Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

September 13, 2016

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

RE: **Notice of Exempt Modification for AT&T/ LTE 3C Crown Site BU: 876312**
AT&T Site ID: CT2173
2755 State Street, Hamden, CT 06473
Latitude: 41° 21' 19.67"/ Longitude: -72° 53' 25.13"

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 112-foot level of the existing 120-foot self-support tower at 2755 State Street in Hamden, CT. The tower is owned by Crown Castle. The property is owned by Debjay LLC and the Estate of Louis G. Amodio. AT&T now intends to replace three (3) antennas with three (3) new antennas. These antennas would be installed at the 112-foot level of the tower. AT&T also intends to install three (3) RRU-32s and three (3) Bias-T's.
This facility was approved by the by the Town of Hamden Conservation Commission on March 5, 1997. This approval was given without conditions.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to The Honorable Curt B. Leng, Mayor, Town of Hamden, as well as the property owner, and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-729-0053
Jeff.Barbadora@crowncastle.com

Attachments:

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

cc: The Honorable Curt B. Leng, Mayor
Town of Hamden
2750 Dixwell Avenue
Hamden, CT 06518

Debjay LLC
111 Oakwood Drive
New Britain, CT 06052

The Estate of Louis G. Amodio Sr.
Attn: Frank Amodio & Louis Amodio
500 Shuttle Meadow Avenue
New Britain, CT 06052

HARRIS
BEACH &
WILCOX
A LIMITED LIABILITY PARTNERSHIP
ATTORNEYS AT LAW
147 NORTH BROAD STREET
MILFORD, CONNECTICUT 06460-0112
(203) 877-8000
(203) 878-9800 (Fax)

VIA FACSIMILE

April 9, 1997

Mr. Laurance Woods
Sprint Spectrum L.P.
9 Barnes Industrial Road
Wallingford, Connecticut 06492

RE: Hamden Site Nos. 011 & 046

Dear Larry:

I am very pleased to report that both Hamden sites 011 (Amodio Self Storage, 2755 State Street "Montowese") and 046 (Chestnut Hill Apartments, 865 Mix Avenue) were approved unanimously at last night's Planning and Zoning Commission meeting. Site 047 (9 Business Park Drive) was on the agenda, but continued because we neither have a variance nor new regulations in place.

Please take note of the special conditions for sites 011 and 046, which are attached. Both sites have a special condition of RF monitoring and reporting every six months to the Town Planner. I did not have an opportunity to comment on this proposed special condition, because the public hearing was closed in March. The April 8, 1997 meeting consisted of discussion among Commission members only and the vote. Town Planner Daniel Kops did not present the special condition until immediately before the vote. This condition may well violate the Telecommunications Act of 1996. It will be useful to know if Sprint has encountered similar conditions elsewhere, and what position has been taken.

Another condition of site 011 is the Town's receipt of an FCC-approved Environmental Assessment. I do not think that there is such formal "approval" by the FCC in most instances, so we will need to look into whether this is an obstacle. The co-location condition regarding site 011 and the other conditions do not appear to be potentially burdensome. Please call me after you have reviewed the conditions, so that we may determine how to proceed.

Very truly yours,

ELIAS A. ALEXIADES
EAA/vjv

CT03XC011

Enclosures

March 6, 1997

HAMDEN TOWN CLERK
MAR 7 10 23 AM '97

To: Louise
New Haven Register

From: Gerry Tobin
Hamden Conservation Commission

Re: Legal Notice to Appear Tuesday, March 11, 1997

DP 54636: **The Conservation Commission,** sitting as the Inland Wetland Agency for the Town of Hamden, State of Connecticut, held a Regular Meeting at 7:30 p.m. on Wednesday, March 5, 1997. In addition to other agenda items, the following action was taken:

97-814 275 Mount Carmel Avenue
East Residence Hall
Quinnipiac College, Owner and Applicant
Approved with Stipulations

97-815 3931 Whitney Avenue
84 & 100 Tuttle Avenue
Sleeping Giant Associates, Owners
Alphonse E. Savarese, Applicant
Approved with Stipulation

97-816 65 West Meadow Road
Maryanne D. Cuomo, Owner
Michael J. Bennett, L.S., Applicant
Approved with Stipulation

97-817 2755 State Street
Louis G. Amodio and John A. Amodio, Owners
Sprint Spectrum L.P., Applicant
No action required.

Submitted by: Gerry Tobin
Gerry Tobin, Commission Clerk

they add the conditions to the plans and submit the revised plan to the contractor. Mr. Kops said Mr. Raccio has to sign off on the zoning permit, and will also have the opportunity to remind the builder. Mr. Bennett added the notes regarding the staked hay bales and the contractor's notice to Mr. Raccio, to the plan. The vote was *unanimous, in favor.*

97-817 2755 State Street
Louis G. Amodio and John A. Amodio, Owners
Sprint Spectrum L.P., Applicant

Elias Alexiades, Esquire, of Harris, Beech and Wilcox, 147 North Broad Street, Milford, addressed the Commission. He introduced Thomas Petros, Soil Scientist with Environmental Services, Inc., Arthur Johnson, Project Manager with URS Greiner, and Thomas Flynn of SBA Sprint. Sprint Spectrum Limited Partnership has leased a small portion of property owned by the Amodios. PCS is a new digital technology, operating on a higher frequency that currently available. They have filed this application for safety purposes. There are tidal wetlands, not inland wetlands on the property, and he is hoping the Commission will decline jurisdiction.

When Mr. Raccio reviewed this proposal back in October, he reported to the Commission that there are no wetlands on the property and the tower would be erected on the existing blacktop. The Commission declined jurisdiction at that time. The tower is going on blacktop and some grassy area, which is why they have come back to the Commission. Revised plans including an A-2 survey were submitted to the P&Z, and the wetlands were incorrectly referred to as inland wetlands, instead of tidal wetlands. Attorney Alexiades called on Mr. Petros to explain his findings with regard to soil types.

Thomas Petros, registered professional soil scientist and professional wetlands scientist of Cheshire, addressed the Commission. He and Ken Stevens conducted a site inspection on 2/4 and found a tidal marsh supported by phragmites and cattails, to the east of Amodio Storage. Soils include mucky peat and some mineral fill placed 15-20 years ago. They placed flags 1-16, which are shown on the plans. The antenna site is in an upland fill area, and there is a 6-7 foot drop to the tidal marsh. A cross section is shown on the drawing. Mr. Raccio asked where the inland wetlands are. Mr. Alexiades said he had some concern that some soils might be classified as inland wetlands. Mr. Petros said they are properly classified as tidal. Mr.

MINUTES: **The Conservation Commission,** sitting as the Inland Wetland Agency for the Town of Hamden, State of Connecticut, held a Regular Meeting at 7:30 p.m. on Wednesday, March 5, 1997, in the Council Chambers, Memorial Town Hall. The following items were discussed:

Raccio said on the maps submitted to P&Z inland wetlands were indicated. Mr. Farver said as a practical matter, is there any change in the wetlands line between the old map and the new, whether tidal wetlands or inland wetlands. Mr. Johnson's office prepared the drawing. Mr. Johnson said it was simply a scribner's error. The wetland has always been represented as tidal. Mr. Raccio visited the site again today, and sees no problem with the plan. Mr. Kops sees no issues with the tidal wetlands. Mr. Vocelli said we have no jurisdiction. **No action was necessary.**

97-813 383 West Woods Road
and Cease and Desist Order
Peter and Maria Stevenson
Owners & Applicants

Mr. Raccio sent a letter asking the Stevensons to appear at tonight's meeting regarding their application. Ms. Tobin also spoke with Ms. Stevenson. Mr. Vocelli said we have been patient with the Stevensons, but he said perhaps if no application is filed, after next month's meeting perhaps the Staff Attorney should be contacted. Mr. Raccio will try to speak to Mr. Stevenson and let him know. They should be here at least to explain why the application has not been completed. Mr. Kops will advise Ms. Munroe.

97-814 275 Mount Carmel Avenue
East Residence Hall
Quinnipiac College, Owner and Applicant

Mr. Farver read his site inspection report, a copy of which is filed with these minutes. Howard Pfrommer, of Jacobson Associates, Engineers, described the new map submitted last week. New erosion controls were shown, a note was added regarding contacting the RWA. Those were the two main revisions. The grading for the trenching for the sanitary sewer system will be about 20' from the wetland. The leakoff relocation goes right up to the wetland. The pavement relocation is within 6' of the wetland. Mr. Montgomery mentioned that at the site inspection they noted a little erosion that needs to be taken care off. Mr. Vocelli asked from the time these two stream side activities are started, how long will it take to completion? Mr. Pfrommer said this occurs with other activities, but the sanitary work could be done in a couple of weeks. Mr. Rubertone, facilities manager for Quinnipiac College, said he will notify Mr. Raccio when he begins construction. Ms. Bostwick asked if it would be appropriate to work in a two week time limit for each of these activities. Mr.

TOWN OF HAMDEN

INTER-OFFICE MEMO

TO: Planning and Zoning Commission

FROM: Daniel W. Kops, Jr., Town Planner

RE: Special Permit #96-800/CAM
2755 State Street
Telecommunications Antenna

DATE: April 8, 1997

RECOMMENDED CONDITIONS OF APPROVAL

With the conditions noted below, the proposal conforms to the basic site plan objectives specified in Section 844 of the Hamden Zoning Regulations. The application also meets the Special Permit Threshold Decision criteria specified in Section 826. The proposal should have no adverse impact on the health, safety, and welfare of neighboring residents.

It is also consistent with all applicable goals and policies in Section 22a-92 of the General Statutes and contains sufficient safeguards to mitigate adverse impacts on both Coastal resources and future water dependent development activities. I therefore recommend approval of Special Permit/CAM #96-800 subject to the following conditions:

1. The Special Permit must be recorded prior to the issuance of a zoning permit, and only after the conditions necessary for the zoning permit have been met.

2. Prior to the issuance of a zoning permit the applicant must:

   a. Provide revised plans listing all conditions of approval;

   b. Provide a bond in an amount approved by the Town Engineer and Town Planner;

   c. Obtain approval of an environmental assessment from the Federal Communications Commission, in accordance with the Environmental Policy Act of 1969.

3. The telecommunications facility must comply with all applicable Federal Communications Commission Radiofrequency Emissions Guidelines (FCC 96-326, adopted August 1, 1996, effective date January 1, 1997, as revised). At the end of each six month period the applicant must submit to the Commission a report evaluating compliance, prepared by a qualified, independent company.

4. The tower/antenna must be designed to accommodate at least one additional carrier of personal services communications. The addition of any future carrier, however, will require the approval of the Planning and Zoning Commission.

5. All work must be completed by April 8, 2002, or the approval will be null and void.

DWK:tbm

MINUTES: THE PLANNING AND ZONING COMMISSION, Town of Hamden, held a Public Hearing and Regular Meeting on Tuesday, April 8, 1997 at 7:30 p.m. in the Thornton Wilder Hall, Miller Library Complex. The following issues were discussed:

Mr. Roscow said the homes that would be impacted would be those in back of Mauro electric. Going up the street, each home blocks the view of the next. The antenna looks like a big osprey nest. The horizontal lines are much more objectionable. He does not see this as being objectionable. Mr. DeCaprio sees no objection. Mr. McDonough understands the concern of the neighbors regarding a tower park, but this is far from that. This is insignificant. Mr. Roscow said there is a moratorium, there are horizontal wires running everywhere. The only homes with a view would look down on the roof of Mauro Electric, which is more objectionable. Mr. Kops said the applicant has a copy of the recommended conditions of approval.

Mr. DeCaprio made a motion to approve Special Permit 96-800/CAM, subject to the following conditions. The proposal conforms to the basic site plan objectives specified in Section 844 of the Hamden Zoning Regulations. The application also meets the Special Permit Threshold Decision criteria specified in Section 826.The proposal should have no adverse impact on the health, safety and welfare of the surrounding area. The proposal is also consistent with all applicable goals and policies in Section 22a -92 of the General Statutes and contains sufficient safeguards to mitigate adverse impacts on both Coastal resources and future water dependent development activities.

1. The Special Permit must be recorded prior to the issuance of a zoning permit, and only after the conditions necessary for the zoning permit have been met.

2. Prior to the issuance of a zoning permit the applicant must:

   a. Provide revised plans listing all conditions of approval;
   b. Provide a bond in an amount approved by the Town Engineer and Town Planner;
   c. Obtain approval of an environmental assessment from the Federal Communications Commission, in accordance with the Environmental Policy Act of 1969.

3. The telecommunications facility must comply with all applicable Federal Communications Commission Radiofrequency Emissions Guidelines (FCC 96-326, adopted August 1, 1996, effective date January 1, 1997, as revised). At the end of each six month period, the applicant must submit to the Commission a report evaluating compliance, prepared by a qualified, independent company.

4. The tower/antenna must be designed to accommodate at least one additional carrier of personal services communications. The addition of any future carrier, however, will require the approval of the Planning and Zoning Commission.

5. All work must be completed by April 8, 2002, or the approval will be null and void.

Mr. Roscow seconded the motion. Mr. McDonough asked Mr. Kops to explain conditions 3 & 4. Mr. Kops said they must comply, but Mr. Kops has recommended a report be submitted every six months. This will be a three tier tower, each tier with three antennas, each tier being a different carrier. Mr. Kops feels that if they plan to add additional carriers, the Commission should see the plans. There would also be additional boxes on the ground. They might file for an amendment to their special permit. The vote was five in favor, Mr. Sims, Mr. Fortini and Ms. Abbott abstained.

7. Special Permit/WS 96-805
865 Mix Ave. R5. Telecommunication Antenna and
Ground Facilities. SBA, Inc., Sprint Spectrum, LP., Applicant

Mr. DeCaprio made a motion to approve Special Permit/WS 96-805, subject to the following conditions. The proposal conforms to the basic site plan objectives specified in Section 844 of the Hamden Zoning Regulations. The application also meets the Special Permit Threshold Decision criteria specified in Section 826. The proposal should have no adverse impact on the health, safety and welfare of the surrounding area.

1. Prior to filing of the Special Permit the applicant must obtain a zoning permit.

2. All work must be completed by March 12, 2002, or the approval will be null and void.

3. The telecommunications facility must comply with all applicable Federal Communications Commission Radiofrequency Emissions Guidelines (FCC 96-326, adopted August 1, 1996, effective date January 1, 1997, as revised). At the end of each six month period, the applicant must submit to the Commission a report evaluating compliance, prepared by a qualified, independent company.

Mr. Roscow seconded the motion. The vote was six in favor. Ms. Abbott and Mr. Fortini abstained.

8. Special Permit 97-809
2798 Whitney Ave. R4
Expansion of Convalescent Center and Fill

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
Web Site: www.state.ct.us/csc/index.htm

31C

CT-477

April 30, 2002

Mr. Christopher B. Fisher, Esq.
Cuddy & Feder & Worby
90 Maple Avenue
White Plains, NY 10601-5196

RE: **EM-AT&T-062-020327** – AT&T Wireless notice of intent to modify an existing telecommunications facility located at 2755 State Street, Hamden, Connecticut.

Dear Atty. Fisher:

At a public meeting held on April 25, 2002, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice[s] dated March 22, 2002. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also 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.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include 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. 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.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/DM/laf

c: Honorable Carl J. Amento, Mayor, Town of Hamden

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COG

South Central Regional Council of Governments
127 Washington Avenue, 4th Floor West
North Haven, Connecticut 06473-1715
(203) 234-7555 Fax: (203) 234-9850
James A. Butler, Executive Director

November 20, 1996

Dan Kops Jr., Town Planner
Planning & Zoning Commission
Town Hall
2372 Whitney Ave.
Hamden, CT 06518

Subject: Hamden Zoning Referral, proposed temporary moratorium on the installation of cellular and other wireless communications facilities. Rec: 10/16/96

Dear Dan:

In accordance with Sect. 8-3b of the CGS, the Regional Planning Commission reviewed the amendment noted above at the monthly meeting held on Thursday, November 14, 1996.

The Commission would like to forward the following general observations:

- The Regional Planning Commission supports the effort of the Hamden PZC to develop a comprehensive set of regulations which addresses the next generation of wireless communication facilities.
- The Planning and Zoning Commission may want to consider establishing a site selection hierarchy of preferred siting locations as well as detailed documentation why co-sharing and suggested building locations are not being considered.
- The regulations might include detailed landscaping requirements, including illustrations, and preference for a particular type of "pole" construction
- The regulations should have a removal clause and specify ultimate coverage expectations for the community and area.

Thank you for providing an opportunity to review and comment upon the proposal.

Sincerely,

Phillip Bolduc
Vice - Chairman

cc: Woodbridge - S. Spielvogel
Bethany - N. Borgerson
North Haven - R. Johnson
Wallingford - L. Bush

2. Proposed Amendment to Zoning Regulations #96-834
Nine month moratorium on the installation of cellular and other wireless communications facilities.

PROPOSED LANGUAGE

350 Moratoria

351 Temporary Moratorium on the Installation of Cellular and Other Wireless Communications Facilities

From the effective date of this amendment, no cellular or other wireless communications facilities necessary for the provision of personal communications systems authorized under the Telecommunications Act of 1996, will be permitted for a period of nine months. The moratorium is intended to provide the Planning and Zoning Commission with sufficient time to amend the zoning regulations with regard to such issues as the siting, height, type of construction, and screening, as well as the approval process for these facilities.

Planning & Zoning Commission, Applicant

Note: All new language is shown in boldface. Footnote numbering is subject to change.

Special Permit # CAM / FP 96-800

$ 60.00 Fee Paid

TOWN OF HAMDEN

2332-008

ZONING PERMIT AND APPROVAL FOR ISSUANCE OF BUILDING PERMIT

This permit is hereby applied for in accordance with requirements of the Hamden Zoning Regulations, per plot plan attached for:

✓ New Construction ___ Swimming Pool ___ Change of Use ___ Other ___ Addition

TELECOMMUNICATIONS TOWER

___ Sign ___ Excavation/Fill ___ Accessory Bldg./Structure

Location 2755 State Street Zoning District CDD1

Lot Area 133,903 Sq Feet Lot Frontage 481.5 Ft Lot No. 8

Bldg. Hgt. 120 Ft. Town No. of stories ___ Lot Coverage 22.5%

Subdivision ___ No. of Bldgs./Structures 6 New 1 Existing 5

Property Use ___ Single Family X Commercial/Business ___ Mixed Uses ___ Religious

___ Multifamily ___ Industrial/Mfg. ___ 2-3 Family ___ Other

P & Z Approval (s) ___ Site Plan X Special Permit ___ Resubdivision ___ Subdivision

___ O.S.D. X C.A.M. ___ A.P.Z. ___ Flood Hazard Area

Granted On 4/8/97 X Conditionally ___ Unconditionally ___ Not Required

Variance(s) for: None Granted on ___

PROPERTY OWNER John A + Louis G Amodeo ADDRESS 1 Hartford St New Britain Ct 06052 PHONE 860-223-27

This is to certify that the requirements of the following Departments, Boards, and/or Commission have been met as attested to by the signature(s) of the applicable authorized official(s).

Zoning Enforcement Officer [signature] 10/24/97 Z.E.O.

Town Engineering Dept. ___ Town Engineer

Water Pollution Control ___ Authorized Signature

Quinnipiack Valley Health Dist. ___ Director of Health

Fire Department ___ Fire Chief

Police Department ___ Chief of Police

Conservation Commission John A. Amodeo Jr. 10-15-97 Chairman/Authorized Agt.

Tax Department [signature] 10/24/97 Tax Collector

This zoning permit and approval for issuance of a building permit is based on the plot plan submitted and is subject to all conditions (if any) of approval, attached by any board, and/or commission. Falsification by omission, or misrepresentation, or failure to comply with the conditions of approval of record, shall constitute a violation of the Hamden Zoning Regulation.

SIGNATURE [signature] DATE 10/15/97

Thomas F. Flynn Applicant/Owner/Agent

9 Barnes Industrial Rd

Wallingford Ct 06492

203-294-5620

Copies:
White - File
Canary -
Pink - Planning
Gold - Engineering

Floodplain Y ___ N X Flood Zone ___

Substantial Improvement Y ___ N ___

If yes: structures existing value ..... $ ___

Alterations value ..... $ ___

Rev. 3/95

The Printing Store - Hamden

2755 STATE ST

Location	2755 STATE ST	**Mblu**	2332/ 008/ / /
Acct#		**Owner**	AMODIO LOUIS G & DEBJAY LLC
Assessment	$1,115,800	**Appraisal**	$1,594,000
PID	20657	**Building Count**	5

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$1,071,300	$522,700	$1,594,000
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$749,910	$365,890	$1,115,800

Owner of Record

Owner	AMODIO LOUIS G & DEBJAY LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	2755 STATE ST HAMDEN, CT 06517	**Book & Page**	2899/ 324
		Sale Date	03/16/2005

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
AMODIO LOUIS G & DEBJAY LLC	$0		2899/ 324	03/16/2005
AMODIO JOHN A & LOUIS G	$0		777/ 870	02/04/1987

Building Information

Building 1 : Section 1

Year Built:	1980
Living Area:	5700
Building Percent Good:	123

Building Attributes	
Field	**Description**
STYLE	Self Storage
MODEL	Ind/Comm
Grade	C

Building Photo

Stories:	1
Occupancy	51
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	SELF STGE M96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	316I
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEILING ONLY
Rooms/Prtns	AVERAGE
Wall Height	8
% Comn Wall	0

2332-008-00-0000 04/15/2015

(http://images.vgsi.com/photos2/HamdenCTPhotos//\00\04\46/46.JPG)

Building Layout

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	4800	4800
APT	Apartment	580	580
AOF	Office	320	320
SLB	Slab	5700	0
		11400	5700

Building 2 : Section 1

Year Built: 1980
Living Area: 6150
Building Percent Good: 123

Building Photo

Building Attributes : Bldg 2 of 5	
Field	**Description**
STYLE	Self Storage
MODEL	Ind/Comm
Grade	C
Stories:	1
Occupancy	51
Exterior Wall 1	Concr/Cinder

Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	SELF STGE M96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	316I
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	8
% Comn Wall	0

(http://images.vgsi.com/photos2/HamdenCTPhotos//\00\01\89/65.jpg)

Building Layout

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	6150	6150
SLB	Slab	6150	0
		12300	6150

Building 3 : Section 1

Year Built: 1980
Living Area: 6400
Building Percent Good: 123

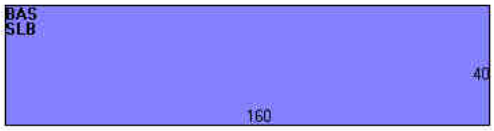
Building Attributes : Bldg 3 of 5	
Field	**Description**
STYLE	Self Storage
MODEL	Ind/Comm
Grade	C
Stories:	1
Occupancy	62
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip

Building Photo

(http://images.vgsi.com/photos2/HamdenCTPhotos//\00\01\89/66.jpg)

Roof Cover	Asphalt
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	SELF STGE M96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	316I
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	8
% Comn Wall	0

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	6400	6400
SLB	Slab	6400	0
		12800	6400

Building 4 : Section 1

Year Built: 1980
Living Area: 3900
Building Percent Good: 123

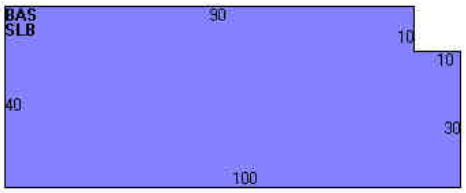
Building Attributes : Bldg 4 of 5	
Field	**Description**
STYLE	Self Storage
MODEL	Ind/Comm
Grade	C
Stories:	1
Occupancy	48
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None

Building Photo

(http://images.vgsi.com/photos2/HamdenCTPhotos//\00\01\89/75.jpg)

Building Layout

Bldg Use	SELF STGE M96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	316I
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	8
% Comn Wall	0



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	3900	3900
SLB	Slab	3900	0
		7800	3900

Building 5 : Section 1

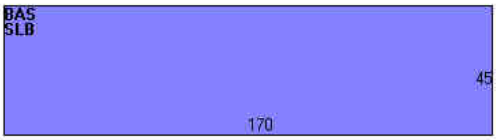
Year Built: 1980
Living Area: 7650
Building Percent Good: 123

Building Attributes : Bldg 5 of 5	
Field	**Description**
STYLE	Self Storage
MODEL	Ind/Comm
Grade	C
Stories:	1
Occupancy	98
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	SELF STGE M96
Total Rooms	
Total Bedrms	00
Total Baths	0

Building Photo

(http://images.vgsi.com/photos2/HamdenCTPhotos//\00\01\89/67.jpg)

Building Layout



Building Sub-Areas (sq ft)	Legend

1st Floor Use:	4310
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	9
% Comn Wall	0

Code	Description	Gross Area	Living Area
BAS	First Floor	7650	7650
SLB	Slab	7650	0
		15300	7650

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
HT3	HEAT, FORCED H/A	900 S.F.	$9,000	1

Land

Land Use

Use Code	3120
Description	SELF STGE M96
Zone	T4
Neighborhood	T
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	3.03
Frontage	336
Depth	0
Assessed Value	$365,890
Appraised Value	$522,700

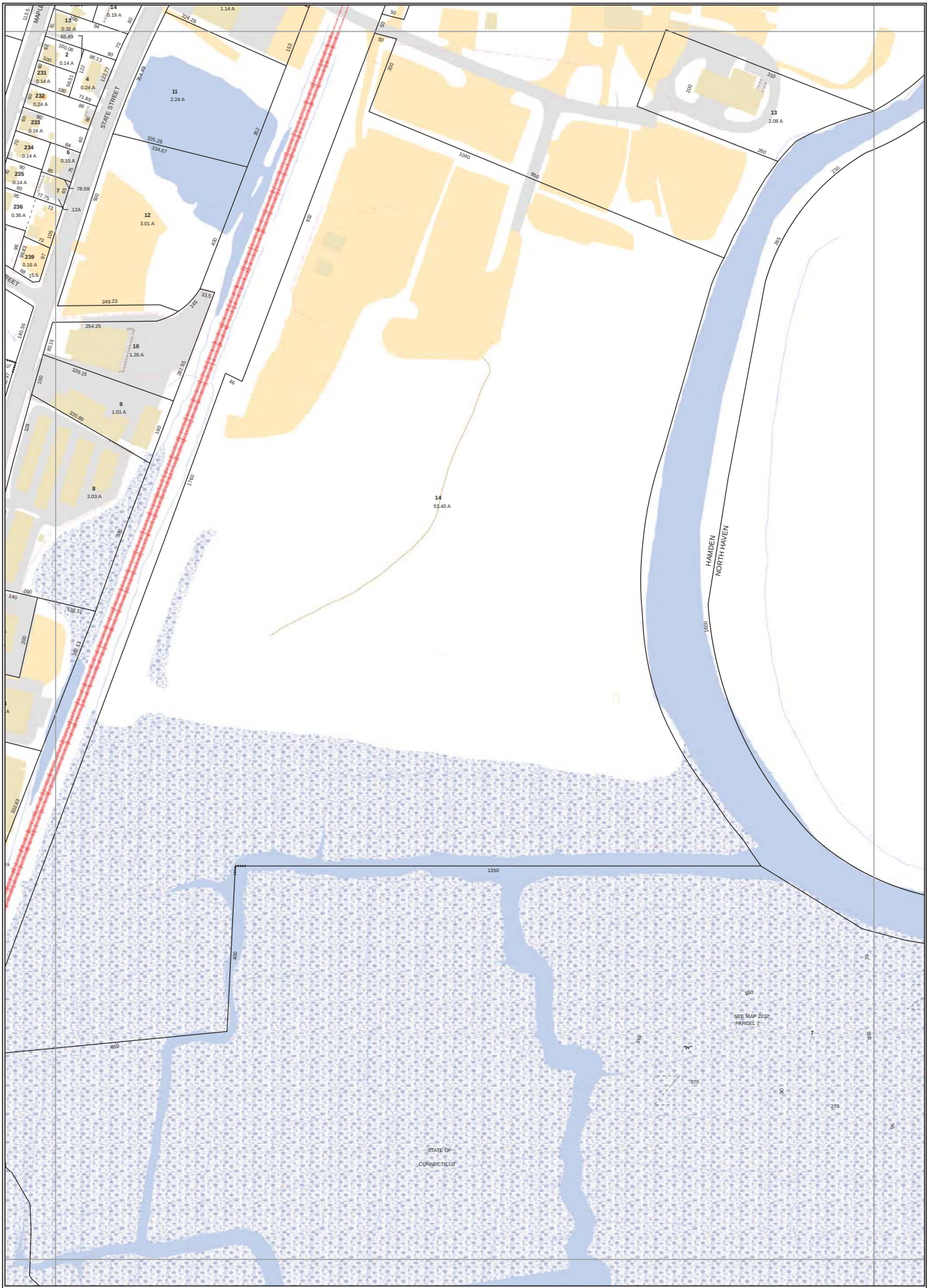
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	PAVING-ASPHALT			48000 S.F.	$32,400	1
SHD5	SHED COM WOOD			192 S.F.	$1,400	1
FN3	FENCE-6' CHAIN			1296 L.F.	$5,800	1

Valuation History

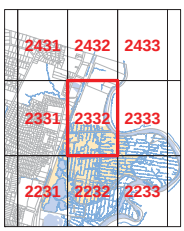
Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$1,071,300	$522,700	$1,594,000
2014	$1,071,300	$522,700	$1,594,000
2013	$1,071,300	$522,700	$1,594,000

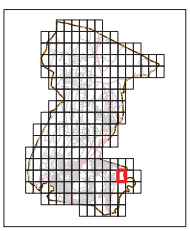
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$749,910	$365,890	$1,115,800
2014	$749,910	$365,890	$1,115,800
2013	$749,910	$365,890	$1,115,800



Map: 2332

Map: 2332





280 Parcel Number
321 Developer Number
Subdivision Corner
23.6 A Acreage
2.100 Parcel Line With Dimension
Historic Parcel Line
KELLY STREET Right Of Way

Water Bodies and Stream
Swamp
Fence / Wall
Railroad
Bldg

1" = 100'

0 100 200 300 400 500 Feet

Revisions
Parcels Updated October 2015

TOWN OF HAMDEN

2750 DIXWELL AVENUE
HAMDEN, CONNECTICUT 06518
(203) 287-7128

NEGEO New England Geosystems

WIRELESS COMMUNICATIONS FACILITY
CT2173 - LTE BWE
HAMDEN SE
CROWN CASTLE SITE NO.: 876312
2755 STATE STREET
HAMDEN, CT 06517

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2005 CONNECTICUT SUPPLEMENT AND 2009 AMENDMENTS, INCLUDING THE TIA/EIA-222 REVISION "F" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2005 CONNECTICUT FIRE SAFETY CODE AND 2009 AMENDMENTS, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

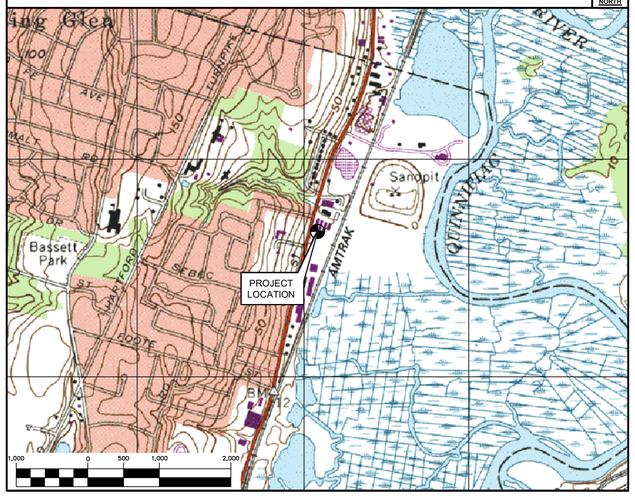
SITE DIRECTIONS

FROM: 500 ENTERPRISE DRIVE, ROCKY HILL, CONNECTICUT
TO: 2755 STATE STREET, HAMDEN, CONNECTICUT

1.	START OUT GOING NORTHEAST TOWARDS CAPITAL BLVD	0.3 MI
2.	TURN LEFT ON WEST ST	0.6 MI
3.	MERGE ONTO I-91S ON LEFT TOWARDS NEW HAVEN	22.5 MI
4.	MERGE ONTO CT-40N VIA EXIT 10	0.8 MI
5.	TAKE EXIT 1	0.2 MI
6.	TURN RIGHT ONTO DEVINE ST	0.1 MI
7.	TAKE FIRST RIGHT ONTO STATE ST. DESTINATION IS ON THE LEFT	1.7 MI

VICINITY MAP

SCALE: 1" = 1000'



PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
   A. REMOVE AND REPLACE EXISTING POSITION 2 LTE ANTENNA FOR PROPOSED LTE HEXPORT ANTENNA, (1) PER SECTOR.
   B. REMOVE AND REPLACE EXISTING LTE 1900 RRUS-11 FOR PROPOSED RRUS-32 B2, (1) PER SECTOR.

PROJECT INFORMATION

AT&T SITE NUMBER:	CT2173
AT&T SITE NAME:	HAMDEN SE
SITE ADDRESS:	CROWN CASTLE SITE NO.: 876312 2755 STATE STREET HAMDEN, CT 06517
LESSEE/APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
ENGINEER:	CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT. 06405
PROJECT COORDINATES:	LATITUDE: 41°-21'-19.72" N LONGITUDE: 72°-53'-25.18" W GROUND ELEVATION: ±10' AMSL COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	NOTES AND SPECIFICATIONS	0
C-1	PLANS, ELEVATION AND DETAILS	0
C-2	LTE 2C EQUIPMENT DETAILS	0
E-1	TYPICAL ELECTRICAL DETAILS AND NOTES	0

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	07/19/16	KAWJR	CAG	CONSTRUCTION DOCUMENTS – ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

CENTEK engineering
Centered on Solutions℠
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
HAMDEN SE
CT2173 - LTE BWE
2755 STATE STREET
HAMDEN, CT 06517

DATE: 07/13/16
SCALE: AS NOTED
JOB NO. 16071.21

TITLE SHEET

T-1

Sheet No. 1 of 5

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2003 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2005 CT STATE BUILDING CODE AND 2009 AMENDMENTS.

1. DESIGN CRITERIA:

- WIND LOAD: PER EIA/TIA 222 F-96 (ANTENNA MOUNTS): 85 MPH (FASTEST MILE), EQUIVALENT TO 105 MPH (3 SECOND GUST)
- BUILDING CLASSIFICATION: II (BASED ON IBC TABLE 1604.5)
- BASIC WIND SPEED (OTHER STRUCTURE): 110 MPH (3 SECOND GUST) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-02) PER 2003 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2005 CONNECTICUT SUPPLEMENT AND 2009 AMMENDMENT.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-02 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
2. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
3. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
4. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
6. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
7. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
10. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER FOUNDATION REMEDIATION WORK IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS, WHICH MIGHT BE NECESSARY.
11. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
12. SHOP DRAWINGS, CONCRETE MIX DESIGNS, TEST REPORTS, AND OTHER SUBMITTALS PERTAINING TO STRUCTURAL WORK SHALL BE FORWARDED TO THE OWNER FOR REVIEW BEFORE FABRICATION AND/OR INSTALLATION IS MADE. SHOP DRAWINGS SHALL INCLUDE ERECTION DRAWINGS AND COMPLETE DETAILS OF CONNECTIONS AS WELL AS MANUFACTURER'S SPECIFICATION DATA WHERE APPROPRIATE. SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE BEING SUBMITTED FOR REVIEW.
13. NO DRILLING WELDING OR TAPING ON CL&P OWNED EQUIPMENT.
14. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)

   A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
   B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
   C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
   D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
   E. PIPE---ASTM A53 (FY = 35 KSI)
   F. CONNECTION BOLTS---ASTM A325-N
   G. U-BOLTS---ASTM A36
   H. ANCHOR RODS---ASTM F 1554
   I. WELDING ELECTRODE---ASTM E 70XX

2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

PAINT NOTES

PAINTING SCHEDULE:

1. ANTENNA PANELS:

   A. SHERWIN WILLIAMS POLANE-B
   B. COLOR TO BE MATCHED WITH EXISTING TOWER STRUCTURE.

2. COAXIAL CABLES:

   A. ONE COAT OF DTM BONDING PRIMER (2-5 MILS. DRY FINISH)
   B. TWO COATS OF DTM ACRYLIC PRIMER/FINISH (2.5-5 MILS. DRY FINISH)
   C. COLOR TO BE FIELD MATCHED WITH EXISTING STRUCTURE.

EXAMINATION AND PREPARATION:

1. DO NOT APPLY PAINT IN SNOW, RAIN, FOG OR MIST OR WHEN RELATIVE HUMIDITY EXCEEDS 85%. DO NOT APPLY PAINT TO DAMP OR WET SURFACES.
2. VERIFY THAT SUBSTRATE CONDITIONS ARE READY TO RECEIVE WORK. EXAMINE SURFACE SCHEDULED TO BE FINISHED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY CONDITION THAT MAY POTENTIALLY AFFECT PROPER APPLICATION.
3. TEST SHOP APPLIED PRIMER FOR COMPATIBILITY WITH SUBSEQUENT COVER MATERIALS.
4. PERFORM PREPARATION AND CLEANING PROCEDURE IN STRICT ACCORDANCE WITH COATING MANUFACTURER'S INSTRUCTIONS FOR EACH SUBSTRATE CONDITION.
5. CORRECT DEFECTS AND CLEAN SURFACES WHICH AFFECT WORK OF THIS SECTION. REMOVE EXISTING COATINGS THAT EXHIBIT LOOSE SURFACE DEFECTS.
6. IMPERVIOUS SURFACE: REMOVE MILDEW BY SCRUBBING WITH SOLUTION OF TRI-SODIUM PHOSPHATE AND BLEACH. RINSE WITH CLEAN WATER AND ALLOW SURFACE TO DRY.
7. ALUMINUM SURFACE SCHEDULED FOR PAINT FINISH: REMOVE SURFACE CONTAMINATION BY STEAM OR HIGH-PRESSURE WATER. REMOVE OXIDATION WITH ACID ETCH AND SOLVENT WASHING. APPLY ETCHING PRIMER IMMEDIATELY FOLLOWING CLEANING.
8. FERROUS METALS: CLEAN UNGALVANIZED FERROUS METAL SURFACES THAT HAVE NOT BEEN SHOP COATED; REMOVE OIL, GREASE, DIRT, LOOSE MILL SCALE, AND OTHER FOREIGN SUBSTANCES. USE SOLVENT OR MECHANICAL CLEANING METHODS THAT COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL'S (SSPC) RECOMMENDATIONS. TOUCH UP BARE AREAS AND SHOP APPLIED PRIME COATS THAT HAVE BEEN DAMAGED. WIRE BRUSH, CLEAN WITH SOLVENTS RECOMMENDED BY PAINT MANUFACTURER, AND TOUCH UP WITH THE SAME PRIMER AS THE SHOP COAT.
9. GALVANIZED SURFACES: CLEAN GALVANIZED SURFACES WITH NON-PETROLEUM-BASED SOLVENTS SO SURFACE IS FREE OF OIL AND SURFACE CONTAMINANTS. REMOVE PRETREATMENT FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS.
10. ANTENNA PANELS: REMOVE ALL OIL, DUST, GREASE, DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION. PANELS MUST BE WIPED WITH METHYL ETHYL KETONE (MEK).
11. COAXIAL CABLES: REMOVE ALL OIL, DUST, GREASE. DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION.

CLEANING:

1. COLLECT WASTE MATERIAL, WHICH MAY CONSTITUTE A FIRE HAZARD, PLACE IN CLOSED METAL CONTAINERS AND REMOVE DAILY FROM SITE.

APPLICATION:

1. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. DO NOT APPLY FINISHES TO SURFACES THAT ARE NOT DRY.
3. APPLY EACH COAT TO UNIFORM FINISH.
4. APPLY EACH COAT OF PAINT SLIGHTLY DARKER THAN PRECEDING COAT UNLESS OTHERWISE APPROVED.
5. SAND METAL LIGHTLY BETWEEN COATS TO ACHIEVE REQUIRED FINISH.
6. VACUUM CLEAN SURFACES FREE OF LOOSE PARTICLES. USE TACK CLOTH JUST PRIOR TO APPLYING NEXT COAT.
7. ALLOW APPLIED COAT TO DRY BEFORE NEXT COAT IS APPLIED.

COMPLETED WORK:

1. SAMPLES: PREPARE 24" X 24" SAMPLE AREA FOR REVIEW.
2. MATCH APPROVED SAMPLES FOR COLOR, TEXTURE AND COVERAGE. REMOVE REFINISH OR REPAINT WORK NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

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NOTES AND SPECIFICATIONS

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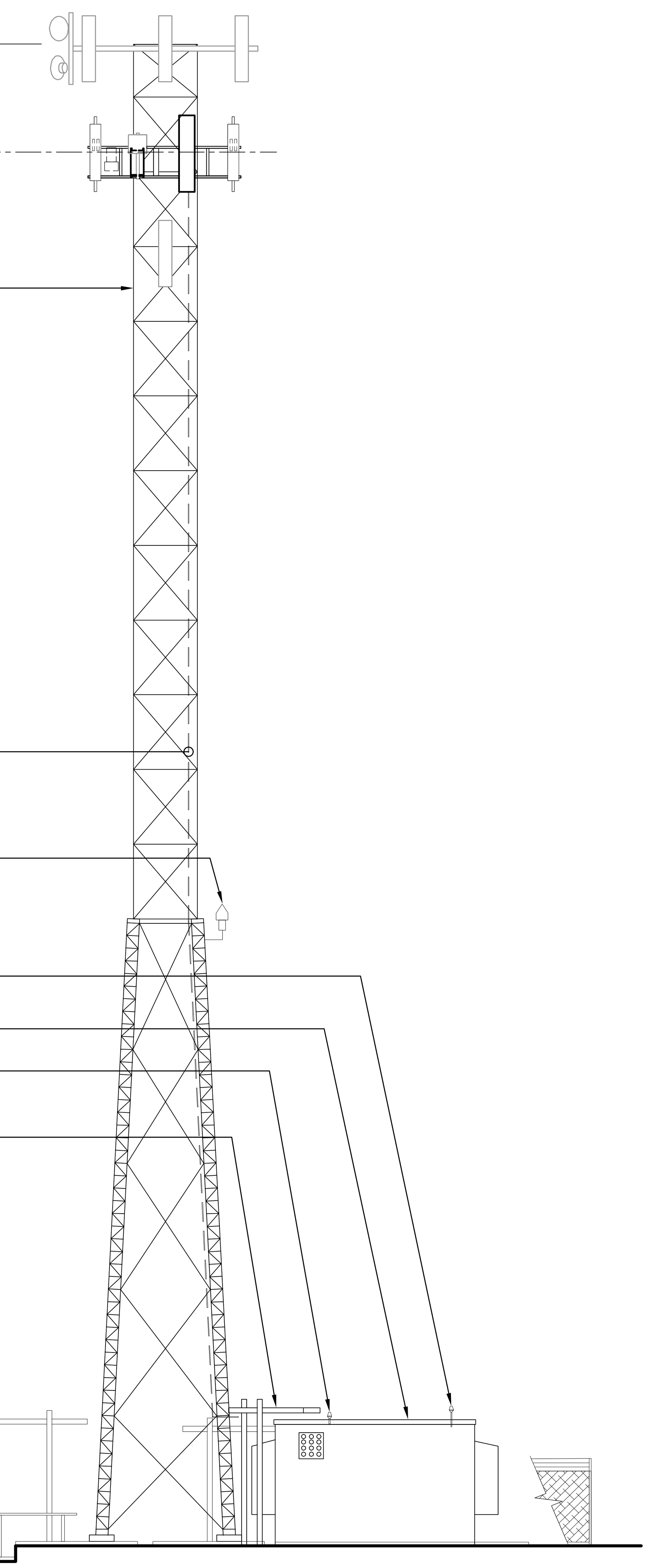


TOWER STRUCTURAL NOTES:

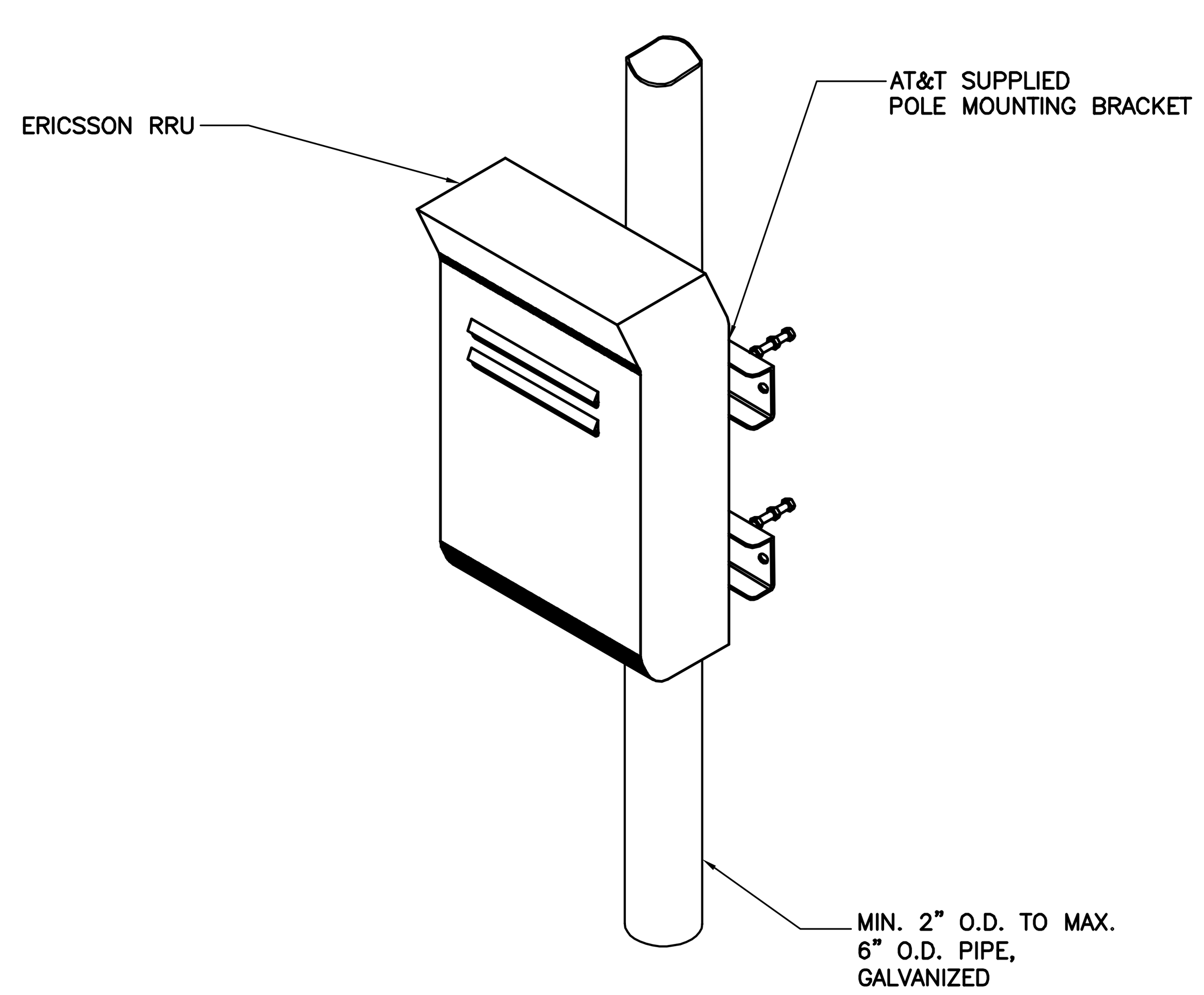
1. TOWER STRUCTURAL ANALYSIS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT TO BE PROVIDED PRIOR TO INSTALLATION OF THE ADDITIONAL TOWER LOADING DEPICTED HEREIN.
2. ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE, INC. AND FINAL AT&T RF DATA SHEET.

NOTES:

1. OTHER CARRIER EQUIPMENT NOT SHOWN FOR CLARITY
2. A.G.L. = ABOVE GRADE LEVEL

4 / C–1 WEST TOWER ELEVATION
SCALE: 1/8" = 1'

GRAPHIC SCALE 8 0 4 8 16 32
(IN FEET)
1 inch = 8 ft.

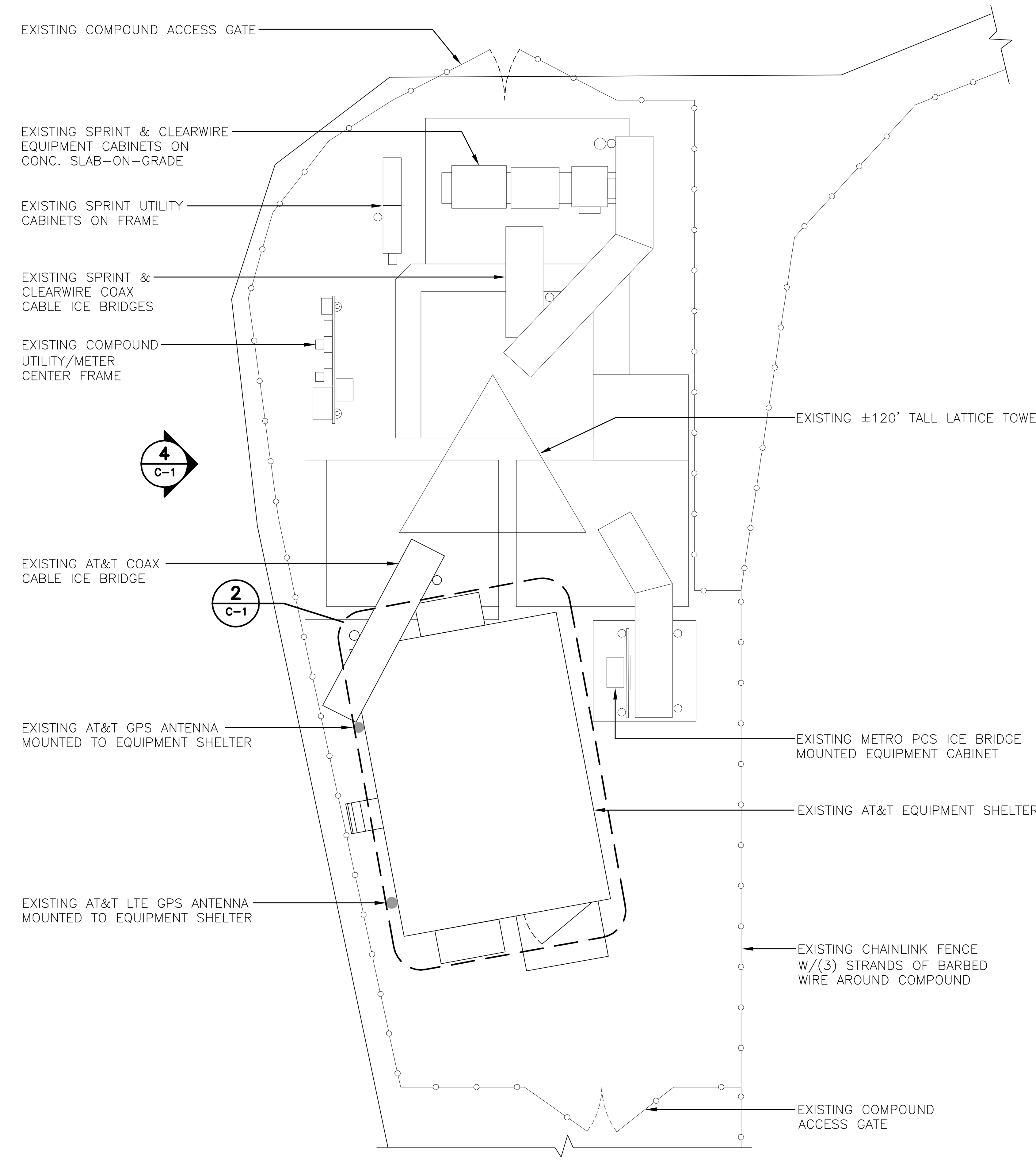


ISOMETRIC VIEW

NOTES:

1. AT&T SHALL SUPPLY RRU, AND RRU POLE–MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE–MOUNTING BRACKET. CONTRACTOR SHALL INSTALLS RRU AND MAKES CABLE TERMINATIONS.
3. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

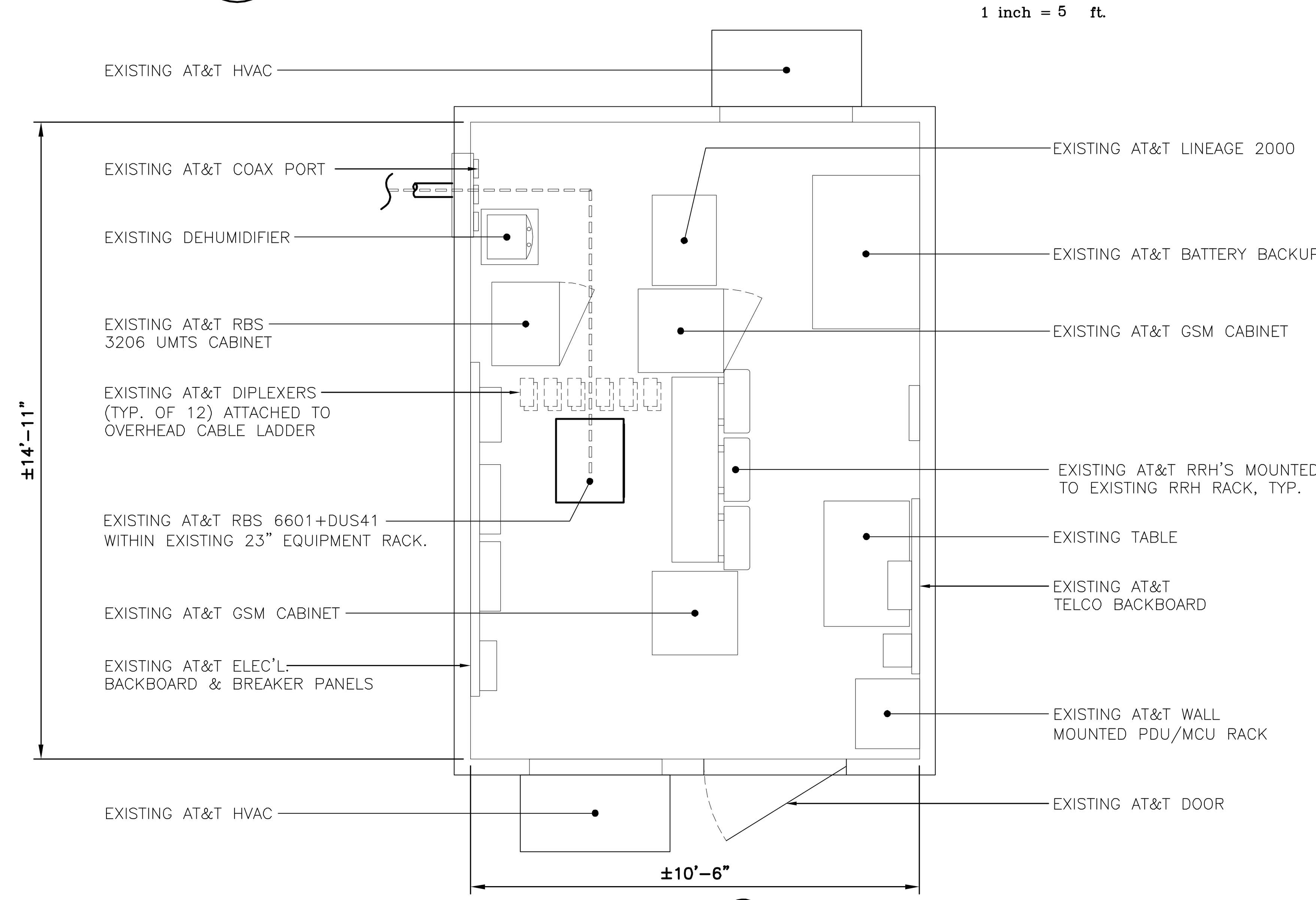
3 / C–1 TYPICAL RRUS MOUNTING DETAILS
SCALE: 1 1/2" = 1'–0"



1 / C–1 COMPOUND PLAN
SCALE: 1" = 5'

APPROX. NORTH

GRAPHIC SCALE 5 0 2.5 5 10 20
(IN FEET)
1 inch = 5 ft.



2 / C–1 EQUIPMENT ROOM PLAN
SCALE: 3/8" = 1'–0"

APPROX. NORTH

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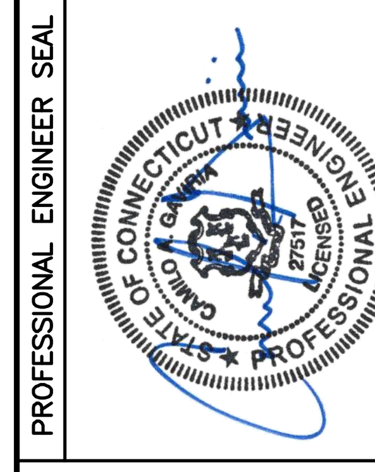

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PLANS, ELEVATION AND DETAILS

C–1

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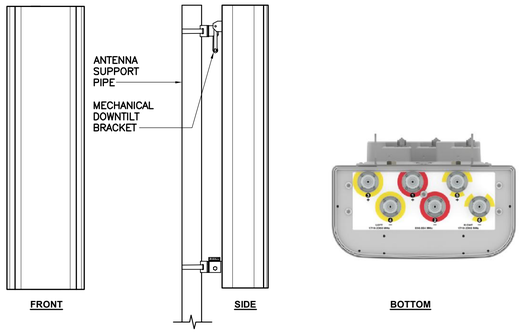
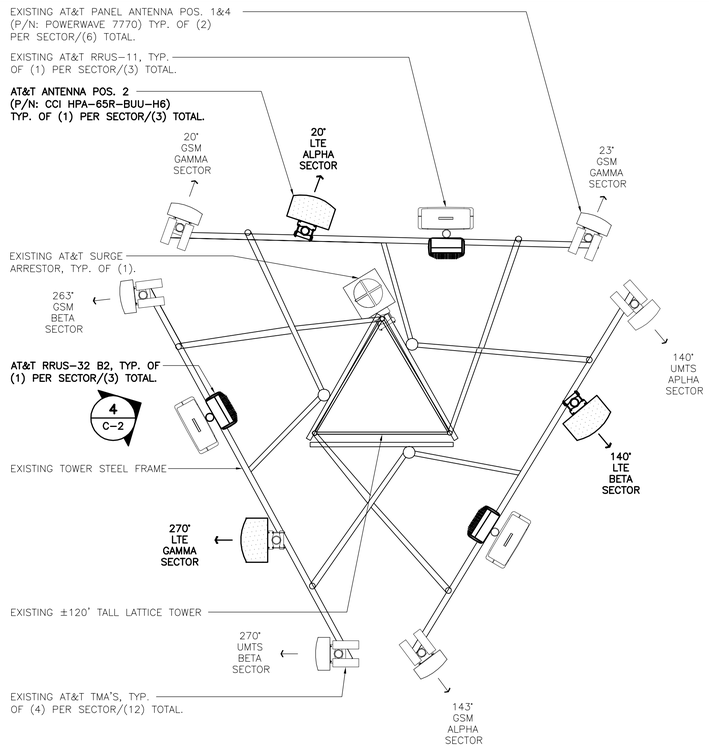
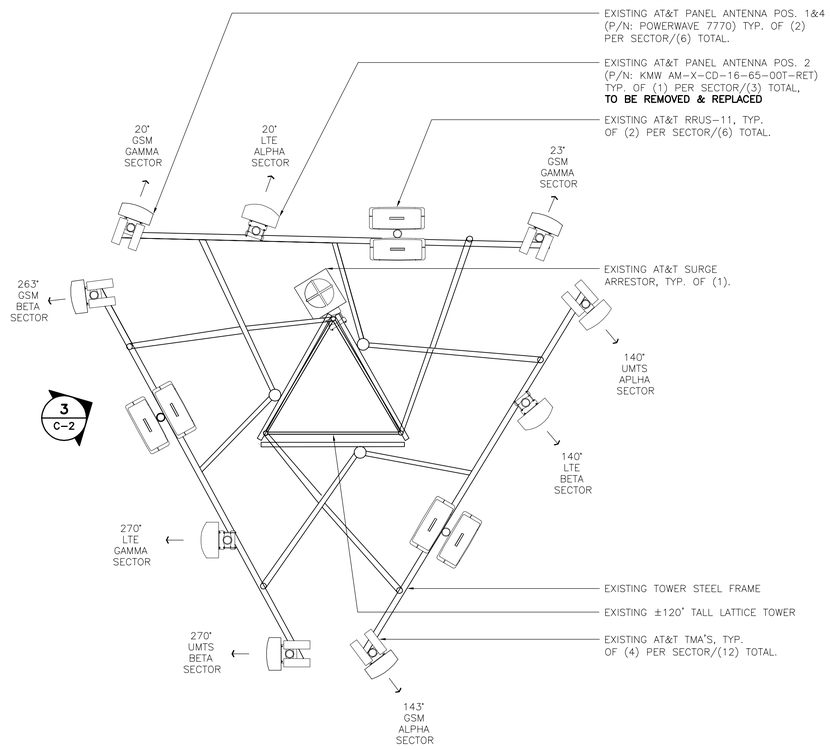


ALPHA/BETA/GAMMA ANTENNA			
EQUIPMENT		DIMENSIONS	WEIGHT
MAKE: MODEL:	CCI HPA-65R-BUU-H6	72.3"L x 14.4"W x 7.3"D	42.9 LBS.

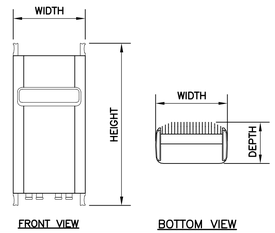
5 C-2 **PROPOSED ANTENNA DETAIL**
SCALE: 1/2" = 1'-0"



2 C-2 **PROPOSED ANTENNA PLAN**
SCALE: 1/2" = 1'-0"
APPROX. NORTH



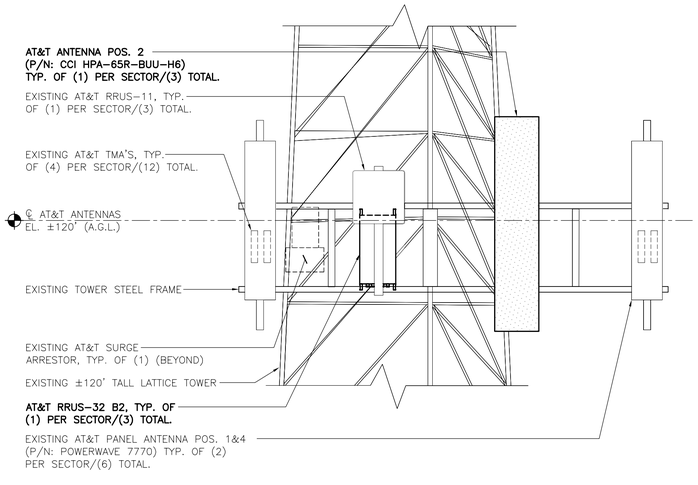
1 C-2 **EXISTING ANTENNA PLAN**
SCALE: 1/2" = 1'-0"
APPROX. NORTH



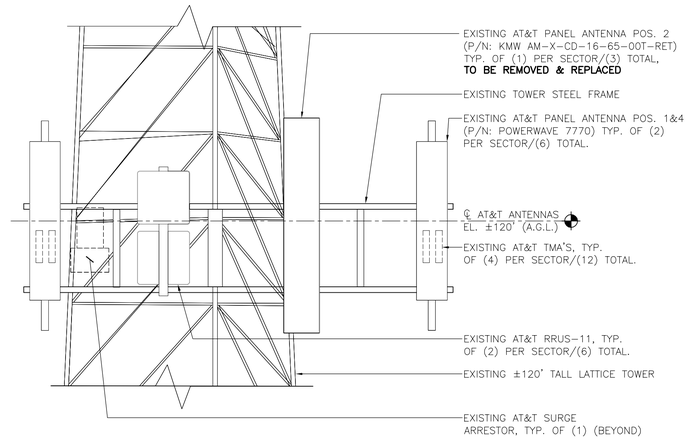
RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS 32	27.17"H x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

6 C-2 **ERICSSON RRUS 32 B2 DETAIL**
SCALE: 1" = 1'-0"



4 C-2 **PROPOSED ANTENNA PLAN**
SCALE: 1/2" = 1'-0"



3 C-2 **EXISTING ANTENNA PLAN**
SCALE: 1/2" = 1'-0"

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LTE 2C EQUIPMENT DETAILS

C-2

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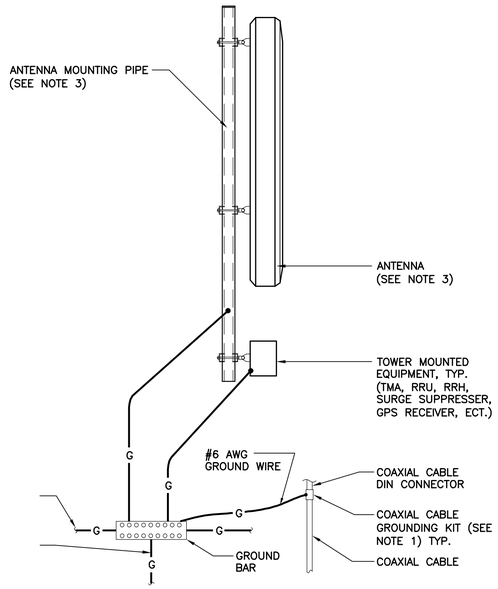
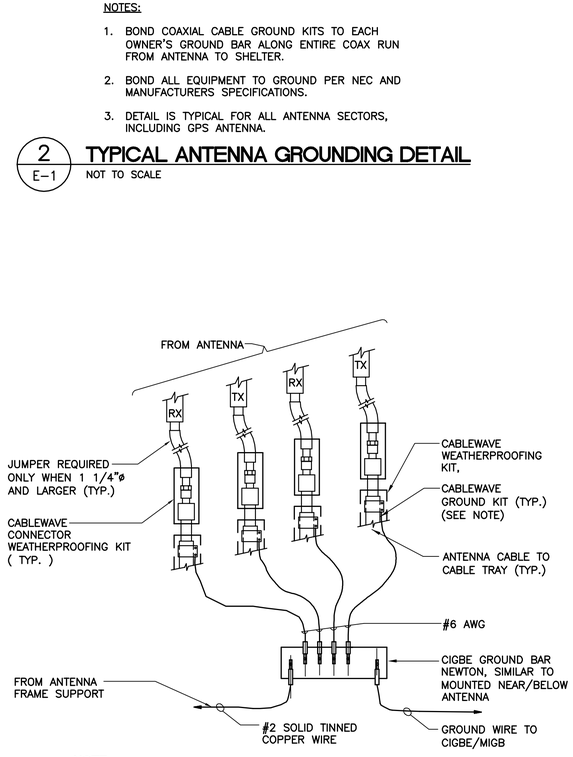


NOTES:

1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

2 / E-1 TYPICAL ANTENNA GROUNDING DETAIL

NOT TO SCALE

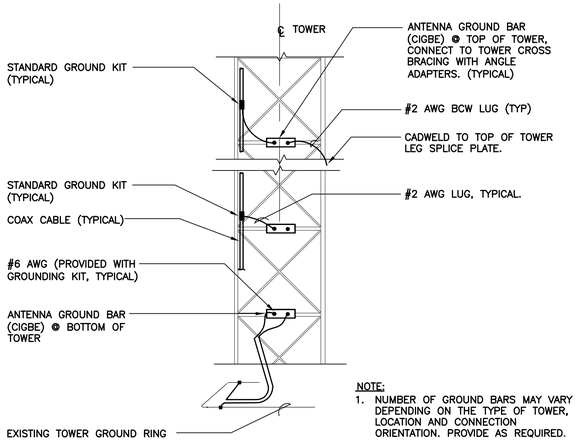


NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

5 / E-1 CONNECTION OF GROUND WIRES TO GROUND BAR

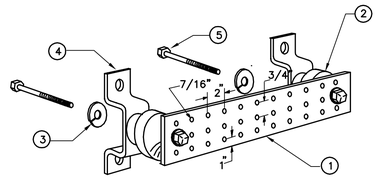
NOT TO SCALE



NOTE:
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.

1 / E-1 ANTENNA CABLE GROUNDING - LATTICE

NOT TO SCALE

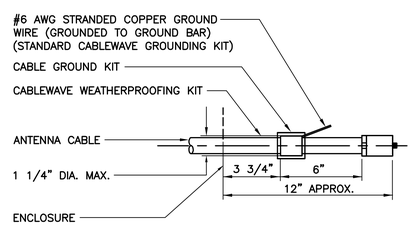


LEGEND

1. TINNED COPPER GROUND BAR, 1/4"x 4"x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG .
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 2. 3061-4.
3. 3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. 4. CAT NO. A-6056.
5. STAINLESS STEEL SECURITY SCREWS.

3 / E-1 GROUND BAR DETAIL

NOT TO SCALE



NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

4 / E-1 ANTENNA CABLE GROUNDING DETAIL

NOT TO SCALE

ELECTRICAL NOTES

1. PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL COORDINATE WITH OWNER FOR ALL CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND ALL MANUFACTURER DOCUMENTATION FOR ALL EQUIPMENT TO BE INSTALLED.
2. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH LOCAL BUILDING CODE, NATIONAL ELECTRIC CODE, OWNER AND MANUFACTURER'S SPECIFICATIONS.
3. CONNECT ALL NEW EQUIPMENT TO EXISTING TELCO AS REQUIRED BY MANUFACTURER.
4. MAINTAIN ALL CLEARANCES REQUIRED BY NEC AND EQUIPMENT MANUFACTURER.
5. PRIOR TO INSTALLATION CONTRACTOR SHALL MEASURE EXISTING ELECTRICAL LOAD AND VERIFY EXISTING AVAILABLE CAPACITY FOR PROPOSED INSTALLATION. IF INADEQUATE CAPACITY IS AVAILABLE, CONTRACTOR SHALL COORDINATE WITH LOCAL ELECTRIC UTILITY COMPANY TO UPGRADE EXISTING ELECTRIC SERVICE.
6. CONTRACTOR SHALL INSPECT EXISTING GROUNDING AND LIGHTNING PROTECTION SYSTEM AND ENSURE THAT IT IS IN COMPLIANCE WITH NEC, AND SITE OWNER'S SPECIFICATIONS. THE RESULTS OF THIS INSPECTION SHALL BE PRESENTED TO OWNERS REPRESENTATIVE, AND ANY DEFICIENCIES SHALL BE CORRECTED.
7. ALL TRANSMISSION TOWER SITES CONTAIN AN EXTENSIVE BURIED GROUNDING SYSTEM. ALL GROUNDING WORK MUST BE COORDINATED WITH, AND APPROVED BY, THE TOWER OWNER'S SITE REPRESENTATIVE. ALL OF THE TOWER OWNER'S SPECIFICATIONS MUST BE STRICTLY FOLLOWED.
8. PROVIDE AND INSTALL GROUND KITS FOR ALL NEW COAXIAL CABLES AND BOND TO EXISTING OWNERS GROUNDING SYSTEM PER OWNERS SPECIFICATIONS AND NEC.
9. ALL CONDUCTORS SHALL BE TYPE THWN (INT. APPLICATION) AND XHHW (EXT. APPLICATION), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED COPPER. #10 AWG AND SMALLER SHALL BE SPLICED USING ACCEPTABLE SOLDERLESS PRESSURE CONNECTORS. #8 AWG AND LARGER SHALL BE SPLICED USING COMPRESSION SPLIT-BOLT TYPE CONNECTORS. #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT CONDUCTOR SIZE(S). CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION:
10. MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.
11. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.
12. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNER'S REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS MAY BE REQUIRED BY THE LOCAL AUTHORITY.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE SITE AND/OR BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.
15. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.
16. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.
17. ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.
18. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.
19. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250-122. (MIN. #12 AWG).
20. CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 5 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3-POINT GROUNDING TEST. (REFER TO SECTION 16960).

TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

A. CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:

   TEST 1: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.

   THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:

   1. TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.
   2. CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.
   3. GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.

B. TESTING SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNERS CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

C. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.

D. CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

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TYPICAL ELECTRICAL DETAILS & NOTES

E-1

Sheet No. 5 of 5

August 08, 2016

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1717 S. Boulder, Suite 300
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btwo@btgrp.com

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CTL02173
	Carrier Site Name:	Hamden SE
Crown Castle Designation:	**Crown Castle BU Number:**	876312
	Crown Castle Site Name:	Montowese Amodio Self Store
	Crown Castle JDE Job Number:	385240
	Crown Castle Work Order Number:	1262986
	Crown Castle Application Number:	353716 Rev. 3
Engineering Firm Designation:	**B+T Group Project Number:**	108127.001.01
Site Data:	**2755 State Street, Hamden, New Haven County, CT** **Latitude *41° 21' 19.67"*, Longitude *-72° 53' 25.13"*** **120 Foot - Self Support Tower**	

Dear Charles McGuirt,

B+T 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 933361, in accordance with application 353716, revision 3.

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:

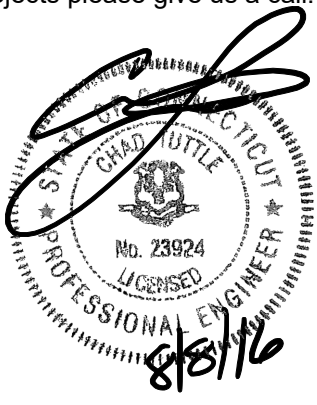
LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 Connecticut State Building Code based upon a wind speed of 85 mph fastest mile.

All equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *B+T 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:
B+T Engineering, Inc.



James Lindsey
Project Engineer

Chad E. Tuttle, P.E.
Engineer of Record
COA: PEC.0001564 Expires: 02/10/2017

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 120 ft. Self-Support tower designed by PiROD Inc., in November of 1997. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F. This tower has been modified by GPD in November of 2008 and those modifications were incorporated 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 85 mph with no ice, 37.6 mph with 0.75 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
110.0	112.0	3	CCI Antennas	HPA-65R-BUU-H6	--	--	--
		3	Ericsson	RRUS 32 B2			
		3	Powerwave Tech.	1001983			

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
120.0	122.0	3	Dragonwave	A-ANT-23G-2-C	6 3	5/16 7983A	1
	118.0	3	Argus Tech.	LLPX310R			
		3	Samsung Telecomm.	FDD_R6_RRH			
	120.0	3	--	Side Arm Mount [SO 301-1]			
		3	Alcatel Lucent	1900MHz RRH (65MHz)	4	1-1/4	1
		3	Alcatel Lucent	800 External Notch Filter			
		3	Alcatel Lucent	800MHZ RRH			
		3	Alcatel Lucent	TD-RRH8x20-25			
		2	Powerwave Tech.	P40-16-XLPP-RR-A			
		9	RFS Celwave	ACU-A20-N			
		1	RFS Celwave	APXVSPP18-C-A20			
		3	RFS Celwave	APXVTM14-C-120			
		1	--	Platform Mount [LP 405-1]			
110.0	112.0	**3**	**Ericsson**	**RRUS-11**	**--**	**--**	**2**
		3	**KMW Comm.**	**AM-X-CD-16-65-00T-RET**			
		3	Ericsson	RRUS-11	12 2 1	1-5/8 5/8 3/8	1
		6	Powerwave Tech.	7770.00			
		12	Powerwave Tech.	LGP21401			
		1	Raycap	DC6-48-60-18-8F			
	110.0	1	--	Sector Mount [SM 406-3]			
100.0	100.0	3	RFS Celwave	APXV18-206517S-C	6	1-5/8	1

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
40.0	46.0	1	Trimble	BULLET III	1	1/2	1
	40.0	1	--	Side Arm Mount [SO 701-1]			

Notes:
1) Existing Equipment
2) Equipment To Be Removed; Not Considered in This Analysis

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)
120	120	6	Generic	10 Sq. ft. Panel Antenna	6	1-5/8
		1	Generic	10.5 LP Platform		
100	100	3	Generic	T Frame Sector Mount	12	1-5/8
		12	Swedcom	ALP9212		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	AT&T Mobility Co-Locate, Rev# 3	353716	CCI Sites
Tower Manufacturer Drawing	PiROD Inc., Eng. File No. A-113604	1611638	CCI Sites
Tower Modification Drawing	GPD, Job No. 2008281.30, Date: 11/10/2008	2486404	CCI Sites
Post Modification Inspection	GPD, Project No. 2009177.16, Date: 06/18/2012	3241117	CCI Sites
Foundation Drawing	PiROD Inc., Eng. File No. A-113604	1611716	CCI Sites
Geotech Report	Clarence Welti Assoc. Inc., Date: 09/12/1996	1529742	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 08/03/2016	CCI Sites

3.1) Analysis Method

tnxTower (version 7.0.5.1), 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 areas and weights are assumed based on photographs provided.

This analysis may be affected if any assumptions are not valid or have been made in error. B+T 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	120 - 117.667	Leg	1 1/2	2	-2.268	35.444	6.4	Pass
T2	117.667 - 110	Leg	1 1/2	14	-13.418	47.248	28.4	Pass
T3	110 - 90	Leg	1 3/4	44	-65.752	69.630	94.4	Pass
T4	90 - 70	Leg	2	108	-114.148	114.379	99.8	Pass
T5	70 - 52.6146	Leg	2 1/2	189	-155.540	164.359	94.6	Pass
T6	52.6146 - 50	Leg	2 1/2	243	-160.487	169.939	94.4	Pass
T7	50 - 40	Leg	Pirod 105245	256	-156.149	184.672	84.6	Pass
T8	40 - 20	Leg	Pirod 105217	265	-163.376	184.672	88.5	Pass
T9	20 - 0	Leg	B+T_BU876312_Pirod 105217 w/ (2) 1.25SR	280	-170.513	270.066	63.1	Pass
T1	120 - 117.667	Diagonal	3/4	8	-3.113	5.539	56.2	Pass
T2	117.667 - 110	Diagonal	5/8	23	-2.734	3.108	88.0	Pass
T3	110 - 90	Diagonal	3/4	52	-4.281	5.253	81.5	Pass
T4	90 - 70	Diagonal	7/8	116	-6.061	8.195	74.0	Pass
T5	70 - 52.6146	Diagonal	7/8	236	-5.508	8.099	68.0	Pass
T6	52.6146 - 50	Diagonal	7/8	249	-3.963	7.367	53.8	Pass
T7	50 - 40	Diagonal	L2 1/2x2 1/2x3/16	260	-5.750	12.228	47.0 50.9 (b)	Pass
T8	40 - 20	Diagonal	L2 1/2x2 1/2x3/16	273	-1.994	10.544	18.9	Pass
T9	20 - 0	Diagonal	L2 1/2x2 1/2x3/16	281	-3.412	7.632	44.7	Pass
T2	117.667 - 110	Horizontal	3/4	35	-0.173	3.847	4.5	Pass
T3	110 - 90	Horizontal	3/4	64	-1.008	3.160	31.9	Pass
T5	70 - 52.6146	Horizontal	7/8	234	-1.803	4.237	42.5	Pass
T6	52.6146 - 50	Horizontal	7/8	244	-0.967	3.619	26.7	Pass
T4	90 - 70	Secondary Horizontal	1 1/4	121	-2.511	18.362	13.7	Pass
T1	120 - 117.667	Top Girt	5x3/8	4	-2.001	2.667	75.1	Pass
T2	117.667 - 110	Top Girt	7/8	18	-0.170	7.127	2.4	Pass
T3	110 - 90	Top Girt	3/4	47	-1.612	3.871	41.7	Pass
T4	90 - 70	Top Girt	1	111	-1.469	9.363	15.7	Pass
T5	70 - 52.6146	Top Girt	1	191	-1.520	7.430	20.5	Pass
T2	117.667 - 110	Bottom Girt	7/8	21	-0.943	7.127	13.2	Pass
T3	110 - 90	Bottom Girt	3/4	48	-1.983	2.966	66.9	Pass
T4	90 - 70	Bottom Girt	1	112	-2.508	7.418	33.8	Pass
T6	52.6146 - 50	Bottom Girt	1	245	-1.482	6.063	24.4	Pass
							Summary	
						Leg (T4)	99.8	Pass
						Diagonal (T2)	88.0	Pass
						Horizontal (T5)	42.5	Pass
						Secondary Horizontal (T4)	13.7	Pass
						Top Girt (T1)	75.1	Pass
						Bottom Girt (T3)	66.9	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
						Bolt Checks	96.2	Pass
						Rating =	99.8	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
--	Anchor Rods	Base	49.8	Pass
1	Base Foundation	Base	85.3	Pass

Structure Rating (max from all components) =	99.8%

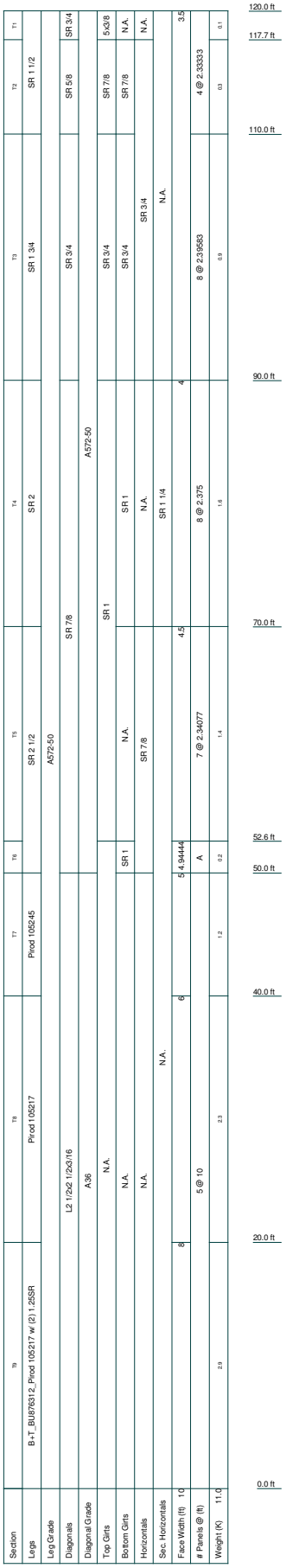
Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the existing and proposed loads. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
LLPX310R w/ Mount Pipe (E)	120	Dragonwave A-ANT-23G-2-C (E)	120
LLPX310R w/ Mount Pipe (E)	120	Dragonwave A-ANT-23G-2-C (E)	120
LLPX310R w/ Mount Pipe (E)	120	(4) LGP21401 (E)	110
FDD_R6_RRH (E)	120	(4) LGP21401 (E)	110
FDD_R6_RRH (E)	120	(4) LGP21401 (E)	110
FDD_R6_RRH (E)	120	RRUS-11 (E)	110
6' x 2" Mount Pipe (E-At Corner For Dish)	120	RRUS-11 (E)	110
6' x 2" Mount Pipe (E-At Corner For Dish)	120	RRUS-11 (E)	110
(2) 5' x 2" Pipe Mount (E-For Dish)	120	DC6-48-60-18-8F (E)	110
5' x 2" Pipe Mount (E-For Dish)	120	HPA-65R-BUU-H6 w/ Mount Pipe (P)	110
(2) Side Arm Mount [SO 301-1] (E)	120	HPA-65R-BUU-H6 w/ Mount Pipe (P)	110
Side Arm Mount [SO 301-1] (E)	120	HPA-65R-BUU-H6 w/ Mount Pipe (P)	110
P40-16-XLPP-RR-A w/ Mount Pipe (E)	120	RRUS 32 B2 (P)	110
P40-16-XLPP-RR-A w/ Mount Pipe (E)	120	RRUS 32 B2 (P)	110
APXVSPP18-C-A20 w/ Mount Pipe (E)	120	RRUS 32 B2 (P)	110
APXVTM14-C-120 w/ Mount Pipe (E)	120	1001983 (P)	110
APXVTM14-C-120 w/ Mount Pipe (E)	120	1001983 (P)	110
APXVTM14-C-120 w/ Mount Pipe (E)	120	1001983 (P)	110
800 EXTERNAL NOTCH FILTER (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
800 EXTERNAL NOTCH FILTER (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
800 EXTERNAL NOTCH FILTER (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
1900MHz RRH (65MHz) (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
1900MHz RRH (65MHz) (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
1900MHz RRH (65MHz) (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
TD-RRH8x20-25 (E)	120	(2) 4' x 2" Pipe Mount (E-For TME's)	110
TD-RRH8x20-25 (E)	120	(2) 4' x 2" Pipe Mount (E-For TME's)	110
TD-RRH8x20-25 (E)	120	(2) 4' x 2" Pipe Mount (E-For TME's)	110
800MHZ RRH (E)	120	Pipe Mount [PM 601-3] (E-For Mount Support)	110
800MHZ RRH (E)	120	Sector Mount [SM 406-3] (E)	110
800MHZ RRH (E)	120	(2) 7770.00 w/ Mount Pipe (E)	110
(3) ACU-A20-N (E)	120	(2) 7770.00 w/ Mount Pipe (E)	110
(3) ACU-A20-N (E)	120	(2) 7770.00 w/ Mount Pipe (E)	110
(3) ACU-A20-N (E)	120	APXV18-206517S-C w/ Mount Pipe (E)	100
6' x 2" Mount Pipe (E-For TME's)	120	APXV18-206517S-C w/ Mount Pipe (E)	100
6' x 2" Mount Pipe (E-For TME's)	120	APXV18-206517S-C w/ Mount Pipe (E)	100
6' x 2" Mount Pipe (E-For TME's)	120	Side Arm Mount [SO 701-1] (E-Leg Per Photo)	40
Platform Mount [LP 405-1] (E)	120	BULLET III (E-Leg Per Photo)	40
Dragonwave A-ANT-23G-2-C (E)	120		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	1 @ 2.03125		

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 New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 99.8%

MAX. CORNER REACTIONS AT BASE:
DOWN: 175 K
SHEAR: 13 K

UPLIFT: -158 K
SHEAR: 12 K

AXIAL
47 K
SHEAR 6 K
MOMENT 472 kip-ft
TORQUE 1 kip-ft
38 mph WIND - 0.750 in ICE

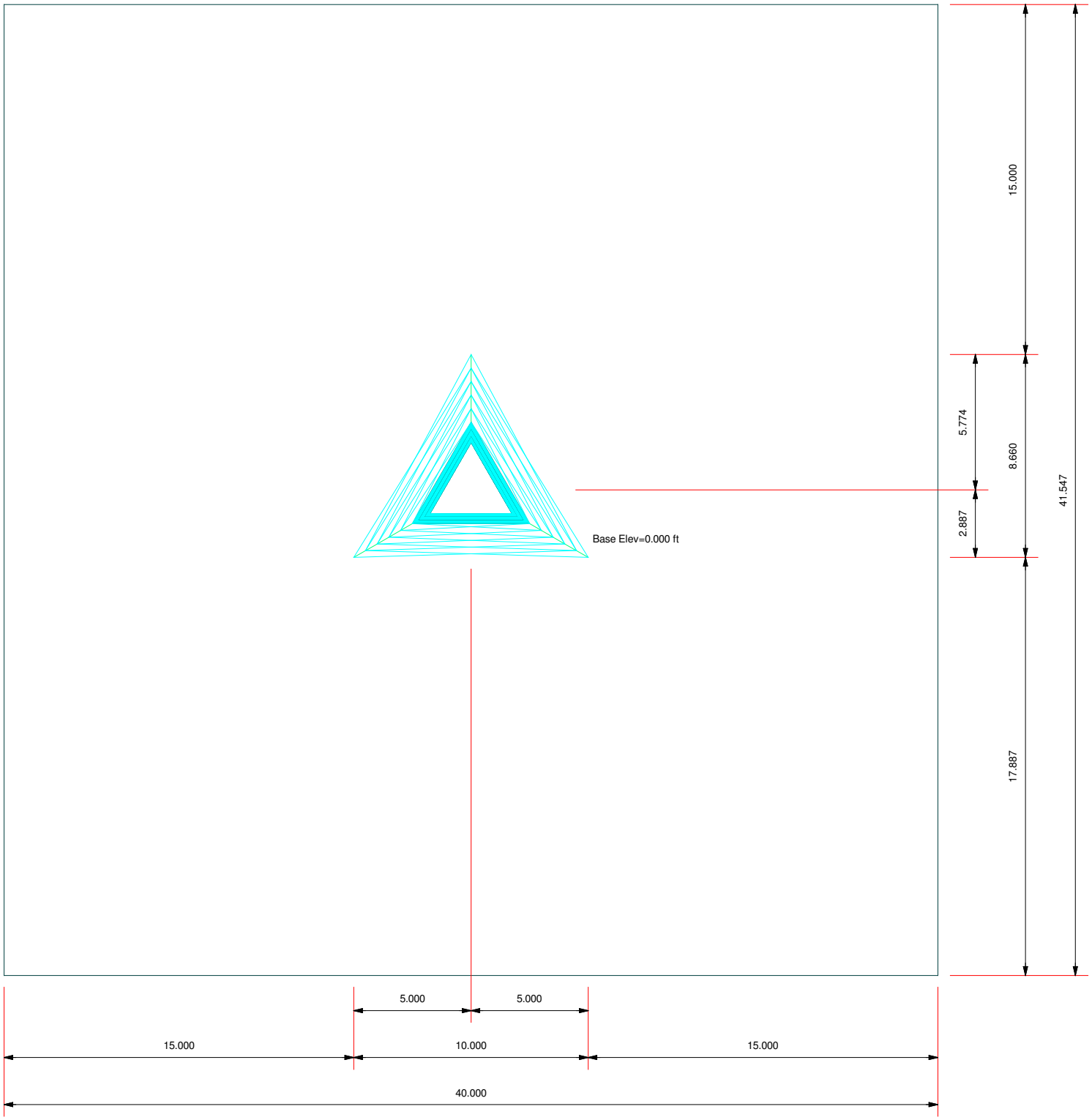
AXIAL
24 K
SHEAR 17 K
MOMENT 1447 kip-ft
TORQUE 3 kip-ft
REACTIONS - 85 mph WIND

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 108127.001.01 - MONTOWESE AMODIO SELF STORE, CT (BU# 876312)
Project:
Client: Crown Castle | Drawn by: Vignesh Prabhu K | App'd:
Code: TIA/EIA-222-F | Date: 08/05/16 | Scale: NTS
Path: | Dwg No. E-1

Plot Plan

Total Area - 0.04 Acres



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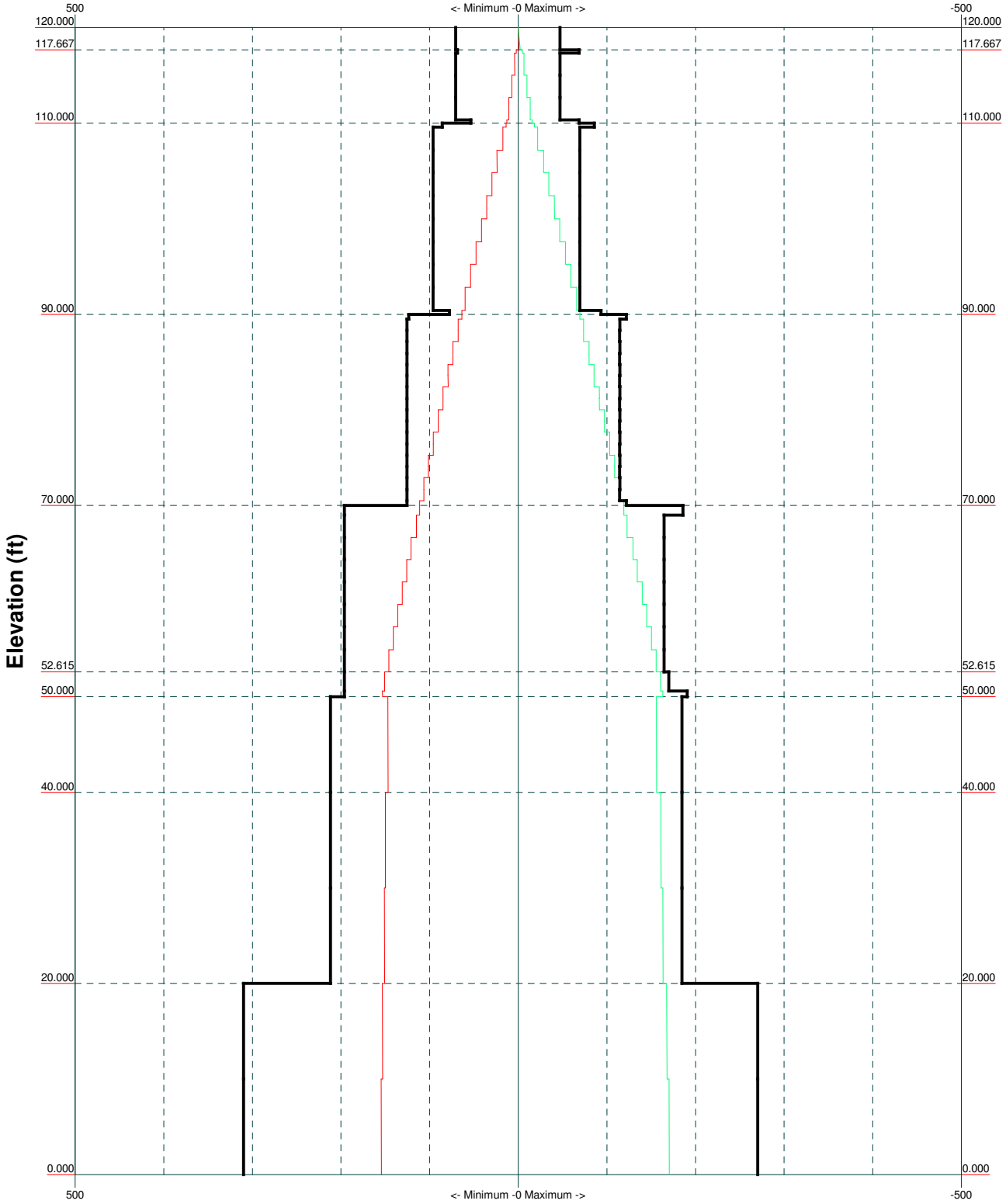
Project:			
Client: Crown Castle	Drawn by: Vignesh Prabhu K	App'd:	
Code: TIA/EIA-222-F	Date: 08/05/16	Scale: NTS	
Path:		Dwg No. E-2	

TIA/EIA-222-F - 85 mph/38 mph 0.750 in Ice

Leg Capacity ——— **Leg Compression (K)**



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Job: 108127.001.01 - MONTOWESE AMODIO SELF STORE, CT (BU# 876312)			
Project:			
Client: Crown Castle	Drawn by: Vignesh Prabhu K	App'd:	
Code: TIA/EIA-222-F	Date: 08/05/16	Scale: NTS	
Path:		Dwg No. E-3	

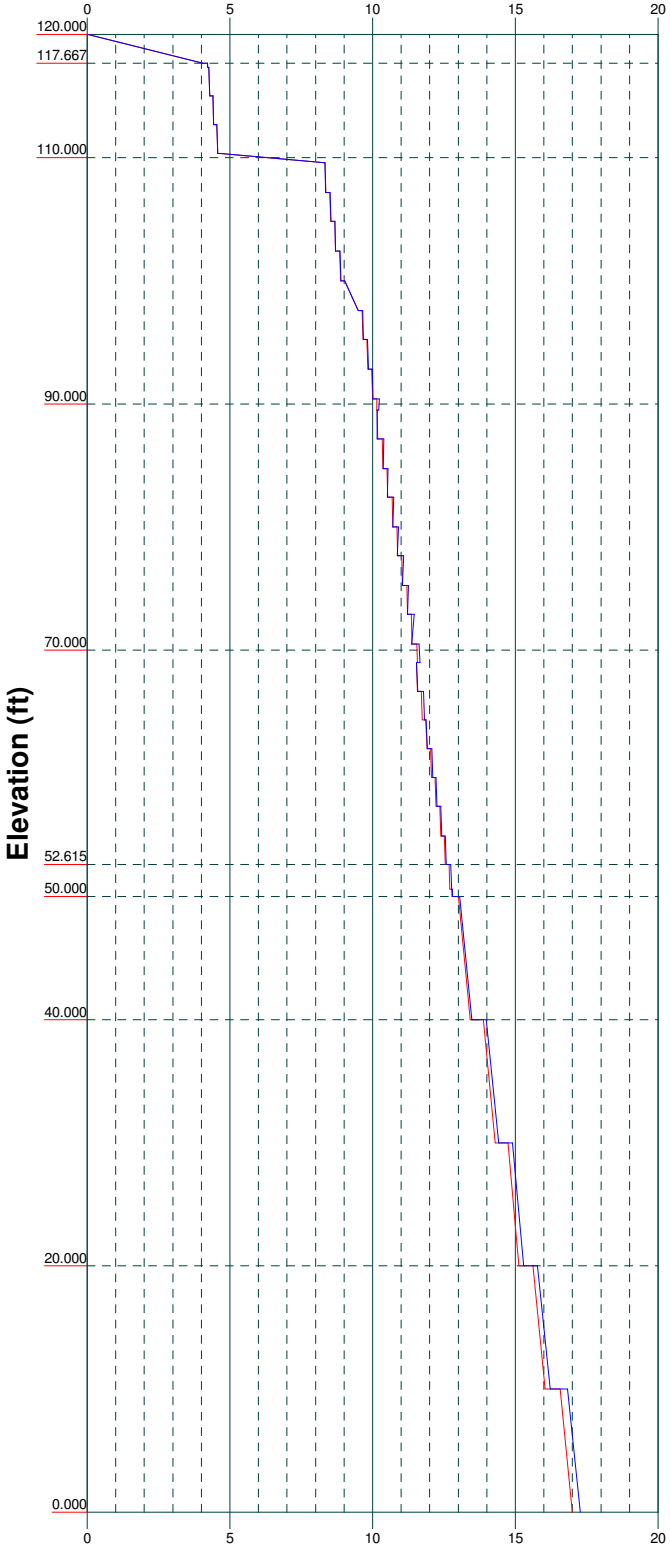
TIA/EIA-222-F - 85 mph/38 mph 0.750 in Ice

Vx Vz

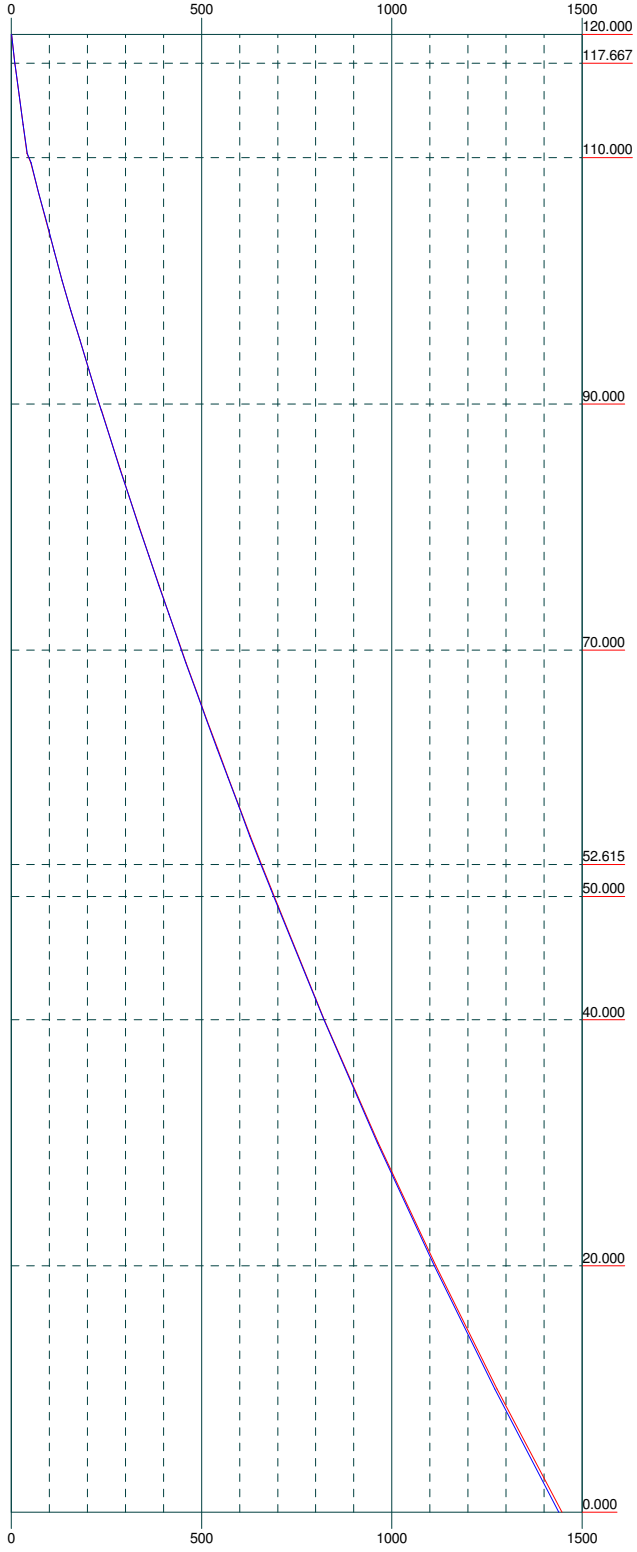
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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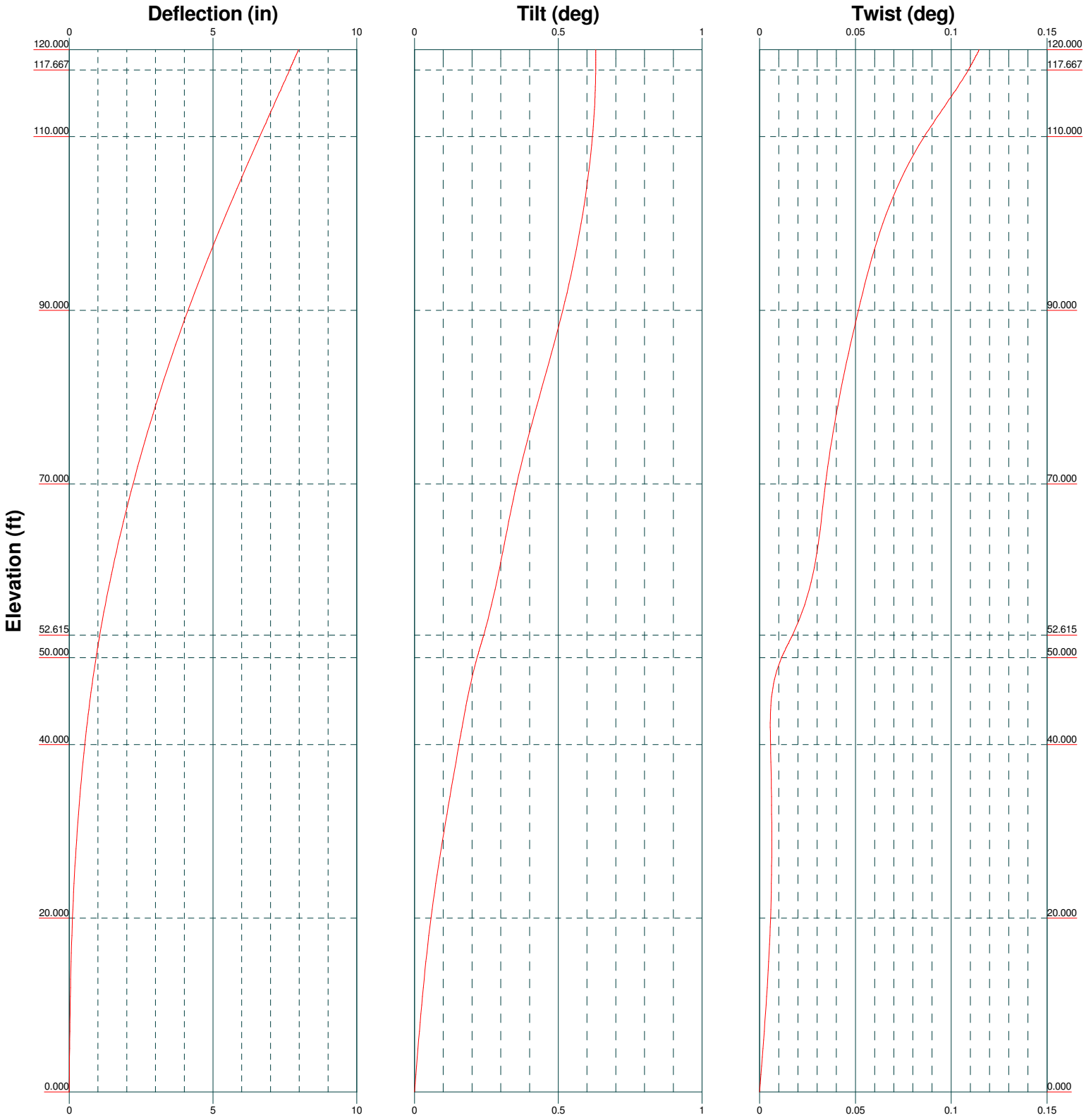
Job: 108127.001.01 - MONTOWESE AMODIO SELF STORE, CT (BU# 876312)			
Project:			
Client: Crown Castle	Drawn by: Vignesh Prabhu K	App'd:	
Code: TIA/EIA-222-F	Date: 08/05/16	Scale: NTS	
Path:		Dwg No. E-4	

TIA/EIA-222-F - Service - 50 mph

Maximum Values



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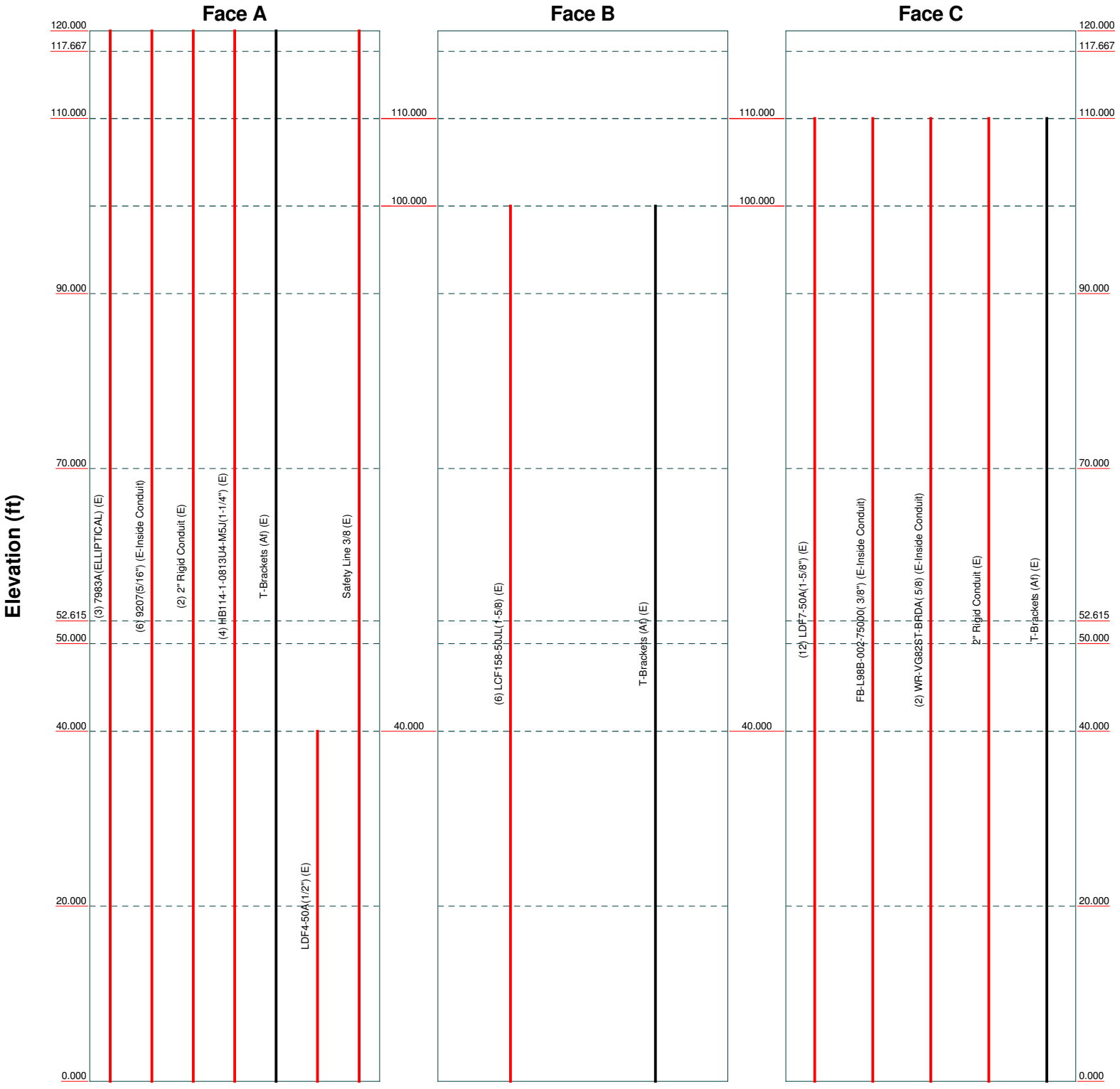
Job: ***108127.001.01 - MONTOWESE AMODIO SELF STORE, CT (BU# 876312)***			
Project:			
Client: Crown Castle	Drawn by: Vignesh Prabhu K	App'd:	
Code: TIA/EIA-222-F	Date: 08/05/16	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 120'

Round | Flat | App In Face | App Out Face | Truss Leg



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Job: ***108127.001.01 - MONTOWESE AMODIO SELF STORE, CT (BU# 876312)***		
Project:		
Client: Crown Castle	Drawn by: Vignesh Prabhu K	App'd:
Code: TIA/EIA-222-F	Date: 08/05/16	Scale: NTS
Path:		Dwg No. E-7

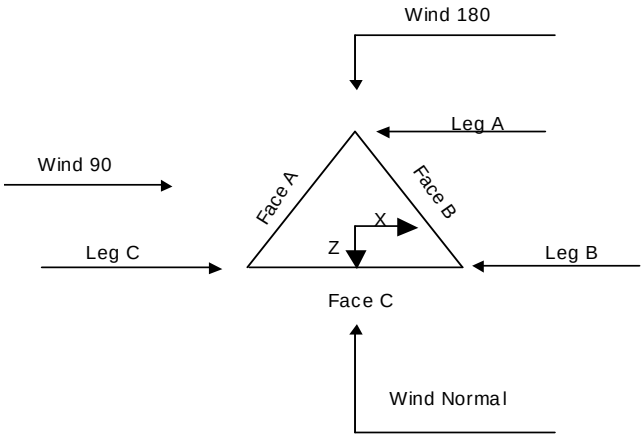
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 120.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 3.500 ft at the top and 10.000 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.750 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area	√	SR Leg Bolts Resist Compression
√	Use Code Stress Ratios	√	Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension	√	Offset Girt At Foundation
√	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients	√	Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
√	Include Bolts In Member Capacity		Autocalc Torque Arm Areas	√	Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
√	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component		Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric				



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	120.000-117.667			3.500	1	2.333
T2	117.667-110.000			3.500	1	7.667
T3	110.000-90.000			3.500	1	20.000
T4	90.000-70.000			4.000	1	20.000
T5	70.000-52.615			4.500	1	17.385
T6	52.615-50.000			4.944	1	2.615
T7	50.000-40.000			5.000	1	10.000
T8	40.000-20.000			6.000	1	20.000
T9	20.000-0.000			8.000	1	20.000

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	120.000-117.667	2.333	K Brace Down	No	Yes	0.000	0.000
T2	117.667-110.000	2.333	X Brace	No	Steps	4.000	4.000
T3	110.000-90.000	2.396	X Brace	No	Steps	5.000	5.000
T4	90.000-70.000	2.375	X Brace	No	Yes	6.000	6.000
T5	70.000-52.615	2.341	X Brace	No	Steps	12.000	0.000
T6	52.615-50.000	2.031	X Brace	No	Steps	0.000	7.000
T7	50.000-40.000	10.000	X Brace	No	No	0.000	0.000
T8	40.000-20.000	10.000	X Brace	No	No	0.000	0.000
T9	20.000-0.000	10.000	X Brace	No	No	0.000	0.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 120.000-117.667	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T2 117.667-110.000	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T3 110.000-90.000	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T4 90.000-70.000	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T5 70.000-52.615	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T6 52.615-50.000	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T7 50.000-40.000	Truss Leg	Pirod 105245	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T8 40.000-20.000	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T9 20.000-0.000	Truss Leg	B+T_BU876312_Pirod 105217 w/ (2) 1.25SR	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T2 117.667-110.000	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 110.000-90.000	Solid Round	3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T4 90.000-70.000	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T5 70.000-52.615	Solid Round	1	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)
T6 52.615-50.000	Solid Round		A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 120.000-117.667	None	Flat Bar		A36 (36 ksi)	Flat Bar	5x3/8	A36 (36 ksi)
T2 117.667-110.000	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T3 110.000-90.000	None	Solid Round		A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T5 70.000-52.615	None	Solid Round		A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T6 52.615-50.000	None	Solid Round		A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T4 90.000-70.000	Solid Round	1 1/4	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 120.000-117.667	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T2 117.667-110.000	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T3 110.000-90.000	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T4 90.000-70.000	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T5 70.000-52.615	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T6 52.615-50.000	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T7 50.000-40.000	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T8 40.000-20.000	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T9 20.000-0.000	0.000	0.000	A36 (36 ksi)	1.1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Brace Diags X	K Brace Diags Y	Single Diags X	Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1 120.000-117.667	No	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T2 117.667-110.000	No	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T3 110.000-90.000	No	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T4	No	Yes	1	1	1	1	1	1	1	1
90.000-70.000				1	1	1	1	1	1	1
T5	No	Yes	1	1	1	1	1	1	1	1
70.000-52.615				1	1	1	1	1	1	1
T6	No	Yes	1	1	1	1	1	1	1	1
52.615-50.000				1	1	1	1	1	1	1
T7	Yes	No	1	1	1	1	1	1	1	1
50.000-40.000				1	1	1	1	1	1	1
T8	Yes	No	1	1	1	1	1	1	1	1
40.000-20.000				1	1	1	1	1	1	1
T9	Yes	No	1.549	1	1	1	1	1	1	1
20.000-0.000				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Truss-Leg K Factors: Truss-Legs Used As Leg Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals	Truss-Legs Used As Inner Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals
T7	1	0.5	0.85	1	0.5	0.85
50.000-40.000						
T8	1	0.5	0.85	1	0.5	0.85
40.000-20.000						
T9	1	0.5	0.85	1	0.5	0.85
20.000-0.000						

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	1	0.000	1
120.000-117.667														
T2	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	1	0.000	1
117.667-110.000														
T3	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1
110.000-90.000														
T4	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1
90.000-70.000														

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T5 70.000-52.615	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1
T6 52.615-50.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1
T7 50.000-40.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	1	0.000	0.75	0.000	0.75
T8 40.000-20.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	1	0.000	0.75	0.000	0.75
T9 20.000-0.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	1	0.000	0.75	0.000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 120.000-117.667	Sleeve DS	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T2 117.667-110.000	Sleeve DS	0.625 A325N	4	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T3 110.000-90.000	Sleeve DS	0.625 A325N	5	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T4 90.000-70.000	Sleeve DS	0.750 A325N	5	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T5 70.000-52.615	Flange	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T6 52.615-50.000	Flange	1.000 A325N	6	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T7 50.000-40.000	Flange	1.000 A325N	6	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T8 40.000-20.000	Flange	1.000 A325N	6	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0
T9 20.000-0.000	Flange	1.000 A687	6	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.000 A325N	0

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 klf
7983A(ELLIPTICAL) (E)	A	Yes	Ar (CfAe)	120.000 - 0.000	-6.000	0.4	3	3	0.850 0.750	0.573		0.000

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 klf
9207(5/16") (E-Inside Conduit)	A	Yes	Ar (CfAe)	120.000 - 0.000	-6.000	0.35	6	6	0.250	0.000		0.001
2" Rigid Conduit (E) **V**	A	Yes	Ar (CfAe)	120.000 - 0.000	-6.000	0.35	2	2	0.850 2.000	2.000		0.003
HB114-1-0813U4-M5J(1-1/4") (E)	A	Yes	Ar (CfAe)	120.000 - 0.000	-6.000	0.44	4	2	0.850 2.000	1.540		0.001
T-Brackets (Af) (E) **V**	A	Yes	Af (CfAe)	120.000 - 0.000	-2.000	0.47	1	1	1.000	1.000	4.000	0.008
LDF7-50A(1-5/8") (E)	C	Yes	Ar (CfAe)	110.000 - 0.000	-6.000	0.35	12	6	0.850 1.000	1.980		0.001
FB-L98B-002-75000(3/8") (E-Inside Conduit)	C	Yes	Ar (CfAe)	110.000 - 0.000	-6.000	0.27	1	1	0.400	0.000		0.000
WR-VG82ST-BRDA(5/8) (E-Inside Conduit)	C	Yes	Ar (CfAe)	110.000 - 0.000	-6.000	0.27	2	2	0.500	0.000		0.000
2" Rigid Conduit (E)	C	Yes	Ar (CfAe)	110.000 - 0.000	-6.000	0.27	1	1	0.850 2.000	2.000		0.003
T-Brackets (Af) (E) **V**	C	Yes	Af (CfAe)	110.000 - 0.000	-2.000	0.47	1	1	1.000	1.000	4.000	0.008
LCF158-50JL(1-5/8) (E)	B	Yes	Ar (CfAe)	100.000 - 0.000	-6.000	0.35	6	6	0.850 0.750	1.980		0.001
T-Brackets (Af) (E) **V**	B	Yes	Af (CfAe)	100.000 - 0.000	-2.000	0.47	1	1	1.000	1.000	4.000	0.008
LDF4-50A(1/2") (E) **V**	A	Yes	Ar (CfAe)	40.000 - 0.000	-3.000	0.35	1	1	0.850 0.750	0.630		0.000
Safety Line 3/8 (E) **V**	A	Yes	Ar (CfAe)	120.000 - 0.000	0.000	0.47	1	1	0.375	0.375		0.000

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight klf
V							

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	120.000-117.667	A	1.784	0.194	0.000	0.000	0.053
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
T2	117.667-110.000	A	5.861	0.639	0.000	0.000	0.175
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
T3	110.000-90.000	A	15.290	1.667	0.000	0.000	0.457
		B	9.900	0.833	0.000	0.000	0.115
		C	23.133	1.667	0.000	0.000	0.434
T4	90.000-70.000	A	15.290	1.667	0.000	0.000	0.457
		B	19.800	1.667	0.000	0.000	0.230
		C	23.133	1.667	0.000	0.000	0.434
T5	70.000-52.615	A	13.291	1.449	0.000	0.000	0.398
		B	17.212	1.449	0.000	0.000	0.200
		C	20.109	1.449	0.000	0.000	0.377
T6	52.615-50.000	A	1.999	0.218	0.000	0.000	0.060
		B	2.588	0.218	0.000	0.000	0.030
		C	3.024	0.218	0.000	0.000	0.057
T7	50.000-40.000	A	7.645	0.833	0.000	0.000	0.229
		B	9.900	0.833	0.000	0.000	0.115
		C	11.567	0.833	0.000	0.000	0.217
T8	40.000-20.000	A	16.340	1.667	0.000	0.000	0.460
		B	19.800	1.667	0.000	0.000	0.230
		C	23.133	1.667	0.000	0.000	0.434
T9	20.000-0.000	A	16.340	1.667	0.000	0.000	0.460
		B	19.800	1.667	0.000	0.000	0.230
		C	23.133	1.667	0.000	0.000	0.434

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	120.000-117.667	A	0.875	2.573	2.237	0.000	0.000	0.113
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
T2	117.667-110.000	A	0.870	8.427	7.345	0.000	0.000	0.369
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
T3	110.000-90.000	A	0.857	21.759	19.130	0.000	0.000	0.953
		B		3.078	13.577	0.000	0.000	0.312
		C		18.056	27.987	0.000	0.000	1.201
T4	90.000-70.000	A	0.834	21.381	19.080	0.000	0.000	0.938
		B		6.080	27.104	0.000	0.000	0.616
		C		17.754	27.937	0.000	0.000	1.187
T5	70.000-52.615	A	0.808	18.206	16.535	0.000	0.000	0.800
		B		5.209	23.510	0.000	0.000	0.527
		C		15.130	24.234	0.000	0.000	1.018
T6	52.615-50.000	A	0.791	2.701	2.482	0.000	0.000	0.119
		B		0.776	3.531	0.000	0.000	0.078
		C		2.246	3.640	0.000	0.000	0.152
T7	50.000-40.000	A	0.778	10.227	9.478	0.000	0.000	0.451
		B		2.947	13.490	0.000	0.000	0.297
		C		8.506	13.907	0.000	0.000	0.577

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T8	40.000-20.000	A	0.750	23.530	18.893	0.000	0.000	0.912
		B		5.800	26.917	0.000	0.000	0.584
		C		16.633	27.750	0.000	0.000	1.136
T9	20.000-0.000	A	0.750	23.530	18.893	0.000	0.000	0.912
		B		5.800	26.917	0.000	0.000	0.584
		C		16.633	27.750	0.000	0.000	1.136

Feed Line Shielding

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
T1	120.000-117.667	A	0.088	1.040	0.353	0.879
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T2	117.667-110.000	A	0.442	3.910	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T3	110.000-90.000	A	1.113	9.017	0.000	0.000
		B	0.704	3.692	0.000	0.000
		C	2.170	13.505	0.000	0.000
T4	90.000-70.000	A	1.981	12.987	0.000	0.000
		B	2.508	10.704	0.000	0.000
		C	2.898	14.628	0.000	0.000
T5	70.000-52.615	A	1.036	7.070	0.000	0.000
		B	1.312	5.871	0.000	0.000
		C	2.058	10.865	0.000	0.000
T6	52.615-50.000	A	0.204	1.332	0.000	0.000
		B	0.259	1.112	0.000	0.000
		C	0.389	1.979	0.000	0.000
T7	50.000-40.000	A	0.000	1.083	0.732	1.739
		B	0.000	0.907	0.927	1.457
		C	0.000	1.229	1.071	1.973
T8	40.000-20.000	A	0.000	1.892	1.313	3.154
		B	0.000	1.468	1.565	2.446
		C	0.000	1.978	1.808	3.297
T9	20.000-0.000	A	0.000	1.619	1.124	2.699
		B	0.000	1.256	1.339	2.093
		C	0.000	1.693	1.547	2.821

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	120.000-117.667	0.496	-3.213	0.061	-0.950
T2	117.667-110.000	0.955	-6.192	0.204	-2.087
T3	110.000-90.000	-2.074	-0.322	-1.168	0.023
T4	90.000-70.000	-0.448	0.879	-0.520	0.871
T5	70.000-52.615	-0.365	0.981	-0.313	0.760
T6	52.615-50.000	-0.321	0.950	-0.214	0.772
T7	50.000-40.000	-0.321	0.797	-0.462	0.693

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T8	40.000-20.000	-0.368	0.835	-0.589	0.572
T9	20.000-0.000	-0.385	1.036	-0.685	0.723

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
LLPX310R w/ Mount Pipe (E)	A	From Leg	4.000 0.000 -2.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.065 5.480 5.905 6.788 8.705	2.985 3.528 4.087 5.314 8.133	0.045 0.083 0.126 0.232 0.544
LLPX310R w/ Mount Pipe (E)	B	From Leg	4.000 0.000 -2.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.065 5.480 5.905 6.788 8.705	2.985 3.528 4.087 5.314 8.133	0.045 0.083 0.126 0.232 0.544
LLPX310R w/ Mount Pipe (E)	C	From Leg	4.000 0.000 -2.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.065 5.480 5.905 6.788 8.705	2.985 3.528 4.087 5.314 8.133	0.045 0.083 0.126 0.232 0.544
FDD_R6_RRH (E)	A	From Leg	4.000 0.000 -2.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.789 1.971 2.163 2.571 3.491	0.778 0.918 1.067 1.391 2.143	0.033 0.045 0.058 0.094 0.200
FDD_R6_RRH (E)	B	From Leg	4.000 0.000 -2.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.789 1.971 2.163 2.571 3.491	0.778 0.918 1.067 1.391 2.143	0.033 0.045 0.058 0.094 0.200
FDD_R6_RRH (E)	C	From Leg	4.000 0.000 -2.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.789 1.971 2.163 2.571 3.491	0.778 0.918 1.067 1.391 2.143	0.033 0.045 0.058 0.094 0.200
6' x 2" Mount Pipe (E-At Corner For Dish)	B	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
6' x 2" Mount Pipe (E-At Corner For Dish)	C	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
(2) 5' x 2" Pipe Mount (E-For Dish)	B	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.000 1.393 1.703 2.351	1.000 1.393 1.703 2.351	0.029 0.037 0.048 0.082

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice	3.778	3.778	0.196
5' x 2" Pipe Mount (E-For Dish)	C	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.000 1.393 1.703 2.351 3.778	1.000 1.393 1.703 2.351 3.778	0.029 0.037 0.048 0.082 0.196
(2) Side Arm Mount [SO 301-1] (E)	B	From Leg	5.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.000 1.390 1.780 2.560 4.120	0.900 1.420 1.940 2.980 5.060	0.023 0.033 0.042 0.061 0.100
Side Arm Mount [SO 301-1] (E)	C	From Leg	5.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.000 1.390 1.780 2.560 4.120	0.900 1.420 1.940 2.980 5.060	0.023 0.033 0.042 0.061 0.100
V									
P40-16-XLPP-RR-A w/ Mount Pipe (E)	A	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	9.373 9.912 10.450 11.556 13.892	4.825 5.571 6.265 7.803 11.107	0.073 0.136 0.205 0.368 0.816
P40-16-XLPP-RR-A w/ Mount Pipe (E)	B	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	9.373 9.912 10.450 11.556 13.892	4.825 5.571 6.265 7.803 11.107	0.073 0.136 0.205 0.368 0.816
APXVSPP18-C-A20 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.151 0.227 0.406 0.909
APXVTM14-C-120 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.134 7.662 8.183 9.256 11.526	4.959 5.754 6.472 8.010 11.412	0.077 0.131 0.193 0.338 0.752
APXVTM14-C-120 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.134 7.662 8.183 9.256 11.526	4.959 5.754 6.472 8.010 11.412	0.077 0.131 0.193 0.338 0.752
APXVTM14-C-120 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.134 7.662 8.183 9.256 11.526	4.959 5.754 6.472 8.010 11.412	0.077 0.131 0.193 0.338 0.752
800 EXTERNAL NOTCH FILTER (E)	A	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.770 0.890 1.018 1.301 1.970	0.375 0.465 0.563 0.787 1.337	0.011 0.017 0.024 0.045 0.114
800 EXTERNAL NOTCH FILTER (E)	B	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.770 0.890 1.018 1.301 1.970	0.375 0.465 0.563 0.787 1.337	0.011 0.017 0.024 0.045 0.114

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
800 EXTERNAL NOTCH FILTER (E)	C	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.770 0.890 1.018 1.301 1.970	0.375 0.465 0.563 0.787 1.337	0.011 0.017 0.024 0.045 0.114
1900MHz RRH (65MHz) (E)	A	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.698 2.936 3.183 3.703 4.846	2.771 3.011 3.260 3.784 4.935	0.060 0.084 0.111 0.176 0.354
1900MHz RRH (65MHz) (E)	B	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.698 2.936 3.183 3.703 4.846	2.771 3.011 3.260 3.784 4.935	0.060 0.084 0.111 0.176 0.354
1900MHz RRH (65MHz) (E)	C	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.698 2.936 3.183 3.703 4.846	2.771 3.011 3.260 3.784 4.935	0.060 0.084 0.111 0.176 0.354
TD-RRH8x20-25 (E)	A	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.720 5.014 5.316 5.948 7.314	1.703 1.920 2.145 2.622 3.680	0.070 0.097 0.128 0.201 0.397
TD-RRH8x20-25 (E)	B	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.720 5.014 5.316 5.948 7.314	1.703 1.920 2.145 2.622 3.680	0.070 0.097 0.128 0.201 0.397
TD-RRH8x20-25 (E)	C	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.720 5.014 5.316 5.948 7.314	1.703 1.920 2.145 2.622 3.680	0.070 0.097 0.128 0.201 0.397
800MHZ RRH (E)	A	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
800MHZ RRH (E)	B	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
800MHZ RRH (E)	C	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
(3) ACU-A20-N (E)	A	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.078 0.121 0.173 0.302 0.665	0.136 0.189 0.251 0.400 0.802	0.001 0.002 0.004 0.012 0.045
(3) ACU-A20-N (E)	B	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	0.078 0.121	0.136 0.189	0.001 0.002

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	0.173	0.251	0.004
						2" Ice	0.302	0.400	0.012
						4" Ice	0.665	0.802	0.045
(3) ACU-A20-N	C	From Leg	4.000	0.000	120.000	No Ice	0.078	0.136	0.001
(E)			0.000			1/2" Ice	0.121	0.189	0.002
			0.000			1" Ice	0.173	0.251	0.004
						2" Ice	0.302	0.400	0.012
						4" Ice	0.665	0.802	0.045
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	120.000	No Ice	1.425	1.425	0.022
(E-For TME's)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	120.000	No Ice	1.425	1.425	0.022
(E-For TME's)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	120.000	No Ice	1.425	1.425	0.022
(E-For TME's)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
Platform Mount [LP 405-1]	C	None		0.000	120.000	No Ice	20.800	20.800	1.800
(E)						1/2" Ice	28.100	28.100	2.066
						1" Ice	35.400	35.400	2.332
						2" Ice	50.000	50.000	2.864
						4" Ice	79.200	79.200	3.928
V									
(2) 7770.00 w/ Mount Pipe	A	From Face	4.000	0.000	110.000	No Ice	6.119	4.254	0.055
(E)			0.000			1/2" Ice	6.626	5.014	0.103
			2.000			1" Ice	7.128	5.711	0.157
						2" Ice	8.164	7.155	0.287
						4" Ice	10.360	10.412	0.665
(2) 7770.00 w/ Mount Pipe	B	From Face	4.000	0.000	110.000	No Ice	6.119	4.254	0.055
(E)			0.000			1/2" Ice	6.626	5.014	0.103
			2.000			1" Ice	7.128	5.711	0.157
						2" Ice	8.164	7.155	0.287
						4" Ice	10.360	10.412	0.665
(2) 7770.00 w/ Mount Pipe	C	From Face	4.000	0.000	110.000	No Ice	6.119	4.254	0.055
(E)			0.000			1/2" Ice	6.626	5.014	0.103
			2.000			1" Ice	7.128	5.711	0.157
						2" Ice	8.164	7.155	0.287
						4" Ice	10.360	10.412	0.665
(4) LGP21401	A	From Face	4.000	0.000	110.000	No Ice	1.288	0.233	0.014
(E)			0.000			1/2" Ice	1.445	0.313	0.021
			2.000			1" Ice	1.611	0.403	0.030
						2" Ice	1.969	0.608	0.055
						4" Ice	2.788	1.121	0.135
(4) LGP21401	B	From Face	4.000	0.000	110.000	No Ice	1.288	0.233	0.014
(E)			0.000			1/2" Ice	1.445	0.313	0.021
			2.000			1" Ice	1.611	0.403	0.030
						2" Ice	1.969	0.608	0.055
						4" Ice	2.788	1.121	0.135
(4) LGP21401	C	From Face	4.000	0.000	110.000	No Ice	1.288	0.233	0.014
(E)			0.000			1/2" Ice	1.445	0.313	0.021
			2.000			1" Ice	1.611	0.403	0.030

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	1.969	0.608	0.055
						4" Ice	2.788	1.121	0.135
RRUS-11	A	From Face	4.000	0.000	110.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			2.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS-11	B	From Face	4.000	0.000	110.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			2.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS-11	C	From Face	4.000	0.000	110.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			2.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
DC6-48-60-18-8F	A	From Face	4.000	0.000	110.000	No Ice	1.467	1.467	0.019
(E)			0.000			1/2" Ice	1.667	1.667	0.037
			2.000			1" Ice	1.878	1.878	0.057
						2" Ice	2.333	2.333	0.105
						4" Ice	3.378	3.378	0.239
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Face	4.000	0.000	110.000	No Ice	10.598	8.113	0.077
			0.000			1/2" Ice	11.268	9.304	0.158
(P)			2.000			1" Ice	11.906	10.209	0.248
						2" Ice	13.209	12.175	0.456
						4" Ice	15.934	16.354	1.020
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Face	4.000	0.000	110.000	No Ice	10.598	8.113	0.077
			0.000			1/2" Ice	11.268	9.304	0.158
(P)			2.000			1" Ice	11.906	10.209	0.248
						2" Ice	13.209	12.175	0.456
						4" Ice	15.934	16.354	1.020
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Face	4.000	0.000	110.000	No Ice	10.598	8.113	0.077
			0.000			1/2" Ice	11.268	9.304	0.158
(P)			2.000			1" Ice	11.906	10.209	0.248
						2" Ice	13.209	12.175	0.456
						4" Ice	15.934	16.354	1.020
RRUS 32 B2	A	From Face	4.000	0.000	110.000	No Ice	3.187	1.851	0.053
(P)			0.000			1/2" Ice	3.445	2.077	0.074
			2.000			1" Ice	3.713	2.312	0.098
						2" Ice	4.273	2.807	0.157
						4" Ice	5.498	3.901	0.322
RRUS 32 B2	B	From Face	4.000	0.000	110.000	No Ice	3.187	1.851	0.053
(P)			0.000			1/2" Ice	3.445	2.077	0.074
			2.000			1" Ice	3.713	2.312	0.098
						2" Ice	4.273	2.807	0.157
						4" Ice	5.498	3.901	0.322
RRUS 32 B2	C	From Face	4.000	0.000	110.000	No Ice	3.187	1.851	0.053
(P)			0.000			1/2" Ice	3.445	2.077	0.074
			2.000			1" Ice	3.713	2.312	0.098
						2" Ice	4.273	2.807	0.157
						4" Ice	5.498	3.901	0.322
1001983	A	From Face	4.000	0.000	110.000	No Ice	0.205	0.094	0.002
(P)			0.000			1/2" Ice	0.270	0.146	0.004
			2.000			1" Ice	0.344	0.207	0.006
						2" Ice	0.518	0.355	0.015
						4" Ice	0.969	0.754	0.051

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
1001983	B	From Face	4.000	0.000	110.000	No Ice	0.205	0.094	0.002
(P)			0.000			1/2" Ice	0.270	0.146	0.004
			2.000			1" Ice	0.344	0.207	0.006
						2" Ice	0.518	0.355	0.015
						4" Ice	0.969	0.754	0.051
1001983	C	From Face	4.000	0.000	110.000	No Ice	0.205	0.094	0.002
(P)			0.000			1/2" Ice	0.270	0.146	0.004
			2.000			1" Ice	0.344	0.207	0.006
						2" Ice	0.518	0.355	0.015
						4" Ice	0.969	0.754	0.051
5 Hor x 2" x 2" Tube Mount	A	From Face	1.000	0.000	110.000	No Ice	1.167	0.039	0.100
(E-Per Photo)			0.000			1/2" Ice	1.573	0.069	0.110
			2.000			1" Ice	1.988	0.108	0.124
						2" Ice	2.843	0.212	0.167
						4" Ice	4.658	0.523	0.313
5 Hor x 2" x 2" Tube Mount	B	From Face	1.000	0.000	110.000	No Ice	1.167	0.039	0.100
(E-Per Photo)			0.000			1/2" Ice	1.573	0.069	0.110
			2.000			1" Ice	1.988	0.108	0.124
						2" Ice	2.843	0.212	0.167
						4" Ice	4.658	0.523	0.313
5 Hor x 2" x 2" Tube Mount	C	From Face	1.000	0.000	110.000	No Ice	1.167	0.039	0.100
(E-Per Photo)			0.000			1/2" Ice	1.573	0.069	0.110
			2.000			1" Ice	1.988	0.108	0.124
						2" Ice	2.843	0.212	0.167
						4" Ice	4.658	0.523	0.313
5 Hor x 2" x 2" Tube Mount	A	From Face	1.000	0.000	110.000	No Ice	1.167	0.039	0.100
(E-Per Photo)			0.000			1/2" Ice	1.573	0.069	0.110
			-2.000			1" Ice	1.988	0.108	0.124
						2" Ice	2.843	0.212	0.167
						4" Ice	4.658	0.523	0.313
5 Hor x 2" x 2" Tube Mount	B	From Face	1.000	0.000	110.000	No Ice	1.167	0.039	0.100
(E-Per Photo)			0.000			1/2" Ice	1.573	0.069	0.110
			-2.000			1" Ice	1.988	0.108	0.124
						2" Ice	2.843	0.212	0.167
						4" Ice	4.658	0.523	0.313
5 Hor x 2" x 2" Tube Mount	C	From Face	1.000	0.000	110.000	No Ice	1.167	0.039	0.100
(E-Per Photo)			0.000			1/2" Ice	1.573	0.069	0.110
			-2.000			1" Ice	1.988	0.108	0.124
						2" Ice	2.843	0.212	0.167
						4" Ice	4.658	0.523	0.313
(2) 4' x 2" Pipe Mount	A	From Face	4.000	0.000	110.000	No Ice	0.785	0.785	0.029
(E-For TME's)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
(2) 4' x 2" Pipe Mount	B	From Face	4.000	0.000	110.000	No Ice	0.785	0.785	0.029
(E-For TME's)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
(2) 4' x 2" Pipe Mount	C	From Face	4.000	0.000	110.000	No Ice	0.785	0.785	0.029
(E-For TME's)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
						4" Ice	3.111	3.111	0.167
Pipe Mount [PM 601-3]	C	None		0.000	110.000	No Ice	4.390	4.390	0.195
(E-For Mount Support)						1/2" Ice	5.480	5.480	0.237

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	6.570	6.570	0.280
						2" Ice	8.750	8.750	0.365
						4" Ice	13.110	13.110	0.534
Sector Mount [SM 406-3] (E)	C	None		0.000	110.000	No Ice	19.830	19.830	0.923
						1/2" Ice	29.410	29.410	1.326
						1" Ice	38.990	38.990	1.729
						2" Ice	58.150	58.150	2.534
						4" Ice	96.470	96.470	4.146
V									
APXV18-206517S-C w/ Mount Pipe (E)	A	From Leg	1.000 0.000 0.000	0.000	100.000	No Ice	5.404	4.700	0.052
						1/2" Ice	5.960	5.860	0.097
						1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/ Mount Pipe (E)	B	From Leg	1.000 0.000 0.000	0.000	100.000	No Ice	5.404	4.700	0.052
						1/2" Ice	5.960	5.860	0.097
						1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/ Mount Pipe (E)	C	From Leg	1.000 0.000 0.000	0.000	100.000	No Ice	5.404	4.700	0.052
						1/2" Ice	5.960	5.860	0.097
						1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
V									
BULLET III (E-Leg Per Photo)	B	From Leg	3.000 0.000 6.000	0.000	40.000	No Ice	0.077	0.077	0.000
						1/2" Ice	0.118	0.118	0.002
						1" Ice	0.168	0.168	0.003
						2" Ice	0.293	0.293	0.010
						4" Ice	0.647	0.647	0.042
Side Arm Mount [SO 701-1] (E-Leg Per Photo)	B	From Leg	1.500 0.000 0.000	0.000	40.000	No Ice	0.850	1.670	0.065
						1/2" Ice	1.140	2.340	0.079
						1" Ice	1.430	3.010	0.093
						2" Ice	2.010	4.350	0.121
						4" Ice	3.170	7.030	0.177
V									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
Dragonwave A-ANT-23G-2-C (E)	B	Paraboloid w/Shroud (HP)	From Leg	5.000 0.000 2.000	-10.000		120.000	2.175	No Ice	3.720	0.012
									1/2" Ice	4.010	0.030
									1" Ice	4.300	0.050
									2" Ice	4.880	0.090
									4" Ice	6.040	0.180
Dragonwave A-ANT-23G-2-C	B	Paraboloid w/Shroud (HP)	From Leg	5.000 0.000	90.000		120.000	2.175	No Ice	3.720	0.012
									1/2" Ice	4.010	0.030

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^2	Weight K
(E)				2.000					1" Ice	4.300	0.050
									2" Ice	4.880	0.090
									4" Ice	6.040	0.180
Dragonwave	C	Paraboloid	From	5.000	10.000		120.000	2.175	No Ice	3.720	0.012
A-ANT-23G-2-C		w/Shroud (HP)	Leg	0.000					1/2" Ice	4.010	0.030
(E)				2.000					1" Ice	4.300	0.050
									2" Ice	4.880	0.090
									4" Ice	6.040	0.180
V											

Truss-Leg Properties

Section Designation	Area in^2	Area Ice in^2	Self Weight K	Ice Weight K	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in^2
Pirod 105245	1090.334	2417.230	0.677	0.432	7.572	16.786	5.301
Pirod 105217	2130.748	4487.011	0.619	0.826	7.398	15.580	5.301
B+T_BU876312_Pirod 105217 w/ (2) 1.25SR	2297.598	4755.230	0.793	0.852	7.978	16.511	7.753

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service

Comb. No.	Description
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	120 - 117.667	Leg	Max Tension	12	0.126	0.000	-0.000
			Max. Compression	16	-2.284	0.029	-0.035
			Max. Mx	10	-1.121	-0.299	0.104
			Max. My	2	-0.836	-0.026	-0.313
			Max. Vy	5	-1.669	-0.000	-0.000
			Max. Vx	2	1.570	-0.000	-0.000
		Diagonal	Max Tension	5	3.065	0.000	0.000
			Max. Compression	5	-3.114	0.000	0.000
			Max. Mx	24	0.758	0.002	0.000
			Max. My	10	0.446	0.000	0.000
			Max. Vy	24	-0.003	0.000	0.000
			Max. Vx	10	-0.000	0.000	0.000
		Top Girt	Max Tension	4	2.058	-0.124	-0.001
			Max. Compression	10	-1.996	0.080	-0.002
			Max. Mx	2	0.964	-0.227	-0.000
			Max. My	2	0.605	-0.226	-0.007
			Max. Vy	2	0.135	-0.227	-0.000
			Max. Vx	2	-0.004	0.000	0.000
T2	117.667 - 110	Leg	Max Tension	4	13.022	0.015	-0.032
			Max. Compression	6	-15.700	0.030	0.022
			Max. Mx	5	-13.730	0.661	-0.048
			Max. My	2	-15.341	-0.045	-0.635
			Max. Vy	10	-1.941	0.348	-0.130
			Max. Vx	2	-2.049	0.030	0.370
		Diagonal	Max Tension	5	2.685	0.000	0.000
			Max. Compression	5	-2.735	0.000	0.000
			Max. Mx	20	0.581	-0.001	-0.000
			Max. My	5	-2.436	-0.000	0.001
			Max. Vy	20	0.003	-0.001	-0.000
			Max. Vx	5	-0.001	-0.000	0.001
		Horizontal	Max Tension	8	0.300	0.000	0.000
			Max. Compression	2	-0.173	0.000	0.000
			Max. Mx	14	0.125	0.005	0.000
			Max. My	5	0.061	0.000	0.000
			Max. Vy	14	-0.006	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Top Girt	Max Tension	10	0.230	0.000	0.000
			Max. Compression	12	-0.170	0.000	0.000
			Max. Mx	14	0.052	0.006	0.000
			Max. My	5	0.049	0.000	0.000
			Max. Vy	14	-0.007	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Bottom Girt	Max Tension	8	0.912	0.000	0.000
			Max. Compression	6	-0.943	0.000	0.000
			Max. Mx	14	0.008	0.006	0.000
			Max. My	5	0.161	0.000	0.000
			Max. Vy	14	-0.007	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
T3	110 - 90	Leg	Max Tension	12	63.704	0.891	-0.059
			Max. Compression	6	-69.547	0.435	-0.021
			Max. Mx	2	-18.027	1.145	-0.074
			Max. My	3	-2.613	0.022	-1.100
			Max. Vy	6	-3.307	0.435	-0.021
			Max. Vx	3	2.850	-0.004	-0.361
		Diagonal	Max Tension	5	4.294	0.000	0.000
			Max. Compression	5	-4.423	0.000	0.000
			Max. Mx	13	2.423	-0.003	0.000
			Max. My	5	-4.414	-0.000	0.003
			Max. Vy	23	0.004	-0.003	-0.000
			Max. Vx	5	-0.002	-0.000	0.003
		Horizontal	Max Tension	8	1.221	0.000	0.000
			Max. Compression	2	-1.008	0.000	0.000
			Max. Mx	14	0.221	0.006	0.000
			Max. My	5	0.096	0.000	0.000
			Max. Vy	14	-0.006	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Top Girt	Max Tension	6	1.638	0.000	0.000
			Max. Compression	12	-1.612	0.000	0.000
			Max. Mx	14	0.013	0.005	0.000
			Max. My	5	-0.032	0.000	0.000
			Max. Vy	14	-0.006	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Bottom Girt	Max Tension	8	1.970	0.000	0.000
			Max. Compression	2	-1.983	0.000	0.000
			Max. Mx	14	0.048	0.006	0.000
			Max. My	5	0.342	0.000	0.000
			Max. Vy	14	0.006	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
T4	90 - 70	Leg	Max Tension	12	111.280	1.971	-0.101
			Max. Compression	2	-119.012	-0.340	0.009
			Max. Mx	6	-118.990	-2.071	0.116
			Max. My	3	-3.564	-0.033	-1.784
			Max. Vy	2	-3.462	-0.340	0.009
			Max. Vx	3	2.864	0.015	0.262
		Diagonal	Max Tension	5	6.030	-0.004	0.000
			Max. Compression	5	-6.062	0.000	0.000
			Max. Mx	6	2.131	-0.006	0.002
			Max. My	3	-3.798	0.002	0.005
			Max. Vy	23	0.006	-0.005	-0.001
			Max. Vx	3	-0.002	0.002	0.005
		Secondary Horizontal	Max Tension	5	2.598	0.000	0.000
			Max. Compression	4	-2.551	-0.004	-0.004
			Max. Mx	10	-1.050	-0.010	-0.004
			Max. My	3	0.083	-0.009	-0.005
			Max. Vy	26	0.009	-0.006	-0.000
			Max. Vx	3	-0.002	-0.009	-0.005
		Top Girt	Max Tension	6	1.584	0.000	0.000
			Max. Compression	12	-1.469	0.000	0.000
			Max. Mx	14	0.013	0.009	0.000
			Max. My	5	-0.306	0.000	0.000
			Max. Vy	14	-0.009	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Bottom Girt	Max Tension	8	2.254	0.000	0.000
			Max. Compression	2	-2.508	0.000	0.000
			Max. Mx	14	0.049	0.011	0.000
			Max. My	5	0.576	0.000	0.000
			Max. Vy	14	-0.010	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
T5	70 - 52.6146	Leg	Max Tension	12	145.982	-0.148	0.003
			Max. Compression	2	-155.542	0.071	-0.001
			Max. Mx	2	-119.032	3.132	-0.071
			Max. My	3	-4.987	0.038	-2.606
			Max. Vy	2	-3.475	3.132	-0.071
			Max. Vx	3	2.870	0.038	-2.606
		Diagonal	Max Tension	5	5.075	0.000	0.000
			Max. Compression	5	-5.508	0.000	0.000
			Max. Mx	7	2.671	-0.006	-0.000
			Max. My	5	-5.487	0.001	0.004
			Max. Vy	23	0.006	-0.004	-0.000
			Max. Vx	5	-0.002	0.001	0.004
		Horizontal	Max Tension	8	2.008	0.000	0.000
			Max. Compression	2	-1.803	0.000	0.000
			Max. Mx	14	0.142	0.011	0.000
			Max. My	5	0.048	0.000	0.000
			Max. Vy	14	-0.009	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Top Girt	Max Tension	6	1.775	0.000	0.000
			Max. Compression	4	-1.520	0.000	0.000
			Max. Mx	14	0.037	0.011	0.000
			Max. My	5	-0.489	0.000	0.000
			Max. Vy	14	-0.010	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
T6	52.6146 - 50	Leg	Max Tension	12	153.151	-0.248	-0.033
			Max. Compression	2	-163.000	2.653	-0.027
			Max. Mx	2	-163.000	2.653	-0.027
			Max. My	3	-5.586	0.070	-1.608
			Max. Vy	6	-4.121	2.642	-0.062
			Max. Vx	3	2.797	0.070	-1.608
		Diagonal	Max Tension	5	3.754	0.000	0.000
			Max. Compression	5	-3.963	0.000	0.000
			Max. Mx	2	3.081	-0.005	-0.000
			Max. My	10	-2.956	0.001	-0.001
			Max. Vy	15	0.006	-0.004	0.000
			Max. Vx	10	0.000	0.000	0.000
		Horizontal	Max Tension	8	1.124	0.000	0.000
			Max. Compression	2	-0.967	0.000	0.000
			Max. Mx	14	0.137	0.011	0.000
			Max. My	5	0.071	0.000	0.000
			Max. Vy	14	-0.009	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Bottom Girt	Max Tension	8	1.606	0.000	0.000
			Max. Compression	2	-1.482	0.000	0.000
			Max. Mx	14	0.045	0.014	0.000
			Max. My	5	-0.176	0.000	0.000
			Max. Vy	14	-0.011	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
T7	50 - 40	Leg	Max Tension	12	147.128	-2.471	0.078
			Max. Compression	2	-156.151	6.734	0.005
			Max. Mx	12	146.846	-7.140	0.083
			Max. My	13	-5.367	-0.204	12.074
			Max. Vy	4	0.544	-7.129	-0.044
			Max. Vx	11	1.127	-0.197	-12.027
		Diagonal	Max Tension	5	5.254	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	5	-5.751	0.000	0.000
			Max. Mx	12	0.257	0.111	-0.017
			Max. My	5	-1.628	0.097	-0.027
			Max. Vy	13	-0.023	0.097	-0.023
			Max. Vx	5	0.005	0.096	-0.027
T8	40 - 20	Leg	Max Tension	12	151.141	-6.613	0.036
			Max. Compression	2	-163.379	6.027	-0.005
			Max. Mx	12	150.116	-7.140	0.083
			Max. My	13	-6.271	-0.204	12.074
			Max. Vy	17	0.162	-2.798	0.004
			Max. Vx	13	0.672	-0.204	12.074
		Diagonal	Max Tension	3	1.834	0.000	0.000
			Max. Compression	4	-1.988	0.000	0.000
			Max. Mx	6	1.025	0.104	-0.007
			Max. My	4	-0.137	0.090	-0.010
			Max. Vy	6	-0.024	0.104	-0.007
			Max. Vx	4	0.002	0.000	0.000
T9	20 - 0	Leg	Max Tension	12	154.832	-5.475	0.035
			Max. Compression	2	-170.516	0.000	0.000
			Max. Mx	2	-167.418	6.027	-0.005
			Max. My	13	-7.650	-0.226	7.946
			Max. Vy	4	-0.628	-5.467	-0.015
			Max. Vx	13	0.867	-0.226	7.946
		Diagonal	Max Tension	4	2.931	0.000	0.000
			Max. Compression	10	-3.409	0.000	0.000
			Max. Mx	2	1.021	0.057	-0.004
			Max. My	3	-2.319	-0.017	-0.008
			Max. Vy	25	0.022	0.042	0.006
			Max. Vx	23	-0.002	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	10	174.604	11.501	-6.520
	Max. H_x	10	174.604	11.501	-6.520
	Max. H_z	4	-157.669	-10.378	5.832
	Min. Vert	4	-157.669	-10.378	5.832
	Min. H_x	4	-157.669	-10.378	5.832
	Min. H_z	10	174.604	11.501	-6.520
Leg B	Max. Vert	6	174.750	-11.508	-6.540
	Max. H_x	12	-158.035	10.369	5.861
	Max. H_z	12	-158.035	10.369	5.861
	Min. Vert	12	-158.035	10.369	5.861
	Min. H_x	6	174.750	-11.508	-6.540
	Min. H_z	6	174.750	-11.508	-6.540
Leg A	Max. Vert	2	175.071	0.025	13.245
	Max. H_x	5	8.728	1.166	0.650
	Max. H_z	2	175.071	0.025	13.245
	Min. Vert	8	-157.012	-0.020	-11.867
	Min. H_x	11	8.118	-1.165	0.610
	Min. H_z	8	-157.012	-0.020	-11.867

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	23.894	0.000	0.000	-1.260	1.562	0.000
Dead+Wind 0 deg - No Ice	23.894	0.013	-17.486	-1447.181	0.542	0.507
Dead+Wind 30 deg - No Ice	23.894	8.675	-14.928	-1243.183	-722.594	1.780
Dead+Wind 60 deg - No Ice	23.894	14.894	-8.582	-716.642	-1242.588	2.334
Dead+Wind 90 deg - No Ice	23.894	17.257	-0.048	-6.612	-1436.189	2.578
Dead+Wind 120 deg - No Ice	23.894	15.154	8.713	718.564	-1252.987	1.725
Dead+Wind 150 deg - No Ice	23.894	8.632	14.918	1240.028	-718.256	0.968
Dead+Wind 180 deg - No Ice	23.894	-0.004	17.149	1428.740	1.519	-0.280
Dead+Wind 210 deg - No Ice	23.894	-8.630	14.890	1235.971	720.160	-1.507
Dead+Wind 240 deg - No Ice	23.894	-15.137	8.694	715.174	1253.491	-2.096
Dead+Wind 270 deg - No Ice	23.894	-17.251	0.004	-1.324	1438.539	-2.424
Dead+Wind 300 deg - No Ice	23.894	-14.903	-8.557	-714.626	1247.412	-1.957
Dead+Wind 330 deg - No Ice	23.894	-8.642	-14.950	-1246.598	722.698	-0.819
Dead+Ice+Temp	47.011	0.000	0.000	-0.292	4.999	0.000
Dead+Wind 0 deg+Ice+Temp	47.011	0.004	-5.908	-468.468	4.739	0.058
Dead+Wind 30 deg+Ice+Temp	47.011	2.847	-4.910	ö -2	-223.107	0.441
Dead+Wind 60 deg+Ice+Temp	47.011	4.847	-2.797	-224.652	-384.304	0.652
Dead+Wind 90 deg+Ice+Temp	47.011	5.670	-0.012	-1.565	-448.768	0.761
Dead+Wind 120 deg+Ice+Temp	47.011	5.116	2.946	233.012	-400.584	0.574
Dead+Wind 150 deg+Ice+Temp	47.011	2.835	4.906	392.097	-221.985	0.338
Dead+Wind 180 deg+Ice+Temp	47.011	-0.002	5.588	448.092	5.186	-0.023
Dead+Wind 210 deg+Ice+Temp	47.011	-2.837	4.902	391.293	232.069	-0.382
Dead+Wind 240 deg+Ice+Temp	47.011	-5.114	2.945	232.441	410.269	-0.602
Dead+Wind 270 deg+Ice+Temp	47.011	-5.669	0.003	-0.149	458.756	-0.726
Dead+Wind 300 deg+Ice+Temp	47.011	-4.847	-2.789	-224.004	394.738	-0.609
Dead+Wind 330 deg+Ice+Temp	47.011	-2.837	-4.914	-393.601	232.395	-0.303
Dead+Wind 0 deg - Service	23.894	0.005	-6.050	-501.655	1.219	0.174
Dead+Wind 30 deg - Service	23.894	3.002	-5.165	-431.055	-249.025	0.607
Dead+Wind 60 deg - Service	23.894	5.154	-2.969	-248.831	-428.976	0.807
Dead+Wind 90 deg - Service	23.894	5.971	-0.016	-3.113	-495.983	0.901
Dead+Wind 120 deg - Service	23.894	5.243	3.015	247.841	-432.591	0.599
Dead+Wind 150 deg - Service	23.894	2.987	5.162	428.294	-247.540	0.329
Dead+Wind 180 deg - Service	23.894	-0.001	5.934	493.596	1.556	-0.099
Dead+Wind 210 deg - Service	23.894	-2.986	5.152	426.889	250.259	-0.516
Dead+Wind 240 deg - Service	23.894	-5.238	3.008	246.668	434.826	-0.727
Dead+Wind 270 deg - Service	23.894	-5.969	0.002	-1.282	498.857	-0.846
Dead+Wind 300 deg - Service	23.894	-5.157	-2.961	-248.133	432.706	-0.676
Dead+Wind 330 deg - Service	23.894	-2.990	-5.173	-432.236	251.122	-0.275

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-23.894	0.000	0.000	23.894	0.000	0.000%
2	0.013	-23.894	-17.486	-0.013	23.894	17.486	0.000%
3	8.675	-23.894	-14.928	-8.675	23.894	14.928	0.000%
4	14.894	-23.894	-8.582	-14.894	23.894	8.582	0.000%
5	17.257	-23.894	-0.048	-17.257	23.894	0.048	0.000%
6	15.154	-23.894	8.713	-15.154	23.894	-8.713	0.000%
7	8.632	-23.894	14.918	-8.632	23.894	-14.918	0.000%
8	-0.004	-23.894	17.149	0.004	23.894	-17.149	0.000%
9	-8.630	-23.894	14.889	8.630	23.894	-14.890	0.000%
10	-15.137	-23.894	8.694	15.137	23.894	-8.694	0.000%
11	-17.251	-23.894	0.004	17.251	23.894	-0.004	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
12	-14.903	-23.894	-8.557	14.903	23.894	8.557	0.000%
13	-8.642	-23.894	-14.950	8.642	23.894	14.950	0.000%
14	0.000	-47.011	0.000	0.000	47.011	0.000	0.000%
15	0.004	-47.011	-5.908	-0.004	47.011	5.908	0.000%
16	2.847	-47.011	-4.910	-2.847	47.011	4.910	0.000%
17	4.847	-47.011	-2.797	-4.847	47.011	2.797	0.000%
18	5.670	-47.011	-0.012	-5.670	47.011	0.012	0.000%
19	5.116	-47.011	2.946	-5.116	47.011	-2.946	0.000%
20	2.835	-47.011	4.906	-2.835	47.011	-4.906	0.000%
21	-0.002	-47.011	5.588	0.002	47.011	-5.588	0.000%
22	-2.837	-47.011	4.902	2.837	47.011	-4.902	0.000%
23	-5.114	-47.011	2.945	5.114	47.011	-2.945	0.000%
24	-5.669	-47.011	0.003	5.669	47.011	-0.003	0.000%
25	-4.847	-47.011	-2.789	4.847	47.011	2.789	0.000%
26	-2.837	-47.011	-4.914	2.837	47.011	4.914	0.000%
27	0.005	-23.894	-6.050	-0.005	23.894	6.050	0.000%
28	3.002	-23.894	-5.165	-3.002	23.894	5.165	0.000%
29	5.154	-23.894	-2.969	-5.154	23.894	2.969	0.000%
30	5.971	-23.894	-0.016	-5.971	23.894	0.016	0.000%
31	5.243	-23.894	3.015	-5.243	23.894	-3.015	0.000%
32	2.987	-23.894	5.162	-2.987	23.894	-5.162	0.000%
33	-0.001	-23.894	5.934	0.001	23.894	-5.934	0.000%
34	-2.986	-23.894	5.152	2.986	23.894	-5.152	0.000%
35	-5.238	-23.894	3.008	5.238	23.894	-3.008	0.000%
36	-5.969	-23.894	0.002	5.969	23.894	-0.002	0.000%
37	-5.157	-23.894	-2.961	5.157	23.894	2.961	0.000%
38	-2.990	-23.894	-5.173	2.990	23.894	5.173	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000687
3	Yes	4	0.00000001	0.00001214
4	Yes	4	0.00000001	0.00001084
5	Yes	4	0.00000001	0.00001038
6	Yes	4	0.00000001	0.00000807
7	Yes	4	0.00000001	0.00001008
8	Yes	4	0.00000001	0.00000868
9	Yes	4	0.00000001	0.00001072
10	Yes	4	0.00000001	0.00000894
11	Yes	4	0.00000001	0.00000993
12	Yes	4	0.00000001	0.00001019
13	Yes	4	0.00000001	0.00001044
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00005240
16	Yes	4	0.00000001	0.00005332
17	Yes	4	0.00000001	0.00005432
18	Yes	4	0.00000001	0.00005343
19	Yes	4	0.00000001	0.00005251
20	Yes	4	0.00000001	0.00005337
21	Yes	4	0.00000001	0.00005425
22	Yes	4	0.00000001	0.00005332
23	Yes	4	0.00000001	0.00005252
24	Yes	4	0.00000001	0.00005346

25	Yes	4	0.00000001	0.00005437
26	Yes	4	0.00000001	0.00005340
27	Yes	4	0.00000001	0.00000910
28	Yes	4	0.00000001	0.00000949
29	Yes	4	0.00000001	0.00000984
30	Yes	4	0.00000001	0.00000951
31	Yes	4	0.00000001	0.00000912
32	Yes	4	0.00000001	0.00000949
33	Yes	4	0.00000001	0.00000982
34	Yes	4	0.00000001	0.00000948
35	Yes	4	0.00000001	0.00000913
36	Yes	4	0.00000001	0.00000950
37	Yes	4	0.00000001	0.00000983
38	Yes	4	0.00000001	0.00000949

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 117.667	7.976	38	0.632	0.115
T2	117.667 - 110	7.663	38	0.631	0.110
T3	110 - 90	6.626	27	0.619	0.085
T4	90 - 70	4.132	27	0.515	0.052
T5	70 - 52.6146	2.219	27	0.356	0.032
T6	52.6146 - 50	1.062	27	0.238	0.016
T7	50 - 40	0.932	27	0.219	0.014
T8	40 - 20	0.542	27	0.155	0.009
T9	20 - 0	0.113	27	0.055	0.003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
122.000	Dragonwave A-ANT-23G-2-C	38	7.976	0.632	0.115	82880
120.000	LLPX310R w/ Mount Pipe	38	7.976	0.632	0.115	82880
110.000	(2) 7770.00 w/ Mount Pipe	27	6.626	0.619	0.085	20759
100.000	APXV18-206517S-C w/ Mount Pipe	27	5.322	0.578	0.063	10362
40.000	BULLET III	27	0.542	0.155	0.009	9988

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 117.667	23.022	12	1.824	0.332
T2	117.667 - 110	22.118	12	1.823	0.317
T3	110 - 90	19.119	12	1.787	0.244
T4	90 - 70	11.919	12	1.485	0.150
T5	70 - 52.6146	6.398	12	1.026	0.093

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T6	52.6146 - 50	3.060	2	0.688	0.046
T7	50 - 40	2.685	2	0.631	0.041
T8	40 - 20	1.562	2	0.447	0.024
T9	20 - 0	0.326	2	0.157	0.008

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
122.000	Dragonwave A-ANT-23G-2-C	12	23.022	1.824	0.332	31739
120.000	LLPX310R w/ Mount Pipe	12	23.022	1.824	0.332	31739
110.000	(2) 7770.00 w/ Mount Pipe	12	19.119	1.787	0.244	7316
100.000	APXV18-206517S-C w/ Mount Pipe	12	15.353	1.669	0.181	3604
40.000	BULLET III	2	1.562	0.447	0.024	3439

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
T2	117.667	Leg	A325N	0.625	4	3.925	12.885	0.305 ✓	1.333	Bolt DS
T3	110	Leg	A325N	0.625	5	13.909	12.885	1.079 ✓	1.333	Bolt DS
T4	90	Leg	A325N	0.750	5	23.802	18.555	1.283 ✓	1.333	Bolt DS
T6	52.6146	Leg	A325N	1.000	6	25.525	34.532	0.739 ✓	1.333	Bolt Tension
T7	50	Leg	A325N	1.000	6	24.521	34.557	0.710 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.000	1	5.254	7.748	0.678 ✓	1.333	Member Block Shear
T8	40	Leg	A325N	1.000	6	25.190	34.557	0.729 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.000	1	1.835	7.748	0.237 ✓	1.333	Member Block Shear
T9	20	Leg	A687	1.000	6	25.805	38.877	0.664 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.000	1	2.931	7.748	0.378 ✓	1.333	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	120 - 117.667	1 1/2	2.333	2.333	74.7 K=1.00	20.058	1.767	-2.276	35.444	0.064* ✔
T2	117.667 - 110	1 1/2	7.667	2.333	74.7 K=1.00	20.058	1.767	-13.435	35.444	0.379 ✔
T3	110 - 90	1 3/4	20.002	2.396	65.7 K=1.00	21.717	2.405	-65.761	52.236	1.259 ✔
T4	90 - 70	2	20.002	1.196	28.7 K=1.00	27.313	3.142	-114.149	85.806	1.330 ✔
T5	70 - 52.6146	2 1/2	17.387	2.341	44.9 K=1.00	25.119	4.909	-155.542	123.300	1.261 ✔
T6	52.6146 - 50	2 1/2	2.615	2.031	39.0 K=1.00	25.971	4.909	-160.490	127.486	1.259 ✔
T7	50 - 40	Pirod 105245	10.017	10.017	37.8 K=1.00	26.132	5.301	-156.151	138.539	1.127 ✔
T8	40 - 20	Pirod 105217	20.033	10.017	37.8 K=1.00	26.132	5.301	-163.379	138.539	1.179 ✔
T9	20 - 0	B+T_BU876312_Pirod 105217 w/ (2) 1.25SR	20.033	10.017	37.8 K=1.55	26.131	7.753	-170.516	202.600	0.842 ✔

* DL controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V K	Allow. V_a K	Stress Ratio
T7	50 - 40	0.5	1.471	120.0	10.366	0.196	1.128	2.278	0.495 ✔
T8	40 - 20	0.5	1.471	120.0	10.279	0.196	0.673	2.259	0.298 ✔
T9	20 - 0	0.5	1.455	118.8	10.459	0.196	0.868	2.298	0.378 ✔

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	120 - 117.667	3/4	2.917	2.813	126.0 K=0.70	9.406	0.442	-3.114	4.155	0.749 ✔
T2	117.667 - 110	5/8	4.206	2.028	140.2 K=0.90	7.599	0.307	-2.735	2.331	1.173 ✔
T3	110 - 90	3/4	4.628	2.246	129.4 K=0.90	8.920	0.442	-4.281	3.941	1.086 ✔
T4	90 - 70	7/8	5.051	2.448	120.9 K=0.90	10.224	0.601	-6.062	6.148	0.986 ✔
T5	70 - 52.6146	7/8	5.122	2.462	121.6	10.105	0.601	-5.508	6.076	0.907

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
					K=0.90					✔
T6	52.6146 - 50	7/8	5.365	2.582	127.5	9.191	0.601	-3.963	5.527	0.717
					K=0.90					✔
T7	50 - 40	L2 1/2x2 1/2x3/16	11.416	4.982	120.8	10.170	0.902	-5.751	9.173	0.627
					K=1.00					✔
T8	40 - 20	L2 1/2x2 1/2x3/16	11.930	5.383	130.5	8.770	0.902	-1.988	7.910	0.251
					K=1.00					✔
T9	20 - 0	L2 1/2x2 1/2x3/16	13.796	6.327	153.4	6.347	0.902	-3.409	5.725	0.595
					K=1.00					✔

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T2	117.667 - 110	3/4	3.500	3.375	151.2	6.532	0.442	-0.173	2.886	0.060
					K=0.70					✔
T3	110 - 90	3/4	3.870	3.724	166.8	5.365	0.442	-1.008	2.370	0.425
					K=0.70					✔
T5	70 - 52.6146	7/8	4.585	4.377	168.1	5.286	0.601	-1.803	3.179	0.567
					K=0.70					✔
T6	52.6146 - 50	7/8	4.944	4.736	181.9	4.515	0.601	-0.967	2.715	0.356
					K=0.70					✔

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T4	90 - 70	1 1/4	4.458	4.291	115.3	11.225	1.227	-2.511	13.775	0.182
					K=0.70					✔

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	120 - 117.667	5x3/8	3.500	3.375	374.1	1.067	1.875	-1.996	2.000	0.998
					K=1.00					✔
		KL/R > 200 (C) - 4								
T2	117.667 - 110	7/8	3.500	3.375	129.6	8.891	0.601	-0.170	5.346	0.032
					K=0.70					✔
T3	110 - 90	3/4	3.510	3.365	150.7	6.573	0.442	-1.612	2.904	0.555
					K=0.70					✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T4	90 - 70	1	4.013	3.846	129.2 K=0.70	8.943	0.785	-1.469	7.024	0.209 ✔
T5	70 - 52.6146	1	4.526	4.317	145.1 K=0.70	7.097	0.785	-1.520	5.574	0.273 ✔

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T2	117.667 - 110	7/8	3.500	3.375	129.6 K=0.70	8.891	0.601	-0.943	5.346	0.176 ✔
T3	110 - 90	3/4	3.990	3.844	172.2 K=0.70	5.036	0.442	-1.983	2.225	0.891 ✔
T4	90 - 70	1	4.487	4.321	145.2 K=0.70	7.085	0.785	-2.508	5.565	0.451 ✔
T6	52.6146 - 50	1	4.988	4.779	160.6 K=0.70	5.791	0.785	-1.482	4.548	0.326 ✔

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	120 - 117.667	1 1/2	2.333	2.333	74.7	30.000	1.767	0.126	53.014	0.002 ✔
T2	117.667 - 110	1 1/2	7.667	0.333	10.7	32.500	1.234	13.022	40.101	0.325 # ✔
T3	110 - 90	1 3/4	20.002	0.417	11.4	32.500	1.794	63.704	58.311	1.092 # ✔
T4	90 - 70	2	20.002	0.500	12.0	30.000	3.142	111.280	94.248	1.181 # ✔
T5	70 - 52.6146	2 1/2	17.387	2.341	44.9	30.000	4.909	145.982	147.262	0.991 ✔
T6	52.6146 - 50	2 1/2	2.615	0.583	11.2	30.000	4.909	153.151	147.262	1.040 ✔
T7	50 - 40	Pirod 105245	10.017	10.017	37.8	30.000	5.301	147.128	159.043	0.925 ✔
T8	40 - 20	Pirod 105217	20.033	10.017	37.8	30.000	5.301	151.141	159.043	0.950 ✔
T9	20 - 0	B+T_BU876312_Pirod 105217 w/ (2) 1.25SR	20.033	10.017	31.3	30.000	7.753	154.832	232.599	0.666 ✔

[#] Based on net area of leg in section below

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V K	Allow. V_a K	Stress Ratio
T7	50 - 40	0.5	1.471	120.0	10.366	0.196	1.128	2.278	0.495 ✓
T8	40 - 20	0.5	1.471	120.0	10.279	0.196	0.673	2.259	0.298 ✓
T9	20 - 0	0.5	1.455	118.8	10.459	0.196	0.868	2.298	0.378 ✓

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	120 - 117.667	3/4	2.917	2.813	180.0	30.000	0.442	3.065	13.254	0.231 ✓
T2	117.667 - 110	5/8	4.206	2.028	155.8	30.000	0.307	2.685	9.204	0.292 ✓
T3	110 - 90	3/4	4.628	2.246	143.8	30.000	0.442	4.294	13.254	0.324 ✓
T4	90 - 70	7/8	5.051	2.448	134.3	30.000	0.601	6.030	18.040	0.334 ✓
T5	70 - 52.6146	7/8	5.122	2.462	135.1	30.000	0.601	5.075	18.040	0.281 ✓
T6	52.6146 - 50	7/8	5.365	2.582	141.6	30.000	0.601	3.754	18.040	0.208 ✓
T7	50 - 40	L2 1/2x2 1/2x3/16	11.416	4.982	80.1	29.000	0.518	5.254	15.031	0.350 ✓
T8	40 - 20	L2 1/2x2 1/2x3/16	11.930	5.383	86.2	29.000	0.518	1.835	15.031	0.122 ✓
T9	20 - 0	L2 1/2x2 1/2x3/16	13.796	6.327	100.8	29.000	0.518	2.931	15.031	0.195 ✓

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T2	117.667 - 110	3/4	3.500	3.375	216.0	30.000	0.442	0.300	13.254	0.023 ✓
T3	110 - 90	3/4	3.870	3.724	238.3	30.000	0.442	1.221	13.254	0.092 ✓
T5	70 - 52.6146	7/8	4.585	4.377	240.1	30.000	0.601	2.008	18.040	0.111

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T6	52.6146 - 50	7/8	4.944	4.736	259.8	30.000	0.601	1.124	18.040	0.062 ✔

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T4	90 - 70	1 1/4	4.458	4.291	164.8	30.000	1.227	2.598	36.816	0.071 ✔

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	120 - 117.667	5x3/8	3.500	3.375	374.1	21.600	1.875	2.058	40.500	0.051 ✔
T2	117.667 - 110	7/8	3.500	3.375	185.1	30.000	0.601	0.230	18.040	0.013 ✔
T3	110 - 90	3/4	3.510	3.365	215.3	30.000	0.442	1.638	13.254	0.124 ✔
T4	90 - 70	1	4.013	3.846	184.6	30.000	0.785	1.584	23.562	0.067 ✔
T5	70 - 52.6146	1	4.526	4.317	207.2	30.000	0.785	1.775	23.562	0.075 ✔

Bottom Girt Design Data (Tension)

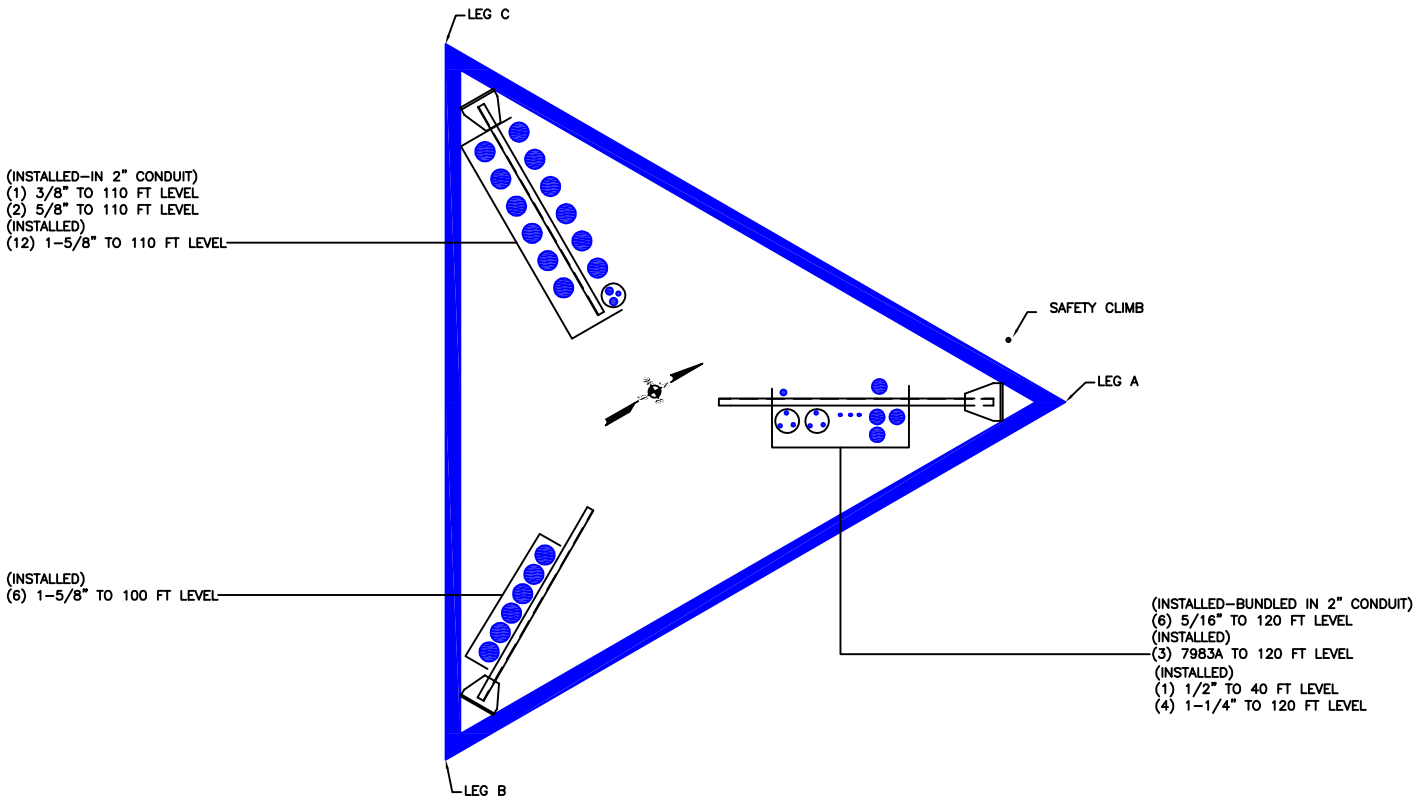
Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T2	117.667 - 110	7/8	3.500	3.375	185.1	30.000	0.601	0.912	18.040	0.051 ✔
T3	110 - 90	3/4	3.990	3.844	246.0	30.000	0.442	1.970	13.254	0.149 ✔
T4	90 - 70	1	4.487	4.321	207.4	30.000	0.785	2.254	23.562	0.096 ✔
T6	52.6146 - 50	1	4.988	4.779	229.4	30.000	0.785	1.606	23.562	0.068 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	120 - 117.667	Leg	1 1/2	2	-2.276	35.444	6.4	Pass
T2	117.667 - 110	Leg	1 1/2	14	-13.435	47.248	28.4	Pass
T3	110 - 90	Leg	1 3/4	43	-65.761	69.630	94.4	Pass
T4	90 - 70	Leg	2	108	-114.149	114.379	99.8	Pass
T5	70 - 52.6146	Leg	2 1/2	189	-155.542	164.359	94.6	Pass
T6	52.6146 - 50	Leg	2 1/2	243	-160.490	169.939	94.4	Pass
T7	50 - 40	Leg	Pirod 105245	256	-156.151	184.672	84.6	Pass
T8	40 - 20	Leg	Pirod 105217	265	-163.379	184.672	88.5	Pass
T9	20 - 0	Leg	B+T_BU876312_Pirod 105217 w/ (2) 1.25SR	280	-170.516	270.066	63.1	Pass
T1	120 - 117.667	Diagonal	3/4	8	-3.114	5.539	56.2	Pass
T2	117.667 - 110	Diagonal	5/8	23	-2.735	3.108	88.0	Pass
T3	110 - 90	Diagonal	3/4	52	-4.281	5.253	81.5	Pass
T4	90 - 70	Diagonal	7/8	116	-6.062	8.195	74.0	Pass
T5	70 - 52.6146	Diagonal	7/8	236	-5.508	8.099	68.0	Pass
T6	52.6146 - 50	Diagonal	7/8	249	-3.963	7.367	53.8	Pass
T7	50 - 40	Diagonal	L2 1/2x2 1/2x3/16	260	-5.751	12.228	47.0 50.9 (b)	Pass
T8	40 - 20	Diagonal	L2 1/2x2 1/2x3/16	273	-1.988	10.544	18.9	Pass
T9	20 - 0	Diagonal	L2 1/2x2 1/2x3/16	281	-3.409	7.632	44.7	Pass
T2	117.667 - 110	Horizontal	3/4	35	-0.173	3.847	4.5	Pass
T3	110 - 90	Horizontal	3/4	64	-1.008	3.160	31.9	Pass
T5	70 - 52.6146	Horizontal	7/8	234	-1.803	4.237	42.5	Pass
T6	52.6146 - 50	Horizontal	7/8	244	-0.967	3.619	26.7	Pass
T4	90 - 70	Secondary Horizontal	1 1/4	121	-2.511	18.362	13.7	Pass
T1	120 - 117.667	Top Girt	5x3/8	4	-1.996	2.667	74.9	Pass
T2	117.667 - 110	Top Girt	7/8	18	-0.170	7.127	2.4	Pass
T3	110 - 90	Top Girt	3/4	47	-1.612	3.871	41.7	Pass
T4	90 - 70	Top Girt	1	111	-1.469	9.363	15.7	Pass
T5	70 - 52.6146	Top Girt	1	191	-1.520	7.430	20.5	Pass
T2	117.667 - 110	Bottom Girt	7/8	21	-0.943	7.127	13.2	Pass
T3	110 - 90	Bottom Girt	3/4	48	-1.983	2.966	66.9	Pass
T4	90 - 70	Bottom Girt	1	112	-2.508	7.418	33.8	Pass
T6	52.6146 - 50	Bottom Girt	1	245	-1.482	6.063	24.4	Pass
						Summary		
						Leg (T4)	99.8	Pass
						Diagonal (T2)	88.0	Pass
						Horizontal (T5)	42.5	Pass
						Secondary Horizontal (T4)	13.7	Pass
						Top Girt (T1)	74.9	Pass
						Bottom Girt (T3)	66.9	Pass
						Bolt Checks	96.2	Pass
						RATING =	**99.8**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876312

APPENDIX C

ADDITIONAL CALCULATIONS

B+T GRP

PROJECT :	108127.001.01	ELEVATION :	0-20
CLIENT :	AT&T Mobility	DESIGN BY :	
BU NO. :	876312 DATE : 05-08-2016	REVIEW BY :	

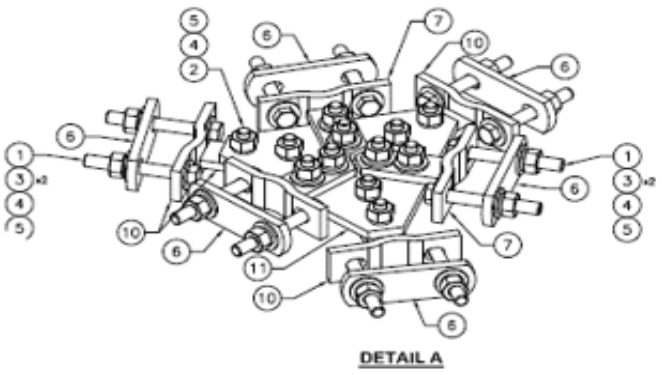
Flexural Buckling of Truss Leg, AISC Manual 14th Edition (AISC 360-10 E3)

Design Criteria

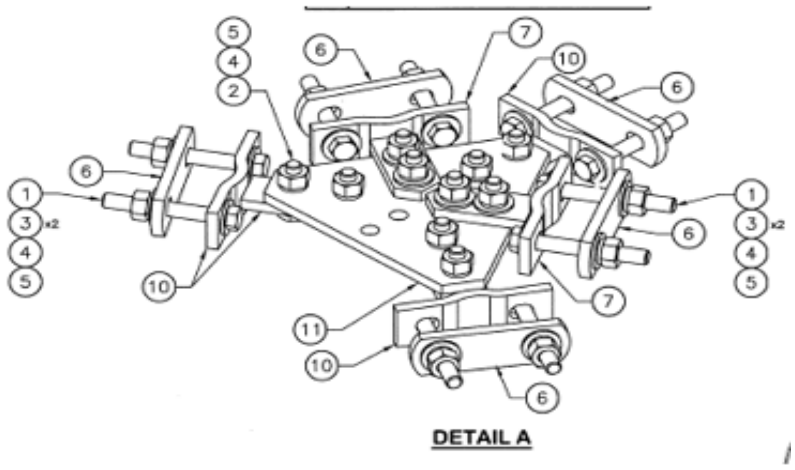
TIA Revision:	F		
Youngs Modulus,	E:	29000	ksi
Existing Rods:	Grade (Fy) :	50	ksi
Tension Load:		154.836	kips
Compression Load:		170.513	kips
Existing PiRod Leg Part Number:		105217	
Existing Tie Rod Diameter:		1.5	in
Diagonal Spacing:		10	ft

Existing Rods		
Qty:	3	
Diameter:	1.5	in
K:	1	ksi
Lu:	14.1875	in
Truss Leg Width:	12	in

New Rods		
Qty:	2	
Diameter:	1.25	in
K:	1	ksi
Lu:	20	in
Offset:	1.125	in



(3) Tie Rod Option

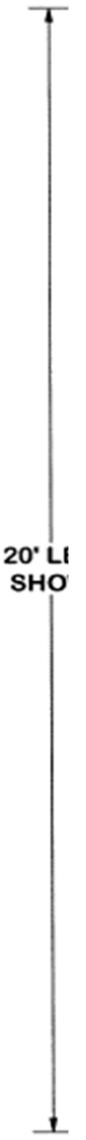


(2) Tie Rod Option

Tension Capacity:	**259**	kips
% Tension Capacity:	**59.9%**	**Pass**
Compression Capacity:	**193**	kips
% Compression Capacity:	**99.8%**	**Pass**

tnx Adjustments

Kx and Ky -Leg:	**1.549**	in
Equivalent Diameter:	**1.814**	in



Project No: 108127.001.01
PROJECT NAME Montowese Amodio Self Store, C

Rev F

PILE FOUNDATION CALCULATIONS

Reactions from TNX

Compression =	175.0	kips
Uplift =	158.0	kips

HP 10 x 42 Ple Capacity

Compression =	95.0	kips/pile
Tension =	40.0	kips/pile

Weight of Concrete Cap

Density =	150.0	pcf
Weight =	65.3	kips

Allowable Pile capacity

Number of piles =	6.0	
Compression =	285.0	kips
Tension =	120.0	kips

Foundation Result:

Compression =	**61.4%**
Tension =	**85.3%**

EBI Consulting
environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

AT&T Existing Facility

Site ID: CT2173

Hamden SE
2755 State Street
Hamden, CT 06517

August 22, 2016

EBI Project Number: 6216003646

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	5.91 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

August 22, 2016

AT&T Mobility – New England
Attn: Cameron Syme, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT2173 – Hamden SE**

EBI Consulting was directed to analyze the proposed AT&T facility located at **2755 State Street, Hamden, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **2755 State Street, Hamden, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 UMTS channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

7) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antennas used in this modeling are the **Powerwave 7770 and the CCI HPA-65R-BUU-H6** for transmission in the 700 MHz, 850 MHz and 1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerlines of the proposed antennas are **112 feet** above ground level (AGL) for **Sector A**, **112 feet** above ground level (AGL) for **Sector B** and **112 feet** above ground level (AGL) for Sector C.

10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculations were done with respect to uncontrolled / general public threshold limits.

AT&T Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	**112 feet**	Height (AGL):	**112 feet**	Height (AGL):	**112 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A1 MPE%	**0.89 %**	Antenna B1 MPE%	**0.89 %**	Antenna C1 MPE%	**0.89 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6
Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd
Height (AGL):	**112 feet**	Height (AGL):	**112 feet**	Height (AGL):	**112 feet**
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	5,462.56	ERP (W):	5,462.56	ERP (W):	5,462.56
Antenna A2 MPE%	**2.43 %**	Antenna B2 MPE%	**2.43 %**	Antenna C2 MPE%	**2.43 %**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 dBd	Gain:	11.4 dBd	Gain:	11.4 dBd
Height (AGL):	**112 feet**	Height (AGL):	**112 feet**	Height (AGL):	**112 feet**
Frequency Bands	850 MHz	Frequency Bands	850 MHz	Frequency Bands	850 MHz
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts
ERP (W):	828.23	ERP (W):	828.23	ERP (W):	828.23
Antenna A3 MPE%	**0.47 %**	Antenna B3 MPE%	**0.47 %**	Antenna C3 MPE%	**0.47 %**

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max per sector	**3.79 %**
MetroPCS	1.38 %
Clearwire	0.15 %
Sprint	0.59 %
Site Total MPE %:	**5.91 %**

AT&T Sector A Total:	3.79 %
AT&T Sector B Total:	3.79 %
AT&T Sector C Total:	3.79 %
Site Total:	5.91 %

AT&T _ Max Values Per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	112	2.65	850 MHz	567	0.47%
AT&T 1900 MHz (PCS) UMTS	2	656.33	112	4.20	1900 MHz (PCS)	1000	0.42%
AT&T 700 MHz LTE	2	940.05	112	6.02	700 MHz	467	1.29%
AT&T 1900 MHz (PCS) LTE	2	1,791.23	112	11.46	1900 MHz (PCS)	1000	1.15%
AT&T 850 MHz GSM	2	414.12	112	2.65	850 MHz	567	0.47%
						Total:	3.79%

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	3.79 %
Sector B:	3.79 %
Sector C:	3.79 %
AT&T Maximum Total (per sector):	3.79 %
Site Total:	5.91 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **5.91 %** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.