 - 185	2L 'a' > 36.8510 in - 562 2L2 1/2x2x3/16x3/8	8.00	7.58	117.4 K=0.50	10.651	1.6200	-6.81	17.25	0.394 ✓
T16	185 - 160	2L 'a' > 36.7500 in - 604 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-9.91	25.15	0.394 ✓
T17	160 - 135	2L 'a' > 43.4573 in - 646 2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7 K=1.00	10.612	2.3800	-10.04	25.26	0.397 ✓
T18	135 - 110	2L 'a' > 43.3376 in - 690 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-8.33	25.15	0.331 ✓
T19	110 - 85	2L 'a' > 43.4573 in - 749 2L2x2x1/4x3/8	8.00	7.56	149.0 K=1.00	6.725	1.8800	-6.05	12.64	0.479 ✓
T20	85 - 60	2L 'a' > 43.6986 in - 791 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-4.17	9.87	0.423 ✓
T21	60 - 35	2L 'a' > 43.4629 in - 833 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-2.90	9.87	0.294* ✓
T22	35 - 10	2L 'a' > 43.4629 in - 856 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-2.98	9.87	0.302* ✓
T23	10 - 0	2L 'a' > 43.4629 in - 898 2L3x5x1/2x3/8	3.97	3.53	51.1 K=1.00	18.255	7.5000	-0.16	136.91	0.001 ✓

\* DL controls

### Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T1	560 - 535	2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6 K=1.00	10.335	2.3800	-0.36	24.60	0.015 ✓
T2	535 - 510	2L 'a' > 44.0559 in - 4 2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6 K=1.00	10.335	2.3800	-1.47	24.60	0.060 ✓

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T3	510 - 485	2L 'a' > 44.0559 in - 46 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0 K=1.00	10.427	2.3800	-2.58	24.82	0.104
T4	485 - 460	2L 'a' > 43.8165 in - 90 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0 K=1.00	10.427	2.3800	-3.22	24.82	0.130
T5	460 - 435	2L 'a' > 43.8165 in - 130 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-1.50	9.66	0.156
T6	435 - 410	2L 'a' > 43.9419 in - 172 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-0.82	9.66	0.085
T7	410 - 385	2L 'a' > 43.9419 in - 216 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-1.90	9.66	0.197
T8	385 - 360	2L 'a' > 43.9419 in - 258 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-2.95	9.66	0.306
T9	360 - 335	2L 'a' > 43.9419 in - 300 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7 K=1.00	10.474	2.3800	-4.98	24.93	0.200
T10	335 - 310	2L 'a' > 43.6968 in - 340 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-5.39	25.15	0.214
T11	310 - 285	2L 'a' > 43.4573 in - 382 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7 K=1.00	10.474	2.3800	-5.11	24.93	0.205
T12	285 - 260	2L 'a' > 43.6968 in - 424 2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-3.25	10.46	0.311
T13	260 - 235	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-2.55	10.46	0.244
T14	235 - 210	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-0.72	10.46	0.068
T15	210 - 185	2L2x2 1/2x3/16x3/8	8.00	7.58	151.7 K=1.00	6.492	1.6200	-2.50	10.52	0.238
T16	185 - 160	2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-4.66	25.15	0.185
T17	160 - 135	2L 'a' > 43.4573 in - 634 2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7 K=1.00	10.612	2.3800	-4.80	25.26	0.190
T18	135 - 110	2L 'a' > 43.3376 in - 676 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-4.66	25.15	0.185
T19	110 - 85	2L 'a' > 43.4573 in - 720 2L2x2x1/4x3/8	8.00	7.56	149.0 K=1.00	6.725	1.8800	-3.05	12.64	0.241
T20	85 - 60	2L 'a' > 43.6986 in - 761 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-2.10	9.87	0.213
T21	60 - 35	2L 'a' > 43.4629 in - 803 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-1.47	9.87	0.149
T22	35 - 10	2L 'a' > 43.4629 in - 845 2L2x2x3/16x3/8	8.00	7.56	147.1	6.903	1.4300	-1.23	9.87	0.124

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
					K=1.00					✓
		2L 'a' > 43.4629 in - 886								

### Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T1	560 - 535	2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6 K=1.00	10.335	2.3800	-1.43	24.60	0.058 ✓
T2	535 - 510	2L 'a' > 44.0559 in - 7 2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6 K=1.00	10.335	2.3800	-2.53	24.60	0.103 ✓
T3	510 - 485	2L 'a' > 44.0559 in - 51 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0 K=1.00	10.427	2.3800	-3.07	24.82	0.124 ✓
T4	485 - 460	2L 'a' > 43.8165 in - 91 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0 K=1.00	10.427	2.3800	-2.46	24.82	0.099 ✓
T5	460 - 435	2L 'a' > 43.8165 in - 133 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-0.79	9.66	0.082 ✓
T6	435 - 410	2L 'a' > 43.9419 in - 177 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-1.87	9.66	0.193 ✓
T7	410 - 385	2L 'a' > 43.9419 in - 219 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-2.94	9.66	0.304 ✓
T8	385 - 360	2L 'a' > 43.9419 in - 261 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-3.03	9.66	0.314 ✓
T9	360 - 335	2L 'a' > 43.9419 in - 303 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7 K=1.00	10.474	2.3800	-5.32	24.93	0.213 ✓
T10	335 - 310	2L 'a' > 43.6968 in - 343 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-4.84	25.15	0.192 ✓
T11	310 - 285	2L 'a' > 43.4573 in - 385 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7 K=1.00	10.474	2.3800	-4.72	24.93	0.189 ✓
T12	285 - 260	2L 'a' > 43.6968 in - 427 2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-2.59	10.46	0.247 ✓
T13	260 - 235	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-0.74	10.46	0.071 ✓
T14	235 - 210	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-2.45	10.46	0.234 ✓
T15	210 - 185	2L2x2 1/2x3/16x3/8	8.00	7.58	151.7 K=1.00	6.492	1.6200	-3.21	10.52	0.305 ✓
T16	185 - 160	2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-5.17	25.15	0.205 ✓

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T17	160 - 135	2L 'a' > 43.4573 in - 637 2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7 K=1.00	10.612	2.3800	-4.70	25.26	0.186
T18	135 - 110	2L 'a' > 43.3376 in - 681 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-3.86	25.15	0.153 ✓
T19	110 - 85	2L 'a' > 43.4573 in - 722 2L2x2x1/4x3/8	8.00	7.56	149.0 K=1.00	6.725	1.8800	-2.76	12.64	0.218 ✓
T20	85 - 60	2L 'a' > 43.6986 in - 764 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-1.49	9.87	0.151 ✓
T21	60 - 35	2L 'a' > 43.4629 in - 806 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-1.21	9.87	0.123 ✓
		2L 'a' > 43.4629 in - 847								0.123 ✓

### Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T3	510 - 485	L2 1/2x2 1/2x1/4	8.00	7.63	119.0 K=1.00	21.600	1.1900	0.00	5.12	0.000*
T10	335 - 310	L2 1/2x2 1/2x1/4	8.00	7.56	118.0 K=1.00	21.600	1.1900	0.00	5.20	0.000*
T17	160 - 135	L2 1/2x2 1/2x1/4	8.00	7.54	117.7 K=1.00	21.600	1.1900	0.00	5.23	0.000*

\* DL controls

### Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	Actual M <sub>x</sub> kip-ft	Actual f <sub>bx</sub> ksi	Allow. F <sub>bx</sub> ksi	Ratio f <sub>bx</sub> F <sub>bx</sub>	Actual M <sub>y</sub> kip-ft	Actual f <sub>by</sub> ksi	Allow. F <sub>by</sub> ksi	Ratio f <sub>by</sub> F <sub>by</sub>
T3	510 - 485	L2 1/2x2 1/2x1/4	-0.07	-1.280	23.760	0.054	-0.07	-2.484	23.760	0.105
T10	335 - 310	L2 1/2x2 1/2x1/4	-0.07	-1.223	23.760	0.051	-0.07	-2.373	23.760	0.100
T17	160 - 135	L2 1/2x2 1/2x1/4	-0.06	-1.130	23.760	0.048	-0.06	-2.193	23.760	0.092

### Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio P P <sub>a</sub>	Ratio f <sub>bx</sub> F <sub>bx</sub>	Ratio f <sub>by</sub> F <sub>by</sub>	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T3	510 - 485	L2 1/2x2 1/2x1/4	0.000	0.054	0.105	0.158* ✓	1.000	H1-3 ✓

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Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T10	335 - 310	L2 1/2x2 1/2x1/4	0.000	0.051	0.100	0.151* ✓	1.000	H1-3 ✓
T17	160 - 135	L2 1/2x2 1/2x1/4	0.000	0.048	0.092	0.140* ✓	1.000	H1-3 ✓

\* DL controls

## Tension Checks

## Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual $\frac{P}{K}$	Allow. $\frac{P_a}{K}$	Ratio $\frac{P}{P_a}$
T1	560 - 535	4	25.00	6.21	74.5	30.000	12.5664	6.61	376.99	0.018
T2	535 - 510	4	25.00	6.21	74.5	30.000	12.5664	25.29	376.99	0.067 ✓
T3	510 - 485	4 1/2	25.00	6.21	66.2	30.000	15.9043	38.98	477.13	0.082 ✓
T8	385 - 360	4 1/4	25.00	6.21	70.1	30.000	14.1863	6.48	425.59	0.015 ✓
T9	360 - 335	4 3/4	25.00	6.21	62.7	30.000	17.7205	49.43	531.62	0.093 ✓
T10	335 - 310	5 1/4	25.00	6.21	56.8	30.000	21.6475	75.93	649.43	0.117 ✓
T11	310 - 285	4 3/4	25.00	6.21	62.7	30.000	17.7205	23.65	531.62	0.044 ✓
T16	185 - 160	5 1/4	25.00	6.21	56.8	30.000	21.6475	3.07	649.43	0.005 ✓
T17	160 - 135	5 1/2	25.00	6.21	54.2	30.000	23.7583	3.07	712.75	0.004 ✓

## Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual $\frac{P}{K}$	Allow. $\frac{P_a}{K}$	Ratio $\frac{P}{P_a}$
T1	560 - 535	1	10.13	9.70	465.8	21.600	0.7854	3.37	16.96	0.198
T2	535 - 510	1	10.13	9.70	465.8	21.600	0.7854	6.04	16.96	0.356 ✓
T3	510 - 485	1 1/4	10.13	9.65	370.6	21.600	1.2272	8.17	26.51	0.308 ✓
T4	485 - 460	1	10.13	9.65	463.3	21.600	0.7854	7.88	16.96	0.464 ✓
T5	460 - 435	5/8	10.13	9.68	743.3	21.600	0.3068	4.32	6.63	0.652 ✓



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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T4	485 - 460	2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0	29.000	1.4100	1.04	40.89	0.025
T5	460 - 435	2L 'a' > 43.8165 in - 142 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8264	0.73	23.97	0.030*
T6	435 - 410	2L 'a' > 43.9419 in - 185 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.79	26.00	0.030*
T7	410 - 385	2L 'a' > 43.9419 in - 228 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	1.35	26.00	0.052
T8	385 - 360	2L 'a' > 43.9419 in - 268 2L2x2x1/4x3/8	8.00	7.65	150.7	29.000	1.1756	2.04	34.09	0.060
T9	360 - 335	2L 'a' > 44.1801 in - 312 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7	29.000	1.5506	2.98	44.97	0.066
T10	335 - 310	2L 'a' > 43.6968 in - 352 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.4569	13.41	42.25	0.317
T11	310 - 285	2L 'a' > 43.4573 in - 396 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7	29.000	1.3631	3.68	39.53	0.093
T12	285 - 260	2L 'a' > 43.6968 in - 454 2L2 1/2x2x3/16x3/8	8.00	7.60	115.1	29.000	1.0392	2.94	30.14	0.098
T13	260 - 235	2L 'a' > 36.8510 in - 478 2L2 1/2x2x3/16x3/8	8.00	7.60	115.1	29.000	1.0392	2.45	30.14	0.081
T14	235 - 210	2L 'a' > 36.8510 in - 520 2L2 1/2x2x3/16x3/8	8.00	7.60	115.1	29.000	1.0392	2.53	30.14	0.084
T15	210 - 185	2L 'a' > 36.8510 in - 562 2L2 1/2x2x3/16x3/8	8.00	7.58	114.8	29.000	1.0392	3.06	30.14	0.101
T16	185 - 160	2L 'a' > 36.7500 in - 604 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.5037	3.85	43.61	0.088
T17	160 - 135	2L 'a' > 43.4573 in - 646 2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7	29.000	1.4569	16.88	42.25	0.400*
T18	135 - 110	2L 'a' > 43.3376 in - 707 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.3631	2.67	39.53	0.067*
T19	110 - 85	2L 'a' > 43.4573 in - 730 2L2x2x1/4x3/8	8.00	7.56	149.0	29.000	1.0819	2.75	31.37	0.088*
T20	85 - 60	2L 'a' > 43.6986 in - 772 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	2.83	23.97	0.118*
T21	60 - 35	2L 'a' > 43.4629 in - 814 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	2.90	23.97	0.121*
T22	35 - 10	2L 'a' > 43.4629 in - 856 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	2.98	23.97	0.124*

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T23	10 - 0	2L 'a' > 43.4629 in - 898 2L3x5x1/2x3/8	7.93	7.50	108.5	21.600	7.5000	37.98	162.00	0.234* ✓ ✓

\* DL controls

### Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T1	560 - 535	2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6	29.000	1.4569	0.14	42.25	0.003 ✓
T2	535 - 510	2L 'a' > 44.0559 in - 5 2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6	29.000	1.4569	0.08	42.25	0.002 ✓
T3	510 - 485	2L 'a' > 44.0559 in - 48 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0	29.000	1.4569	0.06	42.25	0.001 ✓
T5	460 - 435	2L 'a' > 43.8165 in - 88 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8264	0.02	23.97	0.001 ✓
T6	435 - 410	2L 'a' > 43.9419 in - 172 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.05	26.00	0.002 ✓
T7	410 - 385	2L 'a' > 43.9419 in - 214 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.04	26.00	0.002 ✓
T8	385 - 360	2L 'a' > 43.9419 in - 258 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.17	26.00	0.006 ✓
T9	360 - 335	2L 'a' > 43.9419 in - 300 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7	29.000	1.5506	0.26	44.97	0.006 ✓
T10	335 - 310	2L 'a' > 43.6968 in - 340 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.4569	0.17	42.25	0.004 ✓
T12	285 - 260	2L 'a' > 43.4573 in - 382 2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.03	30.14	0.001 ✓
T13	260 - 235	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.01	30.14	0.000 ✓
T14	235 - 210	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.09	30.14	0.003 ✓
T15	210 - 185	2L2x2 1/2x3/16x3/8	8.00	7.58	151.7	29.000	1.0392	0.07	30.14	0.002 ✓
T16	185 - 160	2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.5037	0.10	43.61	0.002 ✓
T17	160 - 135	2L 'a' > 43.4573 in - 634 2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7	29.000	1.4569	0.16	42.25	0.004* ✓

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Section No.	Elevation ft	Size	L ft	L <sub>a</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T18	135 - 110	2L 'a' > 43.3376 in - 676 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.3631	0.12	39.53	0.003
T19	110 - 85	2L 'a' > 43.4573 in - 720 2L2x2x1/4x3/8	8.00	7.56	149.0	29.000	1.0819	0.10	31.37	0.003
T20	85 - 60	2L 'a' > 43.6986 in - 760 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	0.05	23.97	0.002
T21	60 - 35	2L 'a' > 43.4629 in - 802 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	0.05	23.97	0.002
T22	35 - 10	2L 'a' > 43.4629 in - 844 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	0.08	23.97	0.003
		2L 'a' > 43.4629 in - 886								

\* DL controls

### Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>a</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T1	560 - 535	2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6	29.000	1.4569	0.00	42.25	0.000*
T2	535 - 510	2L 'a' > 44.0559 in - 9 2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6	29.000	1.4569	0.00	42.25	0.000
T3	510 - 485	2L 'a' > 44.0559 in - 49 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0	29.000	1.4569	0.10	42.25	0.002
T4	485 - 460	2L 'a' > 43.8165 in - 91 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0	29.000	1.4100	0.10	40.89	0.002
T5	460 - 435	2L 'a' > 43.8165 in - 133 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8264	0.05	23.97	0.002
T6	435 - 410	2L 'a' > 43.9419 in - 175 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.03	26.00	0.001
T7	410 - 385	2L 'a' > 43.9419 in - 219 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.08	26.00	0.003
T8	385 - 360	2L 'a' > 43.9419 in - 261 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.03	26.00	0.001
T9	360 - 335	2L 'a' > 43.9419 in - 301 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7	29.000	1.5506	0.00	44.97	0.000*

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T10	335 - 310	2L 'a' > 43.6968 in - 343 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.4569	0.13	42.25	0.003*
T11	310 - 285	2L 'a' > 43.4573 in - 386 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7	29.000	1.3631	0.18	39.53	0.004 ✓
T12	285 - 260	2L 'a' > 43.6968 in - 427 2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.03	30.14	0.001 ✓
T13	260 - 235	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.08	30.14	0.003 ✓
T14	235 - 210	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.04	30.14	0.001 ✓
T15	210 - 185	2L2x2 1/2x3/16x3/8	8.00	7.58	151.7	29.000	1.0392	0.00	30.14	0.000 ✓
T17	160 - 135	2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7	29.000	1.4569	0.26	42.25	0.006 ✓
T18	135 - 110	2L 'a' > 43.3376 in - 681 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.3631	0.21	39.53	0.005 ✓
T19	110 - 85	2L 'a' > 43.4573 in - 721 2L2x2x1/4x3/8	8.00	7.56	149.0	29.000	1.0819	0.09	31.37	0.003 ✓
T20	85 - 60	2L 'a' > 43.6986 in - 763 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	0.06	23.97	0.002 ✓
T21	60 - 35	2L 'a' > 43.4629 in - 805 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	0.08	23.97	0.003 ✓
T22	35 - 10	2L 'a' > 43.4629 in - 847 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	7.85	23.97	0.327* ✓
		2L 'a' > 43.4629 in - 890								✓

\* DL controls

### Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T3	510 - 485	L2 1/2x2 1/2x1/4	8.00	7.63	119.0	21.600	1.1900	2.16	25.70	0.084*
T10	335 - 310	L2 1/2x2 1/2x1/4	8.00	7.56	118.0	21.600	1.1900	4.35	25.70	0.169*
T17	160 - 135	L2 1/2x2 1/2x1/4	8.00	7.54	117.7	21.600	1.1900	8.44	25.70	0.328*

\* DL controls

### Top Guy Pull-Off Bending Design Data

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Section No.	Elevation ft	Size	Actual $M_x$ kip-ft	Actual $f_{bx}$ ksi	Allow. $F_{bx}$ ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual $M_y$ kip-ft	Actual $f_{by}$ ksi	Allow. $F_{by}$ ksi	Ratio $\frac{f_{by}}{F_{by}}$
T3	510 - 485	L2 1/2x2 1/2x1/4	-0.07	1.280	23.760	0.054	-0.07	2.509	23.760	0.106
T10	335 - 310	L2 1/2x2 1/2x1/4	-0.07	1.223	23.760	0.051	-0.07	2.397	23.760	0.101
T17	160 - 135	L2 1/2x2 1/2x1/4	-0.06	1.130	23.760	0.048	-0.06	2.215	23.760	0.093

### Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $P$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
			$\frac{P}{P_a}$	$\frac{f_{bx}}{F_{bx}}$	$\frac{f_{by}}{F_{by}}$			
T3	510 - 485	L2 1/2x2 1/2x1/4	0.084	0.054	0.106	0.243* ✓	1.000	H2-1 ✓
T10	335 - 310	L2 1/2x2 1/2x1/4	0.169	0.051	0.101	0.320* ✓	1.000	H2-1 ✓
T17	160 - 135	L2 1/2x2 1/2x1/4	0.328	0.048	0.093	0.468* ✓	1.000	H2-1 ✓

\* DL controls

### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	$P$ K	$SF * P_{allow}$ K	% Capacity	Pass Fail
T1	560 - 535	Leg	4	1	-11.09	336.52	3.3	Pass
T2	535 - 510	Leg	4	43	-35.11	336.52	10.4	Pass
T3	510 - 485	Leg	4 1/2	85	-66.22	458.51	14.4	Pass
T4	485 - 460	Leg	4 1/2	127	-60.02	458.51	13.1	Pass
T5	460 - 435	Leg	4 1/4	171	-42.12	296.72	14.2	Pass
T6	435 - 410	Leg	4 1/4	213	-45.38	296.72	15.3	Pass
T7	410 - 385	Leg	4 1/4	253	-77.81	395.53	19.7	Pass
T8	385 - 360	Leg	4 1/4	295	-117.95	395.53	29.8	Pass
T9	360 - 335	Leg	4 3/4	337	-172.06	525.46	32.7	Pass
T10	335 - 310	Leg	5 1/4	379	-224.22	671.27	33.4	Pass
T11	310 - 285	Leg	4 3/4	422	-212.55	525.46	40.5	Pass
T12	285 - 260	Leg	4 3/4	464	-169.79	525.46	32.3	Pass
T13	260 - 235	Leg	4 3/4	506	-141.33	525.46	26.9	Pass
T14	235 - 210	Leg	4 3/4	548	-145.88	525.46	27.8	Pass
T15	210 - 185	Leg	5	590	-176.49	596.38	29.6	Pass
T16	185 - 160	Leg	5 1/4	632	-222.34	671.27	33.1	Pass
T17	160 - 135	Leg	5 1/2	674	-242.59	750.12	32.3	Pass
T18	135 - 110	Leg	5 1/4	715	-153.99	503.58	30.6	Pass
T19	110 - 85	Leg	5 1/4	757	-158.83	503.58	31.5	Pass
T20	85 - 60	Leg	5 1/4	799	-163.25	503.58	32.4	Pass
T21	60 - 35	Leg	5 1/4	841	-167.59	503.58	33.3	Pass
T22	35 - 10	Leg	5 1/4	883	-172.08	503.58	34.2	Pass
T23	10 - 0	Leg	5 1/4	925	-191.07	527.35	36.2	Pass
T1	560 - 535	Diagonal	1	10	3.37	22.61	14.9	Pass
T2	535 - 510	Diagonal	1	57	6.04	22.61	26.7	Pass
T3	510 - 485	Diagonal	1 1/4	94	8.17	35.33	23.1	Pass
T4	485 - 460	Diagonal	1	163	7.88	22.61	34.8	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P <sub>allow</sub> K	% Capacity	Pass Fail
T5	460 - 435	Diagonal	5/8	205	4.32	8.83	48.9	Pass
T6	435 - 410	Diagonal	5/8	225	4.41	8.83	49.9	Pass
T7	410 - 385	Diagonal	5/8	267	6.91	8.83	78.2	Pass
T8	385 - 360	Diagonal	3/4	309	9.37	12.72	73.7	Pass
T9	360 - 335	Diagonal	1	346	12.62	22.61	55.8	Pass
T10	335 - 310	Diagonal	1 1/4	406	14.64	35.33	73.5 (b) 41.4	Pass
T11	310 - 285	Diagonal	1	457	12.80	22.61	59.2 (b) 56.6	Pass
T12	285 - 260	Diagonal	5/8	499	8.83	8.83	99.9	Pass
T13	260 - 235	Diagonal	5/8	541	6.05	8.83	68.5	Pass
T14	235 - 210	Diagonal	5/8	556	5.25	8.83	59.5	Pass
T15	210 - 185	Diagonal	7/8	598	9.14	17.31	52.8	Pass
T16	185 - 160	Diagonal	1	640	12.91	22.61	83.2 (b) 57.1	Pass
T17	160 - 135	Diagonal	1 1/4	695	12.83	35.33	75.2 (b) 36.3	Pass
T18	135 - 110	Diagonal	1	753	10.95	22.61	51.9 (b) 48.4	Pass
T19	110 - 85	Diagonal	7/8	795	8.08	17.31	46.7	Pass
T20	85 - 60	Diagonal	7/8	837	5.63	17.31	32.5	Pass
T21	60 - 35	Diagonal	7/8	879	3.28	17.31	18.9	Pass
T22	35 - 10	Diagonal	7/8	893	5.33	17.31	30.8	Pass
T1	560 - 535	Horizontal	2L2 1/2x2 1/2x1/4x3/8	16	-2.31	32.79	7.0	Pass
T2	535 - 510	Horizontal	2L2 1/2x2 1/2x1/4x3/8	59	-4.37	32.79	13.3	Pass
T3	510 - 485	Horizontal	2L2 1/2x2 1/2x1/4x3/8	111	-6.08	33.08	18.4	Pass
T4	485 - 460	Horizontal	2L2 1/2x2 1/2x1/4x3/8	160	-5.91	33.08	24.5 (b) 17.9	Pass
T5	460 - 435	Horizontal	2L2x2x3/16x3/8	202	-3.22	12.87	25.0	Pass
T6	435 - 410	Horizontal	2L2x2x3/16x3/8	228	-3.16	12.87	24.5	Pass
T7	410 - 385	Horizontal	2L2x2x3/16x3/8	270	-5.18	12.87	40.2	Pass
T8	385 - 360	Horizontal	2L2x2x1/4x3/8	312	-7.20	16.49	43.7	Pass
T9	360 - 335	Horizontal	2L2 1/2x2 1/2x1/4x3/8	352	-9.63	33.23	29.0	Pass
T10	335 - 310	Horizontal	2L2 1/2x2 1/2x1/4x3/8	412	-11.38	33.52	34.0	Pass
T11	310 - 285	Horizontal	2L2 1/2x2 1/2x1/4x3/8	454	-9.80	33.23	36.0 (b) 29.5	Pass
T12	285 - 260	Horizontal	2L2 1/2x2x3/16x3/8	496	-6.84	22.90	29.9	Pass
T13	260 - 235	Horizontal	2L2 1/2x2x3/16x3/8	540	-3.86	22.90	31.1 (b) 16.9	Pass
T14	235 - 210	Horizontal	2L2 1/2x2x3/16x3/8	562	-3.71	22.90	17.6 (b) 16.2	Pass
T15	210 - 185	Horizontal	2L2 1/2x2x3/16x3/8	604	-6.81	23.00	16.9 (b) 29.6	Pass
T16	185 - 160	Horizontal	2L2 1/2x2 1/2x1/4x3/8	646	-9.91	33.52	31.0 (b) 29.6	Pass
T17	160 - 135	Horizontal	2L2 1/2x2 1/2x1/4x3/8	707	16.88	42.25	40.0	Pass
T18	135 - 110	Horizontal	2L2 1/2x2 1/2x1/4x3/8	749	-8.33	33.52	50.9 (b) 24.9	Pass
T19	110 - 85	Horizontal	2L2x2x1/4x3/8	791	-6.05	16.85	35.9	Pass
T20	85 - 60	Horizontal	2L2x2x3/16x3/8	833	-4.17	13.16	31.7	Pass
T21	60 - 35	Horizontal	2L2x2x3/16x3/8	865	-2.90	9.87	29.4	Pass
T22	35 - 10	Horizontal	2L2x2x3/16x3/8	898	-2.98	9.87	30.2	Pass
T23	10 - 0	Horizontal	2L3x5x1/2x3/8	929	37.98	162.00	23.4	Pass
T1	560 - 535	Top Girt	2L2 1/2x2 1/2x1/4x3/8	4	-0.36	32.79	1.1	Pass
T2	535 - 510	Top Girt	2L2 1/2x2 1/2x1/4x3/8	46	-1.47	32.79	4.5	Pass
T3	510 - 485	Top Girt	2L2 1/2x2 1/2x1/4x3/8	90	-2.58	33.08	7.8	Pass
T4	485 - 460	Top Girt	2L2 1/2x2 1/2x1/4x3/8	130	-3.22	33.08	9.7	Pass
T5	460 - 435	Top Girt	2L2x2x3/16x3/8	172	-1.50	12.87	11.7	Pass
T6	435 - 410	Top Girt	2L2x2x3/16x3/8	216	-0.82	12.87	6.4	Pass
T7	410 - 385	Top Girt	2L2x2x3/16x3/8	258	-1.90	12.87	14.8	Pass
T8	385 - 360	Top Girt	2L2x2x3/16x3/8	300	-2.95	12.87	22.9	Pass

<p><b>tnxTower</b></p> <p><b>GPD Group</b> 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 573-2100 FAX: (330) 573-2101</p>	<p><b>Job</b></p> <p>Avon (Deercliff Rd.) - BU #: 870800</p>	<p><b>Page</b></p> <p>30 of 31</p>
	<p><b>Project</b></p> <p>2013775.870800.04</p>	<p><b>Date</b></p> <p>12:53:13 04/26/13</p>
	<p><b>Client</b></p> <p>Crown Castle USA, Inc.</p>	<p><b>Designed by</b></p> <p>jhuffine</p>

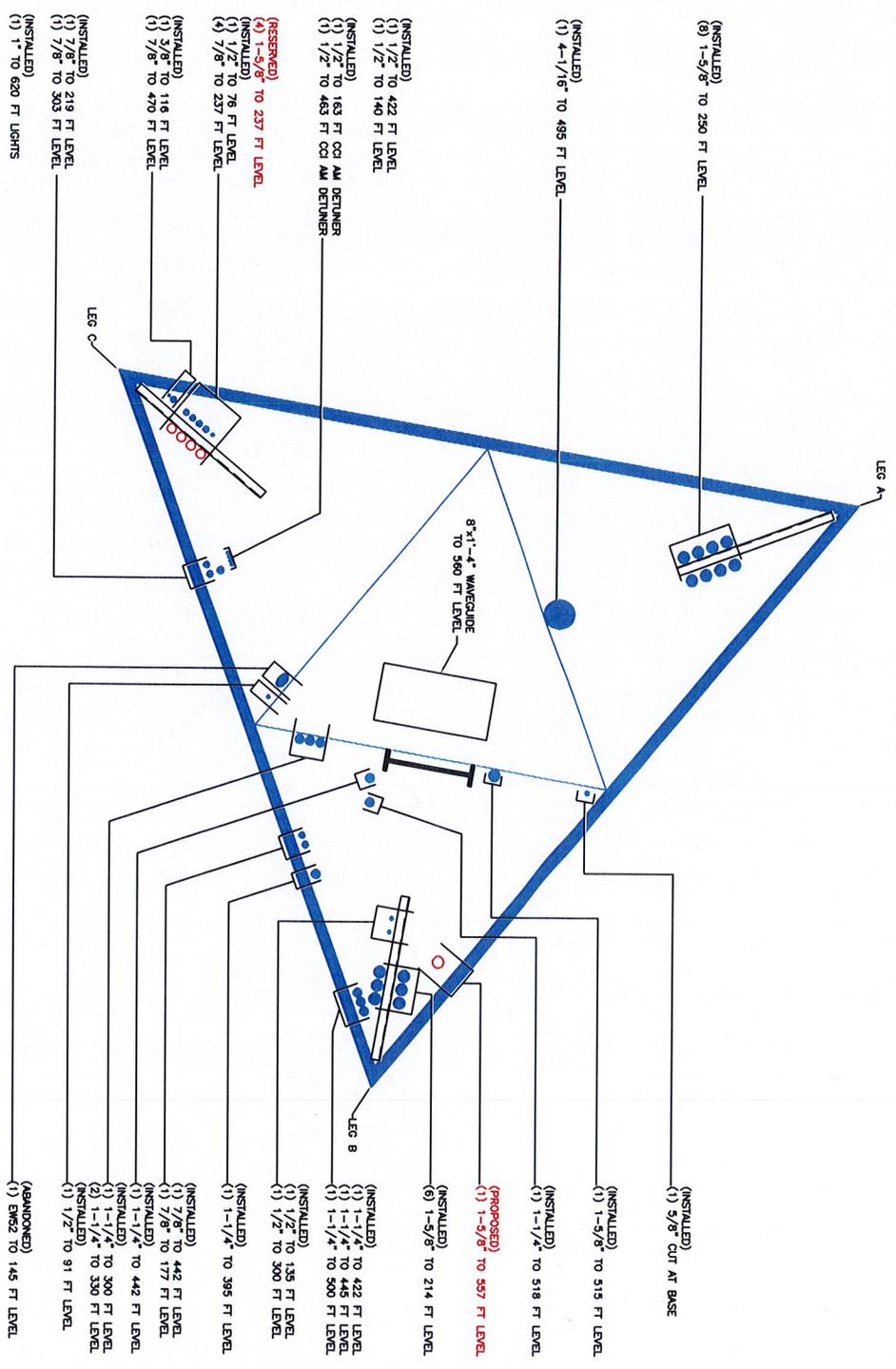
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P <sub>allow</sub> K	% Capacity	Pass Fail
T9	360 - 335	Top Girt	2L2 1/2x2 1/2x1/4x3/8	340	-4.98	33.23	15.0	Pass
T10	335 - 310	Top Girt	2L2 1/2x2 1/2x1/4x3/8	382	-5.39	33.52	22.6 (b)	Pass
T11	310 - 285	Top Girt	2L2 1/2x2 1/2x1/4x3/8	424	-5.11	33.23	16.1	Pass
T12	285 - 260	Top Girt	2L2x2 1/2x3/16x3/8	466	-3.25	13.94	15.4	Pass
T13	260 - 235	Top Girt	2L2x2 1/2x3/16x3/8	508	-2.55	13.94	23.3	Pass
T14	235 - 210	Top Girt	2L2x2 1/2x3/16x3/8	552	-0.72	13.94	18.3	Pass
T15	210 - 185	Top Girt	2L2x2 1/2x3/16x3/8	592	-2.50	14.02	5.1	Pass
T16	185 - 160	Top Girt	2L2 1/2x2 1/2x1/4x3/8	634	-4.66	33.52	17.9	Pass
T17	160 - 135	Top Girt	2L2 1/2x2 1/2x1/4x3/8	676	-4.80	33.67	13.9	Pass
T18	135 - 110	Top Girt	2L2 1/2x2 1/2x1/4x3/8	720	-4.66	33.52	14.3	Pass
T19	110 - 85	Top Girt	2L2x2x1/4x3/8	761	-3.05	16.85	13.9	Pass
T20	85 - 60	Top Girt	2L2x2x3/16x3/8	803	-2.10	13.16	18.1	Pass
T21	60 - 35	Top Girt	2L2x2x3/16x3/8	845	-1.47	13.16	15.9	Pass
T22	35 - 10	Top Girt	2L2x2x3/16x3/8	886	-1.23	13.16	11.1	Pass
T1	560 - 535	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	7	-1.43	32.79	9.3	Pass
T2	535 - 510	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	51	-2.53	32.79	4.4	Pass
T3	510 - 485	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	91	-3.07	33.08	7.7	Pass
T4	485 - 460	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	133	-2.46	33.08	9.3	Pass
T5	460 - 435	Bottom Girt	2L2x2x3/16x3/8	177	-0.79	12.87	7.4	Pass
T6	435 - 410	Bottom Girt	2L2x2x3/16x3/8	219	-1.87	12.87	6.2	Pass
T7	410 - 385	Bottom Girt	2L2x2x3/16x3/8	261	-2.94	12.87	14.5	Pass
T8	385 - 360	Bottom Girt	2L2x2x3/16x3/8	303	-3.03	12.87	22.8	Pass
T9	360 - 335	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	343	-5.32	33.23	23.5	Pass
T10	335 - 310	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	385	-4.84	33.52	16.0	Pass
T11	310 - 285	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	427	-4.72	33.23	24.2 (b)	Pass
T12	285 - 260	Bottom Girt	2L2x2 1/2x3/16x3/8	469	-2.59	13.94	14.4	Pass
T13	260 - 235	Bottom Girt	2L2x2 1/2x3/16x3/8	513	-0.74	13.94	14.2	Pass
T14	235 - 210	Bottom Girt	2L2x2 1/2x3/16x3/8	553	-2.45	13.94	18.6	Pass
T15	210 - 185	Bottom Girt	2L2x2 1/2x3/16x3/8	595	-3.21	14.02	5.3	Pass
T16	185 - 160	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	637	-5.17	33.52	17.6	Pass
T17	160 - 135	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	681	-4.70	33.67	14.0	Pass
T18	135 - 110	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	722	-3.86	33.52	15.4	Pass
T19	110 - 85	Bottom Girt	2L2x2x1/4x3/8	764	-2.76	16.85	11.5	Pass
T20	85 - 60	Bottom Girt	2L2x2x3/16x3/8	806	-1.49	13.16	16.4	Pass
T21	60 - 35	Bottom Girt	2L2x2x3/16x3/8	847	-1.21	13.16	11.3	Pass
T22	35 - 10	Bottom Girt	2L2x2x3/16x3/8	890	7.85	23.97	9.2	Pass
T3	510 - 485	Guy A@491.292	1 1/4	939	59.92	96.00	33.1 (b)	Pass
T10	335 - 310	Guy A@316.292	1 1/2	945	67.36	138.00	62.4	Pass
T17	160 - 135	Guy A@153.708	1 3/4	951	62.01	188.00	48.8	Pass
T3	510 - 485	Guy B@491.292	1 1/4	938	59.28	96.00	33.0	Pass
T10	335 - 310	Guy B@316.292	1 1/2	944	66.44	138.00	61.8	Pass
T17	160 - 135	Guy B@153.708	1 3/4	950	61.06	188.00	48.1	Pass
T3	510 - 485	Guy C@491.292	1 1/4	934	60.82	96.00	32.5	Pass
T10	335 - 310	Guy C@316.292	1 1/2	940	68.54	138.00	63.3	Pass
T17	160 - 135	Guy C@153.708	1 3/4	946	63.39	188.00	49.7	Pass
T3	510 - 485	Top Guy	L2 1/2x2 1/2x1/4	936	2.16	25.70	33.7	Pass
		Pull-Off@491.292					24.3	Pass
T10	335 - 310	Top Guy	L2 1/2x2 1/2x1/4	942	4.35	25.70	32.0	Pass
		Pull-Off@316.292						
T17	160 - 135	Top Guy	L2 1/2x2 1/2x1/4	948	8.44	25.70	46.8	Pass
		Pull-Off@153.708						

Summary	ELC:	Load Case 7
Leg (T11)	40.5	Pass
Diagonal (T12)	99.9	Pass
Horizontal	50.9	Pass

<b>tnxTower</b>  <b>GPD Group</b> 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 573-2100 FAX: (330) 573-2101	<b>Job</b> Avon (Deercliff Rd.) - BU #: 870800	<b>Page</b> 31 of 31
	<b>Project</b> 2013775.870800.04	<b>Date</b> 12:53:13 04/26/13
	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P <sub>allow</sub> K	% Capacity	Pass Fail
						(T17)		
						Top Girt (T12)	23.3	Pass
						Bottom Girt (T22)	33.1	Pass
						Guy A (T3)	62.4	Pass
						Guy B (T3)	61.8	Pass
						Guy C (T3)	63.3	Pass
						Top Guy Pull-Off (T17)	46.8	Pass
						Bolt Checks	83.2	Pass
						Rating =	99.9	Pass

**APPENDIX B**  
**BASE LEVEL DRAWING**



- (INSTALLED) (9) 1-5/8" TO 250 FT LEVEL
- (INSTALLED) (1) 4-1/8" TO 495 FT LEVEL
- (INSTALLED) (1) 1/2" TO 422 FT LEVEL
- (INSTALLED) (1) 1/2" TO 140 FT LEVEL
- (INSTALLED) (1) 1/2" TO 163 FT CCI AM DETUNERS
- (INSTALLED) (1) 1/2" TO 463 FT CCI AM DETUNERS
- (RESERVED) (4) 1-1/4" TO 237 FT LEVEL
- (INSTALLED) (1) 1/2" TO 76 FT LEVEL
- (INSTALLED) (4) 7/8" TO 237 FT LEVEL
- (INSTALLED) (1) 5/8" TO 116 FT LEVEL
- (INSTALLED) (1) 7/8" TO 470 FT LEVEL
- (INSTALLED) (1) 7/8" TO 219 FT LEVEL
- (INSTALLED) (1) 7/8" TO 303 FT LEVEL
- (INSTALLED) (1) 1" TO 620 FT LIGHTS

- (INSTALLED) (1) 5/8" CUT AT BASE
- (INSTALLED) (1) 1-5/8" TO 519 FT LEVEL
- (INSTALLED) (1) 1-1/4" TO 518 FT LEVEL
- (PROPOSED) (1) 1-5/8" TO 597 FT LEVEL
- (INSTALLED) (6) 1-5/8" TO 214 FT LEVEL
- (INSTALLED) (1) 1-1/4" TO 422 FT LEVEL
- (INSTALLED) (1) 1-1/4" TO 445 FT LEVEL
- (INSTALLED) (1) 1-1/4" TO 500 FT LEVEL
- (INSTALLED) (1) 1/2" TO 135 FT LEVEL
- (INSTALLED) (1) 1/2" TO 300 FT LEVEL
- (INSTALLED) (1) 1-1/4" TO 395 FT LEVEL
- (INSTALLED) (1) 7/8" TO 442 FT LEVEL
- (INSTALLED) (1) 7/8" TO 177 FT LEVEL
- (INSTALLED) (1) 1-1/4" TO 442 FT LEVEL
- (INSTALLED) (1) 1-1/4" TO 300 FT LEVEL
- (INSTALLED) (2) 1-1/4" TO 330 FT LEVEL
- (INSTALLED) (1) 1/2" TO 91 FT LEVEL
- (ABANDONED) (1) EMS2 TO 145 FT LEVEL

BUSINESS UNIT: 870800 TOWER ID: C\_BASELEVEL

BASE LEVEL DRAWING

SCALE: 1/4" = 1'-0"

SHEET NUMBER 1

A1-0

CROWN REGION ADDRESS  
USA

31/03/09	AS-BUILT INFORMATION ADDED PER WORK ORDER # 26348	PS
18/08/09	AS-BUILT INFORMATION ADDED PER WORK ORDER # 26744	CP
30/07/09	DECOMMISSIONED PER WORK ORDER # 263534	ATF
12/03/10	AS-BUILT INFORMATION ADDED PER WORK ORDER # 41312	PLM
27/05/11	AS-BUILT INFORMATION ADDED PER WORK ORDER # 41312	PLM
13/06/11	AS-BUILT INFORMATION ADDED PER WORK ORDER # 464654	PLM
28/01/12	APPLICATION ADDED PER WORK ORDER # 464654	PLM
28/03/13	UPDATED PER WORK ORDER # 601810	MS
23/04/13	UPDATED PER WORK ORDER # 604638	MS

DRAWN BY: KJDK  
 CHECKED BY:  
 DRAWING DATE: 15/01/08

SITE NUMBER:  
 SITE NAME:  
 AVON (DEERCLIFF RD.)  
 BUSINESS UNIT NUMBER: 870800

SITE ADDRESS:  
 376 DEERCLIFF RD  
 AVON, CT 06001  
 HARTFORD COUNTY  
 USA

SHEET TITLE:  
 BASE LEVEL

SHEET NUMBER

**APPENDIX C**  
**ADDITIONAL CALCULATIONS**



**Mat Foundation Analysis**  
**Avon (Deercliff Rd.) - BU #: 870800**  
**2013775.870800.04**

General Info	
Code	TIA/EIA-222-F (LRFD)
Bearing On	Soil
Foundation Type	Mono Pad
Pier Type	Square
Reinforcing Known	Yes
Max Capacity	1

Tower Reactions	
Moment, M	k-ft
Axial, P	526 k
Shear, V	4 k

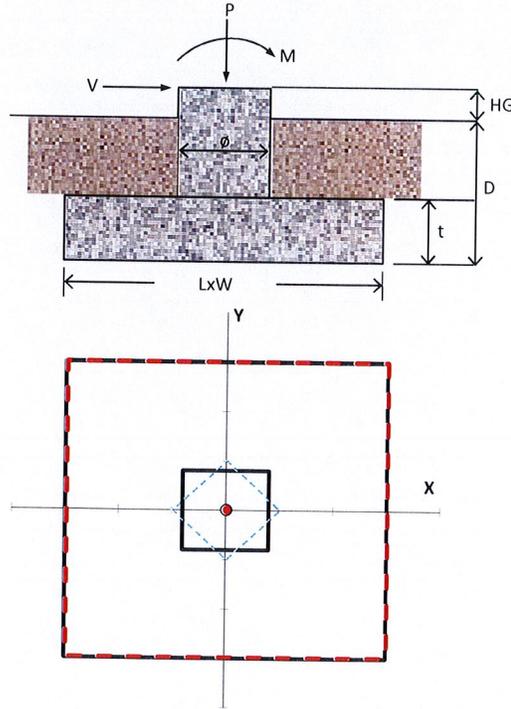
Pad & Pier Geometry	
Pier Width, $\phi$	4 ft
Pad Length, L	15 ft
Pad Width, W	15 ft
Pad Thickness, t	5.3 ft
Depth, D	8 ft
Height Above Grade, HG	1 ft

Pad & Pier Reinforcing	
Rebar Fy	60 ksi
Concrete Fc'	3 ksi
Clear Cover	3 in
Reinforced Top & Bottom?	No
Pad Reinforcing Size	# 9
Pad Quantity Per Layer	23
Pier Rebar Size	# 9
Pier Quantity of Rebar	12

Soil Properties	
Soil Type	Cohesive
Soil Unit Weight	115 pcf
Cohesion, Cu	0 ksf
Bearing Type	Net
Ultimate Bearing	16 ksf
Water Table Depth	99 ft
Frost Depth	3.33 ft

Bearing Summary			Load Case
Qxmax	4.74	ksf	1.2D+1.6W
Qymax	4.74	ksf	1.2D+1.6W
Qmax @ 45°	4.74	ksf	1.2D+1.6W
Q <sub>(all) Gross</sub>	10.15	ksf	
<b>Controlling Capacity</b>	<b>46.7%</b>	<b>Pass</b>	

Overturning Summary (Required FS=1.0)			Load Case
FS(ot)x	163.63	≥1.0	0.9D+1.6W
FS(ot)y	163.63	≥1.0	0.9D+1.6W
<b>Controlling Capacity</b>	<b>0.6%</b>	<b>Pass</b>	





**Base Foundation Reinforcement Check**  
**Avon (Deercliff Rd.) - BU #: 870800**  
**2013775.870800.04**

Code  
**TIA/EIA-222-F**

Tower Reactions	
Moment	0 k-ft
Axial	526
Shear	4 k

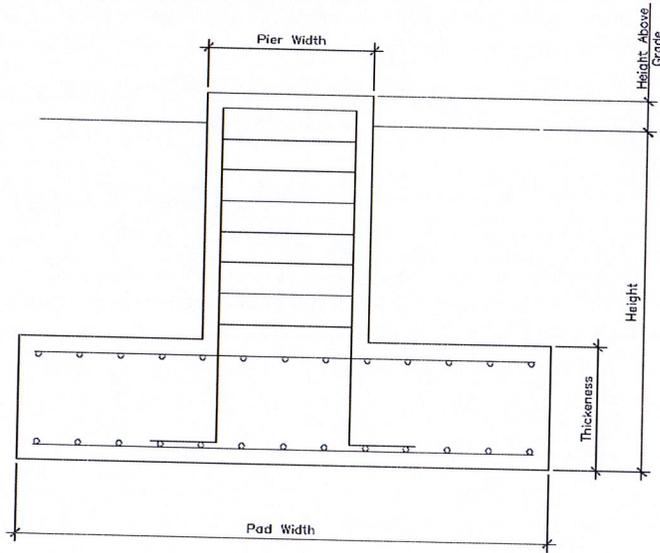
Overall Capacities		
Reinforcement Capacity	18.2%	OK
As Min Met?	Yes	
Controlling Capacity	18.2%	OK

Pad & Pier Geometry	
Height	8 ft
Height above Grade	1 ft
Pad Width	15 ft
Pad Thickness	5.3 ft
Pier Shape	Square
Square Pier Width	4 ft

Pad & Pier Reinforcing	
Reinforcing Known	Yes
$f'_c$	3 ksi
Clear Cover	3 in
Rebar $F_y$	60 ksi
$\phi$ (shear)	0.75
Pad Rebar Size	# 9
Pad Rebar Quantity	23
Pier Rebar Size	# 9
Pier Rebar Quantity	12

Orthogonal Bearing	
$Q_{max}$	4.78 ksf
$Q_{min}$	4.65 ksf

Reinforcing Calculations	
<i>Pad Moment Capacity</i>	
$\phi$ (bending)=	0.90
$M_u$ =	72.06 k-ft
$\phi M_n$ =	396.09 k-ft
Moment Capacity	18.2% OK
<i>One-Way (Wide-Beam) Shear</i>	
$V_u$ =	3.99 psi
$\phi V_n$ =	82.16 psi
Shear Capacity	4.9% OK
<i>Two-Way (Punching) Shear</i>	
$V_u$ =	17.80 psi
$\phi V_n$ =	164.32 psi
Shear Capacity	10.8% OK
<i>Pier Compression</i>	
$P_u$ =	683.8 k
$\phi P_n$ =	3676.18 k
Compression Capacity	18.6% OK





Client: Crown Castle USA, Inc.  
 Project: Avon (Deercliff Rd.)  
 Site ID: 870800  
 Location: Hartford County, CT  
 Loading Type: Wind

Job No.: 2013775.870800.04  
 Sheet No: 1 Of 1  
 Made By: JDH Date: 4/26/2013  
 Chk'd By: F Date: 4/26/2013  
 Code:

**Sources**

Original Design Reactions from Stainless Inc., Report #: 3290, 9/11/1986

**Original Design Reactions**

Uplift 360 K  
 Shear 254 K

**RISA Output Reactions**

Uplift 130 K  
 Shear 129 K

**FOUNDATION CAPACITY w/ 1.35 Conversion Factor**

$$\frac{\text{RISA Output}}{\text{Original Design}} = 50.8\%$$

Exhibit 2  
RF Emissions Compliance Report

# RF EMISSIONS COMPLIANCE REPORT

## Crown Castle on behalf of LightSquared

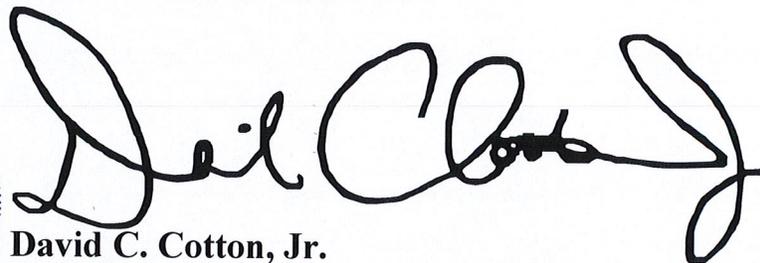
Application ID: 184970

Crown Castle BU: 870800

Crown Castle Site Name: Avon (Deercliff Road)  
376 Deercliff Road  
Avon, CT  
4/9/2013

**Report Status:**

**The Site is Compliant**



A handwritten signature in black ink, appearing to read "David Cotton, Jr.", written over a horizontal line.

David C. Cotton, Jr.  
Licensed Professional Engineer (Electrical)  
State of Connecticut, PEN.0027481  
Date: 2013-April-11

Prepared By:

**Sitesafe, Inc.**

Engineering Statement in Re:  
Electromagnetic Energy Analysis  
LightSquared  
Avon, CT

My signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Sitesafe, Inc. in Arlington, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Crown Castle (See attached Site Summary and Carrier documents), and that LightSquared's installations involve communications equipment, antennas and associated technical equipment at a location referred to as the "Avon (Deercliff Road)" ("the site"); and

That LightSquared proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by LightSquared and shown on the worksheet, and that worst-case 100% duty cycle have been assumed; and

That in addition to the emitters specified in the worksheet, there are additional collocated point-to-point microwave facilities on this structure and, the antennas used are highly directional oriented at angles at or just below the horizontal and, that the energy present at ground level is typically so low as to be considered insignificant and have not been included in this analysis. A list of microwave antennas is included; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio-frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio-frequency radiation must utilize the standards set by the FCC, which is the Federal Agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," defined as situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and (2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for licensees of LightSquared's operating frequency as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed LightSquared operation is no more than 0.007% of the maximum in any accessible area on the ground and

That it is understood per FCC Guidelines and OET65 Appendix A, that regardless of the existent radio-frequency environment, only those licenses whose contributions exceed five percent of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 4.257% of the maximum in any accessible area up to two meters above the ground per OET-65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET-65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier and frequency range indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding Radio Frequency Safety.

In summary, it is stated here that the proposed operation at the site would not result in exposure of the Public to excessive levels of radio-frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307 and that LightSquared's proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals, and approved contractor personnel trained in radio-frequency safety; and that the instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower, or in the immediate proximity of the antennas.

**LightSquared (Proposed)  
Avon (Deercliff Road)  
Site Summary**

<b>Carrier</b>	<b>Area Maximum Percentage MPE</b>
LightSquared (Proposed)	0.007 %
Marcus Communications	0.003 %
Marcus Communications	0.038 %
MetroPCS	0.084 %
Rampoldis Dispatch LC	0.015 %
Sprint-Nextel (iDEN)	0.026 %
T-Mobile	0.076 %
T-Mobile	0.038 %
US-Immigration & Customs	0.021 %
USA Mobility	0.03 %
USA Mobility	0.102 %
USA Mobility	0.064 %
USA Mobility	0.075 %
Unknown	0.03 %
Unknown	0.028 %
Unknown	0.152 %
WUVN - Entravision Holdings (TV Broadcast/Channel 46)	3.466 %
 <b>Composite Site MPE:</b>	 <b>4.257 %</b>

**LightSquared (Proposed)  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 1672.5 MHz  
 Maximum Permissible Exposure (MPE): 1000  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.07347  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.00735 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
Kathrein-Scala	AP19-1670/090D/DT2	557	30	1629	0.032323	0.003232	0.045581	0.004558
Kathrein-Scala	AP19-1670/090D/DT2	557	150	1629	0.032323	0.003232	0.045581	0.004558
Kathrein-Scala	AP19-1670/090D/DT2	557	270	1629	0.032323	0.003232	0.045581	0.004558

**Marcus Communications  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 451 MHz  
 Maximum Permissible Exposure (MPE): 300.67  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.00891  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.00296 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
TX RX	101-68-10-0-03N	508	0	120	0.008905	0.002962	0.008905	0.002962

**Marcus Communications  
Avon (Deercliff Road)  
Carrier Summary**

**Frequency:** 851 MHz  
**Maximum Permissible Exposure (MPE):** 567.33  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.21835  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.03849 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
TX RX	101D-90-06-0-03	427	0	1000	0.116707	0.020571	0.116707	0.020571
TX RX	101D-90-06-0-03	452	0	1000	0.101913	0.017963	0.101913	0.017963

**MetroPCS  
Avon (Deercliff Road)  
Carrier Summary**

**Frequency:** 2100 MHz  
**Maximum Permissible Exposure (MPE):** 1000  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.84078  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.08408 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
Kathrein-Scala	742-213	214	40	3260	0.244543	0.024454	0.521146	0.052115
Kathrein-Scala	742-213	214	115	3260	0.244543	0.024454	0.521146	0.052115
Kathrein-Scala	742-213	214	295	3260	0.244543	0.024454	0.521146	0.052115

**Rampoldis Dispatch LC  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 150 MHz  
 Maximum Permissible Exposure (MPE): 200  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.03084  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.01542 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
SINCLAIR	SC233	402	0	100	0.030842	0.015421	0.030842	0.015421

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 862 MHz  
 Maximum Permissible Exposure (MPE): 574.67  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.15118  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.02631 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	844G65VTZASX	251	160	222	0.035683	0.006209	0.037481	0.006522
ANDREW	844G65VTZASX	251	160	222	0.035683	0.006209	0.037481	0.006522
ANDREW	844G65VTZASX	251	160	222	0.035683	0.006209	0.037481	0.006522
ANDREW	844G65VTZASX	251	160	222	0.035683	0.006209	0.037481	0.006522
RFS	AP859012-42TO	251	280	141	0.021325	0.003711	0.027096	0.004715
RFS	AP859012-42TO	251	280	141	0.021325	0.003711	0.027096	0.004715
RFS	AP859012-42TO	251	280	141	0.021325	0.003711	0.027096	0.004715
RFS	AP859012-42TO	251	280	141	0.021325	0.003711	0.027096	0.004715

Note: Sprint-Nextel is migrating to a CDMA based technology; it is reasoned that the existing iDEN network will be decommissioned in the near future.

## T-Mobile Avon (Deercliff Road) Carrier Summary

**Frequency:** 2100 MHz  
**Maximum Permissible Exposure (MPE):** 1000  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.76389  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.07639 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
RFS	APX16DWW-16DWW-S-E-A20	238	210	1691	0.752761	0.075276	0.752761	0.075276
RFS	APX16DWW-16DWW-S-E-A20	238	310	1691	0.752761	0.075276	0.752761	0.075276

Note: T-Mobile is currently operating only two sectors at this site.

**T-Mobile  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 1900 MHz  
 Maximum Permissible Exposure (MPE): 1000  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.37649  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.03765 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
EMS	FR90-16-02DP	238	210	1301	0.194732	0.019473	0.218757	0.021876
EMS	FR90-16-02DP	238	310	1301	0.194732	0.019473	0.218757	0.021876

Note: T-Mobile is currently operating only two sectors at this site.

**US-Immigration & Customs  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 150 MHz  
 Maximum Permissible Exposure (MPE): 200  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.04279  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.0214 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
TELEWAVE	ANT150F6	528	0	500	0.018386	0.009193	0.042791	0.021396

**USA Mobility  
Avon (Deercliff Road)  
Carrier Summary**

**Frequency:** 928 MHz  
**Maximum Permissible Exposure (MPE):** 618.67  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.18825  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.03043 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	PG1N0F-0093-8	515	0	3500	0.188251	0.030428	0.188251	0.030428

**USA Mobility  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 450 MHz  
 Maximum Permissible Exposure (MPE): 300  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.30508  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.10169 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	DB636-C	305	0	100	0.083793	0.027931	0.083793	0.027931
ANDREW	DB636-C	308	0	100	0.082057	0.027352	0.082057	0.027352
ANDREW	DB636-C	335	0	100	0.069698	0.023233	0.069698	0.023233
ANDREW	DB636-C	335	0	100	0.069698	0.023233	0.069698	0.023233

**USA Mobility  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 150 MHz  
 Maximum Permissible Exposure (MPE): 200  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.12737  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.06368 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
TELEWAVE	ANT150F6	187	0	100	0.03058	0.01529	0.071472	0.035736
TELEWAVE	ANT150F6	219	0	100	0.021546	0.010773	0.051488	0.025744
TELEWAVE	ANT150F6	452	0	100	0.005056	0.002528	0.011741	0.005871
TELEWAVE	ANT150F6	452	0	100	0.005056	0.002528	0.011741	0.005871
TELEWAVE	ANT150F6	480	0	100	0.004499	0.00225	0.010381	0.005191

**USA Mobility  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 470 MHz  
 Maximum Permissible Exposure (MPE): 313.33  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.23447  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.07483 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
RFS	201-8	120	0	100	0.234473	0.074832	0.234473	0.074832

**Unknown  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 450 MHz  
 Maximum Permissible Exposure (MPE): 300  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.09121  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.0304 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	DB636-C	294	0	100	0.091206	0.030402	0.091206	0.030402

**Unknown  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 851 MHz  
 Maximum Permissible Exposure (MPE): 567.33  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.16064  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.02832 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	DB810M-XC	259	0	1000	0.160643	0.028315	0.160643	0.028316

**Unknown  
Avon (Deercliff Road)  
Carrier Summary**

**Frequency:** 150 MHz  
**Maximum Permissible Exposure (MPE):** 200  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.30428  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.15214 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
TELEWAVE	ANT150F2	94	0	100	0.122079	0.061039	0.30305	0.151525
TELEWAVE	ANT150F2	505	0	100	0.004044	0.002022	0.009366	0.004683

**WUVN - Entravision Holdings (TV Broadcast/Channel 46)  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 665 MHz  
 Maximum Permissible Exposure (MPE): 443.33  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 15.36428  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 3.46563 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	ATW25H3-H50-46	495	0	217000	15.364277	3.465626	15.364283	3.465628

**Avon (Deercliff Road)  
Composite Microwave Antenna Summary**

<b>Carrier</b>	<b>Antenna Make/Model</b>	<b>Height (feet)</b>
Marcus Communications	RadioWaves SPD2-5.8	135'
Marcus Communications	RadioWaves SPD2-5.8	140'
Marcus Communications	RadioWaves SPD2-5.8	300'

**LightSquared (Proposed)  
Avon (Deercliff Road)  
Kathrein-Scala:AP19-1670/090D/DT2 Antenna Worksheet (30 Sector)**

Maximum Permissible Exposure (MPE): 1000  
 ERP (Watts): 1629      Height (feet): 557      Frequency (MHz): 1673      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-1.93	0.6418	96127.44	96127.29	0.000006	0.000001	170117091
1.0	-0.45	0.9016	9613.23	9611.76	0.000588	0.000059	1701341
2.0	0.00	1.0000	4807.35	4804.42	0.002350	0.000235	425465
3.0	-0.67	0.8570	3205.71	3201.32	0.005286	0.000529	189191
4.0	-2.71	0.5358	2405.14	2399.28	0.009390	0.000939	106495
5.0	-6.40	0.2291	1924.99	1917.66	0.014659	0.001466	68219
6.0	-12.45	0.0569	1605.06	1596.26	0.021085	0.002108	47427
7.0	-18.87	0.0130	1376.67	1366.41	0.028661	0.002866	34890
8.0	-14.15	0.0385	1205.51	1193.77	0.032323	0.003232	30937
9.0	-12.70	0.0537	1072.49	1059.28	0.026246	0.002625	38100
10.0	-14.23	0.0378	966.17	951.49	0.014539	0.001454	68779
12.0	-34.22	0.0004	806.95	789.31	0.005319	0.000532	187996
14.0	-20.49	0.0089	693.50	672.90	0.007198	0.000720	138925
16.0	-27.37	0.0018	608.68	585.10	0.002415	0.000242	414022
18.0	-24.20	0.0038	542.93	516.36	0.002167	0.000217	461439
20.0	-21.69	0.0068	490.54	460.96	0.002201	0.000220	454410
22.0	-30.99	0.0008	447.87	415.26	0.002635	0.000264	379467
24.0	-25.28	0.0030	412.49	376.83	0.003101	0.000310	322467
26.0	-25.24	0.0030	382.72	343.99	0.001938	0.000194	515935
28.0	-32.99	0.0005	357.37	315.54	0.002218	0.000222	450886
30.0	-35.71	0.0003	335.55	290.59	0.005305	0.000530	188509
32.0	-25.65	0.0027	316.60	268.49	0.006784	0.000678	147405
34.0	-20.75	0.0084	300.03	248.74	0.007535	0.000753	132714
36.0	-20.77	0.0084	285.43	230.92	0.008300	0.000830	120487
38.0	-26.79	0.0021	272.51	214.74	0.009084	0.000908	110079
40.0	-31.81	0.0007	261.01	199.95	0.009872	0.000987	101298
42.0	-24.52	0.0035	250.73	186.33	0.006063	0.000606	164929
44.0	-25.23	0.0030	241.52	173.74	0.004818	0.000482	207544
46.0	-33.62	0.0004	233.23	162.02	0.005149	0.000515	194225
48.0	-36.10	0.0002	225.76	151.06	0.005476	0.000548	182619
50.0	-30.16	0.0010	219.01	140.78	0.002470	0.000247	404849
52.0	-33.12	0.0005	212.91	131.08	0.002827	0.000283	353702
54.0	-35.05	0.0003	207.38	121.89	0.005138	0.000514	194620
56.0	-27.68	0.0017	202.37	113.16	0.005544	0.000554	180368
58.0	-25.15	0.0031	197.84	104.84	0.005771	0.000577	173282
60.0	-25.43	0.0029	193.73	96.86	0.005993	0.000599	166867
62.0	-27.21	0.0019	190.02	89.21	0.006202	0.000620	161230
64.0	-27.94	0.0016	186.67	81.83	0.006398	0.000640	156287
66.0	-26.46	0.0023	183.65	74.70	0.005956	0.000596	167903
68.0	-25.49	0.0028	180.95	67.79	0.006110	0.000611	163675
70.0	-25.76	0.0027	178.54	61.06	0.006248	0.000625	160041
72.0	-26.94	0.0020	176.41	54.51	0.006351	0.000635	157457
74.0	-27.67	0.0017	174.54	48.11	0.007070	0.000707	141449
76.0	-26.75	0.0021	172.91	41.83	0.009477	0.000948	105521
78.0	-25.08	0.0031	171.52	35.66	0.011089	0.001109	90181
80.0	-23.78	0.0042	170.36	29.58	0.011512	0.001151	86865
82.0	-23.13	0.0049	169.42	23.58	0.011528	0.001153	86745
84.0	-23.03	0.0050	168.70	17.63	0.011570	0.001157	86429
86.0	-23.36	0.0046	168.18	11.73	0.011658	0.001166	85774
88.0	-24.05	0.0039	167.88	5.86	0.011648	0.001165	85853
90.0	-25.01	0.0032	167.77	0.00	0.011161	0.001116	89597

**LightSquared (Proposed)**  
**Avon (Deercliff Road)**  
**Kathrein-Scala:AP19-1670/090D/DT2 Antenna Worksheet (150 Sector)**

Maximum Permissible Exposure (MPE):		1000		Frequency (MHz):		Downtilt (Degrees):	
ERP (Watts):	1629	Height (feet):	557	1673			0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-1.93	0.6418	96127.44	96127.29	0.000006	0.000001	170117091
1.0	-0.45	0.9016	9613.23	9611.76	0.000588	0.000059	1701341
2.0	0.00	1.0000	4807.35	4804.42	0.002350	0.000235	425465
3.0	-0.67	0.8570	3205.71	3201.32	0.005286	0.000529	189191
4.0	-2.71	0.5358	2405.14	2399.28	0.009390	0.000939	106495
5.0	-6.40	0.2291	1924.99	1917.66	0.014659	0.001466	68219
6.0	-12.45	0.0569	1605.06	1596.26	0.021085	0.002108	47427
7.0	-18.87	0.0130	1376.67	1366.41	0.028661	0.002866	34890
8.0	-14.15	0.0385	1205.51	1193.77	0.032323	0.003232	30937
9.0	-12.70	0.0537	1072.49	1059.28	0.026250	0.002625	38095
10.0	-14.23	0.0378	966.17	951.49	0.014537	0.001454	68788
12.0	-34.22	0.0004	806.95	789.31	0.005321	0.000532	187924
14.0	-20.49	0.0089	693.50	672.90	0.007199	0.000720	138907
16.0	-27.37	0.0018	608.68	585.10	0.002415	0.000242	414074
18.0	-24.20	0.0038	542.93	516.36	0.002167	0.000217	461556
20.0	-21.69	0.0068	490.54	460.96	0.002200	0.000220	454526
22.0	-30.99	0.0008	447.87	415.26	0.002635	0.000263	379515
24.0	-25.28	0.0030	412.49	376.83	0.003101	0.000310	322426
26.0	-25.24	0.0030	382.72	343.99	0.001938	0.000194	515935
28.0	-32.99	0.0005	357.37	315.54	0.002219	0.000222	450714
30.0	-35.71	0.0003	335.55	290.59	0.005303	0.000530	188581
32.0	-25.65	0.0027	316.60	268.49	0.006782	0.000678	147442
34.0	-20.75	0.0084	300.03	248.74	0.007532	0.000753	132764
36.0	-20.77	0.0084	285.43	230.92	0.008303	0.000830	120440
38.0	-26.79	0.0021	272.51	214.74	0.009079	0.000908	110149
40.0	-31.81	0.0007	261.01	199.95	0.009867	0.000987	101350
42.0	-24.52	0.0035	250.73	186.33	0.006066	0.000607	164845
44.0	-25.23	0.0030	241.52	173.74	0.004816	0.000482	207624
46.0	-33.62	0.0004	233.23	162.02	0.005147	0.000515	194299
48.0	-36.10	0.0002	225.76	151.06	0.005472	0.000547	182735
50.0	-30.16	0.0010	219.01	140.78	0.002468	0.000247	405159
52.0	-33.12	0.0005	212.91	131.08	0.002825	0.000283	353927
54.0	-35.05	0.0003	207.38	121.89	0.005141	0.000514	194496
56.0	-27.68	0.0017	202.37	113.16	0.005540	0.000554	180506
58.0	-25.15	0.0031	197.84	104.84	0.005778	0.000578	173062
60.0	-25.43	0.0029	193.73	96.86	0.006002	0.000600	166612
62.0	-27.21	0.0019	190.02	89.21	0.006213	0.000621	160942
64.0	-27.94	0.0016	186.67	81.83	0.006412	0.000641	155949
66.0	-26.46	0.0023	183.65	74.70	0.005942	0.000594	168288
68.0	-25.49	0.0028	180.95	67.79	0.006093	0.000609	164134
70.0	-25.76	0.0027	178.54	61.06	0.006228	0.000623	160552
72.0	-26.94	0.0020	176.41	54.51	0.006371	0.000637	156956
74.0	-27.67	0.0017	174.54	48.11	0.007044	0.000704	141973
76.0	-26.75	0.0021	172.91	41.83	0.009514	0.000951	105105
78.0	-25.08	0.0031	171.52	35.66	0.011039	0.001104	90584
80.0	-23.78	0.0042	170.36	29.58	0.011455	0.001146	87297
82.0	-23.13	0.0049	169.42	23.58	0.011590	0.001159	86282
84.0	-23.03	0.0050	168.70	17.63	0.011640	0.001164	85913
86.0	-23.36	0.0046	168.18	11.73	0.011583	0.001158	86334
88.0	-24.05	0.0039	167.88	5.86	0.011569	0.001157	86435
90.0	-25.01	0.0032	167.77	0.00	0.011238	0.001124	88982

**LightSquared (Proposed)  
Avon (Deercliff Road)  
Kathrein-Scala:AP19-1670/090D/DT2 Antenna Worksheet (270 Sector)**

Maximum Permissible Exposure (MPE):							
ERP (Watts):		Height (feet):		Frequency (MHz):		Downtilt (Degrees):	
1629		557		1000 1673		0.0	
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-1.93	0.6418	96127.44	96127.29	0.000006	0.000001	170117091
1.0	-0.45	0.9016	9613.23	9611.76	0.000588	0.000059	1701341
2.0	0.00	1.0000	4807.35	4804.42	0.002350	0.000235	425465
3.0	-0.67	0.8570	3205.71	3201.32	0.005286	0.000529	189191
4.0	-2.71	0.5358	2405.14	2399.28	0.009390	0.000939	106495
5.0	-6.40	0.2291	1924.99	1917.66	0.014659	0.001466	68219
6.0	-12.45	0.0569	1605.06	1596.26	0.021085	0.002108	47427
7.0	-18.87	0.0130	1376.67	1366.41	0.028661	0.002866	34890
8.0	-14.15	0.0385	1205.51	1193.77	0.032323	0.003232	30937
9.0	-12.70	0.0537	1072.49	1059.28	0.026250	0.002625	38095
10.0	-14.23	0.0378	966.17	951.49	0.014539	0.001454	68779
12.0	-34.22	0.0004	806.95	789.31	0.005321	0.000532	187924
14.0	-20.49	0.0089	693.50	672.90	0.007199	0.000720	138907
16.0	-27.37	0.0018	608.68	585.10	0.002415	0.000242	414021
18.0	-24.20	0.0038	542.93	516.36	0.002167	0.000217	461439
20.0	-21.69	0.0068	490.54	460.96	0.002201	0.000220	454410
22.0	-30.99	0.0008	447.87	415.26	0.002635	0.000264	379467
24.0	-25.28	0.0030	412.49	376.83	0.003101	0.000310	322426
26.0	-25.24	0.0030	382.72	343.99	0.001938	0.000194	515935
28.0	-32.99	0.0005	357.37	315.54	0.002219	0.000222	450714
30.0	-35.71	0.0003	335.55	290.59	0.005305	0.000530	188509
32.0	-25.65	0.0027	316.60	268.49	0.006784	0.000678	147405
34.0	-20.75	0.0084	300.03	248.74	0.007535	0.000753	132714
36.0	-20.77	0.0084	285.43	230.92	0.008303	0.000830	120441
38.0	-26.79	0.0021	272.51	214.74	0.009084	0.000908	110079
40.0	-31.81	0.0007	261.01	199.95	0.009872	0.000987	101298
42.0	-24.52	0.0035	250.73	186.33	0.006066	0.000607	164845
44.0	-25.23	0.0030	241.52	173.74	0.004818	0.000482	207544
46.0	-33.62	0.0004	233.23	162.02	0.005149	0.000515	194225
48.0	-36.10	0.0002	225.76	151.06	0.005476	0.000548	182619
50.0	-30.16	0.0010	219.01	140.78	0.002470	0.000247	404849
52.0	-33.12	0.0005	212.91	131.08	0.002827	0.000283	353702
54.0	-35.05	0.0003	207.38	121.89	0.005141	0.000514	194496
56.0	-27.68	0.0017	202.37	113.16	0.005544	0.000554	180368
58.0	-25.15	0.0031	197.84	104.84	0.005778	0.000578	173062
60.0	-25.43	0.0029	193.73	96.86	0.006002	0.000600	166612
62.0	-27.21	0.0019	190.02	89.21	0.006213	0.000621	160942
64.0	-27.94	0.0016	186.67	81.83	0.006412	0.000641	155949
66.0	-26.46	0.0023	183.65	74.70	0.005956	0.000596	167903
68.0	-25.49	0.0028	180.95	67.79	0.006110	0.000611	163675
70.0	-25.76	0.0027	178.54	61.06	0.006248	0.000625	160041
72.0	-26.94	0.0020	176.41	54.51	0.006371	0.000637	156956
74.0	-27.67	0.0017	174.54	48.11	0.007070	0.000707	141449
76.0	-26.75	0.0021	172.91	41.83	0.009514	0.000951	105105
78.0	-25.08	0.0031	171.52	35.66	0.011089	0.001109	90181
80.0	-23.78	0.0042	170.36	29.58	0.011512	0.001151	86865
82.0	-23.13	0.0049	169.42	23.58	0.011590	0.001159	86282
84.0	-23.03	0.0050	168.70	17.63	0.011640	0.001164	85913
86.0	-23.36	0.0046	168.18	11.73	0.011658	0.001166	85774
88.0	-24.05	0.0039	167.88	5.86	0.011648	0.001165	85853
90.0	-25.01	0.0032	167.77	0.00	0.011161	0.001116	89597

**Marcus Communications**  
**Avon (Deercliff Road)**  
**TX RX:101-68-10-0-03N Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		300.67					
ERP (Watts):	120	Height (feet):	508	Frequency (MHz):	451	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-1.93	0.6406	96127.41	96127.29	0.000000	0.000000	694364076
1.0	-2.65	0.5436	9612.98	9611.76	0.000043	0.000014	6952858
2.0	-4.67	0.3415	4806.85	4804.42	0.000172	0.000057	1744784
3.0	-5.79	0.2635	3204.96	3201.32	0.000385	0.000128	781149
4.0	-6.79	0.2096	2404.14	2399.28	0.000680	0.000226	442147
5.0	-7.39	0.1823	1923.75	1917.66	0.001051	0.000349	286208
6.0	-7.50	0.1780	1603.56	1596.26	0.001482	0.000493	202895
7.0	-6.88	0.2053	1374.93	1366.41	0.001939	0.000645	155039
8.0	-6.59	0.2193	1203.52	1193.77	0.002387	0.000794	125971
9.0	-6.47	0.2252	1070.25	1059.28	0.002802	0.000932	107317
10.0	-6.57	0.2200	963.69	951.49	0.003119	0.001037	96397
12.0	-8.50	0.1414	803.98	789.31	0.003760	0.001251	79966
14.0	-11.56	0.0698	690.04	672.90	0.004410	0.001467	68173
16.0	-17.74	0.0168	604.73	585.10	0.005072	0.001687	59277
18.0	-17.08	0.0196	538.50	516.36	0.005747	0.001912	52312
20.0	-15.40	0.0289	485.63	460.96	0.006438	0.002141	46700
22.0	-16.55	0.0221	442.49	415.26	0.006674	0.002220	45050
24.0	-19.36	0.0116	406.64	376.83	0.006385	0.002124	47090
26.0	-18.97	0.0127	376.41	343.99	0.006695	0.002227	44906
28.0	-15.85	0.0260	350.60	315.54	0.007898	0.002627	38067
30.0	-13.96	0.0402	328.34	290.59	0.008315	0.002766	36158
32.0	-14.35	0.0367	308.95	268.49	0.008550	0.002844	35165
34.0	-15.83	0.0261	291.94	248.74	0.008728	0.002903	34447
36.0	-19.53	0.0112	276.92	230.92	0.008855	0.002945	33955
38.0	-20.62	0.0087	263.58	214.74	0.008905	0.002962	33762
40.0	-18.97	0.0127	251.67	199.95	0.008213	0.002732	36609
42.0	-17.50	0.0178	241.00	186.33	0.006274	0.002087	47920
44.0	-17.62	0.0173	231.39	173.74	0.005273	0.001754	57014
46.0	-20.08	0.0098	222.73	162.02	0.005134	0.001708	58563
48.0	-24.10	0.0039	214.90	151.06	0.004988	0.001659	60275
50.0	-27.23	0.0019	207.79	140.78	0.004839	0.001609	62132
52.0	-21.15	0.0077	201.35	131.08	0.004146	0.001379	72512
54.0	-18.97	0.0127	195.49	121.89	0.005769	0.001919	52113
56.0	-15.77	0.0265	190.17	113.16	0.006607	0.002197	45506
58.0	-15.15	0.0306	185.34	104.84	0.006794	0.002260	44256
60.0	-15.27	0.0297	180.95	96.86	0.006653	0.002213	45195
62.0	-15.71	0.0269	176.97	89.21	0.006514	0.002167	46154
64.0	-16.81	0.0208	173.37	81.83	0.006381	0.002122	47119
66.0	-19.86	0.0103	170.12	74.70	0.006253	0.002080	48080
68.0	-22.91	0.0051	167.20	67.79	0.005499	0.001829	54674
70.0	-27.20	0.0019	164.59	61.06	0.004555	0.001515	66004
72.0	-41.83	0.0001	162.27	54.51	0.002467	0.000821	121866
74.0	-36.10	0.0002	160.23	48.11	0.001193	0.000397	252115
76.0	-33.13	0.0005	158.46	41.83	0.000448	0.000149	671697
78.0	-31.42	0.0007	156.94	35.66	0.000161	0.000054	1868430
80.0	-31.58	0.0007	155.68	29.58	0.000155	0.000051	1944946
82.0	-35.37	0.0003	154.65	23.58	0.000150	0.000050	2010448
84.0	-36.58	0.0002	153.85	17.63	0.000146	0.000048	2063285
86.0	-35.79	0.0003	153.29	11.73	0.000109	0.000036	2770514
88.0	-33.27	0.0005	152.95	5.86	0.000100	0.000033	3006132
90.0	-32.35	0.0006	152.84	0.00	0.000100	0.000033	3018179

**Marcus Communications**  
**Avon (Deercliff Road)**  
**TX RX:101D-90-06-0-03 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):

567.33

ERP (Watts): 1000      Height (feet): 427      Frequency (MHz): 851      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.03	0.9922	96127.37	96127.29	0.000004	0.000001	157220877
1.0	-0.11	0.9757	9612.62	9611.76	0.000361	0.000064	1572282
2.0	-0.45	0.9014	4806.13	4804.42	0.001443	0.000254	393072
3.0	-1.16	0.7658	3203.88	3201.32	0.003248	0.000572	174690
4.0	-1.93	0.6415	2402.70	2399.28	0.005773	0.001018	98272
5.0	-2.87	0.5169	1921.94	1917.66	0.008993	0.001585	63087
6.0	-3.43	0.4534	1601.40	1596.26	0.012970	0.002286	43742
7.0	-4.92	0.3219	1372.41	1366.41	0.017683	0.003117	32084
8.0	-7.05	0.1971	1200.63	1193.77	0.023046	0.004062	24617
9.0	-9.47	0.1130	1067.01	1059.28	0.028953	0.005103	19594
10.0	-14.40	0.0363	960.08	951.49	0.035160	0.006197	16135
12.0	-21.95	0.0064	799.65	789.31	0.048194	0.008495	11771
14.0	-12.46	0.0568	685.00	672.90	0.061617	0.010861	9207
16.0	-10.29	0.0935	598.97	585.10	0.070268	0.012386	8073
18.0	-10.97	0.0800	532.02	516.36	0.070256	0.012384	8075
20.0	-13.70	0.0427	478.44	460.96	0.077206	0.013609	7348
22.0	-18.97	0.0127	434.58	415.26	0.087768	0.015470	6464
24.0	-18.68	0.0135	398.02	376.83	0.098125	0.017296	5781
26.0	-16.08	0.0247	367.08	343.99	0.108176	0.019067	5244
28.0	-15.64	0.0273	340.57	315.54	0.116707	0.020571	4861
30.0	-17.47	0.0179	317.60	290.59	0.111200	0.019600	5101
32.0	-22.52	0.0056	297.51	268.49	0.087687	0.015456	6469
34.0	-33.85	0.0004	279.81	248.74	0.081830	0.014424	6933
36.0	-20.29	0.0094	264.10	230.92	0.083270	0.014677	6813
38.0	-16.40	0.0229	250.07	214.74	0.084201	0.014842	6737
40.0	-14.60	0.0346	237.49	199.95	0.084663	0.014923	6701
42.0	-14.59	0.0347	226.15	186.33	0.085159	0.015010	6662
44.0	-16.13	0.0244	215.88	173.74	0.098355	0.017336	5768
46.0	-19.27	0.0118	206.57	162.02	0.099941	0.017616	5676
48.0	-23.58	0.0044	198.10	151.06	0.099523	0.017542	5700
50.0	-22.10	0.0062	190.37	140.78	0.098782	0.017412	5743
52.0	-19.70	0.0107	183.31	131.08	0.097764	0.017232	5803
54.0	-18.39	0.0145	176.86	121.89	0.095170	0.016775	5961
56.0	-18.59	0.0138	170.96	113.16	0.075475	0.013304	7516
58.0	-19.71	0.0107	165.57	104.84	0.047385	0.008352	11972
60.0	-22.48	0.0056	160.64	96.86	0.044481	0.007840	12754
62.0	-25.95	0.0025	156.14	89.21	0.042726	0.007531	13278
64.0	-29.81	0.0010	152.05	81.83	0.041043	0.007234	13823
66.0	-28.65	0.0014	148.33	74.70	0.039446	0.006953	14382
68.0	-26.25	0.0024	144.97	67.79	0.032801	0.005782	17296
70.0	-24.95	0.0032	141.96	61.06	0.018154	0.003200	31250
72.0	-23.85	0.0041	139.26	54.51	0.009962	0.001756	56950
74.0	-23.62	0.0043	136.88	48.11	0.010788	0.001902	52588
76.0	-23.50	0.0045	134.80	41.83	0.010802	0.001904	52519
78.0	-23.74	0.0042	133.02	35.66	0.010356	0.001825	54785
80.0	-24.33	0.0037	131.52	29.58	0.009983	0.001760	56830
82.0	-25.31	0.0029	130.30	23.58	0.009682	0.001707	58597
84.0	-27.06	0.0020	129.36	17.63	0.009135	0.001610	62106
86.0	-29.78	0.0011	128.69	11.73	0.007733	0.001363	73364
88.0	-33.28	0.0005	128.28	5.86	0.005552	0.000979	102193
90.0	-39.91	0.0001	128.15	0.00	0.003062	0.000540	185288

**Marcus Communications**  
**Avon (Deercliff Road)**  
**TX RX:101D-90-06-0-03 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 567.33  
ERP (Watts): 1000      Height (feet): 452      Frequency (MHz): 851      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.03	0.9922	96127.38	96127.29	0.000004	0.000001	157220975
1.0	-0.11	0.9757	9612.72	9611.76	0.000361	0.000064	1572323
2.0	-0.45	0.9014	4806.33	4804.42	0.001443	0.000254	393109
3.0	-1.16	0.7658	3204.20	3201.32	0.003247	0.000572	174727
4.0	-1.93	0.6415	2403.12	2399.28	0.005767	0.001017	98372
5.0	-2.87	0.5169	1922.47	1917.66	0.008981	0.001583	63171
6.0	-3.43	0.4534	1602.03	1596.26	0.012976	0.002287	43720
7.0	-4.92	0.3219	1373.14	1366.41	0.017652	0.003111	32139
8.0	-7.05	0.1971	1201.47	1193.77	0.022935	0.004043	24736
9.0	-9.47	0.1130	1067.95	1059.28	0.028672	0.005054	19787
10.0	-14.40	0.0363	961.13	951.49	0.034656	0.006109	16370
12.0	-21.95	0.0064	800.91	789.31	0.046892	0.008265	12098
14.0	-12.46	0.0568	686.46	672.90	0.058866	0.010376	9637
16.0	-10.29	0.0935	600.64	585.10	0.063513	0.011195	8932
18.0	-10.97	0.0800	533.91	516.36	0.064856	0.011432	8747
20.0	-13.70	0.0427	480.53	460.96	0.073915	0.013028	7675
22.0	-18.97	0.0127	436.89	415.26	0.083634	0.014742	6783
24.0	-18.68	0.0135	400.54	376.83	0.093068	0.016405	6095
26.0	-16.08	0.0247	369.81	343.99	0.101913	0.017963	5566
28.0	-15.64	0.0273	343.51	315.54	0.101646	0.017916	5581
30.0	-17.47	0.0179	320.75	290.59	0.084613	0.014914	6705
32.0	-22.52	0.0056	300.87	268.49	0.072512	0.012781	7823
34.0	-33.85	0.0004	283.38	248.74	0.073938	0.013033	7673
36.0	-20.29	0.0094	267.88	230.92	0.074879	0.013198	7576
38.0	-16.40	0.0229	254.06	214.74	0.075378	0.013286	7526
40.0	-14.60	0.0346	241.68	199.95	0.072534	0.012785	7821
42.0	-14.59	0.0347	230.55	186.33	0.086793	0.015298	6536
44.0	-16.13	0.0244	220.49	173.74	0.089070	0.015700	6369
46.0	-19.27	0.0118	211.38	162.02	0.088752	0.015644	6392
48.0	-23.58	0.0044	203.11	151.06	0.088143	0.015536	6436
50.0	-22.10	0.0062	195.58	140.78	0.087287	0.015386	6499
52.0	-19.70	0.0107	188.72	131.08	0.086206	0.015195	6581
54.0	-18.39	0.0145	182.46	121.89	0.072622	0.012801	7812
56.0	-18.59	0.0138	176.75	113.16	0.044468	0.007838	12758
58.0	-19.71	0.0107	171.53	104.84	0.040053	0.007060	14164
60.0	-22.48	0.0056	166.78	96.86	0.038518	0.006789	14728
62.0	-25.95	0.0025	162.45	89.21	0.037045	0.006530	15314
64.0	-29.81	0.0010	158.52	81.83	0.035644	0.006283	15916
66.0	-28.65	0.0014	154.96	74.70	0.032173	0.005671	17633
68.0	-26.25	0.0024	151.75	67.79	0.022328	0.003936	25409
70.0	-24.95	0.0032	148.87	61.06	0.010312	0.001818	55014
72.0	-23.85	0.0041	146.30	54.51	0.009562	0.001685	59334
74.0	-23.62	0.0043	144.04	48.11	0.009705	0.001711	58456
76.0	-23.50	0.0045	142.07	41.83	0.009465	0.001668	59938
78.0	-23.74	0.0042	140.38	35.66	0.009110	0.001606	62277
80.0	-24.33	0.0037	138.96	29.58	0.008814	0.001554	64370
82.0	-25.31	0.0029	137.80	23.58	0.008564	0.001509	66249
84.0	-27.06	0.0020	136.91	17.63	0.007986	0.001408	71043
86.0	-29.78	0.0011	136.28	11.73	0.006728	0.001186	84325
88.0	-33.28	0.0005	135.90	5.86	0.004797	0.000846	118270
90.0	-39.91	0.0001	135.77	0.00	0.002728	0.000481	207978

**MetroPCS**  
**Avon (Deercliff Road)**  
**Kathrein-Scala:742-213 Antenna Worksheet (40 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 3260      Height (feet): 214      Frequency (MHz): 2100      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-0.08	0.9817	96127.31	96127.29	0.000012	0.000001	85006134
1.0	-0.80	0.8318	9611.97	9611.76	0.001177	0.000118	849926
2.0	-2.90	0.5129	4804.83	4804.42	0.004709	0.000471	212379
3.0	-7.10	0.1950	3201.94	3201.32	0.010603	0.001060	94315
4.0	-15.40	0.0288	2400.11	2399.28	0.018870	0.001887	52993
5.0	-25.50	0.0028	1918.71	1917.66	0.029527	0.002953	33866
6.0	-14.90	0.0324	1597.51	1596.26	0.042595	0.004259	23477
7.0	-13.60	0.0437	1367.87	1366.41	0.058097	0.005810	17212
8.0	-16.10	0.0245	1195.45	1193.77	0.076065	0.007606	13146
9.0	-24.00	0.0040	1061.17	1059.28	0.096533	0.009653	10359
10.0	-29.20	0.0012	953.59	951.49	0.119541	0.011954	8365
12.0	-19.10	0.0123	791.84	789.31	0.173367	0.017337	5768
14.0	-29.90	0.0010	675.87	672.90	0.223270	0.022327	4478
16.0	-24.60	0.0035	588.50	585.10	0.244543	0.024454	4089
18.0	-41.50	0.0001	520.21	516.36	0.215882	0.021588	4632
20.0	-18.20	0.0151	465.27	460.96	0.127996	0.012800	7812
22.0	-14.70	0.0339	420.04	415.26	0.052354	0.005235	19100
24.0	-17.50	0.0178	382.09	376.83	0.039053	0.003905	25605
26.0	-27.60	0.0017	349.75	343.99	0.046583	0.004658	21466
28.0	-34.10	0.0004	321.81	315.54	0.054979	0.005498	18188
30.0	-39.20	0.0001	297.39	290.59	0.055511	0.005551	18014
32.0	-43.60	0.0000	275.84	268.49	0.036972	0.003697	27047
34.0	-35.40	0.0003	256.65	248.74	0.026202	0.002620	38165
36.0	-28.20	0.0015	239.42	230.92	0.031993	0.003199	31256
38.0	-27.30	0.0019	223.86	214.74	0.052996	0.005300	18869
40.0	-32.10	0.0006	209.70	199.95	0.093911	0.009391	10648
42.0	-43.10	0.0000	196.77	186.33	0.115230	0.011523	8678
44.0	-36.70	0.0002	184.88	173.74	0.130291	0.013029	7675
46.0	-34.40	0.0004	173.92	162.02	0.146963	0.014696	6804
48.0	-26.50	0.0022	163.76	151.06	0.165427	0.016543	6044
50.0	-22.50	0.0056	154.33	140.78	0.185884	0.018588	5379
52.0	-21.80	0.0066	145.53	131.08	0.208559	0.020856	4794
54.0	-24.00	0.0040	137.32	121.89	0.219282	0.021928	4560
56.0	-29.00	0.0013	129.63	113.16	0.120889	0.012089	8272
58.0	-35.50	0.0003	122.43	104.84	0.017565	0.001757	56930
60.0	-37.50	0.0002	115.67	96.86	0.022579	0.002258	44288
62.0	-34.10	0.0004	109.34	89.21	0.025142	0.002514	39774
64.0	-32.20	0.0006	103.41	81.83	0.027951	0.002795	35777
66.0	-30.50	0.0009	97.86	74.70	0.031015	0.003101	32242
68.0	-31.00	0.0008	92.70	67.79	0.032172	0.003217	31083
70.0	-32.20	0.0006	87.90	61.06	0.100036	0.010004	9996
72.0	-32.20	0.0006	83.48	54.51	0.127884	0.012788	7819
74.0	-33.30	0.0005	79.45	48.11	0.139617	0.013962	7162
76.0	-35.90	0.0003	75.81	41.83	0.151207	0.015121	6613
78.0	-37.40	0.0002	72.59	35.66	0.044289	0.004429	22579
80.0	-38.70	0.0001	69.81	29.58	0.026048	0.002605	38391
82.0	-41.40	0.0001	67.48	23.58	0.027345	0.002735	36569
84.0	-44.60	0.0000	65.64	17.63	0.021100	0.002110	47392
86.0	-44.90	0.0000	64.31	11.73	0.013864	0.001386	72130
88.0	-44.40	0.0000	63.50	5.86	0.005098	0.000510	196160
90.0	-48.00	0.0000	63.23	0.00	0.001413	0.000141	707596

**MetroPCS**  
**Avon (Deercliff Road)**  
**Kathrein-Scala:742-213 Antenna Worksheet (115 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 3260      Height (feet): 214      Frequency (MHz): 2100      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (μW/cm²)	Percent of MPE	Times Below MPE
0.1	-0.08	0.9817	96127.31	96127.29	0.000012	0.000001	85006142
1.0	-0.80	0.8318	9611.97	9611.76	0.001177	0.000118	849926
2.0	-2.90	0.5129	4804.83	4804.42	0.004709	0.000471	212379
3.0	-7.10	0.1950	3201.94	3201.32	0.010603	0.001060	94315
4.0	-15.40	0.0288	2400.11	2399.28	0.018870	0.001887	52993
5.0	-25.50	0.0028	1918.71	1917.66	0.029527	0.002953	33866
6.0	-14.90	0.0324	1597.51	1596.26	0.042595	0.004259	23477
7.0	-13.60	0.0437	1367.87	1366.41	0.058097	0.005810	17212
8.0	-16.10	0.0245	1195.45	1193.77	0.076065	0.007606	13146
9.0	-24.00	0.0040	1061.17	1059.28	0.096533	0.009653	10359
10.0	-29.20	0.0012	953.59	951.49	0.119541	0.011954	8365
12.0	-19.10	0.0123	791.84	789.31	0.173367	0.017337	5768
14.0	-29.90	0.0010	675.87	672.90	0.223270	0.022327	4478
16.0	-24.60	0.0035	588.50	585.10	0.244543	0.024454	4089
18.0	-41.50	0.0001	520.21	516.36	0.215882	0.021588	4632
20.0	-18.20	0.0151	465.27	460.96	0.128160	0.012816	7802
22.0	-14.70	0.0339	420.04	415.26	0.052421	0.005242	19076
24.0	-17.50	0.0178	382.09	376.83	0.039103	0.003910	25573
26.0	-27.60	0.0017	349.75	343.99	0.046583	0.004658	21466
28.0	-34.10	0.0004	321.81	315.54	0.054979	0.005498	18188
30.0	-39.20	0.0001	297.39	290.59	0.055511	0.005551	18014
32.0	-43.60	0.0000	275.84	268.49	0.036925	0.003693	27081
34.0	-35.40	0.0003	256.65	248.74	0.026235	0.002624	38116
36.0	-28.20	0.0015	239.42	230.92	0.031993	0.003199	31256
38.0	-27.30	0.0019	223.86	214.74	0.053024	0.005302	18859
40.0	-32.10	0.0006	209.70	199.95	0.093965	0.009396	10642
42.0	-43.10	0.0000	196.77	186.33	0.115230	0.011523	8678
44.0	-36.70	0.0002	184.88	173.74	0.130291	0.013029	7675
46.0	-34.40	0.0004	173.92	162.02	0.146963	0.014696	6804
48.0	-26.50	0.0022	163.76	151.06	0.165427	0.016543	6044
50.0	-22.50	0.0056	154.33	140.78	0.185884	0.018588	5379
52.0	-21.80	0.0066	145.53	131.08	0.208559	0.020856	4794
54.0	-24.00	0.0040	137.32	121.89	0.219282	0.021928	4560
56.0	-29.00	0.0013	129.63	113.16	0.120919	0.012092	8269
58.0	-35.50	0.0003	122.43	104.84	0.017563	0.001756	56937
60.0	-37.50	0.0002	115.67	96.86	0.022583	0.002258	44280
62.0	-34.10	0.0004	109.34	89.21	0.025152	0.002515	39758
64.0	-32.20	0.0006	103.41	81.83	0.027915	0.002791	35823
66.0	-30.50	0.0009	97.86	74.70	0.030975	0.003098	32283
68.0	-31.00	0.0008	92.70	67.79	0.032130	0.003213	31123
70.0	-32.20	0.0006	87.90	61.06	0.100291	0.010029	9970
72.0	-32.20	0.0006	83.48	54.51	0.127884	0.012788	7819
74.0	-33.30	0.0005	79.45	48.11	0.139617	0.013962	7162
76.0	-35.90	0.0003	75.81	41.83	0.152079	0.015208	6575
78.0	-37.40	0.0002	72.59	35.66	0.044289	0.004429	22579
80.0	-38.70	0.0001	69.81	29.58	0.026281	0.002628	38050
82.0	-41.40	0.0001	67.48	23.58	0.027645	0.002764	36173
84.0	-44.60	0.0000	65.64	17.63	0.021100	0.002110	47392
86.0	-44.90	0.0000	64.31	11.73	0.013636	0.001364	73335
88.0	-44.40	0.0000	63.50	5.86	0.005190	0.000519	192691
90.0	-48.00	0.0000	63.23	0.00	0.001438	0.000144	695295

**MetroPCS**  
**Avon (Deercliff Road)**  
**Kathrein-Scala:742-213 Antenna Worksheet (295 Sector)**

Maximum Permissible Exposure (MPE):							
ERP (Watts):	3260	Height (feet):	214	1000	Frequency (MHz):	2100	Downtilt (Degrees): 0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.08	0.9817	96127.31	96127.29	0.000012	0.000001	85006142
1.0	-0.80	0.8318	9611.97	9611.76	0.001177	0.000118	849926
2.0	-2.90	0.5129	4804.83	4804.42	0.004709	0.000471	212379
3.0	-7.10	0.1950	3201.94	3201.32	0.010603	0.001060	94315
4.0	-15.40	0.0288	2400.11	2399.28	0.018870	0.001887	52993
5.0	-25.50	0.0028	1918.71	1917.66	0.029527	0.002953	33866
6.0	-14.90	0.0324	1597.51	1596.26	0.042595	0.004259	23477
7.0	-13.60	0.0437	1367.87	1366.41	0.058097	0.005810	17212
8.0	-16.10	0.0245	1195.45	1193.77	0.076065	0.007606	13146
9.0	-24.00	0.0040	1061.17	1059.28	0.096533	0.009653	10359
10.0	-29.20	0.0012	953.59	951.49	0.119541	0.011954	8365
12.0	-19.10	0.0123	791.84	789.31	0.173367	0.017337	5768
14.0	-29.90	0.0010	675.87	672.90	0.223270	0.022327	4478
16.0	-24.60	0.0035	588.50	585.10	0.244543	0.024454	4089
18.0	-41.50	0.0001	520.21	516.36	0.215882	0.021588	4632
20.0	-18.20	0.0151	465.27	460.96	0.128160	0.012816	7802
22.0	-14.70	0.0339	420.04	415.26	0.052421	0.005242	19076
24.0	-17.50	0.0178	382.09	376.83	0.039103	0.003910	25573
26.0	-27.60	0.0017	349.75	343.99	0.046583	0.004658	21466
28.0	-34.10	0.0004	321.81	315.54	0.054979	0.005498	18188
30.0	-39.20	0.0001	297.39	290.59	0.055511	0.005551	18014
32.0	-43.60	0.0000	275.84	268.49	0.036925	0.003693	27081
34.0	-35.40	0.0003	256.65	248.74	0.026235	0.002624	38116
36.0	-28.20	0.0015	239.42	230.92	0.031993	0.003199	31256
38.0	-27.30	0.0019	223.86	214.74	0.053024	0.005302	18859
40.0	-32.10	0.0006	209.70	199.95	0.093965	0.009396	10642
42.0	-43.10	0.0000	196.77	186.33	0.115230	0.011523	8678
44.0	-36.70	0.0002	184.88	173.74	0.130291	0.013029	7675
46.0	-34.40	0.0004	173.92	162.02	0.146963	0.014696	6804
48.0	-26.50	0.0022	163.76	151.06	0.165427	0.016543	6044
50.0	-22.50	0.0056	154.33	140.78	0.185884	0.018588	5379
52.0	-21.80	0.0066	145.53	131.08	0.208559	0.020856	4794
54.0	-24.00	0.0040	137.32	121.89	0.219282	0.021928	4560
56.0	-29.00	0.0013	129.63	113.16	0.120919	0.012092	8269
58.0	-35.50	0.0003	122.43	104.84	0.017563	0.001756	56937
60.0	-37.50	0.0002	115.67	96.86	0.022583	0.002258	44280
62.0	-34.10	0.0004	109.34	89.21	0.025152	0.002515	39758
64.0	-32.20	0.0006	103.41	81.83	0.027915	0.002791	35823
66.0	-30.50	0.0009	97.86	74.70	0.030975	0.003098	32283
68.0	-31.00	0.0008	92.70	67.79	0.032130	0.003213	31123
70.0	-32.20	0.0006	87.90	61.06	0.100291	0.010029	9970
72.0	-32.20	0.0006	87.90	61.06	0.127884	0.012788	7819
74.0	-33.30	0.0005	83.48	54.51	0.139617	0.013962	7162
76.0	-35.90	0.0003	79.45	48.11	0.152079	0.015208	6575
78.0	-37.40	0.0002	75.81	41.83	0.044289	0.004429	22579
80.0	-38.70	0.0001	72.59	35.66	0.026281	0.002628	38050
82.0	-41.40	0.0001	69.81	29.58	0.027645	0.002764	36173
84.0	-44.60	0.0000	67.48	23.58	0.021100	0.002110	47392
86.0	-44.90	0.0000	65.64	17.63	0.013636	0.001364	73335
88.0	-44.40	0.0000	64.31	11.73	0.005190	0.000519	192691
90.0	-48.00	0.0000	63.23	0.00	0.001438	0.000144	695295

**Rampoldis Dispatch LC**  
**Avon (Deercliff Road)**  
**SINCLAIR:SC233 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 200  
 ERP (Watts): 100      Height (feet): 402      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.09	0.9795	96127.36	96127.29	0.000000	0.000000	567166907
1.0	0.00	1.0000	9612.52	9611.76	0.000035	0.000018	5672876
2.0	0.00	1.0000	4805.93	4804.42	0.000141	0.000071	1418425
3.0	-0.10	0.9772	3203.59	3201.32	0.000317	0.000159	630443
4.0	-0.20	0.9550	2402.30	2399.28	0.000564	0.000282	354608
5.0	-0.20	0.9550	1921.45	1917.66	0.000881	0.000441	226918
6.0	-0.30	0.9333	1600.81	1596.26	0.001270	0.000635	157458
7.0	-0.40	0.9120	1371.71	1366.41	0.001732	0.000866	115476
8.0	-0.40	0.9120	1199.84	1193.77	0.002264	0.001132	88349
9.0	-0.60	0.8710	1066.12	1059.28	0.002867	0.001434	69751
10.0	-0.70	0.8511	959.10	951.49	0.003541	0.001770	56484
12.0	-1.10	0.7762	798.46	789.31	0.005083	0.002541	39349
14.0	-1.50	0.7079	683.61	672.90	0.006915	0.003457	28924
16.0	-1.90	0.6457	597.38	585.10	0.008982	0.004491	22266
18.0	-2.50	0.5623	530.24	516.36	0.011340	0.005670	17636
20.0	-3.20	0.4786	476.45	460.96	0.013819	0.006910	14472
22.0	-4.00	0.3981	432.39	415.26	0.016426	0.008213	12175
24.0	-4.80	0.3311	395.63	376.83	0.019095	0.009547	10474
26.0	-5.70	0.2692	364.49	343.99	0.021857	0.010928	9150
28.0	-6.70	0.2138	337.77	315.54	0.024527	0.012263	8154
30.0	-7.80	0.1660	314.60	290.59	0.026787	0.013394	7466
32.0	-8.90	0.1288	294.31	268.49	0.028757	0.014379	6954
34.0	-10.00	0.1000	276.40	248.74	0.029959	0.014979	6675
36.0	-11.20	0.0759	260.48	230.92	0.030697	0.015349	6515
38.0	-12.70	0.0537	246.25	214.74	0.030842	0.015421	6484
40.0	-14.70	0.0339	233.46	199.95	0.030313	0.015156	6597
42.0	-16.90	0.0204	221.92	186.33	0.028917	0.014458	6916
44.0	-18.80	0.0132	211.45	173.74	0.026809	0.013405	7460
46.0	-19.70	0.0107	201.93	162.02	0.024323	0.012161	8222
48.0	-19.50	0.0112	193.26	151.06	0.021616	0.010808	9252
50.0	-18.80	0.0132	185.33	140.78	0.018534	0.009267	10791
52.0	-17.70	0.0170	178.07	131.08	0.015017	0.007508	13318
54.0	-16.80	0.0209	171.42	121.89	0.010886	0.005443	18371
56.0	-15.90	0.0257	165.33	113.16	0.007295	0.003648	27414
58.0	-15.20	0.0302	159.74	104.84	0.006475	0.003237	30890
60.0	-14.70	0.0339	154.63	96.86	0.007486	0.003743	26715
62.0	-14.60	0.0347	149.95	89.21	0.008535	0.004268	23432
64.0	-14.50	0.0355	145.68	81.83	0.009335	0.004667	21425
66.0	-14.60	0.0347	141.80	74.70	0.009406	0.004703	21262
68.0	-14.90	0.0324	138.28	67.79	0.009392	0.004696	21295
70.0	-15.40	0.0288	135.12	61.06	0.009197	0.004598	21747
72.0	-16.00	0.0251	132.28	54.51	0.009010	0.004505	22197
74.0	-16.80	0.0209	129.78	48.11	0.008836	0.004418	22635
76.0	-17.80	0.0166	127.58	41.83	0.008515	0.004258	23487
78.0	-19.00	0.0126	125.69	35.66	0.007549	0.003774	26494
80.0	-20.50	0.0089	124.11	29.58	0.006455	0.003227	30986
82.0	-21.90	0.0065	122.81	23.58	0.004980	0.002490	40159
84.0	-23.90	0.0041	121.81	17.63	0.003538	0.001769	56526
86.0	-26.70	0.0021	121.10	11.73	0.002291	0.001145	87311
88.0	-31.20	0.0008	120.67	5.86	0.001420	0.000710	140811
90.0	-34.70	0.0003	120.53	0.00	0.000709	0.000355	281963

**Sprint-Nextel (iDEN)**  
**Avon (Deercliff Road)**  
**ANDREW:844G65VTZASX Antenna Worksheet (160 Sector)**

Maximum Permissible Exposure (MPE):		574.67					
ERP (Watts):	222	Height (feet):	251	Frequency (MHz):	862	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	717349725
1.0	-0.10	0.9772	9612.05	9611.76	0.000080	0.000014	7172482
2.0	-0.20	0.9550	4804.99	4804.42	0.000321	0.000056	1792351
3.0	-0.40	0.9120	3202.18	3201.32	0.000722	0.000126	796030
4.0	-0.70	0.8511	2400.44	2399.28	0.001285	0.000224	447319
5.0	-1.10	0.7762	1919.11	1917.66	0.002010	0.000350	285915
6.0	-1.60	0.6918	1598.00	1596.26	0.002899	0.000504	198239
7.0	-2.20	0.6026	1368.44	1366.41	0.003953	0.000688	145374
8.0	-2.90	0.5129	1196.10	1193.77	0.005174	0.000900	111063
9.0	-3.70	0.4266	1061.90	1059.28	0.006565	0.001142	87539
10.0	-4.60	0.3467	954.41	951.49	0.008127	0.001414	70713
12.0	-7.00	0.1995	792.82	789.31	0.011671	0.002031	49237
14.0	-10.00	0.1000	677.02	672.90	0.015676	0.002728	36659
16.0	-13.90	0.0407	589.82	585.10	0.020118	0.003501	28564
18.0	-19.00	0.0126	521.70	516.36	0.024538	0.004270	23419
20.0	-22.50	0.0056	466.94	460.96	0.028719	0.004997	20010
22.0	-20.90	0.0081	421.89	415.26	0.032043	0.005576	17934
24.0	-19.10	0.0123	384.12	376.83	0.034633	0.006027	16593
26.0	-18.60	0.0138	351.96	343.99	0.035683	0.006209	16104
28.0	-19.30	0.0117	324.21	315.54	0.035526	0.006182	16175
30.0	-21.10	0.0078	299.99	290.59	0.034022	0.005920	16890
32.0	-24.00	0.0040	278.64	268.49	0.031127	0.005416	18462
34.0	-29.20	0.0012	259.65	248.74	0.026363	0.004588	21798
36.0	-39.20	0.0001	242.64	230.92	0.021054	0.003664	27294
38.0	-32.90	0.0005	227.30	214.74	0.015523	0.002701	37021
40.0	-27.50	0.0018	213.38	199.95	0.010178	0.001771	56462
42.0	-24.90	0.0032	200.68	186.33	0.005845	0.001017	98320
44.0	-23.50	0.0045	189.04	173.74	0.003607	0.000628	159298
46.0	-22.90	0.0051	178.33	162.02	0.004041	0.000703	142215
48.0	-22.90	0.0051	168.44	151.06	0.004517	0.000786	127214
50.0	-23.10	0.0049	159.28	140.78	0.005035	0.000876	114143
52.0	-23.80	0.0042	150.77	131.08	0.005690	0.000990	100988
54.0	-24.60	0.0035	142.86	121.89	0.006090	0.001060	94365
56.0	-25.90	0.0026	135.49	113.16	0.005692	0.000991	100953
58.0	-27.60	0.0017	128.61	104.84	0.004050	0.000705	141883
60.0	-29.80	0.0010	122.20	96.86	0.002316	0.000403	248151
62.0	-32.20	0.0006	116.23	89.21	0.003184	0.000554	180465
64.0	-34.40	0.0004	110.67	81.83	0.003972	0.000691	144675
66.0	-35.40	0.0003	105.50	74.70	0.004397	0.000765	130687
68.0	-35.20	0.0003	100.73	67.79	0.004775	0.000831	120351
70.0	-34.70	0.0003	96.33	61.06	0.005321	0.000926	107990
72.0	-34.20	0.0004	92.32	54.51	0.005430	0.000945	105828
74.0	-33.90	0.0004	88.69	48.11	0.004899	0.000853	117299
76.0	-33.90	0.0004	85.44	41.83	0.003479	0.000605	165186
78.0	-34.30	0.0004	82.60	35.66	0.001667	0.000290	344831
80.0	-34.90	0.0003	80.16	29.58	0.000699	0.000122	822504
82.0	-36.30	0.0002	78.15	23.58	0.000690	0.000120	832525
84.0	-37.70	0.0002	76.56	17.63	0.000665	0.000116	863952
86.0	-39.10	0.0001	75.42	11.73	0.000652	0.000113	881121
88.0	-40.00	0.0001	74.73	5.86	0.000531	0.000092	1082621
90.0	-39.60	0.0001	74.50	0.00	0.000370	0.000064	1553514

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
ANDREW:844G65VTZASX Antenna Worksheet (160 Sector)**

Maximum Permissible Exposure (MPE):		574.67					
ERP (Watts):	222	Height (feet):	251	Frequency (MHz):	862	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	717349725
1.0	-0.10	0.9772	9612.05	9611.76	0.000080	0.000014	7172482
2.0	-0.20	0.9550	4804.99	4804.42	0.000321	0.000056	1792351
3.0	-0.40	0.9120	3202.18	3201.32	0.000722	0.000126	796030
4.0	-0.70	0.8511	2400.44	2399.28	0.001285	0.000224	447319
5.0	-1.10	0.7762	1919.11	1917.66	0.002010	0.000350	285915
6.0	-1.60	0.6918	1598.00	1596.26	0.002899	0.000504	198239
7.0	-2.20	0.6026	1368.44	1366.41	0.003953	0.000688	145374
8.0	-2.90	0.5129	1196.10	1193.77	0.005174	0.000900	111063
9.0	-3.70	0.4266	1061.90	1059.28	0.006565	0.001142	87539
10.0	-4.60	0.3467	954.41	951.49	0.008127	0.001414	70713
12.0	-7.00	0.1995	792.82	789.31	0.011671	0.002031	49237
14.0	-10.00	0.1000	677.02	672.90	0.015676	0.002728	36659
16.0	-13.90	0.0407	589.82	585.10	0.020118	0.003501	28564
18.0	-19.00	0.0126	521.70	516.36	0.024538	0.004270	23419
20.0	-22.50	0.0056	466.94	460.96	0.028719	0.004997	20010
22.0	-20.90	0.0081	421.89	415.26	0.032043	0.005576	17934
24.0	-19.10	0.0123	384.12	376.83	0.034633	0.006027	16593
26.0	-18.60	0.0138	351.96	343.99	0.035683	0.006209	16104
28.0	-19.30	0.0117	324.21	315.54	0.035526	0.006182	16175
30.0	-21.10	0.0078	299.99	290.59	0.034022	0.005920	16890
32.0	-24.00	0.0040	278.64	268.49	0.031127	0.005416	18462
34.0	-29.20	0.0012	259.65	248.74	0.026363	0.004588	21798
36.0	-39.20	0.0001	242.64	230.92	0.021054	0.003664	27294
38.0	-32.90	0.0005	227.30	214.74	0.015523	0.002701	37021
40.0	-27.50	0.0018	213.38	199.95	0.010178	0.001771	56462
42.0	-24.90	0.0032	200.68	186.33	0.005845	0.001017	98320
44.0	-23.50	0.0045	189.04	173.74	0.003607	0.000628	159298
46.0	-22.90	0.0051	178.33	162.02	0.004041	0.000703	142215
48.0	-22.90	0.0051	168.44	151.06	0.004517	0.000786	127214
50.0	-23.10	0.0049	159.28	140.78	0.005035	0.000876	114143
52.0	-23.80	0.0042	150.77	131.08	0.005690	0.000990	100988
54.0	-24.60	0.0035	142.86	121.89	0.006090	0.001060	94365
56.0	-25.90	0.0026	135.49	113.16	0.005692	0.000991	100953
58.0	-27.60	0.0017	128.61	104.84	0.004050	0.000705	141883
60.0	-29.80	0.0010	122.20	96.86	0.002316	0.000403	248151
62.0	-32.20	0.0006	116.23	89.21	0.003184	0.000554	180465
64.0	-34.40	0.0004	110.67	81.83	0.003972	0.000691	144675
66.0	-35.40	0.0003	105.50	74.70	0.004397	0.000765	130687
68.0	-35.20	0.0003	100.73	67.79	0.004775	0.000831	120351
70.0	-34.70	0.0003	96.33	61.06	0.005321	0.000926	107990
72.0	-34.20	0.0004	92.32	54.51	0.005430	0.000945	105828
74.0	-33.90	0.0004	88.69	48.11	0.004899	0.000853	117299
76.0	-33.90	0.0004	85.44	41.83	0.003479	0.000605	165186
78.0	-34.30	0.0004	82.60	35.66	0.001667	0.000290	344831
80.0	-34.90	0.0003	80.16	29.58	0.000699	0.000122	822504
82.0	-36.30	0.0002	78.15	23.58	0.000690	0.000120	832525
84.0	-37.70	0.0002	76.56	17.63	0.000665	0.000116	863952
86.0	-39.10	0.0001	75.42	11.73	0.000652	0.000113	881121
88.0	-40.00	0.0001	74.73	5.86	0.000531	0.000092	1082621
90.0	-39.60	0.0001	74.50	0.00	0.000370	0.000064	1553514

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
ANDREW:844G65VTZASX Antenna Worksheet (160 Sector)**

Maximum Permissible Exposure (MPE): 574.67  
 ERP (Watts): 222      Height (feet): 251      Frequency (MHz): 862      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	717349725
1.0	-0.10	0.9772	9612.05	9611.76	0.000080	0.000014	7172482
2.0	-0.20	0.9550	4804.99	4804.42	0.000321	0.000056	1792351
3.0	-0.40	0.9120	3202.18	3201.32	0.000722	0.000126	796030
4.0	-0.70	0.8511	2400.44	2399.28	0.001285	0.000224	447319
5.0	-1.10	0.7762	1919.11	1917.66	0.002010	0.000350	285915
6.0	-1.60	0.6918	1598.00	1596.26	0.002899	0.000504	198239
7.0	-2.20	0.6026	1368.44	1366.41	0.003953	0.000688	145374
8.0	-2.90	0.5129	1196.10	1193.77	0.005174	0.000900	111063
9.0	-3.70	0.4266	1061.90	1059.28	0.006565	0.001142	87539
10.0	-4.60	0.3467	954.41	951.49	0.008127	0.001414	70713
12.0	-7.00	0.1995	792.82	789.31	0.011671	0.002031	49237
14.0	-10.00	0.1000	677.02	672.90	0.015676	0.002728	36659
16.0	-13.90	0.0407	589.82	585.10	0.020118	0.003501	28564
18.0	-19.00	0.0126	521.70	516.36	0.024538	0.004270	23419
20.0	-22.50	0.0056	466.94	460.96	0.028719	0.004997	20010
22.0	-20.90	0.0081	421.89	415.26	0.032043	0.005576	17934
24.0	-19.10	0.0123	384.12	376.83	0.034633	0.006027	16593
26.0	-18.60	0.0138	351.96	343.99	0.035683	0.006209	16104
28.0	-19.30	0.0117	324.21	315.54	0.035526	0.006182	16175
30.0	-21.10	0.0078	299.99	290.59	0.034022	0.005920	16890
32.0	-24.00	0.0040	278.64	268.49	0.031127	0.005416	18462
34.0	-29.20	0.0012	259.65	248.74	0.026363	0.004588	21798
36.0	-39.20	0.0001	242.64	230.92	0.021054	0.003664	27294
38.0	-32.90	0.0005	227.30	214.74	0.015523	0.002701	37021
40.0	-27.50	0.0018	213.38	199.95	0.010178	0.001771	56462
42.0	-24.90	0.0032	200.68	186.33	0.005845	0.001017	98320
44.0	-23.50	0.0045	189.04	173.74	0.003607	0.000628	159298
46.0	-22.90	0.0051	178.33	162.02	0.004041	0.000703	142215
48.0	-22.90	0.0051	168.44	151.06	0.004517	0.000786	127214
50.0	-23.10	0.0049	159.28	140.78	0.005035	0.000876	114143
52.0	-23.80	0.0042	150.77	131.08	0.005690	0.000990	100988
54.0	-24.60	0.0035	142.86	121.89	0.006090	0.001060	94365
56.0	-25.90	0.0026	135.49	113.16	0.005692	0.000991	100953
58.0	-27.60	0.0017	128.61	104.84	0.004050	0.000705	141883
60.0	-29.80	0.0010	122.20	96.86	0.002316	0.000403	248151
62.0	-32.20	0.0006	116.23	89.21	0.003184	0.000554	180465
64.0	-34.40	0.0004	110.67	81.83	0.003972	0.000691	144675
66.0	-35.40	0.0003	105.50	74.70	0.004397	0.000765	130687
68.0	-35.20	0.0003	100.73	67.79	0.004775	0.000831	120351
70.0	-34.70	0.0003	96.33	61.06	0.005321	0.000926	107990
72.0	-34.20	0.0004	92.32	54.51	0.005430	0.000945	105828
74.0	-33.90	0.0004	88.69	48.11	0.004899	0.000853	117299
76.0	-33.90	0.0004	85.44	41.83	0.003479	0.000605	165186
78.0	-34.30	0.0004	82.60	35.66	0.001667	0.000290	344831
80.0	-34.90	0.0003	80.16	29.58	0.000699	0.000122	822504
82.0	-36.30	0.0002	78.15	23.58	0.000690	0.000120	832525
84.0	-37.70	0.0002	76.56	17.63	0.000665	0.000116	863952
86.0	-39.10	0.0001	75.42	11.73	0.000652	0.000113	881121
88.0	-40.00	0.0001	74.73	5.86	0.000531	0.000092	1082621
90.0	-39.60	0.0001	74.50	0.00	0.000370	0.000064	1553514

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
ANDREW:844G65VTZASX Antenna Worksheet (160 Sector)**

Maximum Permissible Exposure (MPE): 574.67  
 ERP (Watts): 222      Height (feet): 251      Frequency (MHz): 862      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm²)	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	717349725
1.0	-0.10	0.9772	9612.05	9611.76	0.000080	0.000014	7172482
2.0	-0.20	0.9550	4804.99	4804.42	0.000321	0.000056	1792351
3.0	-0.40	0.9120	3202.18	3201.32	0.000722	0.000126	796030
4.0	-0.70	0.8511	2400.44	2399.28	0.001285	0.000224	447319
5.0	-1.10	0.7762	1919.11	1917.66	0.002010	0.000350	285915
6.0	-1.60	0.6918	1598.00	1596.26	0.002899	0.000504	198239
7.0	-2.20	0.6026	1368.44	1366.41	0.003953	0.000688	145374
8.0	-2.90	0.5129	1196.10	1193.77	0.005174	0.000900	111063
9.0	-3.70	0.4266	1061.90	1059.28	0.006565	0.001142	87539
10.0	-4.60	0.3467	954.41	951.49	0.008127	0.001414	70713
12.0	-7.00	0.1995	792.82	789.31	0.011671	0.002031	49237
14.0	-10.00	0.1000	677.02	672.90	0.015676	0.002728	36659
16.0	-13.90	0.0407	589.82	585.10	0.020118	0.003501	28564
18.0	-19.00	0.0126	521.70	516.36	0.024538	0.004270	23419
20.0	-22.50	0.0056	466.94	460.96	0.028719	0.004997	20010
22.0	-20.90	0.0081	421.89	415.26	0.032043	0.005576	17934
24.0	-19.10	0.0123	384.12	376.83	0.034633	0.006027	16593
26.0	-18.60	0.0138	351.96	343.99	0.035683	0.006209	16104
28.0	-19.30	0.0117	324.21	315.54	0.035526	0.006182	16175
30.0	-21.10	0.0078	299.99	290.59	0.034022	0.005920	16890
32.0	-24.00	0.0040	278.64	268.49	0.031127	0.005416	18462
34.0	-29.20	0.0012	259.65	248.74	0.026363	0.004588	21798
36.0	-39.20	0.0001	242.64	230.92	0.021054	0.003664	27294
38.0	-32.90	0.0005	227.30	214.74	0.015523	0.002701	37021
40.0	-27.50	0.0018	213.38	199.95	0.010178	0.001771	56462
42.0	-24.90	0.0032	200.68	186.33	0.005845	0.001017	98320
44.0	-23.50	0.0045	189.04	173.74	0.003607	0.000628	159298
46.0	-22.90	0.0051	178.33	162.02	0.004041	0.000703	142215
48.0	-22.90	0.0051	168.44	151.06	0.004517	0.000786	127214
50.0	-23.10	0.0049	159.28	140.78	0.005035	0.000876	114143
52.0	-23.80	0.0042	150.77	131.08	0.005690	0.000990	100988
54.0	-24.60	0.0035	142.86	121.89	0.006090	0.001060	94365
56.0	-25.90	0.0026	135.49	113.16	0.005692	0.000991	100953
58.0	-27.60	0.0017	128.61	104.84	0.004050	0.000705	141883
60.0	-29.80	0.0010	122.20	96.86	0.002316	0.000403	248151
62.0	-32.20	0.0006	116.23	89.21	0.003184	0.000554	180465
64.0	-34.40	0.0004	110.67	81.83	0.003972	0.000691	144675
66.0	-35.40	0.0003	105.50	74.70	0.004397	0.000765	130687
68.0	-35.20	0.0003	100.73	67.79	0.004775	0.000831	120351
70.0	-34.70	0.0003	96.33	61.06	0.005321	0.000926	107990
72.0	-34.20	0.0004	92.32	54.51	0.005430	0.000945	105828
74.0	-33.90	0.0004	88.69	48.11	0.004899	0.000853	117299
76.0	-33.90	0.0004	85.44	41.83	0.003479	0.000605	165186
78.0	-34.30	0.0004	82.60	35.66	0.001667	0.000290	344831
80.0	-34.90	0.0003	80.16	29.58	0.000699	0.000122	822504
82.0	-36.30	0.0002	78.15	23.58	0.000690	0.000120	832525
84.0	-37.70	0.0002	76.56	17.63	0.000665	0.000116	863952
86.0	-39.10	0.0001	75.42	11.73	0.000652	0.000113	881121
88.0	-40.00	0.0001	74.73	5.86	0.000531	0.000092	1082621
90.0	-39.60	0.0001	74.50	0.00	0.000370	0.000064	1553514

**Sprint-Nextel (iDEN)**  
**Avon (Deercliff Road)**  
**RFS:AP859012-42TO Antenna Worksheet (280 Sector)**

Maximum Permissible Exposure (MPE):		574.67		862		Downtilt (Degrees): 0.0	
ERP (Watts):	141	Height (feet):	251	Frequency (MHz):	862	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	1129444374
1.0	-0.10	0.9772	9612.05	9611.76	0.000051	0.000009	11292845
2.0	-0.20	0.9550	4804.99	4804.42	0.000204	0.000035	2822000
3.0	-0.50	0.8913	3202.18	3201.32	0.000459	0.000080	1253325
4.0	-0.90	0.8128	2400.44	2399.28	0.000816	0.000142	704289
5.0	-1.30	0.7413	1919.11	1917.66	0.001277	0.000222	450164
6.0	-1.90	0.6457	1598.00	1596.26	0.001841	0.000320	312122
7.0	-2.50	0.5623	1368.44	1366.41	0.002511	0.000437	228887
8.0	-3.20	0.4786	1196.10	1193.77	0.003286	0.000572	174865
9.0	-4.10	0.3890	1061.90	1059.28	0.004169	0.000726	137828
10.0	-5.20	0.3020	954.41	951.49	0.005162	0.000898	111336
12.0	-7.80	0.1660	792.82	789.31	0.007417	0.001291	77484
14.0	-11.30	0.0741	677.02	672.90	0.009969	0.001735	57646
16.0	-15.80	0.0263	589.82	585.10	0.012723	0.002214	45167
18.0	-19.10	0.0123	521.70	516.36	0.015220	0.002649	37756
20.0	-17.00	0.0200	466.94	460.96	0.017445	0.003036	32942
22.0	-14.70	0.0339	421.89	415.26	0.019466	0.003387	29521
24.0	-13.50	0.0447	384.12	376.83	0.020586	0.003582	27915
26.0	-13.20	0.0479	351.96	343.99	0.021325	0.003711	26948
28.0	-13.70	0.0427	324.21	315.54	0.021114	0.003674	27217
30.0	-14.90	0.0324	299.99	290.59	0.019576	0.003406	29356
32.0	-16.90	0.0204	278.64	268.49	0.017148	0.002984	33512
34.0	-19.80	0.0105	259.65	248.74	0.014161	0.002464	40580
36.0	-23.90	0.0041	242.64	230.92	0.010809	0.001881	53166
38.0	-28.20	0.0015	227.30	214.74	0.007365	0.001282	78028
40.0	-27.40	0.0018	213.38	199.95	0.005741	0.000999	100106
42.0	-24.40	0.0036	200.88	186.33	0.006638	0.001155	86573
44.0	-22.50	0.0056	189.04	173.74	0.007475	0.001301	76878
46.0	-21.50	0.0071	178.33	162.02	0.008390	0.001460	68497
48.0	-21.10	0.0078	168.44	151.06	0.009398	0.001635	61144
50.0	-21.30	0.0074	159.28	140.78	0.010486	0.001825	54803
52.0	-22.10	0.0062	150.77	131.08	0.011682	0.002033	49190
54.0	-23.40	0.0046	142.86	121.89	0.012879	0.002241	44618
56.0	-25.50	0.0028	135.49	113.16	0.012438	0.002164	46202
58.0	-28.50	0.0014	128.61	104.84	0.010290	0.001791	55848
60.0	-32.90	0.0005	122.20	96.86	0.006819	0.001187	84278
62.0	-41.00	0.0001	116.23	89.21	0.003239	0.000564	177398
64.0	-48.80	0.0000	110.67	81.83	0.003594	0.000625	159874
66.0	-37.50	0.0002	105.50	74.70	0.004208	0.000732	136568
68.0	-34.00	0.0004	100.73	67.79	0.004590	0.000799	125189
70.0	-31.80	0.0007	96.33	61.06	0.004989	0.000868	115187
72.0	-30.90	0.0008	92.32	54.51	0.005400	0.000940	106421
74.0	-30.20	0.0010	88.69	48.11	0.004586	0.000798	125306
76.0	-30.20	0.0010	85.44	41.83	0.002573	0.000448	223366
78.0	-30.70	0.0009	82.60	35.66	0.000715	0.000124	803873
80.0	-31.30	0.0007	80.16	29.58	0.000843	0.000147	681664
82.0	-32.30	0.0006	78.15	23.58	0.001000	0.000174	574880
84.0	-33.70	0.0004	76.56	17.63	0.001029	0.000179	558351
86.0	-35.50	0.0003	75.42	11.73	0.001040	0.000181	552340
88.0	-38.10	0.0002	74.73	5.86	0.000766	0.000133	749955
90.0	-38.60	0.0001	74.50	0.00	0.000383	0.000067	1501530

**Sprint-Nextel (iDEN)**  
**Avon (Deercliff Road)**  
**RFS:AP859012-42TO Antenna Worksheet (280 Sector)**

Maximum Permissible Exposure (MPE): 574.67  
ERP (Watts): 141      Height (feet): 251      Frequency (MHz): 862      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (μW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	1129444374
1.0	-0.10	0.9772	9612.05	9611.76	0.000051	0.000009	11292845
2.0	-0.20	0.9550	4804.99	4804.42	0.000204	0.000035	2822000
3.0	-0.50	0.8913	3202.18	3201.32	0.000459	0.000080	1253325
4.0	-0.90	0.8128	2400.44	2399.28	0.000816	0.000142	704289
5.0	-1.30	0.7413	1919.11	1917.66	0.001277	0.000222	450164
6.0	-1.90	0.6457	1598.00	1596.26	0.001841	0.000320	312122
7.0	-2.50	0.5623	1368.44	1366.41	0.002511	0.000437	228887
8.0	-3.20	0.4786	1196.10	1193.77	0.003286	0.000572	174865
9.0	-4.10	0.3890	1061.90	1059.28	0.004169	0.000726	137828
10.0	-5.20	0.3020	954.41	951.49	0.005162	0.000898	111336
12.0	-7.80	0.1660	792.82	789.31	0.007417	0.001291	77484
14.0	-11.30	0.0741	677.02	672.90	0.009969	0.001735	57646
16.0	-15.80	0.0263	589.82	585.10	0.012723	0.002214	45167
18.0	-19.10	0.0123	521.70	516.36	0.015220	0.002649	37756
20.0	-17.00	0.0200	466.94	460.96	0.017445	0.003036	32942
22.0	-14.70	0.0339	421.89	415.26	0.019466	0.003387	29521
24.0	-13.50	0.0447	384.12	376.83	0.020586	0.003582	27915
26.0	-13.20	0.0479	351.96	343.99	0.021325	0.003711	26948
28.0	-13.70	0.0427	324.21	315.54	0.021114	0.003674	27217
30.0	-14.90	0.0324	299.99	290.59	0.019576	0.003406	29356
32.0	-16.90	0.0204	278.64	268.49	0.017148	0.002984	33512
34.0	-19.80	0.0105	259.65	248.74	0.014161	0.002464	40580
36.0	-23.90	0.0041	242.64	230.92	0.010809	0.001881	53166
38.0	-28.20	0.0015	227.30	214.74	0.007365	0.001282	78028
40.0	-27.40	0.0018	213.38	199.95	0.005741	0.000999	100106
42.0	-24.40	0.0036	200.68	186.33	0.006638	0.001155	86573
44.0	-22.50	0.0056	189.04	173.74	0.007475	0.001301	76878
46.0	-21.50	0.0071	178.33	162.02	0.008390	0.001460	68497
48.0	-21.10	0.0078	168.44	151.06	0.009398	0.001635	61144
50.0	-21.30	0.0074	159.28	140.78	0.010486	0.001825	54803
52.0	-22.10	0.0062	150.77	131.08	0.011682	0.002033	49190
54.0	-23.40	0.0046	142.86	121.89	0.012879	0.002241	44618
56.0	-25.50	0.0028	135.49	113.16	0.012438	0.002164	46202
58.0	-28.50	0.0014	128.61	104.84	0.010290	0.001791	55848
60.0	-32.90	0.0005	122.20	96.86	0.006819	0.001187	84278
62.0	-41.00	0.0001	116.23	89.21	0.003239	0.000564	177398
64.0	-48.80	0.0000	110.67	81.83	0.003594	0.000625	159874
66.0	-37.50	0.0002	105.50	74.70	0.004208	0.000732	136568
68.0	-34.00	0.0004	100.73	67.79	0.004590	0.000799	125189
70.0	-31.80	0.0007	96.33	61.06	0.004989	0.000868	115187
72.0	-30.90	0.0008	92.32	54.51	0.005400	0.000940	106421
74.0	-30.20	0.0010	88.69	48.11	0.004586	0.000798	125306
76.0	-30.20	0.0010	85.44	41.83	0.002573	0.000448	223366
78.0	-30.70	0.0009	82.60	35.66	0.000715	0.000124	803873
80.0	-31.30	0.0007	80.16	29.58	0.000843	0.000147	681664
82.0	-32.30	0.0006	78.15	23.58	0.001000	0.000174	574880
84.0	-33.70	0.0004	76.56	17.63	0.001029	0.000179	558351
86.0	-35.50	0.0003	75.42	11.73	0.001040	0.000181	552340
88.0	-38.10	0.0002	74.73	5.86	0.000766	0.000133	749955
90.0	-38.60	0.0001	74.50	0.00	0.000383	0.000067	1501530

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
RFS:AP859012-42TO Antenna Worksheet (280 Sector)**

Maximum Permissible Exposure (MPE): 574.67  
 ERP (Watts): 141      Height (feet): 251      Frequency (MHz): 862      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	1129444374
1.0	-0.10	0.9772	9612.05	9611.76	0.000051	0.000009	11292845
2.0	-0.20	0.9550	4804.99	4804.42	0.000204	0.000035	2822000
3.0	-0.50	0.8913	3202.18	3201.32	0.000459	0.000080	1253325
4.0	-0.90	0.8128	2400.44	2399.28	0.000816	0.000142	704289
5.0	-1.30	0.7413	1919.11	1917.66	0.001277	0.000222	450164
6.0	-1.90	0.6457	1598.00	1596.26	0.001841	0.000320	312122
7.0	-2.50	0.5623	1368.44	1366.41	0.002511	0.000437	228887
8.0	-3.20	0.4786	1196.10	1193.77	0.003286	0.000572	174865
9.0	-4.10	0.3890	1061.90	1059.28	0.004169	0.000726	137828
10.0	-5.20	0.3020	954.41	951.49	0.005162	0.000898	111336
12.0	-7.80	0.1660	792.82	789.31	0.007417	0.001291	77484
14.0	-11.30	0.0741	677.02	672.90	0.009969	0.001735	57646
16.0	-15.80	0.0263	589.82	585.10	0.012723	0.002214	45167
18.0	-19.10	0.0123	521.70	516.36	0.015220	0.002649	37756
20.0	-17.00	0.0200	466.94	460.96	0.017445	0.003036	32942
22.0	-14.70	0.0339	421.89	415.26	0.019466	0.003387	29521
24.0	-13.50	0.0447	384.12	376.83	0.020586	0.003582	27915
26.0	-13.20	0.0479	351.96	343.99	0.021325	0.003711	26948
28.0	-13.70	0.0427	324.21	315.54	0.021114	0.003674	27217
30.0	-14.90	0.0324	299.99	290.59	0.019576	0.003406	29356
32.0	-16.90	0.0204	278.64	268.49	0.017148	0.002984	33512
34.0	-19.80	0.0105	259.65	248.74	0.014161	0.002464	40580
36.0	-23.90	0.0041	242.64	230.92	0.010809	0.001881	53166
38.0	-28.20	0.0015	227.30	214.74	0.007365	0.001282	78028
40.0	-27.40	0.0018	213.38	199.95	0.005741	0.000999	100106
42.0	-24.40	0.0036	200.68	186.33	0.006638	0.001155	86573
44.0	-22.50	0.0056	189.04	173.74	0.007475	0.001301	76878
46.0	-21.50	0.0071	178.33	162.02	0.008390	0.001460	68497
48.0	-21.10	0.0078	168.44	151.06	0.009398	0.001635	61144
50.0	-21.30	0.0074	159.28	140.78	0.010486	0.001825	54803
52.0	-22.10	0.0062	150.77	131.08	0.011682	0.002033	49190
54.0	-23.40	0.0046	142.86	121.89	0.012879	0.002241	44618
56.0	-25.50	0.0028	135.49	113.16	0.012438	0.002164	46202
58.0	-28.50	0.0014	128.61	104.84	0.010290	0.001791	55848
60.0	-32.90	0.0005	122.20	96.86	0.006819	0.001187	84278
62.0	-41.00	0.0001	116.23	89.21	0.003239	0.000564	177398
64.0	-48.80	0.0000	110.67	81.83	0.003594	0.000625	159874
66.0	-37.50	0.0002	105.50	74.70	0.004208	0.000732	136568
68.0	-34.00	0.0004	100.73	67.79	0.004590	0.000799	125189
70.0	-31.80	0.0007	96.33	61.06	0.004989	0.000868	115187
72.0	-30.90	0.0008	92.32	54.51	0.005400	0.000940	106421
74.0	-30.20	0.0010	88.69	48.11	0.004586	0.000798	125306
76.0	-30.20	0.0010	85.44	41.83	0.002573	0.000448	223366
78.0	-30.70	0.0009	82.60	35.66	0.000715	0.000124	803873
80.0	-31.30	0.0007	80.16	29.58	0.000843	0.000147	681664
82.0	-32.30	0.0006	78.15	23.58	0.001000	0.000174	574880
84.0	-33.70	0.0004	76.56	17.63	0.001029	0.000179	558351
86.0	-35.50	0.0003	75.42	11.73	0.001040	0.000181	552340
88.0	-38.10	0.0002	74.73	5.86	0.000766	0.000133	749955
90.0	-38.60	0.0001	74.50	0.00	0.000383	0.000067	1501530

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
RFS:AP859012-42TO Antenna Worksheet (280 Sector)**

Maximum Permissible Exposure (MPE): 574.67  
 ERP (Watts): 141      Height (feet): 251      Frequency (MHz): 862      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	1129444374
1.0	-0.10	0.9772	9612.05	9611.76	0.000051	0.000009	11292845
2.0	-0.20	0.9550	4804.99	4804.42	0.000204	0.000035	2822000
3.0	-0.50	0.8913	3202.18	3201.32	0.000459	0.000080	1253325
4.0	-0.90	0.8128	2400.44	2399.28	0.000816	0.000142	704289
5.0	-1.30	0.7413	1919.11	1917.66	0.001277	0.000222	450164
6.0	-1.90	0.6457	1598.00	1596.26	0.001841	0.000320	312122
7.0	-2.50	0.5623	1368.44	1366.41	0.002511	0.000437	228887
8.0	-3.20	0.4786	1196.10	1193.77	0.003286	0.000572	174865
9.0	-4.10	0.3890	1061.90	1059.28	0.004169	0.000726	137828
10.0	-5.20	0.3020	954.41	951.49	0.005162	0.000898	111336
12.0	-7.80	0.1660	792.82	789.31	0.007417	0.001291	77484
14.0	-11.30	0.0741	677.02	672.90	0.009969	0.001735	57646
16.0	-15.80	0.0263	589.82	585.10	0.012723	0.002214	45167
18.0	-19.10	0.0123	521.70	516.36	0.015220	0.002649	37756
20.0	-17.00	0.0200	466.94	460.96	0.017445	0.003036	32942
22.0	-14.70	0.0339	421.89	415.26	0.019466	0.003387	29521
24.0	-13.50	0.0447	384.12	376.83	0.020586	0.003582	27915
26.0	-13.20	0.0479	351.96	343.99	0.021325	0.003711	26948
28.0	-13.70	0.0427	324.21	315.54	0.021114	0.003674	27217
30.0	-14.90	0.0324	299.99	290.59	0.019576	0.003406	29356
32.0	-16.90	0.0204	278.64	268.49	0.017148	0.002984	33512
34.0	-19.80	0.0105	259.65	248.74	0.014161	0.002464	40580
36.0	-23.90	0.0041	242.64	230.92	0.010809	0.001881	53166
38.0	-28.20	0.0015	227.30	214.74	0.007365	0.001282	78028
40.0	-27.40	0.0018	213.38	199.95	0.005741	0.000999	100106
42.0	-24.40	0.0036	200.68	186.33	0.006638	0.001155	86573
44.0	-22.50	0.0056	189.04	173.74	0.007475	0.001301	76878
46.0	-21.50	0.0071	178.33	162.02	0.008390	0.001460	68497
48.0	-21.10	0.0078	168.44	151.06	0.009398	0.001635	61144
50.0	-21.30	0.0074	159.28	140.78	0.010486	0.001825	54803
52.0	-22.10	0.0062	150.77	131.08	0.011682	0.002033	49190
54.0	-23.40	0.0046	142.86	121.89	0.012879	0.002241	44618
56.0	-25.50	0.0028	135.49	113.16	0.012438	0.002164	46202
58.0	-28.50	0.0014	128.61	104.84	0.010290	0.001791	55848
60.0	-32.90	0.0005	122.20	96.86	0.006819	0.001187	84278
62.0	-41.00	0.0001	116.23	89.21	0.003239	0.000564	177398
64.0	-48.80	0.0000	110.67	81.83	0.003594	0.000625	159874
66.0	-37.50	0.0002	105.50	74.70	0.004208	0.000732	136568
68.0	-34.00	0.0004	100.73	67.79	0.004590	0.000799	125189
70.0	-31.80	0.0007	96.33	61.06	0.004989	0.000868	115187
72.0	-30.90	0.0008	92.32	54.51	0.005400	0.000940	106421
74.0	-30.20	0.0010	88.69	48.11	0.004586	0.000798	125306
76.0	-30.20	0.0010	85.44	41.83	0.002573	0.000448	223366
78.0	-30.70	0.0009	82.60	35.66	0.000715	0.000124	803873
80.0	-31.30	0.0007	80.16	29.58	0.000843	0.000147	681664
82.0	-32.30	0.0006	78.15	23.58	0.001000	0.000174	574880
84.0	-33.70	0.0004	76.56	17.63	0.001029	0.000179	558351
86.0	-35.50	0.0003	75.42	11.73	0.001040	0.000181	552340
88.0	-38.10	0.0002	74.73	5.86	0.000766	0.000133	749955
90.0	-38.60	0.0001	74.50	0.00	0.000383	0.000067	1501530

**T-Mobile**  
**Avon (Deercliff Road)**  
**RFS:APX16DWV-16DWV-S-E-A20 Antenna Worksheet (210 Sector)**

Maximum Permissible Exposure (MPE):								
ERP (Watts):		1691	Height (feet):	238	Frequency (MHz):	2100	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE	
0.1	-31.31	0.0007	96127.31	96127.29	0.000000	0.000000	57716798162	
1.0	-26.29	0.0023	9612.02	9611.76	0.000002	0.000000	590370440	
2.0	-19.76	0.0106	4804.93	4804.42	0.000007	0.000001	151307894	
3.0	-14.15	0.0385	3202.09	3201.32	0.000013	0.000001	77268431	
4.0	-9.77	0.1054	2400.32	2399.28	0.000019	0.000002	53543324	
5.0	-6.44	0.2270	1918.96	1917.66	0.000024	0.000002	42158032	
6.0	-3.93	0.4046	1597.82	1596.26	0.000028	0.000003	35913502	
7.0	-2.03	0.6266	1368.23	1366.41	0.000031	0.000003	32406712	
8.0	-0.78	0.8356	1195.86	1193.77	0.000039	0.000004	25952542	
9.0	-0.08	0.9817	1061.63	1059.28	0.000048	0.000005	21045856	
10.0	0.00	1.0000	954.10	951.49	0.000309	0.000031	3241077	
12.0	-1.41	0.7228	792.46	789.31	0.089581	0.008958	11163	
14.0	-5.84	0.2606	676.59	672.90	0.123138	0.012314	8120	
16.0	-16.52	0.0223	589.33	585.10	0.162348	0.016235	6159	
18.0	-19.53	0.0111	521.15	516.36	0.207607	0.020761	4816	
20.0	-14.57	0.0349	466.32	460.96	0.259297	0.025930	3856	
22.0	-16.83	0.0207	421.20	415.26	0.317822	0.031782	3146	
24.0	-21.35	0.0073	383.37	376.83	0.383643	0.038364	2606	
26.0	-21.69	0.0068	351.15	343.99	0.457292	0.045729	2186	
28.0	-23.91	0.0041	323.33	315.54	0.539371	0.053937	1854	
30.0	-33.35	0.0005	299.03	290.59	0.630568	0.063057	1585	
32.0	-25.07	0.0031	277.61	268.49	0.697363	0.069736	1433	
34.0	-22.33	0.0058	258.54	248.74	0.752761	0.075276	1328	
36.0	-23.65	0.0043	241.46	230.92	0.714162	0.071416	1400	
38.0	-27.86	0.0016	226.03	214.74	0.496908	0.049691	2012	
40.0	-30.42	0.0009	212.02	199.95	0.244312	0.024431	4093	
42.0	-29.04	0.0012	199.24	186.33	0.079370	0.007937	12599	
44.0	-29.99	0.0010	187.51	173.74	0.068093	0.006809	14685	
46.0	-32.80	0.0005	176.71	162.02	0.076577	0.007658	13058	
48.0	-36.23	0.0002	166.72	151.06	0.085582	0.008558	11684	
50.0	-35.13	0.0003	157.46	140.78	0.067914	0.006791	14724	
52.0	-33.08	0.0005	148.86	131.08	0.033867	0.003387	29527	
54.0	-32.94	0.0005	140.84	121.89	0.025672	0.002567	38953	
56.0	-32.59	0.0006	133.35	113.16	0.026005	0.002600	38454	
58.0	-33.70	0.0004	126.36	104.84	0.027660	0.002766	36152	
60.0	-35.03	0.0003	119.83	96.86	0.030692	0.003069	32582	
62.0	-36.18	0.0002	113.73	89.21	0.033982	0.003398	29427	
64.0	-37.34	0.0002	108.04	81.83	0.029941	0.002994	33399	
66.0	-39.30	0.0001	102.74	74.70	0.011304	0.001130	88464	
68.0	-41.49	0.0001	97.83	67.79	0.010784	0.001078	92731	
70.0	-41.56	0.0001	93.30	61.06	0.008961	0.000896	111593	
72.0	-41.39	0.0001	89.15	54.51	0.005801	0.000580	172391	
74.0	-41.80	0.0001	85.39	48.11	0.006155	0.000616	162461	
76.0	-41.86	0.0001	82.01	41.83	0.006703	0.000670	149180	
78.0	-42.23	0.0001	79.04	35.66	0.005354	0.000535	186776	
80.0	-42.21	0.0001	76.49	29.58	0.003339	0.000334	299492	
82.0	-42.13	0.0001	74.38	23.58	0.001587	0.000159	630267	
84.0	-42.93	0.0001	72.71	17.63	0.001184	0.000118	844534	
86.0	-43.71	0.0000	71.51	11.73	0.001065	0.000107	938834	
88.0	-45.64	0.0000	70.79	5.86	0.000999	0.000100	1001402	
90.0	-50.30	0.0000	70.54	0.00	0.000776	0.000078	1289401	

**T-Mobile  
Avon (Deercliff Road)  
RFS:APX16DWV-16DWV-S-E-A20 Antenna Worksheet (310 Sector)**

Maximum Permissible Exposure (MPE): 1000  
 ERP (Watts): 1691      Height (feet): 238      Frequency (MHz): 2100      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-31.31	0.0007	96127.31	96127.29	0.000000	0.000000	57716798162
1.0	-26.29	0.0023	9612.02	9611.76	0.000002	0.000000	590747060
2.0	-19.76	0.0106	4804.93	4804.42	0.000007	0.000001	151404361
3.0	-14.15	0.0385	3202.09	3201.32	0.000013	0.000001	77268425
4.0	-9.77	0.1054	2400.32	2399.28	0.000019	0.000002	53543317
5.0	-6.44	0.2270	1918.96	1917.66	0.000024	0.000002	42158032
6.0	-3.93	0.4046	1597.82	1596.26	0.000028	0.000003	35913505
7.0	-2.03	0.6266	1368.23	1366.41	0.000031	0.000003	32406712
8.0	-0.78	0.8356	1195.86	1193.77	0.000039	0.000004	25952539
9.0	-0.08	0.9817	1061.63	1059.28	0.000048	0.000005	21039461
10.0	0.00	1.0000	954.10	951.49	0.000308	0.000031	3241806
12.0	-1.41	0.7228	792.46	789.31	0.089743	0.008974	11142
14.0	-5.84	0.2606	676.59	672.90	0.123138	0.012314	8120
16.0	-16.52	0.0223	589.33	585.10	0.162348	0.016235	6159
18.0	-19.53	0.0111	521.15	516.36	0.207607	0.020761	4816
20.0	-14.57	0.0349	466.32	460.96	0.259297	0.025930	3856
22.0	-16.83	0.0207	421.20	415.26	0.317822	0.031782	3146
24.0	-21.35	0.0073	383.37	376.83	0.383643	0.038364	2606
26.0	-21.69	0.0068	351.15	343.99	0.457292	0.045729	2186
28.0	-23.91	0.0041	323.33	315.54	0.539371	0.053937	1854
30.0	-33.35	0.0005	299.03	290.59	0.630568	0.063057	1585
32.0	-25.07	0.0031	277.61	268.49	0.697363	0.069736	1433
34.0	-22.33	0.0058	258.54	248.74	0.752761	0.075276	1328
36.0	-23.65	0.0043	241.46	230.92	0.714161	0.071416	1400
38.0	-27.86	0.0016	226.03	214.74	0.496909	0.049691	2012
40.0	-30.42	0.0009	212.02	199.95	0.244312	0.024431	4093
42.0	-29.04	0.0012	199.24	186.33	0.079406	0.007941	12593
44.0	-29.99	0.0010	187.51	173.74	0.068093	0.006809	14685
46.0	-32.80	0.0005	176.71	162.02	0.076577	0.007658	13058
48.0	-36.23	0.0002	166.72	151.06	0.085661	0.008566	11673
50.0	-35.13	0.0003	157.46	140.78	0.068064	0.006806	14692
52.0	-33.08	0.0005	148.86	131.08	0.033867	0.003387	29527
54.0	-32.94	0.0005	140.84	121.89	0.025672	0.002567	38953
56.0	-32.59	0.0006	133.35	113.16	0.026193	0.002619	38178
58.0	-33.70	0.0004	126.36	104.84	0.027396	0.002740	36501
60.0	-35.03	0.0003	119.83	96.86	0.030692	0.003069	32582
62.0	-36.18	0.0002	113.73	89.21	0.033982	0.003398	29427
64.0	-37.34	0.0002	108.04	81.83	0.029446	0.002945	33960
66.0	-39.30	0.0001	102.74	74.70	0.011304	0.001130	88464
68.0	-41.49	0.0001	97.83	67.79	0.010784	0.001078	92731
70.0	-41.56	0.0001	93.30	61.06	0.009134	0.000913	109482
72.0	-41.39	0.0001	89.15	54.51	0.005801	0.000580	172391
74.0	-41.80	0.0001	85.39	48.11	0.006259	0.000626	159768
76.0	-41.86	0.0001	82.01	41.83	0.006703	0.000670	149180
78.0	-42.23	0.0001	79.04	35.66	0.005354	0.000535	186776
80.0	-42.21	0.0001	76.49	29.58	0.003381	0.000338	295812
82.0	-42.13	0.0001	74.38	23.58	0.001587	0.000159	630267
84.0	-42.93	0.0001	72.71	17.63	0.001167	0.000117	856866
86.0	-43.71	0.0000	71.51	11.73	0.001065	0.000107	938834
88.0	-45.64	0.0000	70.79	5.86	0.001027	0.000103	973431
90.0	-50.30	0.0000	70.54	0.00	0.000745	0.000074	1342556

**T-Mobile**  
**Avon (Deercliff Road)**  
**EMS:FR90-16-02DP Antenna Worksheet (210 Sector)**

Maximum Permissible Exposure (MPE):		1000					
ERP (Watts):	1301	Height (feet):	238	Frequency (MHz):	1900	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-1.51	0.7063	96127.31	96127.29	0.000005	0.000000	213005397
1.0	-0.70	0.8511	9612.02	9611.76	0.000470	0.000047	2129739
2.0	0.00	1.0000	4804.93	4804.42	0.001879	0.000188	532196
3.0	-0.10	0.9772	3202.09	3201.32	0.004231	0.000423	236355
4.0	-0.40	0.9120	2400.32	2399.28	0.007530	0.000753	132810
5.0	-1.40	0.7244	1918.96	1917.66	0.011781	0.001178	84884
6.0	-2.90	0.5129	1597.82	1596.26	0.016992	0.001699	58850
7.0	-4.90	0.3236	1368.23	1366.41	0.023173	0.002317	43153
8.0	-7.90	0.1622	1195.86	1193.77	0.030335	0.003034	32965
9.0	-11.20	0.0759	1061.63	1059.28	0.038491	0.003849	25980
10.0	-13.20	0.0479	954.10	951.49	0.047393	0.004739	21100
12.0	-11.30	0.0741	792.46	789.31	0.069079	0.006908	14476
14.0	-12.30	0.0589	676.59	672.90	0.094765	0.009477	10552
16.0	-17.30	0.0186	589.33	585.10	0.124905	0.012490	8006
18.0	-40.00	0.0001	521.15	516.36	0.156851	0.015685	6375
20.0	-20.00	0.0100	466.32	460.96	0.186289	0.018629	5367
22.0	-18.60	0.0138	421.20	415.26	0.194732	0.019473	5135
24.0	-24.00	0.0040	383.37	376.83	0.179145	0.017914	5582
26.0	-24.30	0.0037	351.15	343.99	0.145036	0.014504	6894
28.0	-20.80	0.0083	323.33	315.54	0.097051	0.009705	10303
30.0	-20.90	0.0081	299.03	290.59	0.057456	0.005746	17404
32.0	-27.90	0.0016	277.61	268.49	0.052920	0.005292	18896
34.0	-33.40	0.0005	258.54	248.74	0.060942	0.006094	16409
36.0	-22.60	0.0055	241.46	230.92	0.070120	0.007012	14261
38.0	-21.40	0.0072	226.03	214.74	0.075344	0.007534	13272
40.0	-24.70	0.0034	212.02	199.95	0.056470	0.005647	17708
42.0	-32.40	0.0006	199.24	186.33	0.030848	0.003085	32417
44.0	-27.30	0.0019	187.51	173.74	0.021791	0.002179	45891
46.0	-26.10	0.0025	176.71	162.02	0.024513	0.002451	40793
48.0	-25.50	0.0028	166.72	151.06	0.027513	0.002751	36346
50.0	-26.00	0.0025	157.46	140.78	0.030834	0.003083	32431
52.0	-27.40	0.0018	148.86	131.08	0.025767	0.002577	38809
54.0	-25.80	0.0026	140.84	121.89	0.023936	0.002394	41778
56.0	-24.10	0.0039	133.35	113.16	0.026550	0.002655	37665
58.0	-26.00	0.0025	126.36	104.84	0.029593	0.002959	33791
60.0	-27.80	0.0017	119.83	96.86	0.028833	0.002883	34682
62.0	-35.50	0.0003	113.73	89.21	0.031937	0.003194	31312
64.0	-35.10	0.0003	108.04	81.83	0.035231	0.003523	28384
66.0	-29.30	0.0012	102.74	74.70	0.036727	0.003673	27227
68.0	-28.40	0.0014	97.83	67.79	0.017350	0.001735	57636
70.0	-25.10	0.0031	93.30	61.06	0.018887	0.001889	52946
72.0	-22.80	0.0052	89.15	54.51	0.028193	0.002819	35469
74.0	-24.20	0.0038	85.39	48.11	0.030126	0.003013	33193
76.0	-25.20	0.0030	82.01	41.83	0.032701	0.003270	30579
78.0	-26.00	0.0025	79.04	35.66	0.027076	0.002708	36933
80.0	-24.60	0.0035	76.49	29.58	0.036489	0.003649	27405
82.0	-30.10	0.0010	74.38	23.58	0.050956	0.005096	19624
84.0	-30.80	0.0008	72.71	17.63	0.052534	0.005253	19035
86.0	-31.80	0.0007	71.51	11.73	0.035600	0.003560	28089
88.0	-28.30	0.0015	70.79	5.86	0.031516	0.003152	31730
90.0	-33.70	0.0004	70.54	0.00	0.015995	0.001600	62518

**T-Mobile**  
**Avon (Deercliff Road)**  
**EMS:FR90-16-02DP Antenna Worksheet (310 Sector)**

Maximum Permissible Exposure (MPE):		1000		1900		0.0	
ERP (Watts):	1301	Height (feet):	238	Frequency (MHz):	1900	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-1.51	0.7063	96127.31	96127.29	0.000005	0.000000	213005397
1.0	-0.70	0.8511	9612.02	9611.76	0.000470	0.000047	2129739
2.0	0.00	1.0000	4804.93	4804.42	0.001879	0.000188	532196
3.0	-0.10	0.9772	3202.09	3201.32	0.004231	0.000423	236355
4.0	-0.40	0.9120	2400.32	2399.28	0.007530	0.000753	132810
5.0	-1.40	0.7244	1918.96	1917.66	0.011781	0.001178	84884
6.0	-2.90	0.5129	1597.82	1596.26	0.016992	0.001699	58850
7.0	-4.90	0.3236	1368.23	1366.41	0.023173	0.002317	43153
8.0	-7.90	0.1622	1195.86	1193.77	0.030335	0.003034	32965
9.0	-11.20	0.0759	1061.63	1059.28	0.038491	0.003849	25980
10.0	-13.20	0.0479	954.10	951.49	0.047655	0.004766	20984
12.0	-11.30	0.0741	792.46	789.31	0.069079	0.006908	14476
14.0	-12.30	0.0589	676.59	672.90	0.094765	0.009477	10552
16.0	-17.30	0.0186	589.33	585.10	0.124905	0.012490	8006
18.0	-40.00	0.0001	521.15	516.36	0.156851	0.015685	6375
20.0	-20.00	0.0100	466.32	460.96	0.186289	0.018629	5367
22.0	-18.60	0.0138	421.20	415.26	0.194732	0.019473	5135
24.0	-24.00	0.0040	383.37	376.83	0.178689	0.017869	5596
26.0	-24.30	0.0037	351.15	343.99	0.145036	0.014504	6894
28.0	-20.80	0.0083	323.33	315.54	0.096804	0.009680	10330
30.0	-20.90	0.0081	299.03	290.59	0.057603	0.005760	17360
32.0	-27.90	0.0016	277.61	268.49	0.053055	0.005306	18848
34.0	-33.40	0.0005	258.54	248.74	0.060942	0.006094	16409
36.0	-22.60	0.0055	241.46	230.92	0.070120	0.007012	14261
38.0	-21.40	0.0072	226.03	214.74	0.075344	0.007534	13272
40.0	-24.70	0.0034	212.02	199.95	0.056470	0.005647	17708
42.0	-32.40	0.0006	199.24	186.33	0.030769	0.003077	32499
44.0	-27.30	0.0019	187.51	173.74	0.021791	0.002179	45891
46.0	-26.10	0.0025	176.71	162.02	0.024513	0.002451	40793
48.0	-25.50	0.0028	166.72	151.06	0.027619	0.002762	36207
50.0	-26.00	0.0025	157.46	140.78	0.030953	0.003095	32307
52.0	-27.40	0.0018	148.86	131.08	0.025767	0.002577	38809
54.0	-25.80	0.0026	140.84	121.89	0.023936	0.002394	41778
56.0	-24.10	0.0039	133.35	113.16	0.026622	0.002662	37563
58.0	-26.00	0.0025	126.36	104.84	0.029443	0.002944	33964
60.0	-27.80	0.0017	119.83	96.86	0.028833	0.002883	34682
62.0	-35.50	0.0003	113.73	89.21	0.031937	0.003194	31312
64.0	-35.10	0.0003	108.04	81.83	0.034997	0.003500	28574
66.0	-29.30	0.0012	102.74	74.70	0.036727	0.003673	27227
68.0	-28.40	0.0014	97.83	67.79	0.017350	0.001735	57636
70.0	-25.10	0.0031	93.30	61.06	0.019135	0.001913	52260
72.0	-22.80	0.0052	89.15	54.51	0.028193	0.002819	35469
74.0	-24.20	0.0038	85.39	48.11	0.030457	0.003046	32832
76.0	-25.20	0.0030	82.01	41.83	0.032701	0.003270	30579
78.0	-26.00	0.0025	79.04	35.66	0.027076	0.002708	36933
80.0	-24.60	0.0035	76.49	29.58	0.036898	0.003690	27101
82.0	-30.10	0.0010	74.38	23.58	0.050956	0.005096	19624
84.0	-30.80	0.0008	72.71	17.63	0.051866	0.005187	19280
86.0	-31.80	0.0007	71.51	11.73	0.035600	0.003560	28089
88.0	-28.30	0.0015	70.79	5.86	0.031828	0.003183	31418
90.0	-33.70	0.0004	70.54	0.00	0.015873	0.001587	62998

**US-Immigration & Customs**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		200		Frequency:		Downtilt:	
ERP (Watts):	500	Height (feet):	528	(MHz):	150	(Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.42	96127.29	0.000002	0.000001	110848250
1.0	-0.10	0.9772	9613.08	9611.76	0.000180	0.000090	1108559
2.0	-0.30	0.9333	4807.05	4804.42	0.000722	0.000361	277198
3.0	-0.60	0.8710	3205.26	3201.32	0.001623	0.000811	123242
4.0	-1.00	0.7943	2404.54	2399.28	0.002884	0.001442	69358
5.0	-1.50	0.7079	1924.24	1917.66	0.004503	0.002251	44417
6.0	-2.20	0.6026	1604.16	1596.26	0.006383	0.003192	31331
7.0	-3.10	0.4898	1375.62	1366.41	0.008388	0.004194	23844
8.0	-4.10	0.3890	1204.31	1193.77	0.010371	0.005186	19284
9.0	-5.30	0.2951	1071.14	1059.28	0.012184	0.006092	16415
10.0	-6.80	0.2089	964.68	951.49	0.013690	0.006845	14608
12.0	-11.00	0.0794	805.16	789.31	0.014813	0.007406	13501
14.0	-19.00	0.0126	691.42	672.90	0.013300	0.006650	15037
16.0	-27.30	0.0019	606.30	585.10	0.009611	0.004805	20810
18.0	-15.80	0.0263	540.26	516.36	0.005309	0.002655	37669
20.0	-12.20	0.0603	487.59	460.96	0.007518	0.003759	26603
22.0	-10.60	0.0871	444.63	415.26	0.009232	0.004616	21663
24.0	-10.20	0.0955	408.97	376.83	0.010898	0.005449	18351
26.0	-10.70	0.0851	378.93	343.99	0.012690	0.006345	15760
28.0	-12.10	0.0617	353.30	315.54	0.014594	0.007297	13703
30.0	-14.60	0.0347	331.22	290.59	0.016602	0.008301	12046
32.0	-18.90	0.0129	312.01	268.49	0.017318	0.008659	11548
34.0	-27.50	0.0018	295.18	248.74	0.014860	0.007430	13459
36.0	-26.70	0.0021	280.33	230.92	0.010233	0.005117	19543
38.0	-19.70	0.0107	267.16	214.74	0.007228	0.003614	27669
40.0	-16.50	0.0224	255.42	199.95	0.010445	0.005223	19147
42.0	-14.90	0.0324	244.91	186.33	0.012799	0.006400	15626
44.0	-14.20	0.0380	235.47	173.74	0.013993	0.006997	14292
46.0	-14.10	0.0389	226.96	162.02	0.015037	0.007518	13300
48.0	-14.40	0.0363	219.27	151.06	0.016093	0.008047	12427
50.0	-15.30	0.0295	212.32	140.78	0.017146	0.008573	11664
52.0	-16.60	0.0219	206.01	131.08	0.018181	0.009090	11000
54.0	-18.40	0.0145	200.30	121.89	0.018386	0.009193	10877
56.0	-20.80	0.0083	195.11	113.16	0.016360	0.008180	12225
58.0	-24.40	0.0036	190.40	104.84	0.013112	0.006556	15252
60.0	-29.50	0.0011	186.13	96.86	0.009414	0.004707	21244
62.0	-37.10	0.0002	182.26	89.21	0.005863	0.002932	34109
64.0	-35.10	0.0003	178.76	81.83	0.002836	0.001418	70510
66.0	-29.90	0.0010	175.61	74.70	0.001760	0.000880	113663
68.0	-27.10	0.0019	172.79	67.79	0.002365	0.001182	84567
70.0	-25.50	0.0028	170.26	61.06	0.002796	0.001398	71527
72.0	-24.70	0.0034	168.02	54.51	0.002997	0.001498	66743
74.0	-24.30	0.0037	166.06	48.11	0.003062	0.001531	65308
76.0	-24.20	0.0038	164.35	41.83	0.003121	0.001560	64085
78.0	-24.50	0.0035	162.89	35.66	0.003172	0.001586	63060
80.0	-25.10	0.0031	161.66	29.58	0.003212	0.001606	62266
82.0	-26.00	0.0025	160.67	23.58	0.003207	0.001604	62355
84.0	-26.90	0.0020	159.91	17.63	0.002935	0.001468	68132
86.0	-28.00	0.0016	159.37	11.73	0.002526	0.001263	79170
88.0	-28.80	0.0013	159.04	5.86	0.002023	0.001011	98872
90.0	-29.00	0.0013	158.93	0.00	0.001608	0.000804	124377

**USA Mobility**  
**Avon (Deercliff Road)**  
**ANDREW:PG1N0F-0093-8 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 618.67  
ERP (Watts): 3500      Height (feet): 515      Frequency (MHz): 928      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (μW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9978	96127.41	96127.29	0.000013	0.000002	48984364
1.0	-0.10	0.9781	9613.01	9611.76	0.001263	0.000204	489871
2.0	-0.60	0.8706	4806.92	4804.42	0.005051	0.000816	122488
3.0	-1.60	0.6921	3205.07	3201.32	0.011361	0.001836	54454
4.0	-3.10	0.4900	2404.28	2399.28	0.020127	0.003253	30738
5.0	-5.10	0.3091	1923.92	1917.66	0.031463	0.005086	19663
6.0	-7.89	0.1624	1603.77	1596.26	0.045322	0.007326	13650
7.0	-11.90	0.0645	1375.17	1366.41	0.061181	0.009889	10112
8.0	-18.49	0.0142	1203.79	1193.77	0.078191	0.012639	7912
9.0	-27.96	0.0016	1070.56	1059.28	0.094999	0.015355	6512
10.0	-19.58	0.0110	964.03	951.49	0.109912	0.017766	5628
12.0	-15.19	0.0303	804.38	789.31	0.124663	0.020150	4962
14.0	-16.08	0.0246	690.52	672.90	0.112234	0.018141	5512
16.0	-17.20	0.0190	605.27	585.10	0.130106	0.021030	4755
18.0	-16.77	0.0210	539.11	516.36	0.146932	0.023750	4210
20.0	-16.19	0.0240	486.31	460.96	0.157657	0.025483	3924
22.0	-16.31	0.0234	443.23	415.26	0.166360	0.026890	3718
24.0	-22.16	0.0061	407.45	376.83	0.176042	0.028455	3514
26.0	-37.08	0.0002	377.28	343.99	0.183801	0.029709	3365
28.0	-24.73	0.0034	351.54	315.54	0.188251	0.030428	3286
30.0	-20.09	0.0098	329.33	290.59	0.144384	0.023338	4284
32.0	-19.17	0.0121	310.01	268.49	0.133642	0.021602	4629
34.0	-21.21	0.0076	293.06	248.74	0.131629	0.021276	4700
36.0	-25.85	0.0026	278.10	230.92	0.128922	0.020839	4798
38.0	-36.48	0.0002	264.82	214.74	0.125675	0.020314	4922
40.0	-32.40	0.0006	252.97	199.95	0.109304	0.017668	5660
42.0	-28.40	0.0014	242.36	186.33	0.077817	0.012578	7950
44.0	-29.12	0.0012	232.81	173.74	0.047504	0.007678	13023
46.0	-33.15	0.0005	224.20	162.02	0.044244	0.007152	13983
48.0	-31.06	0.0008	216.42	151.06	0.041180	0.006656	15023
50.0	-25.68	0.0027	209.37	140.78	0.055002	0.008890	11248
52.0	-22.05	0.0062	202.97	131.08	0.078964	0.012764	7834
54.0	-20.17	0.0096	197.17	121.89	0.101566	0.016417	6091
56.0	-19.02	0.0125	191.89	113.16	0.112893	0.018248	5480
58.0	-17.92	0.0161	187.10	104.84	0.117909	0.019059	5246
60.0	-17.59	0.0174	182.75	96.86	0.129081	0.020864	4792
62.0	-17.92	0.0161	178.81	89.21	0.125380	0.020266	4934
64.0	-18.27	0.0149	175.25	81.83	0.121882	0.019701	5075
66.0	-19.66	0.0108	172.04	74.70	0.118607	0.019171	5216
68.0	-22.16	0.0061	169.15	67.79	0.106507	0.017216	5808
70.0	-22.85	0.0052	166.57	61.06	0.085205	0.013772	7260
72.0	-25.68	0.0027	164.28	54.51	0.062930	0.010172	9830
74.0	-26.94	0.0020	162.27	48.11	0.037527	0.006066	16485
76.0	-25.85	0.0026	160.52	41.83	0.028702	0.004639	21554
78.0	-26.38	0.0023	159.02	35.66	0.025953	0.004195	23838
80.0	-23.10	0.0049	157.77	29.58	0.027413	0.004431	22567
82.0	-22.85	0.0052	156.76	23.58	0.026860	0.004342	23032
84.0	-24.73	0.0034	155.97	17.63	0.026435	0.004273	23403
86.0	-23.74	0.0042	155.42	11.73	0.026133	0.004224	23673
88.0	-30.46	0.0009	155.08	5.86	0.025953	0.004195	23837
90.0	-24.58	0.0035	154.97	0.00	0.020530	0.003318	30135

**USA Mobility**  
**Avon (Deercliff Road)**  
**ANDREW:DB636-C Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		300		Frequency		Downtilt	
ERP (Watts):	100	Height (feet):	305	(MHz):	450	(Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.11	0.9750	96127.33	96127.29	0.000000	0.000000	831360466
1.0	-0.20	0.9550	9612.19	9611.76	0.000036	0.000012	8312670
2.0	-0.30	0.9333	4805.28	4804.42	0.000144	0.000048	2077459
3.0	-0.70	0.8511	3202.61	3201.32	0.000325	0.000108	922791
4.0	-1.10	0.7762	2401.00	2399.28	0.000578	0.000193	518735
5.0	-1.70	0.6761	1919.82	1917.66	0.000904	0.000301	331861
6.0	-2.40	0.5754	1598.85	1596.26	0.001303	0.000434	230293
7.0	-3.20	0.4786	1369.43	1366.41	0.001775	0.000592	168982
8.0	-4.00	0.3981	1197.23	1193.77	0.002322	0.000774	129185
9.0	-5.00	0.3162	1063.18	1059.28	0.002944	0.000981	101898
10.0	-6.10	0.2455	955.83	951.49	0.003638	0.001213	82461
12.0	-8.90	0.1288	794.54	789.31	0.005246	0.001749	57183
14.0	-13.30	0.0468	679.03	672.90	0.007104	0.002368	42230
16.0	-22.70	0.0054	592.13	585.10	0.009169	0.003056	32720
18.0	-21.70	0.0068	524.31	516.36	0.011336	0.003779	26464
20.0	-13.10	0.0490	469.84	460.96	0.013493	0.004498	22232
22.0	-9.30	0.1175	425.10	415.26	0.015541	0.005180	19303
24.0	-7.30	0.1862	387.65	376.83	0.017333	0.005778	17307
26.0	-6.30	0.2344	355.81	343.99	0.018617	0.006206	16114
28.0	-6.20	0.2399	328.39	315.54	0.019026	0.006342	15768
30.0	-6.60	0.2188	304.50	290.59	0.019294	0.006431	15548
32.0	-7.70	0.1698	283.49	268.49	0.022122	0.007374	13561
34.0	-9.40	0.1148	264.85	248.74	0.026799	0.008933	11194
36.0	-11.50	0.0708	248.19	230.92	0.031277	0.010426	9591
38.0	-14.00	0.0398	233.21	214.74	0.035118	0.011706	8542
40.0	-16.70	0.0214	219.66	199.95	0.038261	0.012754	7840
42.0	-19.70	0.0107	207.35	186.33	0.041460	0.013820	7235
44.0	-21.40	0.0072	196.11	173.74	0.044715	0.014905	6709
46.0	-18.90	0.0129	185.81	162.02	0.048015	0.016005	6248
48.0	-15.50	0.0282	176.34	151.06	0.051346	0.017115	5842
50.0	-12.60	0.0550	167.61	140.78	0.054694	0.018231	5485
52.0	-10.40	0.0912	159.55	131.08	0.055775	0.018592	5378
54.0	-8.80	0.1318	152.09	121.89	0.051037	0.017012	5878
56.0	-7.70	0.1698	145.19	113.16	0.041869	0.013956	7165
58.0	-7.00	0.1995	138.80	104.84	0.030812	0.010271	9736
60.0	-6.60	0.2188	132.88	96.86	0.019946	0.006649	15040
62.0	-6.60	0.2188	127.41	89.21	0.023385	0.007795	12828
64.0	-6.70	0.2138	122.35	81.83	0.037702	0.012567	7957
66.0	-7.10	0.1950	117.70	74.70	0.053647	0.017882	5592
68.0	-7.50	0.1778	113.44	67.79	0.068471	0.022824	4381
70.0	-8.20	0.1514	109.56	61.06	0.078658	0.026219	3813
72.0	-9.00	0.1259	106.05	54.51	0.080519	0.026840	3725
74.0	-10.00	0.1000	102.90	48.11	0.082176	0.027392	3650
76.0	-11.00	0.0794	100.12	41.83	0.083625	0.027875	3587
78.0	-12.40	0.0575	97.70	35.66	0.083793	0.027931	3580
80.0	-13.90	0.0407	95.65	29.58	0.073740	0.024580	4068
82.0	-15.70	0.0269	93.97	23.58	0.058231	0.019410	5151
84.0	-18.10	0.0155	92.66	17.63	0.040375	0.013458	7430
86.0	-20.20	0.0095	91.72	11.73	0.024889	0.008296	12053
88.0	-23.50	0.0045	91.15	5.86	0.012940	0.004313	23183
90.0	-24.70	0.0034	90.96	0.00	0.005073	0.001691	59133

**USA Mobility**  
**Avon (Deercliff Road)**  
**ANDREW:DB636-C Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):							
ERP (Watts):	100	Height (feet):	308	300	Frequency (MHz):	450	Downtilt (Degrees): 0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.11	0.9750	96127.33	96127.29	0.000000	0.000000	
1.0	-0.20	0.9550	9612.20	9611.76	0.000036	0.000012	831360466
2.0	-0.30	0.9333	4805.30	4804.42	0.000144	0.000048	8312685
3.0	-0.70	0.8511	3202.64	3201.32	0.000325	0.000108	2077474
4.0	-1.10	0.7762	2401.04	2399.28	0.000578	0.000193	922806
5.0	-1.70	0.6761	1919.86	1917.66	0.000904	0.000301	518761
6.0	-2.40	0.5754	1598.90	1596.26	0.001303	0.000434	331888
7.0	-3.20	0.4786	1369.49	1366.41	0.001775	0.000592	230311
8.0	-4.00	0.3981	1197.30	1193.77	0.002322	0.000774	169000
9.0	-5.00	0.3162	1063.26	1059.28	0.002944	0.000981	129202
10.0	-6.10	0.2455	955.92	951.49	0.003637	0.001212	101915
12.0	-8.90	0.1288	794.64	789.31	0.005244	0.001748	82488
14.0	-13.30	0.0468	679.15	672.90	0.007093	0.002364	57212
16.0	-22.70	0.0054	592.27	585.10	0.009149	0.003050	42293
18.0	-21.70	0.0068	524.47	516.36	0.011291	0.003764	32788
20.0	-13.10	0.0490	470.02	460.96	0.013416	0.004472	26571
22.0	-9.30	0.1175	425.30	415.26	0.015427	0.005142	22361
24.0	-7.30	0.1862	387.87	376.83	0.017150	0.005717	19446
26.0	-6.30	0.2344	356.05	343.99	0.018361	0.006120	17492
28.0	-6.20	0.2399	328.64	315.54	0.018652	0.006217	16339
30.0	-6.60	0.2188	304.77	290.59	0.019063	0.006354	16084
32.0	-7.70	0.1698	283.78	268.49	0.022268	0.007423	15737
34.0	-9.40	0.1148	265.16	248.74	0.026838	0.008946	13472
36.0	-11.50	0.0708	248.53	230.92	0.031252	0.010417	11178
38.0	-14.00	0.0398	233.57	214.74	0.034858	0.011619	9599
40.0	-16.70	0.0214	220.04	199.95	0.037942	0.012647	8606
42.0	-19.70	0.0107	207.75	186.33	0.041090	0.013697	7906
44.0	-21.40	0.0072	196.53	173.74	0.044290	0.014763	7301
46.0	-18.90	0.0129	186.26	162.02	0.047530	0.015843	6773
48.0	-15.50	0.0282	176.81	151.06	0.050796	0.016932	6311
50.0	-12.60	0.0550	168.11	140.78	0.054074	0.018025	5905
52.0	-10.40	0.0912	160.07	131.08	0.054295	0.018098	5547
54.0	-8.80	0.1318	152.64	121.89	0.049186	0.016395	5525
56.0	-7.70	0.1698	145.77	113.16	0.039725	0.013242	6099
58.0	-7.00	0.1995	139.40	104.84	0.028724	0.009575	7551
60.0	-6.60	0.2188	133.51	96.86	0.018407	0.006136	10444
62.0	-6.60	0.2188	128.06	89.21	0.024471	0.008157	16297
64.0	-6.70	0.2138	123.04	81.83	0.038658	0.012886	12259
66.0	-7.10	0.1950	118.41	74.70	0.054300	0.018100	7760
68.0	-7.50	0.1778	114.18	67.79	0.068307	0.022769	5524
70.0	-8.20	0.1514	110.32	61.06	0.077276	0.025759	4391
72.0	-9.00	0.1259	106.83	54.51	0.079068	0.026356	3882
74.0	-10.00	0.1000	103.71	48.11	0.080663	0.026888	3794
76.0	-11.00	0.0794	100.95	41.83	0.082057	0.027352	3719
78.0	-12.40	0.0575	98.56	35.66	0.081854	0.027285	3656
80.0	-13.90	0.0407	96.52	29.58	0.071777	0.023926	3665
82.0	-15.70	0.0269	94.86	23.58	0.056381	0.018794	4179
84.0	-18.10	0.0155	93.56	17.63	0.039098	0.013033	5320
86.0	-20.20	0.0095	92.62	11.73	0.024072	0.008024	7673
88.0	-23.50	0.0045	92.07	5.86	0.012567	0.004189	12462
90.0	-24.70	0.0034	91.88	0.00	0.004973	0.001658	23872
							60328

**USA Mobility**  
**Avon (Deercliff Road)**  
**ANDREW:DB636-C Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):

300

ERP (Watts): 100

Height (feet): 335

Frequency (MHz): 450

Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.11	0.9750	96127.34	96127.29	0.000000	0.000000	
1.0	-0.20	0.9550	9612.28	9611.76	0.000036	0.000012	831360564
2.0	-0.30	0.9333	4805.46	4804.42	0.000144	0.000048	8312827
3.0	-0.70	0.8511	3202.88	3201.32	0.000325	0.000108	2077616
4.0	-1.10	0.7762	2401.37	2399.28	0.000578	0.000193	922948
5.0	-1.70	0.6761	1920.28	1917.66	0.000903	0.000301	519008
6.0	-2.40	0.5754	1599.40	1596.26	0.001302	0.000434	332152
7.0	-3.20	0.4786	1370.07	1366.41	0.001773	0.000591	230480
8.0	-4.00	0.3981	1197.96	1193.77	0.002319	0.000773	169165
9.0	-5.00	0.3162	1064.00	1059.28	0.002936	0.000979	129365
10.0	-6.10	0.2455	956.75	951.49	0.003625	0.001208	102163
12.0	-8.90	0.1288	795.64	789.31	0.006992	0.001736	82753
14.0	-13.30	0.0468	680.31	672.90	0.006992	0.002331	57603
16.0	-22.70	0.0054	593.60	585.10	0.008919	0.002973	42907
18.0	-21.70	0.0068	525.97	516.36	0.010859	0.003620	33636
20.0	-13.10	0.0490	471.70	460.96	0.012691	0.004230	27626
22.0	-9.30	0.1175	427.15	415.26	0.014293	0.004764	23639
24.0	-7.30	0.1862	389.90	376.83	0.015416	0.005139	20988
26.0	-6.30	0.2344	358.26	343.99	0.015711	0.005237	19460
28.0	-6.20	0.2399	331.04	315.54	0.016101	0.005367	19094
30.0	-6.60	0.2188	307.35	290.59	0.019095	0.006365	18632
32.0	-7.70	0.1698	286.55	268.49	0.023067	0.007689	15710
34.0	-9.40	0.1148	268.12	248.74	0.026915	0.008972	13005
36.0	-11.50	0.0708	251.69	230.92	0.029833	0.009944	11146
38.0	-14.00	0.0398	236.93	214.74	0.032496	0.010832	10055
40.0	-16.70	0.0214	223.61	199.95	0.035195	0.011732	9232
42.0	-19.70	0.0107	211.52	186.33	0.037922	0.012641	8523
44.0	-21.40	0.0072	200.51	173.74	0.040663	0.013554	7911
46.0	-18.90	0.0129	190.45	162.02	0.043408	0.014469	7377
48.0	-15.50	0.0282	181.22	151.06	0.046143	0.015381	6911
50.0	-12.60	0.0550	172.74	140.78	0.045047	0.015016	6501
52.0	-10.40	0.0912	164.93	131.08	0.040095	0.013365	6659
54.0	-8.80	0.1318	157.73	121.89	0.032212	0.010737	7482
56.0	-7.70	0.1698	151.09	113.16	0.023073	0.007691	9313
58.0	-7.00	0.1995	144.96	104.84	0.014887	0.004962	13002
60.0	-6.60	0.2188	139.30	96.86	0.021083	0.007028	20152
62.0	-6.60	0.2188	134.09	89.21	0.032483	0.010828	14229
64.0	-6.70	0.2138	129.30	81.83	0.044953	0.014984	9235
66.0	-7.10	0.1950	124.91	74.70	0.056403	0.018801	6673
68.0	-7.50	0.1778	120.90	67.79	0.064563	0.021521	5318
70.0	-8.20	0.1514	117.26	61.06	0.066261	0.022087	4646
72.0	-9.00	0.1259	113.99	54.51	0.067557	0.022519	4527
74.0	-10.00	0.1000	111.07	48.11	0.068703	0.022901	4440
76.0	-11.00	0.0794	108.50	41.83	0.069698	0.023233	4366
78.0	-12.40	0.0575	106.27	35.66	0.065847	0.021949	4304
80.0	-13.90	0.0407	104.39	29.58	0.056367	0.018789	4556
82.0	-15.70	0.0269	102.85	23.58	0.042903	0.014301	5322
84.0	-18.10	0.0155	101.65	17.63	0.029802	0.009934	6992
86.0	-20.20	0.0095	100.79	11.73	0.018440	0.006147	10066
88.0	-23.50	0.0045	100.28	5.86	0.009810	0.003270	16268
90.0	-24.70	0.0034	100.11	0.00	0.004189	0.001396	30582
							71619

**USA Mobility**  
**Avon (Deercliff Road)**  
**ANDREW:DB636-C Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):

300

ERP (Watts): 100      Height (feet): 335      Frequency (MHz): 450      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.11	0.9750	96127.34	96127.29	0.000000	0.000000	
1.0	-0.20	0.9550	9612.28	9611.76	0.000036	0.000012	831360564
2.0	-0.30	0.9333	4805.46	4804.42	0.000144	0.000048	8312827
3.0	-0.70	0.8511	3202.88	3201.32	0.000325	0.000108	2077616
4.0	-1.10	0.7762	2401.37	2399.28	0.000578	0.000193	922948
5.0	-1.70	0.6761	1920.28	1917.66	0.000903	0.000301	519008
6.0	-2.40	0.5754	1599.40	1596.26	0.001302	0.000434	332152
7.0	-3.20	0.4786	1370.07	1366.41	0.001773	0.000591	230480
8.0	-4.00	0.3981	1197.96	1193.77	0.002319	0.000773	169165
9.0	-5.00	0.3162	1064.00	1059.28	0.002936	0.000979	129365
10.0	-6.10	0.2455	956.75	951.49	0.003625	0.001208	102163
12.0	-8.90	0.1288	795.64	789.31	0.003625	0.001208	82753
14.0	-13.30	0.0468	680.31	672.90	0.005208	0.001736	57603
16.0	-22.70	0.0054	593.60	585.10	0.006992	0.002331	42907
18.0	-21.70	0.0068	525.97	516.36	0.008919	0.002973	33636
20.0	-13.10	0.0490	471.70	460.96	0.010859	0.003620	27626
22.0	-9.30	0.1175	427.15	415.26	0.012691	0.004230	23639
24.0	-7.30	0.1862	389.90	376.83	0.014293	0.004764	20988
26.0	-6.30	0.2344	358.26	343.99	0.015416	0.005139	19460
28.0	-6.20	0.2399	331.04	315.54	0.015711	0.005237	19094
30.0	-6.60	0.2188	307.35	290.59	0.016101	0.005367	18632
32.0	-7.70	0.1698	286.55	268.49	0.019095	0.006365	15710
34.0	-9.40	0.1148	268.12	248.74	0.023067	0.007689	13005
36.0	-11.50	0.0708	251.69	230.92	0.026915	0.008972	11146
38.0	-14.00	0.0398	236.93	214.74	0.029833	0.009944	10055
40.0	-16.70	0.0214	223.61	199.95	0.032496	0.010832	9232
42.0	-19.70	0.0107	211.52	186.33	0.035195	0.011732	8523
44.0	-21.40	0.0072	200.51	173.74	0.037922	0.012641	7911
46.0	-18.90	0.0129	190.45	162.02	0.040663	0.013554	7377
48.0	-15.50	0.0282	181.22	151.06	0.043408	0.014469	6911
50.0	-12.60	0.0550	172.74	140.78	0.046143	0.015381	6501
52.0	-10.40	0.0912	164.93	131.08	0.045047	0.015016	6659
54.0	-8.80	0.1318	157.73	121.89	0.040095	0.013365	7482
56.0	-7.70	0.1698	151.09	113.16	0.032212	0.010737	9313
58.0	-7.00	0.1995	144.96	104.84	0.023073	0.007691	13002
60.0	-6.60	0.2188	139.30	96.86	0.014887	0.004962	20152
62.0	-6.60	0.2188	134.09	89.21	0.021083	0.007028	14229
64.0	-6.70	0.2138	129.30	81.83	0.032483	0.010828	9235
66.0	-7.10	0.1950	124.91	74.70	0.044953	0.014984	6673
68.0	-7.50	0.1778	120.90	67.79	0.056403	0.018801	5318
70.0	-8.20	0.1514	117.26	61.06	0.064563	0.021521	4646
72.0	-9.00	0.1259	113.99	54.51	0.066261	0.022087	4527
74.0	-10.00	0.1000	111.07	48.11	0.067557	0.022519	4440
76.0	-11.00	0.0794	108.50	41.83	0.068703	0.022901	4366
78.0	-12.40	0.0575	106.27	35.66	0.069698	0.023233	4304
80.0	-13.90	0.0407	104.39	29.58	0.065847	0.021949	4556
82.0	-15.70	0.0269	102.85	23.58	0.056367	0.018789	5322
84.0	-18.10	0.0155	101.65	17.63	0.042903	0.014301	6992
86.0	-20.20	0.0095	100.79	11.73	0.029802	0.009934	10066
88.0	-23.50	0.0045	100.28	5.86	0.018440	0.006147	16268
90.0	-24.70	0.0034	100.11	0.00	0.009810	0.003270	30582
					0.004189	0.001396	71619

**USA Mobility**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 200  
 ERP (Watts): 100      Height (feet): 187      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.30	96127.29	0.000000	0.000000	554240005
1.0	-0.10	0.9772	9611.92	9611.76	0.000036	0.000018	5541464
2.0	-0.30	0.9333	4804.73	4804.42	0.000144	0.000072	1384658
3.0	-0.60	0.8710	3201.79	3201.32	0.000325	0.000163	614879
4.0	-1.00	0.7943	2399.91	2399.28	0.000579	0.000289	345456
5.0	-1.50	0.7079	1918.45	1917.66	0.000906	0.000453	220753
6.0	-2.20	0.6026	1597.21	1596.26	0.001307	0.000654	153012
7.0	-3.10	0.4898	1367.52	1366.41	0.001783	0.000892	112167
8.0	-4.10	0.3890	1195.04	1193.77	0.002335	0.001167	85658
9.0	-5.30	0.2951	1060.71	1059.28	0.002964	0.001482	67483
10.0	-6.80	0.2089	953.08	951.49	0.003671	0.001835	54483
12.0	-11.00	0.0794	791.23	789.31	0.005326	0.002663	37549
14.0	-19.00	0.0126	675.15	672.90	0.007315	0.003658	27340
16.0	-27.30	0.0019	587.68	585.10	0.009578	0.004789	20881
18.0	-15.80	0.0263	519.28	516.36	0.012059	0.006030	16584
20.0	-12.20	0.0603	464.22	460.96	0.014623	0.007311	13677
22.0	-10.60	0.0871	418.88	415.26	0.017189	0.008594	11635
24.0	-10.20	0.0955	380.82	376.83	0.019665	0.009833	10170
26.0	-10.70	0.0851	348.36	343.99	0.021925	0.010963	9121
28.0	-12.10	0.0617	320.29	315.54	0.023773	0.011887	8412
30.0	-14.60	0.0347	295.75	290.59	0.024706	0.012353	8095
32.0	-18.90	0.0129	274.07	268.49	0.024631	0.012316	8119
34.0	-27.50	0.0018	254.74	248.74	0.023717	0.011859	8432
36.0	-26.70	0.0021	237.38	230.92	0.021945	0.010972	9113
38.0	-19.70	0.0107	221.67	214.74	0.019086	0.009543	10479
40.0	-16.50	0.0224	207.37	199.95	0.015301	0.007650	13071
42.0	-14.90	0.0324	194.28	186.33	0.010860	0.005430	18415
44.0	-14.20	0.0380	182.23	173.74	0.009710	0.004855	20596
46.0	-14.10	0.0389	171.10	162.02	0.012008	0.006004	16655
48.0	-14.40	0.0363	160.76	151.06	0.014125	0.007063	14158
50.0	-15.30	0.0295	151.14	140.78	0.015979	0.007990	12516
52.0	-16.60	0.0219	142.15	131.08	0.018044	0.009022	11083
54.0	-18.40	0.0145	133.73	121.89	0.020379	0.010190	9813
56.0	-20.80	0.0083	125.82	113.16	0.023017	0.011508	8689
58.0	-24.40	0.0036	118.39	104.84	0.025993	0.012996	7694
60.0	-29.50	0.0011	111.39	96.86	0.028962	0.014481	6905
62.0	-37.10	0.0002	104.80	89.21	0.027284	0.013642	7330
64.0	-35.10	0.0003	98.59	81.83	0.019931	0.009966	10034
66.0	-29.90	0.0010	92.76	74.70	0.011700	0.005850	17093
68.0	-27.10	0.0019	87.29	67.79	0.018775	0.009387	10652
70.0	-25.50	0.0028	82.18	61.06	0.022978	0.011489	8704
72.0	-24.70	0.0034	77.44	54.51	0.025829	0.012915	7743
74.0	-24.30	0.0037	73.07	48.11	0.028951	0.014475	6908
76.0	-24.20	0.0038	69.10	41.83	0.030580	0.015290	6540
78.0	-24.50	0.0035	65.55	35.66	0.020643	0.010322	9688
80.0	-25.10	0.0031	62.45	29.58	0.007116	0.003558	28104
82.0	-26.00	0.0025	59.84	23.58	0.003898	0.001949	51304
84.0	-26.90	0.0020	57.76	17.63	0.005065	0.002533	39486
86.0	-28.00	0.0016	56.24	11.73	0.005317	0.002659	37613
88.0	-28.80	0.0013	55.31	5.86	0.004828	0.002414	41425
90.0	-29.00	0.0013	55.00	0.00	0.002686	0.001343	74467

**USA Mobility**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 200  
 ERP (Watts): 100      Height (feet): 219      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.31	96127.29	0.000000	0.000000	554240048
1.0	-0.10	0.9772	9611.98	9611.76	0.000036	0.000018	5541535
2.0	-0.30	0.9333	4804.85	4804.42	0.000144	0.000072	1384728
3.0	-0.60	0.8710	3201.97	3201.32	0.000325	0.000163	614949
4.0	-1.00	0.7943	2400.15	2399.28	0.000579	0.000289	345527
5.0	-1.50	0.7079	1918.76	1917.66	0.000906	0.000453	220823
6.0	-2.20	0.6026	1597.58	1596.26	0.001306	0.000653	153082
7.0	-3.10	0.4898	1367.94	1366.41	0.001782	0.000891	112238
8.0	-4.10	0.3890	1195.53	1193.77	0.002333	0.001166	85728
9.0	-5.30	0.2951	1061.26	1059.28	0.002961	0.001480	67553
10.0	-6.80	0.2089	953.69	951.49	0.003666	0.001833	54553
12.0	-11.00	0.0794	791.97	789.31	0.005316	0.002658	37619
14.0	-19.00	0.0126	676.01	672.90	0.007218	0.003609	27706
16.0	-27.30	0.0019	588.67	585.10	0.009288	0.004644	21532
18.0	-15.80	0.0263	520.40	516.36	0.011428	0.005714	17501
20.0	-12.20	0.0603	465.48	460.96	0.013517	0.006758	14796
22.0	-10.60	0.0871	420.27	415.26	0.015383	0.007691	13001
24.0	-10.20	0.0955	382.35	376.83	0.016932	0.008466	11811
26.0	-10.70	0.0851	350.03	343.99	0.017790	0.008895	11242
28.0	-12.10	0.0617	322.11	315.54	0.017761	0.008880	11260
30.0	-14.60	0.0347	297.72	290.59	0.017015	0.008508	11754
32.0	-18.90	0.0129	276.19	268.49	0.015537	0.007768	12872
34.0	-27.50	0.0018	257.03	248.74	0.013190	0.006595	15162
36.0	-26.70	0.0021	239.83	230.92	0.010240	0.005120	19532
38.0	-19.70	0.0107	224.29	214.74	0.006844	0.003422	29221
40.0	-16.50	0.0224	210.17	199.95	0.007544	0.003772	26512
42.0	-14.90	0.0324	197.26	186.33	0.009214	0.004607	21706
44.0	-14.20	0.0380	185.41	173.74	0.010619	0.005310	18833
46.0	-14.10	0.0389	174.48	162.02	0.011990	0.005995	16680
48.0	-14.40	0.0363	164.36	151.06	0.013493	0.006747	14822
50.0	-15.30	0.0295	154.96	140.78	0.015177	0.007589	13177
52.0	-16.60	0.0219	146.20	131.08	0.017047	0.008523	11732
54.0	-18.40	0.0145	138.03	121.89	0.019122	0.009561	10459
56.0	-20.80	0.0083	130.38	113.16	0.021046	0.010523	9502
58.0	-24.40	0.0036	123.22	104.84	0.019616	0.009808	10195
60.0	-29.50	0.0011	116.51	96.86	0.014769	0.007385	13541
62.0	-37.10	0.0002	110.23	89.21	0.007863	0.003931	25436
64.0	-35.10	0.0003	104.35	81.83	0.012380	0.006190	16154
66.0	-29.90	0.0010	98.86	74.70	0.015857	0.007929	12612
68.0	-27.10	0.0019	93.74	67.79	0.017638	0.008819	11339
70.0	-25.50	0.0028	89.00	61.06	0.019529	0.009765	10241
72.0	-24.70	0.0034	84.64	54.51	0.021546	0.010773	9282
74.0	-24.30	0.0037	80.67	48.11	0.021443	0.010721	9327
76.0	-24.20	0.0038	77.09	41.83	0.014674	0.007337	13629
78.0	-24.50	0.0035	73.92	35.66	0.006193	0.003096	32296
80.0	-25.10	0.0031	71.19	29.58	0.002326	0.001163	86000
82.0	-26.00	0.0025	68.91	23.58	0.003491	0.001746	57285
84.0	-26.90	0.0020	67.11	17.63	0.003745	0.001872	53406
86.0	-28.00	0.0016	65.81	11.73	0.003877	0.001938	51586
88.0	-28.80	0.0013	65.02	5.86	0.003289	0.001644	60813
90.0	-29.00	0.0013	64.75	0.00	0.001938	0.000969	103222

**USA Mobility**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 200  
 ERP (Watts): 100      Height (feet): 452      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.38	96127.29	0.000000	0.000000	554240878
1.0	-0.10	0.9772	9612.72	9611.76	0.000036	0.000018	5542389
2.0	-0.30	0.9333	4806.33	4804.42	0.000144	0.000072	1385582
3.0	-0.60	0.8710	3204.20	3201.32	0.000325	0.000162	615803
4.0	-1.00	0.7943	2403.12	2399.28	0.000577	0.000289	346381
5.0	-1.50	0.7079	1922.47	1917.66	0.000902	0.000451	221677
6.0	-2.20	0.6026	1602.03	1596.26	0.001299	0.000650	153937
7.0	-3.10	0.4898	1373.14	1366.41	0.001743	0.000871	114756
8.0	-4.10	0.3890	1201.47	1193.77	0.002213	0.001107	90371
9.0	-5.30	0.2951	1067.95	1059.28	0.002686	0.001343	74457
10.0	-6.80	0.2089	961.13	951.49	0.003137	0.001568	63763
12.0	-11.00	0.0794	800.91	789.31	0.003855	0.001927	51881
14.0	-19.00	0.0126	686.46	672.90	0.004058	0.002029	49288
16.0	-27.30	0.0019	600.64	585.10	0.003738	0.001869	53497
18.0	-15.80	0.0263	533.91	516.36	0.002921	0.001460	68480
20.0	-12.20	0.0603	480.53	460.96	0.001806	0.000903	110765
22.0	-10.60	0.0871	436.89	415.26	0.001766	0.000883	113236
24.0	-10.20	0.0955	400.54	376.83	0.002266	0.001133	88243
26.0	-10.70	0.0851	369.81	343.99	0.002669	0.001335	74933
28.0	-12.10	0.0617	343.51	315.54	0.003089	0.001544	64746
30.0	-14.60	0.0347	320.75	290.59	0.003542	0.001771	56461
32.0	-18.90	0.0129	300.87	268.49	0.004025	0.002012	49691
34.0	-27.50	0.0018	283.38	248.74	0.004536	0.002268	44090
36.0	-26.70	0.0021	267.88	230.92	0.004769	0.002384	41940
38.0	-19.70	0.0107	254.06	214.74	0.004209	0.002104	47518
40.0	-16.50	0.0224	241.68	199.95	0.003072	0.001536	65101
42.0	-14.90	0.0324	230.55	186.33	0.001804	0.000902	110887
44.0	-14.20	0.0380	220.49	173.74	0.002691	0.001345	74335
46.0	-14.10	0.0389	211.38	162.02	0.003396	0.001698	58893
48.0	-14.40	0.0363	203.11	151.06	0.003762	0.001881	53167
50.0	-15.30	0.0295	195.58	140.78	0.004050	0.002025	49379
52.0	-16.60	0.0219	188.72	131.08	0.004348	0.002174	45997
54.0	-18.40	0.0145	182.46	121.89	0.004644	0.002322	43069
56.0	-20.80	0.0083	176.75	113.16	0.004940	0.002470	40483
58.0	-24.40	0.0036	171.53	104.84	0.005056	0.002528	39556
60.0	-29.50	0.0011	166.78	96.86	0.004504	0.002252	44401
62.0	-37.10	0.0002	162.45	89.21	0.003546	0.001773	56398
64.0	-35.10	0.0003	158.52	81.83	0.002441	0.001220	81945
66.0	-29.90	0.0010	154.96	74.70	0.001397	0.000699	143161
68.0	-27.10	0.0019	151.75	67.79	0.000566	0.000283	353188
70.0	-25.50	0.0028	148.87	61.06	0.000560	0.000280	357287
72.0	-24.70	0.0034	146.30	54.51	0.000717	0.000359	278915
74.0	-24.30	0.0037	144.04	48.11	0.000807	0.000404	247778
76.0	-24.20	0.0038	142.07	41.83	0.000837	0.000418	238951
78.0	-24.50	0.0035	140.38	35.66	0.000856	0.000428	233777
80.0	-25.10	0.0031	138.96	29.58	0.000871	0.000436	229577
82.0	-26.00	0.0025	137.80	23.58	0.000884	0.000442	226269
84.0	-26.90	0.0020	136.91	17.63	0.000852	0.000426	234787
86.0	-28.00	0.0016	136.28	11.73	0.000736	0.000368	271688
88.0	-28.80	0.0013	135.90	5.86	0.000576	0.000288	347086
90.0	-29.00	0.0013	135.77	0.00	0.000441	0.000220	453819

**USA Mobility**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 200  
 ERP (Watts): 100      Height (feet): 452      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.38	96127.29	0.000000	0.000000	554240878
1.0	-0.10	0.9772	9612.72	9611.76	0.000036	0.000018	5542389
2.0	-0.30	0.9333	4806.33	4804.42	0.000144	0.000072	1385582
3.0	-0.60	0.8710	3204.20	3201.32	0.000325	0.000162	615803
4.0	-1.00	0.7943	2403.12	2399.28	0.000577	0.000289	346381
5.0	-1.50	0.7079	1922.47	1917.66	0.000902	0.000451	221677
6.0	-2.20	0.6026	1602.03	1596.26	0.001299	0.000650	153937
7.0	-3.10	0.4898	1373.14	1366.41	0.001743	0.000871	114756
8.0	-4.10	0.3890	1201.47	1193.77	0.002213	0.001107	90371
9.0	-5.30	0.2951	1067.95	1059.28	0.002686	0.001343	74457
10.0	-6.80	0.2089	961.13	951.49	0.003137	0.001568	63763
12.0	-11.00	0.0794	800.91	789.31	0.003855	0.001927	51881
14.0	-19.00	0.0126	686.46	672.90	0.004058	0.002029	49288
16.0	-27.30	0.0019	600.64	585.10	0.003738	0.001869	53497
18.0	-15.80	0.0263	533.91	516.36	0.002921	0.001460	68480
20.0	-12.20	0.0603	480.53	460.96	0.001806	0.000903	110765
22.0	-10.60	0.0871	436.89	415.26	0.001766	0.000883	113236
24.0	-10.20	0.0955	400.54	376.83	0.002266	0.001133	88243
26.0	-10.70	0.0851	369.81	343.99	0.002669	0.001335	74933
28.0	-12.10	0.0617	343.51	315.54	0.003089	0.001544	64746
30.0	-14.60	0.0347	320.75	290.59	0.003542	0.001771	56461
32.0	-18.90	0.0129	300.87	268.49	0.004025	0.002012	49691
34.0	-27.50	0.0018	283.38	248.74	0.004536	0.002268	44090
36.0	-26.70	0.0021	267.88	230.92	0.004769	0.002384	41940
38.0	-19.70	0.0107	254.06	214.74	0.004209	0.002104	47518
40.0	-16.50	0.0224	241.68	199.95	0.003072	0.001536	65101
42.0	-14.90	0.0324	230.55	186.33	0.001804	0.000902	110887
44.0	-14.20	0.0380	220.49	173.74	0.002691	0.001345	74335
46.0	-14.10	0.0389	211.38	162.02	0.003396	0.001698	58893
48.0	-14.40	0.0363	203.11	151.06	0.003762	0.001881	53167
50.0	-15.30	0.0295	195.58	140.78	0.004050	0.002025	49379
52.0	-16.60	0.0219	188.72	131.08	0.004348	0.002174	45997
54.0	-18.40	0.0145	182.46	121.89	0.004644	0.002322	43069
56.0	-20.80	0.0083	176.75	113.16	0.004940	0.002470	40483
58.0	-24.40	0.0036	171.53	104.84	0.005056	0.002528	39556
60.0	-29.50	0.0011	166.78	96.86	0.004504	0.002252	44401
62.0	-37.10	0.0002	162.45	89.21	0.003546	0.001773	56398
64.0	-35.10	0.0003	158.52	81.83	0.002441	0.001220	81945
66.0	-29.90	0.0010	154.96	74.70	0.001397	0.000699	143161
68.0	-27.10	0.0019	151.75	67.79	0.000566	0.000283	353188
70.0	-25.50	0.0028	148.87	61.06	0.000560	0.000280	357287
72.0	-24.70	0.0034	146.30	54.51	0.000717	0.000359	278915
74.0	-24.30	0.0037	144.04	48.11	0.000807	0.000404	247778
76.0	-24.20	0.0038	142.07	41.83	0.000837	0.000418	238951
78.0	-24.50	0.0035	140.38	35.66	0.000856	0.000428	233777
80.0	-25.10	0.0031	138.96	29.58	0.000871	0.000436	229577
82.0	-26.00	0.0025	137.80	23.58	0.000884	0.000442	226269
84.0	-26.90	0.0020	136.91	17.63	0.000852	0.000426	234787
86.0	-28.00	0.0016	136.28	11.73	0.000736	0.000368	271688
88.0	-28.80	0.0013	135.90	5.86	0.000576	0.000288	347086
90.0	-29.00	0.0013	135.77	0.00	0.000441	0.000220	453819

**USA Mobility**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):							
ERP (Watts):	100	Height (feet):	480	Frequency (MHz):	150	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.40	96127.29	0.000000	0.000000	
1.0	-0.10	0.9772	9612.85	9611.76	0.000036	0.000018	554241052
2.0	-0.30	0.9333	4806.58	4804.42	0.000144	0.000072	5542533
3.0	-0.60	0.8710	3204.57	3201.32	0.000325	0.000162	1385725
4.0	-1.00	0.7943	2403.61	2399.28	0.000577	0.000289	615946
5.0	-1.50	0.7079	1923.09	1917.66	0.000902	0.000451	346524
6.0	-2.20	0.6026	1602.77	1596.26	0.001293	0.000647	221820
7.0	-3.10	0.4898	1374.01	1366.41	0.001726	0.000863	154634
8.0	-4.10	0.3890	1202.46	1193.77	0.002171	0.001086	115858
9.0	-5.30	0.2951	1069.07	1059.28	0.002603	0.001301	92119
10.0	-6.80	0.2089	962.37	951.49	0.002995	0.001498	76846
12.0	-11.00	0.0794	802.40	789.31	0.003543	0.001771	66776
14.0	-19.00	0.0126	688.20	672.90	0.003517	0.001758	56451
16.0	-27.30	0.0019	602.63	585.10	0.003021	0.001510	56873
18.0	-15.80	0.0263	536.14	516.36	0.002089	0.001045	66208
20.0	-12.20	0.0603	483.01	460.96	0.001360	0.000680	95734
22.0	-10.60	0.0871	439.61	415.26	0.001855	0.000928	147010
24.0	-10.20	0.0955	403.51	376.83	0.002242	0.001121	107805
26.0	-10.70	0.0851	373.03	343.99	0.002620	0.001310	89208
28.0	-12.10	0.0617	346.97	315.54	0.003027	0.001514	76326
30.0	-14.60	0.0347	324.45	290.59	0.003461	0.001731	66067
32.0	-18.90	0.0129	304.82	268.49	0.003921	0.001960	57782
34.0	-27.50	0.0018	287.56	248.74	0.004260	0.002130	51012
36.0	-26.70	0.0021	272.30	230.92	0.003862	0.001931	46953
38.0	-19.70	0.0107	258.72	214.74	0.002898	0.001449	51782
40.0	-16.50	0.0224	246.58	199.95	0.001670	0.000835	69024
42.0	-14.90	0.0324	235.68	186.33	0.002268	0.001134	119783
44.0	-14.20	0.0380	225.85	173.74	0.002927	0.001464	88179
46.0	-14.10	0.0389	216.96	162.02	0.003297	0.001648	68328
48.0	-14.40	0.0363	208.91	151.06	0.003551	0.001776	60664
50.0	-15.30	0.0295	201.60	140.78	0.003811	0.001905	56317
52.0	-16.60	0.0219	194.95	131.08	0.004068	0.002034	52486
54.0	-18.40	0.0145	188.90	121.89	0.004327	0.002163	49164
56.0	-20.80	0.0083	183.38	113.16	0.004499	0.002250	46225
58.0	-24.40	0.0036	178.37	104.84	0.004158	0.002079	44452
60.0	-29.50	0.0011	173.80	96.86	0.003377	0.001688	48103
62.0	-37.10	0.0002	169.65	89.21	0.002453	0.001226	59232
64.0	-35.10	0.0003	165.89	81.83	0.001520	0.000760	81548
66.0	-29.90	0.0010	162.49	74.70	0.000725	0.000363	131611
68.0	-27.10	0.0019	159.43	67.79	0.000427	0.000214	275776
70.0	-25.50	0.0028	156.69	61.06	0.000584	0.000292	467936
72.0	-24.70	0.0034	154.26	54.51	0.000687	0.000343	342687
74.0	-24.30	0.0037	152.11	48.11	0.000731	0.000365	291318
76.0	-24.20	0.0038	150.24	41.83	0.000747	0.000374	273707
78.0	-24.50	0.0035	148.65	35.66	0.000762	0.000381	267583
80.0	-25.10	0.0031	147.31	29.58	0.000774	0.000387	262411
82.0	-26.00	0.0025	146.22	23.58	0.000784	0.000392	258255
84.0	-26.90	0.0020	145.38	17.63	0.000740	0.000370	254953
86.0	-28.00	0.0016	144.78	11.73	0.000636	0.000318	270104
88.0	-28.80	0.0013	144.42	5.86	0.000502	0.000251	314633
90.0	-29.00	0.0013	144.30	0.00	0.000390	0.000195	398282
							512665

**USA Mobility**  
**Avon (Deercliff Road)**  
**RFS:201-8 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 313.33  
 ERP (Watts): 100      Height (feet): 120      Frequency (MHz): 470      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	0.00	1.0000	96127.30	96127.29	0.000000	0.000000	868309127
1.0	0.00	1.0000	9611.82	9611.76	0.000036	0.000012	8681456
2.0	-0.10	0.9772	4804.54	4804.42	0.000144	0.000046	2169125
3.0	-0.40	0.9120	3201.50	3201.32	0.000325	0.000104	963139
4.0	-0.70	0.8511	2399.53	2399.28	0.000579	0.000185	541044
5.0	-1.10	0.7762	1917.98	1917.66	0.000906	0.000289	345674
6.0	-1.50	0.7079	1596.64	1596.26	0.001308	0.000417	239548
7.0	-2.10	0.6166	1366.85	1366.41	0.001785	0.000570	175557
8.0	-2.80	0.5248	1194.27	1193.77	0.002338	0.000746	134025
9.0	-3.70	0.4266	1059.85	1059.28	0.002969	0.000947	105552
10.0	-4.70	0.3388	952.12	951.49	0.003678	0.001174	85185
12.0	-7.00	0.1995	790.07	789.31	0.005342	0.001705	58656
14.0	-10.60	0.0871	673.79	672.90	0.007345	0.002344	42661
16.0	-16.10	0.0245	586.12	585.10	0.009701	0.003096	32298
18.0	-29.10	0.0012	517.51	516.36	0.012435	0.003968	25198
20.0	-20.50	0.0089	462.25	460.96	0.015586	0.004974	20103
22.0	-14.60	0.0347	416.69	415.26	0.019195	0.006126	16323
24.0	-11.90	0.0646	378.41	376.83	0.023286	0.007432	13455
26.0	-10.50	0.0891	345.72	343.99	0.027898	0.008904	11231
28.0	-10.00	0.1000	317.43	315.54	0.033072	0.010555	9474
30.0	-10.20	0.0955	292.64	290.59	0.038853	0.012400	8064
32.0	-11.00	0.0794	270.71	268.49	0.045231	0.014436	6927
34.0	-12.30	0.0589	251.13	248.74	0.050083	0.015984	6256
36.0	-14.50	0.0355	233.50	230.92	0.053947	0.017217	5808
38.0	-17.50	0.0178	217.51	214.74	0.058011	0.018514	5401
40.0	-22.60	0.0055	202.91	199.95	0.062304	0.019884	5029
42.0	-28.90	0.0013	189.51	186.33	0.066856	0.021337	4686
44.0	-25.80	0.0026	177.14	173.74	0.071703	0.022884	4369
46.0	-21.20	0.0076	165.67	162.02	0.076889	0.024539	4075
48.0	-18.60	0.0138	154.97	151.06	0.082464	0.026318	3799
50.0	-17.20	0.0191	144.96	140.78	0.088489	0.028241	3540
52.0	-16.50	0.0224	135.56	131.08	0.095037	0.030331	3296
54.0	-16.30	0.0234	126.70	121.89	0.102198	0.032616	3065
56.0	-16.50	0.0224	118.33	113.16	0.110082	0.035132	2846
58.0	-17.00	0.0200	110.39	104.84	0.118826	0.037923	2636
60.0	-17.80	0.0166	102.85	96.86	0.128607	0.041045	2436
62.0	-18.80	0.0132	95.67	89.21	0.139646	0.044568	2243
64.0	-20.10	0.0098	88.83	81.83	0.152237	0.048586	2058
66.0	-21.60	0.0069	82.31	74.70	0.166771	0.053225	1878
68.0	-23.00	0.0050	76.09	67.79	0.183778	0.058652	1704
70.0	-24.20	0.0038	70.17	61.06	0.204003	0.065107	1535
72.0	-25.30	0.0030	64.55	54.51	0.228521	0.072932	1371
74.0	-26.50	0.0022	59.24	48.11	0.234473	0.074832	1336
76.0	-27.40	0.0018	54.27	41.83	0.171218	0.054644	1830
78.0	-28.10	0.0015	49.67	35.66	0.069576	0.022205	4503
80.0	-28.70	0.0013	45.50	29.58	0.092978	0.029674	3369
82.0	-29.40	0.0011	41.85	23.58	0.085694	0.027349	3656
84.0	-30.10	0.0010	38.81	17.63	0.067799	0.021638	4621
86.0	-30.80	0.0008	36.51	11.73	0.021658	0.006912	14467
88.0	-32.70	0.0005	35.07	5.86	0.005702	0.001820	54951
90.0	-33.30	0.0005	34.58	0.00	0.002486	0.000793	126046

**Unknown  
Avon (Deercliff Road)  
ANDREW:DB636-C Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 300  
 ERP (Watts): 100      Height (feet): 294      Frequency (MHz): 450      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.11	0.9750	96127.33	96127.29	0.000000	0.000000	831360367
1.0	-0.20	0.9550	9612.16	9611.76	0.000036	0.000012	8312616
2.0	-0.30	0.9333	4805.22	4804.42	0.000144	0.000048	2077405
3.0	-0.70	0.8511	3202.52	3201.32	0.000325	0.000108	922737
4.0	-1.10	0.7762	2400.88	2399.28	0.000578	0.000193	518643
5.0	-1.70	0.6761	1919.67	1917.66	0.000904	0.000301	331762
6.0	-2.40	0.5754	1598.66	1596.26	0.001303	0.000434	230228
7.0	-3.20	0.4786	1369.21	1366.41	0.001776	0.000592	168919
8.0	-4.00	0.3981	1196.98	1193.77	0.002323	0.000774	129123
9.0	-5.00	0.3162	1062.90	1059.28	0.002946	0.000982	101836
10.0	-6.10	0.2455	955.52	951.49	0.003642	0.001214	82362
12.0	-8.90	0.1288	794.16	789.31	0.005256	0.001752	57080
14.0	-13.30	0.0468	678.58	672.90	0.007141	0.002380	42008
16.0	-22.70	0.0054	591.62	585.10	0.009237	0.003079	32479
18.0	-21.70	0.0068	523.73	516.36	0.011484	0.003828	26124
20.0	-13.10	0.0490	469.21	460.96	0.013759	0.004586	21803
22.0	-9.30	0.1175	424.40	415.26	0.015953	0.005318	18805
24.0	-7.30	0.1862	386.88	376.83	0.018001	0.006000	16666
26.0	-6.30	0.2344	354.97	343.99	0.019561	0.006520	15336
28.0	-6.20	0.2399	327.47	315.54	0.020421	0.006807	14690
30.0	-6.60	0.2188	303.51	290.59	0.020453	0.006818	14667
32.0	-7.70	0.1698	282.43	268.49	0.021636	0.007212	13866
34.0	-9.40	0.1148	263.71	248.74	0.026327	0.008776	11394
36.0	-11.50	0.0708	246.98	230.92	0.031281	0.010427	9590
38.0	-14.00	0.0398	231.93	214.74	0.035899	0.011966	8356
40.0	-16.70	0.0214	218.30	199.95	0.039455	0.013152	7603
42.0	-19.70	0.0107	205.90	186.33	0.042845	0.014282	7002
44.0	-21.40	0.0072	194.58	173.74	0.046311	0.015437	6477
46.0	-18.90	0.0129	184.19	162.02	0.049841	0.016614	6019
48.0	-15.50	0.0282	174.63	151.06	0.053423	0.017808	5615
50.0	-12.60	0.0550	165.81	140.78	0.057041	0.019014	5259
52.0	-10.40	0.0912	157.66	131.08	0.060679	0.020226	4944
54.0	-8.80	0.1318	150.11	121.89	0.058126	0.019375	5161
56.0	-7.70	0.1698	143.12	113.16	0.050549	0.016850	5934
58.0	-7.00	0.1995	136.63	104.84	0.039636	0.013212	7568
60.0	-6.60	0.2188	130.61	96.86	0.026789	0.008930	11198
62.0	-6.60	0.2188	125.03	89.21	0.019994	0.006665	15004
64.0	-6.70	0.2138	119.88	81.83	0.033761	0.011254	8886
66.0	-7.10	0.1950	115.13	74.70	0.050928	0.016976	5890
68.0	-7.50	0.1778	110.77	67.79	0.068191	0.022730	4399
70.0	-8.20	0.1514	106.79	61.06	0.081303	0.027101	3689
72.0	-9.00	0.1259	103.19	54.51	0.086179	0.028726	3481
74.0	-10.00	0.1000	99.95	48.11	0.088091	0.029364	3405
76.0	-11.00	0.0794	97.09	41.83	0.089768	0.029923	3341
78.0	-12.40	0.0575	94.59	35.66	0.091206	0.030402	3289
80.0	-13.90	0.0407	92.47	29.58	0.081629	0.027210	3675
82.0	-15.70	0.0269	90.73	23.58	0.065789	0.021930	4560
84.0	-18.10	0.0155	89.37	17.63	0.045991	0.015330	6523
86.0	-20.20	0.0095	88.39	11.73	0.028241	0.009414	10623
88.0	-23.50	0.0045	87.81	5.86	0.014458	0.004819	20749
90.0	-24.70	0.0034	87.61	0.00	0.005469	0.001823	54854

**Unknown**  
**Avon (Deercliff Road)**  
**ANDREW:DB810M-XC Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 567.33

ERP (Watts): 1000      Height (feet): 259      Frequency (MHz): 851      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.07	0.9840	96127.32	96127.29	0.000004	0.000001	157219444
1.0	-0.70	0.8511	9612.07	9611.76	0.000361	0.000064	1571978
2.0	-2.20	0.6026	4805.03	4804.42	0.001444	0.000255	392830
3.0	-4.50	0.3548	3202.24	3201.32	0.003252	0.000573	174470
4.0	-7.90	0.1622	2400.51	2399.28	0.005787	0.001020	98043
5.0	-12.90	0.0513	1919.21	1917.66	0.009053	0.001596	62669
6.0	-17.40	0.0182	1598.12	1596.26	0.013056	0.002301	43453
7.0	-15.60	0.0275	1368.57	1366.41	0.017798	0.003137	31876
8.0	-13.60	0.0437	1196.25	1193.77	0.023278	0.004103	24372
9.0	-13.40	0.0457	1062.07	1059.28	0.029519	0.005203	19219
10.0	-14.60	0.0347	954.60	951.49	0.036566	0.006445	15515
12.0	-24.30	0.0037	793.06	789.31	0.044799	0.007896	12664
14.0	-21.10	0.0078	677.29	672.90	0.052549	0.009262	10796
16.0	-18.20	0.0151	590.13	585.10	0.060435	0.010652	9387
18.0	-23.20	0.0048	522.06	516.36	0.068481	0.012071	8284
20.0	-27.90	0.0016	467.33	460.96	0.076711	0.013521	7395
22.0	-20.20	0.0095	422.32	415.26	0.085153	0.015009	6662
24.0	-19.90	0.0102	384.60	376.83	0.093837	0.016540	6045
26.0	-26.50	0.0022	352.49	343.99	0.102796	0.018119	5519
28.0	-27.20	0.0019	324.78	315.54	0.112064	0.019753	5062
30.0	-20.50	0.0089	300.61	290.59	0.121684	0.021448	4662
32.0	-21.50	0.0071	279.30	268.49	0.131699	0.023214	4307
34.0	-30.30	0.0009	260.36	248.74	0.142161	0.025058	3990
36.0	-34.90	0.0003	243.40	230.92	0.149639	0.026376	3791
38.0	-28.30	0.0015	228.11	214.74	0.155897	0.027479	3639
40.0	-33.40	0.0005	214.24	199.95	0.160643	0.028315	3531
42.0	-45.20	0.0000	201.59	186.33	0.151794	0.026756	3737
44.0	-29.30	0.0012	190.01	173.74	0.154163	0.027173	3680
46.0	-25.10	0.0031	179.36	162.02	0.155567	0.027421	3646
48.0	-24.30	0.0037	169.53	151.06	0.155997	0.027497	3636
50.0	-27.00	0.0020	160.43	140.78	0.147736	0.026040	3840
52.0	-34.90	0.0003	151.99	131.08	0.132315	0.023322	4287
54.0	-27.90	0.0016	144.15	121.89	0.129169	0.022768	4392
56.0	-22.80	0.0052	136.85	113.16	0.125292	0.022084	4528
58.0	-20.90	0.0081	130.04	104.84	0.116297	0.020499	4878
60.0	-21.00	0.0079	123.71	96.86	0.051124	0.009011	11097
62.0	-22.90	0.0051	117.81	89.21	0.039667	0.006992	14302
64.0	-26.20	0.0024	112.32	81.83	0.056528	0.009964	10036
66.0	-30.90	0.0008	107.24	74.70	0.052336	0.009225	10840
68.0	-36.20	0.0002	102.54	67.79	0.047628	0.008395	11911
70.0	-36.20	0.0002	98.23	61.06	0.050271	0.008861	11285
72.0	-35.60	0.0003	94.30	54.51	0.074857	0.013195	7578
74.0	-33.80	0.0004	90.75	48.11	0.069781	0.012300	8130
76.0	-32.10	0.0006	87.58	41.83	0.064688	0.011402	8770
78.0	-31.30	0.0007	84.81	35.66	0.056703	0.009995	10005
80.0	-31.10	0.0008	82.43	29.58	0.017826	0.003142	31825
82.0	-32.50	0.0006	80.48	23.58	0.005544	0.000977	102337
84.0	-33.80	0.0004	78.94	17.63	0.005206	0.000918	108968
86.0	-37.30	0.0002	77.83	11.73	0.004853	0.000855	116904
88.0	-38.00	0.0002	77.17	5.86	0.004182	0.000737	135656
90.0	-35.50	0.0003	76.94	0.00	0.005504	0.000970	103075

**Unknown**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F2 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):

200

ERP (Watts): 100      Height (feet): 94      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.29	96127.29	0.000000	0.000000	
1.0	-0.10	0.9772	9611.80	9611.76	0.000036	0.000018	554239830
2.0	-0.30	0.9333	4804.49	4804.42	0.000144	0.000072	5541326
3.0	-0.60	0.8710	3201.43	3201.32	0.000325	0.000163	1384519
4.0	-1.00	0.7943	2399.43	2399.28	0.000579	0.000290	614740
5.0	-1.50	0.7079	1917.85	1917.66	0.000907	0.000453	345318
6.0	-2.20	0.6026	1596.48	1596.26	0.001308	0.000654	220614
7.0	-3.10	0.4898	1366.67	1366.41	0.001785	0.000893	152874
8.0	-4.10	0.3890	1194.07	1193.77	0.002339	0.001169	112029
9.0	-5.30	0.2951	1059.62	1059.28	0.002970	0.001485	85519
10.0	-6.80	0.2089	951.87	951.49	0.003680	0.001840	67344
12.0	-11.00	0.0794	789.76	789.31	0.005346	0.002673	54344
14.0	-19.00	0.0126	673.43	672.90	0.007353	0.003676	37410
16.0	-27.30	0.0019	585.70	585.10	0.009720	0.004860	27201
18.0	-35.80	0.0026	517.04	516.36	0.012473	0.006237	20575
20.0	-44.50	0.0033	461.72	460.96	0.015641	0.007820	16034
22.0	-53.40	0.0040	416.11	415.26	0.019258	0.009629	12787
24.0	-62.50	0.0047	377.77	376.83	0.023366	0.011683	10385
26.0	-71.80	0.0054	345.02	343.99	0.028012	0.014006	8559
28.0	-81.30	0.0061	316.66	315.54	0.033254	0.016627	7139
30.0	-91.00	0.0068	291.81	290.59	0.038955	0.019477	6014
32.0	-100.90	0.0075	269.81	268.49	0.045145	0.022572	5134
34.0	-111.00	0.0082	250.16	248.74	0.051881	0.025940	4430
36.0	-121.30	0.0089	232.45	230.92	0.058879	0.029440	3854
38.0	-131.80	0.0096	216.39	214.74	0.066408	0.033204	3396
40.0	-142.50	0.0103	201.71	199.95	0.073894	0.036947	3011
42.0	-153.40	0.0110	188.23	186.33	0.081646	0.040823	2706
44.0	-164.50	0.0117	175.77	173.74	0.089032	0.044516	2449
46.0	-175.80	0.0124	164.19	162.02	0.095975	0.047987	2246
48.0	-187.30	0.0131	153.40	151.06	0.102304	0.051152	2083
50.0	-199.00	0.0138	143.28	140.78	0.105218	0.052609	1954
52.0	-210.90	0.0145	133.76	131.08	0.105102	0.052551	1900
54.0	-223.00	0.0152	124.77	121.89	0.101791	0.050896	1902
56.0	-235.30	0.0159	116.26	113.16	0.094999	0.047500	1964
58.0	-247.80	0.0166	108.17	104.84	0.082851	0.041426	2105
60.0	-260.50	0.0173	100.46	96.86	0.065088	0.032544	2413
62.0	-273.40	0.0180	93.10	89.21	0.042853	0.021426	3072
64.0	-286.50	0.0187	86.06	81.83	0.045326	0.022663	4667
66.0	-299.80	0.0194	79.31	74.70	0.057585	0.028793	4412
68.0	-313.30	0.0201	72.84	67.79	0.068805	0.034403	3473
70.0	-327.00	0.0208	66.63	61.06	0.082104	0.041052	2906
72.0	-340.90	0.0215	60.68	54.51	0.098962	0.049481	2435
74.0	-355.00	0.0222	55.00	48.11	0.120423	0.060212	2020
76.0	-369.30	0.0229	49.60	41.83	0.106653	0.053327	1660
78.0	-383.80	0.0236	44.52	35.66	0.054498	0.027249	1875
80.0	-398.50	0.0243	39.82	29.58	0.097879	0.048940	3669
82.0	-413.40	0.0250	35.58	23.58	0.122079	0.061039	2043
84.0	-428.50	0.0257	31.96	17.63	0.094243	0.047121	1638
86.0	-443.80	0.0264	29.12	11.73	0.015515	0.007758	2122
88.0	-459.30	0.0271	27.29	5.86	0.022594	0.011297	12890
90.0	-475.00	0.0278	26.65	0.00	0.011437	0.005719	8852
							17486

**Unknown**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F2 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 200  
ERP (Watts): 100      Height (feet): 505      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.41	96127.29	0.000000	0.000000	554241183
1.0	-0.10	0.9772	9612.96	9611.76	0.000036	0.000018	5542668
2.0	-0.30	0.9333	4806.82	4804.42	0.000144	0.000072	1385861
3.0	-0.60	0.8710	3204.92	3201.32	0.000325	0.000162	616082
4.0	-1.00	0.7943	2404.08	2399.28	0.000577	0.000288	346659
5.0	-1.50	0.7079	1923.67	1917.66	0.000901	0.000451	221956
6.0	-2.20	0.6026	1603.48	1596.26	0.001285	0.000642	155682
7.0	-3.10	0.4898	1374.83	1366.41	0.001701	0.000850	117595
8.0	-4.10	0.3890	1203.40	1193.77	0.002122	0.001061	94229
9.0	-5.30	0.2951	1070.12	1059.28	0.002521	0.001261	79326
10.0	-6.80	0.2089	963.55	951.49	0.002870	0.001435	69698
12.0	-11.00	0.0794	803.80	789.31	0.003256	0.001628	61431
14.0	-19.00	0.0126	689.84	672.90	0.003061	0.001530	65345
16.0	-27.30	0.0019	604.50	585.10	0.002412	0.001206	82903
18.0	-15.80	0.0263	538.24	516.36	0.001452	0.000726	137767
20.0	-12.20	0.0603	485.35	460.96	0.001444	0.000722	138520
22.0	-10.60	0.0871	442.17	415.26	0.001867	0.000934	107112
24.0	-10.20	0.0955	406.30	376.83	0.002211	0.001106	90453
26.0	-10.70	0.0851	376.04	343.99	0.002577	0.001289	77597
28.0	-12.10	0.0617	350.21	315.54	0.002971	0.001486	67315
30.0	-14.60	0.0347	327.91	290.59	0.003388	0.001694	59029
32.0	-18.90	0.0129	308.50	268.49	0.003783	0.001892	52866
34.0	-27.50	0.0018	291.46	248.74	0.003639	0.001819	54965
36.0	-26.70	0.0021	276.42	230.92	0.002901	0.001451	68933
38.0	-19.70	0.0107	263.05	214.74	0.001812	0.000906	110384
40.0	-16.50	0.0224	251.12	199.95	0.001844	0.000922	108445
42.0	-14.90	0.0324	240.42	186.33	0.002497	0.001249	80091
44.0	-14.20	0.0380	230.79	173.74	0.002914	0.001457	68636
46.0	-14.10	0.0389	222.11	162.02	0.003144	0.001572	63605
48.0	-14.40	0.0363	214.25	151.06	0.003374	0.001687	59271
50.0	-15.30	0.0295	207.12	140.78	0.003604	0.001802	55488
52.0	-16.60	0.0219	200.66	131.08	0.003838	0.001919	52113
54.0	-18.40	0.0145	194.78	121.89	0.004044	0.002022	49452
56.0	-20.80	0.0083	189.44	113.16	0.003912	0.001956	51125
58.0	-24.40	0.0036	184.59	104.84	0.003305	0.001652	60519
60.0	-29.50	0.0011	180.18	96.86	0.002530	0.001265	79060
62.0	-37.10	0.0002	176.18	89.21	0.001690	0.000845	118325
64.0	-35.10	0.0003	172.56	81.83	0.000942	0.000471	212205
66.0	-29.90	0.0010	169.29	74.70	0.000385	0.000193	519447
68.0	-27.10	0.0019	166.36	67.79	0.000460	0.000230	434714
70.0	-25.50	0.0028	163.74	61.06	0.000572	0.000286	349815
72.0	-24.70	0.0034	161.41	54.51	0.000640	0.000320	312567
74.0	-24.30	0.0037	159.36	48.11	0.000665	0.000333	300631
76.0	-24.20	0.0038	157.58	41.83	0.000679	0.000340	294444
78.0	-24.50	0.0035	156.05	35.66	0.000691	0.000346	289249
80.0	-25.10	0.0031	154.78	29.58	0.000701	0.000350	285349
82.0	-26.00	0.0025	153.74	23.58	0.000707	0.000353	283079
84.0	-26.90	0.0020	152.94	17.63	0.000654	0.000327	305791
86.0	-28.00	0.0016	152.38	11.73	0.000562	0.000281	355735
88.0	-28.80	0.0013	152.04	5.86	0.000447	0.000224	447013
90.0	-29.00	0.0013	151.92	0.00	0.000352	0.000176	568238

**WUVN - Entravision Holdings (TV Broadcast/Channel 46)  
 Avon (Deercliff Road)  
 ANDREW:ATW25H3-H50-46 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 443.33  
 ERP (Watts): 217000      Height (feet): 495      Frequency (MHz): 665      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.08	0.9813	96127.40	96127.29	0.000783	0.000177	566160
1.0	-0.82	0.8278	9612.92	9611.76	0.078302	0.017662	5661
2.0	-2.10	0.6173	4806.72	4804.42	0.313175	0.070641	1415
3.0	-4.30	0.3719	3204.78	3201.32	0.704514	0.158913	629
4.0	-7.14	0.1930	2403.89	2399.28	1.250898	0.282157	354
5.0	-11.42	0.0721	1923.44	1917.66	1.953346	0.440604	226
6.0	-15.97	0.0253	1603.19	1596.26	2.403490	0.542141	184
7.0	-15.64	0.0273	1374.50	1366.41	2.807798	0.633338	157
8.0	-12.22	0.0600	1203.02	1193.77	3.213843	0.724927	137
9.0	-11.52	0.0705	1069.69	1059.28	3.621885	0.816966	122
10.0	-11.74	0.0670	963.07	951.49	4.032189	0.909516	109
12.0	-13.23	0.0476	803.23	789.31	4.860675	1.096393	91
14.0	-12.07	0.0621	689.18	672.90	5.701552	1.286065	77
16.0	-11.22	0.0755	603.74	585.10	6.557201	1.479068	67
18.0	-12.77	0.0528	537.39	516.36	7.430160	1.675976	59
20.0	-17.64	0.0172	484.40	460.96	8.323154	1.877403	53
22.0	-16.50	0.0224	441.14	415.26	9.239142	2.084017	47
24.0	-14.27	0.0374	405.17	376.83	10.181347	2.296545	43
26.0	-14.62	0.0345	374.82	343.99	11.153313	2.515785	39
28.0	-18.60	0.0138	348.89	315.54	12.158960	2.742623	36
30.0	-24.33	0.0037	326.51	290.59	13.202661	2.978044	33
32.0	-27.15	0.0019	307.01	268.49	14.289311	3.223153	31
34.0	-24.47	0.0036	289.88	248.74	15.364277	3.465626	28
36.0	-22.93	0.0051	274.75	230.92	10.078621	2.273373	43
38.0	-22.04	0.0063	261.30	214.74	6.234720	1.406328	71
40.0	-21.53	0.0070	249.28	199.95	6.129762	1.382653	72
42.0	-21.10	0.0078	238.50	186.33	6.131957	1.383148	72
44.0	-21.22	0.0076	228.80	173.74	5.858956	1.321569	75
46.0	-21.68	0.0068	220.03	162.02	5.585521	1.259892	79
48.0	-22.74	0.0053	212.10	151.06	5.315697	1.199029	83
50.0	-25.69	0.0027	204.90	140.78	5.052732	1.139714	87
52.0	-27.59	0.0017	198.36	131.08	4.729825	1.066878	93
54.0	-25.01	0.0032	192.41	121.89	4.177578	0.942311	106
56.0	-21.93	0.0064	187.00	113.16	4.225818	0.953192	104
58.0	-20.33	0.0093	182.08	104.84	4.799472	1.082588	92
60.0	-20.56	0.0088	177.61	96.86	4.591109	1.035589	96
62.0	-22.07	0.0062	173.56	89.21	4.388137	0.989805	101
64.0	-26.35	0.0023	169.88	81.83	4.200184	0.947410	105
66.0	-32.06	0.0006	166.57	74.70	4.027414	0.908439	110
68.0	-32.37	0.0006	163.58	67.79	3.419111	0.771228	129
70.0	-29.20	0.0012	160.91	61.06	2.051081	0.462650	216
72.0	-27.54	0.0018	158.54	54.51	0.786396	0.177383	563
74.0	-27.58	0.0017	156.46	48.11	0.727175	0.164024	609
76.0	-28.44	0.0014	154.64	41.83	0.693670	0.156467	639
78.0	-29.84	0.0010	153.09	35.66	0.665481	0.150108	666
80.0	-31.91	0.0006	151.79	29.58	0.624491	0.140863	709
82.0	-35.63	0.0003	150.73	23.58	0.494733	0.111594	896
84.0	-38.07	0.0002	149.92	17.63	0.331645	0.074807	1336
86.0	-38.07	0.0002	149.34	11.73	0.174014	0.039251	2547
88.0	-38.07	0.0002	148.99	5.86	0.118743	0.026784	3733
90.0	-36.13	0.0002	148.88	0.00	0.184771	0.041678	2399

Exhibit 3  
Full Construction Drawings, Stamped & Sealed

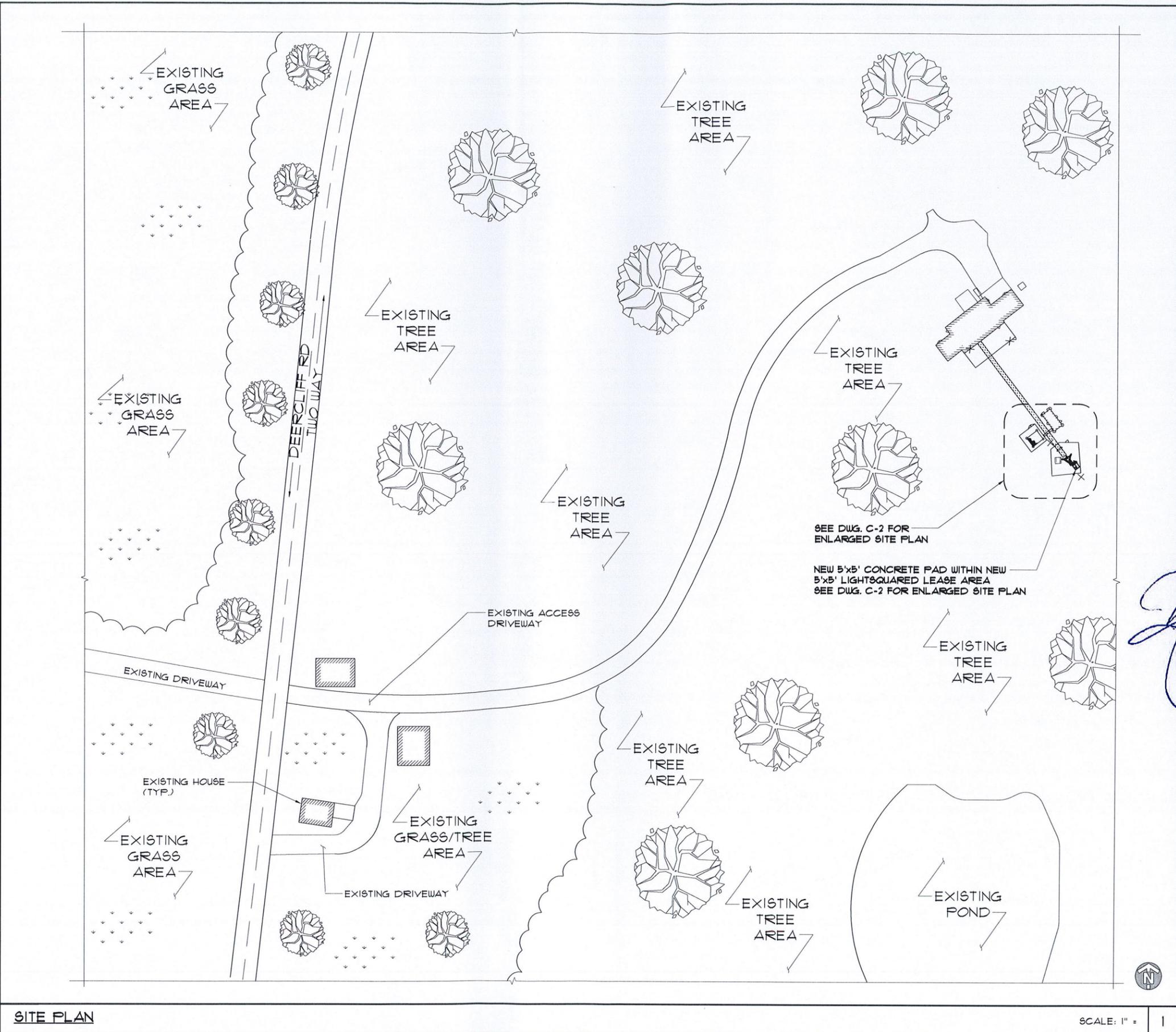


**ABBREVIATIONS**

AFF	ABOVE FINISHED FLOOR
AGL	ABOVE GRADE LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BTS	BASE TRANSMISSION STATION
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
DWG	DRAWING
FT	FOOT(FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ELEV	ELEVATION
EQUIP	EQUIPMENT
EXISTING	EXISTING
EXT	EXTERIOR
FND	FOUNDATION
GA	GAUGE
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
LTE	LONG TERM EVOLUTION
MAX	MAXIMUM
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
NTS	NOT TO SCALE
O.C.	ON CENTER
OE/OT	OVERHEAD ELECTRIC/TELCO
RGS	RIGID GALVANIZED STEEL
IN	INCH(ES)
INT	INTERIOR
LB.(#)	POUND(S)
RRU	REMOTE RADIO UNIT
SF	SQUARE FOOT
STL	STEEL
TYP	TYPICAL
UE/UT	UNDERGROUND ELECTRIC/TELCO
UNO	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD
W	WITH
XFMR	TRANSFORMER
¢	CENTERLINE
PL	PLATE

**SYMBOLS**

¢	CENTERLINE
▲	REVISION
●	WORK POINT
○	UTILITY POLE
[Hatched Box]	BRICK
[Dotted Box]	COMPRESSED STONE
[Cross-hatched Box]	CONCRETE
[Diagonal Hatched Box]	EARTH
[Small Circle Box]	GRAVEL
[Large Circle Box]	MASONRY
[Vertical Hatched Box]	STEEL
---	CENTERLINE
- - -	PROPERTY LINE
- · - · -	LEASE LINE
- · - - ·	EASEMENT LINE
X X	CHAIN LINK FENCE
□ □	WOOD FENCE
— UE —	BELOW GRADE ELECTRIC
— UT —	BELOW GRADE TELEPHONE
— OE/OT —	OVERHEAD ELECTRIC/TELEPHONE
L A L A	SECTION REFERENCE



**SITE PLAN**

SCALE: 1" = 1'

**LightSquared**

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**CROWN CASTLE**

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CHARLOTTE, NC 28271

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ROSEMONT, ILLINOIS 60018  
TEL: 847-292-0200  
FAX: 847-292-0206  
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#	DATE	DESCRIPTION	INT.
	04/11/13	90% REVIEW	RL
	04/24/13	FINAL	MD



SITE NAME  
**AVON  
(DEERCLIFF RD.)**

SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
AVON, CT 06001**

SHEET NAME  
**SITE PLAN**

SHEET NUMBER  
**C-1**

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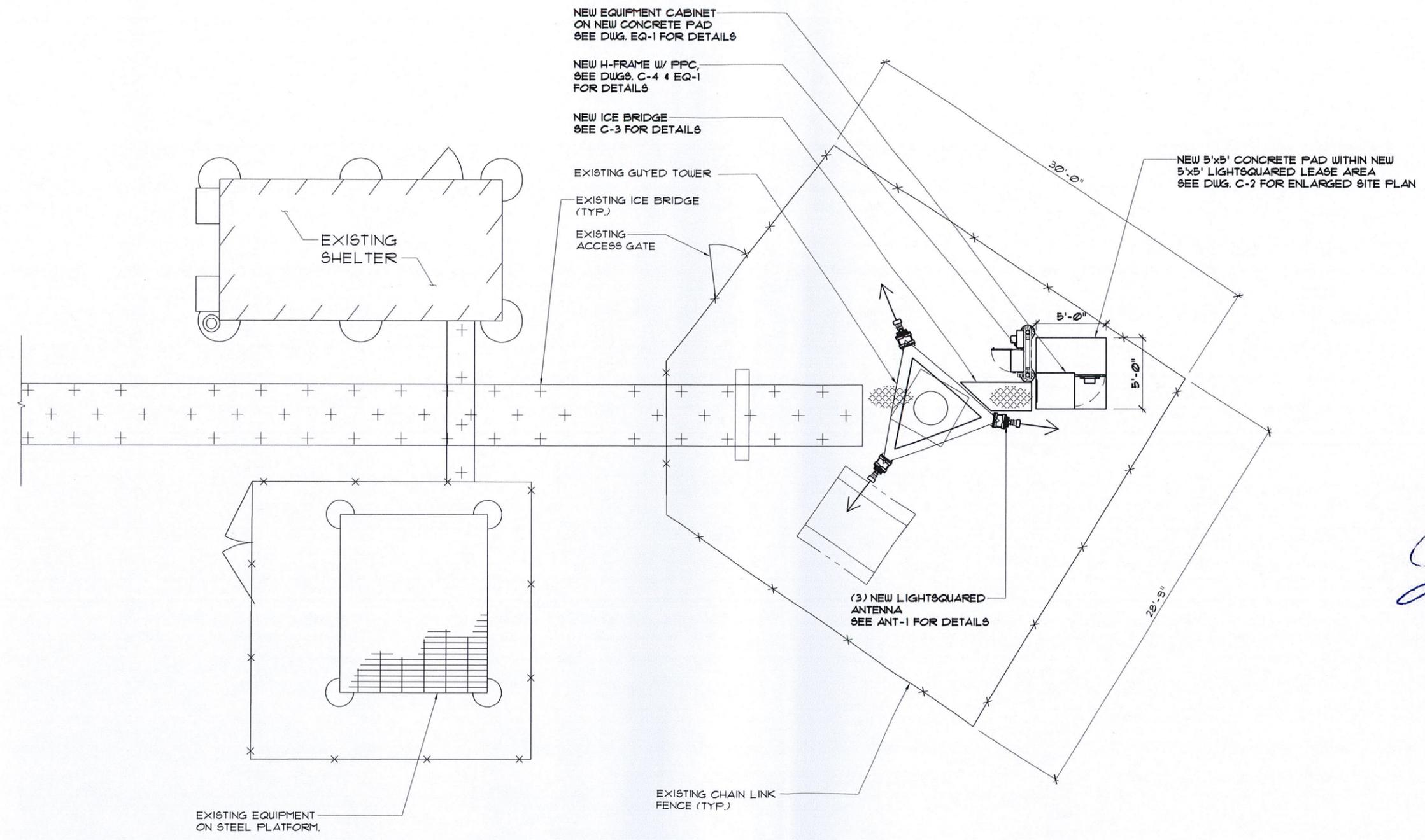
SITE NAME  
**AVON  
(DEERCLIFF RD.)**

SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
AVON, CT 06001**

SHEET NAME  
**ENLARGED  
SITE PLAN**

SHEET NUMBER  
**C-2**



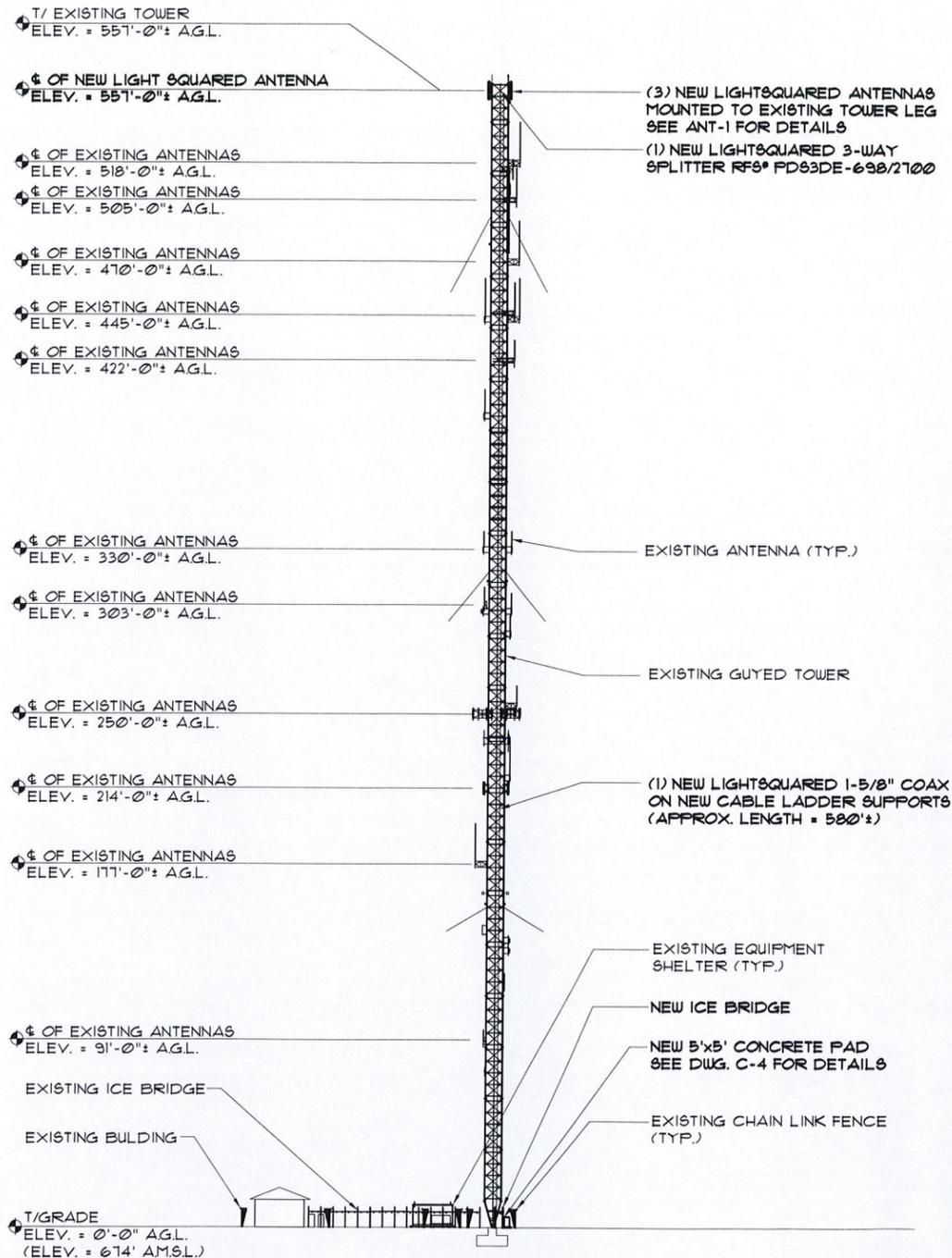
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**ANTENNA NOTES:**

1. THE SIZE, HEIGHT, AND DIRECTION OF THE ANTENNA SHALL BE ADJUSTED TO MEET SYSTEM REQUIREMENTS.
2. CONTRACTOR SHALL VERIFY HEIGHT OF ANTENNA WITH LIGHTSQUARED REPRESENTATIVE.
3. ALL ANTENNA AZIMUTH TO BE FROM TRUE NORTH.

**STRUCTURAL NOTES:**

1. STRUCTURAL CALCULATION PREPARED BY OTHERS. CONTRACTOR TO COORDINATE WITH LIGHTSQUARED REPRESENTATIVE TO OBTAIN A COPY.
2. CONTRACTOR TO REFER TO TOWER STRUCTURAL CALCULATIONS FOR ADDITIONAL LOADS. NO ERECTION OR MODIFICATION OF TOWER SHALL BE MADE WITHOUT APPROVAL OF STRUCTURAL ENGINEER.

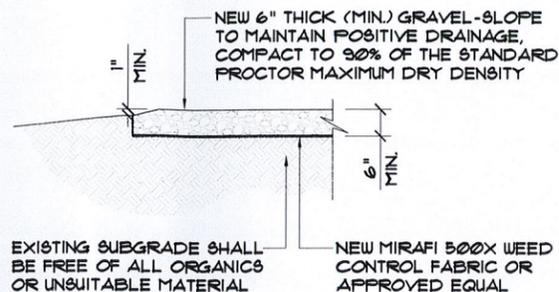


**SOUTH ELEVATION**

SCALE: N.T.S.

1

**TYPICAL ICE BRIDGE DETAIL**



**YARD DETAIL**

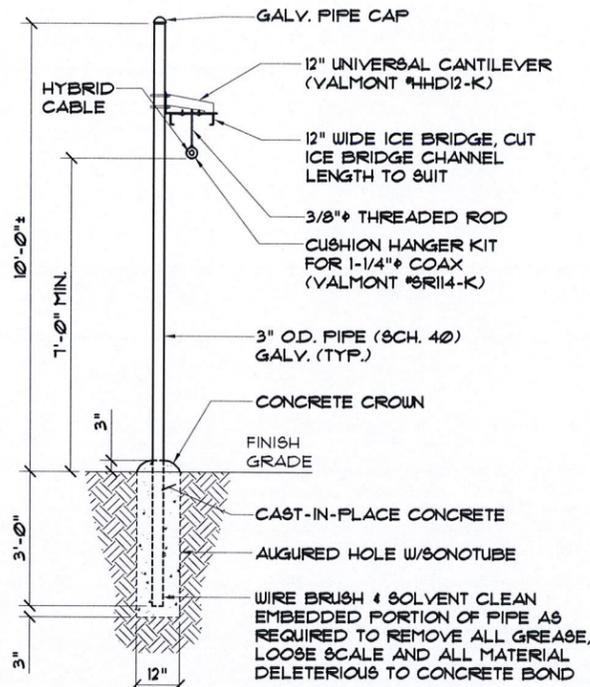
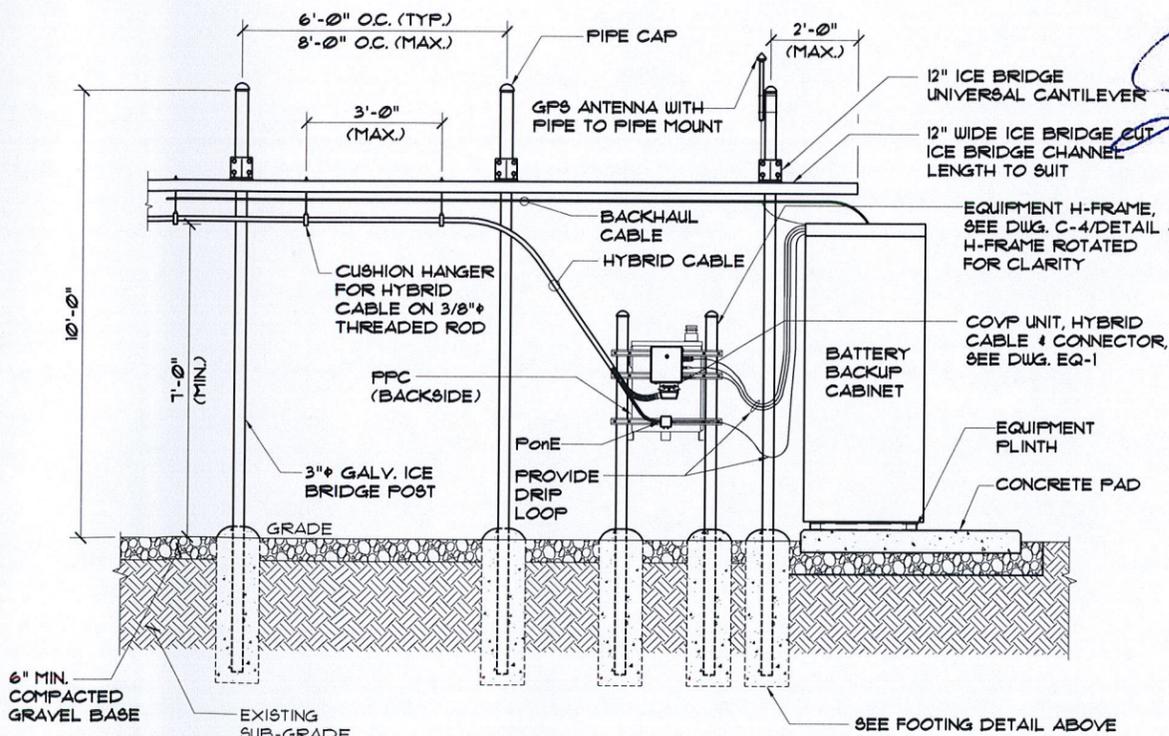
SCALE: N.T.S.

2

**FOOTING DETAIL**

SCALE: N.T.S.

3



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SITE NAME  
**AVON (DEERCLIFF RD.)**

SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
AVON, CT 06001**

SHEET NAME  
**ELEVATION AND DETAILS**

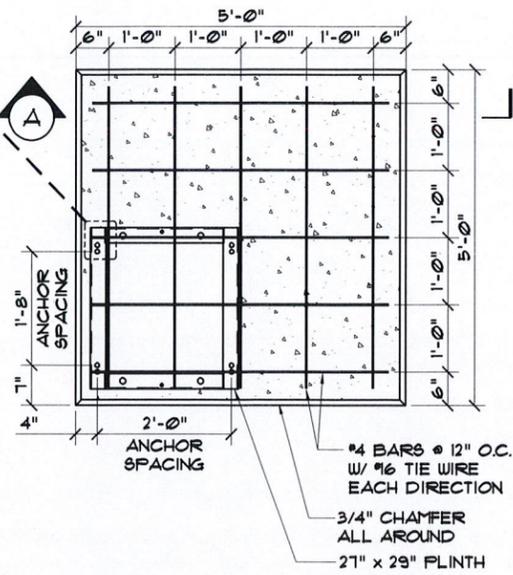
SHEET NUMBER  
**C-3**

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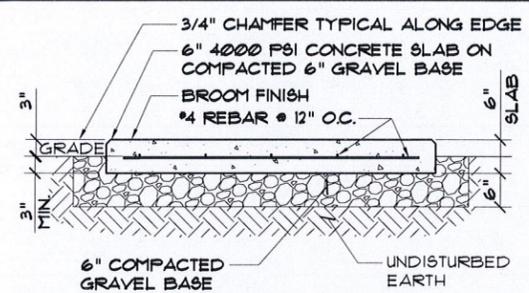
**NOTE:**  
FOR CORRECT  
ORIENTATION TO  
NORTH, SEE DWG.  
C-1 AND C-2

PLINTH CABINET  
BOTTOM  
TORQUE TO  
30 FT-LB  
1/4" THICK  
PHENOLIC PAD,  
BY CUSTOMER  
HILTI HDI 1/2"  
DROP-IN ANCHOR

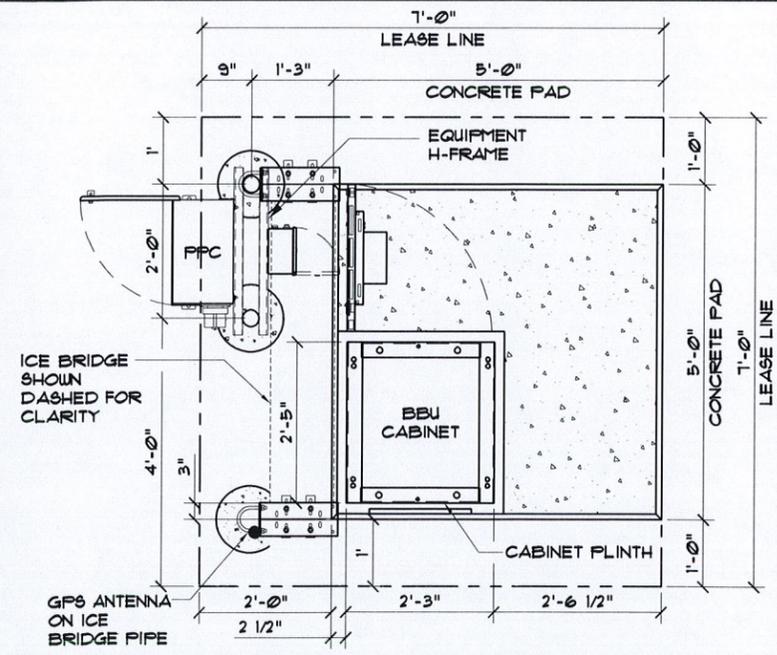
**NOTE:**  
5/8" BIT USED FOR  
DRILLING HOLES,  
RECOMMENDED BIT  
IS HILTI TE-CX 5/8"-8,  
PART NUMBER 28043



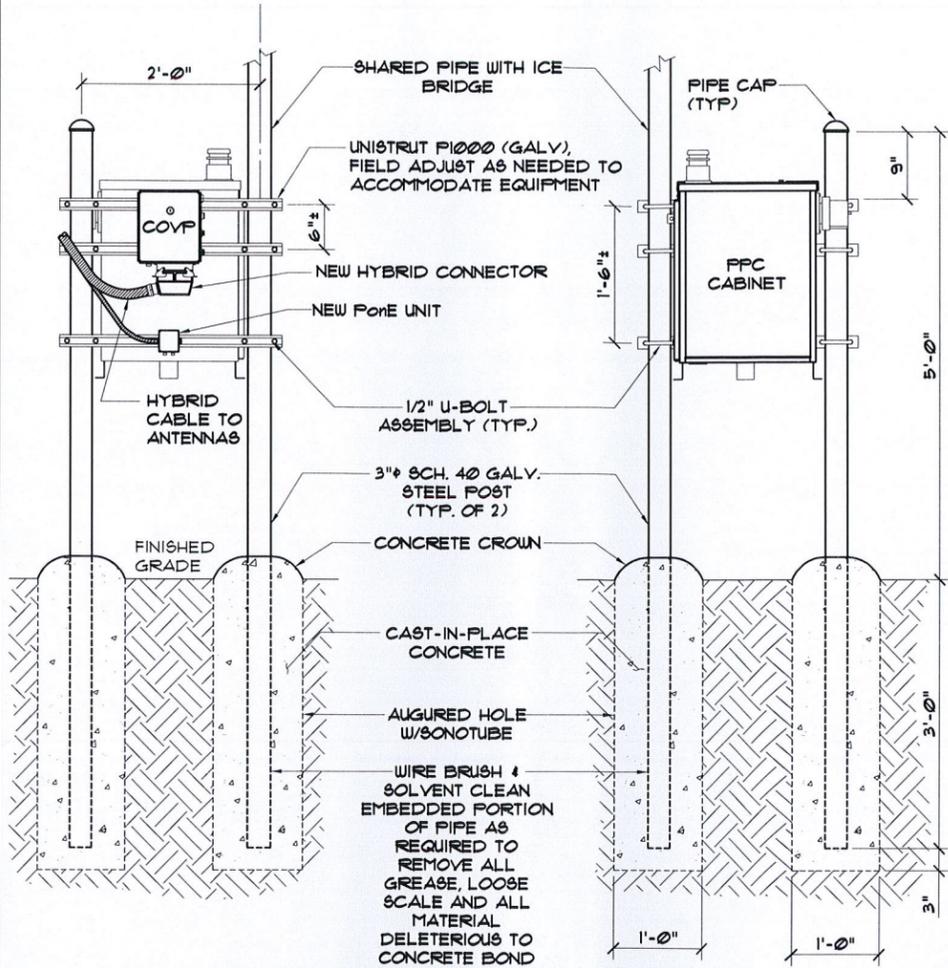
CONCRETE PAD & EQUIP. LAYOUT SCALE: 3/8" = 1'-0" 1



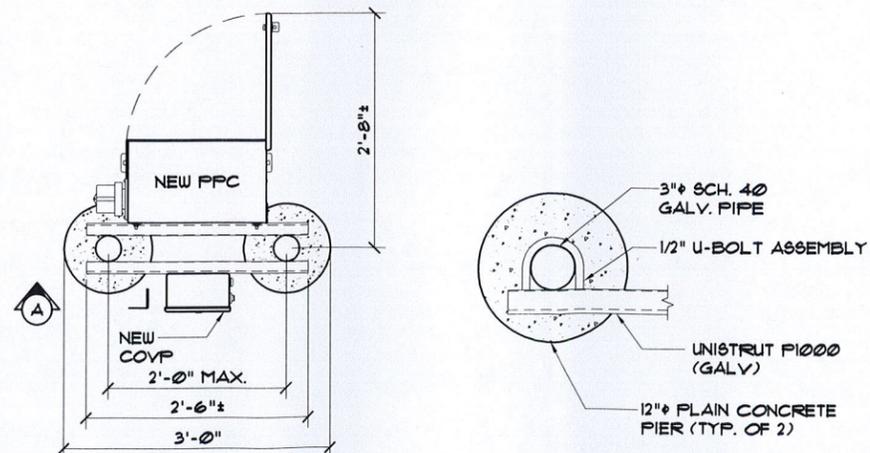
SECTION A SCALE: 3/8" = 1'-0" 2



EQUIPMENT LAYOUT SCALE: 3/8" = 1'-0" 3



TELCO VIEW ELECTRICAL VIEW



TOP VIEW SECTION A SCALE: 2" = 1'-0" 4

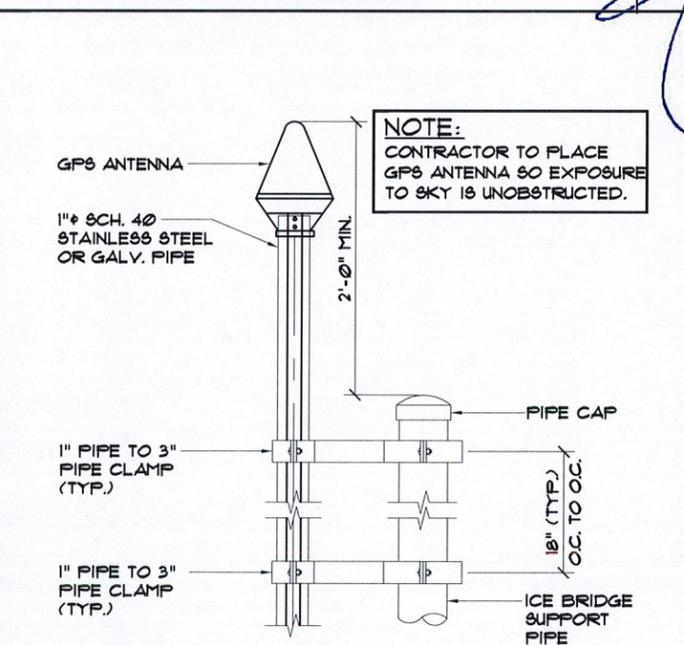
**1.0 GENERAL CONDITIONS**

- 1.1 DESIGN AND CONSTRUCTION OF ALL WORK SHALL CONFORM TO APPLICABLE LOCAL AND STATE CODES, ORDINANCES, AND REGULATIONS. IN CASE OF CONFLICT BETWEEN THE CODES, STANDARDS, REGULATIONS, SPECIFICATIONS, GENERAL NOTES AND/OR MANUFACTURER'S REQUIREMENTS, USE THE MOST STRINGENT PROVISION.
- 1.2 IT IS THE EXPRESS INTENT OF THE PARTIES INVOLVED IN THIS PROJECT THAT THE CONTRACTOR OR SUBCONTRACTOR OR INDEPENDENT CONTRACTOR OR THEIR RESPECTIVE EMPLOYEES SHALL EXCULPATE THE ARCHITECT, THE ENGINEER, THE CONSTRUCTION MANAGER, THE OWNER, AND THEIR AGENTS, FROM ANY LIABILITY WHATSOEVER AND HOLD THEM HARMLESS AGAINST LOSS, DAMAGES, LIABILITY OR ANY EXPENSE ARISING IN ANY MATTER FROM THE WRONGFUL OR NEGLIGENT ACT, OR FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, OR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OR FAILURE TO CONFORM TO THE STATE SCAFFOLDING ACT IN CONNECTION WITH THE WORK.
- 1.3 DESIGN LOADS ARE:  
LIVE LOAD : 100 PSF.  
EQUIPMENT SIZE : 80" H x 30" W x 33" D  
WIND SPEED : 90 MPH (3 SECOND GUST)

**2.0 CONCRETE**

- 2.1 MEET OR EXCEED THE FOLLOWING CODES AND STANDARDS (LATEST EDITION):  
-DESIGN: ACI 318  
-CONSTRUCTION: ACI 301  
-DETAILING: CRSI MANUAL OF STANDARD PRACTICE  
USE CLASS "B" FOR SPLICES UNLESS NOTED
- NOTED  
-REINF. STEEL: ASTM A 615 GRADE 60, DEFORMED  
-MIXING: ASTM C 94. READY MIX CONCRETE  
-AIR ENTRAINMENT: ACI 318 AND ASTM C-260  
-AGGREGATE: ASTM C 33
- 2.2 CONCRETE STRENGTH AT 28 DAYS SHALL BE 4000 PSI MINIMUM
- 2.3 DO NOT USE IN ADMIXTURE, WATER OR OTHER CONSTITUENTS OF CONCRETE WHICH HAS CALCIUM CHLORIDE
- 2.4 MINIMUM COVER FOR REINFORCING STEEL UNLESS INCREASED COVER IS NECESSARY TO MEET FIRE RATING INDICATED:  
-CAST AGAINST AND EXPOSED TO EARTH 3"  
-EXPOSED TO EARTH AND WEATHER, #1 TO #6 BARS 2"  
-EXPOSED TO EARTH AND WEATHER, #8 AND SMALLER 1 1/2"  
-INTERIOR EXPOSURE, BEAMS AND COLUMNS 1 1/2"  
-INTERIOR EXPOSURE, SLABS, WALLS AND JOISTS 3/4"

**STRUCTURAL GENERAL NOTES**



GPS ANTENNA DETAIL SCALE: N.T.S. 6

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APPROVED BY:	MB		
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	04/24/13	FINAL	MD

STATE OF CONNECTICUT  
HENRY M. BELLAGUARD  
No. 25358  
LICENSED PROFESSIONAL ENGINEER

SITE NAME  
**AVON (DEERCLIFF RD.)**

SITE NUMBER  
**870800**

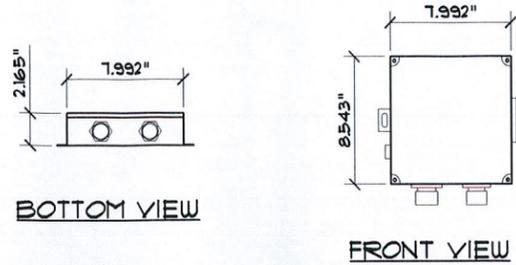
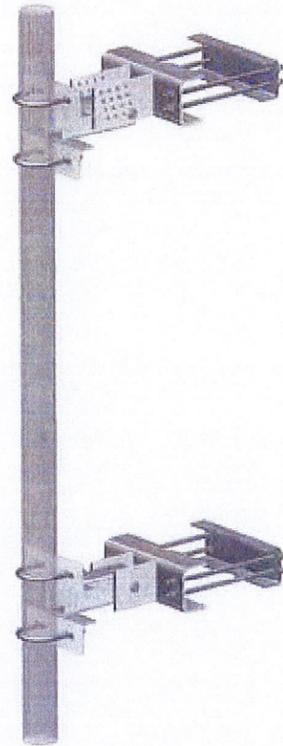
SITE ADDRESS  
**376 DEERCLIFF ROAD  
AVON, CT 06001**

SHEET NAME  
**SITE DETAILS  
AND NOTES**

SHEET NUMBER  
**C-4**

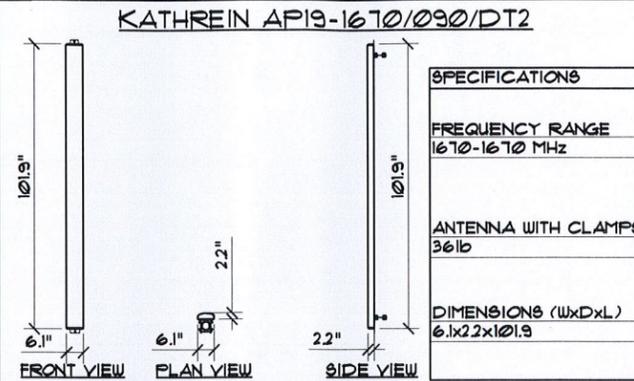
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**PRODUCT INFORMATION:**  
MFR: VALMONT  
P/N: TAM-2U



**DIMENSIONS** 217 mm/8.54" x 203 mm/7.99" x 55 mm/ 2.17"  
**WEIGHT** 5 kg / 11 lb  
**INPUT VOLTAGE OVER ETHERNET** - 36 - 60 VDC

**ETHERNET PoE**      SCALE: N.T.S.      2



CABLE FUNCTION	CABLE TYPE	CABLE SIZE (DIA. IN.)	CABLE LENGTH (FT.)
MAIN LINE COAX FROM ANTENNA JUMPER TO RADIO CABINET	NEW COAX CABLE	1-5/8	580
JUMPER CABLES FROM RADIO TO MAIN TRANSMISSION LINE	ANDREW AVA	1/2	8
JUMPER CABLES FROM MAIN TRANSMISSION LINE TO ANTENNAS	ANDREW AVA	1/2	6
JUMPER CABLES FROM COAX CABLE FEEDER TO LNA	ANDREW AVA	1/2	6
MAIN COAX FROM GPS TO BBU CABINET	ANDREW AVA	1/2	6

SECTOR	COLOR	ANTENNA	REFERENCE	FUNCTION
30 DEG. AZ.	1 RED	A1	MAIN	TX/RX MAIN
150 DEG. AZ.	1 BLUE	B1	MAIN	TX/RX MAIN
270 DEG. AZ.	1 GREEN	C1	MAIN	TX/RX MAIN
GPS	1 WHITE	GPS 1	GPS 1	TX/RX MAIN

**NOTES:**

- CONTRACTOR TO USE PROPER TORQUE WRENCH WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
- ALL COAX CABLE SHALL BE MARKED WITHIN 24" OF THE END OF EACH CABLE WITH 2" WIDE VINYL TAPE THIS INCLUDES ALL JUMPERS AND MAIN LINE COAX CABLE.



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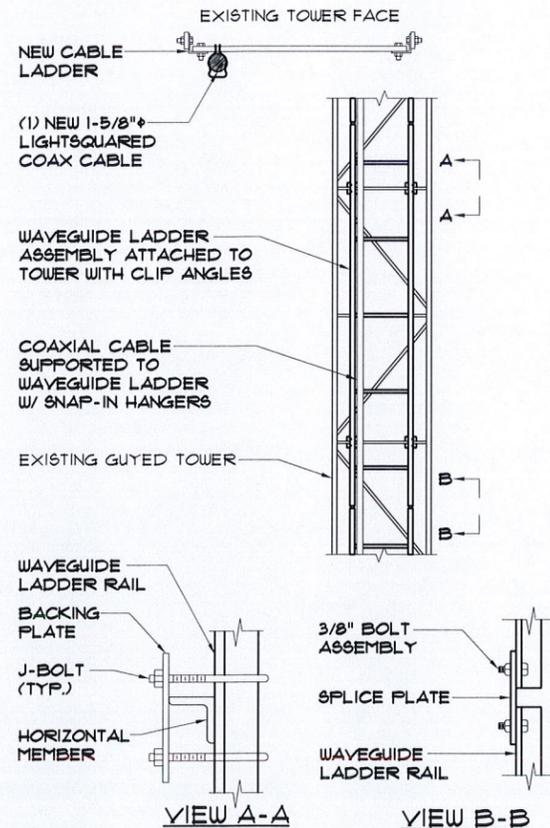
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SUITE 300  
CHARLOTTE, NC 28211



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FAX: 847-292-0206  
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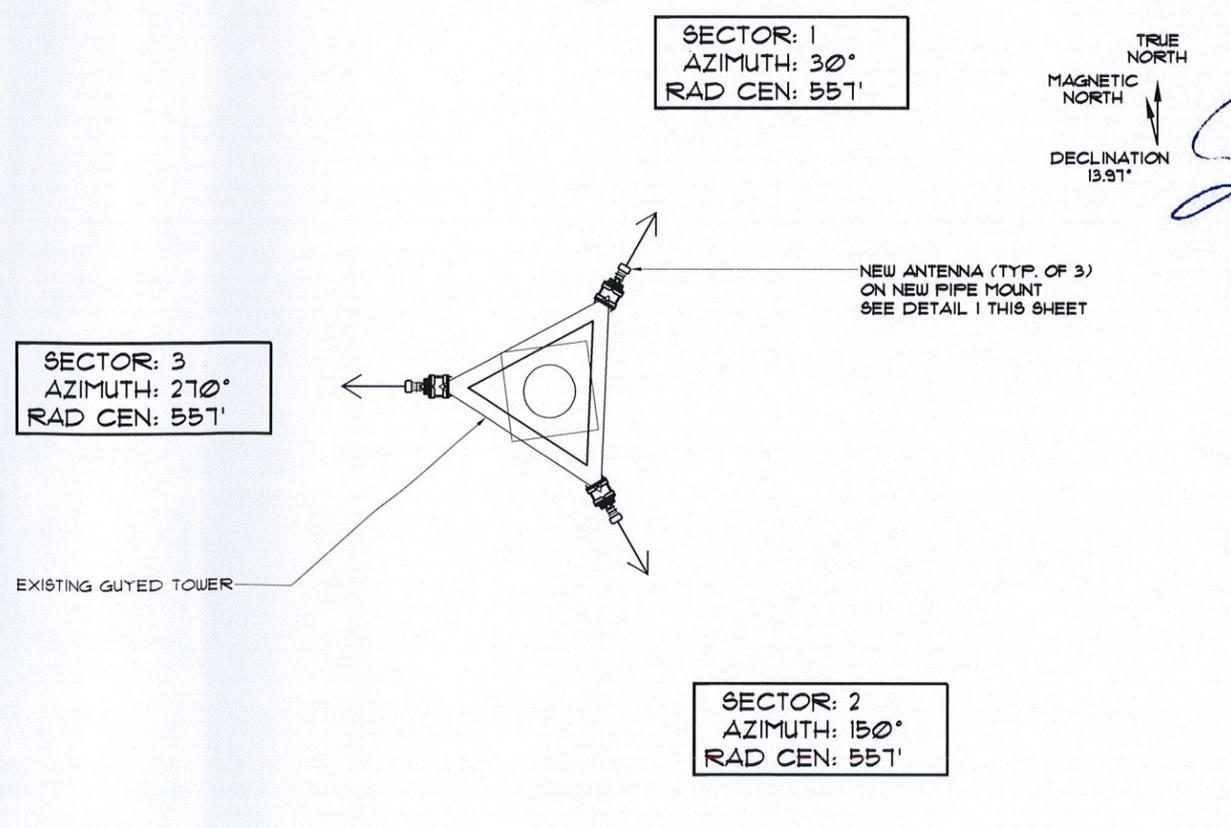
CHECKED BY:	AG		
APPROVED BY:	MB		
#	DATE	DESCRIPTION	INT.
	04/11/13	90% REVIEW	RL
	04/24/13	FINAL	MD

**ANTENNA MOUNTING DETAIL**      SCALE: N.T.S.      1



**COAX CABLE LADDER**      SCALE: N.T.S.      5

**ANTENNA SPECS**      SCALE: N.T.S.      3



**TYPICAL ANTENNA LAYOUT**      SCALE: 1/8" = 1'-0"      6

**CHARTS**      SCALE: N.T.S.      4



SITE NAME  
**AVON (DEERCLIFF RD.)**

SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
AVON, CT 06001**

SHEET NAME  
**ANTENNA/COAX SPECIFICATIONS**

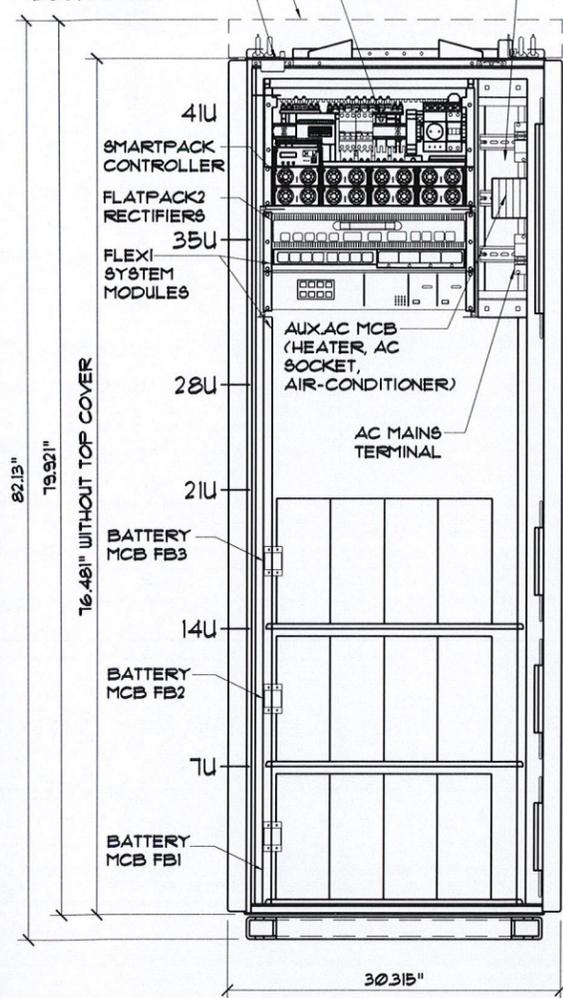
SHEET NUMBER  
**ANT-1**

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16KW, 48VDC,  
0Cab, F and 2.0M

CABINET GROUND  
BAR, AC EARTH (PE)  
AND DC EARTH (TE)  
CONNECTION, ON  
CABINET'S SIDE WALL

DC DISTRIBUTION  
OUTLINE OF  
CABINET COVER  
DOOR SWITCH



**CABINET SPECIFICATIONS:**

ISOLATION 3.0 KVAC - INPUT AND OUTPUT  
1.5 KVAC - INPUT EARTH  
1.0 KVAC - OUTPUT EARTH

DIMENSIONS 770 x 820 x 2650 mm (WxDxH)  
(30.3 x 32.3 x 104.3")

WEIGHT CABINET: 153 KG INCL. FLINTH  
EXCL. RECTIFIERS AND  
BATTERIES  
(3) RECTIFIERS: 1.9 KG, PER RECTIFIER  
BATTERIES: MAX 202 KG, PER  
BATTERY SHELF  
CABINET: FULLY LOADED W/  
BATTERIES & RECTIFIERS  
- 1805 LBS / 818.6 KG

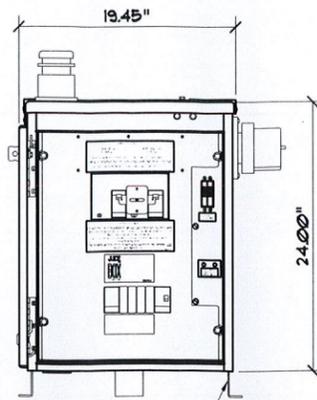
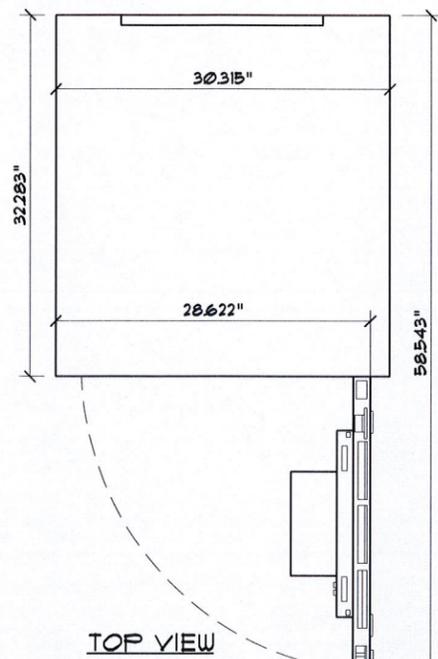
**AC INPUT**

VOLTAGE 1 PHASE 230VAC (MAX 3 RECTIFIERS, 6KW)  
3 PHASE 208VAC ( )  
3 PHASE 230VAC ( )  
3 PHASE 400VAC-N ( Y )

FREQUENCY 45 to 66HZ

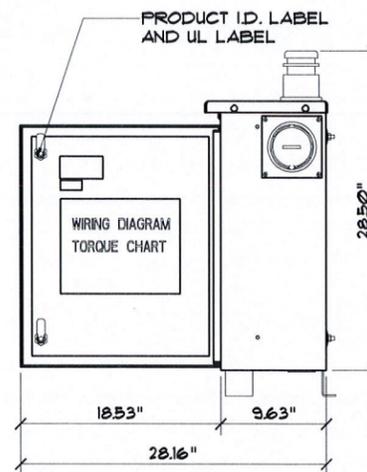
**DC INPUT**

VOLTAGE 48VDC  
CURRENT Up to 16 KW - 340A

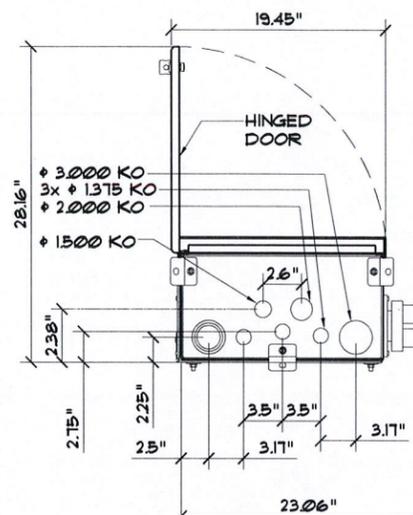


(3) BRACKETS FOR  
SHIPPING PURPOSES ONLY

FRONT VIEW



SIDE VIEW



BOTTOM VIEW

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CROWN  
CASTLE

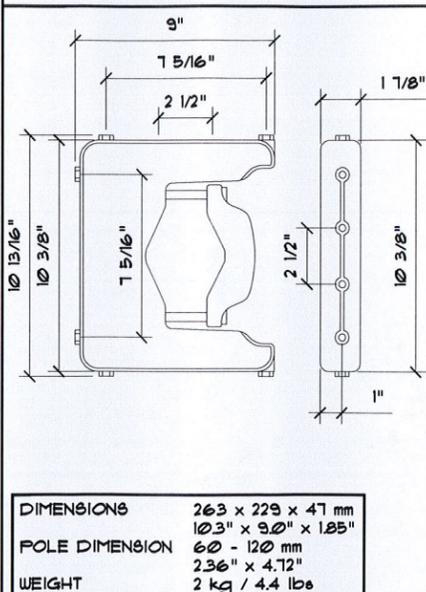
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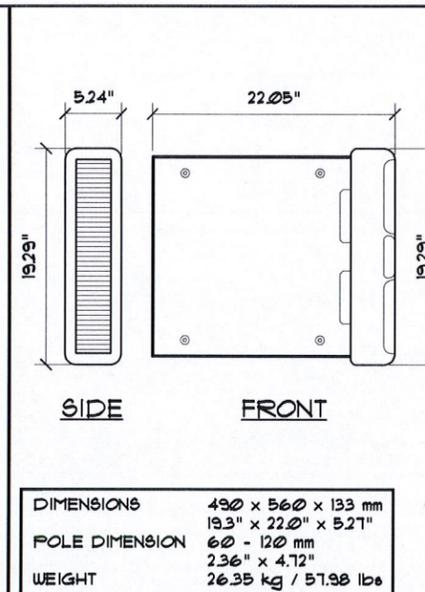
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**JUICE BOX PPC CABINET**

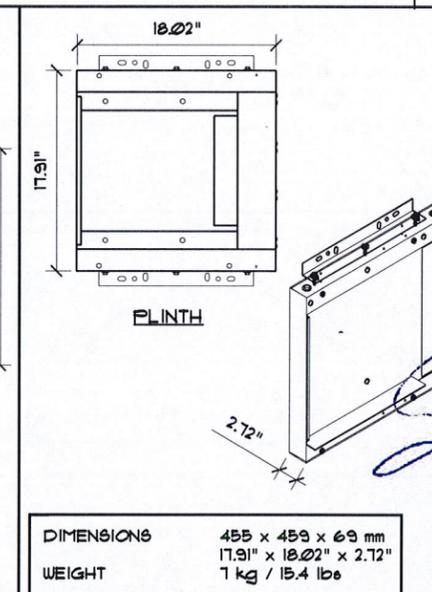
SCALE: N.T.S. 3



DIMENSIONS 263 x 229 x 47 mm  
POLE DIMENSION 10.3" x 9.0" x 1.85"  
POLE DIMENSION 60 - 120 mm  
WEIGHT 2.36" x 4.72"  
2 kg / 4.4 lbs



DIMENSIONS 490 x 560 x 133 mm  
POLE DIMENSION 19.3" x 22.0" x 5.27"  
POLE DIMENSION 60 - 120 mm  
WEIGHT 2.36" x 4.72"  
26.35 kg / 57.98 lbs



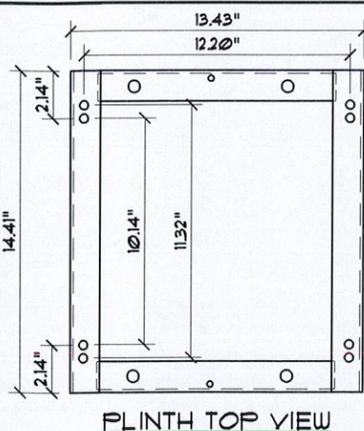
DIMENSIONS 455 x 459 x 69 mm  
WEIGHT 17.91" x 18.02" x 2.72"  
1 kg / 15.4 lbs

CHECKED BY:	AG		
APPROVED BY:	MB		
#	DATE	DESCRIPTION	INT.
04/17/13		90% REVIEW	RL
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**FLATPACK2 PS SYSTEM**

SCALE: N.T.S. 1



PLINTH-TO-FLOOR  
FASTENING HOLE (4X), ONE IN EACH  
CORNER

2M CABINET-TO-  
PLINTH FASTENING  
HOLE (4X), ONE IN  
EACH CORNER

CABINET  
-TO-PLINTH  
FASTENING  
BOLT (4X)

1.3M CABINET-TO-PLINTH  
FASTENING HOLE (4X),  
ONE IN EACH CORNER

SCREW  
M10x30  
ABINET  
/PLINTH

**FLATPACK2 PS SYSTEM**

SCALE: N.T.S. 2

**FPKA DETAIL**

SCALE: N.T.S. 4

**NOT USED**

SCALE: N.T.S. 7

SITE NAME  
**AVON  
(DEERCLIFF RD.)**

SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
AVON, CT 06001**

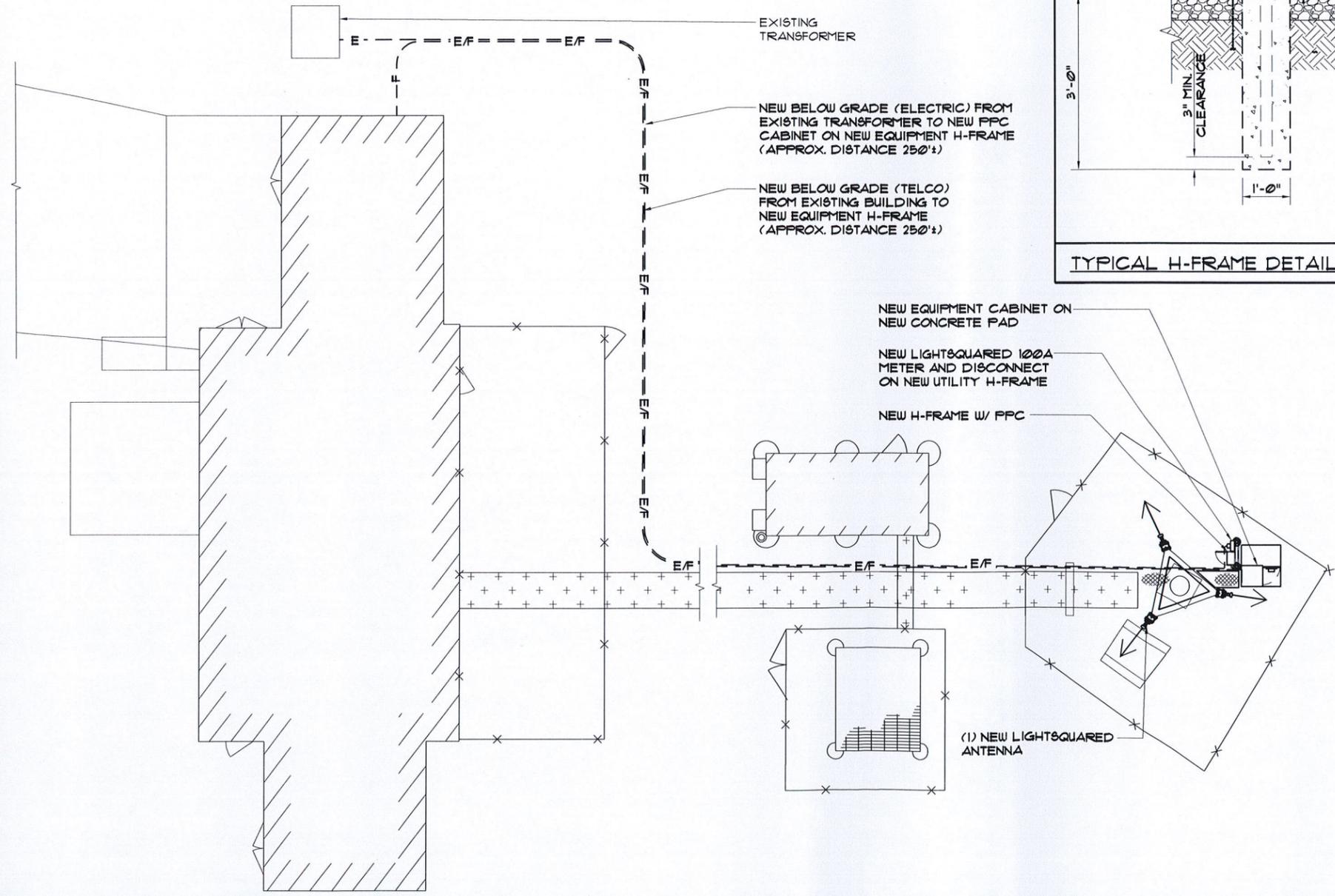
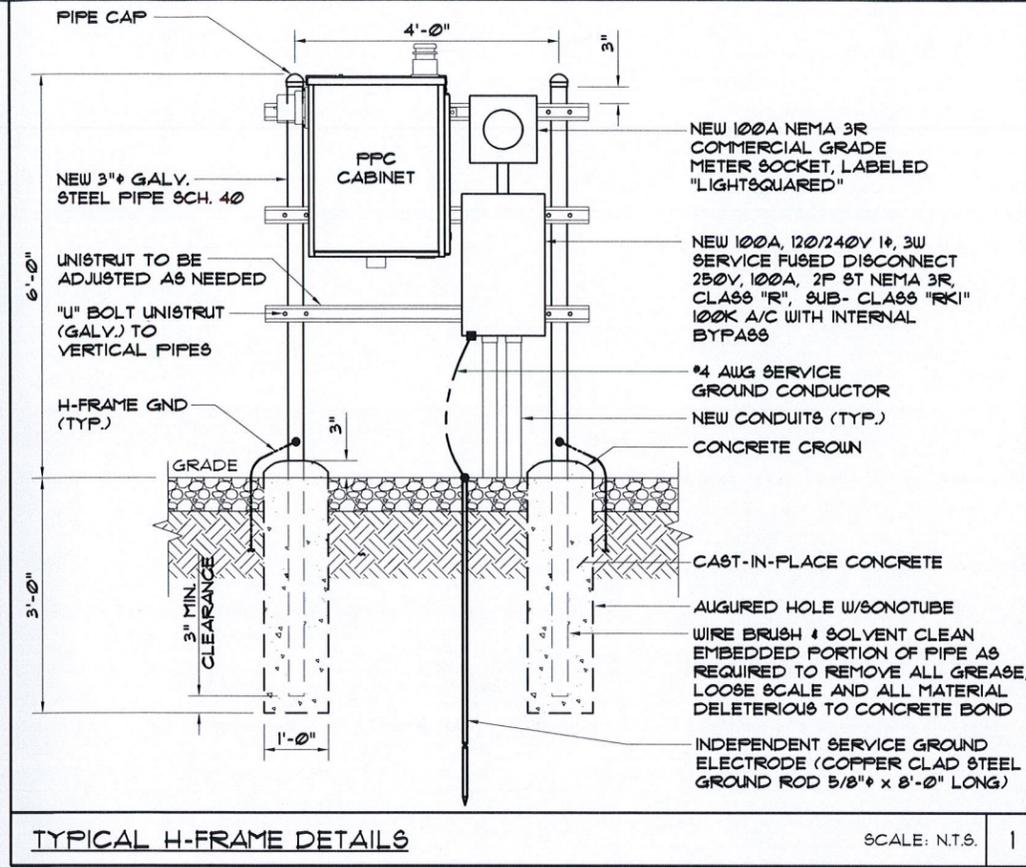
SHEET NAME  
**EQUIPMENT  
SPECS**

SHEET NUMBER  
**EQ-1**

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**NOTES:**

- UTILITY ROUTES SHOWN ARE PROPOSED AND ARE NOT FINAL APPROVED ROUTING BY UTILITY COMPANIES. CONTRACTOR TO VERIFY AND CONFIRM PROPOSED UTILITY ROUTES W/ PROJECT MANAGER PRIOR TO ANY CONSTRUCTION.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH THE LOCAL UTILITY COMPANY FOR FINAL POWER/TELCO MEET POINT AND ROUTE AND NOTE POTENTIAL INTERFERENCES WITH EXISTING UTILITIES, AND HAND DIG IN VICINITY OF ALL UTILITY CROSSINGS.
- ALL WIRING SHALL BE COPPER WITH THHN/THUN DUAL RATED 600 VOLTS INSULATION.
- LOCATE ALL UNDERGROUND UTILITIES WITHIN FENCED AREA PRIOR TO ANY CONSTRUCTION.



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	04/24/13	FINAL	MD



SITE NAME  
**AVON (DEERCLIFF RD.)**

SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
AVON, CT 06001**

SHEET NAME  
**UTILITY PLAN & NOTES**

SHEET NUMBER  
**E-1**



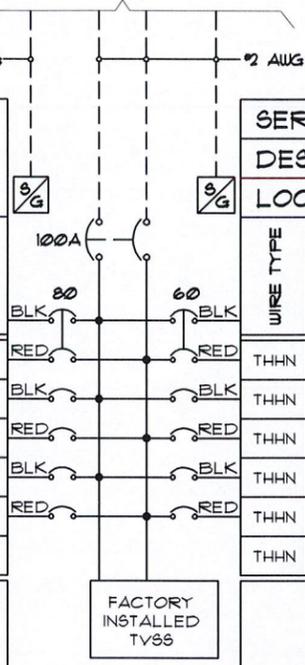
SCALE: 1/16" = 1'-0" 2

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### PANEL CIRCUIT AND LOAD SCHEDULE

DESCRIPTION	QTY.	UNIT V.A.	LOAD PER PHASE (VA)		LOADS CONTINUOUS	LOADS NON-CONTINUOUS	TRIP	POLES	WIRE SIZE	A.I.C.	WIRE TYPE
			A	B							
1 BBU CABINET	1	9,252	9,252		X		80	2	10,000	THHN	
3	1	9,252		9,252	X		80	2	10,000	THHN	
5 SPACE		-							10,000	THHN	
7 SPACE		-							10,000	THHN	
9 SPACE		-							10,000	THHN	
11 SPACE		-							10,000	THHN	
SUBTOTAL CONTINUOUS			9,252	9,252							
SUBTOTAL NON-CONTINUOUS											

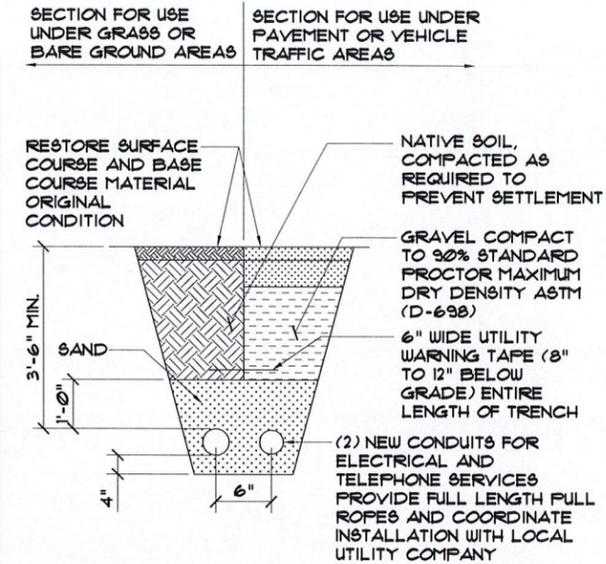
VOLTAGE: 120/240    CYCLE:    PHASE: 1    WIRES: 3  
 NEUTRAL: 100 AMP    MAIN BREAKER: 100 AMP FRAME    A.I.C.: 10,000    TRIP: 100 AMP  
 MAIN LUGS: AMP    MAIN COPPER BUS: 100 AMP  
 MAINS: TOP  BOTTOM



SERVICE: 120/240 VAC  
 DESIGNATION: N/A  
 LOCATION: NEMA 3R

WIRE TYPE	A.I.C.	WIRE SIZE	POLES	TRIP	LOADS CONTINUOUS	LOADS NON-CONTINUOUS	LOAD PER PHASE (VA)		UNIT V.A.	QTY.	DESCRIPTION		
							A	B					
THHN	10,000	8	2	60		X			-	1	SURGE ARRESTOR		
THHN	10,000	8	2	60		X			-	1	4		
THHN	10,000								-	-	6		
THHN	10,000								-	-	8		
THHN	10,000								-	-	10		
THHN	10,000								-	-	12		
SUBTOTAL CONTINUOUS											TOTAL KVA CONTINUOUS X 125	18.5	
SUBTOTAL NON-CONTINUOUS												TOTAL KVA NON-CONTINUOUS	0.0
											TOTAL KVA	18.5	
											TOTAL AMP	77.1	

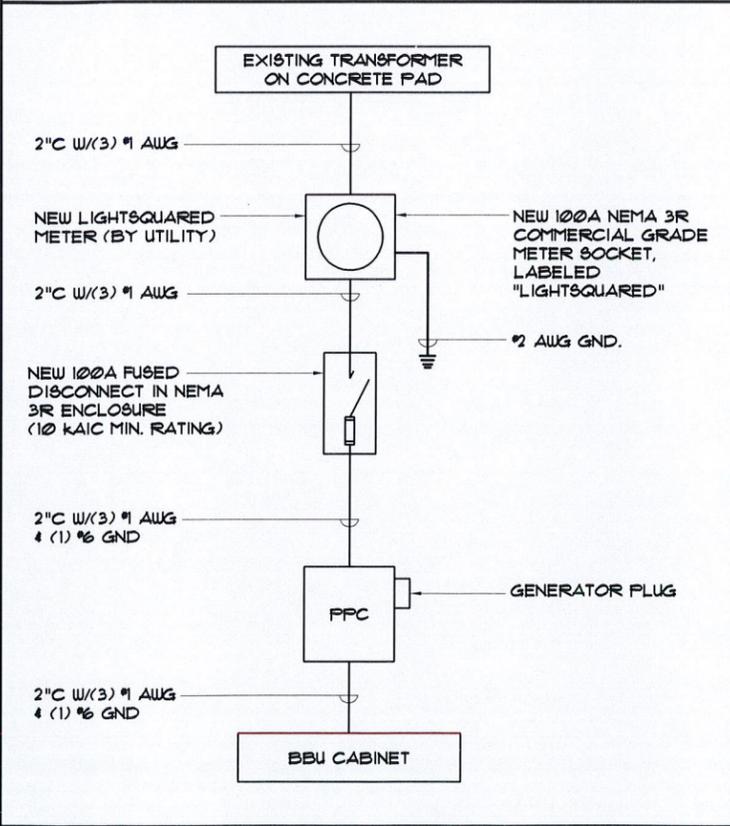
MANUFACTURER: EMERSON  
 TYPE AND CATALOG NUMBER: 531681  
 NO EQUAL:     APPROVED EQUAL:   
 MOUNTING: SURFACE     FLUSH



**NOTES:**

- CONTRACTOR TO VERIFY LOCAL UTILITY REQUIREMENTS FOR DEPTH, SIZE & SEPARATION OF CONDUITS PRIOR TO INSTALLATION. NOTIFY CONSTRUCTION MANAGER IMMEDIATELY OF ANY DISCREPANCIES
- CONTRACTOR TO CALL 811, MIN. 48 HRS PRIOR TO EXCAVATING FOR UNDERGROUND UTILITY LOCATIONS. LOCATION SURROUNDING EXCAVATED AREA MUST BE PRIVATELY LOCATED FOR NON-PUBLIC UTILITIES

PANEL SCHEDULE



CABINET LOAD ONE-LINE DIAGRAM    SCALE: N.T.S.    3

SCALE: N.T.S.    1    TRENCH DETAIL    SCALE: N.T.S.    2

**SINGLE LINE DIAGRAM NOTES:**

- MINIMUM AVAILABLE FAULT NEEDED IS 10 KA. CONTRACTOR TO VERIFY THE ACTUAL AVAILABLE FAULT AT THE TIME OF CONSTRUCTION WITH SERVING UTILITY CO.
- ALL CURRENT CARRYING DEVICES SHALL BE U.L. LISTED AND BRACED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT AT ITS TERMINALS.
- SERIES/COMBINATION SHORT CIRCUIT RATINGS MAY BE USED WHEN OVER CURRENT DEVICE.
- COMBINATIONS ARE LISTED UNDER UL 67 STANDARD AND INSTALLATION SHALL COMPLY WITH NATIONAL ELECTRICAL CODE (N.E.C.) ARTICLE 110-9, 110-22 AND OTHER APPLICABLE SECTIONS.
- APPLICABLE SERIES/COMBINATION RATED EQUIPMENT ENCLOSURES SHALL BE CLEARLY MARKED "CAUTION - SERIES RATED SYSTEM", IN COMPLIANCE WITH NEC. END-USE EQUIPMENT SHALL ALSO BE MARKED WITH THE HIGHER SERIES COMBINATION INTERRUPTING RATING AS PER NEC.
- PROVIDE A MIN. 36" WORK CLEARANCE IN FRONT OF PANELS/ELECTRICAL EQUIPMENT.
- ALL WIRING SHALL BE COPPER TYPE THHN RATED FOR 75° C.
- CONDUIT REQUIREMENTS (TYP., U.N.O.): UNDERGROUND: PVC (SCHED. 40 OR 80) INDOOR: EMT (RGS IN TRAFFIC AREAS) OUTDOOR (ABOVE GRADE): RGS.
- CABINET CIRCUIT BREAKERS TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- PROVIDE A WHITE PHONELIC SIGN WITH 3/4" RED ENGRAVED LETTERING ON PANEL "A" DOOR THAT READS "DISCONNECT GROUND TO NEUTRAL BONDING AT THE PORTABLE EMERGENCY GENERATOR PRIOR TO CONNECTION."
- DO NOT INSTALL THE OPTIONAL NEUTRAL TO GROUND BONDING JUMPER PROVIDED WITH THE BDP. BDP SHALL NOT BE USED AS THE MAIN SERVICE EQUIPMENT (PER CARRIER STANDARD).
- CARRIER REQUIRES A MAIN SERVICE RATED BREAKER IN ALL METER BOXES.

SINGLE LINE NOTES    SCALE: N.T.S.    4

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SITE NAME  
**AVON (DEERCLIFF RD.)**

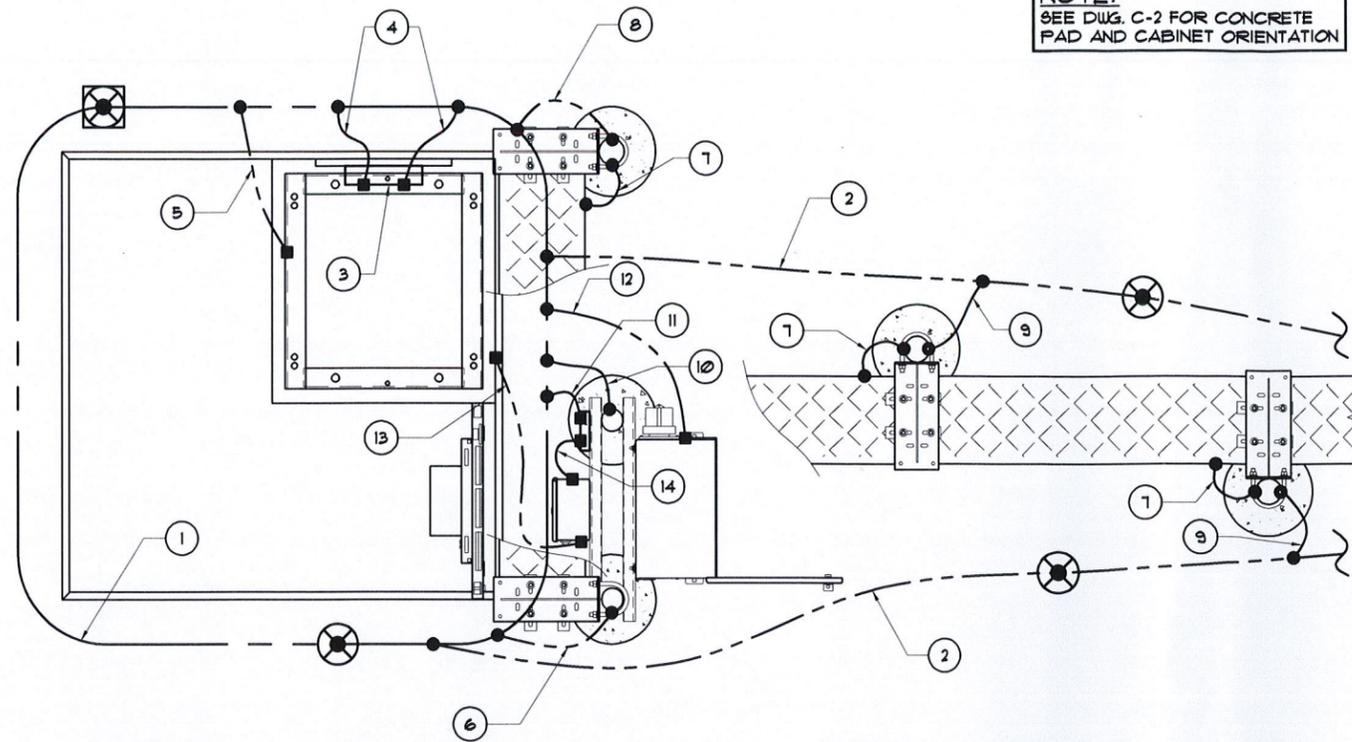
SITE NUMBER  
**870800**

SITE ADDRESS  
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 AVON, CT 06001**

SHEET NAME  
**LOAD SCHEDULE**

SHEET NUMBER  
**E-2**

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**NOTE:**  
SEE DWG. C-2 FOR CONCRETE PAD AND CABINET ORIENTATION

**LEGEND:**

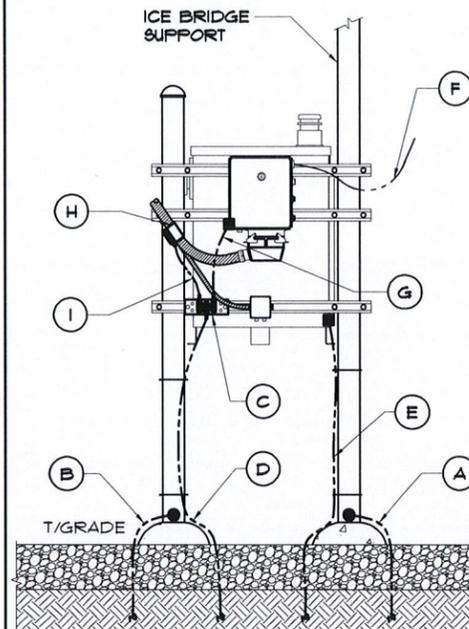
1. NEW GROUND RING CONSTRUCTED OF #2 SOLID TINNED BARE COPPER WIRE IN ONE CONTINUOUS PIECE.
2. #2 SOLID TINNED BARE COPPER GROUND WIRE FOR CONNECTION TO EXISTING TOWER GROUND RING IN (2) LOCATIONS, MINIMUM 6 FT. APART (APPLIES IF THERE IS AN EXISTING TOWER GROUND RING). (V.I.F.)
3. GROUND BAR LOCATED INSIDE BBU CABINET
4. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING TO GROUND BAR INSIDE EACH ENCLOSURE. THE LEADS SHALL BE INSTALLED IN 1/2" PVC AND SEALED ABOVE GRADE WITH SILICONE. (2) PLACES (TYP)
5. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING TO CABINET FLINTH
6. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING TO ICE BRIDGE/EQUIPMENT H-FRAME POST
7. #2 SOLID TINNED BARE COPPER GROUND WIRE FOR ICE BRIDGE TO ICE BRIDGE POST
8. #2 SOLID TINNED BARE COPPER GROUND WIRE FOR ICE BRIDGE POST, CONNECTED TO NEW GROUND RING
9. #2 SOLID TINNED BARE COPPER GROUND WIRE FOR ICE BRIDGE POST CONNECTED TO GROUND LEAD FROM THE NEW GROUND RING TO THE EXISTING TOWER GROUND
10. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR H-FRAME POST
11. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR EQUIPMENT H-FRAME GROUND BAR FOR CABLE GROUNDING
12. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR EQUIPMENT H-FRAME PFC
13. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR COVP TO BBU CABINET (CHECK MANUFACTURE'S REQUIREMENTS)
14. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM EQUIPMENT H-FRAME COVP TO H-FRAME GROUND BAR

**SYMBOL LEGEND:**

- ⊗ GROUND ROD  
SEE DETAIL 2/DWG. EG-3
- ⊠ GROUND ROD WITH ACCESS  
SEE DETAIL 1/DWG. EG-3
- GROUND WIRE
- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- ▲ EXOTHERMIC OR MECHANICAL CONNECTION

TYPICAL GROUNDING PLAN

SCALE: N.T.S. 1



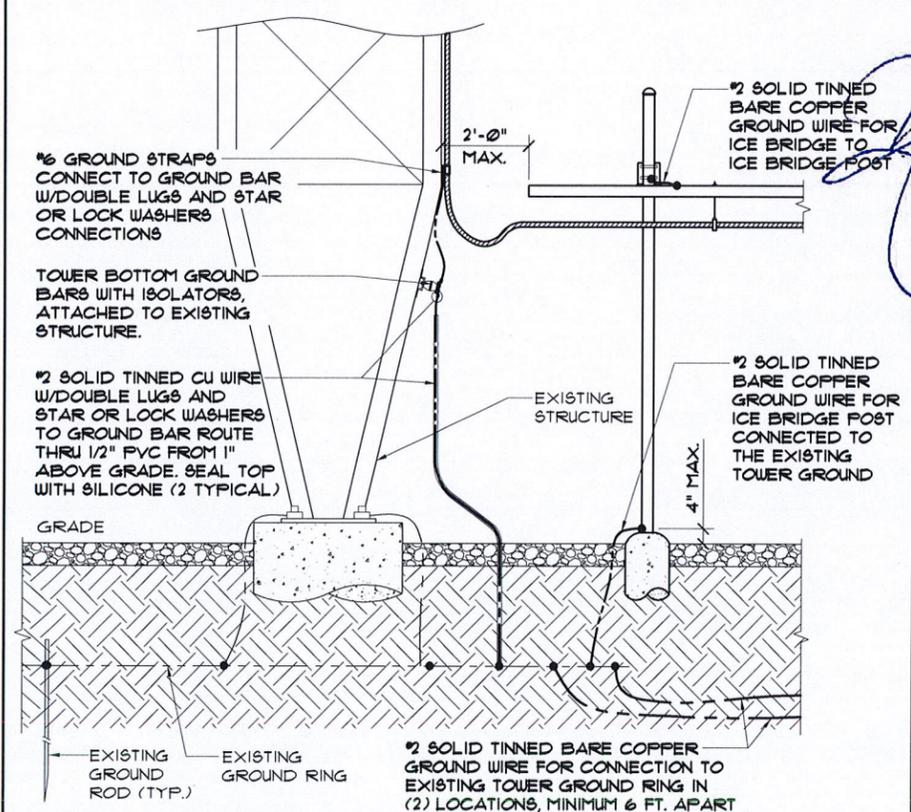
**LEGEND:**

- A. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING TO ICE BRIDGE/EQUIPMENT H-FRAME POST
- B. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR H-FRAME POST
- C. GROUND BAR WITH INSULATORS AND BRACKETS ATTACHED TO THE UNISTRUT
- D. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR EQUIPMENT H-FRAME GROUND BAR
- E. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR EQUIPMENT H-FRAME PFC
- F. #2 SOLID TINNED BARE COPPER GROUND WIRE FOR COVP TO BBU CABINET (CHECK MANUFACTURE'S REQUIREMENTS)
- G. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM COVP TO H-FRAME GROUND BAR
- H. GROUND KIT FOR HYBRID CABLE
- I. 2 GREEN STRANDED INSULATED COPPER GROUND WIRE FOR GROUND KIT TO SECTOR GROUND BAR

SECURE WIRES AND GROUNDS AS NEEDED TO PREVENT MOVEMENT AND POTENTIAL HAZARDS

H-FRAME GROUNDING

SCALE: N.T.S. 2



GROUNDING AT TOWER

SCALE: N.T.S. 3

CHECKED BY:	AG
APPROVED BY:	MB

#	DATE	DESCRIPTION	INT.
	04/11/13	90% REVIEW	RL
	04/24/13	FINAL	MD

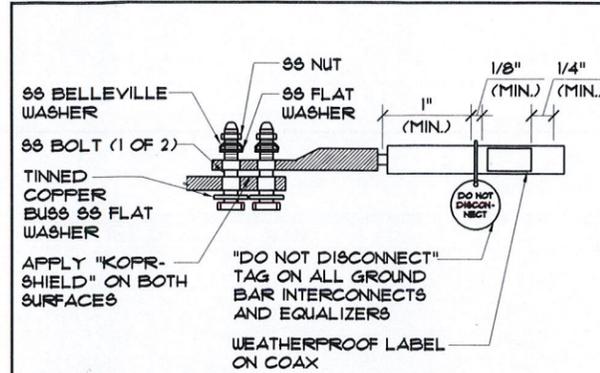


SITE NAME	AVON (DEERCLIFF RD.)
SITE NUMBER	870800
SITE ADDRESS	376 DEERCLIFF ROAD AVON, CT 06001

SHEET NAME	GROUNDING PLAN
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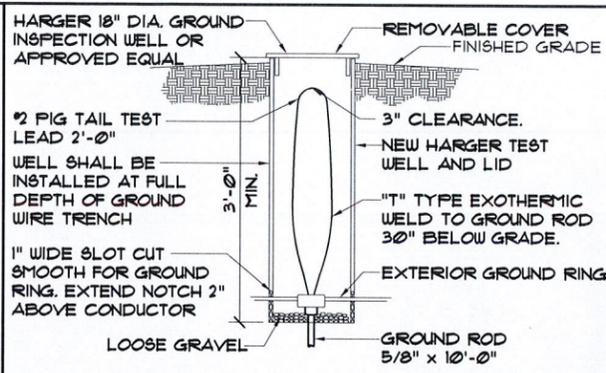
SHEET NUMBER	EG-1
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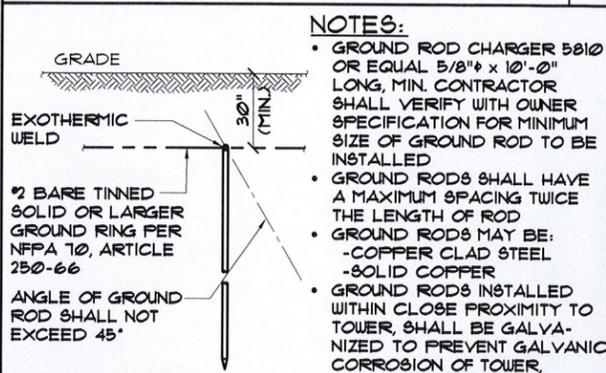


- NOTES:**
1. PROVIDE 2-HOLE, LONG BARREL, TINNED SOLID COPPER LUGS WHEREVER LUGS ARE SHOWN. ERICO B-122-CE PREFERRED WITH CADWELD TYPE GL CONNECTION. THOMAS AND BETTS 54800BE SERIES WHERE CRIMP CONNECTOR IS REQUIRED.
  2. ALL CRIMP CONNECTIONS MUST BE MADE USING HYDRAULIC TOOLS AND THREE POINT HEXAGONAL COMPRESSION MOLDS ON LONG BARREL LUGS.
  3. ALL MECHANICAL CONNECTIONS MUST BE MADE USING THOMAS AND BETTS "KOPR-SHIELD". COAT ALL WIRES BEFORE LUGGING. COAT ALL SURFACES BEFORE CONNECTING.
  4. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING BELLEVILLE, COAT ALL SURFACES WITH "KOPR-SHIELD" BEFORE MATING.
  5. FOR GROUNDING BOND TO STEEL ONLY: COAT ALL SURFACES WITH "KOPR-SHIELD".
  6. NO SLOTTED HOLES ON BUS BAR OR LUGS ARE PERMITTED.
  7. ALL LUG SHANKS AND LEAD JOINTS SHALL HAVE HEAT SHRINK MATERIAL.
  8. DOUBLE CRIMP ALL LONG BARREL LUGS.

**LUG DETAIL** SCALE: N.T.S. 1

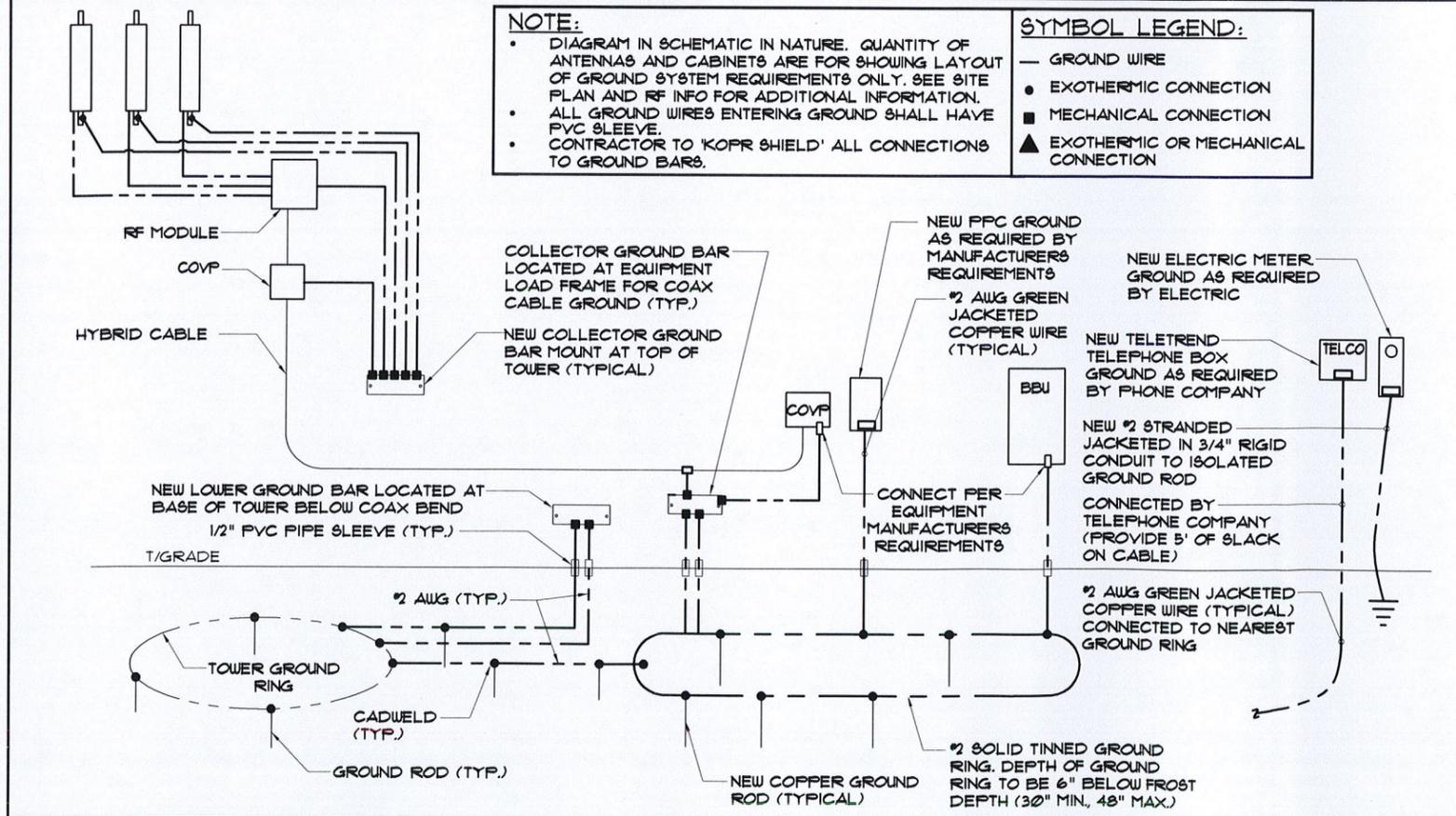


**GROUND ROD WITH ACCESS** SCALE: N.T.S. 2

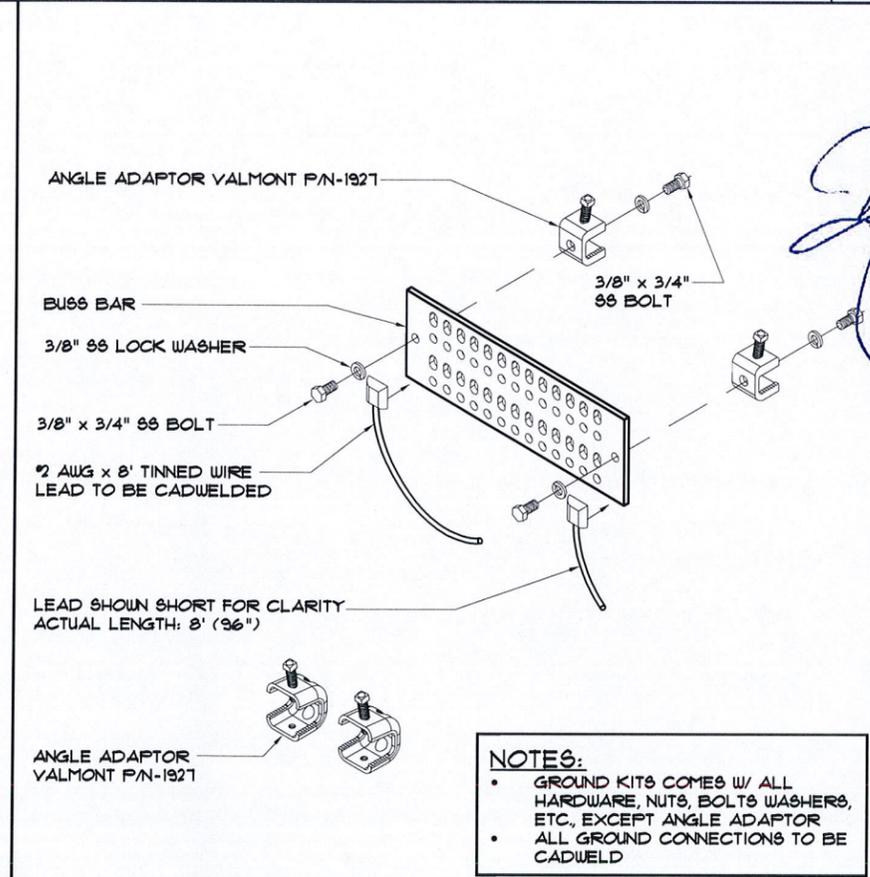


**GROUND ROD** SCALE: N.T.S. 3

**NOT USED** SCALE: N.T.S. 4



**GROUNDING RISER DIAGRAM** SCALE: N.T.S. 5



**EXOTHERMIC WELDS** SCALE: N.T.S. 6

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**CROWN CASTLE**

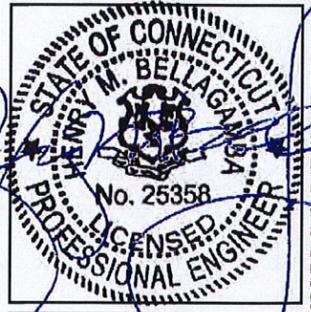
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	04/24/13	FINAL	MD



SITE NAME  
**AVON (DEERCLIFF RD.)**

SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
AVON, CT 06001**

SHEET NAME  
**RISER  
DIAGRAM &  
DETAILS**

SHEET NUMBER  
**EG-2**

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**GENERAL NOTES:**

- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

**SITE NOTES:**

- THE MINIMUM LOWEST ELEVATION SHALL NOT BE LESS THAN 4" ABOVE CROWN OF ROAD OR THE FEDERAL AND/OR 100 YEAR FLOOD ELEVATION, WHICHEVER IS HIGHER. CONTRACTOR SHALL SUBMIT AN ELEVATION SURVEY PRIOR TO POURING SLAB AND A FINAL SURVEY UPON COMPLETION OF PROJECT.
- WORK OUTSIDE OF THE PROPERTY LINE INCLUDED IN THIS SET OF DRAWINGS SHALL BE, BUT NOT LIMITED TO, DRIVEWAYS, SODDING TO ASPHALT LINE AND UTILITY CONNECTIONS.
- IF THERE ARE EXISTING TREES WITHIN TOWER COMPOUND, THEY SHALL BE REMOVED. CONTRACTOR SHALL PROCURE PERMIT.
- CONTRACTOR AND SUB-CONTRACTORS SHALL VERIFY ALL UTILITY SERVICE CONNECTION LOCATIONS PRIOR TO SUBMITTING BID AND PROCEEDING WITH WORK. IT IS RECOMMENDED THAT THE CONTRACTOR VISIT THE SITE AND VERIFY ALL DIMENSIONS AND NOTES BEFORE SUBMITTING BID AND PROCEEDING WITH WORK.
- NO WORK IS TO BE PERFORMED ON THIS TOWER WITHOUT REVIEW OF THE APPROVED STRUCTURAL ANALYSIS. IF ANY DISCREPANCIES ARE FOUND THE GENERAL CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING. AT NO TIME WILL ANY ADDITIONAL ANTENNAS BE INSTALLED WITHOUT WRITTEN CONSENT FROM TOWER ENGINEER.
- CONTRACTOR TO VERIFY ALL HEIGHTS AND AZIMUTHS IN FIELD PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY CARRIER AND ENGINEERING FIRM OF ANY DISCREPANCIES BEFORE PROCEEDING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING FINAL RF CONFIGURATION AND NOTIFY CARRIER AND ENGINEERING FIRM WITH ANY DISCREPANCIES.
- CONTRACTOR TO USE PROPER TORQUE WRENCH WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
- CONTRACTOR SHALL VERIFY ALL FINAL CONNECTION LOCATIONS WITH CARRIER ENGINEER, RF ENGINEER, AND NET-OPS PRIOR TO INSTALLATION.

**CONSTRUCTION NOTES:**

- FIELD VERIFICATION: SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, NEW ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE INSTALLED.
- COORDINATION OF WORK: SUBCONTRACTOR SHOULD COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.
- GRAVEL SURFACE IN AREAS OF COMPOUND THAT ARE DISTURBED DURING CONSTRUCTION SHALL BE REPLACED TO ORIGINAL CONDITION BY SUBCONTRACTOR.
- ALL WORK TO BE PERFORMED BY THE SUBCONTRACTOR UNLESS OTHERWISE NOTED.

**ELECTRICAL NOTES**

- SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
- CONTRACTOR SHALL PERFORM ALL SITE SURVEY, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
- HEIGHTS SHALL BE VERIFIED WITH OWNER PRIOR TO INSTALLATION.
- THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.
- ELECTRICAL SERVICE 120 / 208 VAC 3 PHASE 4 WIRE 100 AMP SERVICE 120 / 240 VAC SINGLE PHASE 3 WIRE 100A SERVICE
- EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANEL BOARD, FULL BOX, J-BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.).
- CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.
- ALL CONDUIT INSTALLED SHALL BE SURFACE MOUNTED OR DIRECT BURIAL UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL CARRY OUT THEIR WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES AND O.S.H.A.
- CONTRACTOR RESPONSIBLE FOR PERMITS AND PAY ALL REQUIRED FEES.
- COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
- ALL CONDUIT ONLY SHALL HAVE A FULL WIRE OR ROPE.
- PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.
- ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC., SHALL BE TURNED OVER TO THE OWNER AT JOB COMPLETION.
- USE T-TAP CONNECTIONS ON ALL MULTI- CIRCUITS WITH COMMON NEUTRAL CONDUCTOR FOR LIGHTING FIXTURES.
- ALL CONDUCTORS SHALL BE COPPER.
- ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
- THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
- PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
- PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH APPLICABLE LOCAL BUILDING CODES.
- WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS.
- GROUNDED CONDUCTORS SHALL BE SOLID TINNED COPPER UNLESS OTHERWISE NOTED.
- METER SOCKET AMPERES, VOLTAGE, NUMBER OF PHASES SHALL BE AS NOTED ON THE DRAWINGS, MANUFACTURED BY "SQUARE D COMPANY", OR APPROVED EQUAL.
- ALL MATERIALS SHALL BE UL LISTED
- ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
- CONTRACTOR TO PROVIDE DAILY UPDATES TO PM UNTIL FINAL ELECTRICAL SERVICE IS EFFECTED.

**28. CONDUIT**

- RIGID CONDUIT SHALL BE UL LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3
  - ELECTRICAL METALLIC TUBING SHALL HAVE UL LABEL, FITTING SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
  - FLEXIBLE METALLIC CONDUIT SHALL HAVE UL LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT SHALL HAVE FULL SIZE EQUIPMENT GROUND WIRE.
  - CONDUIT RUNS SHALL BE SURFACE MOUNTED IN CEILING OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE OWNER PRIOR TO INSTALLING. NO HORIZONTAL CONDUITS SHALL BE BELOW 1'-6" AFF. NO BX OR ROMEX CABLE IS PERMITTED.
  - PARALLEL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 30" BELOW GRADE - STACKED UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 24" BELOW GRADE.
  - ABOVE GROUND CONDUIT SHALL BE P.V.C. SCHEDULE 80 (UNLESS NOTED OTHERWISE).
29. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUND TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
30. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR.

**DEFINITIONS**

- AGB: ANTENNA GROUND BAR
- AWG: AMERICAN WIRE GAUGE
- CAD WELDING: AN EXOTHERMIC WELDING PROCESS WHICH CREATES POSITIVE CONTACT OF POSITIVE CONTACT OF GROUNDING CONDUCTORS
- EMT: ELECTRICAL METAL TUBING (LIGHT GAUGE METAL CONDUIT) MGB MASTER GROUND BAR
- PVC: POLY VINYL CHLORIDE CONDUIT
- RFI: RADIO FREQUENCY INTERFERENCE
- THW: LETTER TYPE DESIGNATION FOR CONDUCTOR INSULATION THAT IS A MOISTURE AND HEAT RESISTANT THERMOPLASTIC WITH A MAXIMUM OPERATING TEMPERATURE OF 75 DEGREES CELSIUS OR 167 DEGREES FAHRENHEIT.
- T/I: TENANT IMPROVEMENT

**NOKIA INSTALLATION CHECK LIST**

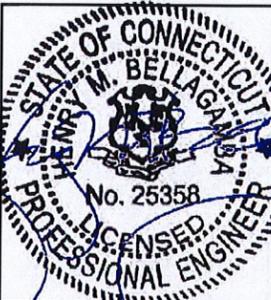
- DELIVERY IS COMPLETE AND UNDAMAGED.
- MINIMUM CLEARANCES ARE MET.
- ADAPTER MECHANICS ARE INSTALLED (FOR WALL AND POLE INSTALLATIONS).
- PLINTH IS INSTALLED ACCORDING TO INSTRUCTIONS.
- PLINTH IS GROUNDED.
- TRANSMISSION SUB-MODULE IS INSTALLED ACCORDING TO THE INSTRUCTIONS.
- POWER SUPPLY CABLE IS CONNECTED.
- MODULES ARE INSTALLED ACCORDING TO THE INSTRUCTIONS.
- MODULES ARE GROUNDED TO THE PLINTH.
- MODULE BACK COVERS ARE INSTALLED.
- CABLE ENTRIES ARE INSTALLED.
- ANTENNA CABLES ARE CONNECTED ACCORDING TO THE CONFIGURATION.
- INTERNAL POWER CABLES ARE CONNECTED.
- TRANSMISSION CABLES ARE CONNECTED.
- OPTICAL FIBRE CABLES ARE CLEANED AND CONNECTED.
- CABLES BETWEEN THE MODULES ON THE SAME PLINTH ARE ROUTED VIA INTERNAL CABLE ENTRIES.
- BTS EXTERNAL CABLES OR CABLES BETWEEN THE MODULES ON SEPARATE PLINTHS ARE ROUTED VIA EXTERNAL CABLE ENTRIES.
- CABLES ARE TIED PROPERLY.
- CABLE CONNECTOR SEALS ARE FIRMLY IN PLACE.
- UNUSED CONNECTORS ARE COVERED WITH IP SEALS.
- BTS IS SWITCHED ON AND ALL UNITS ARE READY FOR COMMISSIONING.
- MODULE FRONT COVERS ARE INSTALLED.
- SITE IS CLEAN AND INSTALLATION IS COMPLETE.

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**AVON  
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 AVON, CT 06001**

SHEET NAME  
**GENERAL NOTES  
 AND  
 SPECIFICATION**

SHEET NUMBER  
**SP-1**

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**UTILITY NOTES:**

1. WIRING DEVICES AND EQUIPMENT SHALL BE UL LISTED SPECIFICATIONS GRADE
2. MATERIALS SHALL BE NEW AND CONFORM TO THE APPLICABLE STANDARDS ESTABLISHED FOR EACH ITEM BY THE ORGANIZATIONS LISTED BELOW
  - AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)
  - UNDERWRITER'S LABORATORY (UL)
  - NATIONAL ELECTRICAL MANUFACTURING ASSOCIATION (NEMA)
  - AMERICAN STANDARDS ASSOCIATION (ASA)
  - NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
3. INSTALLATION OF MATERIALS SHALL COMPLY WITH REGULATIONS OF:
  - THE NATIONAL ELECTRIC CODE (NFPA 70)
  - THE NATIONAL ELECTRICAL SAFETY CODE (ANSI C-2)
  - THE LIFE SAFETY CODE (NFPA 101)
  - LOCAL BUILDING CODES
  - LIGHTSQUARE INSTALLATION GUIDE, LATEST VERSION
4. THE ENTIRE SYSTEM SHALL BE SOLIDLY GROUNDED USING LOCKOUTS AND BONDING NUTS ON CONDUITS AND PROPERLY BONDED GROUND CONDUCTOR RECEPTACLES AND EQUIPMENT BRANCH CIRCUITS SHALL BE GROUNDED WITH A FULL-SIZED EQUIPMENT GROUNDING CONDUCTOR RUN IN THE CIRCUITS CONDUIT
5. OUTLET AND JUNCTION BOXES SHALL BE ZINC-COATED OR CADMIUM PLATED STEEL NOT LESS THAN 4" SQUARE AND SUITABLE FOR THE TYPE SERVICE AND OUTLET. OUTLET AND JUNCTION BOXES SHALL BE SURFACE MOUNTED AND LABELED WITH BRANCH CIRCUIT BREAKER NUMBER
6. LABEL ALL EQUIPMENT SERVED FROM LIGHTSQUARE PANELBOARD WITH PHENOLIC LABELS SIZED IN RELATION TO USAGE
7. OUTDOOR CONDUCTORS SHALL BE INSTALLED IN RIGID GALVANIZED STEEL UNLESS NOTED OTHERWISE. WHERE EMT IS USED, IT SHALL ONLY BE USED WITH LISTED COMPRESSION FITTINGS. NO SET SCREW FITTINGS SHALL BE ALLOWED
8. CONTRACTOR TO PROVIDE AND INSTALL ENGRAVED LABEL ON THE LIGHTSQUARE METER SOCKET ENCLOSURE
9. ALL WIRING SHALL BE COPPER WITH THHN/THWN DUAL RATED 600 VOLTS INSULATION
10. PRIOR TO INSTALLATION OF FINAL ELECTRICAL CONNECTION TO UTILITY SERVICE, THE CONTRACTOR SHALL VERIFY THAT THE AVAILABLE FAULT CURRENT DOES NOT EXCEED 10 KAIC. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF THIS REQUIREMENT IS NOT MET FOR ADDITIONAL ENGINEERING REVIEW AND DESIGN.
11. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR
12. CONTRACTOR TO VERIFY LOCAL UTILITY REQUIREMENTS FOR DEPTH, SIZE & SEPARATION OF CONDUITS PRIOR TO INSTALLATION. NOTIFY CONSTRUCTION MANAGER IMMEDIATELY OF ANY DISCREPANCIES
13. CONTRACTOR TO CALL 811, 48 HRS PRIOR TO EXCAVATING FOR UNDERGROUND UTILITY LOCATIONS. LOCATION SURROUNDING EXCAVATED AREA MUST BE PRIVATELY LOCATED FOR NON-PUBLIC UTILITIES
14. PROPOSED UTILITY SERVICES SHOWN NEED TO BE VERIFIED & APPROVED BY UTILITY COMPANIES BEFORE START OF CONSTRUCTION. CONTRACTOR TO VERIFY WITH LIGHTSQUARED PROJECT MANAGER TO OBTAIN FINAL APPROVAL
15. LINES SHOWN DO NOT REPRESENT THE EXACT LOCATION OF THE CONDUIT RUNS CONTRACTOR TO VERIFY SERVICE LOCATIONS W/ACTUAL FIELD CONDITIONS
16. CONTRACTOR TO NOTE POTENTIAL INTERFERENCES WITH EXISTING UTILITIES, AND HAND DIG IN VICINITY OF ALL UTILITY CROSSINGS

**COORDINATION WITH UTILITY COMPANY**

THE ELECTRICAL CONTRACTOR SHALL COORDINATE COMPLETE ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANIES FOR A COMPLETE OPERATIONS SYSTEM, INCLUDING TRANSFORMER CONNECTIONS, CONCRETE TRANSFORMER PADS PRIOR TO SUBMITTING BID TO INCLUDE ALL LABOR AND MATERIALS

**ELECTRICAL NOTES:**

1. CONTRACTOR SHALL COORDINATE METER SOCKET LOCATION AND TYPE WITH POWER COMPANY
2. CONTRACTOR SHALL INSTALL CONDUIT AND WIRE TO THE BTS SITE. COIL WIRES, SEAL CONDUIT WIRE ENDS FROM MOISTURE INFILTRATION. LEAVE WIRE TO TERMINATE AT RADIO CABINET PANEL, (MINIMUM OF 10 FEET)
3. COPPER GROUND WIRE SHALL BE BONDED TO SITE GROUNDING SYSTEM
4. UNDERGROUND CONDUITS SHALL TRANSITION FROM PVC TO RIGID THROUGH THE SWEEP AND REMAIN RIGID INTO PANELS
5. CONTRACTOR MAY MODIFY KNOCKOUT HOLES IN EQUIPMENT CABINETS TO ACCOMMODATE THE REQUIRED CONDUIT SIZES
6. COORDINATE WITH RADIO CABINET MFG REQUIREMENTS FOR SIZE & NUMBER OF CONDUITS
7. THE BDP IS SHIPPED IN TWO SECTIONS TO BE BOLTED TOGETHER ON SITE
8. SURGE PROTECTION IN TELCO CHAMBER IS REQUIRED ON ALL SITES WITH EXTERNAL ALARM POINT MONITORING. NORTHERN TECHNOLOGIES INC DLP-43 DATA LINE PROTECTOR SHALL BE USED
9. SERVICE POWER SHALL BE (120/240VAC, 100A, 1, 3W) OR (120/208VAC, 100A, 1, 3W)
10. METER BASE SHALL BE INSTALLED WHERE IT IS ACCESSIBLE FOR READOUT. THE NUMBER OF JAWS IN THE METER SOCKET AND THEIR ARRANGEMENT DEPENDS ON THE VOLTAGE SERVICE. COORDINATE WITH POWER COMPANY
11. CABLE SIZES SHALL BE ADJUSTED TO COMPENSATE FOR VOLTAGE DROP IF LONGER THAN 150 FT. VERIFY CONDUIT SIZE WHEN CHANGING CABLE SIZE
12. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT REFER TO VENDOR PRINTS PROVIDED BY BDP MANUFACTURER
13. ADDRESS SHALL BE POSTED BELOW THE METER
14. ANY 120 VOLT OUTLET LOCATED ON THE BDP SHALL HAVE GFCI PROTECTION PER NEC SECTION 210-8
15. CONTRACTOR TO SUPPLY AVAILABLE FAULT CURRENT CALCULATIONS AT THE SERVICE EQUIPMENT LINE TERMINATION POINTS AS WELL AS IMPEDANCE VALUE AND SIZE OF SERVICE CONDUCTORS. ALL SERVICE AND BRANCH PANELS SHALL BE RATED FOR THE AVAILABLE FAULT CURRENT. DISTANCE AND CONDUCTOR SIZES MUST BE FURNISHED TO INSPECTOR
16. EMERGENCY AND BATTERY BACKED UP EXIT LIGHTING CIRCUITS SHALL BE MARKED SPECIFICALLY IN THE ELECTRICAL PANEL AS SUCH. (NEC 700.12.E). THE FIRE DEPARTMENT WILL BE TESTING THESE DEVICES EVERY SIX MONTH DURING BUSINESS HOURS BY SHUTTING THESE CIRCUITS (KEEP CRITICAL LOADS OFF THESE CIRCUITS). IF THE PRIMARY SOURCE OF ILLUMINATION IS HID, THE EMERGENCY LIGHTS SHALL BE REQUIRED TO OPERATE UNTIL NORMAL ILLUMINATION IS RESTORED. (NEC 700.16)
17. CONTRACTOR SHOULD ENSURE THAT ANY GENERATOR SUPPLYING THIS SITE SHOULD HAVE THE GROUND TO NEUTRAL STRAP REMOVED AS THIS IS A 2 POLE TRANSFER SWITCH WITH A SOLID NEUTRAL

**CONDUITS AND WIRING:**

1. WIRING OF EVERY KIND MUST BE INSTALLED IN CONDUIT, UNLESS NOTED OTHERWISE, OR AS APPROVED BY THE ENGINEER
2. UNLESS OTHERWISE SPECIFIED, ALL WIRING SHALL BE COPPER (CU) TYPE THWN, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE
3. RACEWAYS SHALL BE GALVANIZED STEEL, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, UNLESS OTHERWISE NOTED. ALL RACEWAYS SHALL BE APPROVED FOR THE INSTALLATION
4. FULL OR JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED TO FACILITATE INSTALLATION OF RACEWAYS AND WIRING
5. PROVIDE A COMPLETE RACEWAY AND WIRING INSTALLATION, PERMANENTLY AND EFFECTIVELY GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE AND LOCAL CODES

**GROUNDING NOTES:**

1. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE
2. ALL CONDUCTORS SHALL BE #2 GREEN STRANDED INSULATED COPPER GROUND WIRE UNLESS NOTED OTHERWISE
3. ALL CONNECTIONS TO THE COPPER LUG BARREL WITH 1" SPACING SHALL BE CRIMPED USING THE PROPER CRIMPING TOOL TO THE GROUND WIRE AND HEAT-SHRINKED
4. ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FIELD INSPECTED AND MODIFIED TO ENSURE PROPER CONTACT. PRIOR TO EXOTHERMIC CONNECTING, GALVANIZING SHALL BE REMOVED BY GRINDING THE SURFACE TO BARE METAL. "SLAG" FROM EXOTHERMIC CONNECTION MUST BE REMOVED AND SHALL BE SPRAYED WITH COLD GALVANIZATION OR TOUCH UP WITH GALVANOX OR EQUIVALENT AFTER COMPLETION
5. EXOTHERMIC WELDS SHALL USE APPROPRIATE MOLDS AND #30 WELD METAL
6. MECHANICAL CONNECTIONS SHALL BE MADE WITH STAINLESS STEEL BOLTS, NUTS AND LOCK WASHERS, 3/8" MINIMUM. BI-METAL RATED LUGS ARE TO BE USED WHERE THE CONNECTION IS MADE
7. USE NOALOX OR APPROVED EQUAL CONNECTIVE MATERIAL FOR ALL MECHANICAL CONNECTIONS
8. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONNECTOR SHALL NOT BE USED. CLIPS OF THE FOLLOWING MATERIALS AND TYPES MAY BE USED TO SUPPORT GROUNDING CONNECTORS:
  - PLASTIC CLIPS, STAINLESS STEEL OR FERROUS METAL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTORS
9. INSTALL ALL GROUND WIRES IN AN ORGANIZED MANNER, C-TAPPING WHERE POSSIBLE TO REDUCE THE NUMBER OF GROUND WIRES. AVOID CROSSING OF WIRES WHEREVER POSSIBLE
10. INSTALL ALL GROUNDS IN A DOWNWARD SLOPE FOR MAXIMUM LIGHTNING PROTECTION
11. MAINTAIN ALL MINIMUM BENDING RADII IN THE GROUNDING WIRES
12. DO NOT REMOVE MORE INSULATION FROM THE GROUND WIRES THAN NECESSARY WHEN EXOTHERMIC WELDING OR CRIMPING. IF EXCESS INSULATION IS REMOVED, THE CONNECTION WILL BE CONSIDERED UNACCEPTABLE AND WILL BE CORRECTED PER THE LIGHTSQUARE REPRESENTATIVE'S DIRECTION
13. THE CONTRACTOR SHALL SELF-PERFORM OR ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT RESISTANCE TO EARTH NOT EXCEED 100 OHMS. PROVIDE A COPY OF TESTING REPORT, INCLUDING THE METHOD AND INSTRUMENTS USED TO VERIFY TO LIGHTSQUARE REPRESENTATIVE. LIGHTSQUARE STANDARD IS TO PERFORM A THREE POINT FALL-OF-POTENTIAL TEST PRODUCE ALSO REFERRED TO AS A 10 OHM 3 POINT 62% METHOD TEST

**GROUND RING LEAD CONNECTIONS:**

1. ALL CONDUCTORS USED IN THE GROUND RING AND GROUND RING STUBS SHALL BE #2 SOLID TINNED BARE COPPER WIRE. ALL STUBS SHALL BE CONNECTED TO THE GROUND RING USING EXOTHERMIC WELDS WITH TAC 2 BY 2 MOLDS AND #30 WELD METAL
2. FOR SURFACE CONNECTIONS REMOVE ALL PAINT AND CORROSION DOWN TO SHINY METAL, TREAT ALL EXOTHERMIC WELDS WITH GALVANIZING PAINT OR TOUCH UP WITH GALVANOX OR EQUIVALENT
3. WHERE BARE COPPER WIRES ARE ROUTED FOR CONNECTION ABOVE GRADE, INSTALL WIRE IN 1/2" PVC SLEEVE, FROM 1" ABOVE GRADE AND SEAL TOP WITH SILICONE MATERIAL
4. MECHANICAL CONNECTIONS SHALL BE MADE WITH STAINLESS STEEL BOLTS, NUTS AND LOCK WASHERS, 3/8" MINIMUM
5. USE NOALOX OR APPROVED EQUAL CONNECTIVE MATERIAL FOR ALL MECHANICAL CONNECTIONS

**DIRECT BURIAL PIPE GROUND:**

1. ALL DIRECT BURIAL PIPES SHALL BE GROUNDED USING (1) #2 SOLID TINNED BARE COPPER GROUND WIRE
2. THESE PIPES SHALL BE CONNECTED TO THE GROUND RING WITH #2 SOLID TINNED BARE COPPER GROUND WIRE AND INTERMEDIATE GROUND RODS IF THE DISTANCE FROM THE PIPE EXCEEDS (6) FEET. EXOTHERMIC WELD TO THE SITE GROUND RING.

**LightSquared**  
 10802 PARKRIDGE BLVD.  
 RESTON, VA 20191  
 PH. (811) 678-2920

**CROWN CASTLE**  
 shaping the wireless world  
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 www.FullertonEngineering.com

CHECKED BY:	AG		
APPROVED BY:	MB		
#	DATE	DESCRIPTION	INT.
	04/17/13	90% REVIEW	RL
	04/24/13	FINAL	MD



SITE NAME  
**AVON (DEERCLIFF RD.)**

SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
 AVON, CT 06001**

SHEET NAME  
**UTILITY AND GROUNDING NOTES**

SHEET NUMBER  
**SP-2**

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May 18, 2013

TS-L2-004-130520

Linda Roberts  
Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

**ORIGINAL**

**RECEIVED**  
MAY 20 2013

**RE: Lightsquared Exempt Modification – Crown Site BU:870800  
Located at 376 Deercliff Rd. Avon, CT 06001**

CONNECTICUT  
SITING COUNCIL

Ms. Roberts,

This letter and exhibits are submitted on behalf of Lightsquared (L2). L2 is co-locating on this site in Connecticut system in order to deploy their technology. Please accept this letter and exhibits as notification, pursuant to § 16-50j-73 of the Regulations of Connecticut State Agencies (“R.C.S.A.”), of construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In compliance with R.C.S.A. § 16-50j-73, a copy of this letter and exhibits is being sent to The Honorable Brandon Robertson, Town Manager of the Town of Avon.

L2 plans to co-locate on the existing wireless communications facility owned by Crown Castle and located at **376 Deercliff Rd., Avon, CT 06001**. Attached are a compound plan and elevation depicting the planned changes (Exhibit-1), and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration (Exhibit-2). Also included is a power density table report reflecting the modification to L2’s operations at the site (Exhibit-3).

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes (“C.G.S.”) § 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in the R.C.S.A. § 16-50j-72(b)(2).

- The proposed modifications will not result in an increase in the height of the existing tower. L2’s antennas will go at an available elevation.
- Although the proposed co-location will involve placing ground-mounted equipment, the proposed scope of work will not require the extension of the site boundaries.
- The proposed modifications will not increase noise levels at the facility by six decibels or more.
- The operation of the antennas will not increase Radio Frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted

safety standard. A cumulative General Power Density table report for Sprint's modified facility is included as Exhibit 2.

- A Structural Analysis confirming that the tower and foundation can support L2's proposed co-location is included as Exhibit 1.

For the foregoing reasons, Crown Castle respectfully submits the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Thank you,



Wes Webber  
Crown Castle

Tab 1: Exhibit-1: Structural Modification Report

Tab 2: Exhibit-2: General Power Density Table Report (RF Emissions Analysis Report)

Tab 3: Exhibit-3: Compound plan and elevation depicting the planned changes

CC: The Honorable Brandon Robertson, Town Manager of the Town of Avon

**Exhibit 1**  
**Structural Analysis Report**

Date: April 26, 2013

Veronica Harris  
Crown Castle  
1200 McArthur Blvd  
Mahwah, NJ 07430  
(201) 236-9094



GPD Group  
520 South Main Street, Suite 2531  
Akron, OH 44311  
(614) 859-1607  
dpalkovic@gpdgroup.com

**Subject:** Structural Analysis Report

**Carrier Designation:** LightSquared Co-Locate  
**Carrier Site Number:** TMUSCNCONN0001  
**Carrier Site Name:** Connecticut I

**Crown Castle Designation:**  
**Crown Castle BU Number:** 870800  
**Crown Castle Site Name:** Avon (Deercliff Rd.)  
**Crown Castle JDE Job Number:** 229525  
**Crown Castle Work Order Number:** 604037  
**Crown Castle Application Number:** 184970 Rev. 5

**Engineering Firm Designation:** GPD Group Project Number: 2013775.870800.04

**Site Data:**  
376 Deercliff Road, Avon, CT 06001, Hartford County  
Latitude 41° 46' 29.95", Longitude -72° 48' 2.07"  
560 Foot – Modified Stainless Guyed Tower

Dear Ms. Veronica Harris,

GPD Group is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 541191, in accordance with application 184970, revision 5.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**  
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code based upon a wind speed of 80 mph fastest mile.

We at GPD Group appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:



John N. Kabak, P.E.  
Connecticut #: PEN.0028336

4/26/2013

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### 1) INTRODUCTION

The existing tower is supported on a tapered base and has twenty-two major sections. It has a triangular cross section made of bolted connections, with an "X" frame configuration. The tower is fabricated with solid round legs and diagonals and angle horizontals. It has three guy elevations for a total of nine guy wires.

This tower is a 560 ft Guyed tower designed by STAINLESS INC. in November of 1986. The tower was originally designed for a wind speed of 50 mph per EIA-222-C.

All modifications designed by GPD (Project #: 2007282.88, dated 10/17/2007) were considered in this analysis.

### 2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 37 mph with 1 inch ice thickness and 50 mph under service loads.

**Table 1 - Proposed Antenna and Cable Information**

Antenna Elevation (Feet)	Antenna Height (Feet)	Quantity	Manufacturer	Antenna Model	Mounting Type	Mounting Height (Feet)	Notes
557.0	557.0	1		Pipe Mount [PM 601-3]			
		3	Kathrein	AP19-1670/090D/DT2	1	1-5/8	1
		1	RFS Celwave	PDS3DE-698/2700			

Notes:

- 1) See Appendix B for proposed coax layout.

**Table 2 - Existing and Reserved Antenna and Cable Information**

Antenna Elevation (Feet)	Antenna Height (Feet)	Quantity	Manufacturer	Antenna Model	Mounting Type	Mounting Height (Feet)	Notes
518.0	528.0	1	Telewave	ANT150F6			
	518.0	1		Side Arm Mount [SO 308-1]	1	1-1/4	
515.0	515.0	1		Side Arm Mount [SO 307-1]	1	1-5/8	
		1	Andrew	PG1NOF-0093-8			
505.0	505.0	1	Telewave	ANT150F2			
500.0	508.0	1	TX RX Systems	101-68-10-0-03N	1	1-1/4	
	500.0	1		Side Arm Mount [SO 308-1]			
490.0	490.0	1	Andrew	ATW25HS3-HSO-46H	1	4-1/16	
470.0	480.0	1	Telewave	ANT150F6	1	7/8	
	470.0	1		Side Arm Mount [SO 308-1]			
445.0	452.0	1	TX RX Systems	101-68-10-0-03N	1	1-1/4	
	445.0	1		Side Arm Mount [SO 310-1]			
442.0	452.0	2	Telewave	ANT150F6	1	7/8	
	442.0	2		Side Arm Mount [SO 308-1]	1	1-1/4	
422.0	427.0	1	Swedcom	800/1850	1	1-1/4	
		1	TX RX Systems	101D-90-06-0-03			
	422.0	1		Side Arm Mount [SO 308-1]			1

Altitude (ft)	Height (ft)	Number of Antennae	Antenna Manufacturer	Antenna Model	Number of Sectors	Base Height (ft)	Notes
395.0	402.0	1	Sinclair	SC233	1	1-1/4	
	395.0	1		Side Arm Mount [SO 304-1]			
330.0	335.0	2	Decibel	DB636-C	2	1-1/4	
	330.0	2		Side Arm Mount [SO 306-1]			
294.0	299.0	1	Decibel	DB636-C	1	7/8	
	294.0	1		Side Arm Mount [SO 306-1]			
289.0	294.0	1	Decibel	DB636-C	1	1-1/4	
	289.0	1		Side Arm Mount [SO 301-1]			
		1		Side Arm Mount [SO 309-1]			
		1	Radiowaves	SPD2-5.8			
271.0	276.0	1	Decibel	DB636-C	1	1-1/4	
	271.0	1		Side Arm Mount [SO 306-1]			
254.0	259.0	1	Decibel	DB810M-XC			
	254.0	1		Side Arm Mount [SO 306-1]			
250.0	251.0	4	Celwave	AP859012-42T0	8	1-5/8	
		4	Decibel	844G65VTZASX			
	250.0	2		Sector Mount [SM 504-1]			
237.0	238.0	2	RFS Celwave	APX16DWV-16DWV-S-E-A20	4	1-5/8	1
		2	RFS Celwave	ATMAA1412D-1A20			
		2	RFS Celwave	ATMPP1412D-1CWA			
		2	EMS Wireless	FR90-16-02DP			
	237.0	2		Sector Mount [SM 401-1]	4	7/8	
219.0	229.0	1	Telewave	ANT150F6	1	7/8	
	219.0	1		Side Arm Mount [SO 307-1]			
214.0	214.0	3	Kathrein	742-213	6	1-5/8	
177.0	187.0	1	Telewave	ANT150F6	1	7/8	
	177.0	1		Side Arm Mount [SO 308-1]			
145.0	145.0	1		Side Arm Mount [SO 202-1]			2
140.0	140.0	1		Side Arm Mount [SO 301-1]	1	1/2	
		1	Radiowaves	SPD2-5.8			
135.0	135.0	1		Side Arm Mount [SO 601-1]	1	1/2	
		1	Radiowaves	SPD2-5.8			
116.0	120.0	1	Celwave	201-8	1	3/8	
91.0	94.0	1	Telewave	ANT150F2	1	1/2	
	91.0	1		Side Arm Mount [SO 309-1]			
76.0	76.0	1	Trimble	Acutime 2000	1	1/2	

- Notes:  
 1) Reserved loading.  
 2) Abandoned.

**Table 3 - Design Antenna and Cable Information**

Height (ft)	Cable Height (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Cables	Cable Length (ft)
560	560	1	Andrew	Ch. 18 Wavestar	1	6-1/8
		1	Harris	Ch. 18 Wavestar	1	WR1800
550	550	6		2-Way Antennas	6	7/8
490	490	1		8' Microwave Parabolic Antenna	1	EW64
480	480	6		2-Way Antennas	6	7/8
320	320	1		8' Microwave Parabolic Antenna	1	EW64
315	315	1		4' Microwave Parabolic Antenna	1	EW64
300	300	1		2-Bay FM Antenna	1	3
200	200	1		PR450	1	7/8

### 3) ANALYSIS PROCEDURE

**Table 4 - Documents Provided**

Document	Reference	Doc ID	Owner
Tower Manufacturer Drawings	Report #: 3290, dated 11/5/86	Doc ID #: 1579694	Crown DMZ
Tower Mapping	Pinnacle Acquisition #: 0236-001, dated 4/14/99	Doc ID #: 1579694	Crown DMZ
Geotechnical Report	United Consulting Project #: 20004476-01, dated 2/8/01	Doc ID #: 1579662	Crown DMZ
Modification Drawings	GPD Associates Project #: 2007282.88, dated 10/11/07	Doc ID #: 2124272	Crown DMZ
Foundation Mapping	Pinnacle Tower Acquisition #: 0263-001, dated 7/30/1999	Doc ID #: 2899235	Crown DMZ
Post Modification Inspection	GPD, Project #: 2007287.82, dated 4/3/2008	Doc ID #: 2899235	Crown DMZ
Previous Analysis	GPD, Project #: 2012775.870800.01, dated 2/1/2012	Doc ID #: 2899235	Crown DMZ

#### 3.1) Analysis Method

tnxTower (version 6.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

### **3.2) Assumptions**

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
- 5) Mount sizes, weights, and manufacturers are best estimates based on photos provided and determined without the benefit of a site visit by GPD.
- 6) All member connections and foundation steel reinforcing are assumed designed to meet or exceed the load carrying capacity of the connected member and surrounding soils respectively unless otherwise specified in this report.
- 7) All equipment model numbers, quantities, and centerline elevations are as provided in the CCI CAD package dated 4/23/2013 with any adjustments as noted below.

This analysis may be affected if any assumptions are not valid or have been made in error. GPD Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Member ID	Element ID	Orientation	Length (ft)	Area (sq in)	Y-Displacement (in)	Y-Moment (kip-ft)	Y-Shear (kip)	Y-Rotation (rad)	Result
T1	560 - 535	Leg	4	1	-11.09	336.52	3.3	6.1 (b)	Pass
T2	535 - 510	Leg	4	43	-35.11	336.52	10.4	23.5 (b)	Pass
T3	510 - 485	Leg	4 1/2	85	-66.22	458.51	14.4		Pass
T4	485 - 460	Leg	4 1/2	127	-60.02	458.51	13.1		Pass
T5	460 - 435	Leg	4 1/4	171	-42.12	296.72	14.2		Pass
T6	435 - 410	Leg	4 1/4	213	-45.38	296.72	15.3		Pass
T7	410 - 385	Leg	4 1/4	253	-77.81	395.53	19.7		Pass
T8	385 - 360	Leg	4 1/4	295	-117.95	395.53	29.8		Pass
T9	360 - 335	Leg	4 3/4	337	-172.06	525.46	32.7		Pass
T10	335 - 310	Leg	5 1/4	379	-224.22	671.27	33.4		Pass
T11	310 - 285	Leg	4 3/4	422	-212.55	525.46	40.5		Pass
T12	285 - 260	Leg	4 3/4	464	-169.79	525.46	32.3		Pass
T13	260 - 235	Leg	4 3/4	506	-141.33	525.46	26.9		Pass
T14	235 - 210	Leg	4 3/4	548	-145.88	525.46	27.8		Pass
T15	210 - 185	Leg	5	590	-176.49	596.38	29.6		Pass
T16	185 - 160	Leg	5 1/4	632	-222.34	671.27	33.1		Pass
T17	160 - 135	Leg	5 1/2	674	-242.59	750.12	32.3		Pass
T18	135 - 110	Leg	5 1/4	715	-153.99	503.58	30.6		Pass
T19	110 - 85	Leg	5 1/4	757	-158.83	503.58	31.5		Pass
T20	85 - 60	Leg	5 1/4	799	-163.25	503.58	32.4		Pass
T21	60 - 35	Leg	5 1/4	841	-167.59	503.58	33.3		Pass
T22	35 - 10	Leg	5 1/4	883	-172.08	503.58	34.2		Pass
T23	10 - 0	Leg	5 1/4	925	-191.07	527.35	36.2		Pass
T1	560 - 535	Diagonal	1	10	3.37	22.61	14.9		Pass
T2	535 - 510	Diagonal	1	57	6.04	22.61	26.7		Pass
T3	510 - 485	Diagonal	1 1/4	94	8.17	35.33	23.1	33.0 (b)	Pass
T4	485 - 460	Diagonal	1	163	7.88	22.61	34.8		Pass
T5	460 - 435	Diagonal	5/8	205	4.32	8.83	48.9		Pass
T6	435 - 410	Diagonal	5/8	225	4.41	8.83	49.9		Pass
T7	410 - 385	Diagonal	5/8	267	6.91	8.83	78.2		Pass
T8	385 - 360	Diagonal	3/4	309	9.37	12.72	73.7		Pass
T9	360 - 335	Diagonal	1	346	12.62	22.61	55.8	73.5 (b)	Pass
T10	335 - 310	Diagonal	1 1/4	406	14.64	35.33	41.4	59.2 (b)	Pass
T11	310 - 285	Diagonal	1	457	12.80	22.61	56.6		Pass
T12	285 - 260	Diagonal	5/8	499	8.83	8.83	99.9		Pass
T13	260 - 235	Diagonal	5/8	541	6.05	8.83	68.5		Pass
T14	235 - 210	Diagonal	5/8	556	5.25	8.83	59.5		Pass
T15	210 - 185	Diagonal	7/8	598	9.14	17.31	52.8	83.2 (b)	Pass
T16	185 - 160	Diagonal	1	640	12.91	22.61	57.1		Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P allow (K)	% Capacity	Pass / Fail
							75.2 (b)	
T17	160 - 135	Diagonal	1 1/4	695	12.83	35.33	36.3 51.9 (b)	Pass
T18	135 - 110	Diagonal	1	753	10.95	22.61	48.4	Pass
T19	110 - 85	Diagonal	7/8	795	8.08	17.31	46.7	Pass
T20	85 - 60	Diagonal	7/8	837	5.63	17.31	32.5	Pass
T21	60 - 35	Diagonal	7/8	879	3.28	17.31	18.9	Pass
T22	35 - 10	Diagonal	7/8	893	5.33	17.31	30.8	Pass
T1	560 - 535	Horizontal	2L2 1/2x2 1/2x1/4x3/8	16	-2.31	32.79	7.0	Pass
T2	535 - 510	Horizontal	2L2 1/2x2 1/2x1/4x3/8	59	-4.37	32.79	13.3	Pass
T3	510 - 485	Horizontal	2L2 1/2x2 1/2x1/4x3/8	111	-6.08	33.08	18.4 24.5 (b)	Pass
T4	485 - 460	Horizontal	2L2 1/2x2 1/2x1/4x3/8	160	-5.91	33.08	17.9	Pass
T5	460 - 435	Horizontal	2L2x2x3/16x3/8	202	-3.22	12.87	25.0	Pass
T6	435 - 410	Horizontal	2L2x2x3/16x3/8	228	-3.16	12.87	24.5	Pass
T7	410 - 385	Horizontal	2L2x2x3/16x3/8	270	-5.18	12.87	40.2	Pass
T8	385 - 360	Horizontal	2L2x2x1/4x3/8	312	-7.20	16.49	43.7	Pass
T9	360 - 335	Horizontal	2L2 1/2x2 1/2x1/4x3/8	352	-9.63	33.23	29.0	Pass
T10	335 - 310	Horizontal	2L2 1/2x2 1/2x1/4x3/8	412	-11.38	33.52	34.0 36.0 (b)	Pass
T11	310 - 285	Horizontal	2L2 1/2x2 1/2x1/4x3/8	454	-9.80	33.23	29.5	Pass
T12	285 - 260	Horizontal	2L2 1/2x2x3/16x3/8	496	-6.84	22.90	29.9 31.1 (b)	Pass
T13	260 - 235	Horizontal	2L2 1/2x2x3/16x3/8	540	-3.86	22.90	16.9 17.6 (b)	Pass
T14	235 - 210	Horizontal	2L2 1/2x2x3/16x3/8	562	-3.71	22.90	16.2 16.9 (b)	Pass
T15	210 - 185	Horizontal	2L2 1/2x2x3/16x3/8	604	-6.81	23.00	29.6 31.0 (b)	Pass
T16	185 - 160	Horizontal	2L2 1/2x2 1/2x1/4x3/8	646	-9.91	33.52	29.6	Pass
T17	160 - 135	Horizontal	2L2 1/2x2 1/2x1/4x3/8	707	16.88	42.25	40.0 50.9 (b)	Pass
T18	135 - 110	Horizontal	2L2 1/2x2 1/2x1/4x3/8	749	-8.33	33.52	24.9	Pass
T19	110 - 85	Horizontal	2L2x2x1/4x3/8	791	-6.05	16.85	35.9	Pass
T20	85 - 60	Horizontal	2L2x2x3/16x3/8	833	-4.17	13.16	31.7	Pass
T21	60 - 35	Horizontal	2L2x2x3/16x3/8	865	-2.90	9.87	29.4	Pass
T22	35 - 10	Horizontal	2L2x2x3/16x3/8	898	-2.98	9.87	30.2	Pass
T23	10 - 0	Horizontal	2L3x5x1/2x3/8	929	37.98	162.00	23.4	Pass
T1	560 - 535	Top Girt	2L2 1/2x2 1/2x1/4x3/8	4	-0.36	32.79	1.1	Pass
T2	535 - 510	Top Girt	2L2 1/2x2 1/2x1/4x3/8	46	-1.47	32.79	4.5	Pass
T3	510 - 485	Top Girt	2L2 1/2x2 1/2x1/4x3/8	90	-2.58	33.08	7.8	Pass
T4	485 - 460	Top Girt	2L2 1/2x2 1/2x1/4x3/8	130	-3.22	33.08	9.7	Pass
T5	460 - 435	Top Girt	2L2x2x3/16x3/8	172	-1.50	12.87	11.7	Pass
T6	435 - 410	Top Girt	2L2x2x3/16x3/8	216	-0.82	12.87	6.4	Pass
T7	410 - 385	Top Girt	2L2x2x3/16x3/8	258	-1.90	12.87	14.8	Pass
T8	385 - 360	Top Girt	2L2x2x3/16x3/8	300	-2.95	12.87	22.9	Pass
T9	360 - 335	Top Girt	2L2 1/2x2 1/2x1/4x3/8	340	-4.98	33.23	15.0 22.6 (b)	Pass
T10	335 - 310	Top Girt	2L2 1/2x2 1/2x1/4x3/8	382	-5.39	33.52	16.1	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P allow (K)	% Capacity	Pass / Fail
T11	310 - 285	Top Girt	2L2 1/2x2 1/2x1/4x3/8	424	-5.11	33.23	15.4	Pass
T12	285 - 260	Top Girt	2L2x2 1/2x3/16x3/8	466	-3.25	13.94	23.3	Pass
T13	260 - 235	Top Girt	2L2x2 1/2x3/16x3/8	508	-2.55	13.94	18.3	Pass
T14	235 - 210	Top Girt	2L2x2 1/2x3/16x3/8	552	-0.72	13.94	5.1	Pass
T15	210 - 185	Top Girt	2L2x2 1/2x3/16x3/8	592	-2.50	14.02	17.9	Pass
T16	185 - 160	Top Girt	2L2 1/2x2 1/2x1/4x3/8	634	-4.66	33.52	13.9	Pass
T17	160 - 135	Top Girt	2L2 1/2x2 1/2x1/4x3/8	676	-4.80	33.67	14.3	Pass
T18	135 - 110	Top Girt	2L2 1/2x2 1/2x1/4x3/8	720	-4.66	33.52	13.9	Pass
T19	110 - 85	Top Girt	2L2x2x1/4x3/8	761	-3.05	16.85	18.1	Pass
T20	85 - 60	Top Girt	2L2x2x3/16x3/8	803	-2.10	13.16	15.9	Pass
T21	60 - 35	Top Girt	2L2x2x3/16x3/8	845	-1.47	13.16	11.1	Pass
T22	35 - 10	Top Girt	2L2x2x3/16x3/8	886	-1.23	13.16	9.3	Pass
T1	560 - 535	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	7	-1.43	32.79	4.4	Pass
T2	535 - 510	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	51	-2.53	32.79	7.7	Pass
T3	510 - 485	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	91	-3.07	33.08	9.3	Pass
T4	485 - 460	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	133	-2.46	33.08	7.4	Pass
T5	460 - 435	Bottom Girt	2L2x2x3/16x3/8	177	-0.79	12.87	6.2	Pass
T6	435 - 410	Bottom Girt	2L2x2x3/16x3/8	219	-1.87	12.87	14.5	Pass
T7	410 - 385	Bottom Girt	2L2x2x3/16x3/8	261	-2.94	12.87	22.8	Pass
T8	385 - 360	Bottom Girt	2L2x2x3/16x3/8	303	-3.03	12.87	23.5	Pass
T9	360 - 335	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	343	-5.32	33.23	16.0 24.2 (b)	Pass
T10	335 - 310	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	385	-4.84	33.52	14.4	Pass
T11	310 - 285	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	427	-4.72	33.23	14.2	Pass
T12	285 - 260	Bottom Girt	2L2x2 1/2x3/16x3/8	469	-2.59	13.94	18.6	Pass
T13	260 - 235	Bottom Girt	2L2x2 1/2x3/16x3/8	513	-0.74	13.94	5.3	Pass
T14	235 - 210	Bottom Girt	2L2x2 1/2x3/16x3/8	553	-2.45	13.94	17.6	Pass
T15	210 - 185	Bottom Girt	2L2x2 1/2x3/16x3/8	595	-3.21	14.02	22.9	Pass
T16	185 - 160	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	637	-5.17	33.52	15.4	Pass
T17	160 - 135	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	681	-4.70	33.67	14.0	Pass
T18	135 - 110	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	722	-3.86	33.52	11.5	Pass
T19	110 - 85	Bottom Girt	2L2x2x1/4x3/8	764	-2.76	16.85	16.4	Pass
T20	85 - 60	Bottom Girt	2L2x2x3/16x3/8	806	-1.49	13.16	11.3	Pass
T21	60 - 35	Bottom Girt	2L2x2x3/16x3/8	847	-1.21	13.16	9.2	Pass
T22	35 - 10	Bottom Girt	2L2x2x3/16x3/8	890	7.85	23.97	32.7 33.1 (b)	Pass
T3	510 - 485	Guy A@491.292	1 1/4	939	59.92	96.00	62.4	Pass
T10	335 - 310	Guy A@316.292	1 1/2	945	67.36	138.00	48.8	Pass
T17	160 - 135	Guy A@153.708	1 3/4	951	62.01	188.00	33.0	Pass
T3	510 - 485	Guy B@491.292	1 1/4	938	59.28	96.00	61.8	Pass
T10	335 - 310	Guy B@316.292	1 1/2	944	66.44	138.00	48.1	Pass
T17	160 - 135	Guy B@153.708	1 3/4	950	61.06	188.00	32.5	Pass
T3	510 - 485	Guy C@491.292	1 1/4	934	60.82	96.00	63.3	Pass
T10	335 - 310	Guy C@316.292	1 1/2	940	68.54	138.00	49.7	Pass
T17	160 - 135	Guy C@153.708	1 3/4	946	63.39	188.00	33.7	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF:P allow (K)	% Capacity	Pass / Fail
T3	510 - 485	Top Guy Pull-Off@491.292	L2 1/2x2 1/2x1/4	936	2.16	25.70	24.3	Pass
T10	335 - 310	Top Guy Pull-Off@316.292	L2 1/2x2 1/2x1/4	942	4.35	25.70	32.0	Pass
T17	160 - 135	Top Guy Pull-Off@153.708	L2 1/2x2 1/2x1/4	948	8.44	25.70	46.8	Pass
						Summary	ELC:	Load Case 7
						Leg (T11)	40.5	Pass
						Diagonal (T12)	99.9	Pass
						Horizontal (T17)	50.9	Pass
						Top Girt (T12)	23.3	Pass
						Bottom Girt (T22)	33.1	Pass
						Guy A (T3)	62.4	Pass
						Guy B (T3)	61.8	Pass
						Guy C (T3)	63.3	Pass
						Top Guy Pull-Off (T17)	46.8	Pass
						Bolt Checks	83.2	Pass
						Rating =	99.9	Pass

**Table 6 - Tower Component Stresses vs. Capacity – LC7**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Base Foundation	0	46.7	Pass
1, 2	Guy Anchor Foundation	0	50.8	Pass

<b>Structure Rating (max. from all components) =</b>	<b>99.9%</b>
--	--------------

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) Foundation capacity determined by comparing analysis reactions to original design reactions.

**4.1) Recommendations**

The existing tower and foundations designs are sufficient for the proposed loading and will not require modification.

## 5) DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

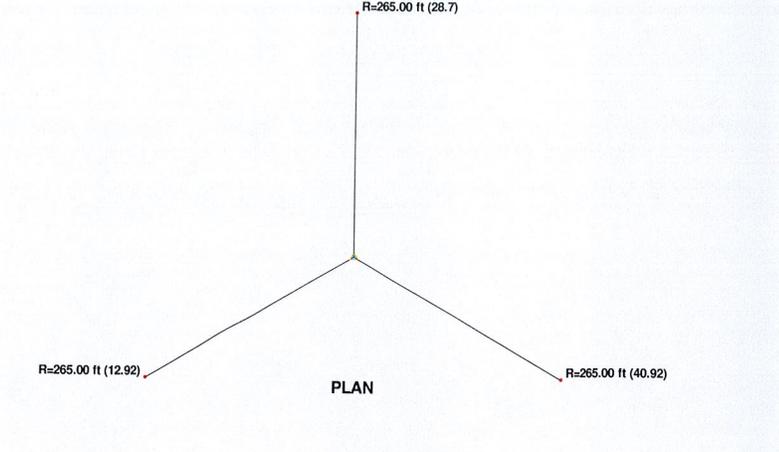
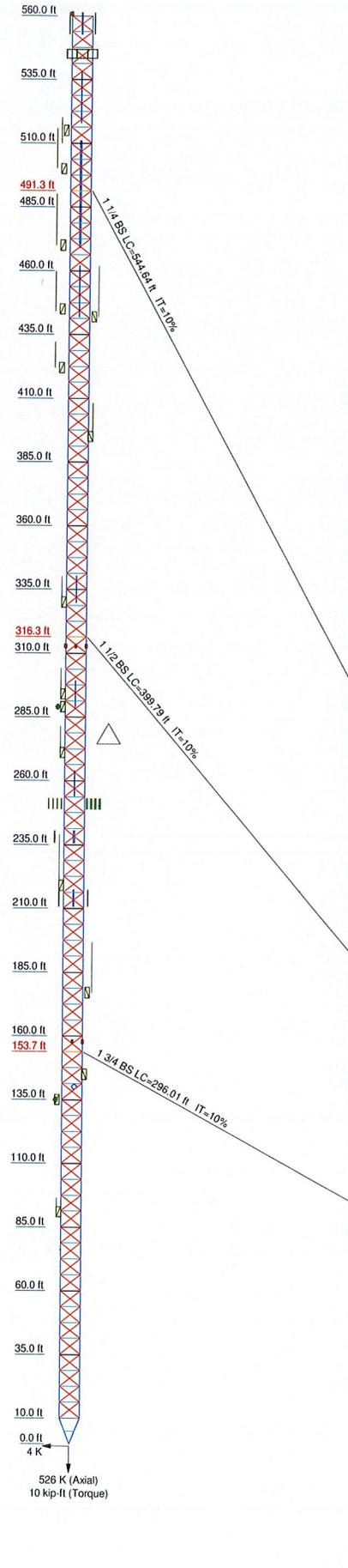
The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

**APPENDIX A**  
**TNXTOWER OUTPUT**

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20	T21	T22	T23	
Legs																								
Leg Grade																								
Diagonals																								
Diagonal Grade																								
Top Girts																								
Bottom Girts																								
Horizontals																								
Top Guy Pull-Offs																								
Face Width (ft)																								
# Panels @ (ft)																								
Weight (K)																								



### DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
4' Lightning Rod	560	Side Arm Mount [SO 309-1]	289
Flash Beacon Lighting	560	SPD2-5.8	289
Pipe Mount [PM 601-3]	557	DB636-C	271
AP19-1670/090D/DT2	557	Side Arm Mount [SO 306-1]	271
AP19-1670/090D/DT2	557	DB810M-XC	254
AP19-1670/090D/DT2	557	Side Arm Mount [SO 306-1]	254
PDS3DE-698/2700	557	Sector Mount [SM 504-1]	250
Platform w/ Handrail	545	(4) 844G65VTZASX w/Mount Pipe	250
Side Arm Mount [SO 308-1]	518	(4) AP859012-42T0 w/Mount Pipe	250
ANT150F6	518	Sector Mount [SM 504-1]	250
Side Arm Mount [SO 307-1]	515	Sector Mount [SM 401-1]	237
PGINOF-0093-8	515	FR90-16-02DP w/Mount Pipe	237
ANT150F2	505	FR90-16-02DP w/Mount Pipe	237
Side Arm Mount [SO 308-1]	500	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	237
101-68-10-0-03N	500		
ATW25HS3-HSO-46H	490	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	237
Side Arm Mount [SO 308-1]	470		
ANT150F6	470	ATMAA1412D-1A20	237
Side Arm Mount [SO 310-1]	445	ATMAA1412D-1A20	237
101-68-10-0-03N	445	ATMPP1412D-1CWA	237
Side Arm Mount [SO 308-1]	442	ATMPP1412D-1CWA	237
Side Arm Mount [SO 308-1]	442	Sector Mount [SM 401-1]	237
ANT150F6	442	ANT150F6	219
ANT150F6	442	Side Arm Mount [SO 307-1]	219
Side Arm Mount [SO 308-1]	422	742-213 w/Mount Pipe	214
101D-90-06-0-03 w/Mount Pipe	422	742-213 w/Mount Pipe	214
SFCP 800/1850 TMA	422	742-213 w/Mount Pipe	214
Side Arm Mount [SO 304-1]	395	ANT150F6	177
SC233	395	Side Arm Mount [SO 308-1]	177
Side Arm Mount [SO 306-1]	330	Side Light	157
Side Arm Mount [SO 306-1]	330	Side Light	157
DB636-C	330	Side Arm Mount [SO 202-1]	145
DB636-C	330	Side Arm Mount [SO 301-1]	140
Flash Beacon Lighting	312	SPD2-5.8	140
Flash Beacon Lighting	312	Side Arm Mount [SO 601-1]	135
Flash Beacon Lighting	312	SPD2-5.8	135
Side Arm Mount [SO 306-1]	294	201-8 W/ Pipe Mount	116
DB636-C	294	Side Arm Mount [SO 309-1]	91
Side Arm Mount [SO 301-1]	289	ANT150F2	91
DB636-C	289	Acutime 2000	76

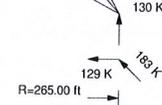
### SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	2L2x2x1/4x3/8	C	L2 1/2x2 1/2x1/4
B	2L3x5x1/2x3/8	D	2 @ 4.95833

### MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

- ### TOWER DESIGN NOTES
1. Tower is located in Hartford County, Connecticut.
  2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
  3. Tower is also designed for a 37 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
  4. Deflections are based upon a 50 mph wind.
  5. TOWER RATING: 99.9%





**GPD Group**  
520 South Main Street, Suite 2531  
Akron, OH 44311  
Phone: (330) 573-2100  
FAX: (330) 573-2101

Job: **Avon (Deercliff Rd.) - BU #: 870800**

Project: **2013775.870800.04**

Client: **Crown Castle USA, Inc.** Drawn by: **jhuffine** App'd: \_\_\_\_\_

Code: **TIA/EIA-222-F** Date: **04/26/13** Scale: **NTS**

Path: **O:\2012\201275870800\04\TNX870800.dwg** Dwg No. **E-1**



<b>inxTower</b>  <b>GPD Group</b> 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 573-2100 FAX: (330) 573-2101	<b>Job</b> Avon (Deercliff Rd.) - BU #: 870800	<b>Page</b> 1 of 31
	<b>Project</b> 2013775.870800.04	<b>Date</b> 12:53:13 04/26/13
	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

## Tower Input Data

The main tower is a 3x guyed tower with an overall height of 560.00 ft above the ground line.  
The base of the tower is set at an elevation of 0.00 ft above the ground line.  
The face width of the tower is 8.00 ft at the top and tapered at the base.  
This tower is designed using the TIA/EIA-222-F standard.  
The following design criteria apply:

- Tower is located in Hartford County, Connecticut.
- Basic wind speed of 80 mph.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 37 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 50 mph.
- Pressures are calculated at each section.
- Safety factor used in guy design is 2.
- Stress ratio used in tower member design is 1.333.
- Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

## Options

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>Consider Moments - Legs</li> <li>Consider Moments - Horizontals</li> <li>Consider Moments - Diagonals</li> <li>Use Moment Magnification</li> <li>√ Use Code Stress Ratios</li> <li>√ Use Code Safety Factors - Guys</li> <li>√ Escalate Ice</li> <li>Always Use Max Kz</li> <li>Use Special Wind Profile</li> <li>√ Include Bolts In Member Capacity</li> <li>Leg Bolts Are At Top Of Section</li> <li>√ Secondary Horizontal Braces Leg</li> <li>√ Use Diamond Inner Bracing (4 Sided)</li> <li>Add IBC .6D+W Combination</li> </ul> | <ul style="list-style-type: none"> <li>Distribute Leg Loads As Uniform</li> <li>Assume Legs Pinned</li> <li>√ Assume Rigid Index Plate</li> <li>√ Use Clear Spans For Wind Area</li> <li>√ Use Clear Spans For KL/r</li> <li>√ Retension Guys To Initial Tension</li> <li>Bypass Mast Stability Checks</li> <li>√ Use Azimuth Dish Coefficients</li> <li>√ Project Wind Area of Appurt.</li> <li>√ Autocalc Torque Arm Areas</li> <li>SR Members Have Cut Ends</li> <li>√ Sort Capacity Reports By Component</li> <li>√ Triangulate Diamond Inner Bracing</li> </ul> | <ul style="list-style-type: none"> <li>Treat Feedline Bundles As Cylinder</li> <li>Use ASCE 10 X-Brace Ly Rules</li> <li>√ Calculate Redundant Bracing Forces</li> <li>Ignore Redundant Members in FEA</li> <li>√ SR Leg Bolts Resist Compression</li> <li>√ All Leg Panels Have Same Allowable</li> <li>Offset Girt At Foundation</li> <li>√ Consider Feedline Torque</li> <li>√ Include Angle Block Shear Check</li> </ul> <p style="text-align: center;"><b>Poles</b></p> <ul style="list-style-type: none"> <li>Include Shear-Torsion Interaction</li> <li>Always Use Sub-Critical Flow</li> <li>Use Top Mounted Sockets</li> </ul> |
|--|--|---|

## Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
MACX450-1(4-1/16)	A	Yes	Ar (CfAe)	495.00 - 8.00	-8.0000	0.1	1	1	4.0620	4.0620		4.16
T-Bracket	A	Yes	Af (CfAe)	250.00 - 8.00	-4.0000	0.43	1	1	0.5000	2.0000	6.0000	10.00
LDF7-50A (1-5/8 FOAM)	A	Yes	Ar (CfAe)	250.00 - 8.00	-4.0000	0.43	8	4	0.5000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	B	Yes	Ar (CfAe)	515.00 - 8.00	-8.0000	0.12	1	1	0.5000	1.9800		0.82
T-Bracket	B	Yes	Af (CfAe)	500.00 - 8.00	-4.0000	0.43	1	1	0.5000	2.0000	6.0000	10.00
CR 50 1873 (1-5/8 FOAM)	B	Yes	Ar (CfAe)	214.00 - 8.00	-4.0000	0.43	6	3	0.5000	1.9800		0.83
FXL 1873 PE (1-5/8")	B	Yes	Ar (CfAe)	557.00 - 8.00	-3.0000	0.42	1	1	1.0000	1.9800		0.67
FSJ4-50B (1/2)	B	Yes	Ar (CfAe)	135.00 - 8.00	-6.0000	0.4	2	2	0.5200	0.5200		0.14

<b>tnxTower</b>  <b>GPD Group</b> 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 573-2100 FAX: (330) 573-2101	<b>Job</b> Avon (Deercliff Rd.) - BU #: 870800	<b>Page</b> 2 of 31
	<b>Project</b> 2013775.870800.04	<b>Date</b> 12:53:13 04/26/13
	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	# Row	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
SUFERFLEX. FOAM)												
FSJ4-50B (1/2 SUFERFLEX. FOAM)	B	Yes	Ar (CfAe)	300.00 - 135.00	-6.0000	0.4	1	1	0.5200	0.5200		0.14
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	422.00 - 8.00	-1.0000	-0.33	3	3	1.0000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	445.00 - 422.00	-1.0000	-0.33	2	2	1.0000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	500.00 - 445.00	-1.0000	-0.33	1	1	1.0000	1.5500		0.66
Climbing Ladder (CCI)	C	Yes	Af (CfAe)	560.00 - 8.00	-15.0000	-0.3	1	1	3.8400	3.8400	15.3600	4.81
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	395.00 - 8.00	-1.0000	-0.15	1	1	1.0000	1.5500		0.66
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	177.00 - 8.00	-1.0000	-0.1	2	2	1.0000	1.0900		0.33
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	442.00 - 177.00	-1.0000	-0.1	1	1	1.0000	1.0900		0.33
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	518.00 - 8.00	-8.0000	-0.1	1	1	1.0000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	442.00 - 8.00	-6.0000	-0.08	1	1	1.0000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	300.00 - 8.00	-5.0000	-0.02	3	1	1.0000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	Yes	Ar (CfAe)	330.00 - 300.00	-5.0000	-0.02	2	1	1.0000	1.5500		0.66
LDF4-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	91.00 - 8.00	-2.0000	0.02	1	1	0.6300	0.6300		0.15
EW52	C	Yes	Af (CfAe)	145.00 - 8.00	-4.0000	0.04	1	1	1.0000	1.7426	5.5505	0.59
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	219.00 - 8.00	-2.0000	0.15	2	1	1.0000	1.0900		0.33
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	303.00 - 219.00	-1.0000	0.15	1	1	1.0000	1.0900		0.33
1" Rigid Conduit	C	Yes	Ar (CfAe)	560.00 - 8.00	-1.0000	0.18	1	1	1.0000	1.0000		0.50
LDF4P-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	140.00 - 8.00	-4.0000	0.16	4	4	0.6300	0.6300		0.15
LDF4P-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	163.00 - 140.00	-4.0000	0.16	3	3	0.6300	0.6300		0.15
LDF4P-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	422.00 - 163.00	-4.0000	0.16	2	2	0.6300	0.6300		0.15
LDF4P-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	463.00 - 422.00	-4.0000	0.16	1	1	0.6300	0.6300		0.15
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	470.00 - 8.00	-2.0000	0.43	1	1	1.0900	1.0900		0.33
LDF2-50 (3/8 FOAM)	C	Yes	Ar (CfAe)	116.00 - 8.00	-2.0000	0.43	1	1	0.4400	0.4400		0.08
T-Bracket	C	Yes	Af (CfAe)	470.00 - 8.00	-4.0000	0.43	1	1	0.5000	2.0000	6.0000	10.00
LDF5-50A (7/8 FOAM)	C	Yes	Ar (CfAe)	237.00 - 8.00	-4.0000	0.4	4	4	0.5000	1.0900		0.33
LDF4-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	76.00 - 8.00	-6.0000	0.4	1	1	0.6300	0.6300		0.15
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CfAe)	237.00 - 8.00	-5.0000	0.4	4	4	0.5000	1.9800		0.82

<b>tnxTower</b>  <b>GPD Group</b> 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 573-2100 FAX: (330) 573-2101	<b>Job</b> Avon (Deercliff Rd.) - BU #: 870800	<b>Page</b> 3 of 31
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	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

## Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Lateral	Vert						
			ft	ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
4' Lightning Rod	C	From Leg	0.00	0.00	0.00	0.0000	560.00	No Ice	0.10	0.10	0.11
								1/2" Ice	0.51	0.51	0.11
								1" Ice	0.89	0.89	0.11
								2" Ice	1.41	1.41	0.13
Flash Beacon Lighting	C	From Leg	0.00	0.00	0.0000	560.00	4" Ice	2.57	2.57	0.20	
							No Ice	2.70	2.70	0.05	
							1/2" Ice	3.10	3.10	0.07	
							1" Ice	3.50	3.50	0.09	
Pipe Mount [PM 601-3]	C	None			0.0000	557.00	2" Ice	4.30	4.30	0.13	
							4" Ice	5.90	5.90	0.21	
							No Ice	4.39	4.39	0.20	
							1/2" Ice	5.48	5.48	0.24	
AP19-1670/090D/DT2	A	From Leg	1.00	0.00	0.0000	557.00	1" Ice	6.57	6.57	0.28	
							2" Ice	8.75	8.75	0.36	
							4" Ice	13.11	13.11	0.53	
							No Ice	7.44	3.18	0.02	
AP19-1670/090D/DT2	B	From Leg	1.00	0.00	0.0000	557.00	1/2" Ice	8.06	4.15	0.05	
							1" Ice	8.68	5.14	0.09	
							2" Ice	9.96	6.70	0.19	
							4" Ice	12.59	9.25	0.49	
AP19-1670/090D/DT2	C	From Leg	1.00	0.00	0.0000	557.00	No Ice	7.44	3.18	0.02	
							1/2" Ice	8.06	4.15	0.05	
							1" Ice	8.68	5.14	0.09	
							2" Ice	9.96	6.70	0.19	
PDS3DE-698/2700	A	From Leg	1.00	0.00	0.0000	557.00	4" Ice	12.59	9.25	0.49	
							No Ice	0.24	0.11	0.00	
							1/2" Ice	0.32	0.18	0.00	
							1" Ice	0.42	0.26	0.01	
Platform w/ Handrail	B	From Face	0.00	0.00	0.0000	545.00	2" Ice	0.62	0.45	0.01	
							4" Ice	1.15	0.93	0.05	
							No Ice	12.00	6.00	0.05	
							1/2" Ice	17.00	7.50	0.08	
Side Arm Mount [SO 308-1]	A	From Leg	3.00	0.00	0.0000	518.00	1" Ice	22.00	9.00	0.11	
							2" Ice	32.00	12.00	0.17	
							4" Ice	52.00	18.00	0.29	
							No Ice	0.98	3.03	0.05	
ANT150F6	A	From Leg	6.00	0.00	0.0000	518.00	1/2" Ice	1.70	5.22	0.08	
							1" Ice	2.42	7.41	0.10	
							2" Ice	3.86	11.79	0.16	
							4" Ice	6.74	20.55	0.26	
Side Arm Mount [SO 307-1]	C	From Leg	2.00	0.00	0.0000	515.00	No Ice	4.80	4.80	0.03	
							1/2" Ice	6.83	6.83	0.07	
							1" Ice	8.87	8.87	0.11	
							2" Ice	13.01	13.01	0.25	
							4" Ice	21.03	21.03	0.68	
							No Ice	0.98	2.60	0.05	
							1/2" Ice	1.70	4.50	0.07	
							1" Ice	2.42	6.40	0.09	
							2" Ice	3.86	10.20	0.14	

<b>tnxTower</b>  <b>GPD Group</b> 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 573-2100 FAX: (330) 573-2101	<b>Job</b> Avon (Deercliff Rd.) - BU #: 870800	<b>Page</b> 4 of 31
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	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub>		Weight	
			Horz	Vert			Front	Side		
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
PGINOF-0093-8	C	From Leg	4.00	0.00	0.0000	515.00	4" Ice	6.74	17.80	0.23
							No Ice	2.98	2.98	0.03
							1/2" Ice	4.01	4.01	0.05
							1" Ice	4.99	4.99	0.08
							2" Ice	6.22	6.22	0.15
ANT150F2	A	From Leg	2.00	0.00	0.0000	505.00	4" Ice	8.78	8.78	0.39
							No Ice	1.29	1.29	0.01
							1/2" Ice	1.60	1.60	0.02
							1" Ice	1.91	1.91	0.04
							2" Ice	2.57	2.57	0.07
Side Arm Mount [SO 308-1]	C	From Leg	3.00	0.00	0.0000	500.00	4" Ice	4.06	4.06	0.20
							No Ice	0.98	3.03	0.05
							1/2" Ice	1.70	5.22	0.08
							1" Ice	2.42	7.41	0.10
							2" Ice	3.86	11.79	0.16
101-68-10-0-03N	C	From Leg	6.00	0.00	0.0000	500.00	4" Ice	6.74	20.55	0.26
							No Ice	5.48	5.48	0.07
							1/2" Ice	7.09	7.09	0.11
							1" Ice	8.71	8.71	0.16
							2" Ice	12.00	12.00	0.29
ATW25HS3-HSO-46H	A	From Leg	1.00	0.00	0.0000	490.00	4" Ice	16.02	16.02	0.67
							No Ice	36.16	36.16	0.48
							1/2" Ice	40.42	40.42	0.72
							1" Ice	44.69	44.69	0.98
							2" Ice	53.30	53.30	1.58
Side Arm Mount [SO 308-1]	C	From Leg	3.00	0.00	0.0000	470.00	4" Ice	70.71	70.71	3.12
							No Ice	0.98	3.03	0.05
							1/2" Ice	1.70	5.22	0.08
							1" Ice	2.42	7.41	0.10
							2" Ice	3.86	11.79	0.16
ANT150F6	C	From Leg	6.00	0.00	0.0000	470.00	4" Ice	6.74	20.55	0.26
							No Ice	4.80	4.80	0.03
							1/2" Ice	6.83	6.83	0.07
							1" Ice	8.87	8.87	0.11
							2" Ice	13.01	13.01	0.25
Side Arm Mount [SO 310-1]	C	From Leg	3.00	0.00	0.0000	445.00	4" Ice	21.03	21.03	0.68
							No Ice	2.97	2.99	0.06
							1/2" Ice	4.40	4.58	0.08
							1" Ice	5.83	6.17	0.11
							2" Ice	8.69	9.35	0.17
101-68-10-0-03N	C	From Leg	6.00	0.00	0.0000	445.00	4" Ice	14.41	15.71	0.28
							No Ice	5.48	5.48	0.07
							1/2" Ice	7.09	7.09	0.11
							1" Ice	8.71	8.71	0.16
							2" Ice	12.00	12.00	0.29
Side Arm Mount [SO 308-1]	A	From Leg	2.00	0.00	0.0000	442.00	4" Ice	16.02	16.02	0.67
							No Ice	0.98	3.03	0.05
							1/2" Ice	1.70	5.22	0.08
							1" Ice	2.42	7.41	0.10
							2" Ice	3.86	11.79	0.16
Side Arm Mount [SO 308-1]	B	From Leg	2.00	0.00	0.0000	442.00	4" Ice	6.74	20.55	0.26
							No Ice	0.98	3.03	0.05
							1/2" Ice	1.70	5.22	0.08
							1" Ice	2.42	7.41	0.10
							2" Ice	3.86	11.79	0.16
ANT150F6	A	From Leg	4.00	0.0000	0.0000	442.00	4" Ice	6.74	20.55	0.26
							No Ice	4.80	4.80	0.03

# tnxTower

**GPD Group**  
 520 South Main Street, Suite 2531  
 Akron, OH 44311  
 Phone: (330) 573-2100  
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<b>Client</b>	Crown Castle USA, Inc.	<b>Designed by</b>	jhuffine

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight
			Horz	Lateral	Vert					
			0.00				1/2" Ice	6.83	6.83	0.07
			10.00				1" Ice	8.87	8.87	0.11
							2" Ice	13.01	13.01	0.25
ANT150F6	B	From Leg	4.00	0.0000	442.00		4" Ice	21.03	21.03	0.68
			0.00				No Ice	4.80	4.80	0.03
			10.00				1/2" Ice	6.83	6.83	0.07
							1" Ice	8.87	8.87	0.11
							2" Ice	13.01	13.01	0.25
Side Arm Mount [SO 308-1]	C	From Leg	3.00	0.0000	422.00		4" Ice	21.03	21.03	0.68
			0.00				No Ice	0.98	3.03	0.05
			0.00				1/2" Ice	1.70	5.22	0.08
							1" Ice	2.42	7.41	0.10
							2" Ice	3.86	11.79	0.16
101D-90-06-0-03 w/Mount Pipe	C	From Leg	6.00	0.0000	422.00		4" Ice	6.74	20.55	0.26
			0.00				No Ice	5.83	7.50	0.07
			5.00				1/2" Ice	6.98	9.37	0.12
							1" Ice	8.15	10.97	0.18
							2" Ice	9.61	13.32	0.33
SFCP 800/1850 TMA	C	From Leg	6.00	0.0000	422.00		4" Ice	12.61	18.18	0.82
			0.00				No Ice	1.02	0.29	0.00
			5.00				1/2" Ice	1.16	0.39	0.01
							1" Ice	1.31	0.50	0.02
							2" Ice	1.63	0.74	0.04
Side Arm Mount [SO 304-1]	B	From Leg	1.00	0.0000	395.00		4" Ice	2.37	1.32	0.11
			0.00				No Ice	0.63	0.94	0.02
			0.00				1/2" Ice	1.00	1.45	0.03
							1" Ice	1.37	1.96	0.04
							2" Ice	2.11	2.98	0.06
SC233	B	From Leg	2.00	0.0000	395.00		4" Ice	3.59	5.02	0.09
			0.00				No Ice	1.81	1.81	0.00
			7.00				1/2" Ice	3.04	3.04	0.02
							1" Ice	4.29	4.29	0.04
							2" Ice	6.83	6.83	0.11
Side Arm Mount [SO 306-1]	A	From Leg	1.00	0.0000	330.00		4" Ice	10.12	10.12	0.35
			0.00				No Ice	0.98	2.18	0.04
			0.00				1/2" Ice	1.70	3.80	0.06
							1" Ice	2.42	5.42	0.08
							2" Ice	3.86	8.66	0.12
Side Arm Mount [SO 306-1]	C	From Leg	1.00	0.0000	330.00		4" Ice	6.74	15.14	0.20
			0.00				No Ice	0.98	2.18	0.04
			0.00				1/2" Ice	1.70	3.80	0.06
							1" Ice	2.42	5.42	0.08
							2" Ice	3.86	8.66	0.12
DB636-C	A	From Leg	2.00	0.0000	330.00		4" Ice	6.74	15.14	0.20
			0.00				No Ice	2.51	2.51	0.03
			5.00				1/2" Ice	3.59	3.59	0.05
							1" Ice	4.68	4.68	0.07
							2" Ice	6.30	6.30	0.15
DB636-C	C	From Leg	2.00	0.0000	330.00		4" Ice	8.97	8.97	0.38
			0.00				No Ice	2.51	2.51	0.03
			5.00				1/2" Ice	3.59	3.59	0.05
							1" Ice	4.68	4.68	0.07
							2" Ice	6.30	6.30	0.15
Flash Beacon Lighting	A	From Leg	0.00	0.0000	312.00		4" Ice	8.97	8.97	0.38
			0.00				No Ice	2.70	2.70	0.05
			0.00				1/2" Ice	3.10	3.10	0.07
							1" Ice	3.50	3.50	0.09

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	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K	
Flash Beacon Lighting	B	From Leg	0.00 0.00 0.00	0.0000	312.00	2" Ice	4.30	4.30	0.13
						4" Ice	5.90	5.90	0.21
						No Ice	2.70	2.70	0.05
						1/2" Ice	3.10	3.10	0.07
						1" Ice	3.50	3.50	0.09
Flash Beacon Lighting	C	From Leg	0.00 0.00 0.00	0.0000	312.00	2" Ice	4.30	4.30	0.13
						4" Ice	5.90	5.90	0.21
						No Ice	2.70	2.70	0.05
						1/2" Ice	3.10	3.10	0.07
						1" Ice	3.50	3.50	0.09
Side Arm Mount [SO 306-1]	C	From Leg	1.00 0.00 0.00	0.0000	294.00	2" Ice	4.30	4.30	0.13
						4" Ice	5.90	5.90	0.21
						No Ice	0.98	2.18	0.04
						1/2" Ice	1.70	3.80	0.06
						1" Ice	2.42	5.42	0.08
DB636-C	C	From Leg	2.00 0.00 5.00	0.0000	294.00	2" Ice	3.86	8.66	0.12
						4" Ice	6.74	15.14	0.20
						No Ice	2.51	2.51	0.03
						1/2" Ice	3.59	3.59	0.05
						1" Ice	4.68	4.68	0.07
Side Arm Mount [SO 301-1]	A	From Leg	1.00 0.00 0.00	0.0000	289.00	2" Ice	6.30	6.30	0.15
						4" Ice	8.97	8.97	0.38
						No Ice	1.00	0.90	0.02
						1/2" Ice	1.39	1.42	0.03
						1" Ice	1.78	1.94	0.04
DB636-C	A	From Leg	2.00 0.00 5.00	0.0000	289.00	2" Ice	2.56	2.98	0.06
						4" Ice	4.12	5.06	0.10
						No Ice	2.51	2.51	0.03
						1/2" Ice	3.59	3.59	0.05
						1" Ice	4.68	4.68	0.07
Side Arm Mount [SO 309-1]	C	From Leg	1.00 0.00 0.00	0.0000	289.00	2" Ice	6.30	6.30	0.15
						4" Ice	8.97	8.97	0.38
						No Ice	2.82	2.20	0.04
						1/2" Ice	4.07	3.16	0.06
						1" Ice	5.32	4.12	0.08
Side Arm Mount [SO 306-1]	C	From Leg	1.00 0.00 0.00	0.0000	271.00	2" Ice	7.82	6.04	0.13
						4" Ice	12.82	9.88	0.22
						No Ice	0.98	2.18	0.04
						1/2" Ice	1.70	3.80	0.06
						1" Ice	2.42	5.42	0.08
DB636-C	C	From Leg	2.00 0.00 5.00	0.0000	271.00	2" Ice	3.86	8.66	0.12
						4" Ice	6.74	15.14	0.20
						No Ice	2.51	2.51	0.03
						1/2" Ice	3.59	3.59	0.05
						1" Ice	4.68	4.68	0.07
Side Arm Mount [SO 306-1]	A	From Leg	2.00 0.00 0.00	0.0000	254.00	2" Ice	6.30	6.30	0.15
						4" Ice	8.97	8.97	0.38
						No Ice	0.98	2.18	0.04
						1/2" Ice	1.70	3.80	0.06
						1" Ice	2.42	5.42	0.08
DB810M-XC	A	From Leg	4.00 0.00 5.00	0.0000	254.00	2" Ice	3.86	8.66	0.12
						4" Ice	6.74	15.14	0.20
						No Ice	2.12	2.12	0.03
						1/2" Ice	3.14	3.14	0.05
						1" Ice	4.18	4.18	0.07
						2" Ice	5.77	5.77	0.13
						4" Ice	8.32	8.32	0.35

<b>tnxTower</b>  <b>GPD Group</b> 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 573-2100 FAX: (330) 573-2101	<b>Job</b>		Avon (Deercliff Rd.) - BU #: 870800		<b>Page</b>		7 of 31	
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	<b>Client</b>		Crown Castle USA, Inc.		<b>Designed by</b>		jhuffine	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>Front</sub>	C <sub>A</sub> A <sub>Side</sub>	Weight
			Horz	Lateral					
			ft	ft			ft <sup>2</sup>	ft <sup>2</sup>	K
Sector Mount [SM 504-1]	B	From Leg	2.00	0.0000	250.00	No Ice	16.44	14.00	0.57
			0.00			1/2" Ice	22.73	20.81	0.76
			0.00			1" Ice	29.02	27.62	0.95
						2" Ice	41.60	41.24	1.34
						4" Ice	66.76	68.48	2.11
Sector Mount [SM 504-1]	C	From Leg	2.00	0.0000	250.00	No Ice	16.44	14.00	0.57
			0.00			1/2" Ice	22.73	20.81	0.76
			0.00			1" Ice	29.02	27.62	0.95
						2" Ice	41.60	41.24	1.34
						4" Ice	66.76	68.48	2.11
(4) 844G65VTZASX w/Mount Pipe	B	From Leg	4.00	0.0000	250.00	No Ice	6.55	5.63	0.04
			0.00			1/2" Ice	7.25	6.73	0.10
			1.00			1" Ice	7.85	7.54	0.16
						2" Ice	9.06	9.21	0.31
						4" Ice	11.64	12.75	0.74
(4) AP859012-42T0 w/Mount Pipe	C	From Leg	4.00	0.0000	250.00	No Ice	3.58	5.40	0.03
			0.00			1/2" Ice	4.20	6.49	0.07
			1.00			1" Ice	4.73	7.30	0.12
						2" Ice	5.86	8.96	0.25
						4" Ice	8.27	12.49	0.61
Sector Mount [SM 401-1]	A	From Leg	2.00	0.0000	237.00	No Ice	8.83	7.05	0.27
			0.00			1/2" Ice	12.37	10.13	0.39
			0.00			1" Ice	15.91	13.21	0.51
						2" Ice	22.99	19.37	0.75
						4" Ice	37.15	31.69	1.23
Sector Mount [SM 401-1]	C	From Leg	2.00	0.0000	237.00	No Ice	8.83	7.05	0.27
			0.00			1/2" Ice	12.37	10.13	0.39
			0.00			1" Ice	15.91	13.21	0.51
						2" Ice	22.99	19.37	0.75
						4" Ice	37.15	31.69	1.23
FR90-16-02DP w/Mount Pipe	A	From Leg	4.00	0.0000	237.00	No Ice	4.91	3.64	0.04
			0.00			1/2" Ice	5.57	4.70	0.08
			1.00			1" Ice	6.14	5.48	0.13
						2" Ice	7.32	7.08	0.25
						4" Ice	9.81	10.47	0.61
FR90-16-02DP w/Mount Pipe	C	From Leg	4.00	0.0000	237.00	No Ice	4.91	3.64	0.04
			0.00			1/2" Ice	5.57	4.70	0.08
			1.00			1" Ice	6.14	5.48	0.13
						2" Ice	7.32	7.08	0.25
						4" Ice	9.81	10.47	0.61
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	A	From Leg	4.00	0.0000	237.00	No Ice	6.84	3.19	0.06
			0.00			1/2" Ice	7.31	3.82	0.10
			1.00			1" Ice	7.78	4.46	0.15
						2" Ice	8.77	5.80	0.28
						4" Ice	10.85	8.73	0.63
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	C	From Leg	4.00	0.0000	237.00	No Ice	6.84	3.19	0.06
			0.00			1/2" Ice	7.31	3.82	0.10
			1.00			1" Ice	7.78	4.46	0.15
						2" Ice	8.77	5.80	0.28
						4" Ice	10.85	8.73	0.63
ATMAA1412D-1A20	A	From Leg	4.00	0.0000	237.00	No Ice	1.17	0.47	0.01
			0.00			1/2" Ice	1.31	0.57	0.02
			1.00			1" Ice	1.47	0.69	0.03
						2" Ice	1.81	0.95	0.06
						4" Ice	2.58	1.57	0.14
ATMAA1412D-1A20	C	From Leg	4.00	0.0000	237.00	No Ice	1.17	0.47	0.01
			0.00			1/2" Ice	1.31	0.57	0.02



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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>A</sub>		Weight	
			Horz	Lateral			Front	Side		
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
Side Arm Mount [SO 202-1]	B	From Leg	1.00	0.00	0.0000	145.00	4" Ice	1.40	1.40	0.01
							No Ice	2.96	2.53	0.11
							1/2" Ice	4.10	3.51	0.13
							1" Ice	5.24	4.49	0.16
Side Arm Mount [SO 301-1]	A	From Leg	2.00	0.00	0.0000	140.00	2" Ice	7.52	6.45	0.20
							4" Ice	12.08	10.37	0.30
							No Ice	1.00	0.90	0.02
							1/2" Ice	1.39	1.42	0.03
Side Arm Mount [SO 601-1]	C	From Leg	2.00	0.00	0.0000	135.00	1" Ice	1.78	1.94	0.04
							2" Ice	2.56	2.98	0.06
							4" Ice	4.12	5.06	0.10
							No Ice	1.22	6.30	0.16
201-8 W/ Pipe Mount	C	From Leg	0.00	0.00	0.0000	116.00	1/2" Ice	1.85	8.61	0.20
							1" Ice	2.48	10.92	0.23
							2" Ice	3.74	15.54	0.31
							4" Ice	6.26	24.78	0.46
Side Arm Mount [SO 309-1]	C	From Leg	1.00	0.00	0.0000	91.00	No Ice	2.72	2.72	0.03
							1/2" Ice	4.28	4.28	0.05
							1" Ice	5.55	5.55	0.09
							2" Ice	7.68	7.68	0.19
ANT150F2	C	From Leg	2.00	0.00	0.0000	91.00	4" Ice	11.65	11.65	0.51
							No Ice	2.82	2.20	0.04
							1/2" Ice	4.07	3.16	0.06
							1" Ice	5.32	4.12	0.08
Acutime 2000	C	From Leg	0.00	0.00	0.0000	76.00	2" Ice	7.82	6.04	0.13
							4" Ice	12.82	9.88	0.22
							No Ice	1.29	1.29	0.01
							1/2" Ice	1.60	1.60	0.02
							1" Ice	1.91	1.91	0.04
							2" Ice	2.57	2.57	0.07
							4" Ice	4.06	4.06	0.20
							No Ice	0.30	0.30	0.00
							1/2" Ice	0.37	0.37	0.00
							1" Ice	0.46	0.46	0.01
							2" Ice	0.65	0.65	0.02
							4" Ice	1.15	1.15	0.08

### Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz	Lateral							
			ft	ft	°	°	ft	ft	ft <sup>2</sup>	K		
SPD2-5.8	C	Paraboloid w/Radome	From Leg	1.97	0.65	10.0000		289.00	2.00	No Ice	3.14	0.02
										1/2" Ice	3.41	0.04
										1" Ice	3.67	0.06
										2" Ice	4.21	0.09
SPD2-5.8	A	Paraboloid w/Radome	From Leg	1.73	1.00	30.0000		140.00	2.04	4" Ice	5.28	0.16
										No Ice	3.27	0.03
										1/2" Ice	3.55	0.05
										1" Ice	3.82	0.03
SPD2-5.8	C	Paraboloid	From	1.97		-10.0000		135.00	2.04	2" Ice	4.37	0.03
										4" Ice	5.46	0.03
										No Ice	3.27	0.03

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Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft <sup>2</sup>	Weight K
		w/Radome	Leg	-0.35 0.00					1/2" Ice 1" Ice 2" Ice 4" Ice	0.05 0.03 0.03 0.03

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	560 - 535	9.797	29	0.1299	0.5568
T2	535 - 510	9.092	29	0.1291	0.5556
T3	510 - 485	8.370	29	0.1235	0.5574
T4	485 - 460	7.720	29	0.1147	0.5622
T5	460 - 435	7.204	29	0.1140	0.6068
T6	435 - 410	6.681	29	0.1180	0.6788
T7	410 - 385	6.007	29	0.1226	0.7334
T8	385 - 360	5.211	29	0.1240	0.7453
T9	360 - 335	4.399	29	0.1184	0.7266
T10	335 - 310	3.669	29	0.1053	0.7313
T11	310 - 285	3.104	29	0.0870	0.7330
T12	285 - 260	2.853	31	0.0735	0.7421
T13	260 - 235	2.748	31	0.0682	0.7903
T14	235 - 210	2.491	31	0.0677	0.7271
T15	210 - 185	2.018	31	0.0668	0.6195
T16	185 - 160	1.526	31	0.0624	0.5428
T17	160 - 135	1.060	31	0.0513	0.5078
T18	135 - 110	0.897	31	0.0397	0.4866
T19	110 - 85	0.861	31	0.0353	0.4497
T20	85 - 60	0.812	31	0.0366	0.3983
T21	60 - 35	0.683	31	0.0409	0.3258
T22	35 - 10	0.441	31	0.0457	0.1930
T23	10 - 0	0.104	30	0.0487	0.0794

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
560.00	4' Lightning Rod	29	9.797	0.1299	0.5568	742320
557.00	Pipe Mount [PM 601-3]	29	9.713	0.1300	0.5565	742320
545.00	Platform w/ Handrail	29	9.377	0.1298	0.5556	247436
518.00	Side Arm Mount [SO 308-1]	29	8.599	0.1259	0.5572	188511
515.00	Side Arm Mount [SO 307-1]	29	8.512	0.1251	0.5574	134598
505.00	ANT150F2	29	8.230	0.1216	0.5572	68400
500.00	Side Arm Mount [SO 308-1]	29	8.095	0.1197	0.5570	54737
491.29	Guy	29	7.870	0.1165	0.5584	40610
490.00	ATW25HS3-HSO-46H	29	7.838	0.1160	0.5590	39113
470.00	Side Arm Mount [SO 308-1]	29	7.401	0.1133	0.5838	82195
445.00	Side Arm Mount [SO 310-1]	29	6.903	0.1161	0.6496	57825
442.00	Side Arm Mount [SO 308-1]	29	6.839	0.1167	0.6585	48101
422.00	Side Arm Mount [SO 308-1]	29	6.350	0.1205	0.7117	40566
395.00	Side Arm Mount [SO 304-1]	29	5.537	0.1241	0.7457	86254

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
330.00	Side Arm Mount [SO 306-1]	29	3.537	0.1017	0.7320	41219
316.29	Guy	29	3.220	0.0915	0.7332	22065
312.00	Flash Beacon Lighting	29	3.138	0.0884	0.7331	19426
294.00	Side Arm Mount [SO 306-1]	29	2.907	0.0774	0.7316	32778
289.00	SPD2-5.8	31	2.873	0.0751	0.7328	42285
271.00	Side Arm Mount [SO 306-1]	31	2.799	0.0697	0.7773	142017
254.00	Side Arm Mount [SO 306-1]	31	2.707	0.0679	0.7857	36060
250.00	Sector Mount [SM 504-1]	31	2.673	0.0677	0.7781	33096
237.00	Sector Mount [SM 401-1]	31	2.521	0.0677	0.7354	24350
219.00	Side Arm Mount [SO 307-1]	31	2.200	0.0674	0.6564	87181
214.00	742-213 w/Mount Pipe	31	2.099	0.0671	0.6352	303201
177.00	Side Arm Mount [SO 308-1]	31	1.360	0.0594	0.5270	84676
157.00	Side Light	31	1.023	0.0497	0.5050	18182
153.71	Guy	31	0.990	0.0480	0.5023	20594
145.00	Side Arm Mount [SO 202-1]	31	0.931	0.0438	0.4955	32397
140.00	SPD2-5.8	31	0.911	0.0416	0.4914	47954
135.00	SPD2-5.8	31	0.897	0.0397	0.4866	80242
116.00	201-8 W/ Pipe Mount	31	0.867	0.0357	0.4603	591499
91.00	Side Arm Mount [SO 309-1]	31	0.829	0.0359	0.4112	92688
76.00	Acutime 2000	31	0.776	0.0379	0.3779	71588

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	560 - 535	46.356	6	0.6747	1.0150
T2	535 - 510	42.761	6	0.6716	1.0124
T3	510 - 485	39.116	6	0.6550	1.0237
T4	485 - 460	35.666	6	0.6290	1.0428
T5	460 - 435	32.568	6	0.6226	1.1514
T6	435 - 410	29.418	6	0.6253	1.3334
T7	410 - 385	25.935	6	0.6257	1.4669
T8	385 - 360	22.210	6	0.6120	1.5498
T9	360 - 335	18.569	6	0.5737	1.5704
T10	335 - 310	15.284	6	0.5154	1.5644
T11	310 - 285	12.576	6	0.4441	1.5638
T12	285 - 260	10.825	6	0.3797	1.6064
T13	260 - 235	9.556	6	0.3386	1.6744
T14	235 - 210	8.106	6	0.3114	1.5630
T15	210 - 185	6.313	6	0.2839	1.3282
T16	185 - 160	4.590	6	0.2480	1.1980
T17	160 - 135	3.049	6	0.1977	1.0977
T18	135 - 110	2.334	6	0.1480	1.0551
T19	110 - 85	2.028	6	0.1183	0.9867
T20	85 - 60	1.788	6	0.1070	0.8756
T21	60 - 35	1.457	4	0.1075	0.7281
T22	35 - 10	0.955	2	0.1131	0.4897
T23	10 - 0	0.250	6	0.1179	0.2338

### Critical Deflections and Radius of Curvature - Design Wind

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
ft						
560.00	4' Lightning Rod	6	46.356	0.6747	1.0150	297271
557.00	Pipe Mount [PM 601-3]	6	45.927	0.6747	1.0141	297271
545.00	Platform w/ Handrail	6	44.207	0.6739	1.0117	99090
518.00	Side Arm Mount [SO 308-1]	6	40.277	0.6622	1.0203	76333
515.00	Side Arm Mount [SO 307-1]	6	39.840	0.6597	1.0218	54405
505.00	ANT150F2	6	38.401	0.6496	1.0250	28206
500.00	Side Arm Mount [SO 308-1]	6	37.695	0.6439	1.0265	22870
491.29	Guy	6	36.499	0.6344	1.0327	17202
490.00	ATW25HS3-HSO-46H	6	36.326	0.6332	1.0343	16592
470.00	Side Arm Mount [SO 308-1]	6	33.785	0.6229	1.0950	46265
445.00	Side Arm Mount [SO 310-1]	6	30.710	0.6240	1.2603	25879
442.00	Side Arm Mount [SO 308-1]	6	30.328	0.6244	1.2829	22634
422.00	Side Arm Mount [SO 308-1]	6	27.650	0.6265	1.4100	20394
395.00	Side Arm Mount [SO 304-1]	6	23.710	0.6201	1.5255	61539
330.00	Side Arm Mount [SO 306-1]	6	14.681	0.5017	1.5629	12097
316.29	Guy	6	13.173	0.4623	1.5617	7347
312.00	Flash Beacon Lighting	6	12.758	0.4498	1.5629	6602
294.00	Side Arm Mount [SO 306-1]	6	11.362	0.4007	1.5825	9826
289.00	SPD2-5.8	6	11.054	0.3886	1.5942	11995
271.00	Side Arm Mount [SO 306-1]	6	10.103	0.3541	1.6579	89960
254.00	Side Arm Mount [SO 306-1]	6	9.242	0.3314	1.6620	18027
250.00	Sector Mount [SM 504-1]	6	9.022	0.3270	1.6502	16768
237.00	Sector Mount [SM 401-1]	6	8.238	0.3134	1.5788	12972
219.00	Side Arm Mount [SO 307-1]	6	6.969	0.2944	1.4117	61498
214.00	742-213 w/Mount Pipe	6	6.603	0.2887	1.3637	53420
177.00	Side Arm Mount [SO 308-1]	6	4.046	0.2332	1.1647	23476
157.00	Side Light	6	2.918	0.1913	1.0897	6974
153.71	Guy	6	2.792	0.1843	1.0827	7782
145.00	Side Arm Mount [SO 202-1]	6	2.534	0.1663	1.0691	11428
140.00	SPD2-5.8	6	2.425	0.1568	1.0625	15635
135.00	SPD2-5.8	6	2.334	0.1480	1.0551	23136
116.00	201-8 W/ Pipe Mount	6	2.087	0.1235	1.0078	66853
91.00	Side Arm Mount [SO 309-1]	6	1.850	0.1084	0.9045	54705
76.00	Acutime 2000	6	1.684	0.1061	0.8301	41500

### Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	560	Leg	A325N	0.6250	6	1.10	13.48	0.082 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	1.68	9.28	0.181 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	1.16	18.56	0.062 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.7500	2	0.18	18.56	0.010 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	0.72	18.56	0.039 ✓	1.333	Bolt Shear
T2	535	Leg	A325N	0.6250	6	4.22	13.45	0.313 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	3.02	9.28	0.326 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	2.18	18.56	0.118 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.7500	2	0.73	18.56	0.040 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	1.27	18.56	0.068 ✓	1.333	Bolt Shear

**tnxTower**

**GPD Group**  
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**Client** Crown Castle USA, Inc.

**Designed by**  
jhuffine

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T3	510	Leg	A325N	0.6250	6	0.00	13.43	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	4.08	9.28	0.440 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	4.56	13.96	0.326 ✓	1.333	Member Block Shear
		Top Girt	A325N	0.7500	2	1.29	18.56	0.069 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	1.54	18.56	0.083 ✓	1.333	Bolt Shear
T4	485	Leg	A325N	0.6250	6	0.00	13.47	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.8750	2	3.94	12.63	0.312 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.8750	2	2.96	25.26	0.117 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.8750	2	1.61	25.26	0.064 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.8750	2	1.23	25.26	0.049 ✓	1.333	Bolt Shear
T5	460	Leg	A325N	0.6250	6	0.00	13.50	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	2.16	9.28	0.233 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	1.61	18.56	0.087 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.7500	2	0.75	18.56	0.041 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	0.40	18.56	0.021 ✓	1.333	Bolt Shear
T6	435	Leg	A325N	0.6250	6	0.00	13.47	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	2.21	4.12	0.535 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.5000	2	1.58	8.25	0.192 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	0.41	8.25	0.050 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.5000	2	0.93	8.25	0.113 ✓	1.333	Bolt Shear
T7	410	Leg	A325N	0.6250	6	0.00	13.40	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	3.45	4.12	0.838 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.5000	2	2.59	8.25	0.314 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	0.95	8.25	0.115 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.5000	2	1.47	8.25	0.178 ✓	1.333	Bolt Shear
T8	385	Leg	A325N	0.6250	6	1.08	13.32	0.081 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	2	4.69	6.44	0.727 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.5000	2	3.60	8.25	0.437 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.48	8.25	0.179 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.5000	2	1.52	8.25	0.184 ✓	1.333	Bolt Shear
T9	360	Leg	A325N	1.0000	6	8.24	34.48	0.239 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	2	6.31	6.44	0.979 ✓	1.333	Bolt Shear
		Horizontal	SAEGR-8	0.5000	2	4.81	15.71	0.306 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	2.49	8.25	0.302 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.5000	2	2.66	8.25	0.322 ✓	1.333	Bolt Shear
T10	335	Leg	A325N	1.0000	6	3.94	34.48	0.114 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	7.32	9.28	0.789 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	6.70	13.96	0.480 ✓	1.333	Member Block Shear
		Top Girt	A325N	0.7500	2	2.69	18.56	0.145 ✓	1.333	Bolt Shear

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T11	310	Bottom Girt	A325N	0.7500	2	2.42	18.56			
		Leg	A325N	0.6250	6	0.00	13.36	0.130	✓	1.333 Bolt Shear
		Diagonal	A325N	1.0000	2	6.40	16.49	0.000	✓	1.333 Bolt Tension
		Horizontal	A325N	1.0000	2	4.90	32.99	0.388	✓	1.333 Bolt Shear
		Top Girt	A325N	1.0000	2	2.56	32.99	0.149	✓	1.333 Bolt Shear
T12	285	Bottom Girt	A325N	1.0000	2	2.36	32.99	0.077	✓	1.333 Bolt Shear
		Leg	A325N	0.6250	6	0.00	32.99	0.072	✓	1.333 Bolt Shear
		Diagonal	A325N	0.5000	2	4.41	13.43	0.000	✓	1.333 Bolt Tension
		Horizontal	A325N	0.5000	2	3.42	4.12	1.071	✓	1.333 Bolt Shear
		Top Girt	A325N	0.5000	2	1.62	8.25	0.415	✓	1.333 Bolt Shear
T13	260	Bottom Girt	A325N	0.5000	2	1.29	8.25	0.197	✓	1.333 Bolt Shear
		Leg	A325N	0.6250	6	0.00	13.50	0.157	✓	1.333 Bolt Shear
		Diagonal	A325N	0.5000	2	3.02	4.12	0.000	✓	1.333 Bolt Tension
		Horizontal	A325N	0.5000	2	1.93	8.25	0.733	✓	1.333 Bolt Shear
		Top Girt	A325N	0.5000	2	1.28	8.25	0.234	✓	1.333 Bolt Shear
T14	235	Bottom Girt	A325N	0.5000	2	0.37	8.25	0.155	✓	1.333 Bolt Shear
		Leg	A325N	0.6250	6	0.00	8.25	0.045	✓	1.333 Bolt Shear
		Diagonal	A325N	0.5000	2	2.63	13.45	0.000	✓	1.333 Bolt Tension
		Horizontal	A325N	0.5000	2	1.86	4.12	0.637	✓	1.333 Bolt Shear
		Top Girt	A325N	0.5000	2	0.36	8.25	0.225	✓	1.333 Bolt Shear
T15	210	Bottom Girt	A325N	0.5000	2	1.22	8.25	0.043	✓	1.333 Bolt Shear
		Leg	A325N	1.0000	6	0.00	8.25	0.148	✓	1.333 Bolt Shear
		Diagonal	A325N	0.5000	2	4.57	34.51	0.000	✓	1.333 Bolt Tension
		Horizontal	A325N	0.5000	2	3.40	4.12	1.109	✓	1.333 Bolt Shear
		Top Girt	A325N	0.5000	2	1.25	8.25	0.413	✓	1.333 Bolt Shear
T16	185	Bottom Girt	A325N	0.5000	2	1.60	8.25	0.152	✓	1.333 Bolt Shear
		Leg	A325N	1.0000	6	0.51	8.25	0.194	✓	1.333 Bolt Shear
		Diagonal	A325N	0.6250	2	6.46	34.49	0.015	✓	1.333 Bolt Tension
		Horizontal	A325N	0.6250	2	6.46	6.44	0.015	✓	1.333 Bolt Tension
		Top Girt	A325N	0.6250	2	4.95	12.89	1.002	✓	1.333 Bolt Shear
T17	160	Bottom Girt	A325N	0.6250	2	2.33	12.89	0.384	✓	1.333 Bolt Shear
		Leg	A325N	1.0000	6	0.00	12.89	0.181	✓	1.333 Bolt Shear
		Diagonal	A325N	0.6250	2	2.58	12.89	0.200	✓	1.333 Bolt Shear
		Horizontal	A325N	0.7500	2	0.00	34.46	0.000	✓	1.333 Bolt Tension
		Top Girt	A325N	0.7500	2	6.41	9.28	0.691	✓	1.333 Bolt Shear
T18	135	Bottom Girt	A325N	0.7500	2	9.46	13.96	0.678	✓	1.333 Member Block Shear
		Leg	A325N	1.0000	6	2.40	18.56	0.129	✓	1.333 Bolt Shear
		Diagonal	A325N	1.0000	2	2.35	18.56	0.127	✓	1.333 Bolt Shear
		Horizontal	A325N	1.0000	2	0.00	34.52	0.000	✓	1.333 Bolt Tension
		Top Girt	A325N	1.0000	2	5.48	16.49	0.332	✓	1.333 Bolt Shear
					4.17	32.99	0.126	✓	1.333 Bolt Shear	

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T19	110	Top Girt	A325N	1.0000	2	2.33	32.99	0.071 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	1.0000	2	1.93	32.99	0.058 ✓	1.333	Bolt Shear
		Leg	A325N	1.0000	6	0.00	34.54	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	4.04	9.28	0.436 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	3.03	18.56	0.163 ✓	1.333	Bolt Shear
T20	85	Top Girt	A325N	0.7500	2	1.53	18.56	0.082 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	1.38	18.56	0.074 ✓	1.333	Bolt Shear
		Leg	A325N	1.0000	6	0.00	34.55	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	2.81	9.28	0.303 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	1.57	9.11	0.172 ✓	1.333	Member Block Shear
T21	60	Top Girt	A325N	0.7500	2	1.05	18.56	0.057 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	0.75	18.56	0.040 ✓	1.333	Bolt Shear
		Leg	A325N	1.0000	6	0.00	34.56	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	1.64	9.28	0.177 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	1.59	9.11	0.175 ✓	1.333	Member Block Shear
T22	35	Top Girt	A325N	0.7500	2	0.73	18.56	0.040 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	0.61	18.56	0.033 ✓	1.333	Bolt Shear
		Leg	A325N	0.6250	6	0.00	12.13	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	2	2.67	9.28	0.287 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	1.59	9.11	0.174 ✓	1.333	Member Block Shear
		Top Girt	A325N	0.7500	2	0.61	18.56	0.033 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.7500	2	4.02	9.11	0.441 ✓	1.333	Member Block Shear

### Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T K	Allowable T <sub>a</sub> K	Required S.F.	Actual S.F.
T3	491.29 (A) (939)	1 1/4 BS	19.20	192.00	59.92	96.00	2.000	3.204 ✓
	491.29 (B) (938)	1 1/4 BS	19.20	192.00	59.28	96.00	2.000	3.239 ✓
	491.29 (C) (934)	1 1/4 BS	19.20	192.00	60.82	96.00	2.000	3.157 ✓
T10	316.29 (A) (945)	1 1/2 BS	27.60	276.00	67.36	138.00	2.000	4.097 ✓
	316.29 (B) (944)	1 1/2 BS	27.60	276.00	66.44	138.00	2.000	4.154 ✓
	316.29 (C) (940)	1 1/2 BS	27.60	276.00	68.54	138.00	2.000	4.027 ✓
T17	153.71 (A)	1 3/4 BS	37.60	376.00	62.01	188.00	2.000	6.063 ✓

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Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T K	Allowable $T_a$ K	Required S.F.	Actual S.F.
	(951)							
	153.71 (B) (950)	1 3/4 BS	37.60	376.00	61.06	188.00	2.000	6.158 ✓
	153.71 (C) (946)	1 3/4 BS	37.60	376.00	63.39	188.00	2.000	5.932 ✓

### Compression Checks

### Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	$L_u$ ft	$Kl/r$	Mast Stability Index	$F_a$ ksi	A in <sup>2</sup>	Actual P K	Allow. $P_a$ K	Ratio $\frac{P}{P_a}$
T1	560 - 535	4	25.00	6.21	74.5 K=1.00	1.00	20.090	12.5664	-11.09	252.45	0.044 ✓
T2	535 - 510	4	25.00	6.21	74.5 K=1.00	1.00	20.090	12.5664	-35.11	252.45	0.139 ✓
T3	510 - 485	4 1/2	25.00	6.21	66.2 K=1.00	1.00	21.627	15.9043	-66.22	343.97	0.193 ✓
T4	485 - 460	4 1/2	25.00	6.21	66.2 K=1.00	1.00	21.627	15.9043	-60.02	343.97	0.174 ✓
T5	460 - 435	4 1/4	25.00	6.21	70.1 K=1.00	1.00	20.916	14.1863	-42.12	296.72	0.142* ✓
T6	435 - 410	4 1/4	25.00	6.21	70.1 K=1.00	1.00	20.916	14.1863	-45.38	296.72	0.153* ✓
T7	410 - 385	4 1/4	25.00	6.21	70.1 K=1.00	1.00	20.916	14.1863	-77.81	296.72	0.262 ✓
T8	385 - 360	4 1/4	25.00	6.21	70.1 K=1.00	1.00	20.916	14.1863	-117.95	296.72	0.398 ✓
T9	360 - 335	4 3/4	25.00	6.21	62.7 K=1.00	1.00	22.245	17.7205	-172.06	394.19	0.436 ✓
T10	335 - 310	5 1/4	25.00	6.21	56.8 K=1.00	1.00	23.262	21.6475	-224.22	503.58	0.445 ✓
T11	310 - 285	4 3/4	25.00	6.21	62.7 K=1.00	1.00	22.245	17.7205	-212.55	394.19	0.539 ✓
T12	285 - 260	4 3/4	25.00	6.21	62.7 K=1.00	1.00	22.245	17.7205	-169.79	394.19	0.431 ✓
T13	260 - 235	4 3/4	25.00	6.21	62.7 K=1.00	1.00	22.245	17.7205	-141.33	394.19	0.359 ✓
T14	235 - 210	4 3/4	25.00	6.21	62.7 K=1.00	1.00	22.245	17.7205	-145.88	394.19	0.370 ✓
T15	210 - 185	5	25.00	6.21	59.6 K=1.00	1.00	22.786	19.6350	-176.49	447.39	0.394 ✓
T16	185 - 160	5 1/4	25.00	6.21	56.8 K=1.00	1.00	23.262	21.6475	-222.34	503.58	0.442 ✓
T17	160 - 135	5 1/2	25.00	6.21	54.2 K=1.00	1.00	23.686	23.7583	-242.59	562.73	0.431 ✓
T18	135 - 110	5 1/4	25.00	6.21	56.8	1.00	23.262	21.6475	-153.99	503.58	0.306* ✓



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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T11	310 - 285	2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7 K=1.00	10.474	2.3800	-9.80	24.93	0.393 ✓
T12	285 - 260	2L 'a' > 43.6968 in - 454 2L2 1/2x2x3/16x3/8	8.00	7.60	117.7 K=0.50	10.605	1.6200	-6.84	17.18	0.398 ✓
T13	260 - 235	2L 'a' > 36.8510 in - 496 2L2 1/2x2x3/16x3/8	8.00	7.60	117.7 K=0.50	10.605	1.6200	-3.86	17.18	0.225 ✓
T14	235 - 210	2L 'a' > 36.8510 in - 540 2L2 1/2x2x3/16x3/8	8.00	7.60	117.7 K=0.50	10.605	1.6200	-3.71	17.18	0.216 ✓
T15	210 - 185	2L 'a' > 36.8510 in - 562 2L2 1/2x2x3/16x3/8	8.00	7.58	117.4 K=0.50	10.651	1.6200	-6.81	17.25	0.394 ✓
T16	185 - 160	2L 'a' > 36.7500 in - 604 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-9.91	25.15	0.394 ✓
T17	160 - 135	2L 'a' > 43.4573 in - 646 2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7 K=1.00	10.612	2.3800	-10.04	25.26	0.397 ✓
T18	135 - 110	2L 'a' > 43.3376 in - 690 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-8.33	25.15	0.331 ✓
T19	110 - 85	2L 'a' > 43.4573 in - 749 2L2x2x1/4x3/8	8.00	7.56	149.0 K=1.00	6.725	1.8800	-6.05	12.64	0.479 ✓
T20	85 - 60	2L 'a' > 43.6986 in - 791 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-4.17	9.87	0.423 ✓
T21	60 - 35	2L 'a' > 43.4629 in - 833 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-2.90	9.87	0.294* ✓
T22	35 - 10	2L 'a' > 43.4629 in - 856 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-2.98	9.87	0.302* ✓
T23	10 - 0	2L 'a' > 43.4629 in - 898 2L3x5x1/2x3/8	3.97	3.53	51.1 K=1.00	18.255	7.5000	-0.16	136.91	0.001 ✓

\* DL controls

### Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T1	560 - 535	2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6 K=1.00	10.335	2.3800	-0.36	24.60	0.015 ✓
T2	535 - 510	2L 'a' > 44.0559 in - 4 2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6 K=1.00	10.335	2.3800	-1.47	24.60	0.060 ✓

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T3	510 - 485	2L 'a' > 44.0559 in - 46 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0 K=1.00	10.427	2.3800	-2.58	24.82	0.104
T4	485 - 460	2L 'a' > 43.8165 in - 90 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0 K=1.00	10.427	2.3800	-3.22	24.82	0.130
T5	460 - 435	2L 'a' > 43.8165 in - 130 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-1.50	9.66	0.156
T6	435 - 410	2L 'a' > 43.9419 in - 172 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-0.82	9.66	0.085
T7	410 - 385	2L 'a' > 43.9419 in - 216 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-1.90	9.66	0.197
T8	385 - 360	2L 'a' > 43.9419 in - 258 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-2.95	9.66	0.306
T9	360 - 335	2L 'a' > 43.9419 in - 300 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7 K=1.00	10.474	2.3800	-4.98	24.93	0.200
T10	335 - 310	2L 'a' > 43.6968 in - 340 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-5.39	25.15	0.214
T11	310 - 285	2L 'a' > 43.4573 in - 382 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7 K=1.00	10.474	2.3800	-5.11	24.93	0.205
T12	285 - 260	2L 'a' > 43.6968 in - 424 2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-3.25	10.46	0.311
T13	260 - 235	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-2.55	10.46	0.244
T14	235 - 210	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-0.72	10.46	0.068
T15	210 - 185	2L2x2 1/2x3/16x3/8	8.00	7.58	151.7 K=1.00	6.492	1.6200	-2.50	10.52	0.238
T16	185 - 160	2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-4.66	25.15	0.185
T17	160 - 135	2L 'a' > 43.4573 in - 634 2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7 K=1.00	10.612	2.3800	-4.80	25.26	0.190
T18	135 - 110	2L 'a' > 43.3376 in - 676 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-4.66	25.15	0.185
T19	110 - 85	2L 'a' > 43.4573 in - 720 2L2x2x1/4x3/8	8.00	7.56	149.0 K=1.00	6.725	1.8800	-3.05	12.64	0.241
T20	85 - 60	2L 'a' > 43.6986 in - 761 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-2.10	9.87	0.213
T21	60 - 35	2L 'a' > 43.4629 in - 803 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-1.47	9.87	0.149
T22	35 - 10	2L 'a' > 43.4629 in - 845 2L2x2x3/16x3/8	8.00	7.56	147.1	6.903	1.4300	-1.23	9.87	0.124

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
					K=1.00					✓
		2L 'a' > 43.4629 in - 886								

### Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T1	560 - 535	2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6 K=1.00	10.335	2.3800	-1.43	24.60	0.058 ✓
T2	535 - 510	2L 'a' > 44.0559 in - 7 2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6 K=1.00	10.335	2.3800	-2.53	24.60	0.103 ✓
T3	510 - 485	2L 'a' > 44.0559 in - 51 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0 K=1.00	10.427	2.3800	-3.07	24.82	0.124 ✓
T4	485 - 460	2L 'a' > 43.8165 in - 91 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0 K=1.00	10.427	2.3800	-2.46	24.82	0.099 ✓
T5	460 - 435	2L 'a' > 43.8165 in - 133 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-0.79	9.66	0.082 ✓
T6	435 - 410	2L 'a' > 43.9419 in - 177 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-1.87	9.66	0.193 ✓
T7	410 - 385	2L 'a' > 43.9419 in - 219 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-2.94	9.66	0.304 ✓
T8	385 - 360	2L 'a' > 43.9419 in - 261 2L2x2x3/16x3/8	8.00	7.65	148.7 K=1.00	6.753	1.4300	-3.03	9.66	0.314 ✓
T9	360 - 335	2L 'a' > 43.9419 in - 303 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7 K=1.00	10.474	2.3800	-5.32	24.93	0.213 ✓
T10	335 - 310	2L 'a' > 43.6968 in - 343 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-4.84	25.15	0.192 ✓
T11	310 - 285	2L 'a' > 43.4573 in - 385 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7 K=1.00	10.474	2.3800	-4.72	24.93	0.189 ✓
T12	285 - 260	2L 'a' > 43.6968 in - 427 2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-2.59	10.46	0.247 ✓
T13	260 - 235	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-0.74	10.46	0.071 ✓
T14	235 - 210	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1 K=1.00	6.456	1.6200	-2.45	10.46	0.234 ✓
T15	210 - 185	2L2x2 1/2x3/16x3/8	8.00	7.58	151.7 K=1.00	6.492	1.6200	-3.21	10.52	0.305 ✓
T16	185 - 160	2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-5.17	25.15	0.205 ✓

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	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T17	160 - 135	2L 'a' > 43.4573 in - 637 2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7 K=1.00	10.612	2.3800	-4.70	25.26	0.186 ✓
T18	135 - 110	2L 'a' > 43.3376 in - 681 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0 K=1.00	10.566	2.3800	-3.86	25.15	0.153 ✓
T19	110 - 85	2L 'a' > 43.4573 in - 722 2L2x2x1/4x3/8	8.00	7.56	149.0 K=1.00	6.725	1.8800	-2.76	12.64	0.218 ✓
T20	85 - 60	2L 'a' > 43.6986 in - 764 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-1.49	9.87	0.151 ✓
T21	60 - 35	2L 'a' > 43.4629 in - 806 2L2x2x3/16x3/8	8.00	7.56	147.1 K=1.00	6.903	1.4300	-1.21	9.87	0.123 ✓
		2L 'a' > 43.4629 in - 847								✓

### Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T3	510 - 485	L2 1/2x2 1/2x1/4	8.00	7.63	119.0 K=1.00	21.600	1.1900	0.00	5.12	0.000*
T10	335 - 310	L2 1/2x2 1/2x1/4	8.00	7.56	118.0 K=1.00	21.600	1.1900	0.00	5.20	0.000*
T17	160 - 135	L2 1/2x2 1/2x1/4	8.00	7.54	117.7 K=1.00	21.600	1.1900	0.00	5.23	0.000*

\* DL controls

### Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	Actual M <sub>x</sub> kip-ft	Actual f <sub>bx</sub> ksi	Allow. F <sub>bx</sub> ksi	Ratio f <sub>bx</sub> F <sub>bx</sub>	Actual M <sub>y</sub> kip-ft	Actual f <sub>by</sub> ksi	Allow. F <sub>by</sub> ksi	Ratio f <sub>by</sub> F <sub>by</sub>
T3	510 - 485	L2 1/2x2 1/2x1/4	-0.07	-1.280	23.760	0.054	-0.07	-2.484	23.760	0.105
T10	335 - 310	L2 1/2x2 1/2x1/4	-0.07	-1.223	23.760	0.051	-0.07	-2.373	23.760	0.100
T17	160 - 135	L2 1/2x2 1/2x1/4	-0.06	-1.130	23.760	0.048	-0.06	-2.193	23.760	0.092

### Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio P P <sub>a</sub>	Ratio f <sub>bx</sub> F <sub>bx</sub>	Ratio f <sub>by</sub> F <sub>by</sub>	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T3	510 - 485	L2 1/2x2 1/2x1/4	0.000	0.054	0.105	0.158 ✓	1.000	H1-3 ✓

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Section No.	Elevation ft	Size	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
			$\frac{P}{P_a}$	$\frac{f_{bx}}{F_{bx}}$	$\frac{f_{by}}{F_{by}}$			
T10	335 - 310	L2 1/2x2 1/2x1/4	0.000	0.051	0.100	0.151*	1.000	H1-3 ✓
T17	160 - 135	L2 1/2x2 1/2x1/4	0.000	0.048	0.092	0.140*	1.000	H1-3 ✓

\* DL controls

### Tension Checks

### Leg Design Data (Tension)

Section No.	Elevation ft	Size	L	L <sub>u</sub>	Kl/r	F <sub>a</sub>	A	Actual P	Allow. P <sub>a</sub>	Ratio P
			ft	ft		ksi	in <sup>2</sup>	K	K	$\frac{P}{P_a}$
T1	560 - 535	4	25.00	6.21	74.5	30.000	12.5664	6.61	376.99	0.018 ✓
T2	535 - 510	4	25.00	6.21	74.5	30.000	12.5664	25.29	376.99	0.067 ✓
T3	510 - 485	4 1/2	25.00	6.21	66.2	30.000	15.9043	38.98	477.13	0.082 ✓
T8	385 - 360	4 1/4	25.00	6.21	70.1	30.000	14.1863	6.48	425.59	0.015 ✓
T9	360 - 335	4 3/4	25.00	6.21	62.7	30.000	17.7205	49.43	531.62	0.093 ✓
T10	335 - 310	5 1/4	25.00	6.21	56.8	30.000	21.6475	75.93	649.43	0.117 ✓
T11	310 - 285	4 3/4	25.00	6.21	62.7	30.000	17.7205	23.65	531.62	0.044 ✓
T16	185 - 160	5 1/4	25.00	6.21	56.8	30.000	21.6475	3.07	649.43	0.005 ✓
T17	160 - 135	5 1/2	25.00	6.21	54.2	30.000	23.7583	3.07	712.75	0.004 ✓

### Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L	L <sub>u</sub>	Kl/r	F <sub>a</sub>	A	Actual P	Allow. P <sub>a</sub>	Ratio P
			ft	ft		ksi	in <sup>2</sup>	K	K	$\frac{P}{P_a}$
T1	560 - 535	1	10.13	9.70	465.8	21.600	0.7854	3.37	16.96	0.198 ✓
T2	535 - 510	1	10.13	9.70	465.8	21.600	0.7854	6.04	16.96	0.356 ✓
T3	510 - 485	1 1/4	10.13	9.65	370.6	21.600	1.2272	8.17	26.51	0.308 ✓
T4	485 - 460	1	10.13	9.65	463.3	21.600	0.7854	7.88	16.96	0.464 ✓
T5	460 - 435	5/8	10.13	9.68	743.3	21.600	0.3068	4.32	6.63	0.652 ✓



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Section No.	Elevation ft	Size	L ft	L <sub>a</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T4	485 - 460	2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0	29.000	1.4100	1.04	40.89	0.025 ✓
T5	460 - 435	2L 'a' > 43.8165 in - 142 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8264	0.73	23.97	0.030* ✓
T6	435 - 410	2L 'a' > 43.9419 in - 185 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.79	26.00	0.030* ✓
T7	410 - 385	2L 'a' > 43.9419 in - 228 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	1.35	26.00	0.052 ✓
T8	385 - 360	2L 'a' > 43.9419 in - 268 2L2x2x1/4x3/8	8.00	7.65	150.7	29.000	1.1756	2.04	34.09	0.060 ✓
T9	360 - 335	2L 'a' > 44.1801 in - 312 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7	29.000	1.5506	2.98	44.97	0.066 ✓
T10	335 - 310	2L 'a' > 43.6968 in - 352 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.4569	13.41	42.25	0.317 ✓
T11	310 - 285	2L 'a' > 43.4573 in - 396 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7	29.000	1.3631	3.68	39.53	0.093 ✓
T12	285 - 260	2L 'a' > 43.6968 in - 454 2L2 1/2x2x3/16x3/8	8.00	7.60	115.1	29.000	1.0392	2.94	30.14	0.098 ✓
T13	260 - 235	2L 'a' > 36.8510 in - 478 2L2 1/2x2x3/16x3/8	8.00	7.60	115.1	29.000	1.0392	2.45	30.14	0.081 ✓
T14	235 - 210	2L 'a' > 36.8510 in - 520 2L2 1/2x2x3/16x3/8	8.00	7.60	115.1	29.000	1.0392	2.53	30.14	0.084 ✓
T15	210 - 185	2L 'a' > 36.8510 in - 562 2L2 1/2x2x3/16x3/8	8.00	7.58	114.8	29.000	1.0392	3.06	30.14	0.101 ✓
T16	185 - 160	2L 'a' > 36.7500 in - 604 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.5037	3.85	43.61	0.088 ✓
T17	160 - 135	2L 'a' > 43.4573 in - 646 2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7	29.000	1.4569	16.88	42.25	0.400* ✓
T18	135 - 110	2L 'a' > 43.3376 in - 707 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.3631	2.67	39.53	0.067* ✓
T19	110 - 85	2L 'a' > 43.4573 in - 730 2L2x2x1/4x3/8	8.00	7.56	149.0	29.000	1.0819	2.75	31.37	0.088* ✓
T20	85 - 60	2L 'a' > 43.6986 in - 772 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	2.83	23.97	0.118* ✓
T21	60 - 35	2L 'a' > 43.4629 in - 814 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	2.90	23.97	0.121* ✓
T22	35 - 10	2L 'a' > 43.4629 in - 856 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	2.98	23.97	0.124* ✓

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T23	10 - 0	2L 'a' > 43.4629 in - 898 2L3x5x1/2x3/8	7.93	7.50	108.5	21.600	7.5000	37.98	162.00	0.234 <sup>**</sup>

\* DL controls

### Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T1	560 - 535	2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6	29.000	1.4569	0.14	42.25	0.003
T2	535 - 510	2L 'a' > 44.0559 in - 5 2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6	29.000	1.4569	0.08	42.25	0.002
T3	510 - 485	2L 'a' > 44.0559 in - 48 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0	29.000	1.4569	0.06	42.25	0.001
T5	460 - 435	2L 'a' > 43.8165 in - 88 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8264	0.02	23.97	0.001
T6	435 - 410	2L 'a' > 43.9419 in - 172 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.05	26.00	0.002
T7	410 - 385	2L 'a' > 43.9419 in - 214 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.04	26.00	0.002
T8	385 - 360	2L 'a' > 43.9419 in - 258 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.17	26.00	0.006
T9	360 - 335	2L 'a' > 43.9419 in - 300 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7	29.000	1.5506	0.26	44.97	0.006
T10	335 - 310	2L 'a' > 43.6968 in - 340 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.4569	0.17	42.25	0.004
T12	285 - 260	2L 'a' > 43.4573 in - 382 2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.03	30.14	0.001
T13	260 - 235	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.01	30.14	0.000
T14	235 - 210	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.09	30.14	0.003
T15	210 - 185	2L2x2 1/2x3/16x3/8	8.00	7.58	151.7	29.000	1.0392	0.07	30.14	0.002
T16	185 - 160	2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.5037	0.10	43.61	0.002
T17	160 - 135	2L 'a' > 43.4573 in - 634 2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7	29.000	1.4569	0.16	42.25	0.004 <sup>**</sup>

<b>tnxTower</b>  <b>GPD Group</b> 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 573-2100 FAX: (330) 573-2101	<b>Job</b> Avon (Deercliff Rd.) - BU #: 870800	<b>Page</b> 26 of 31
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	<b>Client</b> Crown Castle USA, Inc.	<b>Designed by</b> jhuffine

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T18	135 - 110	2L 'a' > 43.3376 in - 676 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.3631	0.12	39.53	0.003 ✓
T19	110 - 85	2L 'a' > 43.4573 in - 720 2L2x2x1/4x3/8	8.00	7.56	149.0	29.000	1.0819	0.10	31.37	0.003 ✓
T20	85 - 60	2L 'a' > 43.6986 in - 760 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	0.05	23.97	0.002 ✓
T21	60 - 35	2L 'a' > 43.4629 in - 802 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	0.05	23.97	0.002 ✓
T22	35 - 10	2L 'a' > 43.4629 in - 844 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	0.08	23.97	0.003 ✓
		2L 'a' > 43.4629 in - 886								✓

\* DL controls

### Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T1	560 - 535	2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6	29.000	1.4569	0.00	42.25	0.000 ✓
T2	535 - 510	2L 'a' > 44.0559 in - 9 2L2 1/2x2 1/2x1/4x3/8	8.00	7.67	119.6	29.000	1.4569	0.00	42.25	0.000 ✓
T3	510 - 485	2L 'a' > 44.0559 in - 49 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0	29.000	1.4569	0.10	42.25	0.002 ✓
T4	485 - 460	2L 'a' > 43.8165 in - 91 2L2 1/2x2 1/2x1/4x3/8	8.00	7.63	119.0	29.000	1.4100	0.10	40.89	0.002 ✓
T5	460 - 435	2L 'a' > 43.8165 in - 133 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8264	0.05	23.97	0.002 ✓
T6	435 - 410	2L 'a' > 43.9419 in - 175 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.03	26.00	0.001 ✓
T7	410 - 385	2L 'a' > 43.9419 in - 219 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.08	26.00	0.003 ✓
T8	385 - 360	2L 'a' > 43.9419 in - 261 2L2x2x3/16x3/8	8.00	7.65	148.7	29.000	0.8967	0.03	26.00	0.001 ✓
T9	360 - 335	2L 'a' > 43.9419 in - 301 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7	29.000	1.5506	0.00	44.97	0.000 ✓

<b>tnxTower</b>  <b>GPD Group</b> 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 573-2100 FAX: (330) 573-2101	<b>Job</b>	Avon (Deercliff Rd.) - BU #: 870800	<b>Page</b>	27 of 31
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	<b>Client</b>	Crown Castle USA, Inc.	<b>Designed by</b>	jhuffine

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T10	335 - 310	2L 'a' > 43.6968 in - 343 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.4569	0.13	42.25	0.003*
T11	310 - 285	2L 'a' > 43.4573 in - 386 2L2 1/2x2 1/2x1/4x3/8	8.00	7.60	118.7	29.000	1.3631	0.18	39.53	0.004 ✓
T12	285 - 260	2L 'a' > 43.6968 in - 427 2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.03	30.14	0.001 ✓
T13	260 - 235	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.08	30.14	0.003 ✓
T14	235 - 210	2L2x2 1/2x3/16x3/8	8.00	7.60	152.1	29.000	1.0392	0.04	30.14	0.001 ✓
T15	210 - 185	2L2x2 1/2x3/16x3/8	8.00	7.58	151.7	29.000	1.0392	0.00	30.14	0.000 ✓
T17	160 - 135	2L2 1/2x2 1/2x1/4x3/8	8.00	7.54	117.7	29.000	1.4569	0.26	42.25	0.006 ✓
T18	135 - 110	2L 'a' > 43.3376 in - 681 2L2 1/2x2 1/2x1/4x3/8	8.00	7.56	118.0	29.000	1.3631	0.21	39.53	0.005 ✓
T19	110 - 85	2L 'a' > 43.4573 in - 721 2L2x2x1/4x3/8	8.00	7.56	149.0	29.000	1.0819	0.09	31.37	0.003 ✓
T20	85 - 60	2L 'a' > 43.6986 in - 763 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	0.06	23.97	0.002 ✓
T21	60 - 35	2L 'a' > 43.4629 in - 805 2L2x2x3/16x3/8	8.00	7.56	147.1	29.000	0.8264	0.08	23.97	0.003 ✓
T22	35 - 10	2L 'a' > 43.4629 in - 847 2L2x2x3/16x3/8  2L 'a' > 43.4629 in - 890	8.00	7.56	147.1	29.000	0.8264	7.85	23.97	0.327* ✓

\* DL controls

### Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P K	Allow. P <sub>a</sub> K	Ratio P P <sub>a</sub>
T3	510 - 485	L2 1/2x2 1/2x1/4	8.00	7.63	119.0	21.600	1.1900	2.16	25.70	0.084*
T10	335 - 310	L2 1/2x2 1/2x1/4	8.00	7.56	118.0	21.600	1.1900	4.35	25.70	0.169*
T17	160 - 135	L2 1/2x2 1/2x1/4	8.00	7.54	117.7	21.600	1.1900	8.44	25.70	0.328*

\* DL controls

### Top Guy Pull-Off Bending Design Data

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Section No.	Elevation ft	Size	Actual $M_x$ kip-ft	Actual $f_{bx}$ ksi	Allow. $F_{bx}$ ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual $M_y$ kip-ft	Actual $f_{by}$ ksi	Allow. $F_{by}$ ksi	Ratio $\frac{f_{by}}{F_{by}}$
T3	510 - 485	L2 1/2x2 1/2x1/4	-0.07	1.280	23.760	0.054	-0.07	2.509	23.760	0.106
T10	335 - 310	L2 1/2x2 1/2x1/4	-0.07	1.223	23.760	0.051	-0.07	2.397	23.760	0.101
T17	160 - 135	L2 1/2x2 1/2x1/4	-0.06	1.130	23.760	0.048	-0.06	2.215	23.760	0.093

### Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $P$ $P_a$	Ratio $f_{bx}$ $F_{bx}$	Ratio $f_{by}$ $F_{by}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T3	510 - 485	L2 1/2x2 1/2x1/4	0.084	0.054	0.106	0.243* ✓	1.000	H2-1 ✓
T10	335 - 310	L2 1/2x2 1/2x1/4	0.169	0.051	0.101	0.320* ✓	1.000	H2-1 ✓
T17	160 - 135	L2 1/2x2 1/2x1/4	0.328	0.048	0.093	0.468* ✓	1.000	H2-1 ✓

\* DL controls

### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	$P$ K	$SF * P_{allow}$ K	% Capacity	Pass Fail
T1	560 - 535	Leg	4	1	-11.09	336.52	3.3	Pass
T2	535 - 510	Leg	4	43	-35.11	336.52	6.1 (b) 10.4 23.5 (b)	Pass
T3	510 - 485	Leg	4 1/2	85	-66.22	458.51	14.4	Pass
T4	485 - 460	Leg	4 1/2	127	-60.02	458.51	13.1	Pass
T5	460 - 435	Leg	4 1/4	171	-42.12	296.72	14.2	Pass
T6	435 - 410	Leg	4 1/4	213	-45.38	296.72	15.3	Pass
T7	410 - 385	Leg	4 1/4	253	-77.81	395.53	19.7	Pass
T8	385 - 360	Leg	4 1/4	295	-117.95	395.53	29.8	Pass
T9	360 - 335	Leg	4 3/4	337	-172.06	525.46	32.7	Pass
T10	335 - 310	Leg	5 1/4	379	-224.22	671.27	33.4	Pass
T11	310 - 285	Leg	4 3/4	422	-212.55	525.46	40.5	Pass
T12	285 - 260	Leg	4 3/4	464	-169.79	525.46	32.3	Pass
T13	260 - 235	Leg	4 3/4	506	-141.33	525.46	26.9	Pass
T14	235 - 210	Leg	4 3/4	548	-145.88	525.46	27.8	Pass
T15	210 - 185	Leg	5	590	-176.49	596.38	29.6	Pass
T16	185 - 160	Leg	5 1/4	632	-222.34	671.27	33.1	Pass
T17	160 - 135	Leg	5 1/2	674	-242.59	750.12	32.3	Pass
T18	135 - 110	Leg	5 1/4	715	-153.99	503.58	30.6	Pass
T19	110 - 85	Leg	5 1/4	757	-158.83	503.58	31.5	Pass
T20	85 - 60	Leg	5 1/4	799	-163.25	503.58	32.4	Pass
T21	60 - 35	Leg	5 1/4	841	-167.59	503.58	33.3	Pass
T22	35 - 10	Leg	5 1/4	883	-172.08	503.58	34.2	Pass
T23	10 - 0	Leg	5 1/4	925	-191.07	527.35	36.2	Pass
T1	560 - 535	Diagonal	1	10	3.37	22.61	14.9	Pass
T2	535 - 510	Diagonal	1	57	6.04	22.61	26.7	Pass
T3	510 - 485	Diagonal	1 1/4	94	8.17	35.33	23.1	Pass
T4	485 - 460	Diagonal	1	163	7.88	22.61	33.0 (b) 34.8	Pass

# tnxTower

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<b>Client</b>	Crown Castle USA, Inc.	<b>Designed by</b>	jhuffine

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P <sub>allow</sub> K	% Capacity	Pass Fail
T5	460 - 435	Diagonal	5/8	205	4.32	8.83	48.9	Pass
T6	435 - 410	Diagonal	5/8	225	4.41	8.83	49.9	Pass
T7	410 - 385	Diagonal	5/8	267	6.91	8.83	78.2	Pass
T8	385 - 360	Diagonal	3/4	309	9.37	12.72	73.7	Pass
T9	360 - 335	Diagonal	1	346	12.62	22.61	55.8	Pass
T10	335 - 310	Diagonal	1 1/4	406	14.64	35.33	73.5 (b)	Pass
T11	310 - 285	Diagonal	1	457	12.80	22.61	41.4	Pass
T12	285 - 260	Diagonal	5/8	499	8.83	8.83	59.2 (b)	Pass
T13	260 - 235	Diagonal	5/8	541	6.05	8.83	56.6	Pass
T14	235 - 210	Diagonal	5/8	556	5.25	8.83	99.9	Pass
T15	210 - 185	Diagonal	7/8	598	9.14	17.31	68.5	Pass
T16	185 - 160	Diagonal	1	640	12.91	22.61	52.8	Pass
T17	160 - 135	Diagonal	1 1/4	695	12.83	35.33	83.2 (b)	Pass
T18	135 - 110	Diagonal	1	753	10.95	22.61	57.1	Pass
T19	110 - 85	Diagonal	7/8	795	8.08	17.31	75.2 (b)	Pass
T20	85 - 60	Diagonal	7/8	837	5.63	17.31	36.3	Pass
T21	60 - 35	Diagonal	7/8	879	3.28	17.31	51.9 (b)	Pass
T22	35 - 10	Diagonal	7/8	893	5.33	17.31	48.4	Pass
T1	560 - 535	Horizontal	2L2 1/2x2 1/2x1/4x3/8	16	-2.31	32.79	46.7	Pass
T2	535 - 510	Horizontal	2L2 1/2x2 1/2x1/4x3/8	59	-4.37	32.79	32.5	Pass
T3	510 - 485	Horizontal	2L2 1/2x2 1/2x1/4x3/8	111	-6.08	33.08	18.9	Pass
T4	485 - 460	Horizontal	2L2 1/2x2 1/2x1/4x3/8	160	-5.91	33.08	30.8	Pass
T5	460 - 435	Horizontal	2L2x2x3/16x3/8	202	-3.22	12.87	24.5 (b)	Pass
T6	435 - 410	Horizontal	2L2x2x3/16x3/8	228	-3.16	12.87	17.9	Pass
T7	410 - 385	Horizontal	2L2x2x3/16x3/8	270	-5.18	12.87	25.0	Pass
T8	385 - 360	Horizontal	2L2x2x3/16x3/8	312	-7.20	16.49	24.5	Pass
T9	360 - 335	Horizontal	2L2 1/2x2 1/2x1/4x3/8	352	-9.63	33.23	40.2	Pass
T10	335 - 310	Horizontal	2L2 1/2x2 1/2x1/4x3/8	412	-11.38	33.52	43.7	Pass
T11	310 - 285	Horizontal	2L2 1/2x2 1/2x1/4x3/8	454	-9.80	33.23	29.0	Pass
T12	285 - 260	Horizontal	2L2 1/2x2x3/16x3/8	496	-6.84	22.90	34.0	Pass
T13	260 - 235	Horizontal	2L2 1/2x2x3/16x3/8	540	-3.86	22.90	36.0 (b)	Pass
T14	235 - 210	Horizontal	2L2 1/2x2x3/16x3/8	562	-3.71	22.90	29.5	Pass
T15	210 - 185	Horizontal	2L2 1/2x2x3/16x3/8	604	-6.81	23.00	29.9	Pass
T16	185 - 160	Horizontal	2L2 1/2x2 1/2x1/4x3/8	646	-9.91	33.52	16.9 (b)	Pass
T17	160 - 135	Horizontal	2L2 1/2x2 1/2x1/4x3/8	707	16.88	42.25	17.6 (b)	Pass
T18	135 - 110	Horizontal	2L2 1/2x2 1/2x1/4x3/8	749	-8.33	33.52	16.2	Pass
T19	110 - 85	Horizontal	2L2x2x1/4x3/8	791	-6.05	16.85	16.9 (b)	Pass
T20	85 - 60	Horizontal	2L2x2x3/16x3/8	833	-4.17	13.16	29.6	Pass
T21	60 - 35	Horizontal	2L2x2x3/16x3/8	865	-2.90	9.87	31.1 (b)	Pass
T22	35 - 10	Horizontal	2L2x2x3/16x3/8	898	-2.98	9.87	17.6 (b)	Pass
T23	10 - 0	Horizontal	2L3x5x1/2x3/8	929	37.98	162.00	16.9 (b)	Pass
T1	560 - 535	Top Girt	2L2 1/2x2 1/2x1/4x3/8	4	-0.36	32.79	29.6	Pass
T2	535 - 510	Top Girt	2L2 1/2x2 1/2x1/4x3/8	46	-1.47	32.79	40.0	Pass
T3	510 - 485	Top Girt	2L2 1/2x2 1/2x1/4x3/8	90	-2.58	33.08	31.0 (b)	Pass
T4	485 - 460	Top Girt	2L2 1/2x2 1/2x1/4x3/8	130	-3.22	33.08	29.6	Pass
T5	460 - 435	Top Girt	2L2x2x3/16x3/8	172	-1.50	12.87	31.0 (b)	Pass
T6	435 - 410	Top Girt	2L2x2x3/16x3/8	216	-0.82	12.87	29.6	Pass
T7	410 - 385	Top Girt	2L2x2x3/16x3/8	258	-1.90	12.87	40.0	Pass
T8	385 - 360	Top Girt	2L2x2x3/16x3/8	300	-2.95	12.87	40.0	Pass

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<b>Client</b>	Crown Castle USA, Inc.	<b>Designed by</b>	jhuffine

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P <sub>allow</sub> K	% Capacity	Pass Fail
T9	360 - 335	Top Girt	2L2 1/2x2 1/2x1/4x3/8	340	-4.98	33.23	15.0	Pass
T10	335 - 310	Top Girt	2L2 1/2x2 1/2x1/4x3/8	382	-5.39	33.52	22.6 (b)	Pass
T11	310 - 285	Top Girt	2L2 1/2x2 1/2x1/4x3/8	424	-5.11	33.23	16.1	Pass
T12	285 - 260	Top Girt	2L2x2 1/2x3/16x3/8	466	-3.25	13.94	15.4	Pass
T13	260 - 235	Top Girt	2L2x2 1/2x3/16x3/8	508	-2.55	13.94	23.3	Pass
T14	235 - 210	Top Girt	2L2x2 1/2x3/16x3/8	552	-0.72	13.94	18.3	Pass
T15	210 - 185	Top Girt	2L2x2 1/2x3/16x3/8	592	-2.50	14.02	5.1	Pass
T16	185 - 160	Top Girt	2L2 1/2x2 1/2x1/4x3/8	634	-4.66	33.52	17.9	Pass
T17	160 - 135	Top Girt	2L2 1/2x2 1/2x1/4x3/8	676	-4.80	33.67	13.9	Pass
T18	135 - 110	Top Girt	2L2 1/2x2 1/2x1/4x3/8	720	-4.66	33.52	14.3	Pass
T19	110 - 85	Top Girt	2L2x2x1/4x3/8	761	-3.05	16.85	13.9	Pass
T20	85 - 60	Top Girt	2L2x2x3/16x3/8	803	-2.10	13.16	18.1	Pass
T21	60 - 35	Top Girt	2L2x2x3/16x3/8	845	-1.47	13.16	15.9	Pass
T22	35 - 10	Top Girt	2L2x2x3/16x3/8	886	-1.23	13.16	11.1	Pass
T1	560 - 535	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	7	-1.43	32.79	9.3	Pass
T2	535 - 510	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	51	-2.53	32.79	4.4	Pass
T3	510 - 485	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	91	-3.07	33.08	7.7	Pass
T4	485 - 460	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	133	-2.46	33.08	9.3	Pass
T5	460 - 435	Bottom Girt	2L2x2x3/16x3/8	177	-0.79	12.87	7.4	Pass
T6	435 - 410	Bottom Girt	2L2x2x3/16x3/8	219	-1.87	12.87	6.2	Pass
T7	410 - 385	Bottom Girt	2L2x2x3/16x3/8	261	-2.94	12.87	14.5	Pass
T8	385 - 360	Bottom Girt	2L2x2x3/16x3/8	303	-3.03	12.87	22.8	Pass
T9	360 - 335	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	343	-5.32	33.23	23.5	Pass
T10	335 - 310	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	385	-4.84	33.52	16.0	Pass
T11	310 - 285	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	427	-4.72	33.23	24.2 (b)	Pass
T12	285 - 260	Bottom Girt	2L2x2 1/2x3/16x3/8	469	-2.59	13.94	14.4	Pass
T13	260 - 235	Bottom Girt	2L2x2 1/2x3/16x3/8	513	-0.74	13.94	18.6	Pass
T14	235 - 210	Bottom Girt	2L2x2 1/2x3/16x3/8	553	-2.45	13.94	5.3	Pass
T15	210 - 185	Bottom Girt	2L2x2 1/2x3/16x3/8	595	-3.21	14.02	17.6	Pass
T16	185 - 160	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	637	-5.17	33.52	22.9	Pass
T17	160 - 135	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	681	-4.70	33.67	15.4	Pass
T18	135 - 110	Bottom Girt	2L2 1/2x2 1/2x1/4x3/8	722	-3.86	33.52	14.0	Pass
T19	110 - 85	Bottom Girt	2L2x2x1/4x3/8	764	-2.76	16.85	11.5	Pass
T20	85 - 60	Bottom Girt	2L2x2x3/16x3/8	806	-1.49	13.16	16.4	Pass
T21	60 - 35	Bottom Girt	2L2x2x3/16x3/8	847	-1.21	13.16	11.3	Pass
T22	35 - 10	Bottom Girt	2L2x2x3/16x3/8	890	7.85	23.97	9.2	Pass
T3	510 - 485	Guy A@491.292	1 1/4	939	59.92	96.00	32.7	Pass
T10	335 - 310	Guy A@316.292	1 1/2	945	67.36	138.00	33.1 (b)	Pass
T17	160 - 135	Guy A@153.708	1 3/4	951	62.01	188.00	62.4	Pass
T3	510 - 485	Guy B@491.292	1 1/4	938	59.28	96.00	48.8	Pass
T10	335 - 310	Guy B@316.292	1 1/2	944	66.44	138.00	33.0	Pass
T17	160 - 135	Guy B@153.708	1 3/4	950	61.06	188.00	61.8	Pass
T3	510 - 485	Guy C@491.292	1 1/4	934	60.82	96.00	48.1	Pass
T10	335 - 310	Guy C@316.292	1 1/2	940	68.54	138.00	32.5	Pass
T17	160 - 135	Guy C@153.708	1 3/4	946	63.39	188.00	63.3	Pass
T3	510 - 485	Top Guy	L2 1/2x2 1/2x1/4	936	2.16	25.70	49.7	Pass
T10	335 - 310	Pull-Off@491.292	L2 1/2x2 1/2x1/4	942	4.35	25.70	33.7	Pass
T10	335 - 310	Top Guy	L2 1/2x2 1/2x1/4	942	4.35	25.70	24.3	Pass
T17	160 - 135	Pull-Off@316.292	L2 1/2x2 1/2x1/4	948	8.44	25.70	24.3	Pass
T17	160 - 135	Top Guy	L2 1/2x2 1/2x1/4	948	8.44	25.70	24.3	Pass
T17	160 - 135	Pull-Off@153.708	L2 1/2x2 1/2x1/4	948	8.44	25.70	24.3	Pass

Summary ELC: Load Case 7

Leg (T11)	40.5	Pass
Diagonal (T12)	99.9	Pass
Horizontal	50.9	Pass

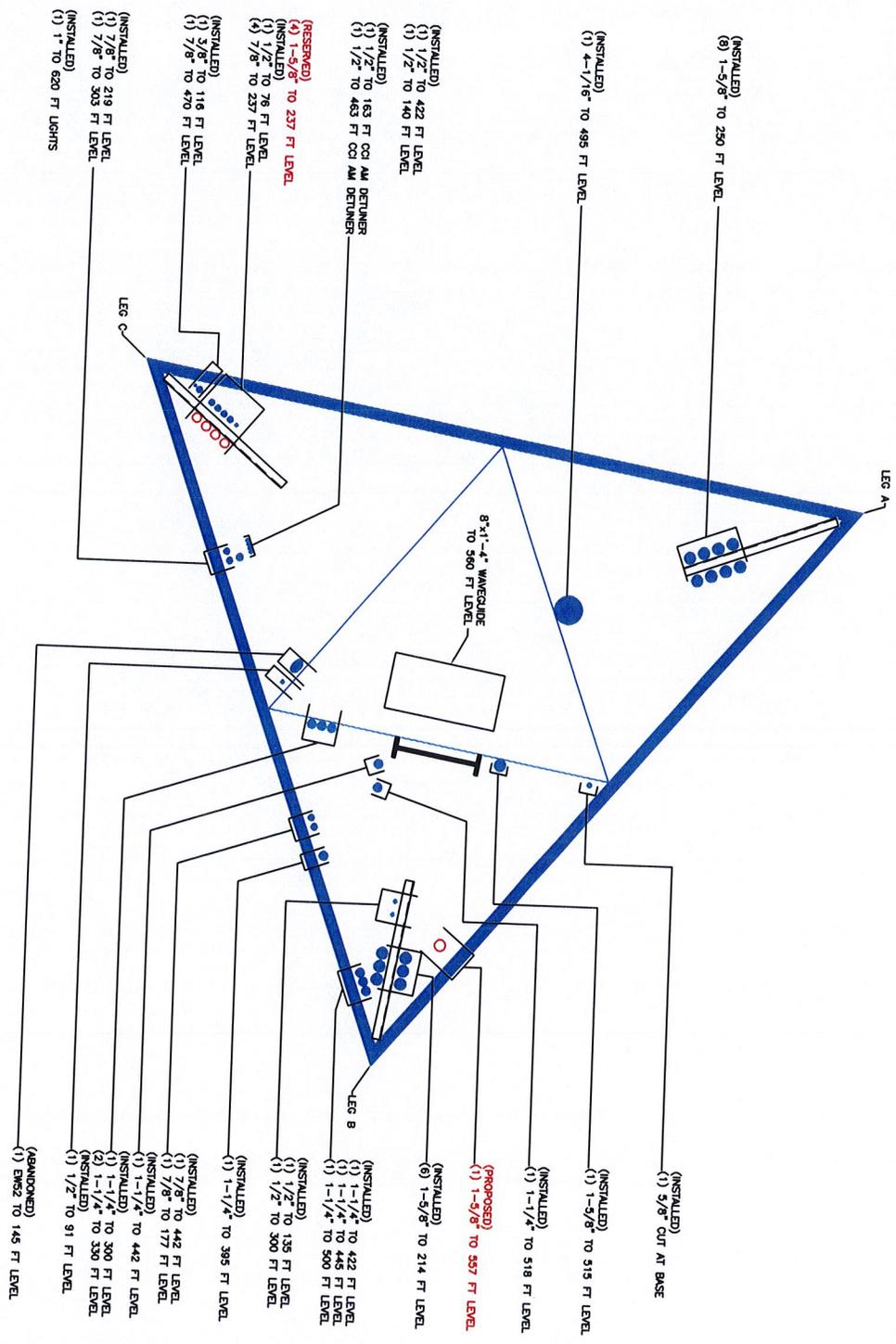
# tnxTower

**GPD Group**  
 520 South Main Street, Suite 2531  
 Akron, OH 44311  
 Phone: (330) 573-2100  
 FAX: (330) 573-2101

<b>Job</b>	Avon (Deercliff Rd.) - BU #: 870800	<b>Page</b>	31 of 31
<b>Project</b>	2013775.870800.04	<b>Date</b>	12:53:13 04/26/13
<b>Client</b>	Crown Castle USA, Inc.	<b>Designed by</b>	jhuffine

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P <sub>allow</sub> K	% Capacity	Pass Fail
						(T17)		
						Top Girt	23.3	Pass
						(T12)		
						Bottom Girt	33.1	Pass
						(T22)		
						Guy A (T3)	62.4	Pass
						Guy B (T3)	61.8	Pass
						Guy C (T3)	63.3	Pass
						Top Guy	46.8	Pass
						Pull-Off		
						(T17)		
						Bolt Checks	83.2	Pass
						Rating =	99.9	Pass

**APPENDIX B**  
**BASE LEVEL DRAWING**



**BASE LEVEL DRAWING**

PROPOSED ANTENNA LEVELS  
 BUSINESS UNIT: 870800 TOWER ID: C-BASELEVEL

SCALE: 1" = 10'

SHEET NUMBER: 1

CROWN REGION ADDRESS  
 USA

31/03/09	AS-BUILT INFORMATION ADDED PER WORK ORDER # 26384	RS
18/06/09	AS-BUILT INFORMATION ADDED PER WORK ORDER # 26744	CP
20/07/09	AS-BUILT INFORMATION ADDED PER WORK ORDER # 26384	ATF
12/03/10	AS-BUILT INFORMATION ADDED PER WORK ORDER # 41312	PLW
27/06/11	AS-BUILT INFORMATION ADDED PER WORK ORDER # 41312	PLW
13/06/11	AS-BUILT INFORMATION ADDED PER WORK ORDER # 41312	PLW
24/01/12	APPLICATION ADDED PER WORK ORDER # 44464	PLW
24/03/13	UPDATED PER WORK ORDER # 091810	RS
23/04/13	UPDATED PER WORK ORDER # 004338	AMB

DRAWN BY: KJWDK  
 CHECKED BY: KJWDK  
 DRAWING DATE: 15/01/08

SITE NUMBER: \_\_\_\_\_  
 SITE NAME: \_\_\_\_\_  
 AVON (OVERCURL RD.)  
 BUSINESS UNIT NUMBER: 870800  
 SITE ADDRESS: \_\_\_\_\_  
 376 OVERCURL RD.  
 AVON, CT 06001  
 HARTFORD COUNTY  
 USA

SHEET TITLE: **BASE LEVEL**  
 SHEET NUMBER: \_\_\_\_\_

A1-0

**APPENDIX C**  
**ADDITIONAL CALCULATIONS**



**Mat Foundation Analysis**  
**Avon (Deercliff Rd.) - BU #: 870800**  
**2013775.870800.04**

General Info	
Code	TIA/EIA-222-F (LRFD)
Bearing On	Soil
Foundation Type	Mono Pad
Pier Type	Square
Reinforcing Known	Yes
Max Capacity	1

Tower Reactions	
Moment, M	k-ft
Axial, P	526 k
Shear, V	4 k

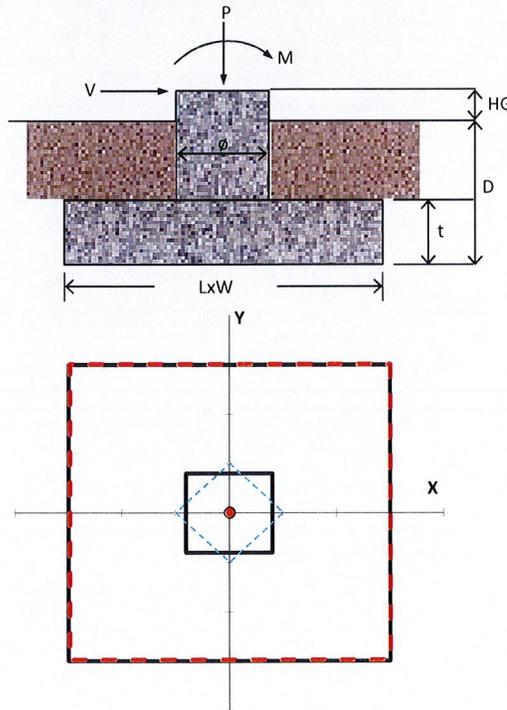
Pad & Pier Geometry	
Pier Width, $\phi$	4 ft
Pad Length, L	15 ft
Pad Width, W	15 ft
Pad Thickness, t	5.3 ft
Depth, D	8 ft
Height Above Grade, HG	1 ft

Pad & Pier Reinforcing	
Rebar Fy	60 ksi
Concrete Fc'	3 ksi
Clear Cover	3 in
Reinforced Top & Bottom?	No
Pad Reinforcing Size	# 9
Pad Quantity Per Layer	23
Pier Rebar Size	# 9
Pier Quantity of Rebar	12

Soil Properties	
Soil Type	Cohesive
Soil Unit Weight	115 pcf
Cohesion, Cu	0 ksf
Bearing Type	Net
Ultimate Bearing	16 ksf
Water Table Depth	99 ft
Frost Depth	3.33 ft

Bearing Summary			Load Case
Qxmax	4.74	ksf	1.2D+1.6W
Qymax	4.74	ksf	1.2D+1.6W
Qmax @ 45°	4.74	ksf	1.2D+1.6W
Q <sub>(all) Gross</sub>	10.15	ksf	
<b>Controlling Capacity</b>	<b>46.7%</b>	<b>Pass</b>	

Overturning Summary (Required FS=1.0)			Load Case
FS(ot)x	163.63	≥1.0	0.9D+1.6W
FS(ot)y	163.63	≥1.0	0.9D+1.6W
<b>Controlling Capacity</b>	<b>0.6%</b>	<b>Pass</b>	





**Base Foundation Reinforcement Check**  
**Avon (Deercliff Rd.) - BU #: 870800**  
**2013775.870800.04**

Code  
**TIA/EIA-222-F**

Tower Reactions	
Moment	0 k-ft
Axial	526
Shear	4 k

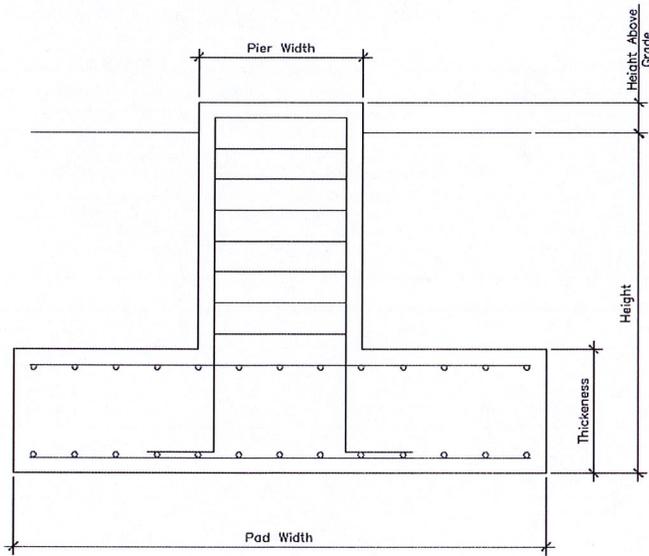
Overall Capacities		
Reinforcement Capacity	18.2%	OK
As Min Met?	Yes	
<b>Controlling Capacity</b>	<b>18.2%</b>	<b>OK</b>

Pad & Pier Geometry	
Height	8 ft
Height above Grade	1 ft
Pad Width	15 ft
Pad Thickness	5.3 ft
Pier Shape	Square
Square Pier Width	4 ft

Pad & Pier Reinforcing	
Reinforcing Known	Yes
$f_c'$	3 ksi
Clear Cover	3 in
Rebar $F_y$	60 ksi
$\phi$ (shear)	0.75
Pad Rebar Size	# 9
Pad Rebar Quantity	23
Pier Rebar Size	# 9
Pier Rebar Quantity	12

Orthogonal Bearing	
$Q_{max}$	4.78 ksf
$Q_{min}$	4.65 ksf

Reinforcing Calculations		
<i>Pad Moment Capacity</i>		
$\phi$ (bending)=	0.90	
$M_u$ =	72.06 k-ft	
$\phi M_n$ =	396.09 k-ft	
Moment Capacity	18.2%	OK
<i>One-Way (Wide-Beam) Shear</i>		
$V_u$ =	3.99 psi	
$\phi V_n$ =	82.16 psi	
Shear Capacity	4.9%	OK
<i>Two-Way (Punching) Shear</i>		
$V_u$ =	17.80 psi	
$\phi V_n$ =	164.32 psi	
Shear Capacity	10.8%	OK
<i>Pier Compression</i>		
$P_u$ =	683.8 k	
$\phi P_n$ =	3676.18 k	
Compression Capacity	18.6%	OK





Client: Crown Castle USA, Inc.  
 Project: Avon (Deercliff Rd.)  
 Site ID: 870800  
 Location: Hartford County, CT  
 Loading Type: Wind

Job No.: 2013775.870800.04  
 Sheet No: 1 Of 1  
 Made By: JDH Date: 4/26/2013  
 Chk'd By: Code: F Date: 4/26/2013

**Sources**

Original Design Reactions from Stainless Inc., Report #: 3290, 9/11/1986

**Original Design Reactions**

Uplift 360 K  
 Shear 254 K

**RISA Output Reactions**

Uplift 130 K  
 Shear 129 K

**FOUNDATION CAPACITY w/ 1.35 Conversion Factor**

$$\frac{\text{RISA Output}}{\text{Original Design}} = 50.8\%$$

**Exhibit 2**  
**RF Emissions Compliance Report**

## RF EMISSIONS COMPLIANCE REPORT

### Crown Castle on behalf of LightSquared

Application ID: 184970

Crown Castle BU: 870800

Crown Castle Site Name: Avon (Deercliff Road)

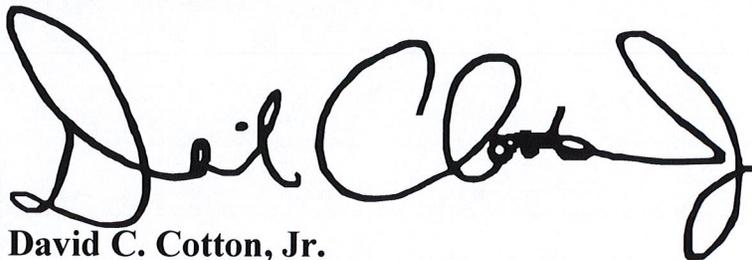
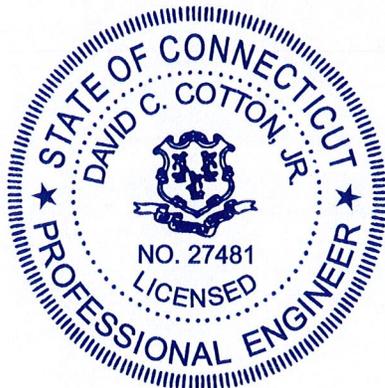
376 Deercliff Road

Avon, CT

4/9/2013

**Report Status:**

**The Site is Compliant**

A handwritten signature in black ink, appearing to read "David Cotton, Jr.", written over a light blue background.

David C. Cotton, Jr.  
Licensed Professional Engineer (Electrical)  
State of Connecticut, PEN.0027481  
Date: 2013-April-11

Prepared By:

**Sitesafe, Inc.**

Engineering Statement in Re:  
Electromagnetic Energy Analysis  
LightSquared  
Avon, CT

My signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Sitesafe, Inc. in Arlington, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Crown Castle (See attached Site Summary and Carrier documents), and that LightSquared's installations involve communications equipment, antennas and associated technical equipment at a location referred to as the "Avon (Deercliff Road)" ("the site"); and

That LightSquared proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by LightSquared and shown on the worksheet, and that worst-case 100% duty cycle have been assumed; and

That in addition to the emitters specified in the worksheet, there are additional collocated point-to-point microwave facilities on this structure and, the antennas used are highly directional oriented at angles at or just below the horizontal and, that the energy present at ground level is typically so low as to be considered insignificant and have not been included in this analysis. A list of microwave antennas is included; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio-frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio-frequency radiation must utilize the standards set by the FCC, which is the Federal Agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," defined as situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and (2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for licensees of LightSquared's operating frequency as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed LightSquared operation is no more than 0.007% of the maximum in any accessible area on the ground and

That it is understood per FCC Guidelines and OET65 Appendix A, that regardless of the existent radio-frequency environment, only those licenses whose contributions exceed five percent of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 4.257% of the maximum in any accessible area up to two meters above the ground per OET-65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET-65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier and frequency range indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding Radio Frequency Safety.

In summary, it is stated here that the proposed operation at the site would not result in exposure of the Public to excessive levels of radio-frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307 and that LightSquared's proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals, and approved contractor personnel trained in radio-frequency safety; and that the instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower, or in the immediate proximity of the antennas.

**LightSquared (Proposed)  
Avon (Deercliff Road)  
Site Summary**

Carrier	Area Maximum Percentage MPE
LightSquared (Proposed)	0.007 %
Marcus Communications	0.003 %
Marcus Communications	0.038 %
MetroPCS	0.084 %
Rampoldis Dispatch LC	0.015 %
Sprint-Nextel (iDEN)	0.026 %
T-Mobile	0.076 %
T-Mobile	0.038 %
US-Immigration & Customs	0.021 %
USA Mobility	0.03 %
USA Mobility	0.102 %
USA Mobility	0.064 %
USA Mobility	0.075 %
Unknown	0.03 %
Unknown	0.028 %
Unknown	0.152 %
WUVN - Entravision Holdings (TV Broadcast/Channel 46)	3.466 %
 <b>Composite Site MPE:</b>	 <b>4.257 %</b>

**LightSquared (Proposed)  
Avon (Deercliff Road)  
Carrier Summary**

<b>Frequency:</b>	1672.5	MHz
<b>Maximum Permissible Exposure (MPE):</b>	1000	$\mu\text{W}/\text{cm}^2$
<b>Maximum power density at ground level:</b>	0.07347	$\mu\text{W}/\text{cm}^2$
<b>Highest percentage of Maximum Permissible Exposure:</b>	0.00735	%

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
Kathrein-Scala	AP19-1670/090D/DT2	557	30	1629	0.032323	0.003232	0.045581	0.004558
Kathrein-Scala	AP19-1670/090D/DT2	557	150	1629	0.032323	0.003232	0.045581	0.004558
Kathrein-Scala	AP19-1670/090D/DT2	557	270	1629	0.032323	0.003232	0.045581	0.004558

## Marcus Communications Avon (Deercliff Road) Carrier Summary

**Frequency:** 451 MHz  
**Maximum Permissible Exposure (MPE):** 300.67  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.00891  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.00296 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
TX RX	101-68-10-0-03N	508	0	120	0.008905	0.002962	0.008905	0.002962

**Marcus Communications  
Avon (Deercliff Road)  
Carrier Summary**

**Frequency:** 851 MHz  
**Maximum Permissible Exposure (MPE):** 567.33  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.21835  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.03849 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
TX RX	101D-90-06-0-03	427	0	1000	0.116707	0.020571	0.116707	0.020571
TX RX	101D-90-06-0-03	452	0	1000	0.101913	0.017963	0.101913	0.017963

## MetroPCS Avon (Deercliff Road) Carrier Summary

Frequency:

2100 MHz  
1000  $\mu\text{W}/\text{cm}^2$

Maximum Permissible Exposure (MPE):  
Maximum power density at ground level:

0.84078  $\mu\text{W}/\text{cm}^2$   
0.08408 %

Highest percentage of Maximum Permissible Exposure:

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
Kathrein-Scala	742-213	214	40	3260	0.244543	0.024454	0.521146	0.052115
Kathrein-Scala	742-213	214	115	3260	0.244543	0.024454	0.521146	0.052115
Kathrein-Scala	742-213	214	295	3260	0.244543	0.024454	0.521146	0.052115

**Rampoldis Dispatch LC  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 150 MHz  
 Maximum Permissible Exposure (MPE): 200  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.03084  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.01542 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
SINCLAIR	SC233	402	0	100	0.030842	0.015421	0.030842	0.015421

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 862 MHz  
 Maximum Permissible Exposure (MPE): 574.67  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.15118  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.02631 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	844G65VTZASX	251	160	222	0.035683	0.006209	0.037481	0.006522
ANDREW	844G65VTZASX	251	160	222	0.035683	0.006209	0.037481	0.006522
ANDREW	844G65VTZASX	251	160	222	0.035683	0.006209	0.037481	0.006522
ANDREW	844G65VTZASX	251	160	222	0.035683	0.006209	0.037481	0.006522
RFS	AP859012-42TO	251	280	141	0.021325	0.003711	0.027096	0.004715
RFS	AP859012-42TO	251	280	141	0.021325	0.003711	0.027096	0.004715
RFS	AP859012-42TO	251	280	141	0.021325	0.003711	0.027096	0.004715
RFS	AP859012-42TO	251	280	141	0.021325	0.003711	0.027096	0.004715

Note: Sprint-Nextel is migrating to a CDMA based technology; it is reasoned that the existing iDEN network will be decommissioned in the near future.

**T-Mobile  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 2100 MHz  
 Maximum Permissible Exposure (MPE): 1000  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.76389  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.07639 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
RFS	APX16DWW-16DWW-S-E-A20	238	210	1691	0.752761	0.075276	0.752761	0.075276
RFS	APX16DWW-16DWW-S-E-A20	238	310	1691	0.752761	0.075276	0.752761	0.075276

Note: T-Mobile is currently operating only two sectors at this site.

**T-Mobile  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 1900 MHz  
 Maximum Permissible Exposure (MPE): 1000  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.37649  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.03765 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
EMS	FR90-16-02DP	238	210	1301	0.194732	0.019473	0.218757	0.021876
EMS	FR90-16-02DP	238	310	1301	0.194732	0.019473	0.218757	0.021876

Note: T-Mobile is currently operating only two sectors at this site.

**US-Immigration & Customs  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 150 MHz  
 Maximum Permissible Exposure (MPE): 200  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.04279  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.0214 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
TELEWAVE	ANT150F6	528	0	500	0.018386	0.009193	0.042791	0.021396

**USA Mobility  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 928 MHz  
 Maximum Permissible Exposure (MPE): 618.67  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.18825  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.03043 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	PG1N0F-0093-8	515	0	3500	0.188251	0.030428	0.188251	0.030428

**USA Mobility  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 450 MHz  
 Maximum Permissible Exposure (MPE): 300  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.30508  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.10169 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	DB636-C	305	0	100	0.083793	0.027931	0.083793	0.027931
ANDREW	DB636-C	308	0	100	0.082057	0.027352	0.082057	0.027352
ANDREW	DB636-C	335	0	100	0.069698	0.023233	0.069698	0.023233
ANDREW	DB636-C	335	0	100	0.069698	0.023233	0.069698	0.023233

**USA Mobility  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 150 MHz  
 Maximum Permissible Exposure (MPE): 200  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.12737  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.06368 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
TELEWAVE	ANT150F6	187	0	100	0.03058	0.01529	0.071472	0.035736
TELEWAVE	ANT150F6	219	0	100	0.021546	0.010773	0.051488	0.025744
TELEWAVE	ANT150F6	452	0	100	0.005056	0.002528	0.011741	0.005871
TELEWAVE	ANT150F6	452	0	100	0.005056	0.002528	0.011741	0.005871
TELEWAVE	ANT150F6	480	0	100	0.004499	0.00225	0.010381	0.005191

**USA Mobility  
Avon (Deercliff Road)  
Carrier Summary**

Frequency: 470 MHz  
 Maximum Permissible Exposure (MPE): 313.33  $\mu\text{W}/\text{cm}^2$   
 Maximum power density at ground level: 0.23447  $\mu\text{W}/\text{cm}^2$   
 Highest percentage of Maximum Permissible Exposure: 0.07483 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
RFS	201-8	120	0	100	0.234473	0.074832	0.234473	0.074832

**Unknown  
Avon (Deercliff Road)  
Carrier Summary**

**Frequency:** 450 MHz  
**Maximum Permissible Exposure (MPE):** 300  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.09121  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.0304 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	DB636-C	294	0	100	0.091206	0.030402	0.091206	0.030402

**Unknown  
Avon (Deercliff Road)  
Carrier Summary**

**Frequency:** 851 MHz  
**Maximum Permissible Exposure (MPE):** 567.33  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.16064  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.02832 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	DB810M-XC	259	0	1000	0.160643	0.028315	0.160643	0.028316

**Unknown  
Avon (Deercliff Road)  
Carrier Summary**

**Frequency:** 150 MHz  
**Maximum Permissible Exposure (MPE):** 200  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.30428  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.15214 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
TELEWAVE	ANT150F2	94	0	100	0.122079	0.061039	0.30305	0.151525
TELEWAVE	ANT150F2	505	0	100	0.004044	0.002022	0.009366	0.004683

**WUVN - Entravision Holdings (TV Broadcast/Channel 46)  
Avon (Deercliff Road)  
Carrier Summary**

**Frequency:** 665 MHz  
**Maximum Permissible Exposure (MPE):** 443.33  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 15.36428  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 3.46563 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
ANDREW	ATW25H3-H50-46	495	0	217000	15.364277	3.465626	15.364283	3.465628

**Avon (Deercliff Road)  
Composite Microwave Antenna Summary**

<b>Carrier</b>	<b>Antenna Make/Model</b>	<b>Height (feet)</b>
Marcus Communications	RadioWaves SPD2-5.8	135'
Marcus Communications	RadioWaves SPD2-5.8	140'
Marcus Communications	RadioWaves SPD2-5.8	300'

**LightSquared (Proposed)**  
**Avon (Deercliff Road)**  
**Kathrein-Scala:AP19-1670/090D/DT2 Antenna Worksheet (30 Sector)**

Maximum Permissible Exposure (MPE):		1000					
ERP (Watts):	1629	Height (feet):	557	Frequency (MHz):	1673	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-1.93	0.6418	96127.44	96127.29	0.000006	0.000001	170117091
1.0	-0.45	0.9016	9613.23	9611.76	0.000588	0.000059	1701341
2.0	0.00	1.0000	4807.35	4804.42	0.002350	0.000235	425465
3.0	-0.67	0.8570	3205.71	3201.32	0.005286	0.000529	189191
4.0	-2.71	0.5358	2405.14	2399.28	0.009390	0.000939	106495
5.0	-6.40	0.2291	1924.99	1917.66	0.014659	0.001466	68219
6.0	-12.45	0.0569	1605.06	1596.26	0.021085	0.002108	47427
7.0	-18.87	0.0130	1376.67	1366.41	0.028661	0.002866	34890
8.0	-14.15	0.0385	1205.51	1193.77	0.032323	0.003232	30937
9.0	-12.70	0.0537	1072.49	1059.28	0.026246	0.002625	38100
10.0	-14.23	0.0378	966.17	951.49	0.014539	0.001454	68779
12.0	-34.22	0.0004	806.95	789.31	0.005319	0.000532	187996
14.0	-20.49	0.0089	693.50	672.90	0.007198	0.000720	138925
16.0	-27.37	0.0018	608.68	585.10	0.002415	0.000242	414022
18.0	-24.20	0.0038	542.93	516.36	0.002167	0.000217	461439
20.0	-21.69	0.0068	490.54	460.96	0.002201	0.000220	454410
22.0	-30.99	0.0008	447.87	415.26	0.002635	0.000264	379467
24.0	-25.28	0.0030	412.49	376.83	0.003101	0.000310	322467
26.0	-25.24	0.0030	382.72	343.99	0.001938	0.000194	515935
28.0	-32.99	0.0005	357.37	315.54	0.002218	0.000222	450886
30.0	-35.71	0.0003	335.55	290.59	0.005305	0.000530	188509
32.0	-25.65	0.0027	316.60	268.49	0.006784	0.000678	147405
34.0	-20.75	0.0084	300.03	248.74	0.007535	0.000753	132714
36.0	-20.77	0.0084	285.43	230.92	0.008300	0.000830	120487
38.0	-26.79	0.0021	272.51	214.74	0.009084	0.000908	110079
40.0	-31.81	0.0007	261.01	199.95	0.009872	0.000987	101298
42.0	-24.52	0.0035	250.73	186.33	0.006063	0.000606	164929
44.0	-25.23	0.0030	241.52	173.74	0.004818	0.000482	207544
46.0	-33.62	0.0004	233.23	162.02	0.005149	0.000515	194225
48.0	-36.10	0.0002	225.76	151.06	0.005476	0.000548	182619
50.0	-30.16	0.0010	219.01	140.78	0.002470	0.000247	404849
52.0	-33.12	0.0005	212.91	131.08	0.002827	0.000283	353702
54.0	-35.05	0.0003	207.38	121.89	0.005138	0.000514	194620
56.0	-27.68	0.0017	202.37	113.16	0.005544	0.000554	180368
58.0	-25.15	0.0031	197.84	104.84	0.005771	0.000577	173282
60.0	-25.43	0.0029	193.73	96.86	0.005993	0.000599	166867
62.0	-27.21	0.0019	190.02	89.21	0.006202	0.000620	161230
64.0	-27.94	0.0016	186.67	81.83	0.006398	0.000640	156287
66.0	-26.46	0.0023	183.65	74.70	0.005956	0.000596	167903
68.0	-25.49	0.0028	180.95	67.79	0.006110	0.000611	163675
70.0	-25.76	0.0027	178.54	61.06	0.006248	0.000625	160041
72.0	-26.94	0.0020	176.41	54.51	0.006351	0.000635	157457
74.0	-27.67	0.0017	174.54	48.11	0.007070	0.000707	141449
76.0	-26.75	0.0021	172.91	41.83	0.009477	0.000948	105521
78.0	-25.08	0.0031	171.52	35.66	0.011089	0.001109	90181
80.0	-23.78	0.0042	170.36	29.58	0.011512	0.001151	86865
82.0	-23.13	0.0049	169.42	23.58	0.011528	0.001153	86745
84.0	-23.03	0.0050	168.70	17.63	0.011570	0.001157	86429
86.0	-23.36	0.0046	168.18	11.73	0.011658	0.001166	85774
88.0	-24.05	0.0039	167.88	5.86	0.011648	0.001165	85853
90.0	-25.01	0.0032	167.77	0.00	0.011161	0.001116	89597

**LightSquared (Proposed)  
Avon (Deercliff Road)  
Kathrein-Scala:AP19-1670/090D/DT2 Antenna Worksheet (150 Sector)**

Maximum Permissible Exposure (MPE): 1000  
 ERP (Watts): 1629      Height (feet): 557      Frequency (MHz): 1673      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm²)	Percent of MPE	Times Below MPE
0.1	-1.93	0.6418	96127.44	96127.29	0.000006	0.000001	170117091
1.0	-0.45	0.9016	9613.23	9611.76	0.000588	0.000059	1701341
2.0	0.00	1.0000	4807.35	4804.42	0.002350	0.000235	425465
3.0	-0.67	0.8570	3205.71	3201.32	0.005286	0.000529	189191
4.0	-2.71	0.5358	2405.14	2399.28	0.009390	0.000939	106495
5.0	-6.40	0.2291	1924.99	1917.66	0.014659	0.001466	68219
6.0	-12.45	0.0569	1605.06	1596.26	0.021085	0.002108	47427
7.0	-18.87	0.0130	1376.67	1366.41	0.028661	0.002866	34890
8.0	-14.15	0.0385	1205.51	1193.77	0.032323	0.003232	30937
9.0	-12.70	0.0537	1072.49	1059.28	0.026250	0.002625	38095
10.0	-14.23	0.0378	966.17	951.49	0.014537	0.001454	68788
12.0	-34.22	0.0004	806.95	789.31	0.005321	0.000532	187924
14.0	-20.49	0.0089	693.50	672.90	0.007199	0.000720	138907
16.0	-27.37	0.0018	608.68	585.10	0.002415	0.000242	414074
18.0	-24.20	0.0038	542.93	516.36	0.002167	0.000217	461556
20.0	-21.69	0.0068	490.54	460.96	0.002200	0.000220	454526
22.0	-30.99	0.0008	447.87	415.26	0.002635	0.000263	379515
24.0	-25.28	0.0030	412.49	376.83	0.003101	0.000310	322426
26.0	-25.24	0.0030	382.72	343.99	0.001938	0.000194	515935
28.0	-32.99	0.0005	357.37	315.54	0.002219	0.000222	450714
30.0	-35.71	0.0003	335.55	290.59	0.005303	0.000530	188581
32.0	-25.65	0.0027	316.60	268.49	0.006782	0.000678	147442
34.0	-20.75	0.0084	300.03	248.74	0.007532	0.000753	132764
36.0	-20.77	0.0084	285.43	230.92	0.008303	0.000830	120440
38.0	-26.79	0.0021	272.51	214.74	0.009079	0.000908	110149
40.0	-31.81	0.0007	261.01	199.95	0.009867	0.000987	101350
42.0	-24.52	0.0035	250.73	186.33	0.006066	0.000607	164845
44.0	-25.23	0.0030	241.52	173.74	0.004816	0.000482	207624
46.0	-33.62	0.0004	233.23	162.02	0.005147	0.000515	194299
48.0	-36.10	0.0002	225.76	151.06	0.005472	0.000547	182735
50.0	-30.16	0.0010	219.01	140.78	0.002468	0.000247	405159
52.0	-33.12	0.0005	212.91	131.08	0.002825	0.000283	353927
54.0	-35.05	0.0003	207.38	121.89	0.005141	0.000514	194496
56.0	-27.68	0.0017	202.37	113.16	0.005540	0.000554	180506
58.0	-25.15	0.0031	197.84	104.84	0.005778	0.000578	173062
60.0	-25.43	0.0029	193.73	96.86	0.006002	0.000600	166612
62.0	-27.21	0.0019	190.02	89.21	0.006213	0.000621	160942
64.0	-27.94	0.0016	186.67	81.83	0.006412	0.000641	155949
66.0	-26.46	0.0023	183.65	74.70	0.005942	0.000594	168288
68.0	-25.49	0.0028	180.95	67.79	0.006093	0.000609	164134
70.0	-25.76	0.0027	178.54	61.06	0.006228	0.000623	160552
72.0	-26.94	0.0020	176.41	54.51	0.006371	0.000637	156956
74.0	-27.67	0.0017	174.54	48.11	0.007044	0.000704	141973
76.0	-26.75	0.0021	172.91	41.83	0.009514	0.000951	105105
78.0	-25.08	0.0031	171.52	35.66	0.011039	0.001104	90584
80.0	-23.78	0.0042	170.36	29.58	0.011455	0.001146	87297
82.0	-23.13	0.0049	169.42	23.58	0.011590	0.001159	86282
84.0	-23.03	0.0050	168.70	17.63	0.011640	0.001164	85913
86.0	-23.36	0.0046	168.18	11.73	0.011583	0.001158	86334
88.0	-24.05	0.0039	167.88	5.86	0.011569	0.001157	86435
90.0	-25.01	0.0032	167.77	0.00	0.011238	0.001124	88982

**LightSquared (Proposed)  
Avon (Deercliff Road)  
Kathrein-Scala:AP19-1670/090D/DT2 Antenna Worksheet (270 Sector)**

Maximum Permissible Exposure (MPE):		1000					
ERP (Watts):	1629	Height (feet):	557	Frequency (MHz):	1673	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-1.93	0.6418	96127.44	96127.29	0.000006	0.000001	170117091
1.0	-0.45	0.9016	9613.23	9611.76	0.000588	0.000059	1701341
2.0	0.00	1.0000	4807.35	4804.42	0.002350	0.000235	425465
3.0	-0.67	0.8570	3205.71	3201.32	0.005286	0.000529	189191
4.0	-2.71	0.5358	2405.14	2399.28	0.009390	0.000939	106495
5.0	-6.40	0.2291	1924.99	1917.66	0.014659	0.001466	68219
6.0	-12.45	0.0569	1605.06	1596.26	0.021085	0.002108	47427
7.0	-18.87	0.0130	1376.67	1366.41	0.028661	0.002866	34890
8.0	-14.15	0.0385	1205.51	1193.77	0.032323	0.003232	30937
9.0	-12.70	0.0537	1072.49	1059.28	0.026250	0.002625	38095
10.0	-14.23	0.0378	966.17	951.49	0.014539	0.001454	68779
12.0	-34.22	0.0004	806.95	789.31	0.005321	0.000532	187924
14.0	-20.49	0.0089	693.50	672.90	0.007199	0.000720	138907
16.0	-27.37	0.0018	608.68	585.10	0.002415	0.000242	414021
18.0	-24.20	0.0038	542.93	516.36	0.002167	0.000217	461439
20.0	-21.69	0.0068	490.54	460.96	0.002201	0.000220	454410
22.0	-30.99	0.0008	447.87	415.26	0.002635	0.000264	379467
24.0	-25.28	0.0030	412.49	376.83	0.003101	0.000310	322426
26.0	-25.24	0.0030	382.72	343.99	0.001938	0.000194	515935
28.0	-32.99	0.0005	357.37	315.54	0.002219	0.000222	450714
30.0	-35.71	0.0003	335.55	290.59	0.005305	0.000530	188509
32.0	-25.65	0.0027	316.60	268.49	0.006784	0.000678	147405
34.0	-20.75	0.0084	300.03	248.74	0.007535	0.000753	132714
36.0	-20.77	0.0084	285.43	230.92	0.008303	0.000830	120441
38.0	-26.79	0.0021	272.51	214.74	0.009084	0.000908	110079
40.0	-31.81	0.0007	261.01	199.95	0.009872	0.000987	101298
42.0	-24.52	0.0035	250.73	186.33	0.006066	0.000607	164845
44.0	-25.23	0.0030	241.52	173.74	0.004818	0.000482	207544
46.0	-33.62	0.0004	233.23	162.02	0.005149	0.000515	194225
48.0	-36.10	0.0002	225.76	151.06	0.005476	0.000548	182619
50.0	-30.16	0.0010	219.01	140.78	0.002470	0.000247	404849
52.0	-33.12	0.0005	212.91	131.08	0.002827	0.000283	353702
54.0	-35.05	0.0003	207.38	121.89	0.005141	0.000514	194496
56.0	-27.68	0.0017	202.37	113.16	0.005544	0.000554	180368
58.0	-25.15	0.0031	197.84	104.84	0.005778	0.000578	173062
60.0	-25.43	0.0029	193.73	96.86	0.006002	0.000600	166612
62.0	-27.21	0.0019	190.02	89.21	0.006213	0.000621	160942
64.0	-27.94	0.0016	186.67	81.83	0.006412	0.000641	155949
66.0	-26.46	0.0023	183.65	74.70	0.005956	0.000596	167903
68.0	-25.49	0.0028	180.95	67.79	0.006110	0.000611	163675
70.0	-25.76	0.0027	178.54	61.06	0.006248	0.000625	160041
72.0	-26.94	0.0020	176.41	54.51	0.006371	0.000637	156956
74.0	-27.67	0.0017	174.54	48.11	0.007070	0.000707	141449
76.0	-26.75	0.0021	172.91	41.83	0.009514	0.000951	105105
78.0	-25.08	0.0031	171.52	35.66	0.011089	0.001109	90181
80.0	-23.78	0.0042	170.36	29.58	0.011512	0.001151	86865
82.0	-23.13	0.0049	169.42	23.58	0.011590	0.001159	86282
84.0	-23.03	0.0050	168.70	17.63	0.011640	0.001164	85913
86.0	-23.36	0.0046	168.18	11.73	0.011658	0.001166	85774
88.0	-24.05	0.0039	167.88	5.86	0.011648	0.001165	85853
90.0	-25.01	0.0032	167.77	0.00	0.011161	0.001116	89597

**Marcus Communications**  
**Avon (Deercliff Road)**  
**TX RX:101-68-10-0-03N Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 300.67  
ERP (Watts): 120      Height (feet): 508      Frequency (MHz): 451      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-1.93	0.6406	96127.41	96127.29	0.000000	0.000000	694364076
1.0	-2.65	0.5436	9612.98	9611.76	0.000043	0.000014	6952858
2.0	-4.67	0.3415	4806.85	4804.42	0.000172	0.000057	1744784
3.0	-5.79	0.2635	3204.96	3201.32	0.000385	0.000128	781149
4.0	-6.79	0.2096	2404.14	2399.28	0.000680	0.000226	442147
5.0	-7.39	0.1823	1923.75	1917.66	0.001051	0.000349	286208
6.0	-7.50	0.1780	1603.56	1596.26	0.001482	0.000493	202895
7.0	-6.88	0.2053	1374.93	1366.41	0.001939	0.000645	155039
8.0	-6.59	0.2193	1203.52	1193.77	0.002387	0.000794	125971
9.0	-6.47	0.2252	1070.25	1059.28	0.002802	0.000932	107317
10.0	-6.57	0.2200	963.69	951.49	0.003119	0.001037	96397
12.0	-8.50	0.1414	803.98	789.31	0.003760	0.001251	79966
14.0	-11.56	0.0698	690.04	672.90	0.004410	0.001467	68173
16.0	-17.74	0.0168	604.73	585.10	0.005072	0.001687	59277
18.0	-17.08	0.0196	538.50	516.36	0.005747	0.001912	52312
20.0	-15.40	0.0289	485.63	460.96	0.006438	0.002141	46700
22.0	-16.55	0.0221	442.49	415.26	0.006674	0.002220	45050
24.0	-19.36	0.0116	406.64	376.83	0.006385	0.002124	47090
26.0	-18.97	0.0127	376.41	343.99	0.006695	0.002227	44906
28.0	-15.85	0.0260	350.60	315.54	0.007898	0.002627	38067
30.0	-13.96	0.0402	328.34	290.59	0.008315	0.002766	36158
32.0	-14.35	0.0367	308.95	268.49	0.008550	0.002844	35165
34.0	-15.83	0.0261	291.94	248.74	0.008728	0.002903	34447
36.0	-19.53	0.0112	276.92	230.92	0.008855	0.002945	33955
38.0	-20.62	0.0087	263.58	214.74	0.008905	0.002962	33762
40.0	-18.97	0.0127	251.67	199.95	0.008213	0.002732	36609
42.0	-17.50	0.0178	241.00	186.33	0.006274	0.002087	47920
44.0	-17.62	0.0173	231.39	173.74	0.005273	0.001754	57014
46.0	-20.08	0.0098	222.73	162.02	0.005134	0.001708	58563
48.0	-24.10	0.0039	214.90	151.06	0.004988	0.001659	60275
50.0	-27.23	0.0019	207.79	140.78	0.004839	0.001609	62132
52.0	-21.15	0.0077	201.35	131.08	0.004146	0.001379	72512
54.0	-18.97	0.0127	195.49	121.89	0.005769	0.001919	52113
56.0	-15.77	0.0265	190.17	113.16	0.006607	0.002197	45506
58.0	-15.15	0.0306	185.34	104.84	0.006794	0.002260	44256
60.0	-15.27	0.0297	180.95	96.86	0.006653	0.002213	45195
62.0	-15.71	0.0269	176.97	89.21	0.006514	0.002167	46154
64.0	-16.81	0.0208	173.37	81.83	0.006381	0.002122	47119
66.0	-19.86	0.0103	170.12	74.70	0.006253	0.002080	48080
68.0	-22.91	0.0051	167.20	67.79	0.005499	0.001829	54674
70.0	-27.20	0.0019	164.59	61.06	0.004555	0.001515	66004
72.0	-41.83	0.0001	162.27	54.51	0.002467	0.000821	121866
74.0	-36.10	0.0002	160.23	48.11	0.001193	0.000397	252115
76.0	-33.13	0.0005	158.46	41.83	0.000448	0.000149	671697
78.0	-31.42	0.0007	156.94	35.66	0.000161	0.000054	1868430
80.0	-31.58	0.0007	155.68	29.58	0.000155	0.000051	1944946
82.0	-35.37	0.0003	154.65	23.58	0.000150	0.000050	2010448
84.0	-36.58	0.0002	153.85	17.63	0.000146	0.000048	2063285
86.0	-35.79	0.0003	153.29	11.73	0.000109	0.000036	2770514
88.0	-33.27	0.0005	152.95	5.86	0.000100	0.000033	3006132
90.0	-32.35	0.0006	152.84	0.00	0.000100	0.000033	3018179

**Marcus Communications**  
**Avon (Deercliff Road)**  
**TX RX:101D-90-06-0-03 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 567.33  
ERP (Watts): 1000      Height (feet): 427      Frequency (MHz): 851      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (μW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-0.03	0.9922	96127.37	96127.29	0.000004	0.000001	157220877
1.0	-0.11	0.9757	9612.62	9611.76	0.000361	0.000064	1572282
2.0	-0.45	0.9014	4806.13	4804.42	0.001443	0.000254	393072
3.0	-1.16	0.7658	3203.88	3201.32	0.003248	0.000572	174690
4.0	-1.93	0.6415	2402.70	2399.28	0.005773	0.001018	98272
5.0	-2.87	0.5169	1921.94	1917.66	0.008993	0.001585	63087
6.0	-3.43	0.4534	1601.40	1596.26	0.012970	0.002286	43742
7.0	-4.92	0.3219	1372.41	1366.41	0.017683	0.003117	32084
8.0	-7.05	0.1971	1200.63	1193.77	0.023046	0.004062	24617
9.0	-9.47	0.1130	1067.01	1059.28	0.028953	0.005103	19594
10.0	-14.40	0.0363	960.08	951.49	0.035160	0.006197	16135
12.0	-21.95	0.0064	799.65	789.31	0.048194	0.008495	11771
14.0	-12.46	0.0568	685.00	672.90	0.061617	0.010861	9207
16.0	-10.29	0.0935	598.97	585.10	0.070268	0.012386	8073
18.0	-10.97	0.0800	532.02	516.36	0.070256	0.012384	8075
20.0	-13.70	0.0427	478.44	460.96	0.077206	0.013609	7348
22.0	-18.97	0.0127	434.58	415.26	0.087768	0.015470	6464
24.0	-18.68	0.0135	398.02	376.83	0.098125	0.017296	5781
26.0	-16.08	0.0247	367.08	343.99	0.108176	0.019067	5244
28.0	-15.64	0.0273	340.57	315.54	0.116707	0.020571	4861
30.0	-17.47	0.0179	317.60	290.59	0.111200	0.019600	5101
32.0	-22.52	0.0056	297.51	268.49	0.087687	0.015456	6469
34.0	-33.85	0.0004	279.81	248.74	0.081830	0.014424	6933
36.0	-20.29	0.0094	264.10	230.92	0.083270	0.014677	6813
38.0	-16.40	0.0229	250.07	214.74	0.084201	0.014842	6737
40.0	-14.60	0.0346	237.49	199.95	0.084663	0.014923	6701
42.0	-14.59	0.0347	226.15	186.33	0.085159	0.015010	6662
44.0	-16.13	0.0244	215.88	173.74	0.098355	0.017336	5768
46.0	-19.27	0.0118	206.57	162.02	0.099941	0.017616	5676
48.0	-23.58	0.0044	198.10	151.06	0.099523	0.017542	5700
50.0	-22.10	0.0062	190.37	140.78	0.098782	0.017412	5743
52.0	-19.70	0.0107	183.31	131.08	0.097764	0.017232	5803
54.0	-18.39	0.0145	176.86	121.89	0.095170	0.016775	5961
56.0	-18.59	0.0138	170.96	113.16	0.075475	0.013304	7516
58.0	-19.71	0.0107	165.57	104.84	0.047385	0.008352	11972
60.0	-22.48	0.0056	160.64	96.86	0.044481	0.007840	12754
62.0	-25.95	0.0025	156.14	89.21	0.042726	0.007531	13278
64.0	-29.81	0.0010	152.05	81.83	0.041043	0.007234	13823
66.0	-28.65	0.0014	148.33	74.70	0.039446	0.006953	14382
68.0	-26.25	0.0024	144.97	67.79	0.032801	0.005782	17296
70.0	-24.95	0.0032	141.96	61.06	0.018154	0.003200	31250
72.0	-23.85	0.0041	139.26	54.51	0.009962	0.001756	56950
74.0	-23.62	0.0043	136.88	48.11	0.010788	0.001902	52588
76.0	-23.50	0.0045	134.80	41.83	0.010802	0.001904	52519
78.0	-23.74	0.0042	133.02	35.66	0.010356	0.001825	54785
80.0	-24.33	0.0037	131.52	29.58	0.009983	0.001760	56830
82.0	-25.31	0.0029	130.30	23.58	0.009682	0.001707	58597
84.0	-27.06	0.0020	129.36	17.63	0.009135	0.001610	62106
86.0	-29.78	0.0011	128.69	11.73	0.007733	0.001363	73364
88.0	-33.28	0.0005	128.28	5.86	0.005552	0.000979	102193
90.0	-39.91	0.0001	128.15	0.00	0.003062	0.000540	185288

**Marcus Communications**  
**Avon (Deercliff Road)**  
**TX RX:101D-90-06-0-03 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		567.33					
ERP (Watts):	1000	Height (feet):	452	Frequency (MHz):	851	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.03	0.9922	96127.38	96127.29	0.000004	0.000001	157220975
1.0	-0.11	0.9757	9612.72	9611.76	0.000361	0.000064	1572323
2.0	-0.45	0.9014	4806.33	4804.42	0.001443	0.000254	393109
3.0	-1.16	0.7658	3204.20	3201.32	0.003247	0.000572	174727
4.0	-1.93	0.6415	2403.12	2399.28	0.005767	0.001017	98372
5.0	-2.87	0.5169	1922.47	1917.66	0.008981	0.001583	63171
6.0	-3.43	0.4534	1602.03	1596.26	0.012976	0.002287	43720
7.0	-4.92	0.3219	1373.14	1366.41	0.017652	0.003111	32139
8.0	-7.05	0.1971	1201.47	1193.77	0.022935	0.004043	24736
9.0	-9.47	0.1130	1067.95	1059.28	0.028672	0.005054	19787
10.0	-14.40	0.0363	961.13	951.49	0.034656	0.006109	16370
12.0	-21.95	0.0064	800.91	789.31	0.046892	0.008265	12098
14.0	-12.46	0.0568	686.46	672.90	0.058866	0.010376	9637
16.0	-10.29	0.0935	600.64	585.10	0.063513	0.011195	8932
18.0	-10.97	0.0800	533.91	516.36	0.064856	0.011432	8747
20.0	-13.70	0.0427	480.53	460.96	0.073915	0.013028	7675
22.0	-18.97	0.0127	436.89	415.26	0.083634	0.014742	6783
24.0	-18.68	0.0135	400.54	376.83	0.093068	0.016405	6095
26.0	-16.08	0.0247	369.81	343.99	0.101913	0.017963	5566
28.0	-15.64	0.0273	343.51	315.54	0.101646	0.017916	5581
30.0	-17.47	0.0179	320.75	290.59	0.084613	0.014914	6705
32.0	-22.52	0.0056	300.87	268.49	0.072512	0.012781	7823
34.0	-33.85	0.0004	283.38	248.74	0.073938	0.013033	7673
36.0	-20.29	0.0094	267.88	230.92	0.074879	0.013198	7576
38.0	-16.40	0.0229	254.06	214.74	0.075378	0.013286	7526
40.0	-14.60	0.0346	241.68	199.95	0.072534	0.012785	7821
42.0	-14.59	0.0347	230.55	186.33	0.086793	0.015298	6536
44.0	-16.13	0.0244	220.49	173.74	0.089070	0.015700	6369
46.0	-19.27	0.0118	211.38	162.02	0.088752	0.015644	6392
48.0	-23.58	0.0044	203.11	151.06	0.088143	0.015536	6436
50.0	-22.10	0.0062	195.58	140.78	0.087287	0.015386	6499
52.0	-19.70	0.0107	188.72	131.08	0.086206	0.015195	6581
54.0	-18.39	0.0145	182.46	121.89	0.072622	0.012801	7812
56.0	-18.59	0.0138	176.75	113.16	0.044468	0.007838	12758
58.0	-19.71	0.0107	171.53	104.84	0.040053	0.007060	14164
60.0	-22.48	0.0056	166.78	96.86	0.038518	0.006789	14728
62.0	-25.95	0.0025	162.45	89.21	0.037045	0.006530	15314
64.0	-29.81	0.0010	158.52	81.83	0.035644	0.006283	15916
66.0	-28.65	0.0014	154.96	74.70	0.032173	0.005671	17633
68.0	-26.25	0.0024	151.75	67.79	0.022328	0.003936	25409
70.0	-24.95	0.0032	148.87	61.06	0.010312	0.001818	55014
72.0	-23.85	0.0041	146.30	54.51	0.009562	0.001685	59334
74.0	-23.62	0.0043	144.04	48.11	0.009705	0.001711	58456
76.0	-23.50	0.0045	142.07	41.83	0.009465	0.001668	59938
78.0	-23.74	0.0042	140.38	35.66	0.009110	0.001606	62277
80.0	-24.33	0.0037	138.96	29.58	0.008814	0.001554	64370
82.0	-25.31	0.0029	137.80	23.58	0.008564	0.001509	66249
84.0	-27.06	0.0020	136.91	17.63	0.007986	0.001408	71043
86.0	-29.78	0.0011	136.28	11.73	0.006728	0.001186	84325
88.0	-33.28	0.0005	135.90	5.86	0.004797	0.000846	118270
90.0	-39.91	0.0001	135.77	0.00	0.002728	0.000481	207978

**MetroPCS**  
**Avon (Deercliff Road)**  
**Kathrein-Scala:742-213 Antenna Worksheet (40 Sector)**

Maximum Permissible Exposure (MPE):		1000					
ERP (Watts):	3260	Height (feet):	214	Frequency (MHz):	2100	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.08	0.9817	96127.31	96127.29	0.000012	0.000001	85006134
1.0	-0.80	0.8318	96111.97	96111.76	0.001177	0.000118	849926
2.0	-2.90	0.5129	4804.83	4804.42	0.004709	0.000471	212379
3.0	-7.10	0.1950	3201.94	3201.32	0.010603	0.001060	94315
4.0	-15.40	0.0288	2400.11	2399.28	0.018870	0.001887	52993
5.0	-25.50	0.0028	1918.71	1917.66	0.029527	0.002953	33866
6.0	-14.90	0.0324	1597.51	1596.26	0.042595	0.004259	23477
7.0	-13.60	0.0437	1367.87	1366.41	0.058097	0.005810	17212
8.0	-16.10	0.0245	1195.45	1193.77	0.076065	0.007606	13146
9.0	-24.00	0.0040	1061.17	1059.28	0.096533	0.009653	10359
10.0	-29.20	0.0012	953.59	951.49	0.119541	0.011954	8365
12.0	-19.10	0.0123	791.84	789.31	0.173367	0.017337	5768
14.0	-29.90	0.0010	675.87	672.90	0.223270	0.022327	4478
16.0	-24.60	0.0035	588.50	585.10	0.244543	0.024454	4089
18.0	-41.50	0.0001	520.21	516.36	0.215882	0.021588	4632
20.0	-18.20	0.0151	465.27	460.96	0.127996	0.012800	7812
22.0	-14.70	0.0339	420.04	415.26	0.052354	0.005235	19100
24.0	-17.50	0.0178	382.09	376.83	0.039053	0.003905	25605
26.0	-27.60	0.0017	349.75	343.99	0.046583	0.004658	21466
28.0	-34.10	0.0004	321.81	315.54	0.054979	0.005498	18188
30.0	-39.20	0.0001	297.39	290.59	0.055511	0.005551	18014
32.0	-43.60	0.0000	275.84	268.49	0.036972	0.003697	27047
34.0	-35.40	0.0003	256.65	248.74	0.026202	0.002620	38165
36.0	-28.20	0.0015	239.42	230.92	0.031993	0.003199	31256
38.0	-27.30	0.0019	223.86	214.74	0.052996	0.005300	18869
40.0	-32.10	0.0006	209.70	199.95	0.093911	0.009391	10648
42.0	-43.10	0.0000	196.77	186.33	0.115230	0.011523	8678
44.0	-36.70	0.0002	184.88	173.74	0.130291	0.013029	7675
46.0	-34.40	0.0004	173.92	162.02	0.146963	0.014696	6804
48.0	-26.50	0.0022	163.76	151.06	0.165427	0.016543	6044
50.0	-22.50	0.0056	154.33	140.78	0.185884	0.018588	5379
52.0	-21.80	0.0066	145.53	131.08	0.208559	0.020856	4794
54.0	-24.00	0.0040	137.32	121.89	0.219282	0.021928	4560
56.0	-29.00	0.0013	129.63	113.16	0.120889	0.012089	8272
58.0	-35.50	0.0003	122.43	104.84	0.017565	0.001757	56930
60.0	-37.50	0.0002	115.67	96.86	0.022579	0.002258	44288
62.0	-34.10	0.0004	109.34	89.21	0.025142	0.002514	39774
64.0	-32.20	0.0006	103.41	81.83	0.027951	0.002795	35777
66.0	-30.50	0.0009	97.86	74.70	0.031015	0.003101	32242
68.0	-31.00	0.0008	92.70	67.79	0.032172	0.003217	31083
70.0	-32.20	0.0006	87.90	61.06	0.100036	0.010004	9996
72.0	-32.20	0.0006	83.48	54.51	0.127884	0.012788	7819
74.0	-33.30	0.0005	79.45	48.11	0.139617	0.013962	7162
76.0	-35.90	0.0003	75.81	41.83	0.151207	0.015121	6613
78.0	-37.40	0.0002	72.59	35.66	0.044289	0.004429	22579
80.0	-38.70	0.0001	69.81	29.58	0.026048	0.002605	38391
82.0	-41.40	0.0001	67.48	23.58	0.027345	0.002735	36569
84.0	-44.60	0.0000	65.64	17.63	0.021100	0.002110	47392
86.0	-44.90	0.0000	64.31	11.73	0.013864	0.001386	72130
88.0	-44.40	0.0000	63.50	5.86	0.005098	0.000510	196160
90.0	-48.00	0.0000	63.23	0.00	0.001413	0.000141	707596

**MetroPCS**  
**Avon (Deercliff Road)**  
**Kathrein-Scala:742-213 Antenna Worksheet (115 Sector)**

Maximum Permissible Exposure (MPE):		1000					
ERP (Watts):	3260	Height (feet):	214	Frequency (MHz):	2100	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.08	0.9817	96127.31	96127.29	0.000012	0.000001	85006142
1.0	-0.80	0.8318	9611.97	9611.76	0.001177	0.000118	849926
2.0	-2.90	0.5129	4804.83	4804.42	0.004709	0.000471	212379
3.0	-7.10	0.1950	3201.94	3201.32	0.010603	0.001060	94315
4.0	-15.40	0.0288	2400.11	2399.28	0.018870	0.001887	52993
5.0	-25.50	0.0028	1918.71	1917.66	0.029527	0.002953	33866
6.0	-14.90	0.0324	1597.51	1596.26	0.042595	0.004259	23477
7.0	-13.60	0.0437	1367.87	1366.41	0.058097	0.005810	17212
8.0	-16.10	0.0245	1195.45	1193.77	0.076065	0.007606	13146
9.0	-24.00	0.0040	1061.17	1059.28	0.096533	0.009653	10359
10.0	-29.20	0.0012	953.59	951.49	0.119541	0.011954	8365
12.0	-19.10	0.0123	791.84	789.31	0.173367	0.017337	5768
14.0	-29.90	0.0010	675.87	672.90	0.223270	0.022327	4478
16.0	-24.60	0.0035	588.50	585.10	0.244543	0.024454	4089
18.0	-41.50	0.0001	520.21	516.36	0.215882	0.021588	4632
20.0	-18.20	0.0151	465.27	460.96	0.128160	0.012816	7802
22.0	-14.70	0.0339	420.04	415.26	0.052421	0.005242	19076
24.0	-17.50	0.0178	382.09	376.83	0.039103	0.003910	25573
26.0	-27.60	0.0017	349.75	343.99	0.046583	0.004658	21466
28.0	-34.10	0.0004	321.81	315.54	0.054979	0.005498	18188
30.0	-39.20	0.0001	297.39	290.59	0.055511	0.005551	18014
32.0	-43.60	0.0000	275.84	268.49	0.036925	0.003693	27081
34.0	-35.40	0.0003	256.65	248.74	0.026235	0.002624	38116
36.0	-28.20	0.0015	239.42	230.92	0.031993	0.003199	31256
38.0	-27.30	0.0019	223.86	214.74	0.053024	0.005302	18859
40.0	-32.10	0.0006	209.70	199.95	0.093965	0.009396	10642
42.0	-43.10	0.0000	196.77	186.33	0.115230	0.011523	8678
44.0	-36.70	0.0002	184.88	173.74	0.130291	0.013029	7675
46.0	-34.40	0.0004	173.92	162.02	0.146963	0.014696	6804
48.0	-26.50	0.0022	163.76	151.06	0.165427	0.016543	6044
50.0	-22.50	0.0056	154.33	140.78	0.185884	0.018588	5379
52.0	-21.80	0.0066	145.53	131.08	0.208559	0.020856	4794
54.0	-24.00	0.0040	137.32	121.89	0.219282	0.021928	4560
56.0	-29.00	0.0013	129.63	113.16	0.120919	0.012092	8269
58.0	-35.50	0.0003	122.43	104.84	0.017563	0.001756	56937
60.0	-37.50	0.0002	115.67	96.86	0.022583	0.002258	44280
62.0	-34.10	0.0004	109.34	89.21	0.025152	0.002515	39758
64.0	-32.20	0.0006	103.41	81.83	0.027915	0.002791	35823
66.0	-30.50	0.0009	97.86	74.70	0.030975	0.003098	32283
68.0	-31.00	0.0008	92.70	67.79	0.032130	0.003213	31123
70.0	-32.20	0.0006	87.90	61.06	0.100291	0.010029	9970
72.0	-32.20	0.0006	83.48	54.51	0.127884	0.012788	7819
74.0	-33.30	0.0005	79.45	48.11	0.139617	0.013962	7162
76.0	-35.90	0.0003	75.81	41.83	0.152079	0.015208	6575
78.0	-37.40	0.0002	72.59	35.66	0.044289	0.004429	22579
80.0	-38.70	0.0001	69.81	29.58	0.026281	0.002628	38050
82.0	-41.40	0.0001	67.48	23.58	0.027645	0.002764	36173
84.0	-44.60	0.0000	65.64	17.63	0.021100	0.002110	47392
86.0	-44.90	0.0000	64.31	11.73	0.013636	0.001364	73335
88.0	-44.40	0.0000	63.50	5.86	0.005190	0.000519	192691
90.0	-48.00	0.0000	63.23	0.00	0.001438	0.000144	695295

**MetroPCS**  
**Avon (Deercliff Road)**  
**Kathrein-Scala:742-213 Antenna Worksheet (295 Sector)**

Maximum Permissible Exposure (MPE):		1000					
ERP (Watts):	3260	Height (feet):	214	Frequency (MHz):	2100	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.08	0.9817	96127.31	96127.29	0.000012	0.000001	85006142
1.0	-0.80	0.8318	9611.97	9611.76	0.001177	0.000118	849926
2.0	-2.90	0.5129	4804.83	4804.42	0.004709	0.000471	212379
3.0	-7.10	0.1950	3201.94	3201.32	0.010603	0.001060	94315
4.0	-15.40	0.0288	2400.11	2399.28	0.018870	0.001887	52993
5.0	-25.50	0.0028	1918.71	1917.66	0.029527	0.002953	33866
6.0	-14.90	0.0324	1597.51	1596.26	0.042595	0.004259	23477
7.0	-13.60	0.0437	1367.87	1366.41	0.058097	0.005810	17212
8.0	-16.10	0.0245	1195.45	1193.77	0.076065	0.007606	13146
9.0	-24.00	0.0040	1061.17	1059.28	0.096533	0.009653	10359
10.0	-29.20	0.0012	953.59	951.49	0.119541	0.011954	8365
12.0	-19.10	0.0123	791.84	789.31	0.173367	0.017337	5768
14.0	-29.90	0.0010	675.87	672.90	0.223270	0.022327	4478
16.0	-24.60	0.0035	588.50	585.10	0.244543	0.024454	4089
18.0	-41.50	0.0001	520.21	516.36	0.215882	0.021588	4632
20.0	-18.20	0.0151	465.27	460.96	0.128160	0.012816	7802
22.0	-14.70	0.0339	420.04	415.26	0.052421	0.005242	19076
24.0	-17.50	0.0178	382.09	376.83	0.039103	0.003910	25573
26.0	-27.60	0.0017	349.75	343.99	0.046583	0.004658	21466
28.0	-34.10	0.0004	321.81	315.54	0.054979	0.005498	18188
30.0	-39.20	0.0001	297.39	290.59	0.055511	0.005551	18014
32.0	-43.60	0.0000	275.84	268.49	0.036925	0.003693	27081
34.0	-35.40	0.0003	256.65	248.74	0.026235	0.002624	38116
36.0	-28.20	0.0015	239.42	230.92	0.031993	0.003199	31256
38.0	-27.30	0.0019	223.86	214.74	0.053024	0.005302	18859
40.0	-32.10	0.0006	209.70	199.95	0.093965	0.009396	10642
42.0	-43.10	0.0000	196.77	186.33	0.115230	0.011523	8678
44.0	-36.70	0.0002	184.88	173.74	0.130291	0.013029	7675
46.0	-34.40	0.0004	173.92	162.02	0.146963	0.014696	6804
48.0	-26.50	0.0022	163.76	151.06	0.165427	0.016543	6044
50.0	-22.50	0.0056	154.33	140.78	0.185884	0.018588	5379
52.0	-21.80	0.0066	145.53	131.08	0.208559	0.020856	4794
54.0	-24.00	0.0040	137.32	121.89	0.219282	0.021928	4560
56.0	-29.00	0.0013	129.63	113.16	0.120919	0.012092	8269
58.0	-35.50	0.0003	122.43	104.84	0.017563	0.001756	56937
60.0	-37.50	0.0002	115.67	96.86	0.022583	0.002258	44280
62.0	-34.10	0.0004	109.34	89.21	0.025152	0.002515	39758
64.0	-32.20	0.0006	103.41	81.83	0.027915	0.002791	35823
66.0	-30.50	0.0009	97.86	74.70	0.030975	0.003098	32283
68.0	-31.00	0.0008	92.70	67.79	0.032130	0.003213	31123
70.0	-32.20	0.0006	87.90	61.06	0.100291	0.010029	9970
72.0	-32.20	0.0006	83.48	54.51	0.127884	0.012788	7819
74.0	-33.30	0.0005	79.45	48.11	0.139617	0.013962	7162
76.0	-35.90	0.0003	75.81	41.83	0.152079	0.015208	6575
78.0	-37.40	0.0002	72.59	35.66	0.044289	0.004429	22579
80.0	-38.70	0.0001	69.81	29.58	0.026281	0.002628	38050
82.0	-41.40	0.0001	67.48	23.58	0.027645	0.002764	36173
84.0	-44.60	0.0000	65.64	17.63	0.021100	0.002110	47392
86.0	-44.90	0.0000	64.31	11.73	0.013636	0.001364	73335
88.0	-44.40	0.0000	63.50	5.86	0.005190	0.000519	192691
90.0	-48.00	0.0000	63.23	0.00	0.001438	0.000144	695295

**Rampoldis Dispatch LC  
Avon (Deercliff Road)  
SINCLAIR:SC233 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 200  
 ERP (Watts): 100      Height (feet): 402      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.09	0.9795	96127.36	96127.29	0.000000	0.000000	567166907
1.0	0.00	1.0000	9612.52	9611.76	0.000035	0.000018	5672876
2.0	0.00	1.0000	4805.93	4804.42	0.000141	0.000071	1418425
3.0	-0.10	0.9772	3203.59	3201.32	0.000317	0.000159	630443
4.0	-0.20	0.9550	2402.30	2399.28	0.000564	0.000282	354608
5.0	-0.20	0.9550	1921.45	1917.66	0.000881	0.000441	226918
6.0	-0.30	0.9333	1600.81	1596.26	0.001270	0.000635	157458
7.0	-0.40	0.9120	1371.71	1366.41	0.001732	0.000866	115476
8.0	-0.40	0.9120	1199.84	1193.77	0.002264	0.001132	88349
9.0	-0.60	0.8710	1066.12	1059.28	0.002867	0.001434	69751
10.0	-0.70	0.8511	959.10	951.49	0.003541	0.001770	56484
12.0	-1.10	0.7762	798.46	789.31	0.005083	0.002541	39349
14.0	-1.50	0.7079	683.61	672.90	0.006915	0.003457	28924
16.0	-1.90	0.6457	597.38	585.10	0.008982	0.004491	22266
18.0	-2.50	0.5623	530.24	516.36	0.011340	0.005670	17636
20.0	-3.20	0.4786	476.45	460.96	0.013819	0.006910	14472
22.0	-4.00	0.3981	432.39	415.26	0.016426	0.008213	12175
24.0	-4.80	0.3311	395.63	376.83	0.019095	0.009547	10474
26.0	-5.70	0.2692	364.49	343.99	0.021857	0.010928	9150
28.0	-6.70	0.2138	337.77	315.54	0.024527	0.012263	8154
30.0	-7.80	0.1660	314.60	290.59	0.026787	0.013394	7466
32.0	-8.90	0.1288	294.31	268.49	0.028757	0.014379	6954
34.0	-10.00	0.1000	276.40	248.74	0.029959	0.014979	6675
36.0	-11.20	0.0759	260.48	230.92	0.030697	0.015349	6515
38.0	-12.70	0.0537	246.25	214.74	0.030842	0.015421	6484
40.0	-14.70	0.0339	233.46	199.95	0.030313	0.015156	6597
42.0	-16.90	0.0204	221.92	186.33	0.028917	0.014458	6916
44.0	-18.80	0.0132	211.45	173.74	0.026809	0.013405	7460
46.0	-19.70	0.0107	201.93	162.02	0.024323	0.012161	8222
48.0	-19.50	0.0112	193.26	151.06	0.021616	0.010808	9252
50.0	-18.80	0.0132	185.33	140.78	0.018534	0.009267	10791
52.0	-17.70	0.0170	178.07	131.08	0.015017	0.007508	13318
54.0	-16.80	0.0209	171.42	121.89	0.010886	0.005443	18371
56.0	-15.90	0.0257	165.33	113.16	0.007295	0.003648	27414
58.0	-15.20	0.0302	159.74	104.84	0.006475	0.003237	30890
60.0	-14.70	0.0339	154.63	96.86	0.007486	0.003743	26715
62.0	-14.60	0.0347	149.95	89.21	0.008535	0.004268	23432
64.0	-14.50	0.0355	145.68	81.83	0.009335	0.004667	21425
66.0	-14.60	0.0347	141.80	74.70	0.009406	0.004703	21262
68.0	-14.90	0.0324	138.28	67.79	0.009392	0.004696	21295
70.0	-15.40	0.0288	135.12	61.06	0.009197	0.004598	21747
72.0	-16.00	0.0251	132.28	54.51	0.009010	0.004505	22197
74.0	-16.80	0.0209	129.78	48.11	0.008836	0.004418	22635
76.0	-17.80	0.0166	127.58	41.83	0.008515	0.004258	23487
78.0	-19.00	0.0126	125.69	35.66	0.007549	0.003774	26494
80.0	-20.50	0.0089	124.11	29.58	0.006455	0.003227	30986
82.0	-21.90	0.0065	122.81	23.58	0.004980	0.002490	40159
84.0	-23.90	0.0041	121.81	17.63	0.003538	0.001769	56526
86.0	-26.70	0.0021	121.10	11.73	0.002291	0.001145	87311
88.0	-31.20	0.0008	120.67	5.86	0.001420	0.000710	140811
90.0	-34.70	0.0003	120.53	0.00	0.000709	0.000355	281963

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
ANDREW:844G65VTZASX Antenna Worksheet (160 Sector)**

Maximum Permissible Exposure (MPE):		574.67					
ERP (Watts):	222	Height (feet):	251	Frequency (MHz):	862	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	717349725
1.0	-0.10	0.9772	9612.05	9611.76	0.000080	0.000014	7172482
2.0	-0.20	0.9550	4804.99	4804.42	0.000321	0.000056	1792351
3.0	-0.40	0.9120	3202.18	3201.32	0.000722	0.000126	796030
4.0	-0.70	0.8511	2400.44	2399.28	0.001285	0.000224	447319
5.0	-1.10	0.7762	1919.11	1917.66	0.002010	0.000350	285915
6.0	-1.60	0.6918	1598.00	1596.26	0.002899	0.000504	198239
7.0	-2.20	0.6026	1368.44	1366.41	0.003953	0.000688	145374
8.0	-2.90	0.5129	1196.10	1193.77	0.005174	0.000900	111063
9.0	-3.70	0.4266	1061.90	1059.28	0.006565	0.001142	87539
10.0	-4.60	0.3467	954.41	951.49	0.008127	0.001414	70713
12.0	-7.00	0.1995	792.82	789.31	0.011671	0.002031	49237
14.0	-10.00	0.1000	677.02	672.90	0.015676	0.002728	36659
16.0	-13.90	0.0407	589.82	585.10	0.020118	0.003501	28564
18.0	-19.00	0.0126	521.70	516.36	0.024538	0.004270	23419
20.0	-22.50	0.0056	466.94	460.96	0.028719	0.004997	20010
22.0	-20.90	0.0081	421.89	415.26	0.032043	0.005576	17934
24.0	-19.10	0.0123	384.12	376.83	0.034633	0.006027	16593
26.0	-18.60	0.0138	351.96	343.99	0.035683	0.006209	16104
28.0	-19.30	0.0117	324.21	315.54	0.035526	0.006182	16175
30.0	-21.10	0.0078	299.99	290.59	0.034022	0.005920	16890
32.0	-24.00	0.0040	278.64	268.49	0.031127	0.005416	18462
34.0	-29.20	0.0012	259.65	248.74	0.026363	0.004588	21798
36.0	-39.20	0.0001	242.64	230.92	0.021054	0.003664	27294
38.0	-32.90	0.0005	227.30	214.74	0.015523	0.002701	37021
40.0	-27.50	0.0018	213.38	199.95	0.010178	0.001771	56462
42.0	-24.90	0.0032	200.68	186.33	0.005845	0.001017	98320
44.0	-23.50	0.0045	189.04	173.74	0.003607	0.000628	159298
46.0	-22.90	0.0051	178.33	162.02	0.004041	0.000703	142215
48.0	-22.90	0.0051	168.44	151.06	0.004517	0.000786	127214
50.0	-23.10	0.0049	159.28	140.78	0.005035	0.000876	114143
52.0	-23.80	0.0042	150.77	131.08	0.005690	0.000990	100988
54.0	-24.60	0.0035	142.86	121.89	0.006090	0.001060	94365
56.0	-25.90	0.0026	135.49	113.16	0.005692	0.000991	100953
58.0	-27.60	0.0017	128.61	104.84	0.004050	0.000705	141883
60.0	-29.80	0.0010	122.20	96.86	0.002316	0.000403	248151
62.0	-32.20	0.0006	116.23	89.21	0.003184	0.000554	180465
64.0	-34.40	0.0004	110.67	81.83	0.003972	0.000691	144675
66.0	-35.40	0.0003	105.50	74.70	0.004397	0.000765	130687
68.0	-35.20	0.0003	100.73	67.79	0.004775	0.000831	120351
70.0	-34.70	0.0003	96.33	61.06	0.005321	0.000926	107990
72.0	-34.20	0.0004	92.32	54.51	0.005430	0.000945	105828
74.0	-33.90	0.0004	88.69	48.11	0.004899	0.000853	117299
76.0	-33.90	0.0004	85.44	41.83	0.003479	0.000605	165186
78.0	-34.30	0.0004	82.60	35.66	0.001667	0.000290	344831
80.0	-34.90	0.0003	80.16	29.58	0.000699	0.000122	822504
82.0	-36.30	0.0002	78.15	23.58	0.000690	0.000120	832525
84.0	-37.70	0.0002	76.56	17.63	0.000665	0.000116	863952
86.0	-39.10	0.0001	75.42	11.73	0.000652	0.000113	881121
88.0	-40.00	0.0001	74.73	5.86	0.000531	0.000092	1082621
90.0	-39.60	0.0001	74.50	0.00	0.000370	0.000064	1553514

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
ANDREW:844G65VTZASX Antenna Worksheet (160 Sector)**

Maximum Permissible Exposure (MPE):		574.67					
ERP (Watts):	222	Height (feet):	251	Frequency (MHz):	862	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	717349725
1.0	-0.10	0.9772	9612.05	9611.76	0.000080	0.000014	7172482
2.0	-0.20	0.9550	4804.99	4804.42	0.000321	0.000056	1792351
3.0	-0.40	0.9120	3202.18	3201.32	0.000722	0.000126	796030
4.0	-0.70	0.8511	2400.44	2399.28	0.001285	0.000224	447319
5.0	-1.10	0.7762	1919.11	1917.66	0.002010	0.000350	285915
6.0	-1.60	0.6918	1598.00	1596.26	0.002899	0.000504	198239
7.0	-2.20	0.6026	1368.44	1366.41	0.003953	0.000688	145374
8.0	-2.90	0.5129	1196.10	1193.77	0.005174	0.000900	111063
9.0	-3.70	0.4266	1061.90	1059.28	0.006565	0.001142	87539
10.0	-4.60	0.3467	954.41	951.49	0.008127	0.001414	70713
12.0	-7.00	0.1995	792.82	789.31	0.011671	0.002031	49237
14.0	-10.00	0.1000	677.02	672.90	0.015676	0.002728	36659
16.0	-13.90	0.0407	589.82	585.10	0.020118	0.003501	28564
18.0	-19.00	0.0126	521.70	516.36	0.024538	0.004270	23419
20.0	-22.50	0.0056	466.94	460.96	0.028719	0.004997	20010
22.0	-20.90	0.0081	421.89	415.26	0.032043	0.005576	17934
24.0	-19.10	0.0123	384.12	376.83	0.034633	0.006027	16593
26.0	-18.60	0.0138	351.96	343.99	0.035683	0.006209	16104
28.0	-19.30	0.0117	324.21	315.54	0.035526	0.006182	16175
30.0	-21.10	0.0078	299.99	290.59	0.034022	0.005920	16890
32.0	-24.00	0.0040	278.64	268.49	0.031127	0.005416	18462
34.0	-29.20	0.0012	259.65	248.74	0.026363	0.004588	21798
36.0	-39.20	0.0001	242.64	230.92	0.021054	0.003664	27294
38.0	-32.90	0.0005	227.30	214.74	0.015523	0.002701	37021
40.0	-27.50	0.0018	213.38	199.95	0.010178	0.001771	56462
42.0	-24.90	0.0032	200.68	186.33	0.005845	0.001017	98320
44.0	-23.50	0.0045	189.04	173.74	0.003607	0.000628	159298
46.0	-22.90	0.0051	178.33	162.02	0.004041	0.000703	142215
48.0	-22.90	0.0051	168.44	151.06	0.004517	0.000786	127214
50.0	-23.10	0.0049	159.28	140.78	0.005035	0.000876	114143
52.0	-23.80	0.0042	150.77	131.08	0.005690	0.000990	100988
54.0	-24.60	0.0035	142.86	121.89	0.006090	0.001060	94365
56.0	-25.90	0.0026	135.49	113.16	0.005692	0.000991	100953
58.0	-27.60	0.0017	128.61	104.84	0.004050	0.000705	141883
60.0	-29.80	0.0010	122.20	96.86	0.002316	0.000403	248151
62.0	-32.20	0.0006	116.23	89.21	0.003184	0.000554	180465
64.0	-34.40	0.0004	110.67	81.83	0.003972	0.000691	144675
66.0	-35.40	0.0003	105.50	74.70	0.004397	0.000765	130687
68.0	-35.20	0.0003	100.73	67.79	0.004775	0.000831	120351
70.0	-34.70	0.0003	96.33	61.06	0.005321	0.000926	107990
72.0	-34.20	0.0004	92.32	54.51	0.005430	0.000945	105828
74.0	-33.90	0.0004	88.69	48.11	0.004899	0.000853	117299
76.0	-33.90	0.0004	85.44	41.83	0.003479	0.000605	165186
78.0	-34.30	0.0004	82.60	35.66	0.001667	0.000290	344831
80.0	-34.90	0.0003	80.16	29.58	0.000699	0.000122	822504
82.0	-36.30	0.0002	78.15	23.58	0.000690	0.000120	832525
84.0	-37.70	0.0002	76.56	17.63	0.000665	0.000116	863952
86.0	-39.10	0.0001	75.42	11.73	0.000652	0.000113	881121
88.0	-40.00	0.0001	74.73	5.86	0.000531	0.000092	1082621
90.0	-39.60	0.0001	74.50	0.00	0.000370	0.000064	1553514

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
ANDREW:844G65VTZASX Antenna Worksheet (160 Sector)**

Maximum Permissible Exposure (MPE): 574.67  
 ERP (Watts): 222      Height (feet): 251      Frequency (MHz): 862      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	717349725
1.0	-0.10	0.9772	9612.05	9611.76	0.000080	0.000014	7172482
2.0	-0.20	0.9550	4804.99	4804.42	0.000321	0.000056	1792351
3.0	-0.40	0.9120	3202.18	3201.32	0.000722	0.000126	796030
4.0	-0.70	0.8511	2400.44	2399.28	0.001285	0.000224	447319
5.0	-1.10	0.7762	1919.11	1917.66	0.002010	0.000350	285915
6.0	-1.60	0.6918	1598.00	1596.26	0.002899	0.000504	198239
7.0	-2.20	0.6026	1368.44	1366.41	0.003953	0.000688	145374
8.0	-2.90	0.5129	1196.10	1193.77	0.005174	0.000900	111063
9.0	-3.70	0.4266	1061.90	1059.28	0.006565	0.001142	87539
10.0	-4.60	0.3467	954.41	951.49	0.008127	0.001414	70713
12.0	-7.00	0.1995	792.82	789.31	0.011671	0.002031	49237
14.0	-10.00	0.1000	677.02	672.90	0.015676	0.002728	36659
16.0	-13.90	0.0407	589.82	585.10	0.020118	0.003501	28564
18.0	-19.00	0.0126	521.70	516.36	0.024538	0.004270	23419
20.0	-22.50	0.0056	466.94	460.96	0.028719	0.004997	20010
22.0	-20.90	0.0081	421.89	415.26	0.032043	0.005576	17934
24.0	-19.10	0.0123	384.12	376.83	0.034633	0.006027	16593
26.0	-18.60	0.0138	351.96	343.99	0.035683	0.006209	16104
28.0	-19.30	0.0117	324.21	315.54	0.035526	0.006182	16175
30.0	-21.10	0.0078	299.99	290.59	0.034022	0.005920	16890
32.0	-24.00	0.0040	278.64	268.49	0.031127	0.005416	18462
34.0	-29.20	0.0012	259.65	248.74	0.026363	0.004588	21798
36.0	-39.20	0.0001	242.64	230.92	0.021054	0.003664	27294
38.0	-32.90	0.0005	227.30	214.74	0.015523	0.002701	37021
40.0	-27.50	0.0018	213.38	199.95	0.010178	0.001771	56462
42.0	-24.90	0.0032	200.68	186.33	0.005845	0.001017	98320
44.0	-23.50	0.0045	189.04	173.74	0.003607	0.000628	159298
46.0	-22.90	0.0051	178.33	162.02	0.004041	0.000703	142215
48.0	-22.90	0.0051	168.44	151.06	0.004517	0.000786	127214
50.0	-23.10	0.0049	159.28	140.78	0.005035	0.000876	114143
52.0	-23.80	0.0042	150.77	131.08	0.005690	0.000990	100988
54.0	-24.60	0.0035	142.86	121.89	0.006090	0.001060	94365
56.0	-25.90	0.0026	135.49	113.16	0.005692	0.000991	100953
58.0	-27.60	0.0017	128.61	104.84	0.004050	0.000705	141883
60.0	-29.80	0.0010	122.20	96.86	0.002316	0.000403	248151
62.0	-32.20	0.0006	116.23	89.21	0.003184	0.000554	180465
64.0	-34.40	0.0004	110.67	81.83	0.003972	0.000691	144675
66.0	-35.40	0.0003	105.50	74.70	0.004397	0.000765	130687
68.0	-35.20	0.0003	100.73	67.79	0.004775	0.000831	120351
70.0	-34.70	0.0003	96.33	61.06	0.005321	0.000926	107990
72.0	-34.20	0.0004	92.32	54.51	0.005430	0.000945	105828
74.0	-33.90	0.0004	88.69	48.11	0.004899	0.000853	117299
76.0	-33.90	0.0004	85.44	41.83	0.003479	0.000605	165186
78.0	-34.30	0.0004	82.60	35.66	0.001667	0.000290	344831
80.0	-34.90	0.0003	80.16	29.58	0.000699	0.000122	822504
82.0	-36.30	0.0002	78.15	23.58	0.000690	0.000120	832525
84.0	-37.70	0.0002	76.56	17.63	0.000665	0.000116	863952
86.0	-39.10	0.0001	75.42	11.73	0.000652	0.000113	881121
88.0	-40.00	0.0001	74.73	5.86	0.000531	0.000092	1082621
90.0	-39.60	0.0001	74.50	0.00	0.000370	0.000064	1553514

**Sprint-Nextel (iDEN)**  
**Avon (Deercliff Road)**  
**ANDREW:844G65VTZASX Antenna Worksheet (160 Sector)**

Maximum Permissible Exposure (MPE):		574.67					
ERP (Watts):	222	Height (feet):	251	Frequency (MHz):	862	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	717349725
1.0	-0.10	0.9772	9612.05	9611.76	0.000080	0.000014	7172482
2.0	-0.20	0.9550	4804.99	4804.42	0.000321	0.000056	1792351
3.0	-0.40	0.9120	3202.18	3201.32	0.000722	0.000126	796030
4.0	-0.70	0.8511	2400.44	2399.28	0.001285	0.000224	447319
5.0	-1.10	0.7762	1919.11	1917.66	0.002010	0.000350	285915
6.0	-1.60	0.6918	1598.00	1596.26	0.002899	0.000504	198239
7.0	-2.20	0.6026	1368.44	1366.41	0.003953	0.000688	145374
8.0	-2.90	0.5129	1196.10	1193.77	0.005174	0.000900	111063
9.0	-3.70	0.4266	1061.90	1059.28	0.006565	0.001142	87539
10.0	-4.60	0.3467	954.41	951.49	0.008127	0.001414	70713
12.0	-7.00	0.1995	792.82	789.31	0.011671	0.002031	49237
14.0	-10.00	0.1000	677.02	672.90	0.015676	0.002728	36659
16.0	-13.90	0.0407	589.82	585.10	0.020118	0.003501	28564
18.0	-19.00	0.0126	521.70	516.36	0.024538	0.004270	23419
20.0	-22.50	0.0056	466.94	460.96	0.028719	0.004997	20010
22.0	-20.90	0.0081	421.89	415.26	0.032043	0.005576	17934
24.0	-19.10	0.0123	384.12	376.83	0.034633	0.006027	16593
26.0	-18.60	0.0138	351.96	343.99	0.035683	0.006209	16104
28.0	-19.30	0.0117	324.21	315.54	0.035526	0.006182	16175
30.0	-21.10	0.0078	299.99	290.59	0.034022	0.005920	16890
32.0	-24.00	0.0040	278.64	268.49	0.031127	0.005416	18462
34.0	-29.20	0.0012	259.65	248.74	0.026363	0.004588	21798
36.0	-39.20	0.0001	242.64	230.92	0.021054	0.003664	27294
38.0	-32.90	0.0005	227.30	214.74	0.015523	0.002701	37021
40.0	-27.50	0.0018	213.38	199.95	0.010178	0.001771	56462
42.0	-24.90	0.0032	200.68	186.33	0.005845	0.001017	98320
44.0	-23.50	0.0045	189.04	173.74	0.003607	0.000628	159298
46.0	-22.90	0.0051	178.33	162.02	0.004041	0.000703	142215
48.0	-22.90	0.0051	168.44	151.06	0.004517	0.000786	127214
50.0	-23.10	0.0049	159.28	140.78	0.005035	0.000876	114143
52.0	-23.80	0.0042	150.77	131.08	0.005690	0.000990	100988
54.0	-24.60	0.0035	142.86	121.89	0.006090	0.001060	94365
56.0	-25.90	0.0026	135.49	113.16	0.005692	0.000991	100953
58.0	-27.60	0.0017	128.61	104.84	0.004050	0.000705	141883
60.0	-29.80	0.0010	122.20	96.86	0.002316	0.000403	248151
62.0	-32.20	0.0006	116.23	89.21	0.003184	0.000554	180465
64.0	-34.40	0.0004	110.67	81.83	0.003972	0.000691	144675
66.0	-35.40	0.0003	105.50	74.70	0.004397	0.000765	130687
68.0	-35.20	0.0003	100.73	67.79	0.004775	0.000831	120351
70.0	-34.70	0.0003	96.33	61.06	0.005321	0.000926	107990
72.0	-34.20	0.0004	92.32	54.51	0.005430	0.000945	105828
74.0	-33.90	0.0004	88.69	48.11	0.004899	0.000853	117299
76.0	-33.90	0.0004	85.44	41.83	0.003479	0.000605	165186
78.0	-34.30	0.0004	82.60	35.66	0.001667	0.000290	344831
80.0	-34.90	0.0003	80.16	29.58	0.000699	0.000122	822504
82.0	-36.30	0.0002	78.15	23.58	0.000690	0.000120	832525
84.0	-37.70	0.0002	76.56	17.63	0.000665	0.000116	863952
86.0	-39.10	0.0001	75.42	11.73	0.000652	0.000113	881121
88.0	-40.00	0.0001	74.73	5.86	0.000531	0.000092	1082621
90.0	-39.60	0.0001	74.50	0.00	0.000370	0.000064	1553514

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
RFS:AP859012-42TO Antenna Worksheet (280 Sector)**

Maximum Permissible Exposure (MPE): 574.67  
 ERP (Watts): 141      Height (feet): 251      Frequency (MHz): 862      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm²)	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	1129444374
1.0	-0.10	0.9772	9612.05	9611.76	0.000051	0.000009	11292845
2.0	-0.20	0.9550	4804.99	4804.42	0.000204	0.000035	2822000
3.0	-0.50	0.8913	3202.18	3201.32	0.000459	0.000080	1253325
4.0	-0.90	0.8128	2400.44	2399.28	0.000816	0.000142	704289
5.0	-1.30	0.7413	1919.11	1917.66	0.001277	0.000222	450164
6.0	-1.90	0.6457	1598.00	1596.26	0.001841	0.000320	312122
7.0	-2.50	0.5623	1368.44	1366.41	0.002511	0.000437	228887
8.0	-3.20	0.4786	1196.10	1193.77	0.003286	0.000572	174865
9.0	-4.10	0.3890	1061.90	1059.28	0.004169	0.000726	137828
10.0	-5.20	0.3020	954.41	951.49	0.005162	0.000898	111336
12.0	-7.80	0.1660	792.82	789.31	0.007417	0.001291	77484
14.0	-11.30	0.0741	677.02	672.90	0.009969	0.001735	57646
16.0	-15.80	0.0263	589.82	585.10	0.012723	0.002214	45167
18.0	-19.10	0.0123	521.70	516.36	0.015220	0.002649	37756
20.0	-17.00	0.0200	466.94	460.96	0.017445	0.003036	32942
22.0	-14.70	0.0339	421.89	415.26	0.019466	0.003387	29521
24.0	-13.50	0.0447	384.12	376.83	0.020586	0.003582	27915
26.0	-13.20	0.0479	351.96	343.99	0.021325	0.003711	26948
28.0	-13.70	0.0427	324.21	315.54	0.021114	0.003674	27217
30.0	-14.90	0.0324	299.99	290.59	0.019576	0.003406	29356
32.0	-16.90	0.0204	278.64	268.49	0.017148	0.002984	33512
34.0	-19.80	0.0105	259.65	248.74	0.014161	0.002464	40580
36.0	-23.90	0.0041	242.64	230.92	0.010809	0.001881	53166
38.0	-28.20	0.0015	227.30	214.74	0.007365	0.001282	78028
40.0	-27.40	0.0018	213.38	199.95	0.005741	0.000999	100106
42.0	-24.40	0.0036	200.68	186.33	0.006638	0.001155	86573
44.0	-22.50	0.0056	189.04	173.74	0.007475	0.001301	76878
46.0	-21.50	0.0071	178.33	162.02	0.008390	0.001460	68497
48.0	-21.10	0.0078	168.44	151.06	0.009398	0.001635	61144
50.0	-21.30	0.0074	159.28	140.78	0.010486	0.001825	54803
52.0	-22.10	0.0062	150.77	131.08	0.011682	0.002033	49190
54.0	-23.40	0.0046	142.86	121.89	0.012879	0.002241	44618
56.0	-25.50	0.0028	135.49	113.16	0.012438	0.002164	46202
58.0	-28.50	0.0014	128.61	104.84	0.010290	0.001791	55848
60.0	-32.90	0.0005	122.20	96.86	0.006819	0.001187	84278
62.0	-41.00	0.0001	116.23	89.21	0.003239	0.000564	177398
64.0	-48.80	0.0000	110.67	81.83	0.003594	0.000625	159874
66.0	-37.50	0.0002	105.50	74.70	0.004208	0.000732	136568
68.0	-34.00	0.0004	100.73	67.79	0.004590	0.000799	125189
70.0	-31.80	0.0007	96.33	61.06	0.004989	0.000868	115187
72.0	-30.90	0.0008	92.32	54.51	0.005400	0.000940	106421
74.0	-30.20	0.0010	88.69	48.11	0.004586	0.000798	125306
76.0	-30.20	0.0010	85.44	41.83	0.002573	0.000448	223366
78.0	-30.70	0.0009	82.60	35.66	0.000715	0.000124	803873
80.0	-31.30	0.0007	80.16	29.58	0.000843	0.000147	681664
82.0	-32.30	0.0006	78.15	23.58	0.001000	0.000174	574880
84.0	-33.70	0.0004	76.56	17.63	0.001029	0.000179	558351
86.0	-35.50	0.0003	75.42	11.73	0.001040	0.000181	552340
88.0	-38.10	0.0002	74.73	5.86	0.000766	0.000133	749955
90.0	-38.60	0.0001	74.50	0.00	0.000383	0.000067	1501530

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
RFS:AP859012-42TO Antenna Worksheet (280 Sector)**

Maximum Permissible Exposure (MPE): 574.67  
 ERP (Watts): 141      Height (feet): 251      Frequency (MHz): 862      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	1129444374
1.0	-0.10	0.9772	9612.05	9611.76	0.000051	0.000009	11292845
2.0	-0.20	0.9550	4804.99	4804.42	0.000204	0.000035	2822000
3.0	-0.50	0.8913	3202.18	3201.32	0.000459	0.000080	1253325
4.0	-0.90	0.8128	2400.44	2399.28	0.000816	0.000142	704289
5.0	-1.30	0.7413	1919.11	1917.66	0.001277	0.000222	450164
6.0	-1.90	0.6457	1598.00	1596.26	0.001841	0.000320	312122
7.0	-2.50	0.5623	1368.44	1366.41	0.002511	0.000437	228887
8.0	-3.20	0.4786	1196.10	1193.77	0.003286	0.000572	174865
9.0	-4.10	0.3890	1061.90	1059.28	0.004169	0.000726	137828
10.0	-5.20	0.3020	954.41	951.49	0.005162	0.000898	111336
12.0	-7.80	0.1660	792.82	789.31	0.007417	0.001291	77484
14.0	-11.30	0.0741	677.02	672.90	0.009969	0.001735	57646
16.0	-15.80	0.0263	589.82	585.10	0.012723	0.002214	45167
18.0	-19.10	0.0123	521.70	516.36	0.015220	0.002649	37756
20.0	-17.00	0.0200	466.94	460.96	0.017445	0.003036	32942
22.0	-14.70	0.0339	421.89	415.26	0.019466	0.003387	29521
24.0	-13.50	0.0447	384.12	376.83	0.020586	0.003582	27915
26.0	-13.20	0.0479	351.96	343.99	0.021325	0.003711	26948
28.0	-13.70	0.0427	324.21	315.54	0.021114	0.003674	27217
30.0	-14.90	0.0324	299.99	290.59	0.019576	0.003406	29356
32.0	-16.90	0.0204	278.64	268.49	0.017148	0.002984	33512
34.0	-19.80	0.0105	259.65	248.74	0.014161	0.002464	40580
36.0	-23.90	0.0041	242.64	230.92	0.010809	0.001881	53166
38.0	-28.20	0.0015	227.30	214.74	0.007365	0.001282	78028
40.0	-27.40	0.0018	213.38	199.95	0.005741	0.000999	100106
42.0	-24.40	0.0036	200.68	186.33	0.006638	0.001155	86573
44.0	-22.50	0.0056	189.04	173.74	0.007475	0.001301	76878
46.0	-21.50	0.0071	178.33	162.02	0.008390	0.001460	68497
48.0	-21.10	0.0078	168.44	151.06	0.009398	0.001635	61144
50.0	-21.30	0.0074	159.28	140.78	0.010486	0.001825	54803
52.0	-22.10	0.0062	150.77	131.08	0.011682	0.002033	49190
54.0	-23.40	0.0046	142.86	121.89	0.012879	0.002241	44618
56.0	-25.50	0.0028	135.49	113.16	0.012438	0.002164	46202
58.0	-28.50	0.0014	128.61	104.84	0.010290	0.001791	55848
60.0	-32.90	0.0005	122.20	96.86	0.006819	0.001187	84278
62.0	-41.00	0.0001	116.23	89.21	0.003239	0.000564	177398
64.0	-48.80	0.0000	110.67	81.83	0.003594	0.000625	159874
66.0	-37.50	0.0002	105.50	74.70	0.004208	0.000732	136568
68.0	-34.00	0.0004	100.73	67.79	0.004590	0.000799	125189
70.0	-31.80	0.0007	96.33	61.06	0.004989	0.000868	115187
72.0	-30.90	0.0008	92.32	54.51	0.005400	0.000940	106421
74.0	-30.20	0.0010	88.69	48.11	0.004586	0.000798	125306
76.0	-30.20	0.0010	85.44	41.83	0.002573	0.000448	223366
78.0	-30.70	0.0009	82.60	35.66	0.000715	0.000124	803873
80.0	-31.30	0.0007	80.16	29.58	0.000843	0.000147	681664
82.0	-32.30	0.0006	78.15	23.58	0.001000	0.000174	574880
84.0	-33.70	0.0004	76.56	17.63	0.001029	0.000179	558351
86.0	-35.50	0.0003	75.42	11.73	0.001040	0.000181	552340
88.0	-38.10	0.0002	74.73	5.86	0.000766	0.000133	749955
90.0	-38.60	0.0001	74.50	0.00	0.000383	0.000067	1501530

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
RFS:AP859012-42TO Antenna Worksheet (280 Sector)**

**Maximum Permissible Exposure (MPE):** 574.67  
**ERP (Watts):** 141      **Height (feet):** 251      **Frequency (MHz):** 862      **Downtilt (Degrees):** 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm²)	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	1129444374
1.0	-0.10	0.9772	9612.05	9611.76	0.000051	0.000009	11292845
2.0	-0.20	0.9550	4804.99	4804.42	0.000204	0.000035	2822000
3.0	-0.50	0.8913	3202.18	3201.32	0.000459	0.000080	1253325
4.0	-0.90	0.8128	2400.44	2399.28	0.000816	0.000142	704289
5.0	-1.30	0.7413	1919.11	1917.66	0.001277	0.000222	450164
6.0	-1.90	0.6457	1598.00	1596.26	0.001841	0.000320	312122
7.0	-2.50	0.5623	1368.44	1366.41	0.002511	0.000437	228887
8.0	-3.20	0.4786	1196.10	1193.77	0.003286	0.000572	174865
9.0	-4.10	0.3890	1061.90	1059.28	0.004169	0.000726	137828
10.0	-5.20	0.3020	954.41	951.49	0.005162	0.000898	111336
12.0	-7.80	0.1660	792.82	789.31	0.007417	0.001291	77484
14.0	-11.30	0.0741	677.02	672.90	0.009969	0.001735	57646
16.0	-15.80	0.0263	589.82	585.10	0.012723	0.002214	45167
18.0	-19.10	0.0123	521.70	516.36	0.015220	0.002649	37756
20.0	-17.00	0.0200	466.94	460.96	0.017445	0.003036	32942
22.0	-14.70	0.0339	421.89	415.26	0.019466	0.003387	29521
24.0	-13.50	0.0447	384.12	376.83	0.020586	0.003582	27915
26.0	-13.20	0.0479	351.96	343.99	0.021325	0.003711	26948
28.0	-13.70	0.0427	324.21	315.54	0.021114	0.003674	27217
30.0	-14.90	0.0324	299.99	290.59	0.019576	0.003406	29356
32.0	-16.90	0.0204	278.64	268.49	0.017148	0.002984	33512
34.0	-19.80	0.0105	259.65	248.74	0.014161	0.002464	40580
36.0	-23.90	0.0041	242.64	230.92	0.010809	0.001881	53166
38.0	-28.20	0.0015	227.30	214.74	0.007365	0.001282	78028
40.0	-27.40	0.0018	213.38	199.95	0.005741	0.000999	100106
42.0	-24.40	0.0036	200.68	186.33	0.006638	0.001155	86573
44.0	-22.50	0.0056	189.04	173.74	0.007475	0.001301	76878
46.0	-21.50	0.0071	178.33	162.02	0.008390	0.001460	68497
48.0	-21.10	0.0078	168.44	151.06	0.009398	0.001635	61144
50.0	-21.30	0.0074	159.28	140.78	0.010486	0.001825	54803
52.0	-22.10	0.0062	150.77	131.08	0.011682	0.002033	49190
54.0	-23.40	0.0046	142.86	121.89	0.012879	0.002241	44618
56.0	-25.50	0.0028	135.49	113.16	0.012438	0.002164	46202
58.0	-28.50	0.0014	128.61	104.84	0.010290	0.001791	55848
60.0	-32.90	0.0005	122.20	96.86	0.006819	0.001187	84278
62.0	-41.00	0.0001	116.23	89.21	0.003239	0.000564	177398
64.0	-48.80	0.0000	110.67	81.83	0.003594	0.000625	159874
66.0	-37.50	0.0002	105.50	74.70	0.004208	0.000732	136568
68.0	-34.00	0.0004	100.73	67.79	0.004590	0.000799	125189
70.0	-31.80	0.0007	96.33	61.06	0.004989	0.000868	115187
72.0	-30.90	0.0008	92.32	54.51	0.005400	0.000940	106421
74.0	-30.20	0.0010	88.69	48.11	0.004586	0.000798	125306
76.0	-30.20	0.0010	85.44	41.83	0.002573	0.000448	223366
78.0	-30.70	0.0009	82.60	35.66	0.000715	0.000124	803873
80.0	-31.30	0.0007	80.16	29.58	0.000843	0.000147	681664
82.0	-32.30	0.0006	78.15	23.58	0.001000	0.000174	574880
84.0	-33.70	0.0004	76.56	17.63	0.001029	0.000179	558351
86.0	-35.50	0.0003	75.42	11.73	0.001040	0.000181	552340
88.0	-38.10	0.0002	74.73	5.86	0.000766	0.000133	749955
90.0	-38.60	0.0001	74.50	0.00	0.000383	0.000067	1501530

**Sprint-Nextel (iDEN)  
Avon (Deercliff Road)  
RFS:AP859012-42TO Antenna Worksheet (280 Sector)**

Maximum Permissible Exposure (MPE):		574.67					
ERP (Watts):	141	Height (feet):	251	Frequency (MHz):	862	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.32	96127.29	0.000001	0.000000	1129444374
1.0	-0.10	0.9772	9612.05	9611.76	0.000051	0.000009	11292845
2.0	-0.20	0.9550	4804.99	4804.42	0.000204	0.000035	2822000
3.0	-0.50	0.8913	3202.18	3201.32	0.000459	0.000080	1253325
4.0	-0.90	0.8128	2400.44	2399.28	0.000816	0.000142	704289
5.0	-1.30	0.7413	1919.11	1917.66	0.001277	0.000222	450164
6.0	-1.90	0.6457	1598.00	1596.26	0.001841	0.000320	312122
7.0	-2.50	0.5623	1368.44	1366.41	0.002511	0.000437	228887
8.0	-3.20	0.4786	1196.10	1193.77	0.003286	0.000572	174865
9.0	-4.10	0.3890	1061.90	1059.28	0.004169	0.000726	137828
10.0	-5.20	0.3020	954.41	951.49	0.005162	0.000898	111336
12.0	-7.80	0.1660	792.82	789.31	0.007417	0.001291	77484
14.0	-11.30	0.0741	677.02	672.90	0.009969	0.001735	57646
16.0	-15.80	0.0263	589.82	585.10	0.012723	0.002214	45167
18.0	-19.10	0.0123	521.70	516.36	0.015220	0.002649	37756
20.0	-17.00	0.0200	466.94	460.96	0.017445	0.003036	32942
22.0	-14.70	0.0339	421.89	415.26	0.019466	0.003387	29521
24.0	-13.50	0.0447	384.12	376.83	0.020586	0.003582	27915
26.0	-13.20	0.0479	351.96	343.99	0.021325	0.003711	26948
28.0	-13.70	0.0427	324.21	315.54	0.021114	0.003674	27217
30.0	-14.90	0.0324	299.99	290.59	0.019576	0.003406	29356
32.0	-16.90	0.0204	278.64	268.49	0.017148	0.002984	33512
34.0	-19.80	0.0105	259.65	248.74	0.014161	0.002464	40580
36.0	-23.90	0.0041	242.64	230.92	0.010809	0.001881	53166
38.0	-28.20	0.0015	227.30	214.74	0.007365	0.001282	78028
40.0	-27.40	0.0018	213.38	199.95	0.005741	0.000999	100106
42.0	-24.40	0.0036	200.68	186.33	0.006638	0.001155	86573
44.0	-22.50	0.0056	189.04	173.74	0.007475	0.001301	76878
46.0	-21.50	0.0071	178.33	162.02	0.008390	0.001460	68497
48.0	-21.10	0.0078	168.44	151.06	0.009398	0.001635	61144
50.0	-21.30	0.0074	159.28	140.78	0.010486	0.001825	54803
52.0	-22.10	0.0062	150.77	131.08	0.011682	0.002033	49190
54.0	-23.40	0.0046	142.86	121.89	0.012879	0.002241	44618
56.0	-25.50	0.0028	135.49	113.16	0.012438	0.002164	46202
58.0	-28.50	0.0014	128.61	104.84	0.010290	0.001791	55848
60.0	-32.90	0.0005	122.20	96.86	0.006819	0.001187	84278
62.0	-41.00	0.0001	116.23	89.21	0.003239	0.000564	177398
64.0	-48.80	0.0000	110.67	81.83	0.003594	0.000625	159874
66.0	-37.50	0.0002	105.50	74.70	0.004208	0.000732	136568
68.0	-34.00	0.0004	100.73	67.79	0.004590	0.000799	125189
70.0	-31.80	0.0007	96.33	61.06	0.004989	0.000868	115187
72.0	-30.90	0.0008	92.32	54.51	0.005400	0.000940	106421
74.0	-30.20	0.0010	88.69	48.11	0.004586	0.000798	125306
76.0	-30.20	0.0010	85.44	41.83	0.002573	0.000448	223366
78.0	-30.70	0.0009	82.60	35.66	0.000715	0.000124	803873
80.0	-31.30	0.0007	80.16	29.58	0.000843	0.000147	681664
82.0	-32.30	0.0006	78.15	23.58	0.001000	0.000174	574880
84.0	-33.70	0.0004	76.56	17.63	0.001029	0.000179	558351
86.0	-35.50	0.0003	75.42	11.73	0.001040	0.000181	552340
88.0	-38.10	0.0002	74.73	5.86	0.000766	0.000133	749955
90.0	-38.60	0.0001	74.50	0.00	0.000383	0.000067	1501530

**T-Mobile**  
**Avon (Deercliff Road)**  
**RFS:APX16DWV-16DWV-S-E-A20 Antenna Worksheet (210 Sector)**

Maximum Permissible Exposure (MPE):		1000					
ERP (Watts):	1691	Height (feet):	238	Frequency (MHz):	2100	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-31.31	0.0007	96127.31	96127.29	0.000000	0.000000	57716798162
1.0	-26.29	0.0023	9612.02	9611.76	0.000002	0.000000	590370440
2.0	-19.76	0.0106	4804.93	4804.42	0.000007	0.000001	151307894
3.0	-14.15	0.0385	3202.09	3201.32	0.000013	0.000001	77268431
4.0	-9.77	0.1054	2400.32	2399.28	0.000019	0.000002	53543324
5.0	-6.44	0.2270	1918.96	1917.66	0.000024	0.000002	42158032
6.0	-3.93	0.4046	1597.82	1596.26	0.000028	0.000003	35913502
7.0	-2.03	0.6266	1368.23	1366.41	0.000031	0.000003	32406712
8.0	-0.78	0.8356	1195.86	1193.77	0.000039	0.000004	25952542
9.0	-0.08	0.9817	1061.63	1059.28	0.000048	0.000005	21045856
10.0	0.00	1.0000	954.10	951.49	0.000309	0.000031	3241077
12.0	-1.41	0.7228	792.46	789.31	0.089581	0.008958	11163
14.0	-5.84	0.2606	676.59	672.90	0.123138	0.012314	8120
16.0	-16.52	0.0223	589.33	585.10	0.162348	0.016235	6159
18.0	-19.53	0.0111	521.15	516.36	0.207607	0.020761	4816
20.0	-14.57	0.0349	466.32	460.96	0.259297	0.025930	3856
22.0	-16.83	0.0207	421.20	415.26	0.317822	0.031782	3146
24.0	-21.35	0.0073	383.37	376.83	0.383643	0.038364	2606
26.0	-21.69	0.0068	351.15	343.99	0.457292	0.045729	2186
28.0	-23.91	0.0041	323.33	315.54	0.539371	0.053937	1854
30.0	-33.35	0.0005	299.03	290.59	0.630568	0.063057	1585
32.0	-25.07	0.0031	277.61	268.49	0.697363	0.069736	1433
34.0	-22.33	0.0058	258.54	248.74	0.752761	0.075276	1328
36.0	-23.65	0.0043	241.46	230.92	0.714162	0.071416	1400
38.0	-27.86	0.0016	226.03	214.74	0.496908	0.049691	2012
40.0	-30.42	0.0009	212.02	199.95	0.244312	0.024431	4093
42.0	-29.04	0.0012	199.24	186.33	0.079370	0.007937	12599
44.0	-29.99	0.0010	187.51	173.74	0.068093	0.006809	14685
46.0	-32.80	0.0005	176.71	162.02	0.076577	0.007658	13058
48.0	-36.23	0.0002	166.72	151.06	0.085582	0.008558	11684
50.0	-35.13	0.0003	157.46	140.78	0.067914	0.006791	14724
52.0	-33.08	0.0005	148.86	131.08	0.033867	0.003387	29527
54.0	-32.94	0.0005	140.84	121.89	0.025672	0.002567	38953
56.0	-32.59	0.0006	133.35	113.16	0.026005	0.002600	38454
58.0	-33.70	0.0004	126.36	104.84	0.027660	0.002766	36152
60.0	-35.03	0.0003	119.83	96.86	0.030692	0.003069	32582
62.0	-36.18	0.0002	113.73	89.21	0.033982	0.003398	29427
64.0	-37.34	0.0002	108.04	81.83	0.029941	0.002994	33399
66.0	-39.30	0.0001	102.74	74.70	0.011304	0.001130	88464
68.0	-41.49	0.0001	97.83	67.79	0.010784	0.001078	92731
70.0	-41.56	0.0001	93.30	61.06	0.008961	0.000896	111593
72.0	-41.39	0.0001	89.15	54.51	0.005801	0.000580	172391
74.0	-41.80	0.0001	85.39	48.11	0.006155	0.000616	162461
76.0	-41.86	0.0001	82.01	41.83	0.006703	0.000670	149180
78.0	-42.23	0.0001	79.04	35.66	0.005354	0.000535	186776
80.0	-42.21	0.0001	76.49	29.58	0.003339	0.000334	299492
82.0	-42.13	0.0001	74.38	23.58	0.001587	0.000159	630267
84.0	-42.93	0.0001	72.71	17.63	0.001184	0.000118	844534
86.0	-43.71	0.0000	71.51	11.73	0.001065	0.000107	938834
88.0	-45.64	0.0000	70.79	5.86	0.000999	0.000100	1001402
90.0	-50.30	0.0000	70.54	0.00	0.000776	0.000078	1289401

**T-Mobile**  
**Avon (Deercliff Road)**  
**RFS:APX16DWV-16DWV-S-E-A20 Antenna Worksheet (310 Sector)**

Maximum Permissible Exposure (MPE):							
ERP (Watts):		Height (feet):		Frequency (MHz):		Downtilt (Degrees):	
1691		238		2100		0.0	
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-31.31	0.0007	96127.31	96127.29	0.000000	0.000000	57716798162
1.0	-26.29	0.0023	9612.02	9611.76	0.000002	0.000000	590747060
2.0	-19.76	0.0106	4804.93	4804.42	0.000007	0.000001	151404361
3.0	-14.15	0.0385	3202.09	3201.32	0.000013	0.000001	77268425
4.0	-9.77	0.1054	2400.32	2399.28	0.000019	0.000002	53543317
5.0	-6.44	0.2270	1918.96	1917.66	0.000024	0.000002	42158032
6.0	-3.93	0.4046	1597.82	1596.26	0.000028	0.000003	35913505
7.0	-2.03	0.6266	1368.23	1366.41	0.000031	0.000003	32406712
8.0	-0.78	0.8356	1195.86	1193.77	0.000039	0.000004	25952539
9.0	-0.08	0.9817	1061.63	1059.28	0.000048	0.000005	21039461
10.0	0.00	1.0000	954.10	951.49	0.000308	0.000031	3241806
12.0	-1.41	0.7228	792.46	789.31	0.089743	0.008974	11142
14.0	-5.84	0.2606	676.59	672.90	0.123138	0.012314	8120
16.0	-16.52	0.0223	589.33	585.10	0.162348	0.016235	6159
18.0	-19.53	0.0111	521.15	516.36	0.207607	0.020761	4816
20.0	-14.57	0.0349	466.32	460.96	0.259297	0.025930	3856
22.0	-16.83	0.0207	421.20	415.26	0.317822	0.031782	3146
24.0	-21.35	0.0073	383.37	376.83	0.383643	0.038364	2606
26.0	-21.69	0.0068	351.15	343.99	0.457292	0.045729	2186
28.0	-23.91	0.0041	323.33	315.54	0.539371	0.053937	1854
30.0	-33.35	0.0005	299.03	290.59	0.630568	0.063057	1585
32.0	-25.07	0.0031	277.61	268.49	0.697363	0.069736	1433
34.0	-22.33	0.0058	258.54	248.74	0.752761	0.075276	1328
36.0	-23.65	0.0043	241.46	230.92	0.714161	0.071416	1400
38.0	-27.86	0.0016	226.03	214.74	0.496909	0.049691	2012
40.0	-30.42	0.0009	212.02	199.95	0.244312	0.024431	4093
42.0	-29.04	0.0012	199.24	186.33	0.079406	0.007941	12593
44.0	-29.99	0.0010	187.51	173.74	0.068093	0.006809	14685
46.0	-32.80	0.0005	176.71	162.02	0.076577	0.007658	13058
48.0	-36.23	0.0002	166.72	151.06	0.085661	0.008566	11673
50.0	-35.13	0.0003	157.46	140.78	0.068064	0.006806	14692
52.0	-33.08	0.0005	148.86	131.08	0.033867	0.003387	29527
54.0	-32.94	0.0005	140.84	121.89	0.025672	0.002567	38953
56.0	-32.59	0.0006	133.35	113.16	0.026193	0.002619	38178
58.0	-33.70	0.0004	126.36	104.84	0.027396	0.002740	36501
60.0	-35.03	0.0003	119.83	96.86	0.030692	0.003069	32582
62.0	-36.18	0.0002	113.73	89.21	0.033982	0.003398	29427
64.0	-37.34	0.0002	108.04	81.83	0.029446	0.002945	33960
66.0	-39.30	0.0001	102.74	74.70	0.011304	0.001130	88464
68.0	-41.49	0.0001	97.83	67.79	0.010784	0.001078	92731
70.0	-41.56	0.0001	93.30	61.06	0.009134	0.000913	109482
72.0	-41.39	0.0001	89.15	54.51	0.005801	0.000580	172391
74.0	-41.80	0.0001	85.39	48.11	0.006259	0.000626	159768
76.0	-41.86	0.0001	82.01	41.83	0.006703	0.000670	149180
78.0	-42.23	0.0001	79.04	35.66	0.005354	0.000535	186776
80.0	-42.21	0.0001	76.49	29.58	0.003381	0.000338	295812
82.0	-42.13	0.0001	74.38	23.58	0.001587	0.000159	630267
84.0	-42.93	0.0001	72.71	17.63	0.001167	0.000117	856866
86.0	-43.71	0.0000	71.51	11.73	0.001065	0.000107	938834
88.0	-45.64	0.0000	70.79	5.86	0.001027	0.000103	973431
90.0	-50.30	0.0000	70.54	0.00	0.000745	0.000074	1342556

**T-Mobile**  
**Avon (Deercliff Road)**  
**EMS:FR90-16-02DP Antenna Worksheet (210 Sector)**

Maximum Permissible Exposure (MPE):		1000					
ERP (Watts):	1301	Height (feet):	238	Frequency (MHz):	1900	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-1.51	0.7063	96127.31	96127.29	0.000005	0.000000	213005397
1.0	-0.70	0.8511	9612.02	9611.76	0.000470	0.000047	2129739
2.0	0.00	1.0000	4804.93	4804.42	0.001879	0.000188	532196
3.0	-0.10	0.9772	3202.09	3201.32	0.004231	0.000423	236355
4.0	-0.40	0.9120	2400.32	2399.28	0.007530	0.000753	132810
5.0	-1.40	0.7244	1918.96	1917.66	0.011781	0.001178	84884
6.0	-2.90	0.5129	1597.82	1596.26	0.016992	0.001699	58850
7.0	-4.90	0.3236	1368.23	1366.41	0.023173	0.002317	43153
8.0	-7.90	0.1622	1195.86	1193.77	0.030335	0.003034	32965
9.0	-11.20	0.0759	1061.63	1059.28	0.038491	0.003849	25980
10.0	-13.20	0.0479	954.10	951.49	0.047393	0.004739	21100
12.0	-11.30	0.0741	792.46	789.31	0.069079	0.006908	14476
14.0	-12.30	0.0589	676.59	672.90	0.094765	0.009477	10552
16.0	-17.30	0.0186	589.33	585.10	0.124905	0.012490	8006
18.0	-40.00	0.0001	521.15	516.36	0.156851	0.015685	6375
20.0	-20.00	0.0100	466.32	460.96	0.186289	0.018629	5367
22.0	-18.60	0.0138	421.20	415.26	0.194732	0.019473	5135
24.0	-24.00	0.0040	383.37	376.83	0.179145	0.017914	5582
26.0	-24.30	0.0037	351.15	343.99	0.145036	0.014504	6894
28.0	-20.80	0.0083	323.33	315.54	0.097051	0.009705	10303
30.0	-20.90	0.0081	299.03	290.59	0.057456	0.005746	17404
32.0	-27.90	0.0016	277.61	268.49	0.052920	0.005292	18896
34.0	-33.40	0.0005	258.54	248.74	0.060942	0.006094	16409
36.0	-22.60	0.0055	241.46	230.92	0.070120	0.007012	14261
38.0	-21.40	0.0072	226.03	214.74	0.075344	0.007534	13272
40.0	-24.70	0.0034	212.02	199.95	0.056470	0.005647	17708
42.0	-32.40	0.0006	199.24	186.33	0.030848	0.003085	32417
44.0	-27.30	0.0019	187.51	173.74	0.021791	0.002179	45891
46.0	-26.10	0.0025	176.71	162.02	0.024513	0.002451	40793
48.0	-25.50	0.0028	166.72	151.06	0.027513	0.002751	36346
50.0	-26.00	0.0025	157.46	140.78	0.030834	0.003083	32431
52.0	-27.40	0.0018	148.86	131.08	0.025767	0.002577	38809
54.0	-25.80	0.0026	140.84	121.89	0.023936	0.002394	41778
56.0	-24.10	0.0039	133.35	113.16	0.026550	0.002655	37665
58.0	-26.00	0.0025	126.36	104.84	0.029593	0.002959	33791
60.0	-27.80	0.0017	119.83	96.86	0.028833	0.002883	34682
62.0	-35.50	0.0003	113.73	89.21	0.031937	0.003194	31312
64.0	-35.10	0.0003	108.04	81.83	0.035231	0.003523	28384
66.0	-29.30	0.0012	102.74	74.70	0.036727	0.003673	27227
68.0	-28.40	0.0014	97.83	67.79	0.017350	0.001735	57636
70.0	-25.10	0.0031	93.30	61.06	0.018887	0.001889	52946
72.0	-22.80	0.0052	89.15	54.51	0.028193	0.002819	35469
74.0	-24.20	0.0038	85.39	48.11	0.030126	0.003013	33193
76.0	-25.20	0.0030	82.01	41.83	0.032701	0.003270	30579
78.0	-26.00	0.0025	79.04	35.66	0.027076	0.002708	36933
80.0	-24.60	0.0035	76.49	29.58	0.036489	0.003649	27405
82.0	-30.10	0.0010	74.38	23.58	0.050956	0.005096	19624
84.0	-30.80	0.0008	72.71	17.63	0.052534	0.005253	19035
86.0	-31.80	0.0007	71.51	11.73	0.035600	0.003560	28089
88.0	-28.30	0.0015	70.79	5.86	0.031516	0.003152	31730
90.0	-33.70	0.0004	70.54	0.00	0.015995	0.001600	62518

**T-Mobile**  
**Avon (Deercliff Road)**  
**EMS:FR90-16-02DP Antenna Worksheet (310 Sector)**

Maximum Permissible Exposure (MPE):		1000					
ERP (Watts):	1301	Height (feet):	238	Frequency (MHz):	1900	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-1.51	0.7063	96127.31	96127.29	0.000005	0.000000	213005397
1.0	-0.70	0.8511	9612.02	9611.76	0.000470	0.000047	2129739
2.0	0.00	1.0000	4804.93	4804.42	0.001879	0.000188	532196
3.0	-0.10	0.9772	3202.09	3201.32	0.004231	0.000423	236355
4.0	-0.40	0.9120	2400.32	2399.28	0.007530	0.000753	132810
5.0	-1.40	0.7244	1918.96	1917.66	0.011781	0.001178	84884
6.0	-2.90	0.5129	1597.82	1596.26	0.016992	0.001699	58850
7.0	-4.90	0.3236	1368.23	1366.41	0.023173	0.002317	43153
8.0	-7.90	0.1622	1195.86	1193.77	0.030335	0.003034	32965
9.0	-11.20	0.0759	1061.63	1059.28	0.038491	0.003849	25980
10.0	-13.20	0.0479	954.10	951.49	0.047655	0.004766	20984
12.0	-11.30	0.0741	792.46	789.31	0.069079	0.006908	14476
14.0	-12.30	0.0589	676.59	672.90	0.094765	0.009477	10552
16.0	-17.30	0.0186	589.33	585.10	0.124905	0.012490	8006
18.0	-40.00	0.0001	521.15	516.36	0.156851	0.015685	6375
20.0	-20.00	0.0100	466.32	460.96	0.186289	0.018629	5367
22.0	-18.60	0.0138	421.20	415.26	0.194732	0.019473	5135
24.0	-24.00	0.0040	383.37	376.83	0.178689	0.017869	5596
26.0	-24.30	0.0037	351.15	343.99	0.145036	0.014504	6894
28.0	-20.80	0.0083	323.33	315.54	0.096804	0.009680	10330
30.0	-20.90	0.0081	299.03	290.59	0.057603	0.005760	17360
32.0	-27.90	0.0016	277.61	268.49	0.053055	0.005306	18848
34.0	-33.40	0.0005	258.54	248.74	0.060942	0.006094	16409
36.0	-22.60	0.0055	241.46	230.92	0.070120	0.007012	14261
38.0	-21.40	0.0072	226.03	214.74	0.075344	0.007534	13272
40.0	-24.70	0.0034	212.02	199.95	0.056470	0.005647	17708
42.0	-32.40	0.0006	199.24	186.33	0.030769	0.003077	32499
44.0	-27.30	0.0019	187.51	173.74	0.021791	0.002179	45891
46.0	-26.10	0.0025	176.71	162.02	0.024513	0.002451	40793
48.0	-25.50	0.0028	166.72	151.06	0.027619	0.002762	36207
50.0	-26.00	0.0025	157.46	140.78	0.030953	0.003095	32307
52.0	-27.40	0.0018	148.86	131.08	0.025767	0.002577	38809
54.0	-25.80	0.0026	140.84	121.89	0.023936	0.002394	41778
56.0	-24.10	0.0039	133.35	113.16	0.026622	0.002662	37563
58.0	-26.00	0.0025	126.36	104.84	0.029443	0.002944	33964
60.0	-27.80	0.0017	119.83	96.86	0.028833	0.002883	34682
62.0	-35.50	0.0003	113.73	89.21	0.031937	0.003194	31312
64.0	-35.10	0.0003	108.04	81.83	0.034997	0.003500	28574
66.0	-29.30	0.0012	102.74	74.70	0.036727	0.003673	27227
68.0	-28.40	0.0014	97.83	67.79	0.017350	0.001735	57636
70.0	-25.10	0.0031	93.30	61.06	0.019135	0.001913	52260
72.0	-22.80	0.0052	89.15	54.51	0.028193	0.002819	35469
74.0	-24.20	0.0038	85.39	48.11	0.030457	0.003046	32832
76.0	-25.20	0.0030	82.01	41.83	0.032701	0.003270	30579
78.0	-26.00	0.0025	79.04	35.66	0.027076	0.002708	36933
80.0	-24.60	0.0035	76.49	29.58	0.036898	0.003690	27101
82.0	-30.10	0.0010	74.38	23.58	0.050956	0.005096	19624
84.0	-30.80	0.0008	72.71	17.63	0.051866	0.005187	19280
86.0	-31.80	0.0007	71.51	11.73	0.035600	0.003560	28089
88.0	-28.30	0.0015	70.79	5.86	0.031828	0.003183	31418
90.0	-33.70	0.0004	70.54	0.00	0.015873	0.001587	62998

**US-Immigration & Customs**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		200		Frequency (MHz):		150		Downtilt (Degrees):		0.0	
ERP (Watts):		500		Height (feet):		528		Frequency (MHz):		150	
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE				
0.1	-0.01	0.9977	96127.42	96127.29	0.000002	0.000001	110848250				
1.0	-0.10	0.9772	9613.08	9611.76	0.000180	0.000090	1108559				
2.0	-0.30	0.9333	4807.05	4804.42	0.000722	0.000361	277198				
3.0	-0.60	0.8710	3205.26	3201.32	0.001623	0.000811	123242				
4.0	-1.00	0.7943	2404.54	2399.28	0.002884	0.001442	69358				
5.0	-1.50	0.7079	1924.24	1917.66	0.004503	0.002251	44417				
6.0	-2.20	0.6026	1604.16	1596.26	0.006383	0.003192	31331				
7.0	-3.10	0.4898	1375.62	1366.41	0.008388	0.004194	23844				
8.0	-4.10	0.3890	1204.31	1193.77	0.010371	0.005186	19284				
9.0	-5.30	0.2951	1071.14	1059.28	0.012184	0.006092	16415				
10.0	-6.80	0.2089	964.68	951.49	0.013690	0.006845	14608				
12.0	-11.00	0.0794	805.16	789.31	0.014813	0.007406	13501				
14.0	-19.00	0.0126	691.42	672.90	0.013300	0.006650	15037				
16.0	-27.30	0.0019	606.30	585.10	0.009611	0.004805	20810				
18.0	-15.80	0.0263	540.26	516.36	0.005309	0.002655	37669				
20.0	-12.20	0.0603	487.59	460.96	0.007518	0.003759	26603				
22.0	-10.60	0.0871	444.63	415.26	0.009232	0.004616	21663				
24.0	-10.20	0.0955	408.97	376.83	0.010898	0.005449	18351				
26.0	-10.70	0.0851	378.93	343.99	0.012690	0.006345	15760				
28.0	-12.10	0.0617	353.30	315.54	0.014594	0.007297	13703				
30.0	-14.60	0.0347	331.22	290.59	0.016602	0.008301	12046				
32.0	-18.90	0.0129	312.01	268.49	0.017318	0.008659	11548				
34.0	-27.50	0.0018	295.18	248.74	0.014860	0.007430	13459				
36.0	-26.70	0.0021	280.33	230.92	0.010233	0.005117	19543				
38.0	-19.70	0.0107	267.16	214.74	0.007228	0.003614	27669				
40.0	-16.50	0.0224	255.42	199.95	0.010445	0.005223	19147				
42.0	-14.90	0.0324	244.91	186.33	0.012799	0.006400	15626				
44.0	-14.20	0.0380	235.47	173.74	0.013993	0.006997	14292				
46.0	-14.10	0.0389	226.96	162.02	0.015037	0.007518	13300				
48.0	-14.40	0.0363	219.27	151.06	0.016093	0.008047	12427				
50.0	-15.30	0.0295	212.32	140.78	0.017146	0.008573	11664				
52.0	-16.60	0.0219	206.01	131.08	0.018181	0.009090	11000				
54.0	-18.40	0.0145	200.30	121.89	0.018386	0.009193	10877				
56.0	-20.80	0.0083	195.11	113.16	0.016360	0.008180	12225				
58.0	-24.40	0.0036	190.40	104.84	0.013112	0.006556	15252				
60.0	-29.50	0.0011	186.13	96.86	0.009414	0.004707	21244				
62.0	-37.10	0.0002	182.26	89.21	0.005863	0.002932	34109				
64.0	-35.10	0.0003	178.76	81.83	0.002836	0.001418	70510				
66.0	-29.90	0.0010	175.61	74.70	0.001760	0.000880	113663				
68.0	-27.10	0.0019	172.79	67.79	0.002365	0.001182	84567				
70.0	-25.50	0.0028	170.26	61.06	0.002796	0.001398	71527				
72.0	-24.70	0.0034	168.02	54.51	0.002997	0.001498	66743				
74.0	-24.30	0.0037	166.06	48.11	0.003062	0.001531	65308				
76.0	-24.20	0.0038	164.35	41.83	0.003121	0.001560	64085				
78.0	-24.50	0.0035	162.89	35.66	0.003172	0.001586	63060				
80.0	-25.10	0.0031	161.66	29.58	0.003212	0.001606	62266				
82.0	-26.00	0.0025	160.67	23.58	0.003207	0.001604	62355				
84.0	-26.90	0.0020	159.91	17.63	0.002935	0.001468	68132				
86.0	-28.00	0.0016	159.37	11.73	0.002526	0.001263	79170				
88.0	-28.80	0.0013	159.04	5.86	0.002023	0.001011	98872				
90.0	-29.00	0.0013	158.93	0.00	0.001608	0.000804	124377				

**USA Mobility**  
**Avon (Deercliff Road)**  
**ANDREW:PG1N0F-0093-8 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		618.67					
ERP (Watts):	3500	Height (feet):	515	Frequency (MHz):	928	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9978	96127.41	96127.29	0.000013	0.000002	48984364
1.0	-0.10	0.9781	9613.01	9611.76	0.001263	0.000204	489871
2.0	-0.60	0.8706	4806.92	4804.42	0.005051	0.000816	122488
3.0	-1.60	0.6921	3205.07	3201.32	0.011361	0.001836	54454
4.0	-3.10	0.4900	2404.28	2399.28	0.020127	0.003253	30738
5.0	-5.10	0.3091	1923.92	1917.66	0.031463	0.005086	19663
6.0	-7.89	0.1624	1603.77	1596.26	0.045322	0.007326	13650
7.0	-11.90	0.0645	1375.17	1366.41	0.061181	0.009889	10112
8.0	-18.49	0.0142	1203.79	1193.77	0.078191	0.012639	7912
9.0	-27.96	0.0016	1070.56	1059.28	0.094999	0.015355	6512
10.0	-19.58	0.0110	964.03	951.49	0.109912	0.017766	5628
12.0	-15.19	0.0303	804.38	789.31	0.124663	0.020150	4962
14.0	-16.08	0.0246	690.52	672.90	0.112234	0.018141	5512
16.0	-17.20	0.0190	605.27	585.10	0.130106	0.021030	4755
18.0	-16.77	0.0210	539.11	516.36	0.146932	0.023750	4210
20.0	-16.19	0.0240	486.31	460.96	0.157657	0.025483	3924
22.0	-16.31	0.0234	443.23	415.26	0.166360	0.026890	3718
24.0	-22.16	0.0061	407.45	376.83	0.176042	0.028455	3514
26.0	-37.08	0.0002	377.28	343.99	0.183801	0.029709	3365
28.0	-24.73	0.0034	351.54	315.54	0.188251	0.030428	3286
30.0	-20.09	0.0098	329.33	290.59	0.144384	0.023338	4284
32.0	-19.17	0.0121	310.01	268.49	0.133642	0.021602	4629
34.0	-21.21	0.0076	293.06	248.74	0.131629	0.021276	4700
36.0	-25.85	0.0026	278.10	230.92	0.128922	0.020839	4798
38.0	-36.48	0.0002	264.82	214.74	0.125675	0.020314	4922
40.0	-32.40	0.0006	252.97	199.95	0.109304	0.017668	5660
42.0	-28.40	0.0014	242.36	186.33	0.077817	0.012578	7950
44.0	-29.12	0.0012	232.81	173.74	0.047504	0.007678	13023
46.0	-33.15	0.0005	224.20	162.02	0.044244	0.007152	13983
48.0	-31.06	0.0008	216.42	151.06	0.041180	0.006656	15023
50.0	-25.68	0.0027	209.37	140.78	0.055002	0.008890	11248
52.0	-22.05	0.0062	202.97	131.08	0.078964	0.012764	7834
54.0	-20.17	0.0096	197.17	121.89	0.101566	0.016417	6091
56.0	-19.02	0.0125	191.89	113.16	0.112893	0.018248	5480
58.0	-17.92	0.0161	187.10	104.84	0.117909	0.019059	5246
60.0	-17.59	0.0174	182.75	96.86	0.129081	0.020864	4792
62.0	-17.92	0.0161	178.81	89.21	0.125380	0.020266	4934
64.0	-18.27	0.0149	175.25	81.83	0.121882	0.019701	5075
66.0	-19.66	0.0108	172.04	74.70	0.118607	0.019171	5216
68.0	-22.16	0.0061	169.15	67.79	0.106507	0.017216	5808
70.0	-22.85	0.0052	166.57	61.06	0.085205	0.013772	7260
72.0	-25.68	0.0027	164.28	54.51	0.062930	0.010172	9830
74.0	-26.94	0.0020	162.27	48.11	0.037527	0.006066	16485
76.0	-25.85	0.0026	160.52	41.83	0.028702	0.004639	21554
78.0	-26.38	0.0023	159.02	35.66	0.025953	0.004195	23838
80.0	-23.10	0.0049	157.77	29.58	0.027413	0.004431	22567
82.0	-22.85	0.0052	156.76	23.58	0.026860	0.004342	23032
84.0	-24.73	0.0034	155.97	17.63	0.026435	0.004273	23403
86.0	-23.74	0.0042	155.42	11.73	0.026133	0.004224	23673
88.0	-30.46	0.0009	155.08	5.86	0.025953	0.004195	23837
90.0	-24.58	0.0035	154.97	0.00	0.020530	0.003318	30135

**USA Mobility**  
**Avon (Deercliff Road)**  
**ANDREW:DB636-C Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		300		450		Downtilt (Degrees):	
ERP (Watts):	100	Height (feet):	305	Frequency (MHz):	450		0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.11	0.9750	96127.33	96127.29	0.000000	0.000000	831360466
1.0	-0.20	0.9550	9612.19	9611.76	0.000036	0.000012	8312670
2.0	-0.30	0.9333	4805.28	4804.42	0.000144	0.000048	2077459
3.0	-0.70	0.8511	3202.61	3201.32	0.000325	0.000108	922791
4.0	-1.10	0.7762	2401.00	2399.28	0.000578	0.000193	518735
5.0	-1.70	0.6761	1919.82	1917.66	0.000904	0.000301	331861
6.0	-2.40	0.5754	1598.85	1596.26	0.001303	0.000434	230293
7.0	-3.20	0.4786	1369.43	1366.41	0.001775	0.000592	168982
8.0	-4.00	0.3981	1197.23	1193.77	0.002322	0.000774	129185
9.0	-5.00	0.3162	1063.18	1059.28	0.002944	0.000981	101898
10.0	-6.10	0.2455	955.83	951.49	0.003638	0.001213	82461
12.0	-8.90	0.1288	794.54	789.31	0.005246	0.001749	57183
14.0	-13.30	0.0468	679.03	672.90	0.007104	0.002368	42230
16.0	-22.70	0.0054	592.13	585.10	0.009169	0.003056	32720
18.0	-21.70	0.0068	524.31	516.36	0.011336	0.003779	26464
20.0	-13.10	0.0490	469.84	460.96	0.013493	0.004498	22232
22.0	-9.30	0.1175	425.10	415.26	0.015541	0.005180	19303
24.0	-7.30	0.1862	387.65	376.83	0.017333	0.005778	17307
26.0	-6.30	0.2344	355.81	343.99	0.018617	0.006206	16114
28.0	-6.20	0.2399	328.39	315.54	0.019026	0.006342	15768
30.0	-6.60	0.2188	304.50	290.59	0.019294	0.006431	15548
32.0	-7.70	0.1698	283.49	268.49	0.022122	0.007374	13561
34.0	-9.40	0.1148	264.85	248.74	0.026799	0.008933	11194
36.0	-11.50	0.0708	248.19	230.92	0.031277	0.010426	9591
38.0	-14.00	0.0398	233.21	214.74	0.035118	0.011706	8542
40.0	-16.70	0.0214	219.66	199.95	0.038261	0.012754	7840
42.0	-19.70	0.0107	207.35	186.33	0.041460	0.013820	7235
44.0	-21.40	0.0072	196.11	173.74	0.044715	0.014905	6709
46.0	-18.90	0.0129	185.81	162.02	0.048015	0.016005	6248
48.0	-15.50	0.0282	176.34	151.06	0.051346	0.017115	5842
50.0	-12.60	0.0550	167.61	140.78	0.054694	0.018231	5485
52.0	-10.40	0.0912	159.55	131.08	0.055775	0.018592	5378
54.0	-8.80	0.1318	152.09	121.89	0.051037	0.017012	5878
56.0	-7.70	0.1698	145.19	113.16	0.041869	0.013956	7165
58.0	-7.00	0.1995	138.80	104.84	0.030812	0.010271	9736
60.0	-6.60	0.2188	132.88	96.86	0.019946	0.006649	15040
62.0	-6.60	0.2188	127.41	89.21	0.023385	0.007795	12828
64.0	-6.70	0.2138	122.35	81.83	0.037702	0.012567	7957
66.0	-7.10	0.1950	117.70	74.70	0.053647	0.017882	5592
68.0	-7.50	0.1778	113.44	67.79	0.068471	0.022824	4381
70.0	-8.20	0.1514	109.56	61.06	0.078658	0.026219	3813
72.0	-9.00	0.1259	106.05	54.51	0.080519	0.026840	3725
74.0	-10.00	0.1000	102.90	48.11	0.082176	0.027392	3650
76.0	-11.00	0.0794	100.12	41.83	0.083625	0.027875	3587
78.0	-12.40	0.0575	97.70	35.66	0.083793	0.027931	3580
80.0	-13.90	0.0407	95.65	29.58	0.073740	0.024580	4068
82.0	-15.70	0.0269	93.97	23.58	0.058231	0.019410	5151
84.0	-18.10	0.0155	92.66	17.63	0.040375	0.013458	7430
86.0	-20.20	0.0095	91.72	11.73	0.024889	0.008296	12053
88.0	-23.50	0.0045	91.15	5.86	0.012940	0.004313	23183
90.0	-24.70	0.0034	90.96	0.00	0.005073	0.001691	59133

**USA Mobility**  
**Avon (Deercliff Road)**  
**ANDREW:DB636-C Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		300		Frequency		Downtilt	
ERP (Watts):	100	Height (feet):	308	(MHz):	450	(Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.11	0.9750	96127.33	96127.29	0.000000	0.000000	831360466
1.0	-0.20	0.9550	9612.20	9611.76	0.000036	0.000012	8312685
2.0	-0.30	0.9333	4805.30	4804.42	0.000144	0.000048	2077474
3.0	-0.70	0.8511	3202.64	3201.32	0.000325	0.000108	922806
4.0	-1.10	0.7762	2401.04	2399.28	0.000578	0.000193	518761
5.0	-1.70	0.6761	1919.86	1917.66	0.000904	0.000301	331888
6.0	-2.40	0.5754	1598.90	1596.26	0.001303	0.000434	230311
7.0	-3.20	0.4786	1369.49	1366.41	0.001775	0.000592	169000
8.0	-4.00	0.3981	1197.30	1193.77	0.002322	0.000774	129202
9.0	-5.00	0.3162	1063.26	1059.28	0.002944	0.000981	101915
10.0	-6.10	0.2455	955.92	951.49	0.003637	0.001212	82488
12.0	-8.90	0.1288	794.64	789.31	0.005244	0.001748	57212
14.0	-13.30	0.0468	679.15	672.90	0.007093	0.002364	42293
16.0	-22.70	0.0054	592.27	585.10	0.009149	0.003050	32788
18.0	-21.70	0.0068	524.47	516.36	0.011291	0.003764	26571
20.0	-13.10	0.0490	470.02	460.96	0.013416	0.004472	22361
22.0	-9.30	0.1175	425.30	415.26	0.015427	0.005142	19446
24.0	-7.30	0.1862	387.87	376.83	0.017150	0.005717	17492
26.0	-6.30	0.2344	356.05	343.99	0.018361	0.006120	16339
28.0	-6.20	0.2399	328.64	315.54	0.018652	0.006217	16084
30.0	-6.60	0.2188	304.77	290.59	0.019063	0.006354	15737
32.0	-7.70	0.1698	283.78	268.49	0.022268	0.007423	13472
34.0	-9.40	0.1148	265.16	248.74	0.026838	0.008946	11178
36.0	-11.50	0.0708	248.53	230.92	0.031252	0.010417	9599
38.0	-14.00	0.0398	233.57	214.74	0.034858	0.011619	8606
40.0	-16.70	0.0214	220.04	199.95	0.037942	0.012647	7906
42.0	-19.70	0.0107	207.75	186.33	0.041090	0.013697	7301
44.0	-21.40	0.0072	196.53	173.74	0.044290	0.014763	6773
46.0	-18.90	0.0129	186.26	162.02	0.047530	0.015843	6311
48.0	-15.50	0.0282	176.81	151.06	0.050796	0.016932	5905
50.0	-12.60	0.0550	168.11	140.78	0.054074	0.018025	5547
52.0	-10.40	0.0912	160.07	131.08	0.054295	0.018098	5525
54.0	-8.80	0.1318	152.64	121.89	0.049186	0.016395	6099
56.0	-7.70	0.1698	145.77	113.16	0.039725	0.013242	7551
58.0	-7.00	0.1995	139.40	104.84	0.028724	0.009575	10444
60.0	-6.60	0.2188	133.51	96.86	0.018407	0.006136	16297
62.0	-6.60	0.2188	128.06	89.21	0.024471	0.008157	12259
64.0	-6.70	0.2138	123.04	81.83	0.038658	0.012886	7760
66.0	-7.10	0.1950	118.41	74.70	0.054300	0.018100	5524
68.0	-7.50	0.1778	114.18	67.79	0.068307	0.022769	4391
70.0	-8.20	0.1514	110.32	61.06	0.077276	0.025759	3882
72.0	-9.00	0.1259	106.83	54.51	0.079068	0.026356	3794
74.0	-10.00	0.1000	103.71	48.11	0.080663	0.026888	3719
76.0	-11.00	0.0794	100.95	41.83	0.082057	0.027352	3656
78.0	-12.40	0.0575	98.56	35.66	0.081854	0.027285	3665
80.0	-13.90	0.0407	96.52	29.58	0.071777	0.023926	4179
82.0	-15.70	0.0269	94.86	23.58	0.056381	0.018794	5320
84.0	-18.10	0.0155	93.56	17.63	0.039098	0.013033	7673
86.0	-20.20	0.0095	92.62	11.73	0.024072	0.008024	12462
88.0	-23.50	0.0045	92.07	5.86	0.012567	0.004189	23872
90.0	-24.70	0.0034	91.88	0.00	0.004973	0.001658	60328

**USA Mobility**  
**Avon (Deercliff Road)**  
**ANDREW:DB636-C Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		300		450		Downtilt (Degrees): 0.0		
ERP (Watts):	100	Height (feet):	335 <th>Frequency (MHz):</th> <td>450 <th>Power Density (<math>\mu\text{W}/\text{cm}^2</math>)</th> <th>Percent of MPE</th> <th>Times Below MPE</th> </td>	Frequency (MHz):	450 <th>Power Density (<math>\mu\text{W}/\text{cm}^2</math>)</th> <th>Percent of MPE</th> <th>Times Below MPE</th>	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE	
0.1	-0.11	0.9750	96127.34	96127.29	0.000000	0.000000	831360564	
1.0	-0.20	0.9550	9612.28	9611.76	0.000036	0.000012	8312827	
2.0	-0.30	0.9333	4805.46	4804.42	0.000144	0.000048	2077616	
3.0	-0.70	0.8511	3202.88	3201.32	0.000325	0.000108	922948	
4.0	-1.10	0.7762	2401.37	2399.28	0.000578	0.000193	519008	
5.0	-1.70	0.6761	1920.28	1917.66	0.000903	0.000301	332152	
6.0	-2.40	0.5754	1599.40	1596.26	0.001302	0.000434	230480	
7.0	-3.20	0.4786	1370.07	1366.41	0.001773	0.000591	169165	
8.0	-4.00	0.3981	1197.96	1193.77	0.002319	0.000773	129365	
9.0	-5.00	0.3162	1064.00	1059.28	0.002936	0.000979	102163	
10.0	-6.10	0.2455	956.75	951.49	0.003625	0.001208	82753	
12.0	-8.90	0.1288	795.64	789.31	0.005208	0.001736	57603	
14.0	-13.30	0.0468	680.31	672.90	0.006992	0.002331	42907	
16.0	-22.70	0.0054	593.60	585.10	0.008919	0.002973	33636	
18.0	-21.70	0.0068	525.97	516.36	0.010859	0.003620	27626	
20.0	-13.10	0.0490	471.70	460.96	0.012691	0.004230	23639	
22.0	-9.30	0.1175	427.15	415.26	0.014293	0.004764	20988	
24.0	-7.30	0.1862	389.90	376.83	0.015416	0.005139	19460	
26.0	-6.30	0.2344	358.26	343.99	0.015711	0.005237	19094	
28.0	-6.20	0.2399	331.04	315.54	0.016101	0.005367	18632	
30.0	-6.60	0.2188	307.35	290.59	0.019095	0.006365	15710	
32.0	-7.70	0.1698	286.55	268.49	0.023067	0.007689	13005	
34.0	-9.40	0.1148	268.12	248.74	0.026915	0.008972	11146	
36.0	-11.50	0.0708	251.69	230.92	0.029833	0.009944	10055	
38.0	-14.00	0.0398	236.93	214.74	0.032496	0.010832	9232	
40.0	-16.70	0.0214	223.61	199.95	0.035195	0.011732	8523	
42.0	-19.70	0.0107	211.52	186.33	0.037922	0.012641	7911	
44.0	-21.40	0.0072	200.51	173.74	0.040663	0.013554	7377	
46.0	-18.90	0.0129	190.45	162.02	0.043408	0.014469	6911	
48.0	-15.50	0.0282	181.22	151.06	0.046143	0.015381	6501	
50.0	-12.60	0.0550	172.74	140.78	0.045047	0.015016	6659	
52.0	-10.40	0.0912	164.93	131.08	0.040095	0.013365	7482	
54.0	-8.80	0.1318	157.73	121.89	0.032212	0.010737	9313	
56.0	-7.70	0.1698	151.09	113.16	0.023073	0.007691	13002	
58.0	-7.00	0.1995	144.96	104.84	0.014887	0.004962	20152	
60.0	-6.60	0.2188	139.30	96.86	0.021083	0.007028	14229	
62.0	-6.60	0.2188	134.09	89.21	0.032483	0.010828	9235	
64.0	-6.70	0.2138	129.30	81.83	0.044953	0.014984	6673	
66.0	-7.10	0.1950	124.91	74.70	0.056403	0.018801	5318	
68.0	-7.50	0.1778	120.90	67.79	0.064563	0.021521	4646	
70.0	-8.20	0.1514	117.26	61.06	0.066261	0.022087	4527	
72.0	-9.00	0.1259	113.99	54.51	0.067557	0.022519	4440	
74.0	-10.00	0.1000	111.07	48.11	0.068703	0.022901	4366	
76.0	-11.00	0.0794	108.50	41.83	0.069698	0.023233	4304	
78.0	-12.40	0.0575	106.27	35.66	0.065847	0.021949	4556	
80.0	-13.90	0.0407	104.39	29.58	0.056367	0.018789	5322	
82.0	-15.70	0.0269	102.85	23.58	0.042903	0.014301	6992	
84.0	-18.10	0.0155	101.65	17.63	0.029802	0.009934	10066	
86.0	-20.20	0.0095	100.79	11.73	0.018440	0.006147	16268	
88.0	-23.50	0.0045	100.28	5.86	0.009810	0.003270	30582	
90.0	-24.70	0.0034	100.11	0.00	0.004189	0.001396	71619	

**USA Mobility  
Avon (Deercliff Road)  
ANDREW:DB636-C Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):							
ERP (Watts):	100	Height (feet):	335	Frequency (MHz):	450	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.11	0.9750	96127.34	96127.29	0.000000	0.000000	
1.0	-0.20	0.9550	9612.28	9611.76	0.000036	0.000012	831360564
2.0	-0.30	0.9333	4805.46	4804.42	0.000144	0.000048	8312827
3.0	-0.70	0.8511	3202.88	3201.32	0.000325	0.000108	2077616
4.0	-1.10	0.7762	2401.37	2399.28	0.000578	0.000193	922948
5.0	-1.70	0.6761	1920.28	1917.66	0.000903	0.000301	519008
6.0	-2.40	0.5754	1599.40	1596.26	0.001302	0.000434	332152
7.0	-3.20	0.4786	1370.07	1366.41	0.001773	0.000591	230480
8.0	-4.00	0.3981	1197.96	1193.77	0.002319	0.000773	169165
9.0	-5.00	0.3162	1064.00	1059.28	0.002936	0.000979	129365
10.0	-6.10	0.2455	956.75	951.49	0.003625	0.001208	102163
12.0	-8.90	0.1288	795.64	789.31	0.005208	0.001736	82753
14.0	-13.30	0.0468	680.31	672.90	0.006992	0.002331	57603
16.0	-22.70	0.0054	593.60	585.10	0.008919	0.002973	42907
18.0	-21.70	0.0068	525.97	516.36	0.010859	0.003620	33636
20.0	-13.10	0.0490	471.70	460.96	0.012691	0.004230	27626
22.0	-9.30	0.1175	427.15	415.26	0.014293	0.004764	23639
24.0	-7.30	0.1862	389.90	376.83	0.015416	0.005139	20988
26.0	-6.30	0.2344	358.26	343.99	0.015711	0.005237	19460
28.0	-6.20	0.2399	331.04	315.54	0.016101	0.005367	19094
30.0	-6.60	0.2188	307.35	290.59	0.019095	0.006365	18632
32.0	-7.70	0.1698	286.55	268.49	0.023067	0.007689	15710
34.0	-9.40	0.1148	268.12	248.74	0.026915	0.008972	13005
36.0	-11.50	0.0708	251.69	230.92	0.029833	0.010832	11146
38.0	-14.00	0.0398	236.93	214.74	0.032496	0.011732	9232
40.0	-16.70	0.0214	223.61	199.95	0.035195	0.012641	8523
42.0	-19.70	0.0107	211.52	186.33	0.037922	0.013554	7911
44.0	-21.40	0.0072	200.51	173.74	0.040663	0.014469	7377
46.0	-18.90	0.0129	190.45	162.02	0.043408	0.015381	6911
48.0	-15.50	0.0282	181.22	151.06	0.046143	0.015381	6501
50.0	-12.60	0.0550	172.74	140.78	0.045047	0.015016	6659
52.0	-10.40	0.0912	164.93	131.08	0.040095	0.013365	7482
54.0	-8.80	0.1318	157.73	121.89	0.032212	0.010737	9313
56.0	-7.70	0.1698	151.09	113.16	0.023073	0.007691	13002
58.0	-7.00	0.1995	144.96	104.84	0.014887	0.004962	20152
60.0	-6.60	0.2188	139.30	96.86	0.021083	0.007028	14229
62.0	-6.60	0.2188	134.09	89.21	0.032483	0.010828	9235
64.0	-6.70	0.2138	129.30	81.83	0.044953	0.014984	6673
66.0	-7.10	0.1950	124.91	74.70	0.056403	0.018801	5318
68.0	-7.50	0.1778	120.90	67.79	0.064563	0.021521	4646
70.0	-8.20	0.1514	117.26	61.06	0.066261	0.022087	4527
72.0	-9.00	0.1259	113.99	54.51	0.067557	0.022519	4440
74.0	-10.00	0.1000	111.07	48.11	0.068703	0.022901	4366
76.0	-11.00	0.0794	108.50	41.83	0.069698	0.023233	4304
78.0	-12.40	0.0575	106.27	35.66	0.065847	0.021949	4556
80.0	-13.90	0.0407	104.39	29.58	0.056367	0.018789	5322
82.0	-15.70	0.0269	102.85	23.58	0.042903	0.014301	6992
84.0	-18.10	0.0155	101.65	17.63	0.029802	0.009934	10066
86.0	-20.20	0.0095	100.79	11.73	0.018440	0.006147	16268
88.0	-23.50	0.0045	100.28	5.86	0.009810	0.003270	30582
90.0	-24.70	0.0034	100.11	0.00	0.004189	0.001396	71619

**USA Mobility**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 200  
ERP (Watts): 100      Height (feet): 187      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.30	96127.29	0.000000	0.000000	554240005
1.0	-0.10	0.9772	9611.92	9611.76	0.000036	0.000018	5541464
2.0	-0.30	0.9333	4804.73	4804.42	0.000144	0.000072	1384658
3.0	-0.60	0.8710	3201.79	3201.32	0.000325	0.000163	614879
4.0	-1.00	0.7943	2399.91	2399.28	0.000579	0.000289	345456
5.0	-1.50	0.7079	1918.45	1917.66	0.000906	0.000453	220753
6.0	-2.20	0.6026	1597.21	1596.26	0.001307	0.000654	153012
7.0	-3.10	0.4898	1367.52	1366.41	0.001783	0.000892	112167
8.0	-4.10	0.3890	1195.04	1193.77	0.002335	0.001167	85658
9.0	-5.30	0.2951	1060.71	1059.28	0.002964	0.001482	67483
10.0	-6.80	0.2089	953.08	951.49	0.003671	0.001835	54483
12.0	-11.00	0.0794	791.23	789.31	0.005326	0.002663	37549
14.0	-19.00	0.0126	675.15	672.90	0.007315	0.003658	27340
16.0	-27.30	0.0019	587.68	585.10	0.009578	0.004789	20881
18.0	-15.80	0.0263	519.28	516.36	0.012059	0.006030	16584
20.0	-12.20	0.0603	464.22	460.96	0.014623	0.007311	13677
22.0	-10.60	0.0871	418.88	415.26	0.017189	0.008594	11635
24.0	-10.20	0.0955	380.82	376.83	0.019665	0.009833	10170
26.0	-10.70	0.0851	348.36	343.99	0.021925	0.010963	9121
28.0	-12.10	0.0617	320.29	315.54	0.023773	0.011887	8412
30.0	-14.60	0.0347	295.75	290.59	0.024706	0.012353	8095
32.0	-18.90	0.0129	274.07	268.49	0.024631	0.012316	8119
34.0	-27.50	0.0018	254.74	248.74	0.023717	0.011859	8432
36.0	-26.70	0.0021	237.38	230.92	0.021945	0.010972	9113
38.0	-19.70	0.0107	221.67	214.74	0.019086	0.009543	10479
40.0	-16.50	0.0224	207.37	199.95	0.015301	0.007650	13071
42.0	-14.90	0.0324	194.28	186.33	0.010860	0.005430	18415
44.0	-14.20	0.0380	182.23	173.74	0.009710	0.004855	20596
46.0	-14.10	0.0389	171.10	162.02	0.012008	0.006004	16655
48.0	-14.40	0.0363	160.76	151.06	0.014125	0.007063	14158
50.0	-15.30	0.0295	151.14	140.78	0.015979	0.007990	12516
52.0	-16.60	0.0219	142.15	131.08	0.018044	0.009022	11083
54.0	-18.40	0.0145	133.73	121.89	0.020379	0.010190	9813
56.0	-20.80	0.0083	125.82	113.16	0.023017	0.011508	8689
58.0	-24.40	0.0036	118.39	104.84	0.025993	0.012996	7694
60.0	-29.50	0.0011	111.39	96.86	0.028962	0.014481	6905
62.0	-37.10	0.0002	104.80	89.21	0.027284	0.013642	7330
64.0	-35.10	0.0003	98.59	81.83	0.019931	0.009966	10034
66.0	-29.90	0.0010	92.76	74.70	0.011700	0.005850	17093
68.0	-27.10	0.0019	87.29	67.79	0.018775	0.009387	10652
70.0	-25.50	0.0028	82.18	61.06	0.022978	0.011489	8704
72.0	-24.70	0.0034	77.44	54.51	0.025829	0.012915	7743
74.0	-24.30	0.0037	73.07	48.11	0.028951	0.014475	6908
76.0	-24.20	0.0038	69.10	41.83	0.030580	0.015290	6540
78.0	-24.50	0.0035	65.55	35.66	0.020643	0.010322	9688
80.0	-25.10	0.0031	62.45	29.58	0.007116	0.003558	28104
82.0	-26.00	0.0025	59.84	23.58	0.003898	0.001949	51304
84.0	-26.90	0.0020	57.76	17.63	0.005065	0.002533	39486
86.0	-28.00	0.0016	56.24	11.73	0.005317	0.002659	37613
88.0	-28.80	0.0013	55.31	5.86	0.004828	0.002414	41425
90.0	-29.00	0.0013	55.00	0.00	0.002686	0.001343	74467

**USA Mobility**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		200					
ERP (Watts):	100	Height (feet):	219	Frequency (MHz):	150	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.31	96127.29	0.000000	0.000000	554240048
1.0	-0.10	0.9772	9611.98	9611.76	0.000036	0.000018	5541535
2.0	-0.30	0.9333	4804.85	4804.42	0.000144	0.000072	1384728
3.0	-0.60	0.8710	3201.97	3201.32	0.000325	0.000163	614949
4.0	-1.00	0.7943	2400.15	2399.28	0.000579	0.000289	345527
5.0	-1.50	0.7079	1918.76	1917.66	0.000906	0.000453	220823
6.0	-2.20	0.6026	1597.58	1596.26	0.001306	0.000653	153082
7.0	-3.10	0.4898	1367.94	1366.41	0.001782	0.000891	112238
8.0	-4.10	0.3890	1195.53	1193.77	0.002333	0.001166	85728
9.0	-5.30	0.2951	1061.26	1059.28	0.002961	0.001480	67553
10.0	-6.80	0.2089	953.69	951.49	0.003666	0.001833	54553
12.0	-11.00	0.0794	791.97	789.31	0.005316	0.002658	37619
14.0	-19.00	0.0126	676.01	672.90	0.007218	0.003609	27706
16.0	-27.30	0.0019	588.67	585.10	0.009288	0.004644	21532
18.0	-15.80	0.0263	520.40	516.36	0.011428	0.005714	17501
20.0	-12.20	0.0603	465.48	460.96	0.013517	0.006758	14796
22.0	-10.60	0.0871	420.27	415.26	0.015383	0.007691	13001
24.0	-10.20	0.0955	382.35	376.83	0.016932	0.008466	11811
26.0	-10.70	0.0851	350.03	343.99	0.017790	0.008895	11242
28.0	-12.10	0.0617	322.11	315.54	0.017761	0.008880	11260
30.0	-14.60	0.0347	297.72	290.59	0.017015	0.008508	11754
32.0	-18.90	0.0129	276.19	268.49	0.015537	0.007768	12872
34.0	-27.50	0.0018	257.03	248.74	0.013190	0.006595	15162
36.0	-26.70	0.0021	239.83	230.92	0.010240	0.005120	19532
38.0	-19.70	0.0107	224.29	214.74	0.006844	0.003422	29221
40.0	-16.50	0.0224	210.17	199.95	0.007544	0.003772	26512
42.0	-14.90	0.0324	197.26	186.33	0.009214	0.004607	21706
44.0	-14.20	0.0380	185.41	173.74	0.010619	0.005310	18833
46.0	-14.10	0.0389	174.48	162.02	0.011990	0.005995	16680
48.0	-14.40	0.0363	164.36	151.06	0.013493	0.006747	14822
50.0	-15.30	0.0295	154.96	140.78	0.015177	0.007589	13177
52.0	-16.60	0.0219	146.20	131.08	0.017047	0.008523	11732
54.0	-18.40	0.0145	138.03	121.89	0.019122	0.009561	10459
56.0	-20.80	0.0083	130.38	113.16	0.021046	0.010523	9502
58.0	-24.40	0.0036	123.22	104.84	0.019616	0.009808	10195
60.0	-29.50	0.0011	116.51	96.86	0.014769	0.007385	13541
62.0	-37.10	0.0002	110.23	89.21	0.007863	0.003931	25436
64.0	-35.10	0.0003	104.35	81.83	0.012380	0.006190	16154
66.0	-29.90	0.0010	98.86	74.70	0.015857	0.007929	12612
68.0	-27.10	0.0019	93.74	67.79	0.017638	0.008819	11339
70.0	-25.50	0.0028	89.00	61.06	0.019529	0.009765	10241
72.0	-24.70	0.0034	84.64	54.51	0.021546	0.010773	9282
74.0	-24.30	0.0037	80.67	48.11	0.021443	0.010721	9327
76.0	-24.20	0.0038	77.09	41.83	0.014674	0.007337	13629
78.0	-24.50	0.0035	73.92	35.66	0.006193	0.003096	32296
80.0	-25.10	0.0031	71.19	29.58	0.002326	0.001163	86000
82.0	-26.00	0.0025	68.91	23.58	0.003491	0.001746	57285
84.0	-26.90	0.0020	67.11	17.63	0.003745	0.001872	53406
86.0	-28.00	0.0016	65.81	11.73	0.003877	0.001938	51586
88.0	-28.80	0.0013	65.02	5.86	0.003289	0.001644	60813
90.0	-29.00	0.0013	64.75	0.00	0.001938	0.000969	103222

**USA Mobility**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 200  
ERP (Watts): 100      Height (feet): 452      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm²)	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.38	96127.29	0.000000	0.000000	554240878
1.0	-0.10	0.9772	9612.72	9611.76	0.000036	0.000018	5542389
2.0	-0.30	0.9333	4806.33	4804.42	0.000144	0.000072	1385582
3.0	-0.60	0.8710	3204.20	3201.32	0.000325	0.000162	615803
4.0	-1.00	0.7943	2403.12	2399.28	0.000577	0.000289	346381
5.0	-1.50	0.7079	1922.47	1917.66	0.000902	0.000451	221677
6.0	-2.20	0.6026	1602.03	1596.26	0.001299	0.000650	153937
7.0	-3.10	0.4898	1373.14	1366.41	0.001743	0.000871	114756
8.0	-4.10	0.3890	1201.47	1193.77	0.002213	0.001107	90371
9.0	-5.30	0.2951	1067.95	1059.28	0.002686	0.001343	74457
10.0	-6.80	0.2089	961.13	951.49	0.003137	0.001568	63763
12.0	-11.00	0.0794	800.91	789.31	0.003855	0.001927	51881
14.0	-19.00	0.0126	686.46	672.90	0.004058	0.002029	49288
16.0	-27.30	0.0019	600.64	585.10	0.003738	0.001869	53497
18.0	-15.80	0.0263	533.91	516.36	0.002921	0.001460	68480
20.0	-12.20	0.0603	480.53	460.96	0.001806	0.000903	110765
22.0	-10.60	0.0871	436.89	415.26	0.001766	0.000883	113236
24.0	-10.20	0.0955	400.54	376.83	0.002266	0.001133	88243
26.0	-10.70	0.0851	369.81	343.99	0.002669	0.001335	74933
28.0	-12.10	0.0617	343.51	315.54	0.003089	0.001544	64746
30.0	-14.60	0.0347	320.75	290.59	0.003542	0.001771	56461
32.0	-18.90	0.0129	300.87	268.49	0.004025	0.002012	49691
34.0	-27.50	0.0018	283.38	248.74	0.004536	0.002268	44090
36.0	-26.70	0.0021	267.88	230.92	0.004769	0.002384	41940
38.0	-19.70	0.0107	254.06	214.74	0.004209	0.002104	47518
40.0	-16.50	0.0224	241.68	199.95	0.003072	0.001536	65101
42.0	-14.90	0.0324	230.55	186.33	0.001804	0.000902	110887
44.0	-14.20	0.0380	220.49	173.74	0.002691	0.001345	74335
46.0	-14.10	0.0389	211.38	162.02	0.003396	0.001698	58893
48.0	-14.40	0.0363	203.11	151.06	0.003762	0.001881	53167
50.0	-15.30	0.0295	195.58	140.78	0.004050	0.002025	49379
52.0	-16.60	0.0219	188.72	131.08	0.004348	0.002174	45997
54.0	-18.40	0.0145	182.46	121.89	0.004644	0.002322	43069
56.0	-20.80	0.0083	176.75	113.16	0.004940	0.002470	40483
58.0	-24.40	0.0036	171.53	104.84	0.005056	0.002528	39556
60.0	-29.50	0.0011	166.78	96.86	0.004504	0.002252	44401
62.0	-37.10	0.0002	162.45	89.21	0.003546	0.001773	56398
64.0	-35.10	0.0003	158.52	81.83	0.002441	0.001220	81945
66.0	-29.90	0.0010	154.96	74.70	0.001397	0.000699	143161
68.0	-27.10	0.0019	151.75	67.79	0.000566	0.000283	353188
70.0	-25.50	0.0028	148.87	61.06	0.000560	0.000280	357287
72.0	-24.70	0.0034	146.30	54.51	0.000717	0.000359	278915
74.0	-24.30	0.0037	144.04	48.11	0.000807	0.000404	247778
76.0	-24.20	0.0038	142.07	41.83	0.000837	0.000418	238951
78.0	-24.50	0.0035	140.38	35.66	0.000856	0.000428	233777
80.0	-25.10	0.0031	138.96	29.58	0.000871	0.000436	229577
82.0	-26.00	0.0025	137.80	23.58	0.000884	0.000442	226269
84.0	-26.90	0.0020	136.91	17.63	0.000852	0.000426	234787
86.0	-28.00	0.0016	136.28	11.73	0.000736	0.000368	271688
88.0	-28.80	0.0013	135.90	5.86	0.000576	0.000288	347086
90.0	-29.00	0.0013	135.77	0.00	0.000441	0.000220	453819

**USA Mobility**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 200  
ERP (Watts): 100      Height (feet): 452      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (μW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.38	96127.29	0.000000	0.000000	554240878
1.0	-0.10	0.9772	9612.72	9611.76	0.000036	0.000018	5542389
2.0	-0.30	0.9333	4806.33	4804.42	0.000144	0.000072	1385582
3.0	-0.60	0.8710	3204.20	3201.32	0.000325	0.000162	615803
4.0	-1.00	0.7943	2403.12	2399.28	0.000577	0.000289	346381
5.0	-1.50	0.7079	1922.47	1917.66	0.000902	0.000451	221677
6.0	-2.20	0.6026	1602.03	1596.26	0.001299	0.000650	153937
7.0	-3.10	0.4898	1373.14	1366.41	0.001743	0.000871	114756
8.0	-4.10	0.3890	1201.47	1193.77	0.002213	0.001107	90371
9.0	-5.30	0.2951	1067.95	1059.28	0.002686	0.001343	74457
10.0	-6.80	0.2089	961.13	951.49	0.003137	0.001568	63763
12.0	-11.00	0.0794	800.91	789.31	0.003855	0.001927	51881
14.0	-19.00	0.0126	686.46	672.90	0.004058	0.002029	49288
16.0	-27.30	0.0019	600.64	585.10	0.003738	0.001869	53497
18.0	-15.80	0.0263	533.91	516.36	0.002921	0.001460	68480
20.0	-12.20	0.0603	480.53	460.96	0.001806	0.000903	110765
22.0	-10.60	0.0871	436.89	415.26	0.001766	0.000883	113236
24.0	-10.20	0.0955	400.54	376.83	0.002266	0.001133	88243
26.0	-10.70	0.0851	369.81	343.99	0.002669	0.001335	74933
28.0	-12.10	0.0617	343.51	315.54	0.003089	0.001544	64746
30.0	-14.60	0.0347	320.75	290.59	0.003542	0.001771	56461
32.0	-18.90	0.0129	300.87	268.49	0.004025	0.002012	49691
34.0	-27.50	0.0018	283.38	248.74	0.004536	0.002268	44090
36.0	-26.70	0.0021	267.88	230.92	0.004769	0.002384	41940
38.0	-19.70	0.0107	254.06	214.74	0.004209	0.002104	47518
40.0	-16.50	0.0224	241.68	199.95	0.003072	0.001536	65101
42.0	-14.90	0.0324	230.55	186.33	0.001804	0.000902	110887
44.0	-14.20	0.0380	220.49	173.74	0.002691	0.001345	74335
46.0	-14.10	0.0389	211.38	162.02	0.003396	0.001698	58893
48.0	-14.40	0.0363	203.11	151.06	0.003762	0.001881	53167
50.0	-15.30	0.0295	195.58	140.78	0.004050	0.002025	49379
52.0	-16.60	0.0219	188.72	131.08	0.004348	0.002174	45997
54.0	-18.40	0.0145	182.46	121.89	0.004644	0.002322	43069
56.0	-20.80	0.0083	176.75	113.16	0.004940	0.002470	40483
58.0	-24.40	0.0036	171.53	104.84	0.005056	0.002528	39556
60.0	-29.50	0.0011	166.78	96.86	0.004504	0.002252	44401
62.0	-37.10	0.0002	162.45	89.21	0.003546	0.001773	56398
64.0	-35.10	0.0003	158.52	81.83	0.002441	0.001220	81945
66.0	-29.90	0.0010	154.96	74.70	0.001397	0.000699	143161
68.0	-27.10	0.0019	151.75	67.79	0.000566	0.000283	353188
70.0	-25.50	0.0028	148.87	61.06	0.000560	0.000280	357287
72.0	-24.70	0.0034	146.30	54.51	0.000717	0.000359	278915
74.0	-24.30	0.0037	144.04	48.11	0.000807	0.000404	247778
76.0	-24.20	0.0038	142.07	41.83	0.000837	0.000418	238951
78.0	-24.50	0.0035	140.38	35.66	0.000856	0.000428	233777
80.0	-25.10	0.0031	138.96	29.58	0.000871	0.000436	229577
82.0	-26.00	0.0025	137.80	23.58	0.000884	0.000442	226269
84.0	-26.90	0.0020	136.91	17.63	0.000852	0.000426	234787
86.0	-28.00	0.0016	136.28	11.73	0.000736	0.000368	271688
88.0	-28.80	0.0013	135.90	5.86	0.000576	0.000288	347086
90.0	-29.00	0.0013	135.77	0.00	0.000441	0.000220	453819

**USA Mobility**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F6 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		200		200			
ERP (Watts):	100	Height (feet):	480	Frequency (MHz):	150	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.40	96127.29	0.000000	0.000000	554241052
1.0	-0.10	0.9772	9612.85	9611.76	0.000036	0.000018	5542533
2.0	-0.30	0.9333	4806.58	4804.42	0.000144	0.000072	1385725
3.0	-0.60	0.8710	3204.57	3201.32	0.000325	0.000162	615946
4.0	-1.00	0.7943	2403.61	2399.28	0.000577	0.000289	346524
5.0	-1.50	0.7079	1923.09	1917.66	0.000902	0.000451	221820
6.0	-2.20	0.6026	1602.77	1596.26	0.001293	0.000647	154634
7.0	-3.10	0.4898	1374.01	1366.41	0.001726	0.000863	115858
8.0	-4.10	0.3890	1202.46	1193.77	0.002171	0.001086	92119
9.0	-5.30	0.2951	1069.07	1059.28	0.002603	0.001301	76846
10.0	-6.80	0.2089	962.37	951.49	0.002995	0.001498	66776
12.0	-11.00	0.0794	802.40	789.31	0.003543	0.001771	56451
14.0	-19.00	0.0126	688.20	672.90	0.003517	0.001758	56873
16.0	-27.30	0.0019	602.63	585.10	0.003021	0.001510	66208
18.0	-15.80	0.0263	536.14	516.36	0.002089	0.001045	95734
20.0	-12.20	0.0603	483.01	460.96	0.001360	0.000680	147010
22.0	-10.60	0.0871	439.61	415.26	0.001855	0.000928	107805
24.0	-10.20	0.0955	403.51	376.83	0.002242	0.001121	89208
26.0	-10.70	0.0851	373.03	343.99	0.002620	0.001310	76326
28.0	-12.10	0.0617	346.97	315.54	0.003027	0.001514	66067
30.0	-14.60	0.0347	324.45	290.59	0.003461	0.001731	57782
32.0	-18.90	0.0129	304.82	268.49	0.003921	0.001960	51012
34.0	-27.50	0.0018	287.56	248.74	0.004260	0.002130	46953
36.0	-26.70	0.0021	272.30	230.92	0.003862	0.001931	51782
38.0	-19.70	0.0107	258.72	214.74	0.002898	0.001449	69024
40.0	-16.50	0.0224	246.58	199.95	0.001670	0.000835	119783
42.0	-14.90	0.0324	235.68	186.33	0.002268	0.001134	88179
44.0	-14.20	0.0380	225.85	173.74	0.002927	0.001464	68328
46.0	-14.10	0.0389	216.96	162.02	0.003297	0.001648	60664
48.0	-14.40	0.0363	208.91	151.06	0.003551	0.001776	56317
50.0	-15.30	0.0295	201.60	140.78	0.003811	0.001905	52486
52.0	-16.60	0.0219	194.95	131.08	0.004068	0.002034	49164
54.0	-18.40	0.0145	188.90	121.89	0.004327	0.002163	46225
56.0	-20.80	0.0083	183.38	113.16	0.004499	0.002250	44452
58.0	-24.40	0.0036	178.37	104.84	0.004158	0.002079	48103
60.0	-29.50	0.0011	173.80	96.86	0.003377	0.001688	59232
62.0	-37.10	0.0002	169.65	89.21	0.002453	0.001226	81548
64.0	-35.10	0.0003	165.89	81.83	0.001520	0.000760	131611
66.0	-29.90	0.0010	162.49	74.70	0.000725	0.000363	275776
68.0	-27.10	0.0019	159.43	67.79	0.000427	0.000214	467936
70.0	-25.50	0.0028	156.69	61.06	0.000584	0.000292	342687
72.0	-24.70	0.0034	154.26	54.51	0.000687	0.000343	291318
74.0	-24.30	0.0037	152.11	48.11	0.000731	0.000365	273707
76.0	-24.20	0.0038	150.24	41.83	0.000747	0.000374	267583
78.0	-24.50	0.0035	148.65	35.66	0.000762	0.000381	262411
80.0	-25.10	0.0031	147.31	29.58	0.000774	0.000387	258255
82.0	-26.00	0.0025	146.22	23.58	0.000784	0.000392	254953
84.0	-26.90	0.0020	145.38	17.63	0.000740	0.000370	270104
86.0	-28.00	0.0016	144.78	11.73	0.000636	0.000318	314633
88.0	-28.80	0.0013	144.42	5.86	0.000502	0.000251	398282
90.0	-29.00	0.0013	144.30	0.00	0.000390	0.000195	512665

**USA Mobility  
Avon (Deercliff Road)  
RFS:201-8 Antenna Worksheet (0 Sector)**

**Maximum Permissible Exposure (MPE):** 313.33  
**ERP (Watts):** 100      **Height (feet):** 120      **Frequency (MHz):** 470      **Downtilt (Degrees):** 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (μW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	0.00	1.0000	96127.30	96127.29	0.000000	0.000000	868309127
1.0	0.00	1.0000	9611.82	9611.76	0.000036	0.000012	8681456
2.0	-0.10	0.9772	4804.54	4804.42	0.000144	0.000046	2169125
3.0	-0.40	0.9120	3201.50	3201.32	0.000325	0.000104	963139
4.0	-0.70	0.8511	2399.53	2399.28	0.000579	0.000185	541044
5.0	-1.10	0.7762	1917.98	1917.66	0.000906	0.000289	345674
6.0	-1.50	0.7079	1596.64	1596.26	0.001308	0.000417	239548
7.0	-2.10	0.6166	1366.85	1366.41	0.001785	0.000570	175557
8.0	-2.80	0.5248	1194.27	1193.77	0.002338	0.000746	134025
9.0	-3.70	0.4266	1059.85	1059.28	0.002969	0.000947	105552
10.0	-4.70	0.3388	952.12	951.49	0.003678	0.001174	85185
12.0	-7.00	0.1995	790.07	789.31	0.005342	0.001705	58656
14.0	-10.60	0.0871	673.79	672.90	0.007345	0.002344	42661
16.0	-16.10	0.0245	586.12	585.10	0.009701	0.003096	32298
18.0	-29.10	0.0012	517.51	516.36	0.012435	0.003968	25198
20.0	-20.50	0.0089	462.25	460.96	0.015586	0.004974	20103
22.0	-14.60	0.0347	416.69	415.26	0.019195	0.006126	16323
24.0	-11.90	0.0646	378.41	376.83	0.023286	0.007432	13455
26.0	-10.50	0.0891	345.72	343.99	0.027898	0.008904	11231
28.0	-10.00	0.1000	317.43	315.54	0.033072	0.010555	9474
30.0	-10.20	0.0955	292.64	290.59	0.038853	0.012400	8064
32.0	-11.00	0.0794	270.71	268.49	0.045231	0.014436	6927
34.0	-12.30	0.0589	251.13	248.74	0.050083	0.015984	6256
36.0	-14.50	0.0355	233.50	230.92	0.053947	0.017217	5808
38.0	-17.50	0.0178	217.51	214.74	0.058011	0.018514	5401
40.0	-22.60	0.0055	202.91	199.95	0.062304	0.019884	5029
42.0	-28.90	0.0013	189.51	186.33	0.066856	0.021337	4686
44.0	-25.80	0.0026	177.14	173.74	0.071703	0.022884	4369
46.0	-21.20	0.0076	165.67	162.02	0.076889	0.024539	4075
48.0	-18.60	0.0138	154.97	151.06	0.082464	0.026318	3799
50.0	-17.20	0.0191	144.96	140.78	0.088489	0.028241	3540
52.0	-16.50	0.0224	135.56	131.08	0.095037	0.030331	3296
54.0	-16.30	0.0234	126.70	121.89	0.102198	0.032616	3065
56.0	-16.50	0.0224	118.33	113.16	0.110082	0.035132	2846
58.0	-17.00	0.0200	110.39	104.84	0.118826	0.037923	2636
60.0	-17.80	0.0166	102.85	96.86	0.128607	0.041045	2436
62.0	-18.80	0.0132	95.67	89.21	0.139646	0.044568	2243
64.0	-20.10	0.0098	88.83	81.83	0.152237	0.048586	2058
66.0	-21.60	0.0069	82.31	74.70	0.166771	0.053225	1878
68.0	-23.00	0.0050	76.09	67.79	0.183778	0.058652	1704
70.0	-24.20	0.0038	70.17	61.06	0.204003	0.065107	1535
72.0	-25.30	0.0030	64.55	54.51	0.228521	0.072932	1371
74.0	-26.50	0.0022	59.24	48.11	0.234473	0.074832	1336
76.0	-27.40	0.0018	54.27	41.83	0.171218	0.054644	1830
78.0	-28.10	0.0015	49.67	35.66	0.069576	0.022205	4503
80.0	-28.70	0.0013	45.50	29.58	0.092978	0.029674	3369
82.0	-29.40	0.0011	41.85	23.58	0.085694	0.027349	3656
84.0	-30.10	0.0010	38.81	17.63	0.067799	0.021638	4621
86.0	-30.80	0.0008	36.51	11.73	0.021658	0.006912	14467
88.0	-32.70	0.0005	35.07	5.86	0.005702	0.001820	54951
90.0	-33.30	0.0005	34.58	0.00	0.002486	0.000793	126046

**Unknown**  
**Avon (Deercliff Road)**  
**ANDREW:DB636-C Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		300		450		0.0	
ERP (Watts):	100	Height (feet):	294	Frequency (MHz):	450	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.11	0.9750	96127.33	96127.29	0.000000	0.000000	831360367
1.0	-0.20	0.9550	9612.16	9611.76	0.000036	0.000012	8312616
2.0	-0.30	0.9333	4805.22	4804.42	0.000144	0.000048	2077405
3.0	-0.70	0.8511	3202.52	3201.32	0.000325	0.000108	922737
4.0	-1.10	0.7762	2400.88	2399.28	0.000578	0.000193	518643
5.0	-1.70	0.6761	1919.67	1917.66	0.000904	0.000301	331762
6.0	-2.40	0.5754	1598.66	1596.26	0.001303	0.000434	230228
7.0	-3.20	0.4786	1369.21	1366.41	0.001776	0.000592	168919
8.0	-4.00	0.3981	1196.98	1193.77	0.002323	0.000774	129123
9.0	-5.00	0.3162	1062.90	1059.28	0.002946	0.000982	101836
10.0	-6.10	0.2455	955.52	951.49	0.003642	0.001214	82362
12.0	-8.90	0.1288	794.16	789.31	0.005256	0.001752	57080
14.0	-13.30	0.0468	678.58	672.90	0.007141	0.002380	42008
16.0	-22.70	0.0054	591.62	585.10	0.009237	0.003079	32479
18.0	-21.70	0.0068	523.73	516.36	0.011484	0.003828	26124
20.0	-13.10	0.0490	469.21	460.96	0.013759	0.004586	21803
22.0	-9.30	0.1175	424.40	415.26	0.015953	0.005318	18805
24.0	-7.30	0.1862	386.88	376.83	0.018001	0.006000	16666
26.0	-6.30	0.2344	354.97	343.99	0.019561	0.006520	15336
28.0	-6.20	0.2399	327.47	315.54	0.020421	0.006807	14690
30.0	-6.60	0.2188	303.51	290.59	0.020453	0.006818	14667
32.0	-7.70	0.1698	282.43	268.49	0.021636	0.007212	13866
34.0	-9.40	0.1148	263.71	248.74	0.026327	0.008776	11394
36.0	-11.50	0.0708	246.98	230.92	0.031281	0.010427	9590
38.0	-14.00	0.0398	231.93	214.74	0.035899	0.011966	8356
40.0	-16.70	0.0214	218.30	199.95	0.039455	0.013152	7603
42.0	-19.70	0.0107	205.90	186.33	0.042845	0.014282	7002
44.0	-21.40	0.0072	194.58	173.74	0.046311	0.015437	6477
46.0	-18.90	0.0129	184.19	162.02	0.049841	0.016614	6019
48.0	-15.50	0.0282	174.63	151.06	0.053423	0.017808	5615
50.0	-12.60	0.0550	165.81	140.78	0.057041	0.019014	5259
52.0	-10.40	0.0912	157.66	131.08	0.060679	0.020226	4944
54.0	-8.80	0.1318	150.11	121.89	0.058126	0.019375	5161
56.0	-7.70	0.1698	143.12	113.16	0.050549	0.016850	5934
58.0	-7.00	0.1995	136.63	104.84	0.039636	0.013212	7568
60.0	-6.60	0.2188	130.61	96.86	0.026789	0.008930	11198
62.0	-6.60	0.2188	125.03	89.21	0.019994	0.006665	15004
64.0	-6.70	0.2138	119.88	81.83	0.033761	0.011254	8886
66.0	-7.10	0.1950	115.13	74.70	0.050928	0.016976	5890
68.0	-7.50	0.1778	110.77	67.79	0.068191	0.022730	4399
70.0	-8.20	0.1514	106.79	61.06	0.081303	0.027101	3689
72.0	-9.00	0.1259	103.19	54.51	0.086179	0.028726	3481
74.0	-10.00	0.1000	99.95	48.11	0.088091	0.029364	3405
76.0	-11.00	0.0794	97.09	41.83	0.089768	0.029923	3341
78.0	-12.40	0.0575	94.59	35.66	0.091206	0.030402	3289
80.0	-13.90	0.0407	92.47	29.58	0.081629	0.027210	3675
82.0	-15.70	0.0269	90.73	23.58	0.065789	0.021930	4560
84.0	-18.10	0.0155	89.37	17.63	0.045991	0.015330	6523
86.0	-20.20	0.0095	88.39	11.73	0.028241	0.009414	10623
88.0	-23.50	0.0045	87.81	5.86	0.014458	0.004819	20749
90.0	-24.70	0.0034	87.61	0.00	0.005469	0.001823	54854

**Unknown**  
**Avon (Deercliff Road)**  
**ANDREW:DB810M-XC Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		567.33					
ERP (Watts):	1000	Height (feet):	259	Frequency (MHz):	851	Downtilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.07	0.9840	96127.32	96127.29	0.000004	0.000001	157219444
1.0	-0.70	0.8511	9612.07	9611.76	0.000361	0.000064	1571978
2.0	-2.20	0.6026	4805.03	4804.42	0.001444	0.000255	392830
3.0	-4.50	0.3548	3202.24	3201.32	0.003252	0.000573	174470
4.0	-7.90	0.1622	2400.51	2399.28	0.005787	0.001020	98043
5.0	-12.90	0.0513	1919.21	1917.66	0.009053	0.001596	62669
6.0	-17.40	0.0182	1598.12	1596.26	0.013056	0.002301	43453
7.0	-15.60	0.0275	1368.57	1366.41	0.017798	0.003137	31876
8.0	-13.60	0.0437	1196.25	1193.77	0.023278	0.004103	24372
9.0	-13.40	0.0457	1062.07	1059.28	0.029519	0.005203	19219
10.0	-14.60	0.0347	954.60	951.49	0.036566	0.006445	15515
12.0	-24.30	0.0037	793.06	789.31	0.044799	0.007896	12664
14.0	-21.10	0.0078	677.29	672.90	0.052549	0.009262	10796
16.0	-18.20	0.0151	590.13	585.10	0.060435	0.010652	9387
18.0	-23.20	0.0048	522.06	516.36	0.068481	0.012071	8284
20.0	-27.90	0.0016	467.33	460.96	0.076711	0.013521	7395
22.0	-20.20	0.0095	422.32	415.26	0.085153	0.015009	6662
24.0	-19.90	0.0102	384.60	376.83	0.093837	0.016540	6045
26.0	-26.50	0.0022	352.49	343.99	0.102796	0.018119	5519
28.0	-27.20	0.0019	324.78	315.54	0.112064	0.019753	5062
30.0	-20.50	0.0089	300.61	290.59	0.121684	0.021448	4662
32.0	-21.50	0.0071	279.30	268.49	0.131699	0.023214	4307
34.0	-30.30	0.0009	260.36	248.74	0.142161	0.025058	3990
36.0	-34.90	0.0003	243.40	230.92	0.149639	0.026376	3791
38.0	-28.30	0.0015	228.11	214.74	0.155897	0.027479	3639
40.0	-33.40	0.0005	214.24	199.95	0.160643	0.028315	3531
42.0	-45.20	0.0000	201.59	186.33	0.151794	0.026756	3737
44.0	-29.30	0.0012	190.01	173.74	0.154163	0.027173	3680
46.0	-25.10	0.0031	179.36	162.02	0.155567	0.027421	3646
48.0	-24.30	0.0037	169.53	151.06	0.155997	0.027497	3636
50.0	-27.00	0.0020	160.43	140.78	0.147736	0.026040	3840
52.0	-34.90	0.0003	151.99	131.08	0.132315	0.023322	4287
54.0	-27.90	0.0016	144.15	121.89	0.129169	0.022768	4392
56.0	-22.80	0.0052	136.85	113.16	0.125292	0.022084	4528
58.0	-20.90	0.0081	130.04	104.84	0.116297	0.020499	4878
60.0	-21.00	0.0079	123.71	96.86	0.051124	0.009011	11097
62.0	-22.90	0.0051	117.81	89.21	0.039667	0.006992	14302
64.0	-26.20	0.0024	112.32	81.83	0.056528	0.009964	10036
66.0	-30.90	0.0008	107.24	74.70	0.052336	0.009225	10840
68.0	-36.20	0.0002	102.54	67.79	0.047628	0.008395	11911
70.0	-36.20	0.0002	98.23	61.06	0.050271	0.008861	11285
72.0	-35.60	0.0003	94.30	54.51	0.074857	0.013195	7578
74.0	-33.80	0.0004	90.75	48.11	0.069781	0.012300	8130
76.0	-32.10	0.0006	87.58	41.83	0.064688	0.011402	8770
78.0	-31.30	0.0007	84.81	35.66	0.056703	0.009995	10005
80.0	-31.10	0.0008	82.43	29.58	0.017826	0.003142	31825
82.0	-32.50	0.0006	80.48	23.58	0.005544	0.000977	102337
84.0	-33.80	0.0004	78.94	17.63	0.005206	0.000918	108968
86.0	-37.30	0.0002	77.83	11.73	0.004853	0.000855	116904
88.0	-38.00	0.0002	77.17	5.86	0.004182	0.000737	135656
90.0	-35.50	0.0003	76.94	0.00	0.005504	0.000970	103075

**Unknown**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F2 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):

200

ERP (Watts): 100      Height (feet): 94      Frequency (MHz): 150      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.29	96127.29	0.000000	0.000000	554239830
1.0	-0.10	0.9772	9611.80	9611.76	0.000036	0.000018	5541326
2.0	-0.30	0.9333	4804.49	4804.42	0.000144	0.000072	1384519
3.0	-0.60	0.8710	3201.43	3201.32	0.000325	0.000163	614740
4.0	-1.00	0.7943	2399.43	2399.28	0.000579	0.000290	345318
5.0	-1.50	0.7079	1917.85	1917.66	0.000907	0.000453	220614
6.0	-2.20	0.6026	1596.48	1596.26	0.001308	0.000654	152874
7.0	-3.10	0.4898	1366.67	1366.41	0.001785	0.000893	112029
8.0	-4.10	0.3890	1194.07	1193.77	0.002339	0.001169	85519
9.0	-5.30	0.2951	1059.62	1059.28	0.002970	0.001485	67344
10.0	-6.80	0.2089	951.87	951.49	0.003680	0.001840	54344
12.0	-11.00	0.0794	789.76	789.31	0.005346	0.002673	37410
14.0	-19.00	0.0126	673.43	672.90	0.007353	0.003676	27201
16.0	-27.30	0.0019	585.70	585.10	0.009720	0.004860	20575
18.0	-15.80	0.0263	517.04	516.36	0.012473	0.006237	16034
20.0	-12.20	0.0603	461.72	460.96	0.015641	0.007820	12787
22.0	-10.60	0.0871	416.11	415.26	0.019258	0.009629	10385
24.0	-10.20	0.0955	377.77	376.83	0.023366	0.011683	8559
26.0	-10.70	0.0851	345.02	343.99	0.028012	0.014006	7139
28.0	-12.10	0.0617	316.66	315.54	0.033254	0.016627	6014
30.0	-14.60	0.0347	291.81	290.59	0.038955	0.019477	5134
32.0	-18.90	0.0129	269.81	268.49	0.045145	0.022572	4430
34.0	-27.50	0.0018	250.16	248.74	0.051881	0.025940	3854
36.0	-26.70	0.0021	232.45	230.92	0.058879	0.029440	3396
38.0	-19.70	0.0107	216.39	214.74	0.066408	0.033204	3011
40.0	-16.50	0.0224	201.71	199.95	0.073894	0.036947	2706
42.0	-14.90	0.0324	188.23	186.33	0.081646	0.040823	2449
44.0	-14.20	0.0380	175.77	173.74	0.089032	0.044516	2246
46.0	-14.10	0.0389	164.19	162.02	0.095975	0.047987	2083
48.0	-14.40	0.0363	153.40	151.06	0.102304	0.051152	1954
50.0	-15.30	0.0295	143.28	140.78	0.105218	0.052609	1900
52.0	-16.60	0.0219	133.76	131.08	0.105102	0.052551	1902
54.0	-18.40	0.0145	124.77	121.89	0.101791	0.050896	1964
56.0	-20.80	0.0083	116.26	113.16	0.094999	0.047500	2105
58.0	-24.40	0.0036	108.17	104.84	0.082851	0.041426	2413
60.0	-29.50	0.0011	100.46	96.86	0.065088	0.032544	3072
62.0	-37.10	0.0002	93.10	89.21	0.042853	0.021426	4667
64.0	-35.10	0.0003	86.06	81.83	0.045326	0.022663	4412
66.0	-29.90	0.0010	79.31	74.70	0.057585	0.028793	3473
68.0	-27.10	0.0019	72.84	67.79	0.068805	0.034403	2906
70.0	-25.50	0.0028	66.63	61.06	0.082104	0.041052	2435
72.0	-24.70	0.0034	60.68	54.51	0.098962	0.049481	2020
74.0	-24.30	0.0037	55.00	48.11	0.120423	0.060212	1660
76.0	-24.20	0.0038	49.60	41.83	0.106653	0.053327	1875
78.0	-24.50	0.0035	44.52	35.66	0.054498	0.027249	3669
80.0	-25.10	0.0031	39.82	29.58	0.097879	0.048940	2043
82.0	-26.00	0.0025	35.58	23.58	0.122079	0.061039	1638
84.0	-26.90	0.0020	31.96	17.63	0.094243	0.047121	2122
86.0	-28.00	0.0016	29.12	11.73	0.015515	0.007758	12890
88.0	-28.80	0.0013	27.29	5.86	0.022594	0.011297	8852
90.0	-29.00	0.0013	26.65	0.00	0.011437	0.005719	17486

**Unknown**  
**Avon (Deercliff Road)**  
**TELEWAVE:ANT150F2 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		200		Frequency		Downtilt	
ERP (Watts):	100	Height (feet):	505	(MHz):	150	(Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	96127.41	96127.29	0.000000	0.000000	554241183
1.0	-0.10	0.9772	9612.96	9611.76	0.000036	0.000018	5542668
2.0	-0.30	0.9333	4806.82	4804.42	0.000144	0.000072	1385861
3.0	-0.60	0.8710	3204.92	3201.32	0.000325	0.000162	616082
4.0	-1.00	0.7943	2404.08	2399.28	0.000577	0.000288	346659
5.0	-1.50	0.7079	1923.67	1917.66	0.000901	0.000451	221956
6.0	-2.20	0.6026	1603.48	1596.26	0.001285	0.000642	155682
7.0	-3.10	0.4898	1374.83	1366.41	0.001701	0.000850	117595
8.0	-4.10	0.3890	1203.40	1193.77	0.002122	0.001061	94229
9.0	-5.30	0.2951	1070.12	1059.28	0.002521	0.001261	79326
10.0	-6.80	0.2089	963.55	951.49	0.002870	0.001435	69698
12.0	-11.00	0.0794	803.80	789.31	0.003256	0.001628	61431
14.0	-19.00	0.0126	689.84	672.90	0.003061	0.001530	65345
16.0	-27.30	0.0019	604.50	585.10	0.002412	0.001206	82903
18.0	-15.80	0.0263	538.24	516.36	0.001452	0.000726	137767
20.0	-12.20	0.0603	485.35	460.96	0.001444	0.000722	138520
22.0	-10.60	0.0871	442.17	415.26	0.001867	0.000934	107112
24.0	-10.20	0.0955	406.30	376.83	0.002211	0.001106	90453
26.0	-10.70	0.0851	376.04	343.99	0.002577	0.001289	77597
28.0	-12.10	0.0617	350.21	315.54	0.002971	0.001486	67315
30.0	-14.60	0.0347	327.91	290.59	0.003388	0.001694	59029
32.0	-18.90	0.0129	308.50	268.49	0.003783	0.001892	52866
34.0	-27.50	0.0018	291.46	248.74	0.003639	0.001819	54965
36.0	-26.70	0.0021	276.42	230.92	0.002901	0.001451	68933
38.0	-19.70	0.0107	263.05	214.74	0.001812	0.000906	110384
40.0	-16.50	0.0224	251.12	199.95	0.001844	0.000922	108445
42.0	-14.90	0.0324	240.42	186.33	0.002497	0.001249	80091
44.0	-14.20	0.0380	230.79	173.74	0.002914	0.001457	68636
46.0	-14.10	0.0389	222.11	162.02	0.003144	0.001572	63605
48.0	-14.40	0.0363	214.25	151.06	0.003374	0.001687	59271
50.0	-15.30	0.0295	207.12	140.78	0.003604	0.001802	55488
52.0	-16.60	0.0219	200.66	131.08	0.003838	0.001919	52113
54.0	-18.40	0.0145	194.78	121.89	0.004044	0.002022	49452
56.0	-20.80	0.0083	189.44	113.16	0.003912	0.001956	51125
58.0	-24.40	0.0036	184.59	104.84	0.003305	0.001652	60519
60.0	-29.50	0.0011	180.18	96.86	0.002530	0.001265	79060
62.0	-37.10	0.0002	176.18	89.21	0.001690	0.000845	118325
64.0	-35.10	0.0003	172.56	81.83	0.000942	0.000471	212205
66.0	-29.90	0.0010	169.29	74.70	0.000385	0.000193	519447
68.0	-27.10	0.0019	166.36	67.79	0.000460	0.000230	434714
70.0	-25.50	0.0028	163.74	61.06	0.000572	0.000286	349815
72.0	-24.70	0.0034	161.41	54.51	0.000640	0.000320	312567
74.0	-24.30	0.0037	159.36	48.11	0.000665	0.000333	300631
76.0	-24.20	0.0038	157.58	41.83	0.000679	0.000340	294444
78.0	-24.50	0.0035	156.05	35.66	0.000691	0.000346	289249
80.0	-25.10	0.0031	154.78	29.58	0.000701	0.000350	285349
82.0	-26.00	0.0025	153.74	23.58	0.000707	0.000353	283079
84.0	-26.90	0.0020	152.94	17.63	0.000654	0.000327	305791
86.0	-28.00	0.0016	152.38	11.73	0.000562	0.000281	355735
88.0	-28.80	0.0013	152.04	5.86	0.000447	0.000224	447013
90.0	-29.00	0.0013	151.92	0.00	0.000352	0.000176	568238

**WUVN - Entravision Holdings (TV Broadcast/Channel 46)  
Avon (Deercliff Road)  
ANDREW:ATW25H3-H50-46 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE):		443.33		665		Downtilt (Degrees): 0.0	
ERP (Watts):	217000	Height (feet):	495 <th>Frequency (MHz):</th> <td>665 <th>Down tilt (Degrees):</th> <td>0.0</td> </td>	Frequency (MHz):	665 <th>Down tilt (Degrees):</th> <td>0.0</td>	Down tilt (Degrees):	0.0
Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.08	0.9813	96127.40	96127.29	0.000783	0.000177	566160
1.0	-0.82	0.8278	9612.92	9611.76	0.078302	0.017662	5661
2.0	-2.10	0.6173	4806.72	4804.42	0.313175	0.070641	1415
3.0	-4.30	0.3719	3204.78	3201.32	0.704514	0.158913	629
4.0	-7.14	0.1930	2403.89	2399.28	1.250898	0.282157	354
5.0	-11.42	0.0721	1923.44	1917.66	1.953346	0.440604	226
6.0	-15.97	0.0253	1603.19	1596.26	2.403490	0.542141	184
7.0	-15.64	0.0273	1374.50	1366.41	2.807798	0.633338	157
8.0	-12.22	0.0600	1203.02	1193.77	3.213843	0.724927	137
9.0	-11.52	0.0705	1069.69	1059.28	3.621885	0.816966	122
10.0	-11.74	0.0670	963.07	951.49	4.032189	0.909516	109
12.0	-13.23	0.0476	803.23	789.31	4.860675	1.096393	91
14.0	-12.07	0.0621	689.18	672.90	5.701552	1.286065	77
16.0	-11.22	0.0755	603.74	585.10	6.557201	1.479068	67
18.0	-12.77	0.0528	537.39	516.36	7.430160	1.675976	59
20.0	-17.64	0.0172	484.40	460.96	8.323154	1.877403	53
22.0	-16.50	0.0224	441.14	415.26	9.239142	2.084017	47
24.0	-14.27	0.0374	405.17	376.83	10.181347	2.296545	43
26.0	-14.62	0.0345	374.82	343.99	11.153313	2.515785	39
28.0	-18.60	0.0138	348.89	315.54	12.158960	2.742623	36
30.0	-24.33	0.0037	326.51	290.59	13.202661	2.978044	33
32.0	-27.15	0.0019	307.01	268.49	14.289311	3.223153	31
34.0	-24.47	0.0036	289.88	248.74	15.364277	3.465626	28
36.0	-22.93	0.0051	274.75	230.92	10.078621	2.273373	43
38.0	-22.04	0.0063	261.30	214.74	6.234720	1.406328	71
40.0	-21.53	0.0070	249.28	199.95	6.129762	1.382653	72
42.0	-21.10	0.0078	238.50	186.33	6.131957	1.383148	72
44.0	-21.22	0.0076	228.80	173.74	5.858956	1.321569	75
46.0	-21.68	0.0068	220.03	162.02	5.585521	1.259892	79
48.0	-22.74	0.0053	212.10	151.06	5.315697	1.199029	83
50.0	-25.69	0.0027	204.90	140.78	5.052732	1.139714	87
52.0	-27.59	0.0017	198.36	131.08	4.729825	1.066878	93
54.0	-25.01	0.0032	192.41	121.89	4.177578	0.942311	106
56.0	-21.93	0.0064	187.00	113.16	4.225818	0.953192	104
58.0	-20.33	0.0093	182.08	104.84	4.799472	1.082588	92
60.0	-20.56	0.0088	177.61	96.86	4.591109	1.035589	96
62.0	-22.07	0.0062	173.56	89.21	4.388137	0.989805	101
64.0	-26.35	0.0023	169.88	81.83	4.200184	0.947410	105
66.0	-32.06	0.0006	166.57	74.70	4.027414	0.908439	110
68.0	-32.37	0.0006	163.58	67.79	3.419111	0.771228	129
70.0	-29.20	0.0012	160.91	61.06	2.051081	0.462650	216
72.0	-27.54	0.0018	158.54	54.51	0.786396	0.177383	563
74.0	-27.58	0.0017	156.46	48.11	0.727175	0.164024	609
76.0	-28.44	0.0014	154.64	41.83	0.693670	0.156467	639
78.0	-29.84	0.0010	153.09	35.66	0.665481	0.150108	666
80.0	-31.91	0.0006	151.79	29.58	0.624491	0.140863	709
82.0	-35.63	0.0003	150.73	23.58	0.494733	0.111594	896
84.0	-38.07	0.0002	149.92	17.63	0.331645	0.074807	1336
86.0	-38.07	0.0002	149.34	11.73	0.174014	0.039251	2547
88.0	-38.07	0.0002	148.99	5.86	0.118743	0.026784	3733
90.0	-36.13	0.0002	148.88	0.00	0.184771	0.041678	2399

Exhibit 3  
Full Construction Drawings, Stamped & Sealed



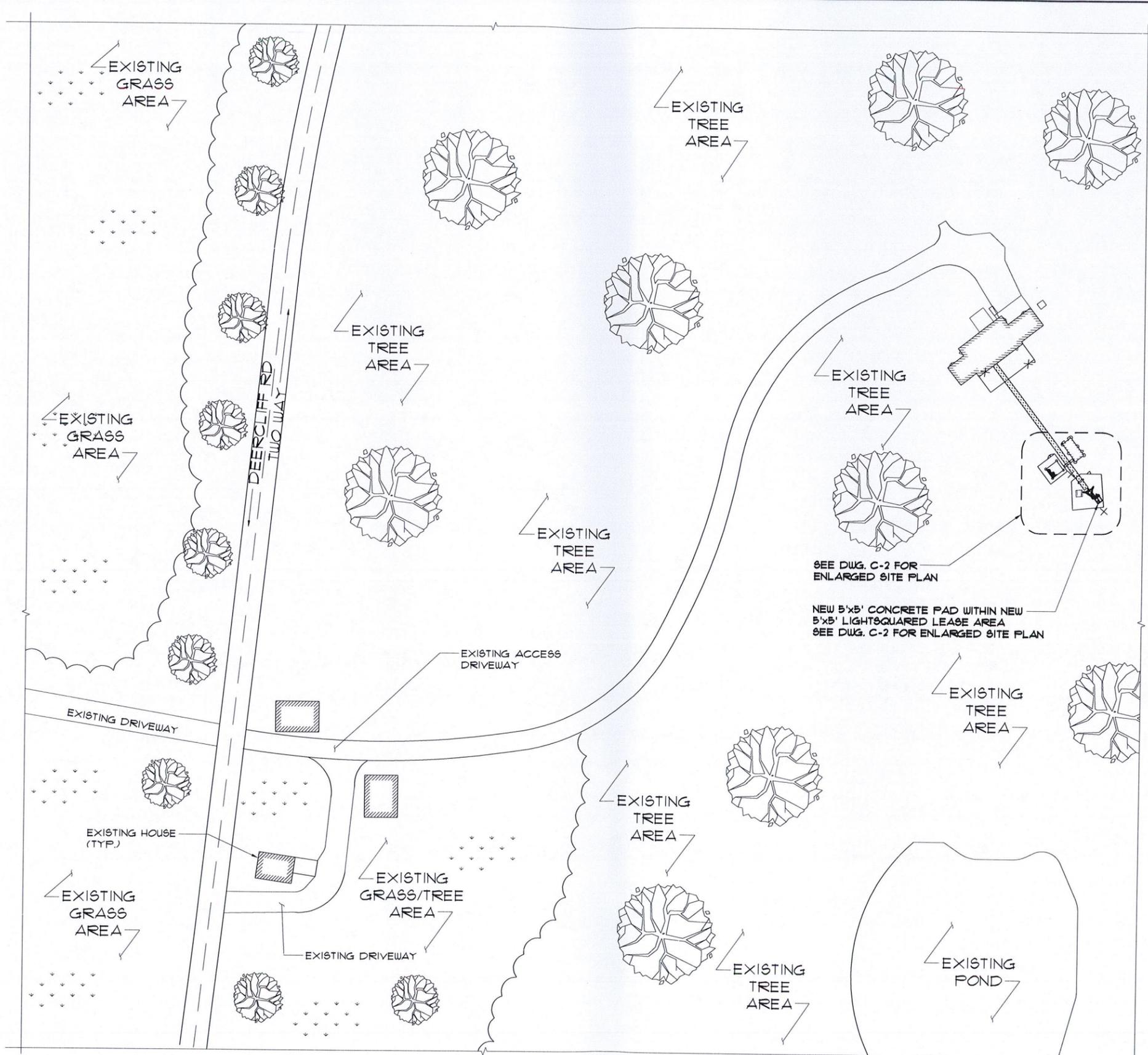
**ABBREVIATIONS**

AFF	ABOVE FINISHED FLOOR
AGL	ABOVE GRADE LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BT6	BASE TRANSMISSION STATION
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
DWG	DRAWING
FT	FOOT(FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ELEV	ELEVATION
EQUIP	EQUIPMENT
EXISTING	EXISTING
EXT	EXTERIOR
FND	FOUNDATION
GA	GAUGE
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
LTE	LONG TERM EVOLUTION
MAX	MAXIMUM
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
NTS	NOT TO SCALE
O.C.	ON CENTER
OE/OT	OVERHEAD ELECTRIC/TELCO
RGS	RIGID GALVANIZED STEEL
IN	INCH(ES)
INT	INTERIOR
LB(°)	POUND(S)
RRU	REMOTE RADIO UNIT
SF	SQUARE FOOT
STL	STEEL
TYP	TYPICAL
UE/UT	UNDERGROUND ELECTRIC/TELCO
UNO	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD
W/	WITH
XFMR	TRANSFORMER
¢	CENTERLINE
⊕	REVISION
⊙	WORK POINT
⊕	UTILITY POLE
▨	BRICK
▩	COMPRESSED STONE
▤	CONCRETE
▥	EARTH
▧	GRAVEL
▨	MASONRY
▩	STEEL
---	CENTERLINE
- - -	PROPERTY LINE
- · - · -	LEASE LINE
- · - - -	EASEMENT LINE
X X	CHAIN LINK FENCE
□ □	WOOD FENCE
— UE —	BELOW GRADE ELECTRIC
— UT —	BELOW GRADE TELEPHONE
— OE/OT —	OVERHEAD ELECTRIC/TELEPHONE
L A	SECTION REFERENCE

**SYMBOLS**

¢	CENTERLINE
⊕	REVISION
⊙	WORK POINT
⊕	UTILITY POLE
▨	BRICK
▩	COMPRESSED STONE
▤	CONCRETE
▥	EARTH
▧	GRAVEL
▨	MASONRY
▩	STEEL
---	CENTERLINE
- - -	PROPERTY LINE
- · - · -	LEASE LINE
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X X	CHAIN LINK FENCE
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— UE —	BELOW GRADE ELECTRIC
— UT —	BELOW GRADE TELEPHONE
— OE/OT —	OVERHEAD ELECTRIC/TELEPHONE
L A	SECTION REFERENCE

**SITE PLAN**



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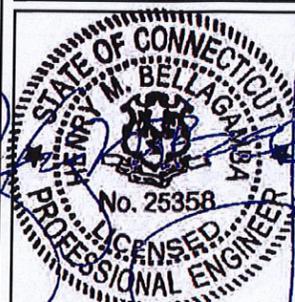
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	04/24/13	FINAL	MD



SITE NAME  
AVON  
(DEERCLIFF RD.)

SITE NUMBER  
870800

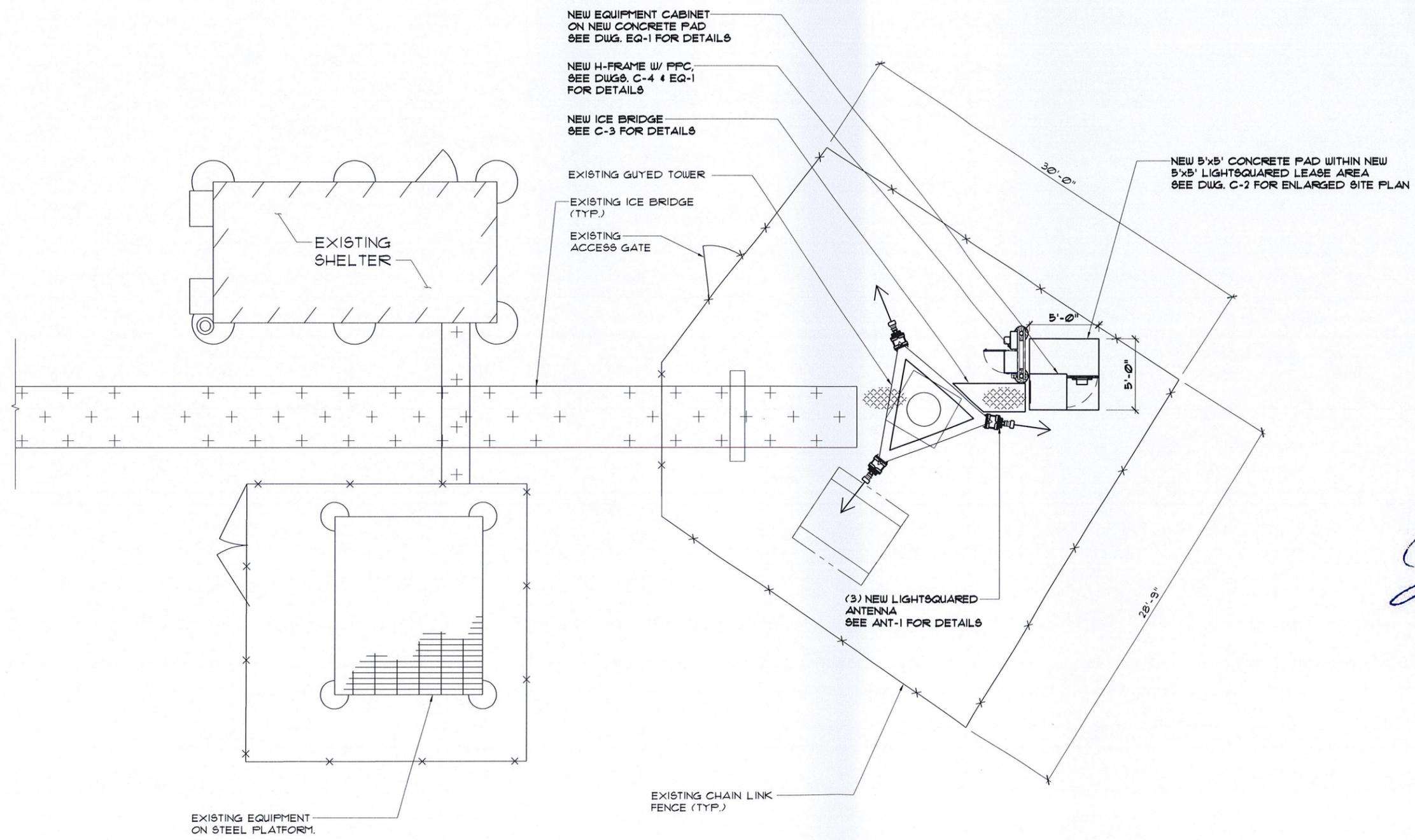
SITE ADDRESS  
376 DEERCLIFF ROAD  
AVON, CT 06001

SHEET NAME  
SITE PLAN

SHEET NUMBER  
C-1

SCALE: 1" = 1'

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SITE NAME  
**AVON  
(DEERCLIFF RD.)**

SITE NUMBER  
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SITE ADDRESS  
**376 DEERCLIFF ROAD  
AVON, CT 06001**

SHEET NAME  
**ENLARGED  
SITE PLAN**

SHEET NUMBER  
**C-2**

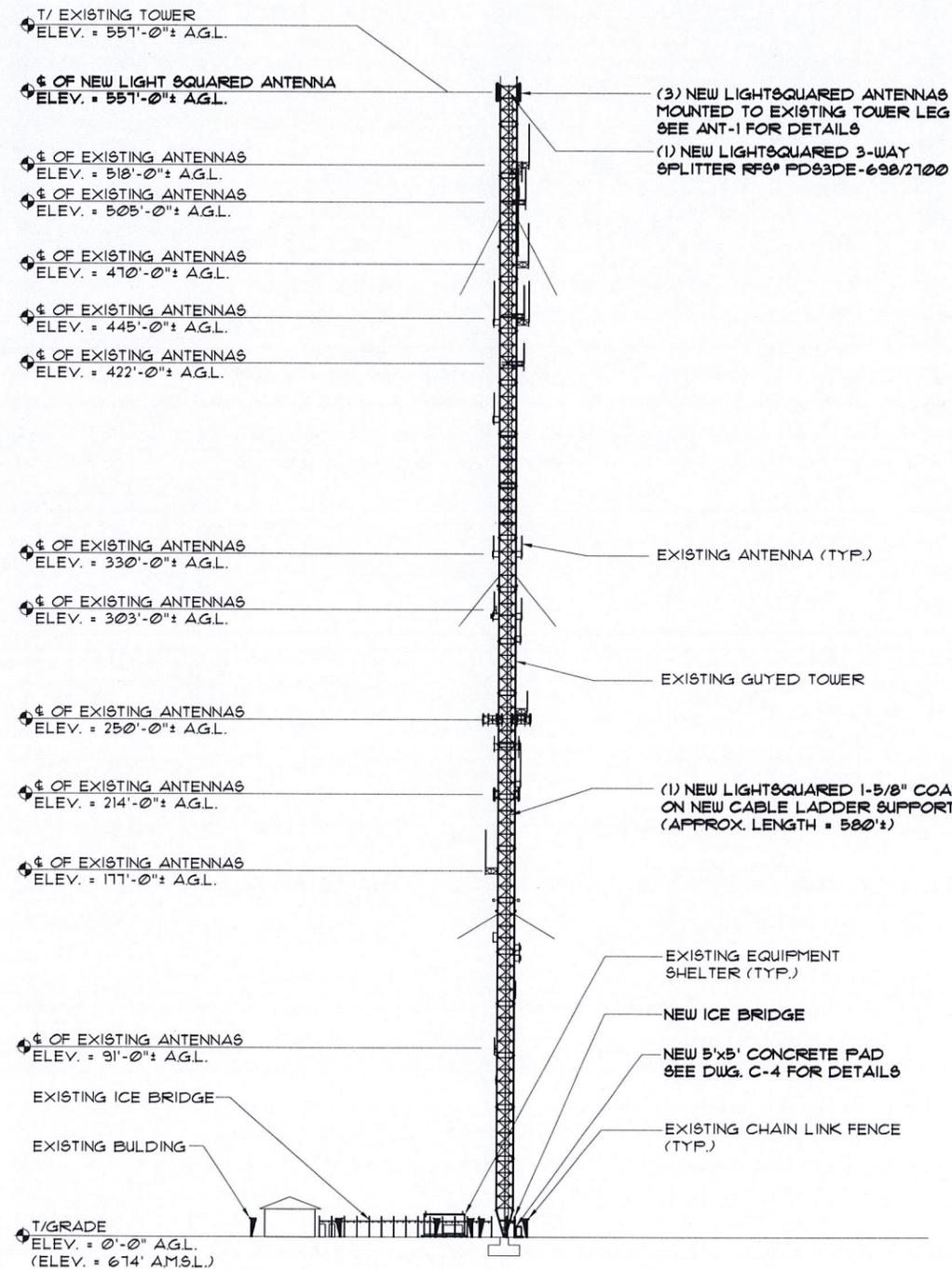
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**ANTENNA NOTES:**

1. THE SIZE, HEIGHT, AND DIRECTION OF THE ANTENNA SHALL BE ADJUSTED TO MEET SYSTEM REQUIREMENTS.
2. CONTRACTOR SHALL VERIFY HEIGHT OF ANTENNA WITH LIGHTSQUARED REPRESENTATIVE.
3. ALL ANTENNA AZIMUTH TO BE FROM TRUE NORTH.

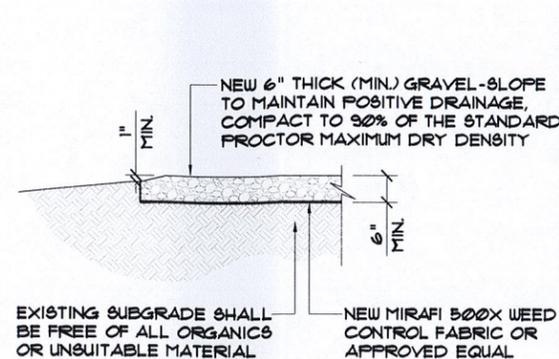
**STRUCTURAL NOTES:**

1. STRUCTURAL CALCULATION PREPARED BY OTHERS. CONTRACTOR TO COORDINATE WITH LIGHTSQUARED REPRESENTATIVE TO OBTAIN A COPY.
2. CONTRACTOR TO REFER TO TOWER STRUCTURAL CALCULATIONS FOR ADDITIONAL LOADS. NO ERECTION OR MODIFICATION OF TOWER SHALL BE MADE WITHOUT APPROVAL OF STRUCTURAL ENGINEER.



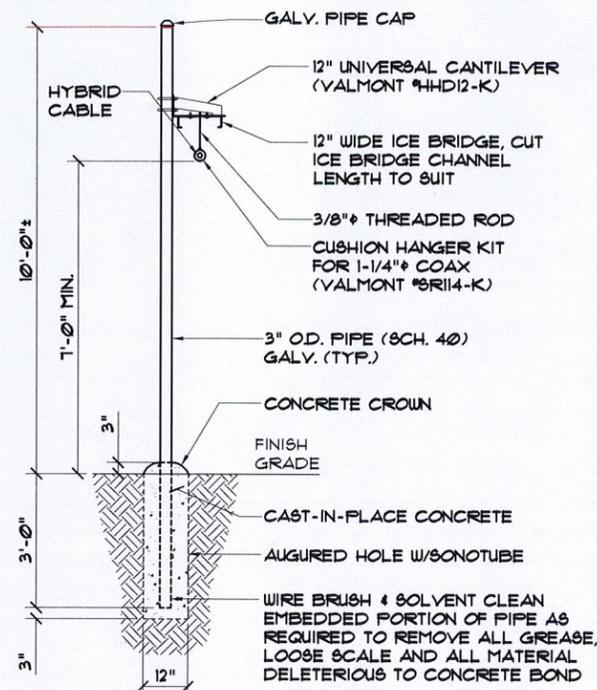
**SOUTH ELEVATION**

SCALE: N.T.S. 1



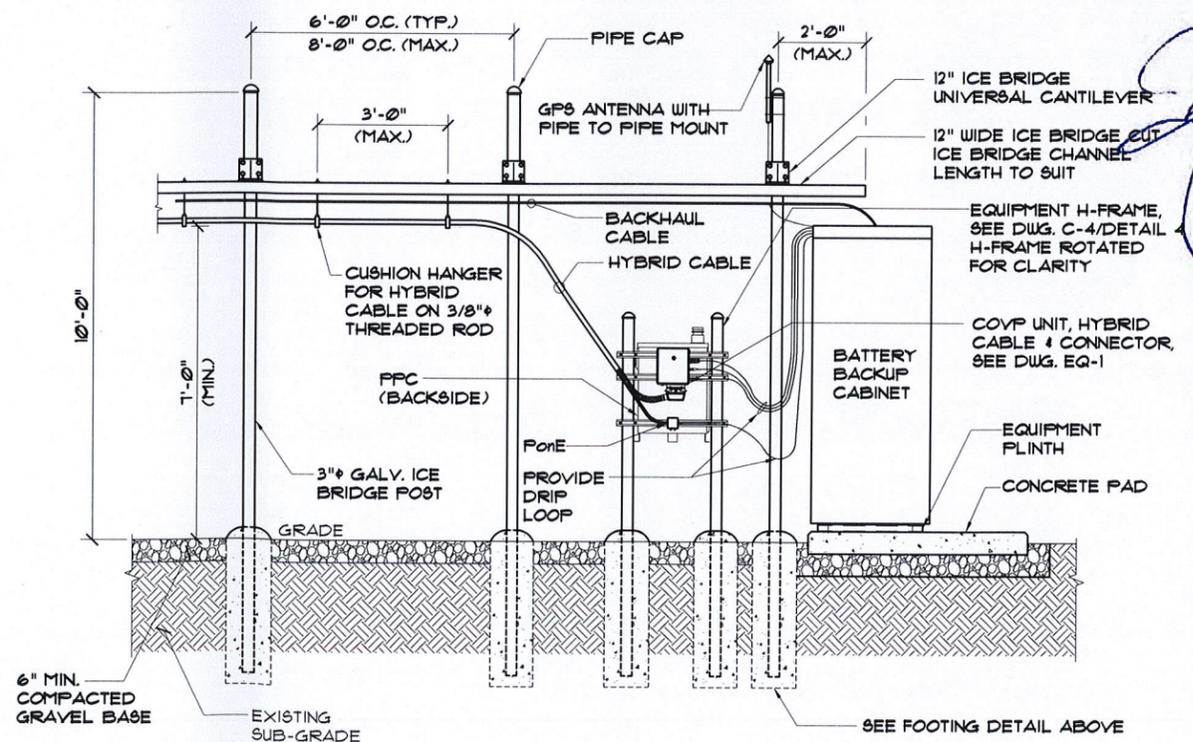
**YARD DETAIL**

SCALE: N.T.S. 2



**FOOTING DETAIL**

SCALE: N.T.S. 3



**TYPICAL ICE BRIDGE DETAIL**

SCALE: N.T.S. 4



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SITE NAME  
**AVON (DEERCLIFF RD.)**

SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
AVON, CT 06001**

SHEET NAME  
**ELEVATION AND DETAILS**

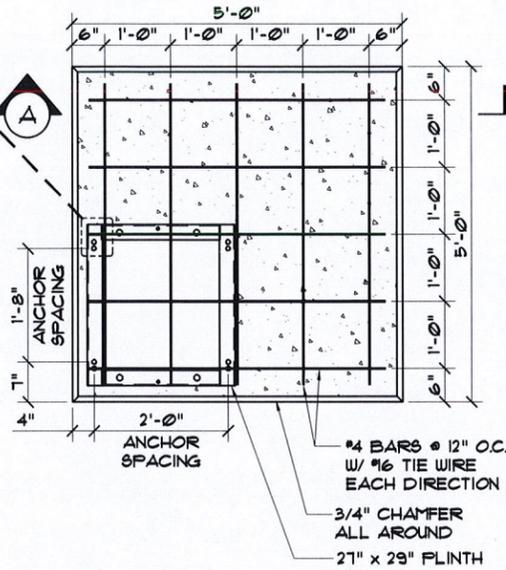
SHEET NUMBER  
**C-3**

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**NOTE:**  
FOR CORRECT ORIENTATION TO NORTH, SEE DWG. C-1 AND C-2

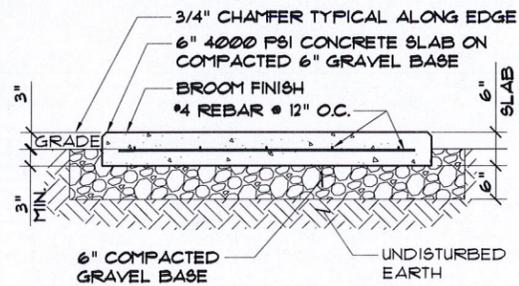
PLINTH CABINET BOTTOM  
TORQUE TO 30 FT-LB  
1/4" THICK PHENOLIC PAD, BY CUSTOMER  
HILTI HDI 1/2" DROP-IN ANCHOR

**NOTE:**  
5/8" BIT USED FOR DRILLING HOLES.  
RECOMMENDED BIT IS HILTI TE-CX 5/8"-8, PART NUMBER 28043



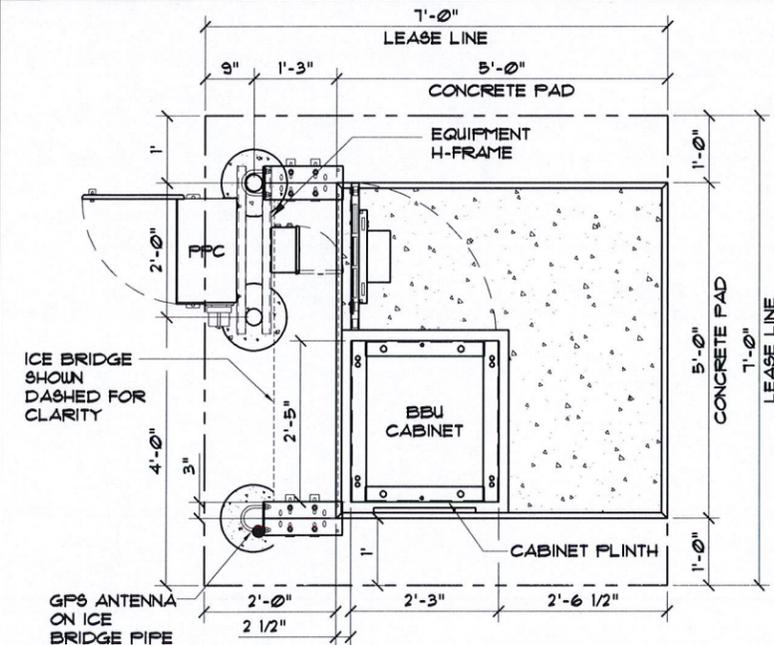
CONCRETE PAD & EQUIP. LAYOUT

SCALE: 3/8" = 1'-0" 1



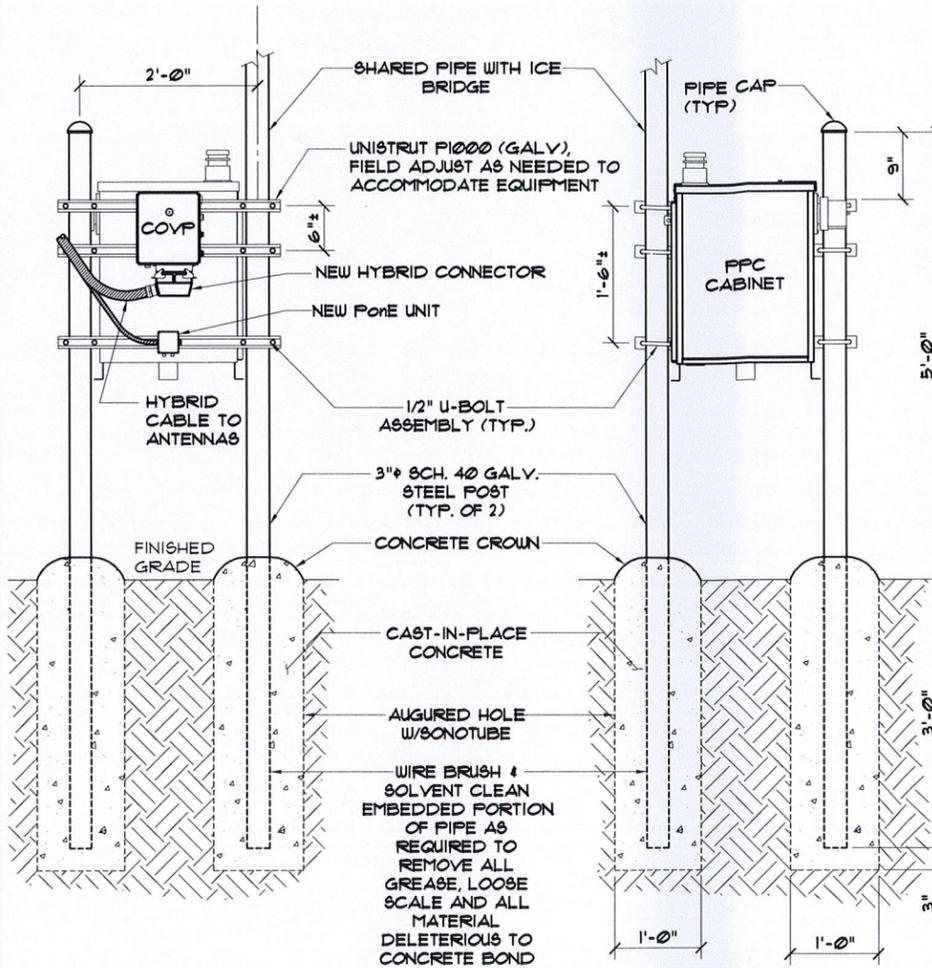
SECTION A

SCALE: 3/8" = 1'-0" 2



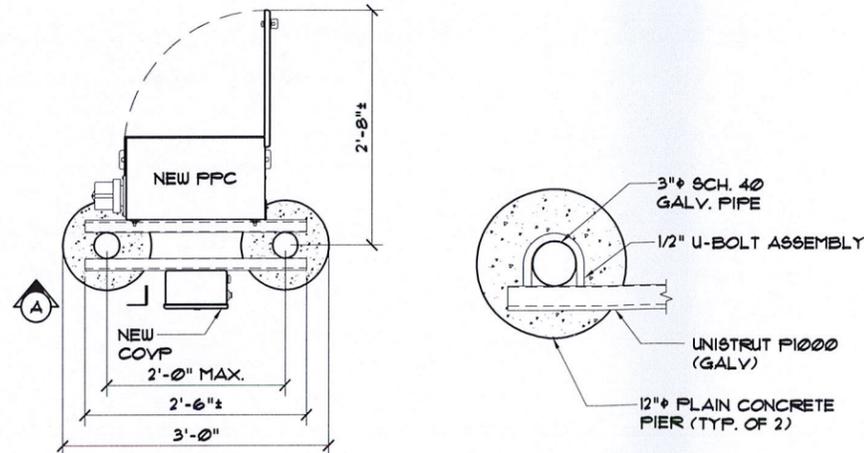
EQUIPMENT LAYOUT

SCALE: 3/8" = 1'-0" 3



TELCO VIEW

ELECTRICAL VIEW



TOP VIEW

SECTION A  
SCALE: 2" = 1'-0"

EQUIPMENT H-FRAME

SCALE: 3/8" = 1'-0" 4

1.0 GENERAL CONDITIONS

- 1.1 DESIGN AND CONSTRUCTION OF ALL WORK SHALL CONFORM TO APPLICABLE LOCAL AND STATE CODES, ORDINANCES, AND REGULATIONS. IN CASE OF CONFLICT BETWEEN THE CODES, STANDARDS, REGULATIONS, SPECIFICATIONS, GENERAL NOTES AND/OR MANUFACTURER'S REQUIREMENTS, USE THE MOST STRINGENT PROVISION
- 1.2 IT IS THE EXPRESS INTENT OF THE PARTIES INVOLVED IN THIS PROJECT THAT THE CONTRACTOR OR SUBCONTRACTOR OR INDEPENDENT CONTRACTOR OR THEIR RESPECTIVE EMPLOYEES SHALL EXCULPATE THE ARCHITECT, THE ENGINEER, THE CONSTRUCTION MANAGER, THE OWNER, AND THEIR AGENTS, FROM ANY LIABILITY WHATSOEVER AND HOLD THEM HARMLESS AGAINST LOSS, DAMAGES, LIABILITY OR ANY EXPENSE ARISING IN ANY MATTER FROM THE WRONGFUL OR NEGLIGENT ACT, OR FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, OR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OR FAILURE TO CONFORM TO THE STATE SCAFFOLDING ACT IN CONNECTION WITH THE WORK

- 1.5 DESIGN LOADS ARE:  
LIVE LOAD : 100 PSF.  
EQUIPMENT SIZE : 80" H x 30" W x 33" D  
WIND SPEED : 90 MPH (3 SECOND GUST)

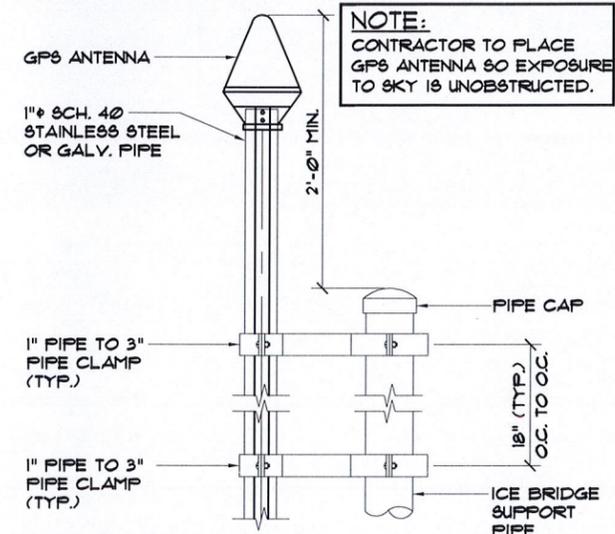
2.0 CONCRETE

- 2.1 MEET OR EXCEED THE FOLLOWING CODES AND STANDARDS (LATEST EDITION):  
-DESIGN: ACI 318  
-CONSTRUCTION: ACI 301  
-DETAILING: CRSI MANUAL OF STANDARD PRACTICE USE CLASS "B" FOR SPLICES UNLESS NOTED

- NOTED  
-REINF. STEEL: ASTM A 615 GRADE 60, DEFORMED  
-MIXING: ASTM C 34. READY MIX CONCRETE  
-AIR ENTRAINMENT: ACI 318 AND ASTM C-260  
-AGGREGATE: ASTM C 33

- 2.2 CONCRETE STRENGTH AT 28 DAYS SHALL BE 4000 PSI MINIMUM
- 2.3 DO NOT USE IN ADMIXTURE, WATER OR OTHER CONSTITUENTS OF CONCRETE WHICH HAS CALCIUM CHLORIDE
- 2.4 MINIMUM COVER FOR REINFORCING STEEL UNLESS INCREASED COVER IS NECESSARY TO MEET FIRE RATING INDICATED:  
-CAST AGAINST AND EXPOSED TO EARTH 3"  
-EXPOSED TO EARTH AND WEATHER, #1 TO #6 BARS 2"  
-EXPOSED TO EARTH AND WEATHER, #8 AND SMALLER 1 1/2"  
-INTERIOR EXPOSURE, BEAMS AND COLUMNS 1 1/2"  
-INTERIOR EXPOSURE, SLABS, WALLS AND JOISTS 3/4"

STRUCTURAL GENERAL NOTES



**NOTE:**  
CONTRACTOR TO PLACE GPS ANTENNA SO EXPOSURE TO SKY IS UNOBSTRUCTED.

GPS ANTENNA DETAIL

SCALE: N.T.S. 6

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SITE NAME  
AVON  
(DEERCLIFF RD.)

SITE NUMBER  
870800

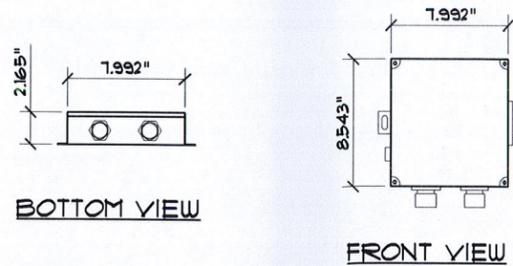
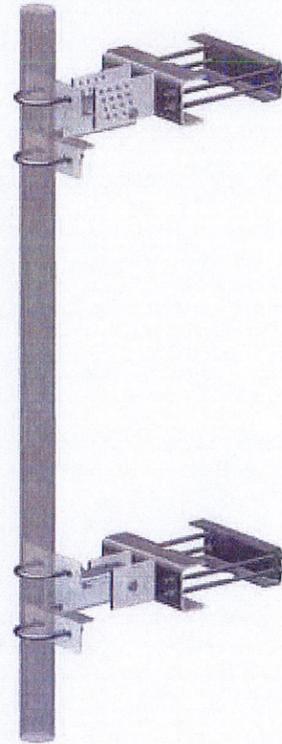
SITE ADDRESS  
376 DEERCLIFF ROAD  
AVON, CT 06001

SHEET NAME  
SITE DETAILS  
AND NOTES

SHEET NUMBER  
C-4

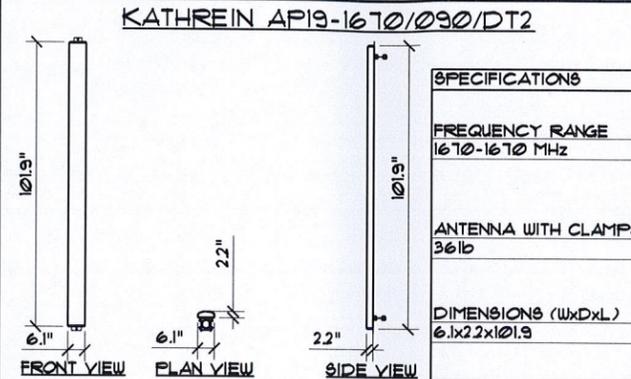
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**PRODUCT INFORMATION:**  
 MFR: VALMONT  
 P/N: TAM-2U



**DIMENSIONS** 217 mm/8.54" x 203 mm/7.99" x 55 mm/ 2.17"  
**WEIGHT** 5 kg / 11 lb  
**INPUT VOLTAGE OVER ETHERNET** - 36 - 60 VDC

**ETHERNET PoE** SCALE: N.T.S. 2



CABLE FUNCTION	CABLE TYPE	CABLE SIZE (DIA. IN.)	CABLE LENGTH (FT.)
MAIN LINE COAX FROM ANTENNA JUMPER TO RADIO CABINET	NEW COAX CABLE	1-5/8	580
JUMPER CABLES FROM RADIO TO MAIN TRANSMISSION LINE	ANDREW AVA	1/2	8
JUMPER CABLES FROM MAIN TRANSMISSION LINE TO ANTENNAS	ANDREW AVA	1/2	6
JUMPER CABLES FROM COAX CABLE FEEDER TO LNA	ANDREW AVA	1/2	6
MAIN COAX FROM GPS TO BBU CABINET	ANDREW AVA	1/2	6

SECTOR	COLOR	ANTENNA	REFERENCE	FUNCTION
30 DEG. AZ.	1 RED	A1	MAIN	TX/RX MAIN
150 DEG. AZ.	1 BLUE	B1	MAIN	TX/RX MAIN
270 DEG. AZ.	1 GREEN	C1	MAIN	TX/RX MAIN
GPS	1 WHITE	GPS 1	GPS 1	TX/RX MAIN

**NOTES:**

- CONTRACTOR TO USE PROPER TORQUE WRENCH WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
- ALL COAX CABLE SHALL BE MARKED WITHIN 24" OF THE END OF EACH CABLE WITH 2" WIDE VINYL TAPE THIS INCLUDES ALL JUMPERS AND MAIN LINE COAX CABLE.

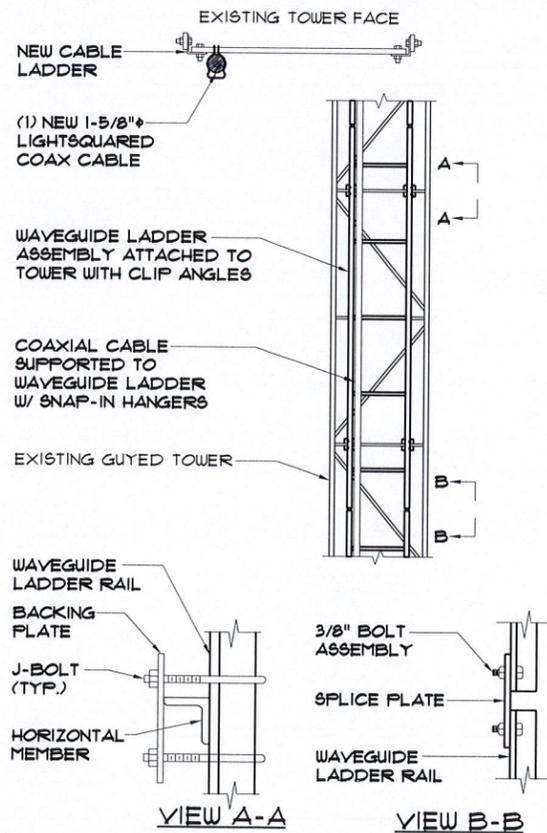
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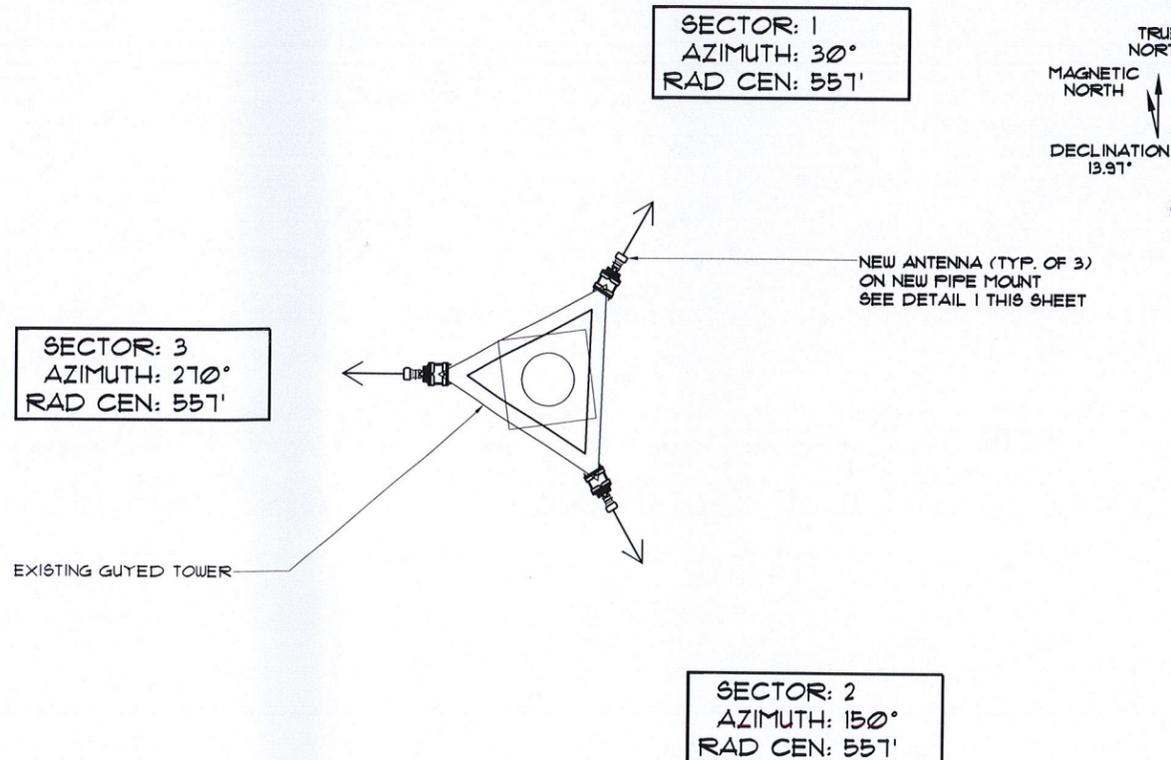
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#	DATE	DESCRIPTION	INT.
	04/11/13	90% REVIEW	RL
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**ANTENNA MOUNTING DETAIL** SCALE: N.T.S. 1



**COAX CABLE LADDER** SCALE: N.T.S. 5

**ANTENNA SPECS** SCALE: N.T.S. 3



**TYPICAL ANTENNA LAYOUT** SCALE: 1/8" = 1'-0" 6



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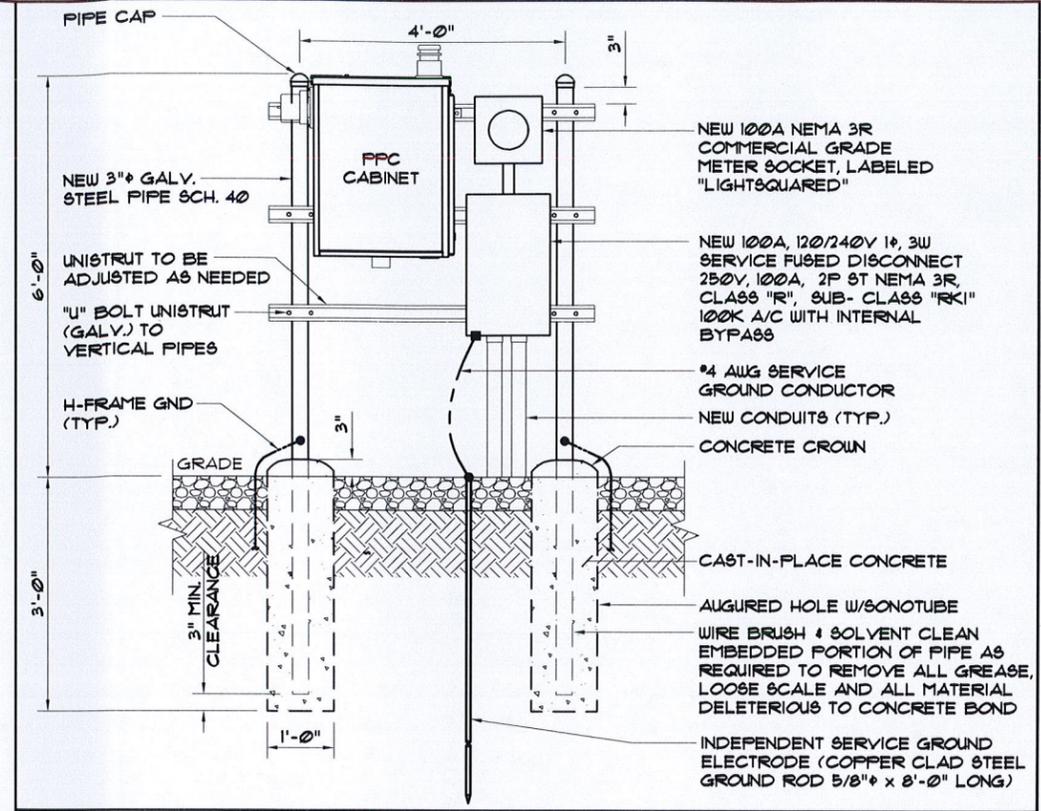
SHEET NAME  
**ANTENNA/COAX  
 SPECIFICATIONS**

SHEET NUMBER  
**ANT-1**

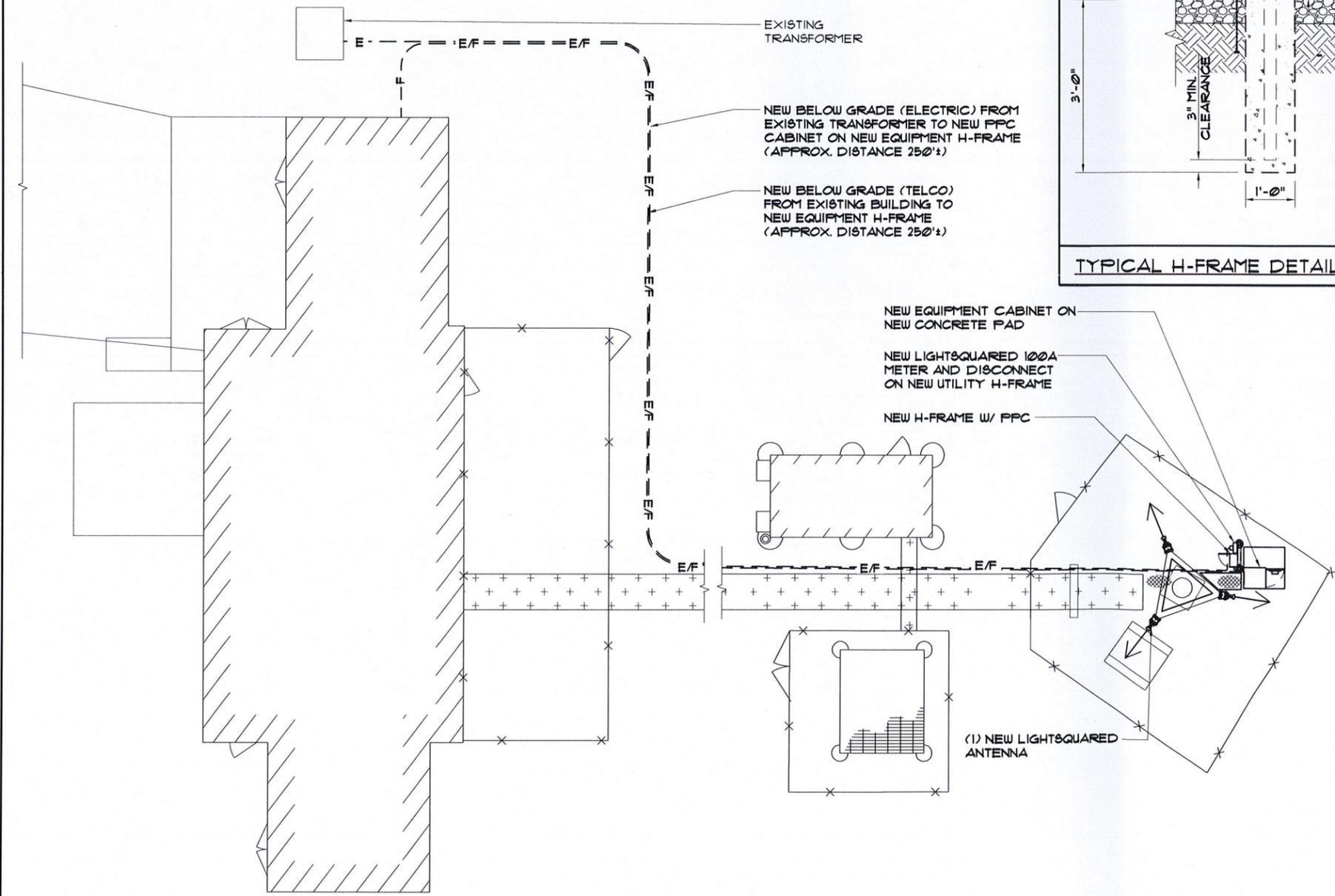
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- NOTES:**
- UTILITY ROUTES SHOWN ARE PROPOSED AND ARE NOT FINAL APPROVED ROUTING BY UTILITY COMPANIES. CONTRACTOR TO VERIFY AND CONFIRM PROPOSED UTILITY ROUTES W/ PROJECT MANAGER PRIOR TO ANY CONSTRUCTION.
  - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE LOCAL UTILITY COMPANY FOR FINAL POWER/TELCO MEET POINT AND ROUTE AND NOTE POTENTIAL INTERFERENCES WITH EXISTING UTILITIES, AND HAND DIG IN VICINITY OF ALL UTILITY CROSSINGS.
  - ALL WIRING SHALL BE COPPER WITH THHN/THWN DUAL RATED 600 VOLTS INSULATION.
  - LOCATE ALL UNDERGROUND UTILITIES WITHIN FENCED AREA PRIOR TO ANY CONSTRUCTION.



**TYPICAL H-FRAME DETAILS** SCALE: N.T.S. 1



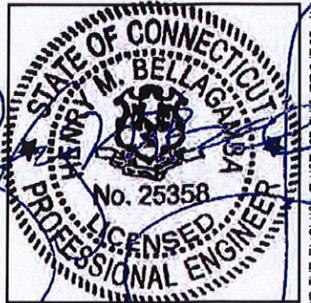
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#	DATE	DESCRIPTION	INT.
	04/11/13	90% REVIEW	RL
	04/24/13	FINAL	MD



SITE NAME  
**AVON (DEERCLIFF RD.)**

SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
 AVON, CT 06001**

SHEET NAME  
**UTILITY PLAN & NOTES**

SHEET NUMBER  
**E-1**

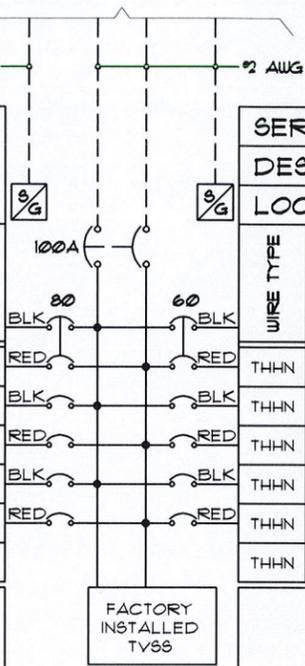


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### PANEL CIRCUIT AND LOAD SCHEDULE

LOAD	DESCRIPTION	QTY.	UNIT V.A.	LOAD PER PHASE (VA)		LOADS CONTINUOUS	LOADS NON-CONTINUOUS	TRIP	POLES	WIRE SIZE	A.I.C.	WIRE TYPE
				A	B							
1	BBU CABINET	1	9,252	9,252		X		80	2	2	10,000	THHN
3		1	9,252	9,252		X		80	2	2	10,000	THHN
5	SPACE										10,000	THHN
7	SPACE										10,000	THHN
9	SPACE										10,000	THHN
11	SPACE										10,000	THHN
SUBTOTAL CONTINUOUS				9,252	9,252							
SUBTOTAL NON-CONTINUOUS												

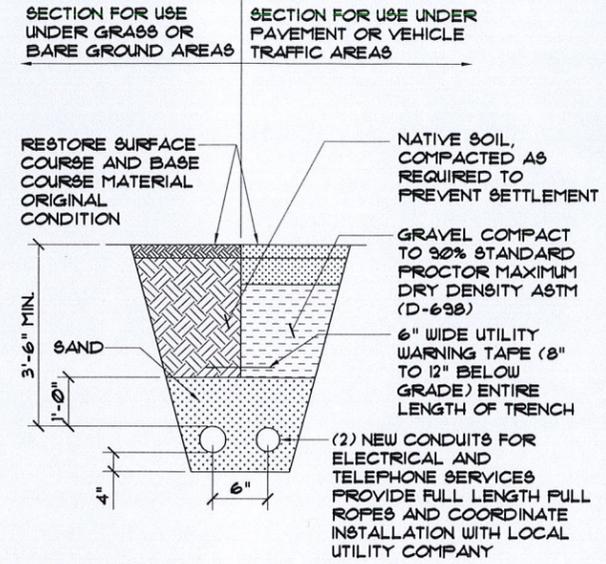
VOLTAGE: 120/240 CYCLE: PHASE: 1 WIRES: 3  
 NEUTRAL: 100 AMPS  
 MAIN BREAKER: 100 AMP FRAME A.I.C.: 10,000 TRIP: 100 AMPS  
 MAIN LUGS: AMPS MAIN COPPER BUS: 100 AMPS  
 MAINS: TOP  BOTTOM



SERVICE: 120/240 VAC  
 DESIGNATION: N/A  
 LOCATION: NEMA 3R

WIRE TYPE	A.I.C.	WIRE SIZE	POLES	TRIP	LOADS CONTINUOUS	LOADS NON-CONTINUOUS	LOAD PER PHASE (VA)		UNIT V.A.	QTY.	DESCRIPTION
							A	B			
THHN	10,000	8	2	60		X				1	SURGE ARRESTOR
THHN	10,000	8	2	60		X				1	
THHN	10,000										SPACE
THHN	10,000										SPACE
THHN	10,000										SPACE
THHN	10,000										SPACE
SUBTOTAL CONTINUOUS										18.5	TOTAL KVA CONTINUOUS X 125
SUBTOTAL NON-CONTINUOUS										0.0	TOTAL KVA NON-CONTINUOUS
										18.5	TOTAL KVA
										77.1	TOTAL AMPS

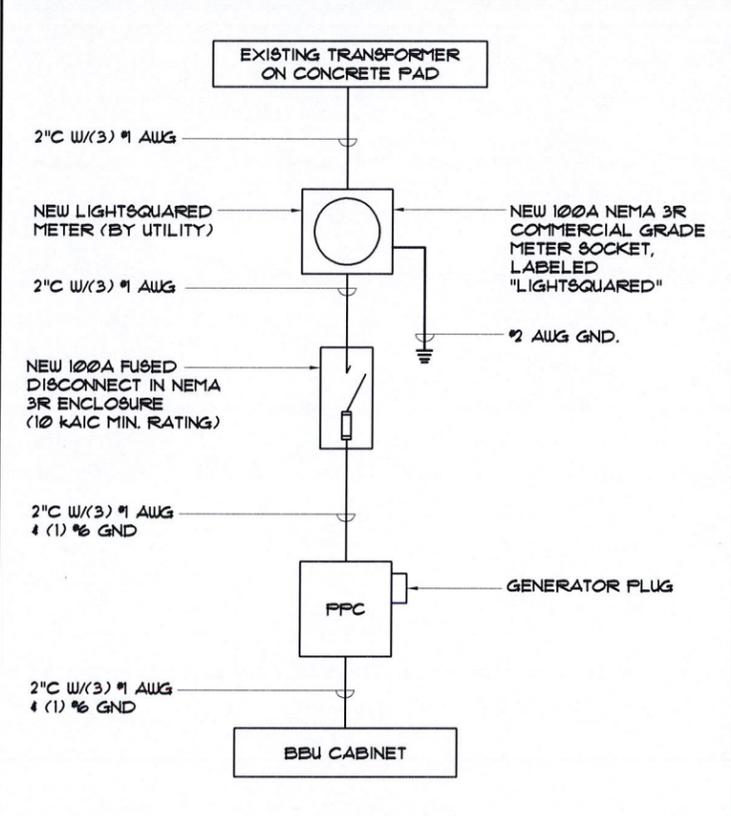
MANUFACTURER: EMERSON  
 TYPE AND CATALOG NUMBER: 531681  
 NO EQUAL:  APPROVED EQUAL:   
 MOUNTING: SURFACE  FLUSH



**NOTES:**

- CONTRACTOR TO VERIFY LOCAL UTILITY REQUIREMENTS FOR DEPTH, SIZE & SEPARATION OF CONDUITS PRIOR TO INSTALLATION. NOTIFY CONSTRUCTION MANAGER IMMEDIATELY OF ANY DISCREPANCIES
- CONTRACTOR TO CALL 811, MIN. 48 HRS PRIOR TO EXCAVATING FOR UNDERGROUND UTILITY LOCATIONS. LOCATION SURROUNDING EXCAVATED AREA MUST BE PRIVATELY LOCATED FOR NON-PUBLIC UTILITIES

PANEL SCHEDULE



CABINET LOAD ONE-LINE DIAGRAM

TRENCH DETAIL

**SINGLE LINE DIAGRAM NOTES:**

- MINIMUM AVAILABLE FAULT NEEDED IS 10 KA. CONTRACTOR TO VERIFY THE ACTUAL AVAILABLE FAULT AT THE TIME OF CONSTRUCTION WITH SERVING UTILITY CO.
- ALL CURRENT CARRYING DEVICES SHALL BE UL LISTED AND BRACED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT AT ITS TERMINALS.
- SERIES/COMBINATION SHORT CIRCUIT RATINGS MAY BE USED WHEN OVER CURRENT DEVICE.
- COMBINATIONS ARE LISTED UNDER UL 67 STANDARD AND INSTALLATION SHALL COMPLY WITH NATIONAL ELECTRICAL CODE (N.E.C.) ARTICLE 110-9, 110-22 AND OTHER APPLICABLE SECTIONS.
- APPLICABLE SERIES/COMBINATION RATED EQUIPMENT ENCLOSURES SHALL BE CLEARLY MARKED "CAUTION - SERIES RATED SYSTEM", IN COMPLIANCE WITH NEC. END-USE EQUIPMENT SHALL ALSO BE MARKED WITH THE HIGHER SERIES COMBINATION INTERRUPTING RATING AS PER NEC.
- PROVIDE A MIN. 36" WORK CLEARANCE IN FRONT OF PANELS/ELECTRICAL EQUIPMENT.
- ALL WIRING SHALL BE COPPER TYPE THHN RATED FOR 75° C.
- CONDUIT REQUIREMENTS (TYP., U.N.O.): UNDERGROUND: PVC (SCHED. 40 OR 80) INDOOR: EMT (RGS IN TRAFFIC AREAS) OUTDOOR (ABOVE GRADE): RGS.
- CABINET CIRCUIT BREAKERS TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- PROVIDE A WHITE PHONELIC SIGN WITH 3/4" RED ENGRAVED LETTERING ON PANEL "A" DOOR THAT READS "DISCONNECT GROUND TO NEUTRAL BONDING AT THE PORTABLE EMERGENCY GENERATOR PRIOR TO CONNECTION."
- DO NOT INSTALL THE OPTIONAL NEUTRAL TO GROUND BONDING JUMPER PROVIDED WITH THE BDP. BDP SHALL NOT BE USED AS THE MAIN SERVICE EQUIPMENT (PER CARRIER STANDARD).
- CARRIER REQUIRES A MAIN SERVICE RATED BREAKER IN ALL METER BOXES.

SINGLE LINE NOTES

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SITE NAME  
**AVON (DEERCLIFF RD.)**

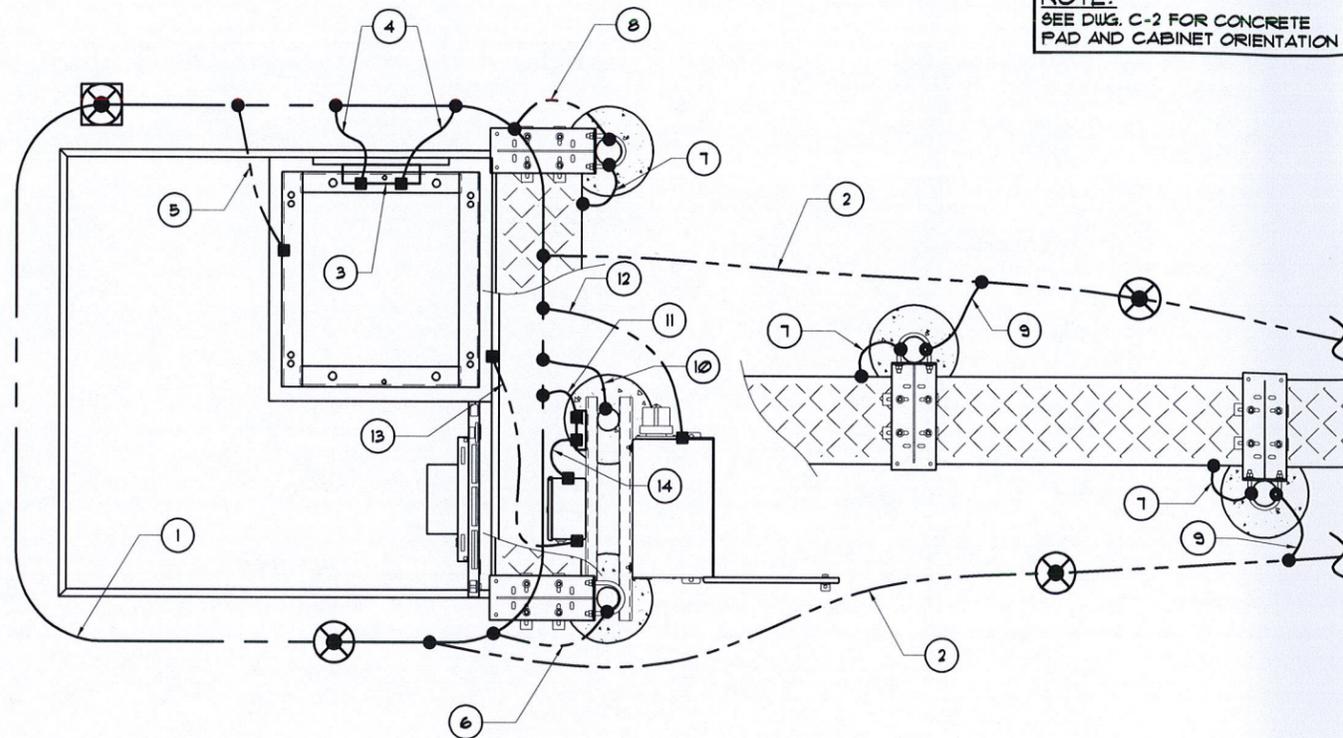
SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
 AVON, CT 06001**

SHEET NAME  
**LOAD SCHEDULE**

SHEET NUMBER  
**E-2**

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**LEGEND:**

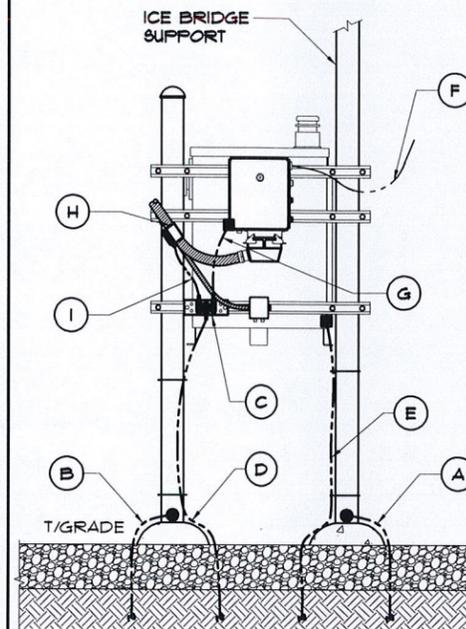
1. NEW GROUND RING CONSTRUCTED OF #2 SOLID TINNED BARE COPPER WIRE IN ONE CONTINUOUS PIECE.
2. #2 SOLID TINNED BARE COPPER GROUND WIRE FOR CONNECTION TO EXISTING TOWER GROUND RING IN (2) LOCATIONS, MINIMUM 6 FT. APART (APPLIES IF THERE IS AN EXISTING TOWER GROUND RING). (V.I.F.)
3. GROUND BAR LOCATED INSIDE BBU CABINET
4. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING TO GROUND BAR INSIDE EACH ENCLOSURE. THE LEADS SHALL BE INSTALLED IN 1/2" PVC AND SEALED ABOVE GRADE WITH SILICON. (2) PLACES (TYP)
5. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING TO CABINET PLINTH
6. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING TO ICE BRIDGE/EQUIPMENT H-FRAME POST
7. #2 SOLID TINNED BARE COPPER GROUND WIRE FOR ICE BRIDGE TO ICE BRIDGE POST
8. #2 SOLID TINNED BARE COPPER GROUND WIRE FOR ICE BRIDGE POST, CONNECTED TO NEW GROUND RING
9. #2 SOLID TINNED BARE COPPER GROUND WIRE FOR ICE BRIDGE POST CONNECTED TO GROUND LEAD FROM THE NEW GROUND RING TO THE EXISTING TOWER GROUND
10. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR H-FRAME POST
11. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR EQUIPMENT H-FRAME GROUND BAR FOR CABLE GROUNDING
12. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR EQUIPMENT H-FRAME PFC
13. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR COVP TO BBU CABINET (CHECK MANUFACTURE'S REQUIREMENTS)
14. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM EQUIPMENT H-FRAME COVP TO H-FRAME GROUND BAR

**SYMBOL LEGEND:**

- ⊗ GROUND ROD SEE DETAIL 2/DWG. EG-3
- ⊠ GROUND ROD WITH ACCESS SEE DETAIL 1/DWG. EG-3
- GROUND WIRE
- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- ▲ EXOTHERMIC OR MECHANICAL CONNECTION

TYPICAL GROUNDING PLAN

SCALE: N.T.S. 1



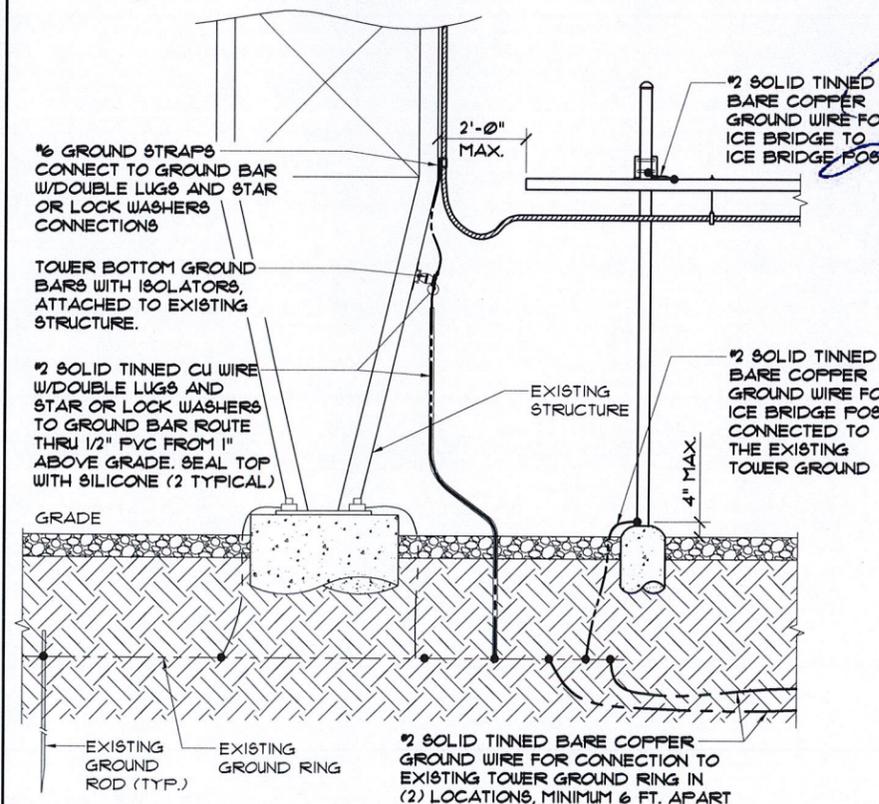
**LEGEND:**

- A. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING TO ICE BRIDGE/EQUIPMENT H-FRAME POST
- B. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR H-FRAME POST
- C. GROUND BAR WITH INSULATORS AND BRACKETS ATTACHED TO THE UNISTRUT
- D. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR EQUIPMENT H-FRAME GROUND BAR
- E. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING FOR EQUIPMENT H-FRAME PFC
- F. #2 SOLID TINNED BARE COPPER GROUND WIRE FOR COVP TO BBU CABINET (CHECK MANUFACTURE'S REQUIREMENTS)
- G. #2 SOLID TINNED BARE COPPER GROUND WIRE FROM COVP TO H-FRAME GROUND BAR
- H. GROUND KIT FOR HYBRID CABLE
- I. 2 GREEN STRANDED INSULATED COPPER GROUND WIRE FOR GROUND KIT TO SECTOR GROUND BAR

SECURE WIRES AND GROUNDS AS NEEDED TO PREVENT MOVEMENT AND POTENTIAL HAZARDS

H-FRAME GROUNDING

SCALE: N.T.S. 2



GROUNDING AT TOWER

SCALE: N.T.S. 3



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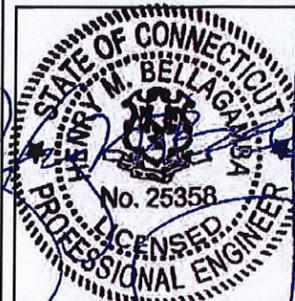


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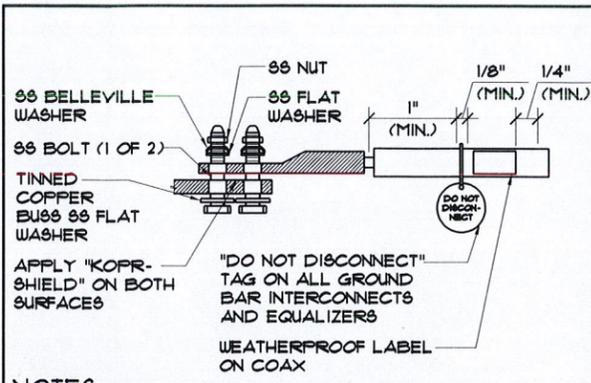


SITE NAME	AVON (DEERCLIFF RD.)
SITE NUMBER	870800
SITE ADDRESS	376 DEERCLIFF ROAD AVON, CT 06001

SHEET NAME	GROUNDING PLAN
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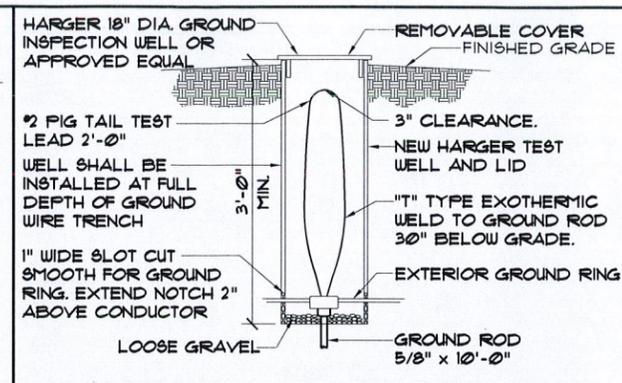
SHEET NUMBER	EG-1
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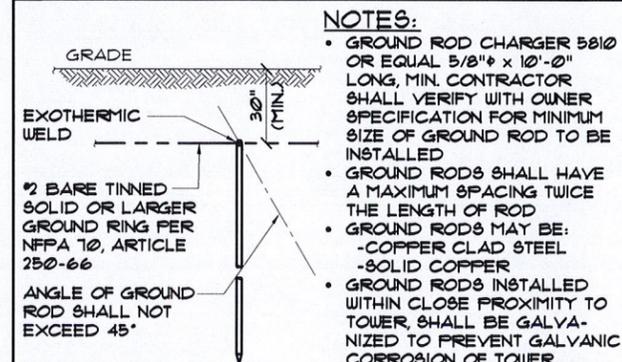


- NOTES:**
1. PROVIDE 2-HOLE, LONG BARREL, TINNED SOLID COPPER LUGS WHEREVER LUGS ARE SHOWN. ERICO B-122-CE PREFERRED WITH CADWELD TYPE GL CONNECTION. THOMAS AND BETTS 54800BE SERIES WHERE CRIMP CONNECTOR IS REQUIRED.
  2. ALL CRIMP CONNECTIONS MUST BE MADE USING HYDRAULIC TOOLS AND THREE POINT HEXAGONAL COMPRESSION MOLDS ON LONG BARREL LUGS.
  3. ALL MECHANICAL CONNECTIONS MUST BE MADE USING THOMAS AND BETTS "KOPR-SHIELD". COAT ALL WIRES BEFORE LUGGING. COAT ALL SURFACES BEFORE CONNECTING.
  4. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING BELLEVILLE, COAT ALL SURFACES WITH "KOPR-SHIELD" BEFORE MATING.
  5. FOR GROUNDING BOND TO STEEL ONLY: COAT ALL SURFACES WITH "KOPR-SHIELD".
  6. NO SLOTTED HOLES ON BUS BAR OR LUGS ARE PERMITTED.
  7. ALL LUG SHANKS AND LEAD JOINTS SHALL HAVE HEAT SHRINK MATERIAL.
  8. DOUBLE CRIMP ALL LONG BARREL LUGS.

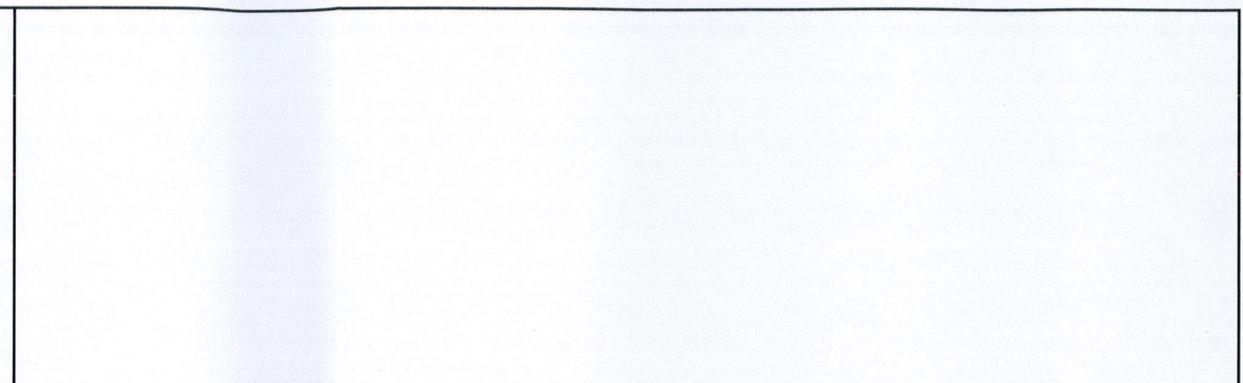
**LUG DETAIL** SCALE: N.T.S. 1



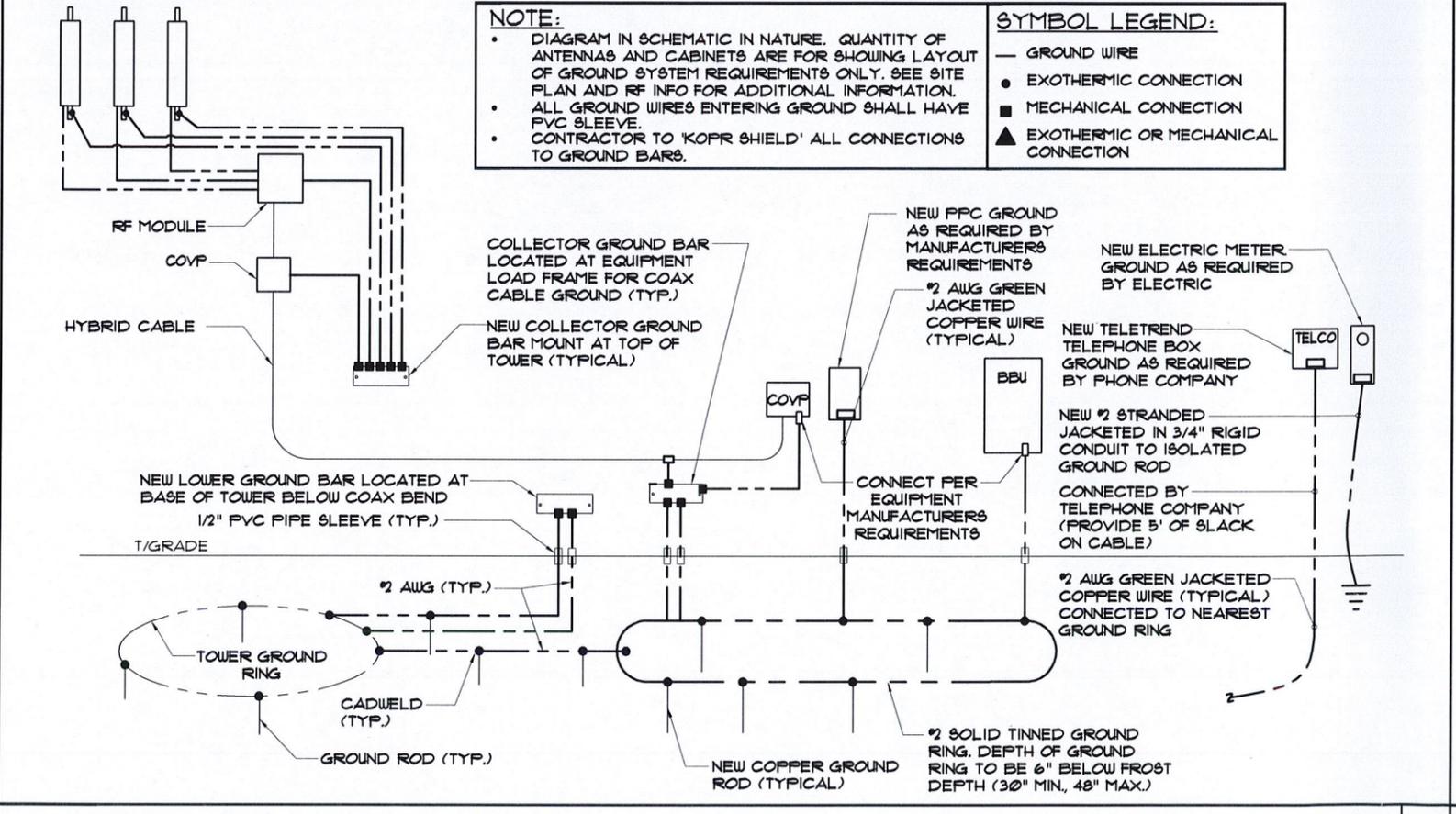
**GROUND ROD WITH ACCESS** SCALE: N.T.S. 2



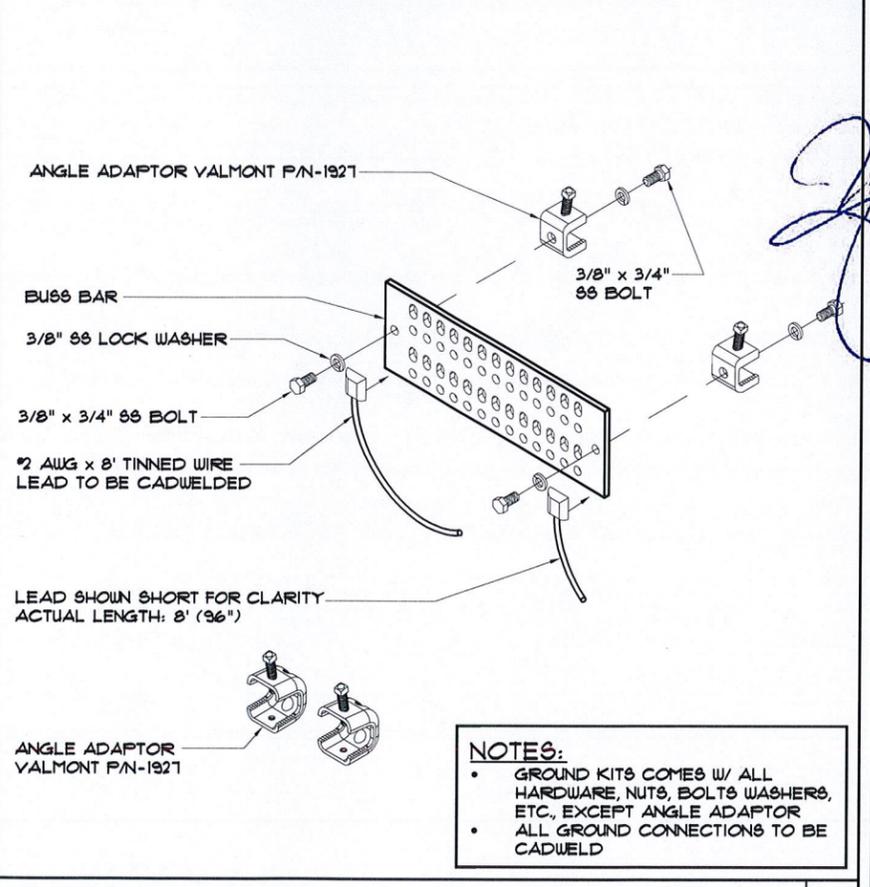
**GROUND ROD** SCALE: N.T.S. 3



**NOT USED** SCALE: N.T.S. 4



**GROUNDING RISER DIAGRAM** SCALE: N.T.S. 5



**EXOTHERMIC WELDS** SCALE: N.T.S. 6

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SHEET NAME  
**RISER  
 DIAGRAM &  
 DETAILS**

SHEET NUMBER  
**EG-2**

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**GENERAL NOTES:**

- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

**SITE NOTES:**

- THE MINIMUM LOWEST ELEVATION SHALL NOT BE LESS THAN 4" ABOVE CROWN OF ROAD OR THE FEDERAL AND/OR 100 YEAR FLOOD ELEVATION, WHICHEVER IS HIGHER. CONTRACTOR SHALL SUBMIT AN ELEVATION SURVEY PRIOR TO POURING SLAB AND A FINAL SURVEY UPON COMPLETION OF PROJECT.
- WORK OUTSIDE OF THE PROPERTY LINE INCLUDED IN THIS SET OF DRAWINGS SHALL BE, BUT NOT LIMITED TO, DRIVEWAYS, SODDING TO ASPHALT LINE AND UTILITY CONNECTIONS.
- IF THERE ARE EXISTING TREES WITHIN TOWER COMPOUND, THEY SHALL BE REMOVED. CONTRACTOR SHALL PROCURE PERMIT.
- CONTRACTOR AND SUB-CONTRACTORS SHALL VERIFY ALL UTILITY SERVICE CONNECTION LOCATIONS PRIOR TO SUBMITTING BID AND PROCEEDING WITH WORK. IT IS RECOMMENDED THAT THE CONTRACTOR VISIT THE SITE AND VERIFY ALL DIMENSIONS AND NOTES BEFORE SUBMITTING BID AND PROCEEDING WITH WORK.
- NO WORK IS TO BE PERFORMED ON THIS TOWER WITHOUT REVIEW OF THE APPROVED STRUCTURAL ANALYSIS. IF ANY DISCREPANCIES ARE FOUND THE GENERAL CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING. AT NO TIME WILL ANY ADDITIONAL ANTENNAS BE INSTALLED WITHOUT WRITTEN CONSENT FROM TOWER ENGINEER.
- CONTRACTOR TO VERIFY ALL HEIGHTS AND AZIMUTHS IN FIELD PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY CARRIER AND ENGINEERING FIRM OF ANY DISCREPANCIES BEFORE PROCEEDING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING FINAL RF CONFIGURATION AND NOTIFY CARRIER AND ENGINEERING FIRM WITH ANY DISCREPANCIES.
- CONTRACTOR TO USE PROPER TORQUE WRENCH WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
- CONTRACTOR SHALL VERIFY ALL FINAL CONNECTION LOCATIONS WITH CARRIER ENGINEER, RF ENGINEER, AND NET-OPS PRIOR TO INSTALLATION.

**CONSTRUCTION NOTES:**

- FIELD VERIFICATION: SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, NEW ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE INSTALLED.
- COORDINATION OF WORK: SUBCONTRACTOR SHOULD COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.
- GRAVEL SURFACE IN AREAS OF COMPOUND THAT ARE DISTURBED DURING CONSTRUCTION SHALL BE REPLACED TO ORIGINAL CONDITION BY SUBCONTRACTOR.
- ALL WORK TO BE PERFORMED BY THE SUBCONTRACTOR UNLESS OTHERWISE NOTED.

**ELECTRICAL NOTES**

- SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
- CONTRACTOR SHALL PERFORM ALL SITE SURVEY, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
- HEIGHTS SHALL BE VERIFIED WITH OWNER PRIOR TO INSTALLATION.
- THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.
- ELECTRICAL SERVICE 120 / 208 VAC 3 PHASE 4 WIRE 100 AMP SERVICE 120 / 240 VAC SINGLE PHASE 3 WIRE 100A SERVICE
- EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANEL BOARD, FULL BOX, J-BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.).
- CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NEBFU.
- ALL CONDUIT INSTALLED SHALL BE SURFACE MOUNTED OR DIRECT BURIAL UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL CARRY OUT THEIR WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES AND O.S.H.A.
- CONTRACTOR RESPONSIBLE FOR PERMITS AND PAY ALL REQUIRED FEES.
- COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
- ALL CONDUIT ONLY SHALL HAVE A PULL WIRE OR ROPE.
- PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.
- ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC., SHALL BE TURNED OVER TO THE OWNER AT JOB COMPLETION.
- USE T-TAP CONNECTIONS ON ALL MULTI- CIRCUITS WITH COMMON NEUTRAL CONDUCTOR FOR LIGHTING FIXTURES.
- ALL CONDUCTORS SHALL BE COPPER.
- ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
- THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
- PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
- PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH APPLICABLE LOCAL BUILDING CODES.
- WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS.
- GROUNDED CONDUCTORS SHALL BE SOLID TINNED COPPER UNLESS OTHERWISE NOTED.
- METER SOCKET AMPERES, VOLTAGE, NUMBER OF PHASES SHALL BE AS NOTED ON THE DRAWINGS, MANUFACTURED BY "SQUARE D COMPANY", OR APPROVED EQUAL.
- ALL MATERIALS SHALL BE UL LISTED
- ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
- CONTRACTOR TO PROVIDE DAILY UPDATES TO PM UNTIL FINAL ELECTRICAL SERVICE IS EFFECTED.

**28. CONDUIT**

- RIGID CONDUIT SHALL BE UL LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3
  - ELECTRICAL METALLIC TUBING SHALL HAVE UL LABEL, FITTING SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
  - FLEXIBLE METALLIC CONDUIT SHALL HAVE UL LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT SHALL HAVE FULL SIZE EQUIPMENT GROUND WIRE.
  - CONDUIT RUNS SHALL BE SURFACE MOUNTED IN CEILINGS OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE OWNER PRIOR TO INSTALLING. NO HORIZONTAL CONDUITS SHALL BE BELOW 7'-6" AFF. NO BX OR ROMEX CABLE IS PERMITTED.
  - PARALLEL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 30" BELOW GRADE - STACKED UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 24" BELOW GRADE.
  - ABOVE GROUND CONDUIT SHALL BE P.V.C. SCHEDULE 80 (UNLESS NOTED OTHERWISE).
29. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUND TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
30. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR.

**DEFINITIONS**

- AGB: ANTENNA GROUND BAR
- AWG: AMERICAN WIRE GAUGE
- CAD WELDING: AN EXOTHERMIC WELDING PROCESS WHICH CREATES POSITIVE CONTACT OF POSITIVE CONTACT OF GROUNDING CONDUCTORS
- EMT: ELECTRICAL METAL TUBING (LIGHT GAUGE METAL CONDUIT) MGB MASTER GROUND BAR
- PVC: POLY VINYL CHLORIDE CONDUIT
- RFI: RADIO FREQUENCY INTERFERENCE
- THW: LETTER TYPE DESIGNATION FOR CONDUCTOR INSULATION THAT IS A MOISTURE AND HEAT RESISTANT THERMOPLASTIC WITH A MAXIMUM OPERATING TEMPERATURE OF 75 DEGREES CELSIUS OR 167 DEGREES FAHRENHEIT.
- T/I: TENANT IMPROVEMENT

**NOKIA INSTALLATION CHECK LIST**

- DELIVERY IS COMPLETE AND UNDAMAGED.
- MINIMUM CLEARANCES ARE MET.
- ADAPTER MECHANICS ARE INSTALLED (FOR WALL AND POLE INSTALLATIONS).
- PLINTH IS INSTALLED ACCORDING TO INSTRUCTIONS.
- PLINTH IS GROUNDED.
- TRANSMISSION SUB-MODULE IS INSTALLED ACCORDING TO THE INSTRUCTIONS.
- POWER SUPPLY CABLE IS CONNECTED.
- MODULES ARE INSTALLED ACCORDING TO THE INSTRUCTIONS.
- MODULES ARE GROUNDED TO THE PLINTH.
- MODULE BACK COVERS ARE INSTALLED.
- CABLE ENTRIES ARE INSTALLED.
- ANTENNA CABLES ARE CONNECTED ACCORDING TO THE CONFIGURATION.
- INTERNAL POWER CABLES ARE CONNECTED.
- TRANSMISSION CABLES ARE CONNECTED.
- OPTICAL FIBRE CABLES ARE CLEANED AND CONNECTED.
- CABLES BETWEEN THE MODULES ON THE SAME PLINTH ARE ROUTED VIA INTERNAL CABLE ENTRIES.
- BT5 EXTERNAL CABLES OR CABLES BETWEEN THE MODULES ON SEPARATE PLINTHS ARE ROUTED VIA EXTERNAL CABLE ENTRIES.
- CABLES ARE TIED PROPERLY.
- CABLE CONNECTOR SEALS ARE FIRMLY IN PLACE.
- UNUSED CONNECTORS ARE COVERED WITH IP SEALS
- BT5 IS SWITCHED ON AND ALL UNITS ARE READY FOR COMMISSIONING.
- MODULE FRONT COVERS ARE INSTALLED.
- SITE IS CLEAN AND INSTALLATION IS COMPLETE.

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	04/24/13	FINAL	MD



SITE NAME  
**AVON  
 (DEERCLIFF RD.)**

SITE NUMBER  
**870800**

SITE ADDRESS  
**376 DEERCLIFF ROAD  
 AVON, CT 06001**

SHEET NAME  
**GENERAL NOTES  
 AND  
 SPECIFICATION**

SHEET NUMBER  
**SP-1**

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### UTILITY NOTES:

1. WIRING DEVICES AND EQUIPMENT SHALL BE UL LISTED SPECIFICATIONS GRADE
2. MATERIALS SHALL BE NEW AND CONFORM TO THE APPLICABLE STANDARDS ESTABLISHED FOR EACH ITEM BY THE ORGANIZATIONS LISTED BELOW
  - AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)
  - UNDERWRITER'S LABORATORY (UL)
  - NATIONAL ELECTRICAL MANUFACTURING ASSOCIATION (NEMA)
  - AMERICAN STANDARDS ASSOCIATION (ASA)
  - NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
3. INSTALLATION OF MATERIALS SHALL COMPLY WITH REGULATIONS OF:
  - THE NATIONAL ELECTRIC CODE (NFPA 70)
  - THE NATIONAL ELECTRICAL SAFETY CODE (ANSI C-2)
  - THE LIFE SAFETY CODE (NFPA 101)
  - LOCAL BUILDING CODES
  - LIGHTSQUARE INSTALLATION GUIDE, LATEST VERSION
4. THE ENTIRE SYSTEM SHALL BE SOLIDLY GROUNDED USING LOCKOUTS AND BONDING NUTS ON CONDUITS AND PROPERLY BONDED GROUND CONDUCTOR RECEPTACLES AND EQUIPMENT BRANCH CIRCUITS SHALL BE GROUNDED WITH A FULL-SIZED EQUIPMENT GROUNDING CONDUCTOR RUN IN THE CIRCUITS CONDUIT
5. OUTLET AND JUNCTION BOXES SHALL BE ZINC-COATED OR CADMIUM PLATED STEEL NOT LESS THAN 4" SQUARE AND SUITABLE FOR THE TYPE SERVICE AND OUTLET. OUTLET AND JUNCTION BOXES SHALL BE SURFACE MOUNTED AND LABELED WITH BRANCH CIRCUIT BREAKER NUMBER
6. LABEL ALL EQUIPMENT SERVED FROM LIGHTSQUARE PANELBOARD WITH PHENOLIC LABELS SIZED IN RELATION TO USAGE
7. OUTDOOR CONDUCTORS SHALL BE INSTALLED IN RIGID GALVANIZED STEEL UNLESS NOTED OTHERWISE. WHERE EMT IS USED, IT SHALL ONLY BE USED WITH LISTED COMPRESSION FITTINGS. NO SET SCREW FITTINGS SHALL BE ALLOWED
8. CONTRACTOR TO PROVIDE AND INSTALL ENGRAVED LABEL ON THE LIGHTSQUARE METER SOCKET ENCLOSURE
9. ALL WIRING SHALL BE COPPER WITH THHN/THWN DUAL RATED 600 VOLTS INSULATION
10. PRIOR TO INSTALLATION OF FINAL ELECTRICAL CONNECTION TO UTILITY SERVICE, THE CONTRACTOR SHALL VERIFY THAT THE AVAILABLE FAULT CURRENT DOES NOT EXCEED 10 KAIC. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF THIS REQUIREMENT IS NOT MET FOR ADDITIONAL ENGINEERING REVIEW AND DESIGN.
11. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR
12. CONTRACTOR TO VERIFY LOCAL UTILITY REQUIREMENTS FOR DEPTH, SIZE & SEPARATION OF CONDUITS PRIOR TO INSTALLATION. NOTIFY CONSTRUCTION MANAGER IMMEDIATELY OF ANY DISCREPANCIES
13. CONTRACTOR TO CALL 811, 48 HRS PRIOR TO EXCAVATING FOR UNDERGROUND UTILITY LOCATIONS. LOCATION SURROUNDING EXCAVATED AREA MUST BE PRIVATELY LOCATED FOR NON-PUBLIC UTILITIES
14. PROPOSED UTILITY SERVICES SHOWN NEED TO BE VERIFIED & APPROVED BY UTILITY COMPANIES BEFORE START OF CONSTRUCTION. CONTRACTOR TO VERIFY WITH LIGHTSQUARED PROJECT MANAGER TO OBTAIN FINAL APPROVAL
15. LINES SHOWN DO NOT REPRESENT THE EXACT LOCATION OF THE CONDUIT RUNS CONTRACTOR TO VERIFY SERVICE LOCATIONS W/ACTUAL FIELD CONDITIONS
16. CONTRACTOR TO NOTE POTENTIAL INTERFERENCES WITH EXISTING UTILITIES, AND HAND DIG IN VICINITY OF ALL UTILITY CROSSINGS

### COORDINATION WITH UTILITY COMPANY

THE ELECTRICAL CONTRACTOR SHALL COORDINATE COMPLETE ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANIES FOR A COMPLETE OPERATIONS SYSTEM, INCLUDING TRANSFORMER CONNECTIONS, CONCRETE TRANSFORMER PADS PRIOR TO SUBMITTING BID TO INCLUDE ALL LABOR AND MATERIALS

### ELECTRICAL NOTES:

1. CONTRACTOR SHALL COORDINATE METER SOCKET LOCATION AND TYPE WITH POWER COMPANY
2. CONTRACTOR SHALL INSTALL CONDUIT AND WIRE TO THE BTS SITE. COIL WIRES, SEAL CONDUIT WIRE ENDS FROM MOISTURE INFILTRATION. LEAVE WIRE TO TERMINATE AT RADIO CABINET PANEL, (MINIMUM OF 10 FEET)
3. COPPER GROUND WIRE SHALL BE BONDED TO SITE GROUNDING SYSTEM
4. UNDERGROUND CONDUITS SHALL TRANSITION FROM PVC TO RIGID THROUGH THE SWEEP AND REMAIN RIGID INTO PANELS
5. CONTRACTOR MAY MODIFY KNOCKOUT HOLES IN EQUIPMENT CABINETS TO ACCOMMODATE THE REQUIRED CONDUIT SIZES
6. COORDINATE WITH RADIO CABINET MFG REQUIREMENTS FOR SIZE & NUMBER OF CONDUITS
7. THE BDP IS SHIPPED IN TWO SECTIONS TO BE BOLTED TOGETHER ON SITE
8. SURGE PROTECTION IN TELCO CHAMBER IS REQUIRED ON ALL SITES WITH EXTERNAL ALARM POINT MONITORING. NORTHERN TECHNOLOGIES INC DLP-43 DATA LINE PROTECTOR SHALL BE USED
9. SERVICE POWER SHALL BE (120/240VAC, 100A, 1, 3W) OR (120/208VAC, 100A, 1, 3W)
10. METER BASE SHALL BE INSTALLED WHERE IT IS ACCESSIBLE FOR READOUT. THE NUMBER OF JAWS IN THE METER SOCKET AND THEIR ARRANGEMENT DEPENDS ON THE VOLTAGE SERVICE. COORDINATE WITH POWER COMPANY
11. CABLE SIZES SHALL BE ADJUSTED TO COMPENSATE FOR VOLTAGE DROP IF LONGER THAN 150 FT. VERIFY CONDUIT SIZE WHEN CHANGING CABLE SIZE
12. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT REFER TO VENDOR PRINTS PROVIDED BY BDP MANUFACTURER
13. ADDRESS SHALL BE POSTED BELOW THE METER
14. ANY 120 VOLT OUTLET LOCATED ON THE BDP SHALL HAVE GFCI PROTECTION PER NEC SECTION 210-8
15. CONTRACTOR TO SUPPLY AVAILABLE FAULT CURRENT CALCULATIONS AT THE SERVICE EQUIPMENT LINE TERMINATION POINTS AS WELL AS IMPEDANCE VALUE AND SIZE OF SERVICE CONDUCTORS. ALL SERVICE AND BRANCH PANELS SHALL BE RATED FOR THE AVAILABLE FAULT CURRENT. DISTANCE AND CONDUCTOR SIZES MUST BE FURNISHED TO INSPECTOR
16. EMERGENCY AND BATTERY BACKED UP EXIT LIGHTING CIRCUITS SHALL BE MARKED SPECIFICALLY IN THE ELECTRICAL PANEL AS SUCH. (NEC 700.12.E). THE FIRE DEPARTMENT WILL BE TESTING THESE DEVICES EVERY SIX MONTH DURING BUSINESS HOURS BY SHUTTING THESE CIRCUITS (KEEP CRITICAL LOADS OFF THESE CIRCUITS). IF THE PRIMARY SOURCE OF ILLUMINATION IS HID, THE EMERGENCY LIGHTS SHALL BE REQUIRED TO OPERATE UNTIL NORMAL ILLUMINATION IS RESTORED. (NEC 700.16)
17. CONTRACTOR SHOULD ENSURE THAT ANY GENERATOR SUPPLYING THIS SITE SHOULD HAVE THE GROUND TO NEUTRAL STRAP REMOVED AS THIS IS A 2 POLE TRANSFER SWITCH WITH A SOLID NEUTRAL

### CONDUITS AND WIRING:

1. WIRING OF EVERY KIND MUST BE INSTALLED IN CONDUIT, UNLESS NOTED OTHERWISE, OR AS APPROVED BY THE ENGINEER
2. UNLESS OTHERWISE SPECIFIED, ALL WIRING SHALL BE COPPER (CU) TYPE THWN, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE
3. RACEWAYS SHALL BE GALVANIZED STEEL, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, UNLESS OTHERWISE NOTED. ALL RACEWAYS SHALL BE APPROVED FOR THE INSTALLATION
4. FULL OR JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED TO FACILITATE INSTALLATION OF RACEWAYS AND WIRING
5. PROVIDE A COMPLETE RACEWAY AND WIRING INSTALLATION, PERMANENTLY AND EFFECTIVELY GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE AND LOCAL CODES

### GROUNDING NOTES:

1. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE
2. ALL CONDUCTORS SHALL BE #2 GREEN STRANDED INSULATED COPPER GROUND WIRE UNLESS NOTED OTHERWISE
3. ALL CONNECTIONS TO THE COPPER LUG BARREL WITH 1" SPACING SHALL BE CRIMPED USING THE PROPER CRIMPING TOOL TO THE GROUND WIRE AND HEAT-SHRINKED
4. ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FIELD INSPECTED AND MODIFIED TO ENSURE PROPER CONTACT. PRIOR TO EXOTHERMIC CONNECTING, GALVANIZING SHALL BE REMOVED BY GRINDING THE SURFACE TO BARE METAL. "SLAG" FROM EXOTHERMIC CONNECTION MUST BE REMOVED AND SHALL BE SPRAYED WITH COLD GALVANIZATION OR TOUCH UP WITH GALVANOX OR EQUIVALENT AFTER COMPLETION
5. EXOTHERMIC WELDS SHALL USE APPROPRIATE MOLDS AND #30 WELD METAL
6. MECHANICAL CONNECTIONS SHALL BE MADE WITH STAINLESS STEEL BOLTS, NUTS AND LOCK WASHERS, 3/8" MINIMUM. BI-METAL RATED LUGS ARE TO BE USED WHERE THE CONNECTION IS MADE
7. USE NOALOX OR APPROVED EQUAL CONNECTIVE MATERIAL FOR ALL MECHANICAL CONNECTIONS
8. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONNECTOR SHALL NOT BE USED. CLIPS OF THE FOLLOWING MATERIALS AND TYPES MAY BE USED TO SUPPORT GROUNDING CONNECTORS:
  - PLASTIC CLIPS, STAINLESS STEEL OR FERROUS METAL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTORS
9. INSTALL ALL GROUND WIRES IN AN ORGANIZED MANNER, C-TAPPING WHERE POSSIBLE TO REDUCE THE NUMBER OF GROUND WIRES. AVOID CROSSING OF WIRES WHEREVER POSSIBLE
10. INSTALL ALL GROUNDS IN A DOWNWARD SLOPE FOR MAXIMUM LIGHTING PROTECTION
11. MAINTAIN ALL MINIMUM BENDING RADII IN THE GROUNDING WIRES
12. DO NOT REMOVE MORE INSULATION FROM THE GROUND WIRES THAN NECESSARY WHEN EXOTHERMIC WELDING OR CRIMPING. IF EXCESS INSULATION IS REMOVED, THE CONNECTION WILL BE CONSIDERED UNACCEPTABLE AND WILL BE CORRECTED PER THE LIGHTSQUARE REPRESENTATIVE'S DIRECTION
13. THE CONTRACTOR SHALL SELF-PERFORM OR ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT RESISTANCE TO EARTH NOT EXCEED 100 OHMS. PROVIDE A COPY OF TESTING REPORT, INCLUDING THE METHOD AND INSTRUMENTS USED TO VERIFY TO LIGHTSQUARE REPRESENTATIVE. LIGHTSQUARE STANDARD IS TO PERFORM A THREE POINT FALL-OF-POTENTIAL TEST PRODUCE ALSO REFERRED TO AS A 10 OHM 2 POINT 62% METHOD TEST

### GROUND RING LEAD CONNECTIONS:

1. ALL CONDUCTORS USED IN THE GROUND RING AND GROUND RING STUBS SHALL BE #2 SOLID TINNED BARE COPPER WIRE. ALL STUBS SHALL BE CONNECTED TO THE GROUND RING USING EXOTHERMIC WELDS WITH TAC 2 BY 2 MOLDS AND #30 WELD METAL
2. FOR SURFACE CONNECTIONS REMOVE ALL PAINT AND CORROSION DOWN TO SHINY METAL, TREAT ALL EXOTHERMIC WELDS WITH GALVANIZING PAINT OR TOUCH UP WITH GALVANOX OR EQUIVALENT
3. WHERE BARE COPPER WIRES ARE ROUTED FOR CONNECTION ABOVE GRADE, INSTALL WIRE IN 1/2" PVC SLEEVE, FROM 1" ABOVE GRADE AND SEAL TOP WITH SILICONE MATERIAL
4. MECHANICAL CONNECTIONS SHALL BE MADE WITH STAINLESS STEEL BOLTS, NUTS AND LOCK WASHERS, 3/8" MINIMUM
5. USE NOALOX OR APPROVED EQUAL CONNECTIVE MATERIAL FOR ALL MECHANICAL CONNECTIONS

### DIRECT BURIAL PIPE GROUND:

1. ALL DIRECT BURIAL PIPES SHALL BE GROUNDED USING (1) #2 SOLID TINNED BARE COPPER GROUND WIRE
2. THESE PIPES SHALL BE CONNECTED TO THE GROUND RING WITH #2 SOLID TINNED BARE COPPER GROUND WIRE AND INTERMEDIATE GROUND RODS IF THE DISTANCE FROM THE PIPE EXCEEDS (6) FEET. EXOTHERMIC WELD TO THE SITE GROUND RING.

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870800

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376 DEERCLIFF ROAD  
AVON, CT 06001

SHEET NAME  
UTILITY AND  
GROUNDING  
NOTES

SHEET NUMBER  
SP-2

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