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

March 2, 2017

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 six (6) triplexers, three (3) RRUs, six (6) tower mounted switches, one (1) Raycap, two (2) DC trunks, and one (1) fiber cable.

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 06517

The Estate of Louis G. Amodio Sr.
Attn: Frank Amodio & Louis Amodio
500 Shuttle Meadow Avenue
New Britain, CT 06052
Hamden, CT 06518

Planning and Zoning Commission
Town of Hamden
2750 Dixwell Avenue

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

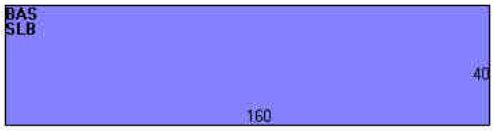
Building Attributes : Bldg 3 of 5	
Field	**Description**
STYLE	Self Storage
MODEL	Ind/Comm
Grade	C
Stories:	1
Occupancy	62
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip

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

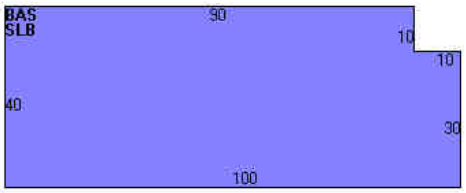
Building Attributes : Bldg 4 of 5	
Field	**Description**
STYLE	Self Storage
MODEL	Ind/Comm
Grade	C
Stories:	1
Occupancy	48
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior 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

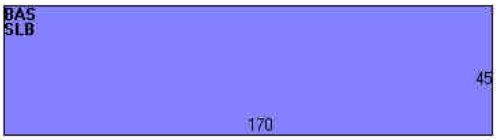
Year Built: 1980
Living Area: 7650
Building Percent Good: 123

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

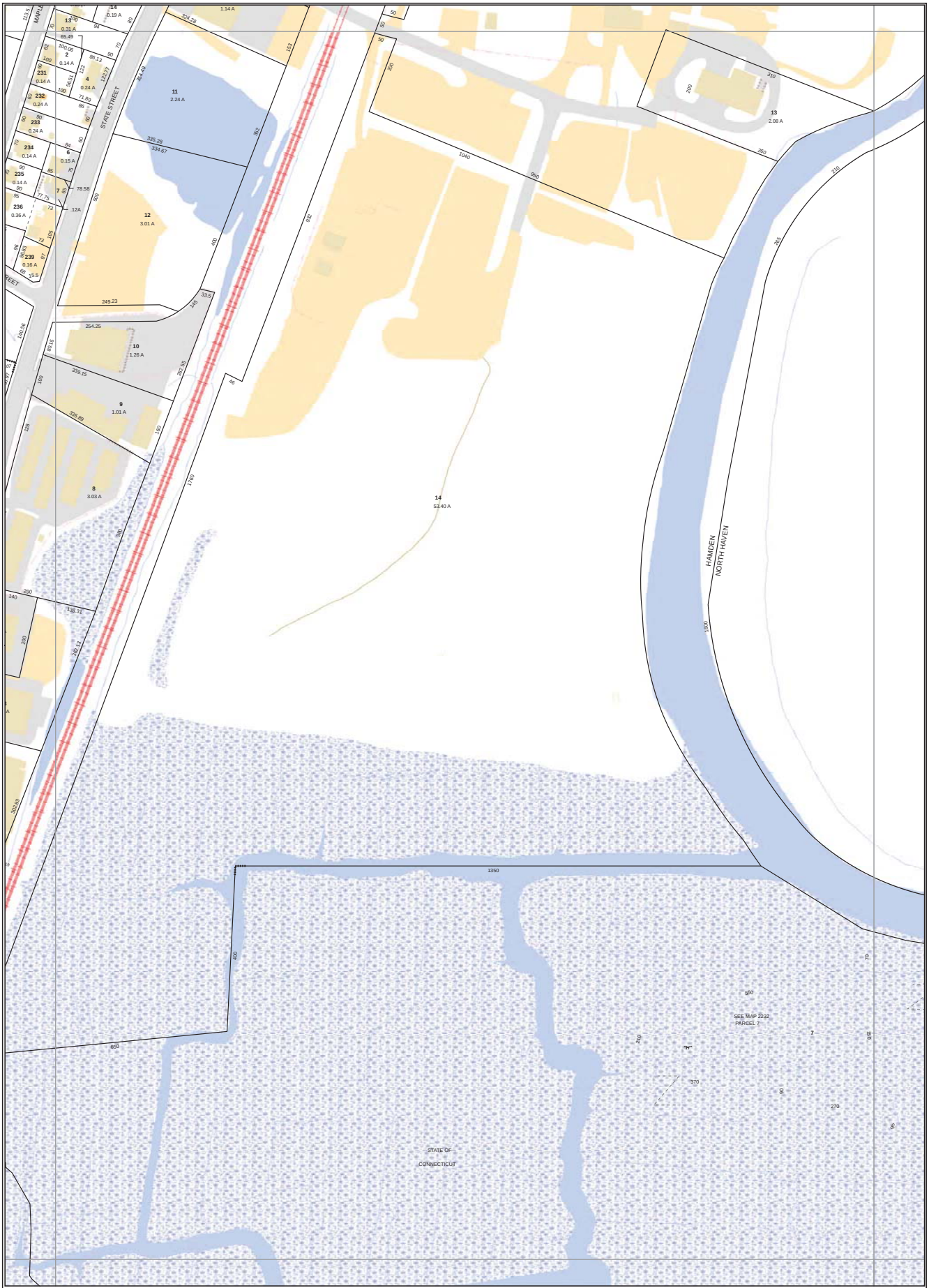
Outbuildings

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

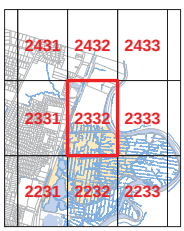
Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$1,071,300	$522,700	$1,594,000
2014	$1,071,300	$522,700	$1,594,000
2013	$1,071,300	$522,700	$1,594,000

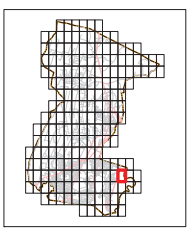
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$749,910	$365,890	$1,115,800
2014	$749,910	$365,890	$1,115,800
2013	$749,910	$365,890	$1,115,800



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 - 3C WCS
HAMDEN SE
CROWN CASTLE SITE NO.: 876312
2755 STATE STREET
HAMDEN, CT 06517

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE AND, 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.

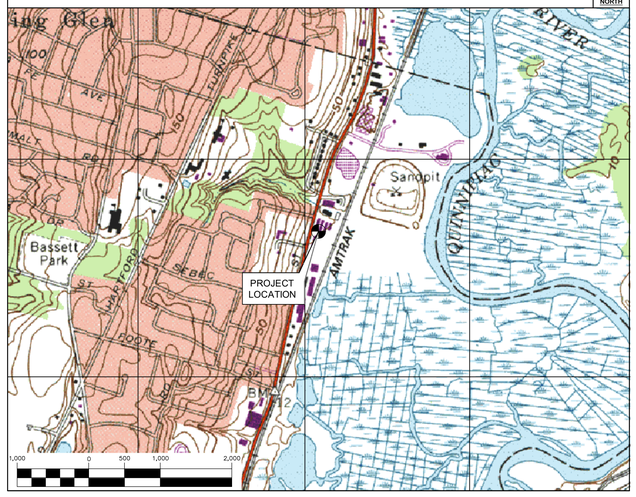
SITE DIRECTIONS

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 4 ANTENNA FOR PROPOSED 12 PORT ANTENNA, (1) PER SECTOR, TOTAL OF (3).
   - B. INSTALL PROPOSED LTE WCS RRUS-32, (1) PER SECTOR, TOTAL OF (3).
   - C. REMOVE (6) EXISTING DIPLEXERS WITHIN SHELTER AND (6) TMA'S ON TOWER.
   - D. INSTALL (12) PROPOSED TRIPLEXERS, (6) ON TOWER AND (6) WITHIN EXIST. EQUIPMENT SHELTER.
   - E. INSTALL (6) PROPOSED SMART BIAS TEEs, (3) ON TOWER AND (3) AT GROUND LEVEL.
   - F. INSTALL (1) PROPOSED TOWER MOUNTED SURGE ARRESTOR.
   - G. INSTALL (1) PROPOSED FIBER TRUNK AND (2) DC CONDUCTOR CABLES FROM GROUND EQUIPMENT TO NEW TOWER MOUNTED SURGE ARRESTOR.
   - H. REMOVE EXISTING DUS41 WITHIN LTE EQUIPMENT RACK AND REPLACE WITH PROPOSED 5216 RACK MOUNTED UNIT.

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	LTE SCHEMATIC DIAGRAM AND NOTES	0
E-2	LTE WIRING DIAGRAM	0
E-3	TYPICAL ELECTRICAL DETAILS	0

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	02/16/17	LGL	CAG	CONSTRUCTION DRAWINGS - 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 3C WCS
2755 STATE STREET
HAMDEN, CT 06517

DATE: 01/16/17
SCALE: AS NOTED
JOB NO. 16071.98

TITLE SHEET

T-1

Sheet No. 1 of 7

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2012 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2016 CT STATE BUILDING CODE AND AMENDMENTS.

1. DESIGN CRITERIA:

- WIND LOAD: PER TIA 222 G (ANTENNA MOUNTS): 95–115 MPH (3 SECOND GUST)
- RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)
- NOMINAL DESIGN SPEED (OTHER STRUCTURE): 97 MPH (Vasd) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7–10) PER 2012 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7–10 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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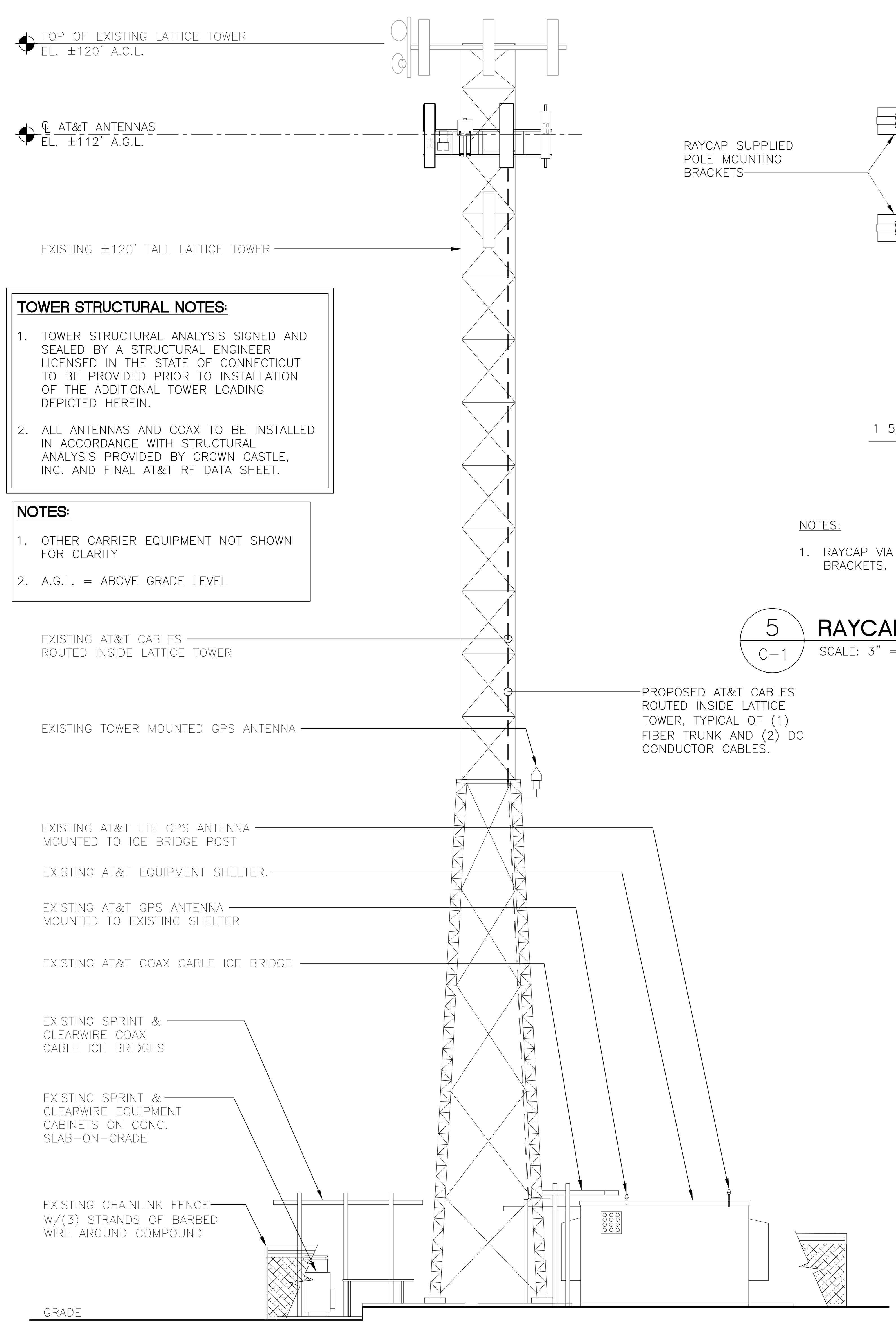
NOTES AND SPECIFICATIONS

N-1



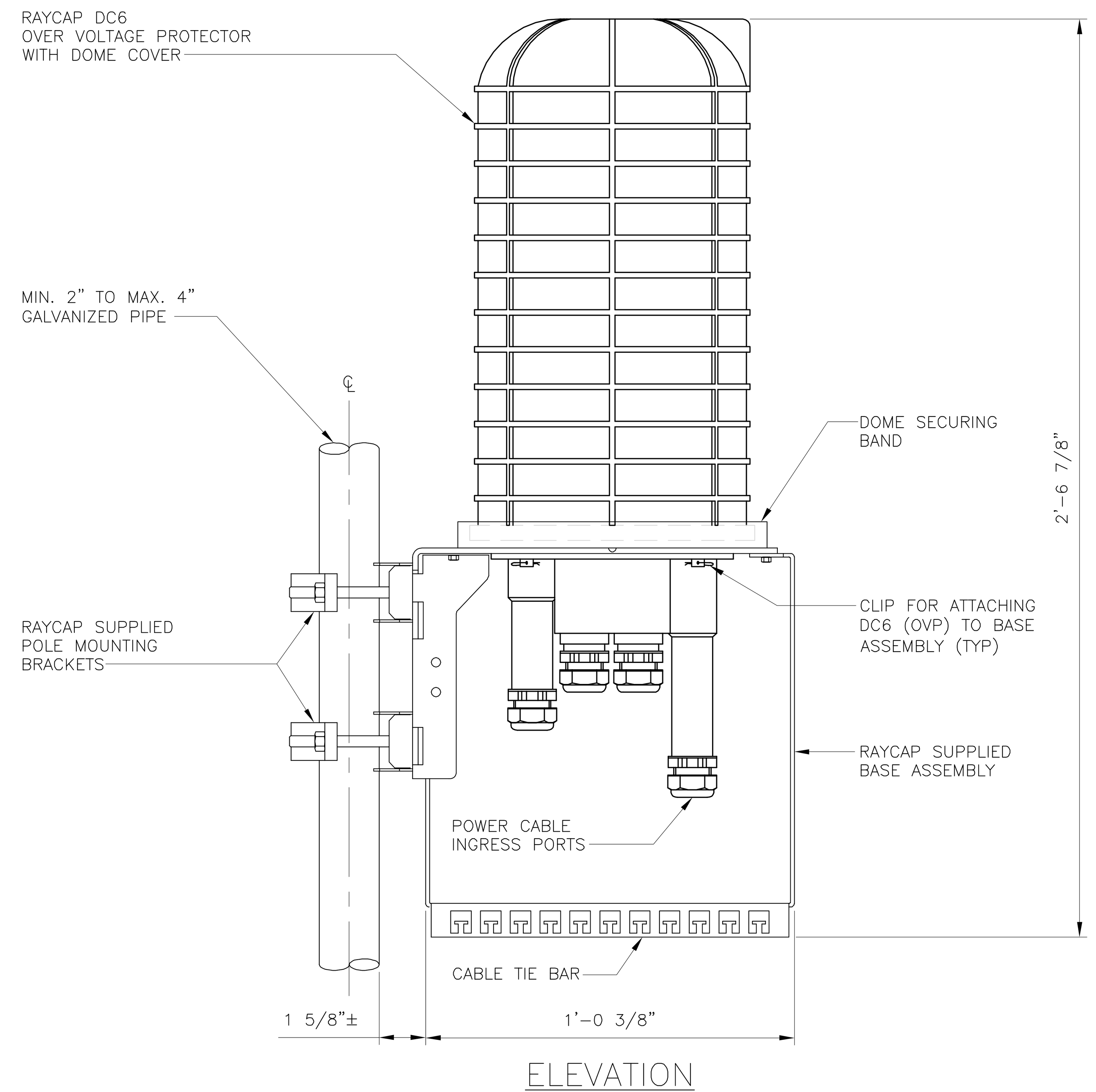
TOWER STRUCTURAL NOTES:

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'

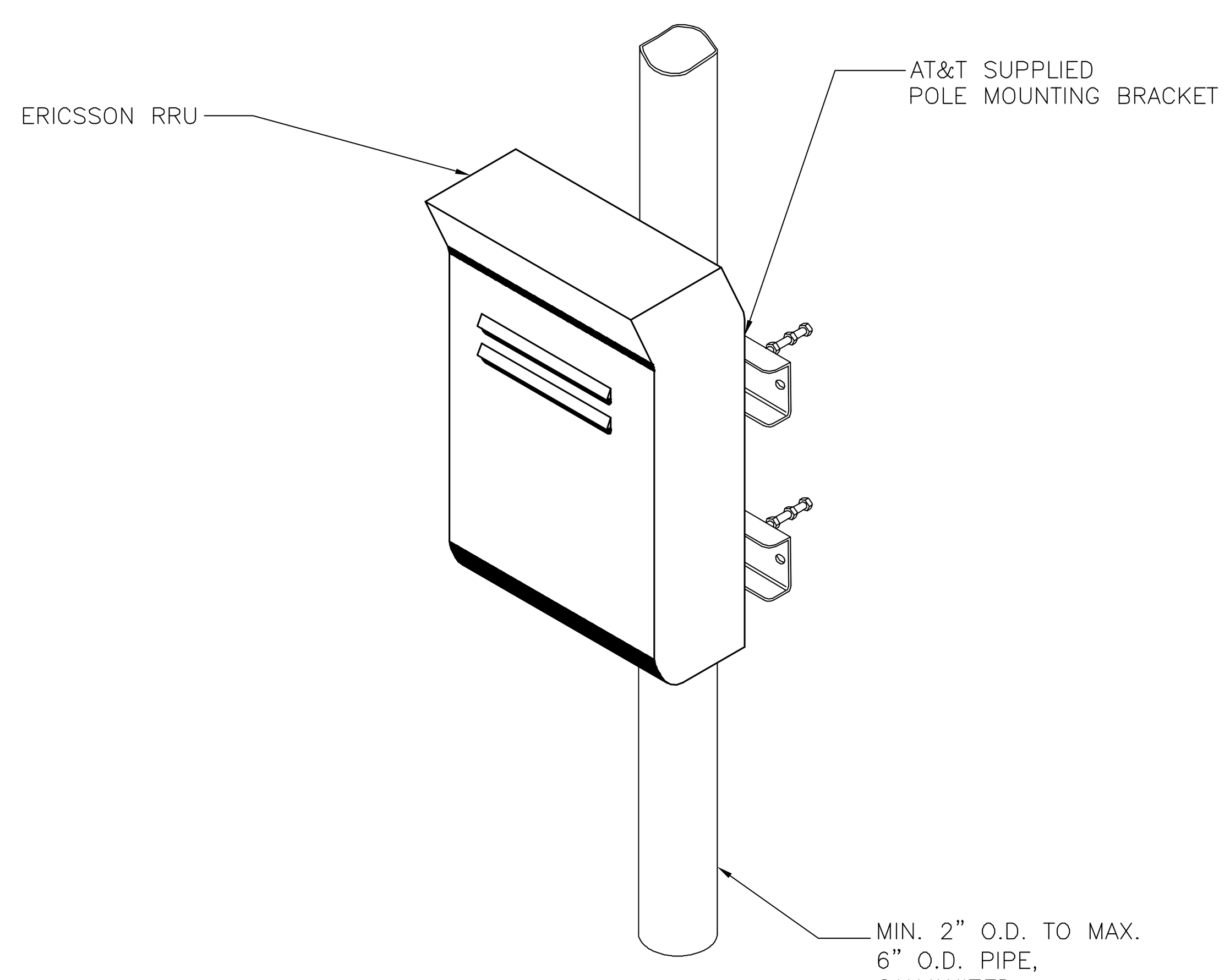


ELEVATION

NOTES:

1. RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

5 C-1 RAYCAP DC6 MOUNTING DETAIL
SCALE: 3" = 1'-0"

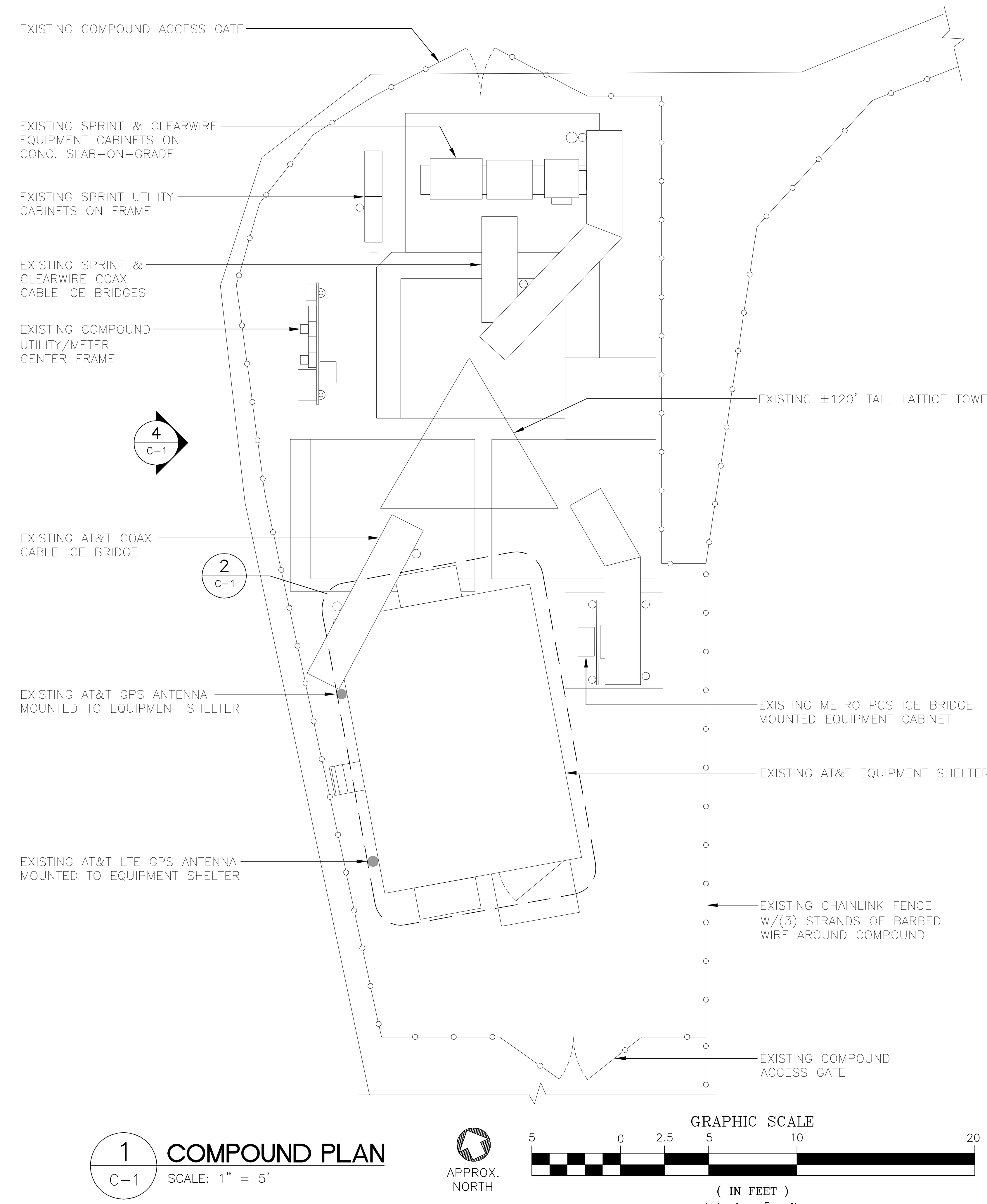


ISOMETRIC VIEW

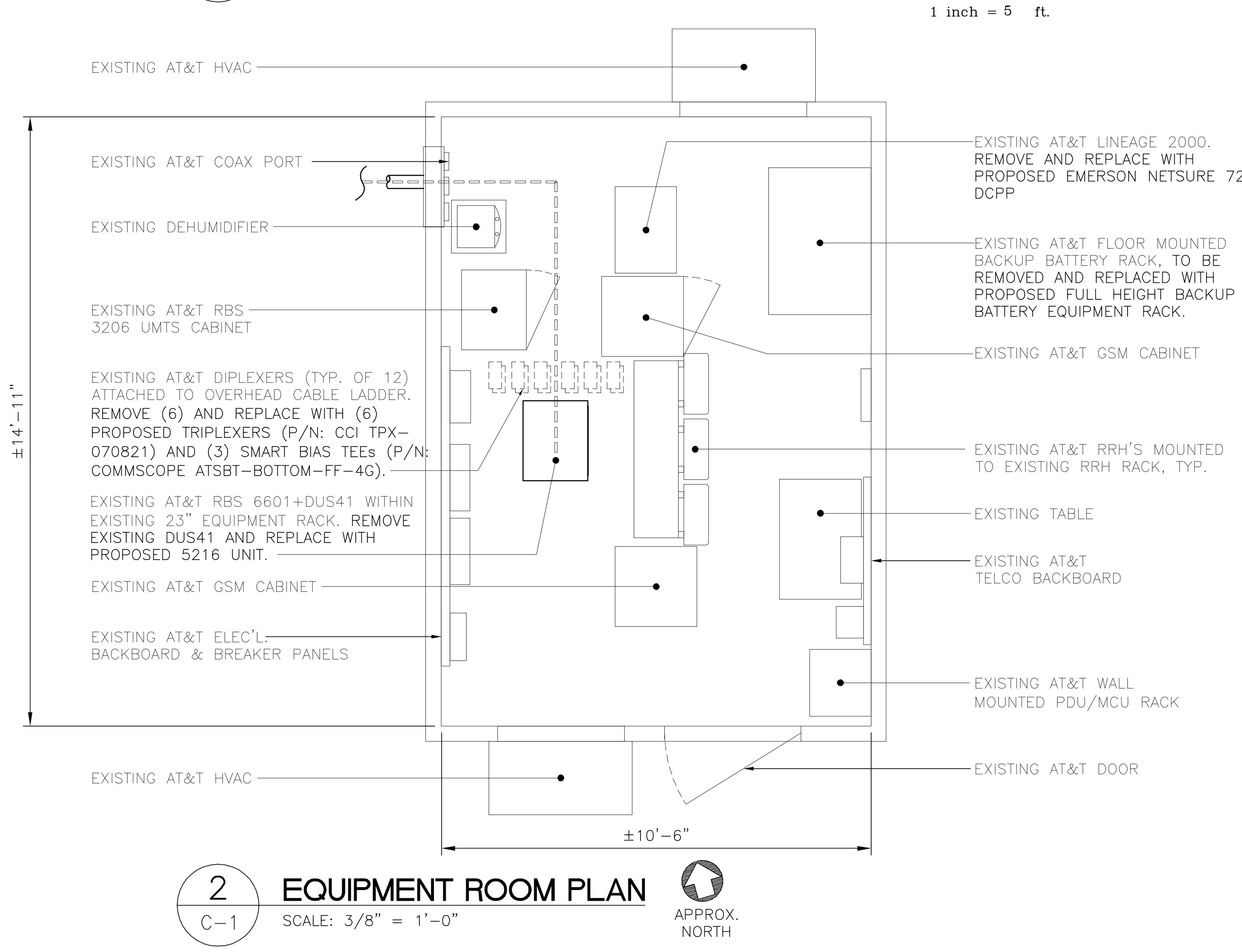
NOTES:

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'



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

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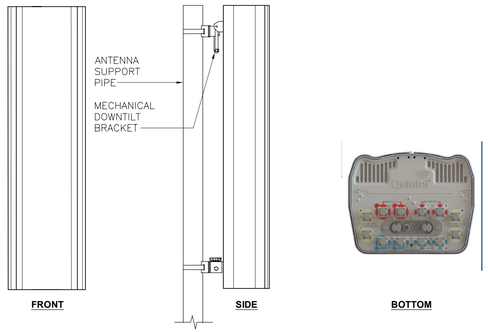
PLANS, ELEVATION AND DETAILS

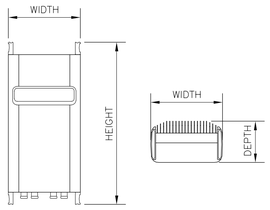
C-1

Sheet No. 3 of 7



ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: QUINTEL MODEL: QS66512-2	72"L x 12"W x 9.6"D	111 LBS.

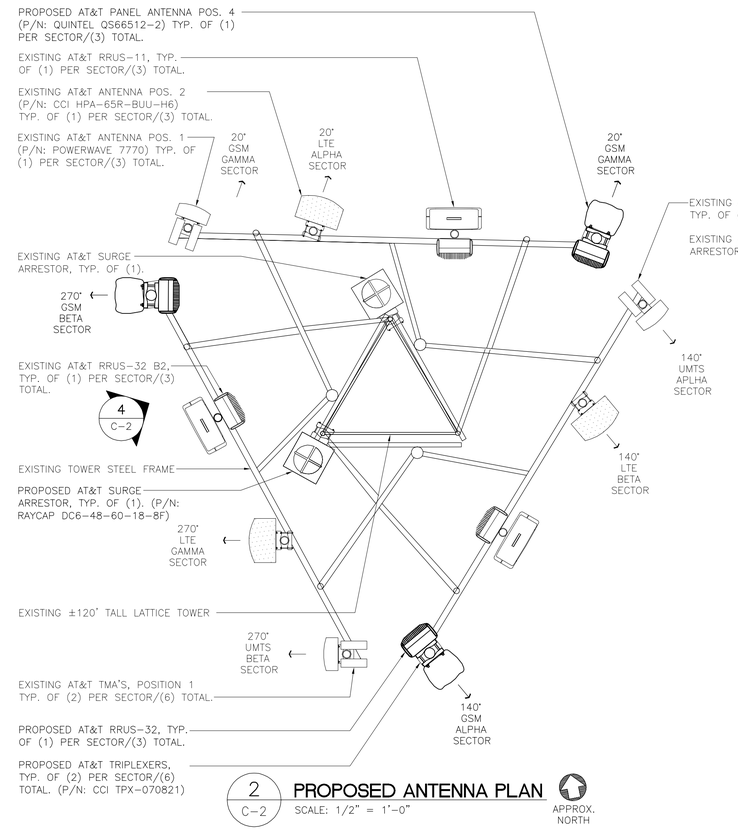
5 C-2 PROPOSED ANTENNA DETAIL
SCALE: 1/2" = 1'-0"



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.

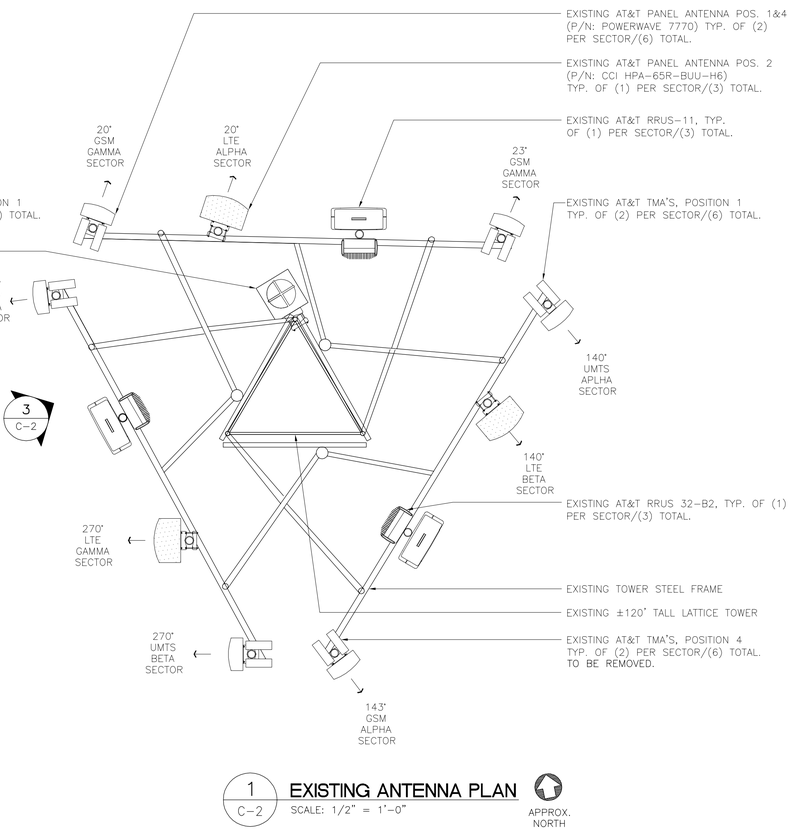
NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

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



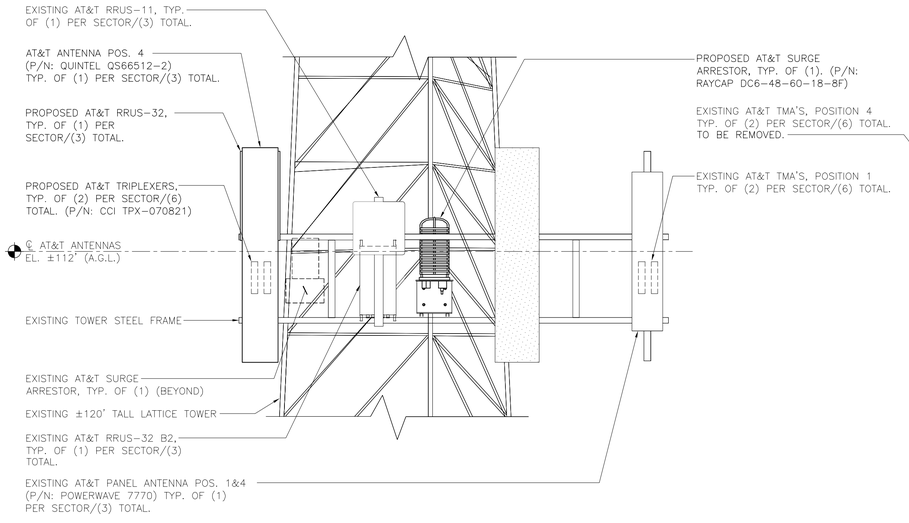
2 C-2 PROPOSED ANTENNA PLAN
SCALE: 1/2" = 1'-0"

APPROX. NORTH

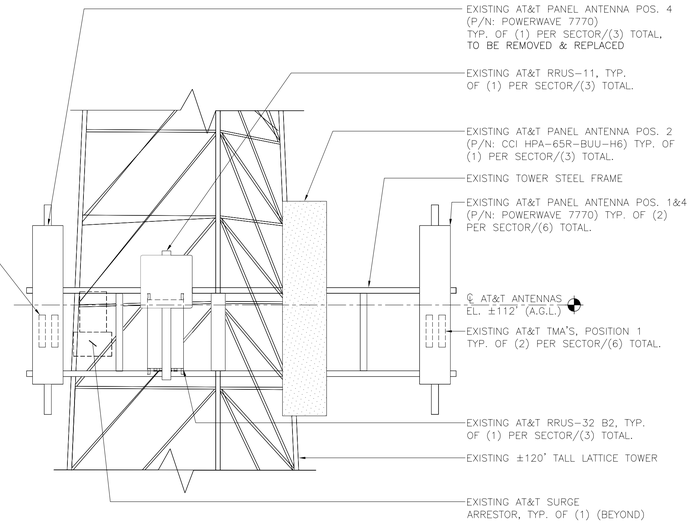


1 C-2 EXISTING ANTENNA PLAN
SCALE: 1/2" = 1'-0"

APPROX. NORTH



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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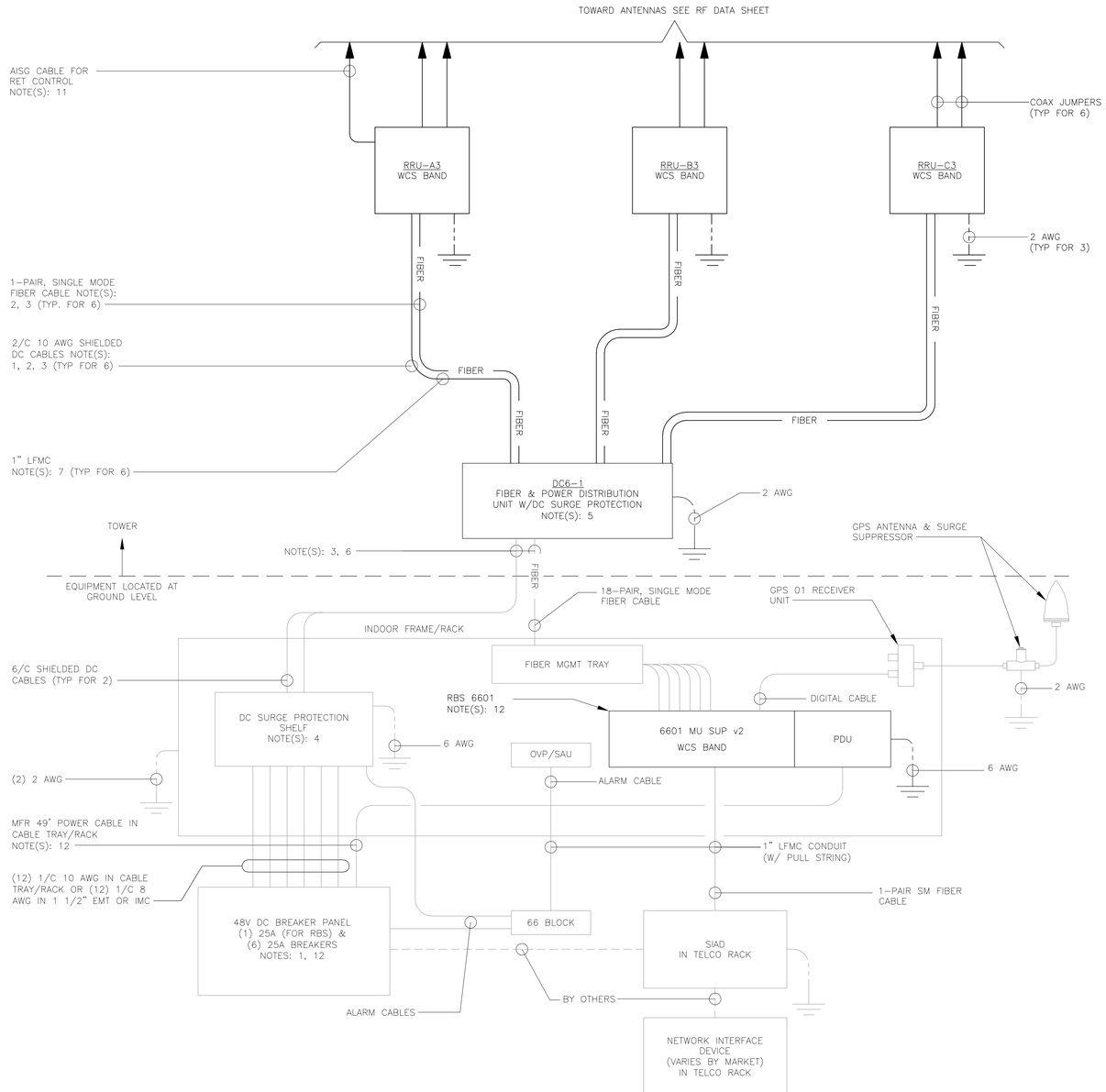

1 E-1 LTE SCHEMATIC DIAGRAM

NOT TO SCALE

LTE SCHEMATIC DIAGRAM NOTES:

1. BREAKERS TO BE TAGGED AND LOCKED OUT. A 20A (MIN.) OR 30A (MAX.) BREAKER FOR RRUs MAY BE SUBSTITUTED FOR THE RECOMMENDED 25A BREAKER. SIZE 12 CONDUCTORS MAY BE USED ONLY WITH 20A BREAKERS.
2. LEAVE COILED AND PROTECTED UNTIL TERMINATED.
3. DC AND FIBER CABLE SHALL BE ROUTED WITH THE EXISTING COAX CABLE.
4. DC SURGE PROTECTION SHELF SHALL BE RAYCAP DCx-48-60-RM.
5. FIBER & DC DISTRIBUTION BOX W/DC SURGE PROTECTION SHALL BE RAYCAP DC6-48-60-18-8F.
6. SUPPORT FIBER & DC POWER CABLES WITH SNAP-IN HANGERS SPACED NO GREATER THAN 3 FEET APART ON TOWER. SUPPORT FIBER AND DC POWER CABLES INSIDE MONOPOLE WITH CABLE HOISTING GRIPS AT 250 FT MAXIMUM INTERVALS. DRESS CABLES TO PREVENT CONTACT WITH ENTRANCE AND EXIT OPENINGS.
7. CONDUIT TO BE USED ON A TOWER IF THE RRU IS MORE THAN 10' FROM THE DISTRIBUTION UNITS. MAX CABLE LENGTH IS 16 FEET.
8. SINGLE-CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX® OR KS24194™, COPPER, UL LISTED RHH NON-HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS I (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR -48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI-CONDUCTOR DC POWER CABLES SHALL BE COPPER, CLASS B STRANDING WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/ 75°C WET INSTALLATION.
9. GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
10. FIBER OPTIC CABLES SHALL BE INSTALLED IN FLEXIBLE CONDUIT AS SCOPED BY MARKET.
11. RET CONTROL FROM THE RRU IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
12. RBS 6601 VARIANT 2 REQUIRES A 25A BREAKER AND 10 AWG (MIN.) CONDUCTORS. REPLACE EXISTING 15A OR 20A BREAKERS AND 12 AWG CONDUCTORS WHEN UPGRADING AN EXISTING RBS 6601 VARIANT 1.

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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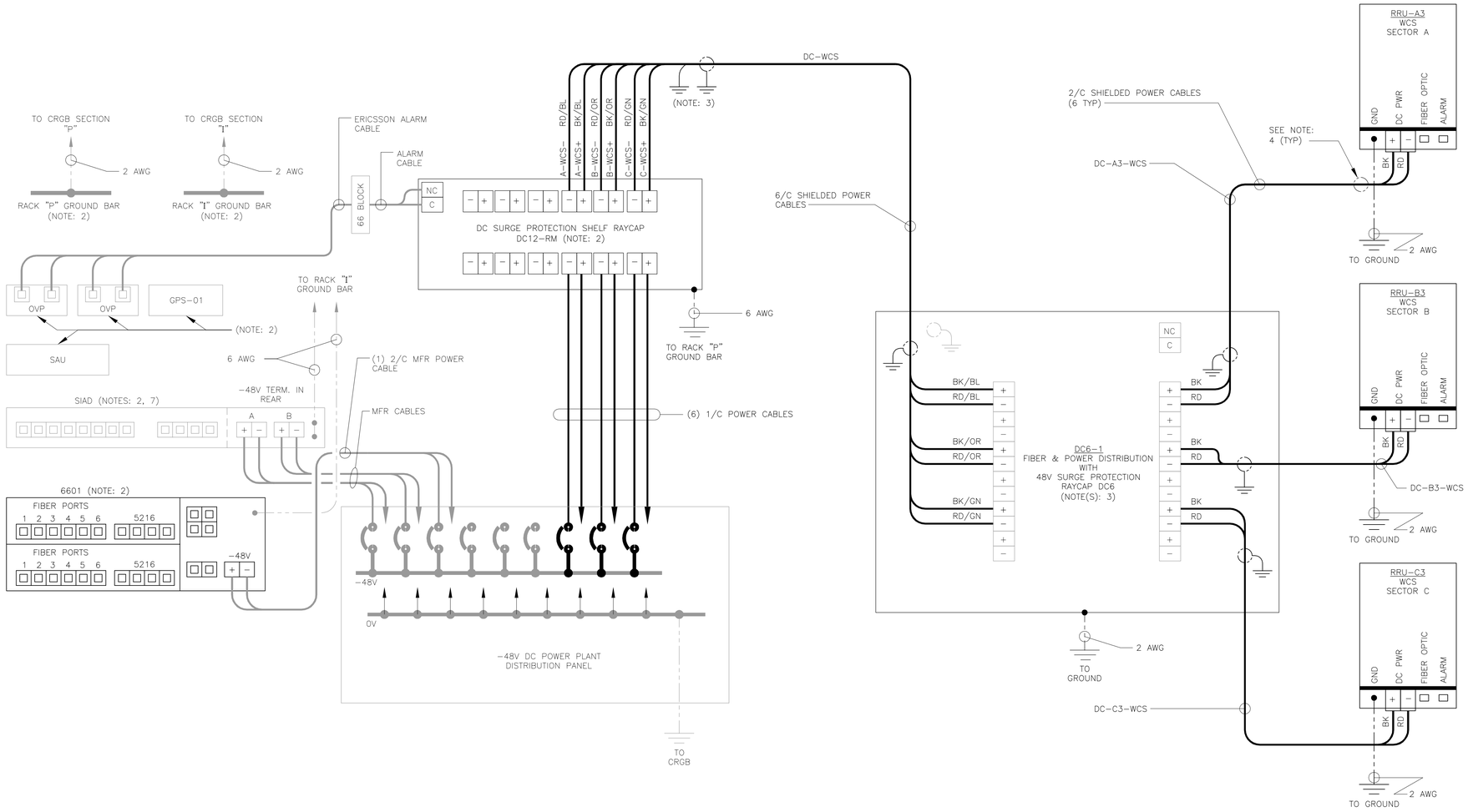
LTE SCHEMATIC DIAGRAM AND NOTES

E-1

Sheet No. 5 of 7



1 / E-2 LTE WIRING DIAGRAM

NOT TO SCALE

LTE WIRING DIAGRAM NOTES:

1. LABEL THE DC POWER CABLES AT BOTH ENDS OF EVERY WIRE AND IN ANY PULL BOX IF USED. LABEL SHALL BE DURABLE, SELF ADHESIVE, WRAPPED LONGITUDINALLY ALONG THE CABLE AND STATE THE SECTOR, FREQUENCY BAND AND POLARITY; I.E. "A-1900+". CABLE AND WIRE LABELS SHOWN ARE REPRESENTATIVE AND MAY BE MODIFIED AS DIRECTED BY AT&T.
2. INSTALL ON BASEBAND EQUIPMENT RACK.
3. THE BARE GROUND WIRE OF EACH MULTI-CONDUCTOR CABLE SHALL BE CONNECTED TO THE "P" GROUND BAR ON THE RACK. WHEN A SHIELDED CABLE IS USED, THE DRAIN WIRE ALSO SHALL BE CONNECTED TO THE "P" GROUND BAR.
4. CABLE GROUND WIRE AND SHIELD DRAIN WIRE TO BE LEFT UN-TERMINATED AT RRU AND DC POWER PLANT.
5. SEE LTE SCHEMATIC DIAGRAM DETAIL 1/E-1 FOR BREAKER RATING.

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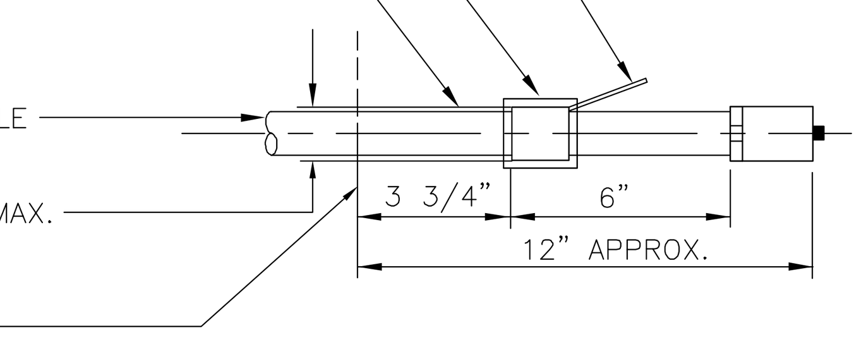
LTE WIRING DIAGRAM

E-2

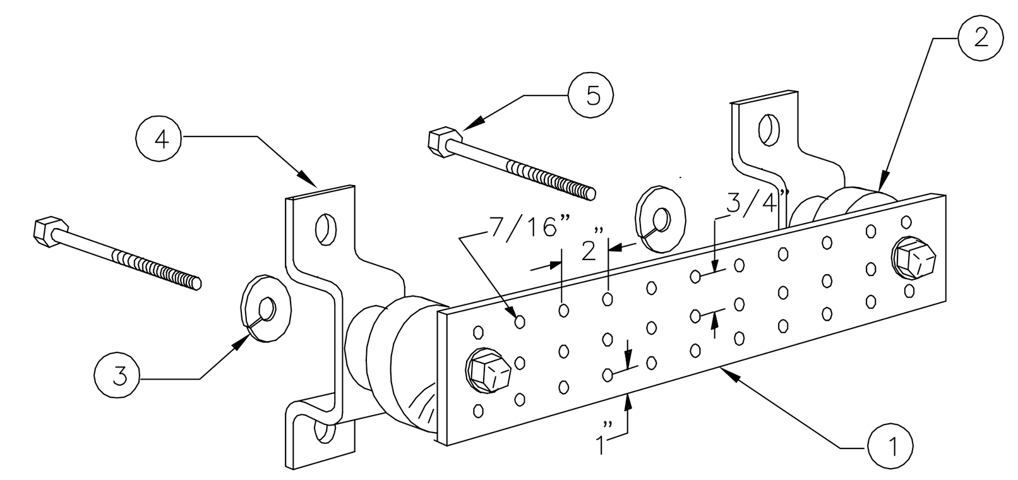


NOTE:

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

4 E-3 ANTENNA CABLE GROUNDING DETAIL

NOT TO SCALE

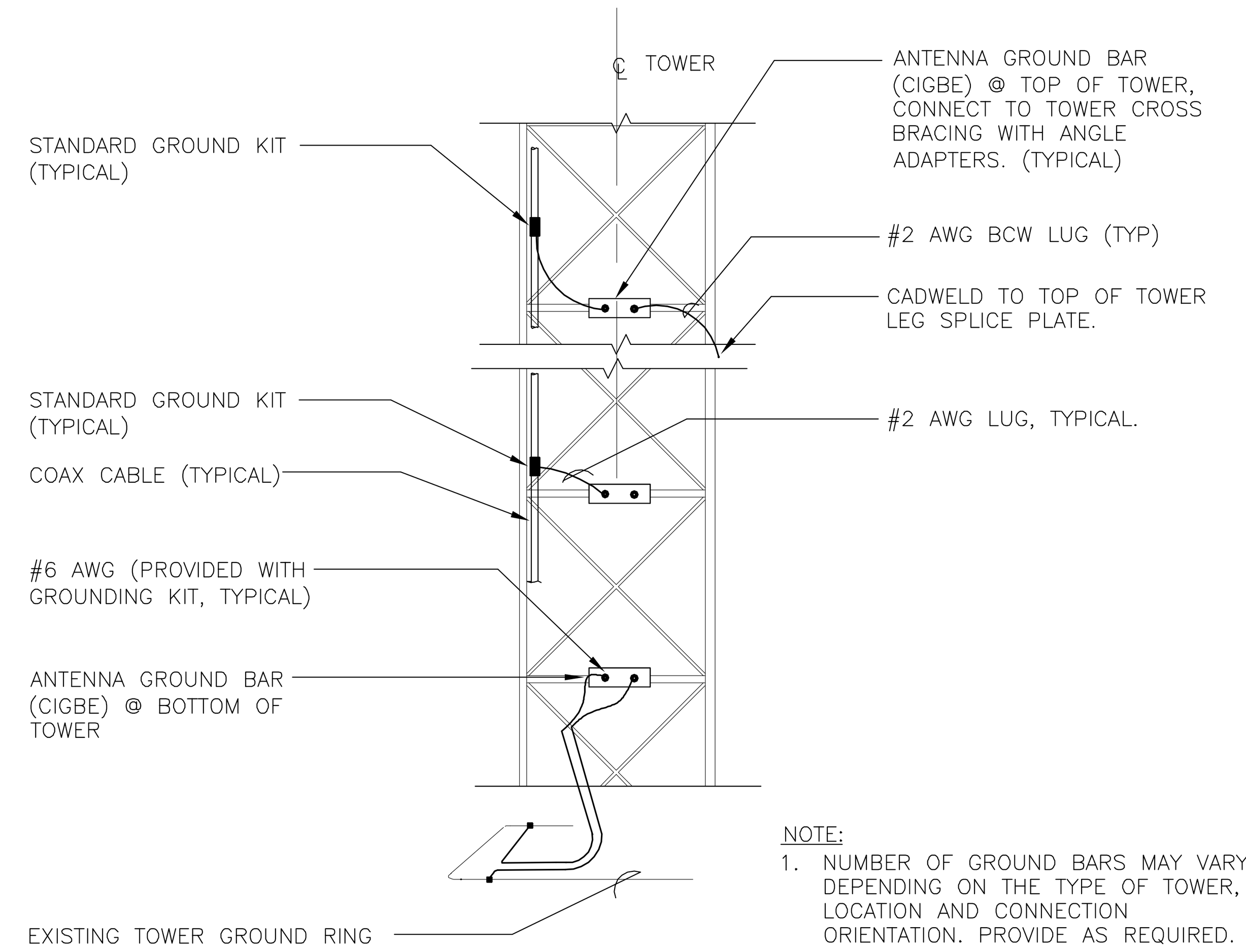


LEGEND

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-3 GROUND BAR DETAIL

NOT TO SCALE

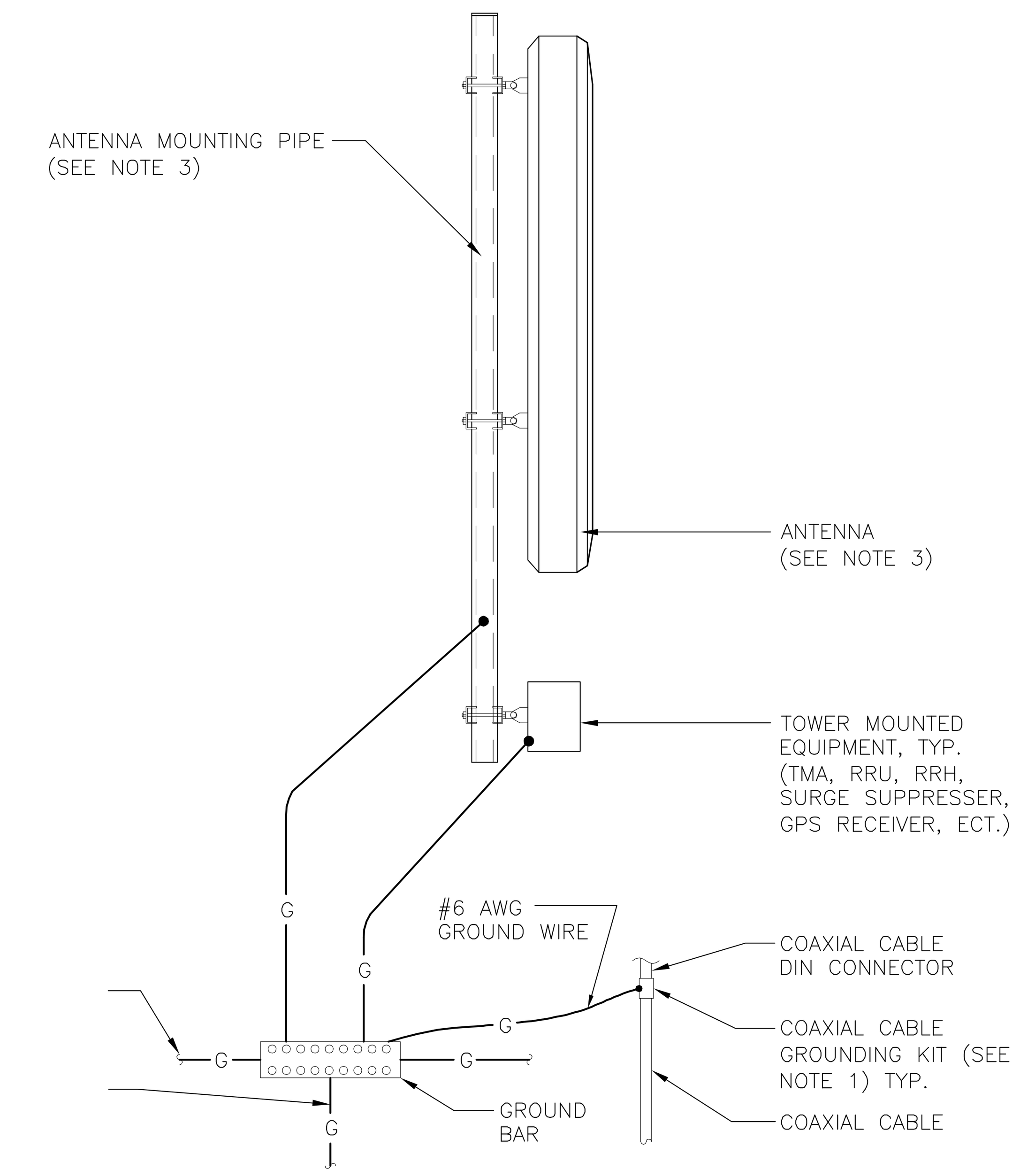


NOTE:

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

2 E-3 ANTENNA CABLE GROUNDING - LATTICE

NOT TO SCALE



NOTES:

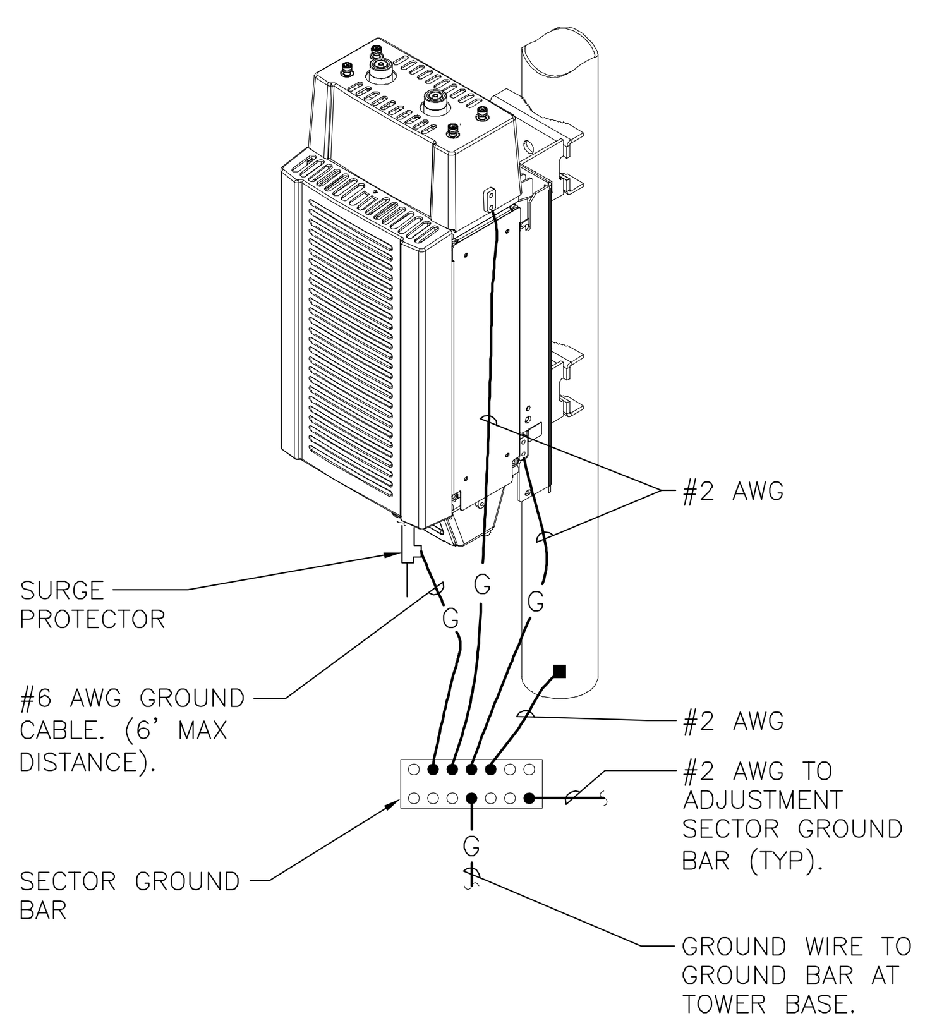
1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

1 E-3 TYPICAL ANTENNA GROUNDING DETAIL

NOT TO SCALE

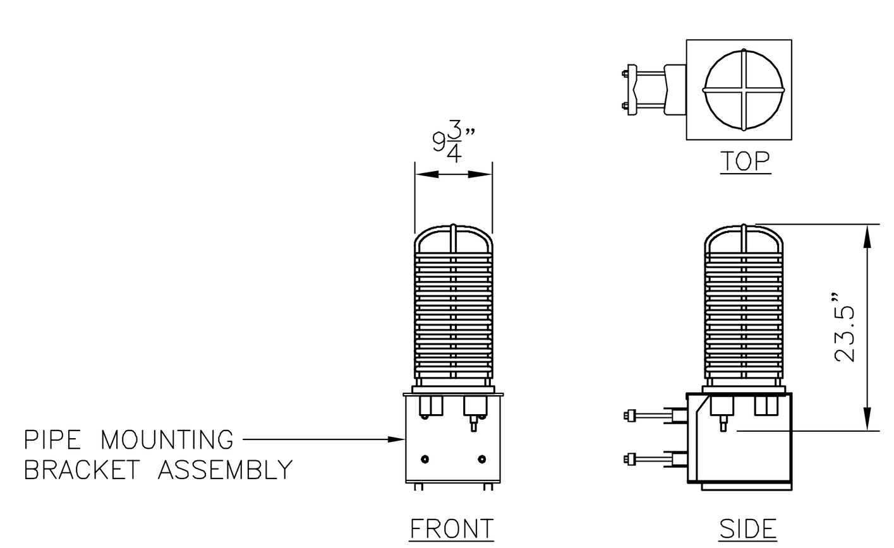
EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:

1. AT TOP OF THE CABINET
2. AT RIGHT SIDE OF THE CABINET.



7 E-3 RRU POLE MOUNT GROUNDING

NOT TO SCALE



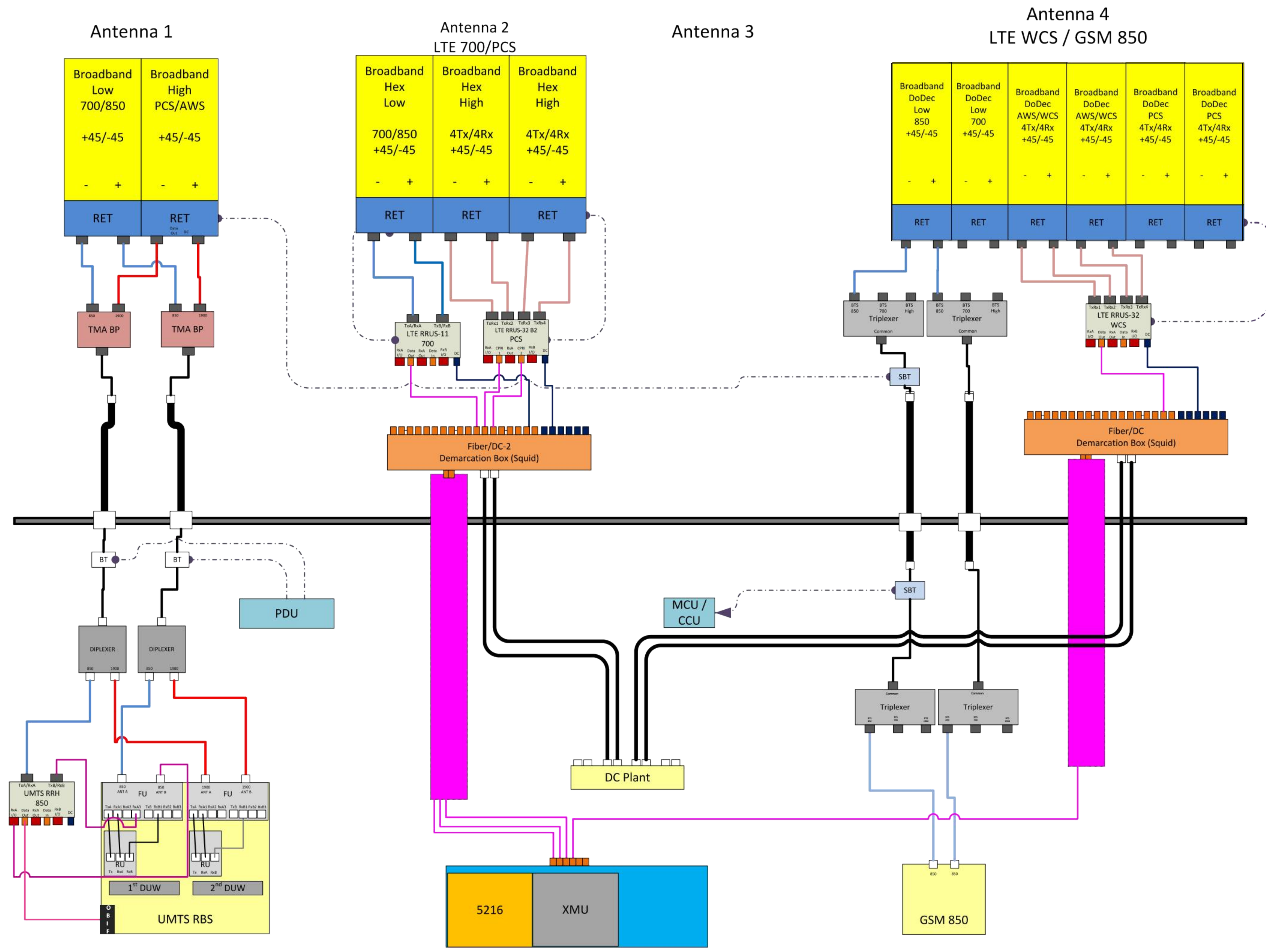
SITE TYPE	ARRESTOR MAKE/MODEL	QTY REQUIRED	ARRESTOR LOCATION	WEIGHT
	MAKE: RAYCAP (SQUID) MODEL: DC6-48-60-18-8F	(1) PER SITE	TOWER, ADJACENT TO AT&T ANTENNAS AND RRUs.	20 LBS. (WITHOUT MOUNT)

NOTES:

1. CONTRACTOR TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.
2. CONTRACTOR TO INSTALL ARRESTOR IN CONFORMANCE WITH MANUFACTURERS RECOMMENDATIONS.

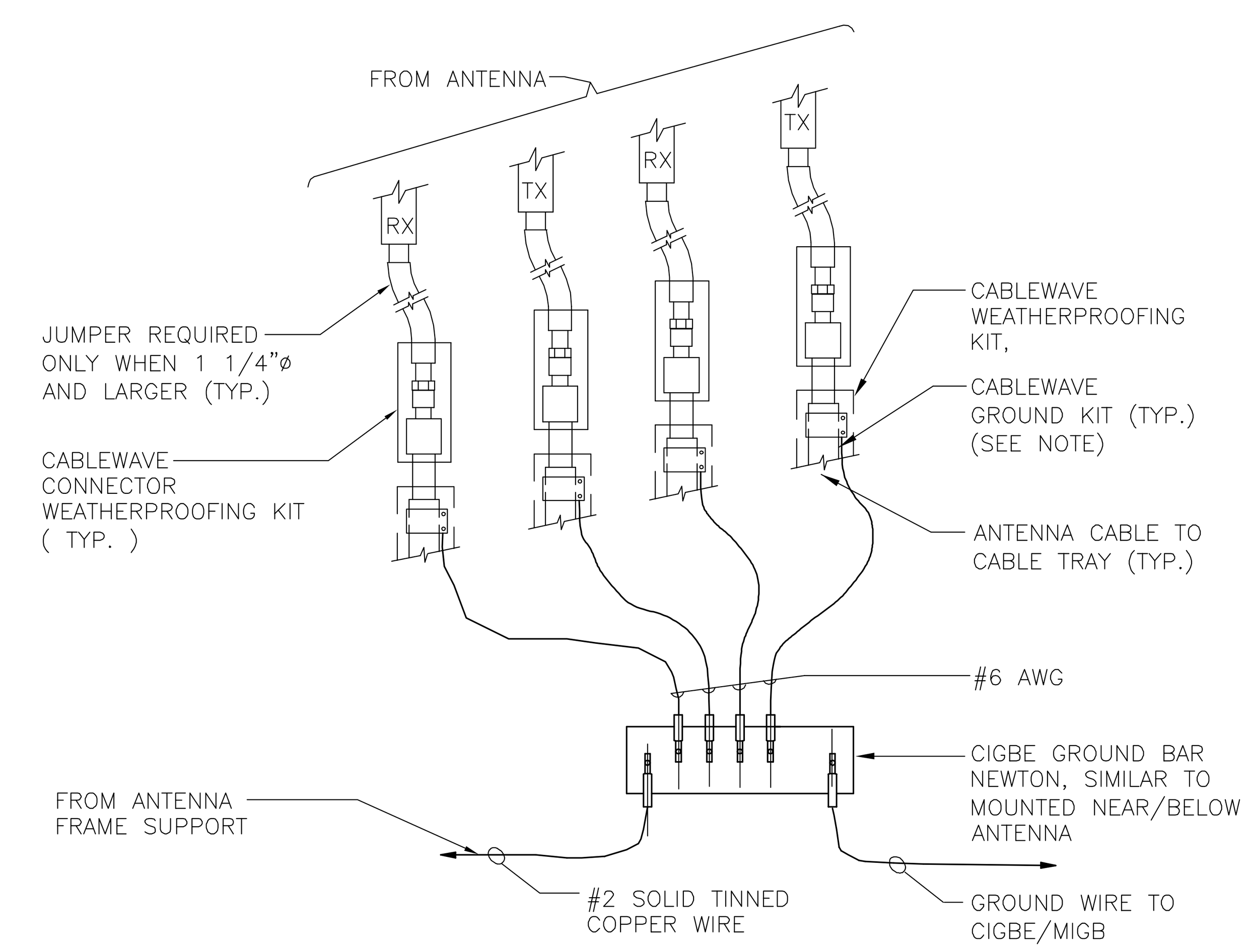
8 E-3 SURGE ARRESTOR DETAIL

SCALE: NTS



6 E-3 RF PLUMBING DIAGRAM

NOT TO SCALE



NOTE:

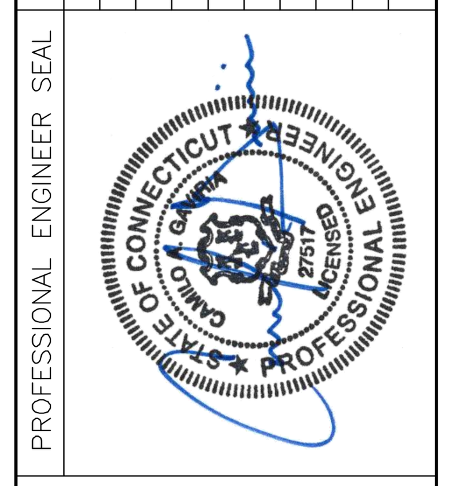
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

5 E-3 CONNECTION OF GROUND WIRES TO GROUND BAR

NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	02/16/17	LGL	CAG	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL



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Branford, CT 06405
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AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY

HAMDEN SE

CT2173 - LTE 3C WCS

2755 STATE STREET
HAMDEN, CT 06517

DATE: 01/16/17
SCALE: AS NOTED
JOB NO. 16071.98

TYPICAL ELECTRICAL DETAILS

E-3

Sheet No. 7 of 7

January 13, 2017

Kevin Morrow
Crown Castle
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Charlotte, NC 28277
(704) 405-6619

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
btwo@btgrp.com

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	10035219
	Carrier Site Name:	CT2173
Crown Castle Designation:	**Crown Castle BU Number:**	876312
	Crown Castle Site Name:	Montowese Amodio Self Store
	Crown Castle JDE Job Number:	415558
	Crown Castle Work Order Number:	1348565
	Crown Castle Application Number:	374178 Rev. 1
Engineering Firm Designation:	**B+T Group Project Number:**	108127.003.01
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 Kevin Morrow,

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 990260, in accordance with application 374178, revision 1.

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.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C and Risk Category II were used in this analysis.

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.

Jacob Johnson, E.I.T.
Project Engineer

Scott S. Vance, P.E.
Engineer of Record
COA: PEC.0001564 Expires: 02/10/2017

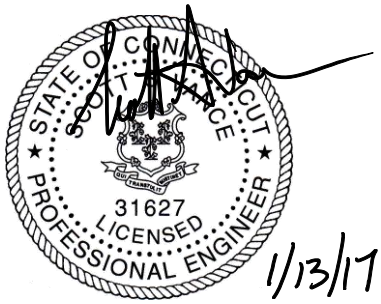


TABLE OF CONTENTS

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-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 97 mph with no ice, 50 mph with 0.75-inch ice thickness and 60 mph under service loads, exposure category C with topographic category 1 and crest height of 0 feet.

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	2 1	5/8 3/8	--
		6	CCI Antennas	TPX-070821			
		3	Commscope	ATSBT-BOTTOM-FF-4G			
		3	Ericsson	RRUS 32			
		3	Ericsson	RRUS 32 B2			
		6	Powerwave Tech.	7020.00			
		3	Quintel Technology	QS66512-2			
		1	Raycap	DC6-48-60-18-8F			

Table 2 - Existing 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	4 3 6	1-1/4 7983A 5/16	1
	120.0	3	Alcatel Lucent	1900MHz RRH (65MHz)			
		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]			
		3	--	Side Arm Mount [SO 301-1]			
	118.0	3	Argus Tech.	LLPX310R			
		3	Samsung Telecomm.	FDD_R6_RRH			
110.0	112.0	**3**	**Powerwave Tech.**	**7770.00**	--	--	**2**
		3	**Ericsson**	**RRUS-11**			
		3	**KMW Comm.**	**AM-X-CD-16-65-00T-RET**			
		3	Powerwave Tech.	7770.00	12 2 1	1-5/8 5/8 3/8	1
		3	Ericsson	RRUS-11			
		12	Powerwave Tech.	LGP21401			
		1	Raycap	DC6-48-60-18-8F			
	110.0	1	--	Sector Mount [SM 406-3]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
100.0	100.0	3	RFS Celwave	APXV18-206517S-C	6	1-5/8	1
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# 1	374178	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,	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: 01/12/2017	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) Mount areas and weights are assumed based on photographs provided.
5) The existing base plate grout was considered in this analysis. Grout must be maintained and inspected periodically, and must be replaced if damaged or cracked. Refer to crown document ENG-BUL-10122, Tower Base Plate Grout Inspection and Classification.

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	-3.642	52.899	6.9	Pass
T2	117.667 - 110	Leg	1 1/2	14	-14.212	52.899	26.9	Pass
T3	110 - 90	Leg	1 3/4	43	-73.325	78.927	92.9	Pass
T4	90 - 70	Leg	2	107	-132.022	133.113	99.2	Pass
T5	70 - 52.6146	Leg	2 1/2	189	-185.474	190.559	97.3	Pass
T6	52.6146 - 50	Leg	2 1/2	243	-192.083	197.641	97.2	Pass
T7	50 - 40	Leg	Pirod 105245	254	-188.691	214.859	87.8	Pass
T8	40 - 20	Leg	Pirod 105217	263	-203.312	214.859	94.6	Pass
T9	20 - 0	Leg	B+T_BU876312_Pirod 105217 w/ (2) 1.25SR	280	-217.314	258.578	84.0	Pass
T1	120 - 117.667	Diagonal	3/4	8	-3.272	6.287	52.0	Pass
T2	117.667 - 110	Diagonal	5/8	23	-2.928	3.527	83.0	Pass
T3	110 - 90	Diagonal	3/4	52	-4.976	5.962	83.5	Pass
T4	90 - 70	Diagonal	7/8	116	-7.612	9.300	81.9	Pass
T5	70 - 52.6146	Diagonal	7/8	236	-7.009	9.192	76.2	Pass
T6	52.6146 - 50	Diagonal	7/8	249	-5.266	8.361	63.0	Pass
T7	50 - 40	Diagonal	L2 1/2x2 1/2x3/16	260	-6.519	13.558	48.1 58.6 (b)	Pass
T8	40 - 20	Diagonal	L2 1/2x2 1/2x3/16	267	-3.099	10.950	28.3	Pass
T9	20 - 0	Diagonal	L2 1/2x2 1/2x3/16	281	-5.104	8.662	58.9	Pass
T2	117.667 - 110	Horizontal	3/4	35	-0.188	4.366	4.3	Pass
T3	110 - 90	Horizontal	3/4	64	-1.107	3.586	30.9	Pass
T5	70 - 52.6146	Horizontal	7/8	234	-2.164	4.809	45.0	Pass
T6	52.6146 - 50	Horizontal	7/8	244	-1.152	4.107	28.1	Pass
T4	90 - 70	Secondary Horizontal	1 1/4	121	-3.144	20.839	15.1	Pass
T1	120 - 117.667	Top Girt	5x3/8	4	-2.091	5.380	38.9	Pass
T2	117.667 - 110	Top Girt	7/8	18	-0.186	8.088	2.3	Pass
T3	110 - 90	Top Girt	3/4	46	-1.749	4.393	39.8	Pass
T4	90 - 70	Top Girt	1	110	-1.730	10.626	16.3	Pass
T5	70 - 52.6146	Top Girt	1	191	-1.975	8.432	23.4	Pass
T2	117.667 - 110	Bottom Girt	7/8	21	-0.986	8.088	12.2	Pass
T3	110 - 90	Bottom Girt	3/4	48	-2.275	3.366	67.6	Pass
T4	90 - 70	Bottom Girt	1	112	-3.164	8.418	37.6	Pass
T6	52.6146 - 50	Bottom Girt	1	245	-1.765	6.881	25.7	Pass
							Summary	
						Leg (T4)	99.2	Pass
						Diagonal (T3)	83.5	Pass
						Horizontal (T5)	45.0	Pass
						Secondary Horizontal (T4)	15.1	Pass
						Top Girt (T3)	39.8	Pass
						Bottom Girt (T3)	67.6	Pass
						Bolt Checks	77.2	Pass
						Rating =	99.2	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	53.4	Pass
1	Base Foundation	Base	80.5	Pass

Structure Rating (max from all components) =	99.2%

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

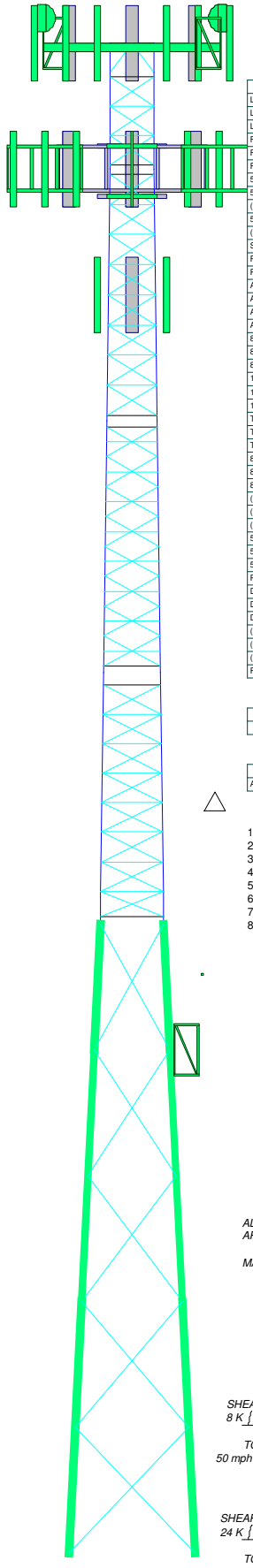
4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the final load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9
Legs		SR 1 1/2	SR 1.344	SR 2	SR 2 1/2		Prod 105245	Prod 105217	B+T_BU876312_Prod 105217 w/ (2) 1.25SR
Leg Grade					A572-50				
Diagonals	SR 3/4	SR 5/8	SR 3/4	SR 7/8				L2 1/2x2 1/2x3/16	
Diagonal Grade				A572-50				A36	
Top Girts		SR 7/8	SR 3/4	SR 1				N.A.	
Bottom Girts	5x3/8	N.A.	SR 3/4	SR 1	N.A.	SR 1		N.A.	
Horizontals	N.A.	SR 7/8	SR 3/4	N.A.	SR 7/8			N.A.	
Sec. Horizontals			N.A.	SR 1 1/4				N.A.	
Face Width (ft)	3.5	4 @ 2.33333	8 @ 2.39583	4	4.5	5	4.94444	6	8
# Panels @ (ft)	0.1	0.3	0.9	1.6	1.4	0.2	1.2	2.3	2.9
Weight (K)	11.0				7 @ 2.34077	A		5 @ 10	



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
LLPX310R w/ Mount Pipe (E)	120	RRUS-11 (E)	110
LLPX310R w/ Mount Pipe (E)	120	RRUS-11 (E)	110
LLPX310R w/ Mount Pipe (E)	120	DC6-48-60-18-8F (E)	110
FDD_R6_RRH (E)	120	HPA-65R-BUU-H6 w/ Mount Pipe (P)	110
FDD_R6_RRH (E)	120	HPA-65R-BUU-H6 w/ Mount Pipe (P)	110
FDD_R6_RRH (E)	120	HPA-65R-BUU-H6 w/ Mount Pipe (P)	110
5' x 2" Pipe Mount (E-At Corner For Dish)	120	QS66512-2 w/ Mount Pipe (P)	110
5' x 2" Pipe Mount (E-At Corner For Dish)	120	QS66512-2 w/ Mount Pipe (P)	110
(2) 5' x 2" Pipe Mount (E-For Dish)	120	QS66512-2 w/ Mount Pipe (P)	110
5' x 2" Pipe Mount (E-For Dish)	120	(2) 7020.00 (P)	110
(2) Side Arm Mount [SO 301-1] (E)	120	(2) 7020.00 (P)	110
Side Arm Mount [SO 301-1] (E)	120	(2) 7020.00 (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	ATSBT-BOTTOM-FF-4G (P)	110
APXVTM14-C-120 w/ Mount Pipe (E)	120	ATSBT-BOTTOM-FF-4G (P)	110
APXVTM14-C-120 w/ Mount Pipe (E)	120	ATSBT-BOTTOM-FF-4G (P)	110
800 EXTERNAL NOTCH FILTER (E)	120	RRUS 32 (P)	110
800 EXTERNAL NOTCH FILTER (E)	120	RRUS 32 (P)	110
800 EXTERNAL NOTCH FILTER (E)	120	RRUS 32 (P)	110
1900MHz RRH (65MHz) (E)	120	(2) TPX-070821 (P)	110
1900MHz RRH (65MHz) (E)	120	(2) TPX-070821 (P)	110
1900MHz RRH (65MHz) (E)	120	(2) TPX-070821 (P)	110
TD-RRH8x20-25 (E)	120	DC6-48-60-18-8F (P)	110
TD-RRH8x20-25 (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
TD-RRH8x20-25 (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
800MHZ RRH (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
800MHZ RRH (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
800MHZ RRH (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
(3) ACU-A20-N (E)	120	5 Hor x 2" x 2" Tube Mount (E-Per Photo)	110
(3) ACU-A20-N (E)	120	(2) 4' x 2" Pipe Mount (E-For TME's)	110
(3) ACU-A20-N (E)	120	(2) 4' x 2" Pipe Mount (E-For TME's)	110
5' x 2" Pipe Mount (E-For TME's)	120	(2) 4' x 2" Pipe Mount (E-For TME's)	110
5' x 2" Pipe Mount (E-For TME's)	120	Pipe Mount [PM 601-3] (E-For Mount Support)	110
5' x 2" Pipe Mount (E-For TME's)	120	Sector Mount [SM 406-3] (E)	110
Platform Mount [LP 405-1] (E)	120	7770.00 w/ Mount Pipe (E)	110
Dragonwave A-ANT-23G-2-C (E)	120	7770.00 w/ Mount Pipe (E)	110
Dragonwave A-ANT-23G-2-C (E)	120	7770.00 w/ Mount Pipe (E)	110
Dragonwave A-ANT-23G-2-C (E)	120	APXV18-206517S-C w/ Mount Pipe (E)	100
(4) LGP21401 (E)	110	APXV18-206517S-C w/ Mount Pipe (E)	100
(4) LGP21401 (E)	110	APXV18-206517S-C w/ Mount Pipe (E)	100
(4) LGP21401 (E)	110	Side Arm Mount [SO 701-1] (E-Leg Per Photo)	40
RRUS-11 (E)	110	BULLET III (E-Leg Per Photo)	40

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 Exposure C to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 99.2%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 224 K
SHEAR: 18 K

UPLIFT: -204 K
SHEAR: 16 K

AXIAL 84 K
SHEAR 8 K *MOMENT 594 kip-ft*
TORQUE 1 kip-ft
50 mph WIND - 0.750 in ICE

AXIAL 29 K
SHEAR 24 K *MOMENT 1857 kip-ft*
TORQUE 3 kip-ft
REACTIONS - 97 mph WIND

B+T Group
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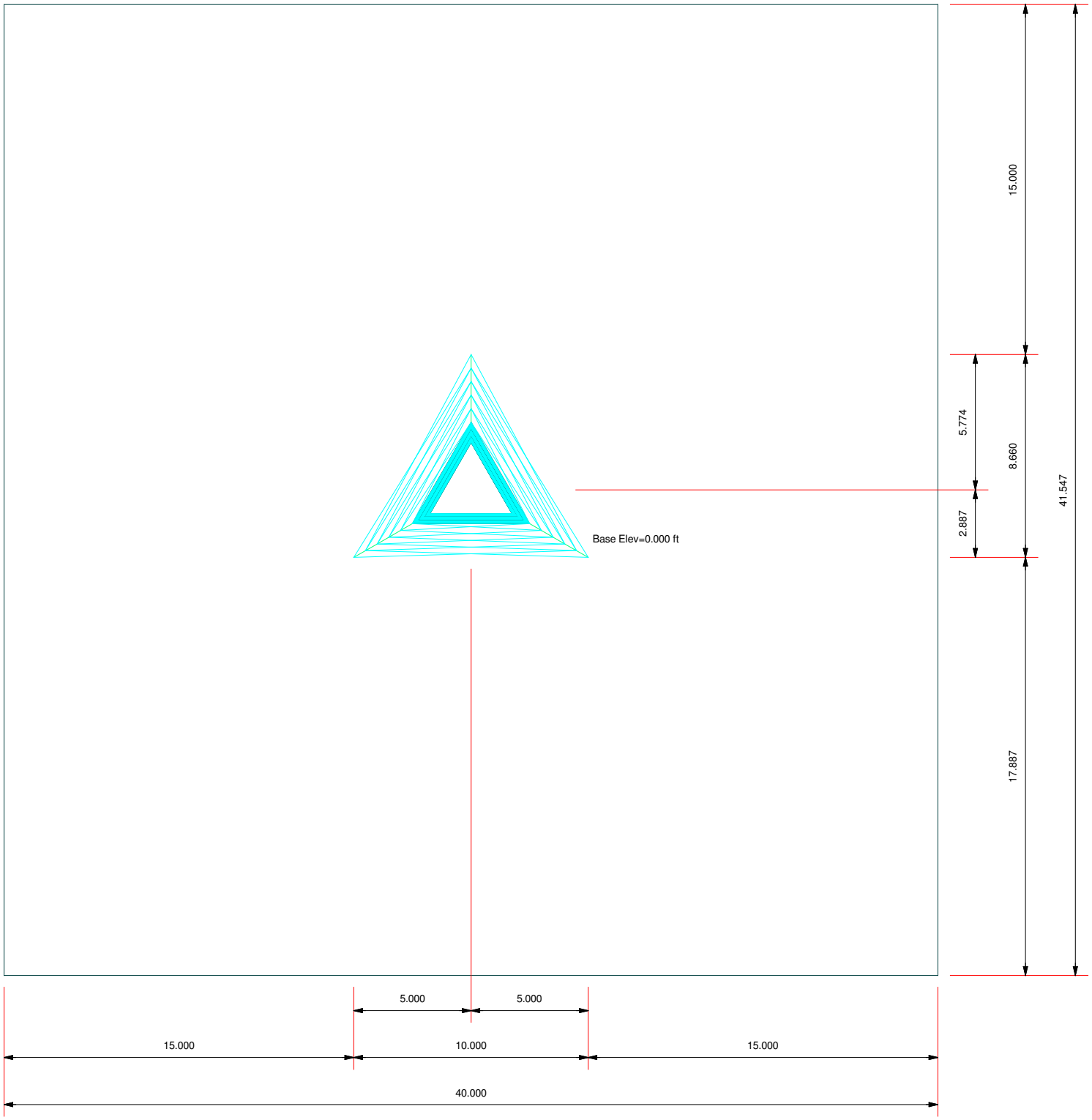
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: *108127.003.01 - MONTOWESE AMODIO SELF STORE, CT (BU# 876312)*
Project:
Client: Crown Castle | Drawn by: Vignesh Prabhu K | App'd:
Code: TIA-222-G | Date: 01/13/17 | Scale: NTS
Path: | Dwg No. E-1

Plot Plan

Total Area - 0.04 Acres



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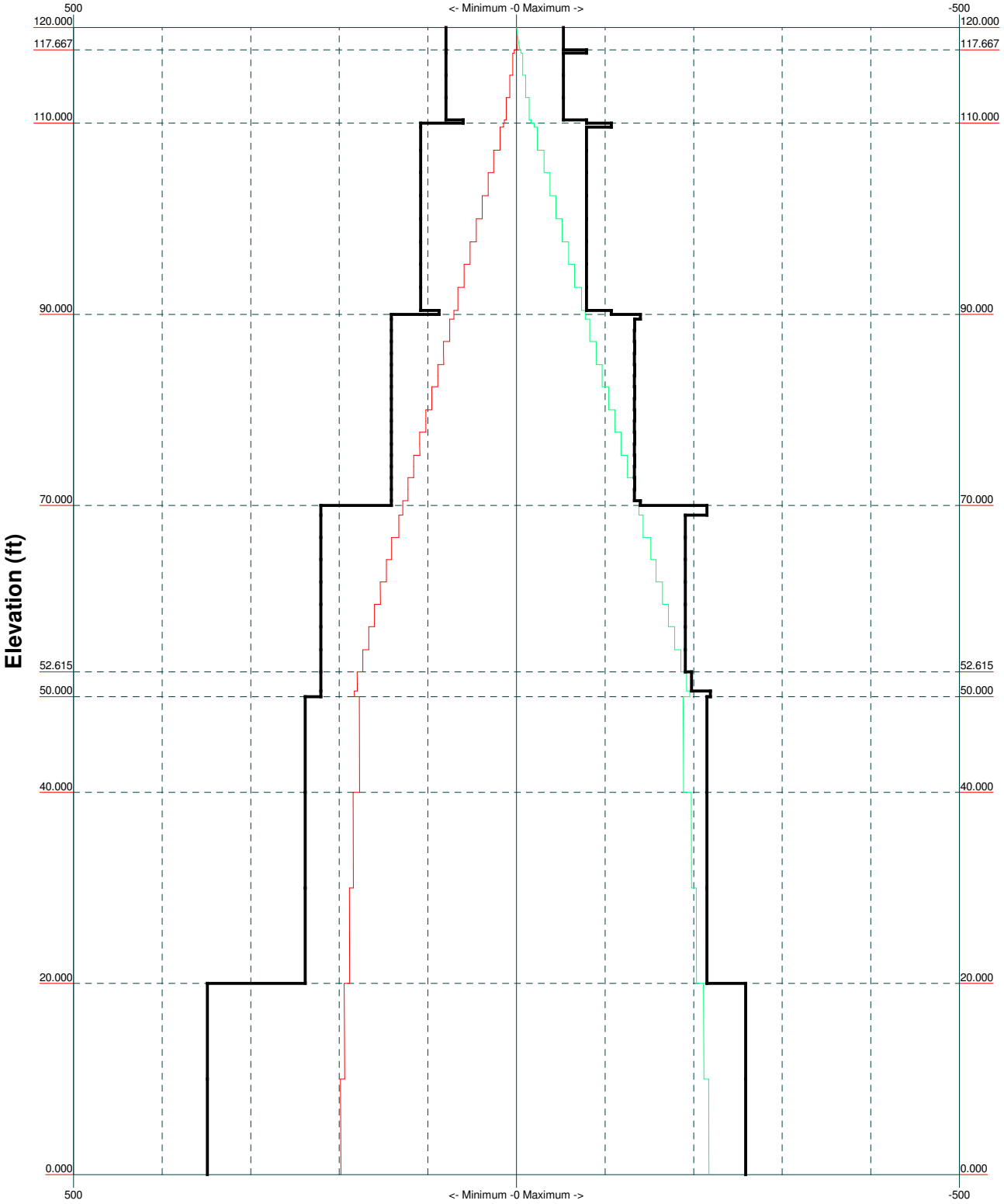
FAX: (918) 295-0265

Job: 108127.003.01 - MONTOWESE AMODIO SELF STORE, CT (BU# 876312)			
Project:			
Client: Crown Castle	Drawn by: Vignesh Prabhu K	App'd:	
Code: TIA-222-G	Date: 01/13/17	Scale: NTS	
Path:		Dwg No. E-2	

TIA-222-G - 97 mph/50 mph 0.750 in Ice Exposure C

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



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Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 108127.003.01 - MONTOWESE AMODIO SELF STORE, CT (BU# 876312)			
Project:			
Client: Crown Castle	Drawn by: Vignesh Prabhu K	App'd:	
Code: TIA-222-G	Date: 01/13/17	Scale: NTS	
Path:		Dwg No. E-3	

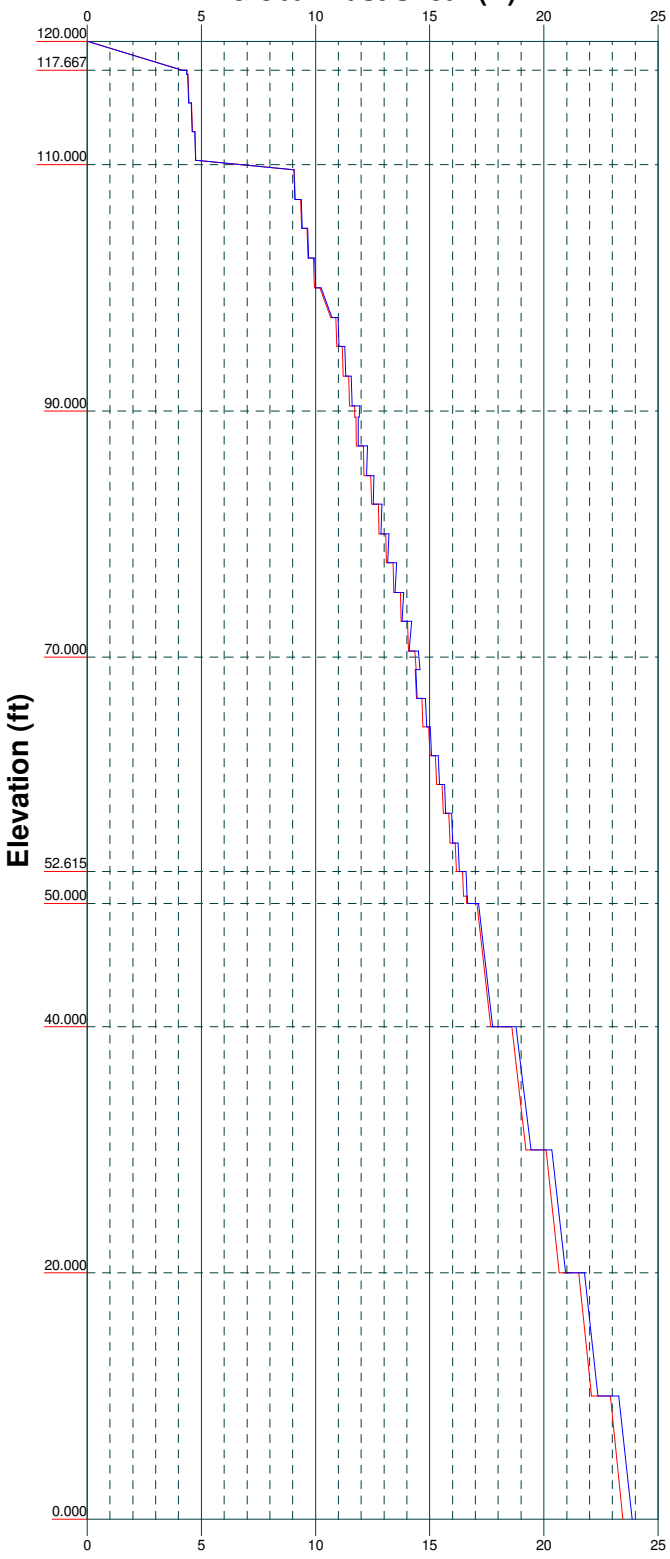
TIA-222-G - 97 mph/50 mph 0.750 in Ice Exposure C

Vx Vz

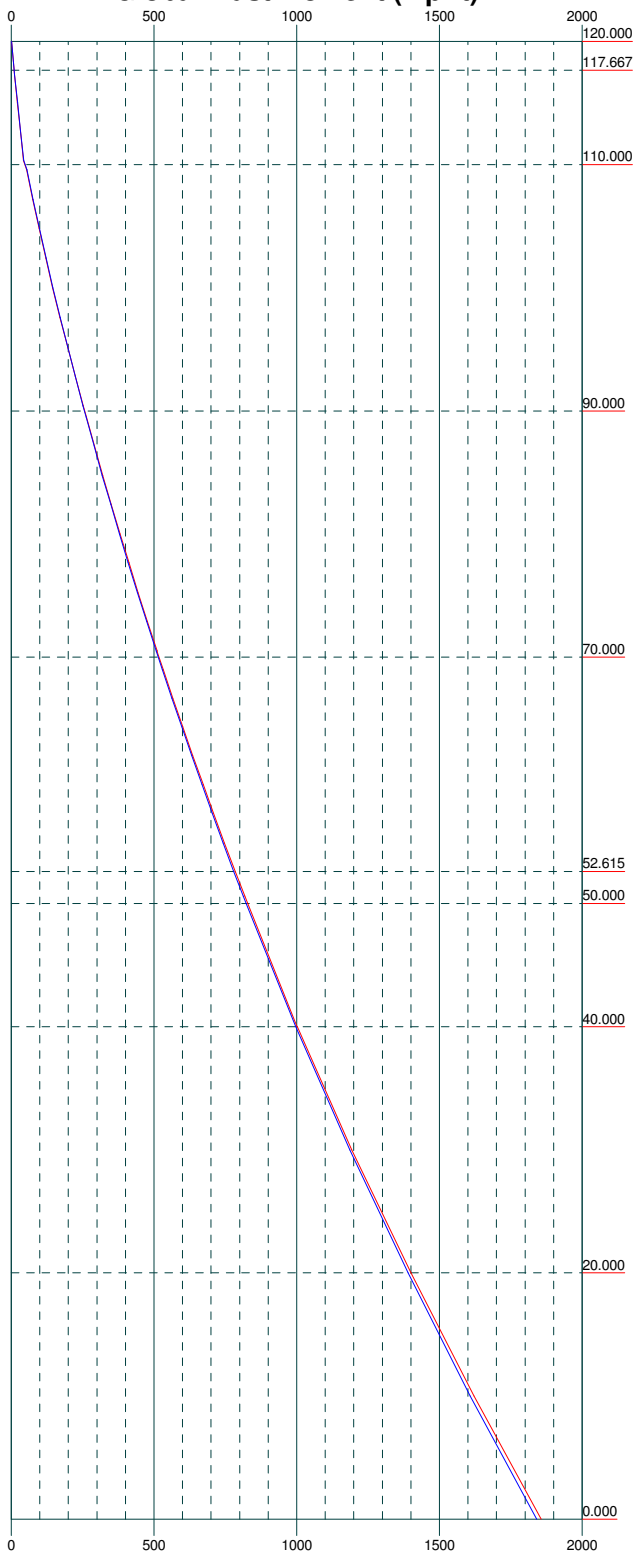
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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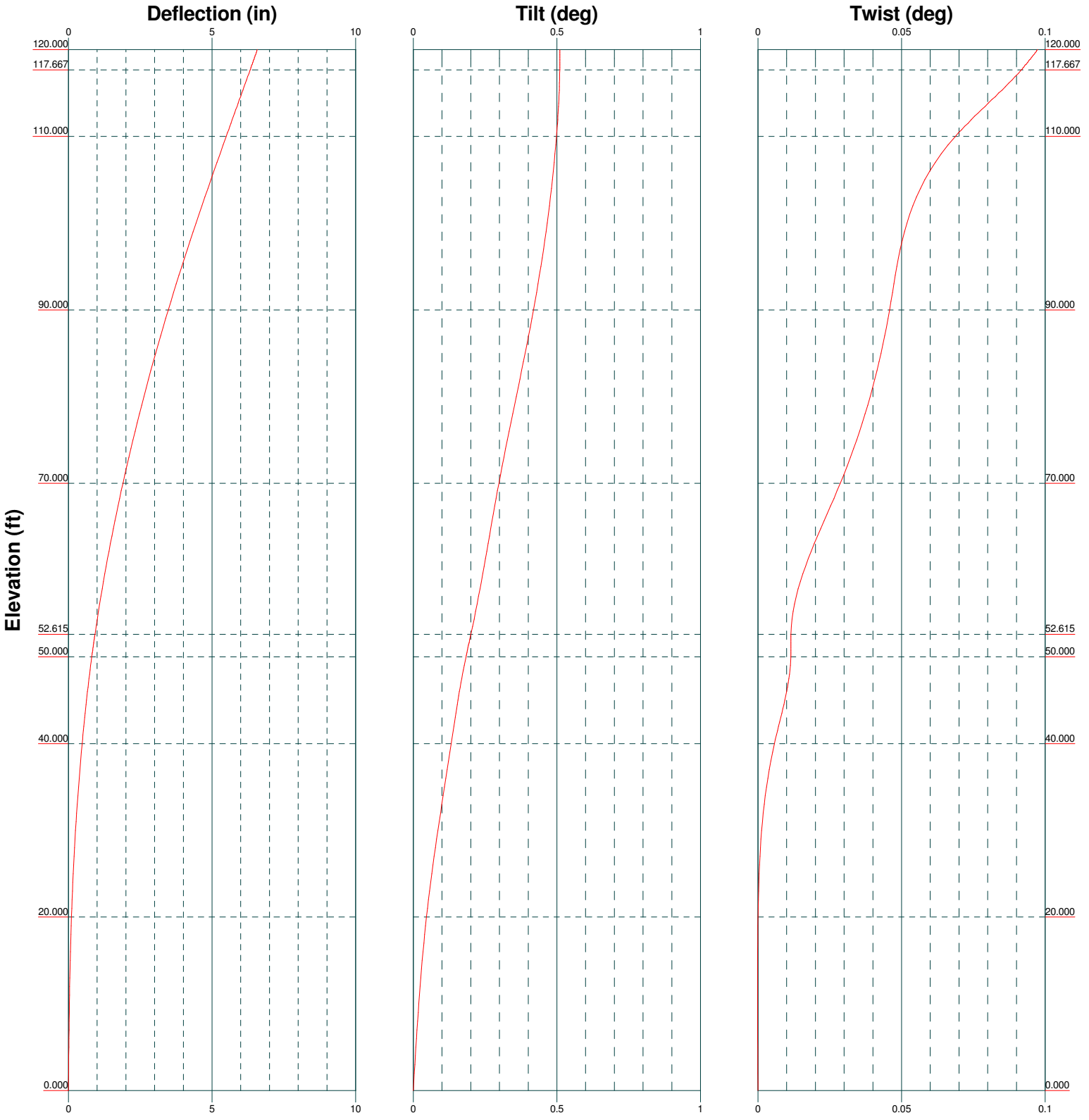
Job: 108127.003.01 - MONTOWESE AMODIO SELF STORE, CT (BU# 876312)		
Project:		
Client: Crown Castle	Drawn by: Vignesh Prabhu K	App'd:
Code: TIA-222-G	Date: 01/13/17	Scale: NTS
Path:		Dwg No. E-4

TIA-222-G - Service - 60 mph

Maximum Values



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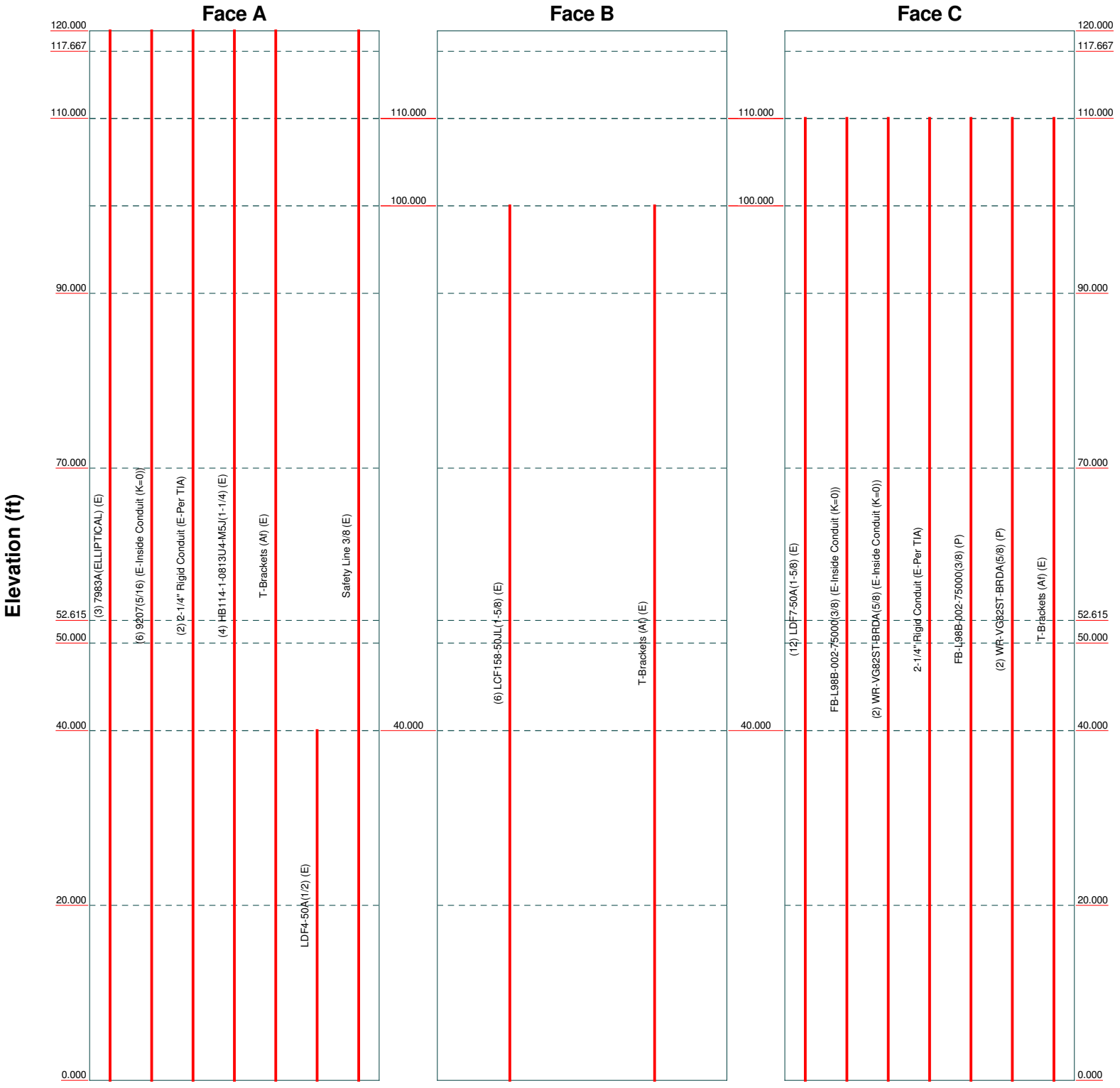
Job: 108127.003.01 - MONTOWESE AMODIO SELF STORE, CT (BU# 876312)			
Project:			
Client: Crown Castle	Drawn by: Vignesh Prabhu K	App'd:	
Code: TIA-222-G	Date: 01/13/17	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 120'

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



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Job: 108127.003.01 - MONTOWESE AMODIO SELF STORE, CT (BU# 876312)			
Project:			
Client: Crown Castle	Drawn by: Vignesh Prabhu K	App'd:	
Code: TIA-222-G	Date: 01/13/17	Scale: NTS	
Path:		Dwg No. E-7	

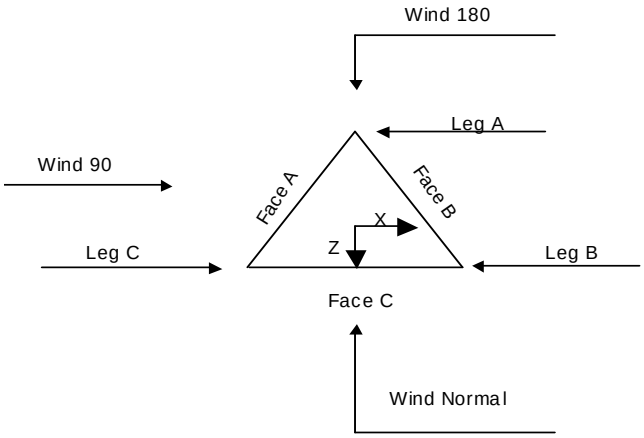
Tower Input Data

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-222-G standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.000 ft.
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 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
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

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
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 Single Diags X	K 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
T2 117.667-110.000	No	Yes	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
T4 90.000-70.000	No	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T5 70.000-52.615	No	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T6 52.615-50.000	No	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T7 50.000-40.000	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T8 40.000-20.000	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T9 20.000-0.000	Yes	No	2.62	1	1	1	1	1	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 50.000-40.000	1	0.5	0.85	1	0.5	0.85
T8 40.000-20.000	1	0.5	0.85	1	0.5	0.85
T9 20.000-0.000	1	0.5	0.85	1	0.5	0.85

Tower Section Geometry *(cont'd)*

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
T1 120.000-117.667	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	1	0.000	1
T2 117.667-110.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	1	0.000	1
T3 110.000-90.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1
T4 90.000-70.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1
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	0.000 A687	0	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	No	Ar (CaAa)	120.000 - 0.000	-6.000	0.34	3	3	0.500	0.573		0.000
9207(5/16) (E-Inside Conduit (K=0))	A	No	Ar (CaAa)	120.000 - 0.000	-6.000	0.3	6	6	0.330	0.330		0.001
2-1/4" Rigid Conduit (E-Per TIA) **v**	A	No	Ar (CaAa)	120.000 - 0.000	-6.000	0.3	2	2	2.250	2.250		0.003
HB114-1-0813U4-M5J(1-1/4) (E)	A	No	Ar (CaAa)	120.000 - 0.000	-6.000	0.4	4	2	0.500 2.000	1.540		0.001
T-Brackets (Af) (E) **v**	A	No	Af (CaAa)	120.000 - 0.000	-2.000	0.47	1	1	1.000	1.000		0.008
LDF7-50A(1-5/8) (E)	C	No	Ar (CaAa)	110.000 - 0.000	-6.000	0.35	12	6	0.500 2.000	1.980		0.001
FB-L98B-002-75000(3/8) (E-Inside Conduit (K=0))	C	No	Ar (CaAa)	110.000 - 0.000	-6.000	0.27	1	1	0.394	0.394		0.000
WR-VG82ST-BRDA(5/8) (E-Inside Conduit (K=0))	C	No	Ar (CaAa)	110.000 - 0.000	-6.000	0.27	2	2	0.645	0.645		0.000
2-1/4" Rigid Conduit (E-Per TIA)	C	No	Ar (CaAa)	110.000 - 0.000	-6.000	0.27	1	1	2.250	2.250		0.003
FB-L98B-002-75000(3/8) (P)	C	No	Ar (CaAa)	110.000 - 0.000	-2.000	0.27	1	1	0.850 0.750	0.394		0.000
WR-VG82ST-BRDA(5/8) (P)	C	No	Ar (CaAa)	110.000 - 0.000	-3.000	0.27	2	2	0.850 0.750	0.645		0.000
T-Brackets (Af) (E) **v**	C	No	Af (CaAa)	110.000 - 0.000	-2.000	0.47	1	1	1.000	1.000		0.008
LCF158-50JL(1-5/8) (E)	B	No	Ar (CaAa)	100.000 - 0.000	-6.000	0.35	6	6	0.500	1.980		0.001
T-Brackets (Af) (E) **v**	B	No	Af (CaAa)	100.000 - 0.000	-2.000	0.47	1	1	1.000	1.000		0.008
LDF4-50A(1/2) (E) **v**	A	No	Ar (CaAa)	40.000 - 0.000	-3.000	0.3	1	1	0.500	0.630		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
Safety Line 3/8 (E) **V**	A	No	Ar (CaAa)	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	0.000	0.000	3.827	0.000	0.054
		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	0.000	0.000	12.574	0.000	0.178
		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	0.000	0.000	32.801	0.000	0.465
		B	0.000	0.000	13.547	0.000	0.115
		C	0.000	0.000	62.088	0.000	0.452
T4	90.000-70.000	A	0.000	0.000	32.801	0.000	0.465
		B	0.000	0.000	27.093	0.000	0.230
		C	0.000	0.000	62.088	0.000	0.452
T5	70.000-52.615	A	0.000	0.000	28.513	0.000	0.405
		B	0.000	0.000	23.551	0.000	0.200
		C	0.000	0.000	53.971	0.000	0.393
T6	52.615-50.000	A	0.000	0.000	4.288	0.000	0.061
		B	0.000	0.000	3.542	0.000	0.030
		C	0.000	0.000	8.117	0.000	0.059
T7	50.000-40.000	A	0.000	0.000	16.401	0.000	0.233
		B	0.000	0.000	13.547	0.000	0.115
		C	0.000	0.000	31.044	0.000	0.226
T8	40.000-20.000	A	0.000	0.000	34.061	0.000	0.468
		B	0.000	0.000	27.093	0.000	0.230
		C	0.000	0.000	62.088	0.000	0.452
T9	20.000-0.000	A	0.000	0.000	34.061	0.000	0.468
		B	0.000	0.000	27.093	0.000	0.230
		C	0.000	0.000	62.088	0.000	0.452

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	1.705	0.000	0.000	13.125	0.000	0.201

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
		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	1.698	0.000	0.000	43.024	0.000	0.657
		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	1.676	0.000	0.000	111.461	0.000	1.694
		B		0.000	0.000	28.163	0.000	0.455
		C		0.000	0.000	119.841	0.000	2.138
T4	90.000-70.000	A	1.639	0.000	0.000	110.148	0.000	1.660
		B		0.000	0.000	55.949	0.000	0.893
		C		0.000	0.000	118.483	0.000	2.098
T5	70.000-52.615	A	1.596	0.000	0.000	94.421	0.000	1.410
		B		0.000	0.000	48.252	0.000	0.759
		C		0.000	0.000	101.619	0.000	1.785
T6	52.615-50.000	A	1.568	0.000	0.000	14.069	0.000	0.209
		B		0.000	0.000	7.219	0.000	0.113
		C		0.000	0.000	15.147	0.000	0.265
T7	50.000-40.000	A	1.547	0.000	0.000	53.449	0.000	0.790
		B		0.000	0.000	27.507	0.000	0.426
		C		0.000	0.000	57.559	0.000	1.001
T8	40.000-20.000	A	1.486	0.000	0.000	111.924	0.000	1.607
		B		0.000	0.000	54.387	0.000	0.825
		C		0.000	0.000	112.861	0.000	1.940
T9	20.000-0.000	A	1.331	0.000	0.000	105.841	0.000	1.467
		B		0.000	0.000	52.816	0.000	0.760
		C		0.000	0.000	107.192	0.000	1.789

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	0.264	-2.257	0.120	-1.563
T2	117.667-110.000	0.345	-2.948	0.134	-1.724
T3	110.000-90.000	-1.212	0.045	-0.680	-0.149
T4	90.000-70.000	-0.743	0.391	-0.274	0.120
T5	70.000-52.615	-0.828	0.454	-0.345	0.164
T6	52.615-50.000	-0.848	0.474	-0.330	0.164
T7	50.000-40.000	-0.807	0.465	-0.269	0.141
T8	40.000-20.000	-1.025	0.554	-0.393	0.061
T9	20.000-0.000	-1.271	0.724	-0.521	0.122

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	7983A(ELLIPTICAL)	117.67 - 120.00	0.6000	0.3176
T1	2	9207(5/16)	117.67 - 120.00	0.0000	0.0000
T1	3	2-1/4" Rigid Conduit	117.67 -	0.6000	0.3176

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			120.00		
T1	5	HB114-1-0813U4-M5J(1-1/4)	117.67 - 120.00	0.6000	0.3176
T1	6	T-Brackets (Af)	117.67 - 120.00	0.6000	0.3176
T1	21	Safety Line 3/8	117.67 - 120.00	0.6000	0.3176
T2	1	7983A(ELLIPTICAL)	110.00 - 117.67	0.6000	0.4389
T2	2	9207(5/16)	110.00 - 117.67	0.0000	0.0000
T2	3	2-1/4" Rigid Conduit	110.00 - 117.67	0.6000	0.4389
T2	5	HB114-1-0813U4-M5J(1-1/4)	110.00 - 117.67	0.6000	0.4389
T2	6	T-Brackets (Af)	110.00 - 117.67	0.6000	0.4389
T2	21	Safety Line 3/8	110.00 - 117.67	0.6000	0.4389
T3	1	7983A(ELLIPTICAL)	90.00 - 110.00	0.6000	0.4867
T3	2	9207(5/16)	90.00 - 110.00	0.0000	0.0000
T3	3	2-1/4" Rigid Conduit	90.00 - 110.00	0.6000	0.4867
T3	5	HB114-1-0813U4-M5J(1-1/4)	90.00 - 110.00	0.6000	0.4867
T3	6	T-Brackets (Af)	90.00 - 110.00	0.6000	0.4867
T3	8	LDF7-50A(1-5/8)	90.00 - 110.00	0.6000	0.4867
T3	9	FB-L98B-002-75000(3/8)	90.00 - 110.00	0.0000	0.0000
T3	10	WR-VG82ST-BRDA(5/8)	90.00 - 110.00	0.0000	0.0000
T3	11	2-1/4" Rigid Conduit	90.00 - 110.00	0.6000	0.4867
T3	12	FB-L98B-002-75000(3/8)	90.00 - 110.00	0.6000	0.4867
T3	13	WR-VG82ST-BRDA(5/8)	90.00 - 110.00	0.6000	0.4867
T3	14	T-Brackets (Af)	90.00 - 110.00	0.6000	0.4867
T3	16	LCF158-50JL(1-5/8)	90.00 - 100.00	0.6000	0.4867
T3	17	T-Brackets (Af)	90.00 - 100.00	0.6000	0.4867
T3	21	Safety Line 3/8	90.00 - 110.00	0.6000	0.4867
T4	1	7983A(ELLIPTICAL)	70.00 - 90.00	0.6000	0.3738
T4	2	9207(5/16)	70.00 - 90.00	0.0000	0.0000
T4	3	2-1/4" Rigid Conduit	70.00 - 90.00	0.6000	0.3738
T4	5	HB114-1-0813U4-M5J(1-1/4)	70.00 - 90.00	0.6000	0.3738
T4	6	T-Brackets (Af)	70.00 - 90.00	0.6000	0.3738
T4	8	LDF7-50A(1-5/8)	70.00 - 90.00	0.6000	0.3738
T4	9	FB-L98B-002-75000(3/8)	70.00 - 90.00	0.0000	0.0000
T4	10	WR-VG82ST-BRDA(5/8)	70.00 - 90.00	0.0000	0.0000
T4	11	2-1/4" Rigid Conduit	70.00 - 90.00	0.6000	0.3738
T4	12	FB-L98B-002-75000(3/8)	70.00 - 90.00	0.6000	0.3738
T4	13	WR-VG82ST-BRDA(5/8)	70.00 - 90.00	0.6000	0.3738
T4	14	T-Brackets (Af)	70.00 - 90.00	0.6000	0.3738
T4	16	LCF158-50JL(1-5/8)	70.00 - 90.00	0.6000	0.3738
T4	17	T-Brackets (Af)	70.00 - 90.00	0.6000	0.3738
T4	21	Safety Line 3/8	70.00 - 90.00	0.6000	0.3738
T5	1	7983A(ELLIPTICAL)	52.61 - 70.00	0.6000	0.5355
T5	2	9207(5/16)	52.61 - 70.00	0.0000	0.0000
T5	3	2-1/4" Rigid Conduit	52.61 - 70.00	0.6000	0.5355
T5	5	HB114-1-0813U4-M5J(1-1/4)	52.61 - 70.00	0.6000	0.5355
T5	6	T-Brackets (Af)	52.61 - 70.00	0.6000	0.5355
T5	8	LDF7-50A(1-5/8)	52.61 - 70.00	0.6000	0.5355
T5	9	FB-L98B-002-75000(3/8)	52.61 - 70.00	0.0000	0.0000
T5	10	WR-VG82ST-BRDA(5/8)	52.61 - 70.00	0.0000	0.0000
T5	11	2-1/4" Rigid Conduit	52.61 - 70.00	0.6000	0.5355
T5	12	FB-L98B-002-75000(3/8)	52.61 - 70.00	0.6000	0.5355

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	13	WR-VG82ST-BRDA(5/8)	52.61 - 70.00	0.6000	0.5355
T5	14	T-Brackets (Af)	52.61 - 70.00	0.6000	0.5355
T5	16	LCF158-50JL(1-5/8)	52.61 - 70.00	0.6000	0.5355
T5	17	T-Brackets (Af)	52.61 - 70.00	0.6000	0.5355
T5	21	Safety Line 3/8	52.61 - 70.00	0.6000	0.5355
T6	1	7983A(ELLIPTICAL)	50.00 - 52.61	0.6000	0.4702
T6	2	9207(5/16)	50.00 - 52.61	0.0000	0.0000
T6	3	2-1/4" Rigid Conduit	50.00 - 52.61	0.6000	0.4702
T6	5	HB114-1-0813U4-M5J(1-1/4)	50.00 - 52.61	0.6000	0.4702
T6	6	T-Brackets (Af)	50.00 - 52.61	0.6000	0.4702
T6	8	LDF7-50A(1-5/8)	50.00 - 52.61	0.6000	0.4702
T6	9	FB-L98B-002-75000(3/8)	50.00 - 52.61	0.0000	0.0000
T6	10	WR-VG82ST-BRDA(5/8)	50.00 - 52.61	0.0000	0.0000
T6	11	2-1/4" Rigid Conduit	50.00 - 52.61	0.6000	0.4702
T6	12	FB-L98B-002-75000(3/8)	50.00 - 52.61	0.6000	0.4702
T6	13	WR-VG82ST-BRDA(5/8)	50.00 - 52.61	0.6000	0.4702
T6	14	T-Brackets (Af)	50.00 - 52.61	0.6000	0.4702
T6	16	LCF158-50JL(1-5/8)	50.00 - 52.61	0.6000	0.4702
T6	17	T-Brackets (Af)	50.00 - 52.61	0.6000	0.4702
T6	21	Safety Line 3/8	50.00 - 52.61	0.6000	0.4702
T7	1	7983A(ELLIPTICAL)	40.00 - 50.00	0.6000	0.3357
T7	2	9207(5/16)	40.00 - 50.00	0.0000	0.0000
T7	3	2-1/4" Rigid Conduit	40.00 - 50.00	0.6000	0.3357
T7	5	HB114-1-0813U4-M5J(1-1/4)	40.00 - 50.00	0.6000	0.3357
T7	6	T-Brackets (Af)	40.00 - 50.00	0.6000	0.3357
T7	8	LDF7-50A(1-5/8)	40.00 - 50.00	0.6000	0.3357
T7	9	FB-L98B-002-75000(3/8)	40.00 - 50.00	0.0000	0.0000
T7	10	WR-VG82ST-BRDA(5/8)	40.00 - 50.00	0.0000	0.0000
T7	11	2-1/4" Rigid Conduit	40.00 - 50.00	0.6000	0.3357
T7	12	FB-L98B-002-75000(3/8)	40.00 - 50.00	0.6000	0.3357
T7	13	WR-VG82ST-BRDA(5/8)	40.00 - 50.00	0.6000	0.3357
T7	14	T-Brackets (Af)	40.00 - 50.00	0.6000	0.3357
T7	16	LCF158-50JL(1-5/8)	40.00 - 50.00	0.6000	0.3357
T7	17	T-Brackets (Af)	40.00 - 50.00	0.6000	0.3357
T7	21	Safety Line 3/8	40.00 - 50.00	0.6000	0.3357
T8	1	7983A(ELLIPTICAL)	20.00 - 40.00	0.6000	0.4441
T8	2	9207(5/16)	20.00 - 40.00	0.0000	0.0000
T8	3	2-1/4" Rigid Conduit	20.00 - 40.00	0.6000	0.4441
T8	5	HB114-1-0813U4-M5J(1-1/4)	20.00 - 40.00	0.6000	0.4441
T8	6	T-Brackets (Af)	20.00 - 40.00	0.6000	0.4441
T8	8	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.4441
T8	9	FB-L98B-002-75000(3/8)	20.00 - 40.00	0.0000	0.0000
T8	10	WR-VG82ST-BRDA(5/8)	20.00 - 40.00	0.0000	0.0000
T8	11	2-1/4" Rigid Conduit	20.00 - 40.00	0.6000	0.4441
T8	12	FB-L98B-002-75000(3/8)	20.00 - 40.00	0.6000	0.4441
T8	13	WR-VG82ST-BRDA(5/8)	20.00 - 40.00	0.6000	0.4441
T8	14	T-Brackets (Af)	20.00 - 40.00	0.6000	0.4441
T8	16	LCF158-50JL(1-5/8)	20.00 - 40.00	0.6000	0.4441
T8	17	T-Brackets (Af)	20.00 - 40.00	0.6000	0.4441
T8	19	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.4441
T8	21	Safety Line 3/8	20.00 - 40.00	0.6000	0.4441
T9	1	7983A(ELLIPTICAL)	0.00 - 20.00	0.6000	0.5440
T9	2	9207(5/16)	0.00 - 20.00	0.0000	0.0000
T9	3	2-1/4" Rigid Conduit	0.00 - 20.00	0.6000	0.5440
T9	5	HB114-1-0813U4-M5J(1-1/4)	0.00 - 20.00	0.6000	0.5440
T9	6	T-Brackets (Af)	0.00 - 20.00	0.6000	0.5440
T9	8	LDF7-50A(1-5/8)	0.00 - 20.00	0.6000	0.5440
T9	9	FB-L98B-002-75000(3/8)	0.00 - 20.00	0.0000	0.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	10	WR-VG82ST-BRDA(5/8)	0.00 - 20.00	0.0000	0.0000
T9	11	2-1/4" Rigid Conduit	0.00 - 20.00	0.6000	0.5440
T9	12	FB-L98B-002-75000(3/8)	0.00 - 20.00	0.6000	0.5440
T9	13	WR-VG82ST-BRDA(5/8)	0.00 - 20.00	0.6000	0.5440
T9	14	T-Brackets (Af)	0.00 - 20.00	0.6000	0.5440
T9	16	LCF158-50JL(1-5/8)	0.00 - 20.00	0.6000	0.5440
T9	17	T-Brackets (Af)	0.00 - 20.00	0.6000	0.5440
T9	19	LDF4-50A(1/2)	0.00 - 20.00	0.6000	0.5440
T9	21	Safety Line 3/8	0.00 - 20.00	0.6000	0.5440

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
LLPX310R w/ Mount Pipe	A	From Leg	4.000	0.000	120.000	No Ice	4.538	2.985	0.045
(E)			0.000			1/2" Ice	4.892	3.528	0.083
			-2.000			1" Ice	5.254	4.087	0.126
LLPX310R w/ Mount Pipe	B	From Leg	4.000	0.000	120.000	No Ice	4.538	2.985	0.045
(E)			0.000			1/2" Ice	4.892	3.528	0.083
			-2.000			1" Ice	5.254	4.087	0.126
LLPX310R w/ Mount Pipe	C	From Leg	4.000	0.000	120.000	No Ice	4.538	2.985	0.045
(E)			0.000			1/2" Ice	4.892	3.528	0.083
			-2.000			1" Ice	5.254	4.087	0.126
FDD_R6_RRH	A	From Leg	4.000	0.000	120.000	No Ice	1.533	0.684	0.033
(E)			0.000			1/2" Ice	1.690	0.800	0.045
			-2.000			1" Ice	1.854	0.923	0.058
FDD_R6_RRH	B	From Leg	4.000	0.000	120.000	No Ice	1.533	0.684	0.033
(E)			0.000			1/2" Ice	1.690	0.800	0.045
			-2.000			1" Ice	1.854	0.923	0.058
FDD_R6_RRH	C	From Leg	4.000	0.000	120.000	No Ice	1.533	0.684	0.033
(E)			0.000			1/2" Ice	1.690	0.800	0.045
			-2.000			1" Ice	1.854	0.923	0.058
5' x 2" Pipe Mount	B	From Leg	4.000	0.000	120.000	No Ice	1.000	1.000	0.029
(E-At Corner For Dish)			0.000			1/2" Ice	1.393	1.393	0.037
			0.000			1" Ice	1.703	1.703	0.048
5' x 2" Pipe Mount	C	From Leg	4.000	0.000	120.000	No Ice	1.000	1.000	0.029
(E-At Corner For Dish)			0.000			1/2" Ice	1.393	1.393	0.037
			0.000			1" Ice	1.703	1.703	0.048
(2) 5' x 2" Pipe Mount	B	From Leg	4.000	0.000	120.000	No Ice	1.000	1.000	0.029
(E-For Dish)			0.000			1/2" Ice	1.393	1.393	0.037
			0.000			1" Ice	1.703	1.703	0.048
5' x 2" Pipe Mount	C	From Leg	4.000	0.000	120.000	No Ice	1.000	1.000	0.029
(E-For Dish)			0.000			1/2" Ice	1.393	1.393	0.037
			0.000			1" Ice	1.703	1.703	0.048
(2) Side Arm Mount [SO	B	From Leg	5.000	0.000	120.000	No Ice	1.000	0.900	0.023
301-1]			0.000			1/2" Ice	1.390	1.420	0.033
(E)			0.000			1" Ice	1.780	1.940	0.042
Side Arm Mount [SO 301-1]	C	From Leg	5.000	0.000	120.000	No Ice	1.000	0.900	0.023
(E)			0.000			1/2" Ice	1.390	1.420	0.033
			0.000			1" Ice	1.780	1.940	0.042

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
V									
P40-16-XLPP-RR-A w/ Mount Pipe	A	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	8.242 8.701	4.825 5.571	0.073 0.136
(E)			0.000			1" Ice	9.155	6.265	0.205
P40-16-XLPP-RR-A w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	8.242 8.701	4.825 5.571	0.073 0.136
(E)			0.000			1" Ice	9.155	6.265	0.205
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	8.262 8.822	6.946 8.127	0.083 0.151
(E)			0.000			1" Ice	9.346	9.021	0.227
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	6.580 7.031	4.959 5.754	0.077 0.131
(E)			0.000			1" Ice	7.473	6.472	0.193
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	6.580 7.031	4.959 5.754	0.077 0.131
(E)			0.000			1" Ice	7.473	6.472	0.193
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	6.580 7.031	4.959 5.754	0.077 0.131
(E)			0.000			1" Ice	7.473	6.472	0.193
800 EXTERNAL NOTCH FILTER	A	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	0.660 0.763	0.321 0.398	0.011 0.017
(E)			0.000			1" Ice	0.873	0.483	0.024
800 EXTERNAL NOTCH FILTER	B	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	0.660 0.763	0.321 0.398	0.011 0.017
(E)			0.000			1" Ice	0.873	0.483	0.024
800 EXTERNAL NOTCH FILTER	C	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	0.660 0.763	0.321 0.398	0.011 0.017
(E)			0.000			1" Ice	0.873	0.483	0.024
1900MHz RRH (65MHz)	A	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	2.313 2.517	2.375 2.581	0.060 0.084
(E)			0.000			1" Ice	2.728	2.794	0.111
1900MHz RRH (65MHz)	B	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	2.313 2.517	2.375 2.581	0.060 0.084
(E)			0.000			1" Ice	2.728	2.794	0.111
1900MHz RRH (65MHz)	C	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	2.313 2.517	2.375 2.581	0.060 0.084
(E)			0.000			1" Ice	2.728	2.794	0.111
TD-RRH8x20-25	A	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	4.045 4.298	1.535 1.714	0.070 0.097
(E)			0.000			1" Ice	4.557	1.901	0.128
TD-RRH8x20-25	B	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	4.045 4.298	1.535 1.714	0.070 0.097
(E)			0.000			1" Ice	4.557	1.901	0.128
TD-RRH8x20-25	C	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	4.045 4.298	1.535 1.714	0.070 0.097
(E)			0.000			1" Ice	4.557	1.901	0.128
800MHZ RRH	A	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	2.134 2.320	1.773 1.946	0.053 0.074
(E)			0.000			1" Ice	2.512	2.127	0.098
800MHZ RRH	B	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	2.134 2.320	1.773 1.946	0.053 0.074
(E)			0.000			1" Ice	2.512	2.127	0.098
800MHZ RRH	C	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	2.134 2.320	1.773 1.946	0.053 0.074
(E)			0.000			1" Ice	2.512	2.127	0.098
(3) ACU-A20-N	A	From Leg	4.000 0.000	0.000	120.000	No Ice 1/2" Ice	0.067 0.104	0.117 0.162	0.001 0.002
(E)									

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
			0.000			1" Ice	0.148	0.215	0.004
(3) ACU-A20-N	B	From Leg	4.000	0.000	120.000	No Ice	0.067	0.117	0.001
(E)			0.000			1/2" Ice	0.104	0.162	0.002
			0.000			1" Ice	0.148	0.215	0.004
(3) ACU-A20-N	C	From Leg	4.000	0.000	120.000	No Ice	0.067	0.117	0.001
(E)			0.000			1/2" Ice	0.104	0.162	0.002
			0.000			1" Ice	0.148	0.215	0.004
5' x 2" Pipe Mount	A	From Leg	4.000	0.000	120.000	No Ice	1.000	1.000	0.029
(E-For TME's)			0.000			1/2" Ice	1.393	1.393	0.037
			0.000			1" Ice	1.703	1.703	0.048
5' x 2" Pipe Mount	B	From Leg	4.000	0.000	120.000	No Ice	1.000	1.000	0.029
(E-For TME's)			0.000			1/2" Ice	1.393	1.393	0.037
			0.000			1" Ice	1.703	1.703	0.048
5' x 2" Pipe Mount	C	From Leg	4.000	0.000	120.000	No Ice	1.000	1.000	0.029
(E-For TME's)			0.000			1/2" Ice	1.393	1.393	0.037
			0.000			1" Ice	1.703	1.703	0.048
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
v									
7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	110.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			2.000			1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	110.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			2.000			1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	110.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			2.000			1" Ice	6.607	5.711	0.157
(4) LGP21401	A	From Leg	4.000	0.000	110.000	No Ice	1.104	0.207	0.014
(E)			0.000			1/2" Ice	1.239	0.274	0.021
			2.000			1" Ice	1.381	0.348	0.030
(4) LGP21401	B	From Leg	4.000	0.000	110.000	No Ice	1.104	0.207	0.014
(E)			0.000			1/2" Ice	1.239	0.274	0.021
			2.000			1" Ice	1.381	0.348	0.030
(4) LGP21401	C	From Leg	4.000	0.000	110.000	No Ice	1.104	0.207	0.014
(E)			0.000			1/2" Ice	1.239	0.274	0.021
			2.000			1" Ice	1.381	0.348	0.030
RRUS-11	A	From Leg	4.000	0.000	110.000	No Ice	2.784	1.187	0.048
(E)			0.000			1/2" Ice	2.992	1.334	0.068
			2.000			1" Ice	3.207	1.490	0.092
RRUS-11	B	From Leg	4.000	0.000	110.000	No Ice	2.784	1.187	0.048
(E)			0.000			1/2" Ice	2.992	1.334	0.068
			2.000			1" Ice	3.207	1.490	0.092
RRUS-11	C	From Leg	4.000	0.000	110.000	No Ice	2.784	1.187	0.048
(E)			0.000			1/2" Ice	2.992	1.334	0.068
			2.000			1" Ice	3.207	1.490	0.092
DC6-48-60-18-8F	A	From Leg	4.000	0.000	110.000	No Ice	0.917	0.917	0.019
(E)			0.000			1/2" Ice	1.458	1.458	0.037
			2.000			1" Ice	1.643	1.643	0.057
HPA-65R-BUU-H6 w/	A	From Leg	4.000	0.000	110.000	No Ice	9.895	8.113	0.077
Mount Pipe			0.000			1/2" Ice	10.470	9.304	0.158
(P)			2.000			1" Ice	11.010	10.209	0.248
HPA-65R-BUU-H6 w/	B	From Leg	4.000	0.000	110.000	No Ice	9.895	8.113	0.077
Mount Pipe			0.000			1/2" Ice	10.470	9.304	0.158
(P)			2.000			1" Ice	11.010	10.209	0.248
HPA-65R-BUU-H6 w/	C	From Leg	4.000	0.000	110.000	No Ice	9.895	8.113	0.077

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
Mount Pipe			0.000			1/2" Ice	10.470	9.304	0.158
(P)			2.000			1" Ice	11.010	10.209	0.248
QS66512-2 w/ Mount Pipe	A	From Leg	4.000	0.000	110.000	No Ice	8.371	8.463	0.137
(P)			0.000			1/2" Ice	8.931	9.657	0.212
			2.000			1" Ice	9.457	10.548	0.296
QS66512-2 w/ Mount Pipe	B	From Leg	4.000	0.000	110.000	No Ice	8.371	8.463	0.137
(P)			0.000			1/2" Ice	8.931	9.657	0.212
			2.000			1" Ice	9.457	10.548	0.296
QS66512-2 w/ Mount Pipe	C	From Leg	4.000	0.000	110.000	No Ice	8.371	8.463	0.137
(P)			0.000			1/2" Ice	8.931	9.657	0.212
			2.000			1" Ice	9.457	10.548	0.296
(2) 7020.00	A	From Leg	4.000	0.000	110.000	No Ice	0.102	0.175	0.002
(P)			0.000			1/2" Ice	0.147	0.239	0.005
			2.000			1" Ice	0.199	0.311	0.009
(2) 7020.00	B	From Leg	4.000	0.000	110.000	No Ice	0.102	0.175	0.002
(P)			0.000			1/2" Ice	0.147	0.239	0.005
			2.000			1" Ice	0.199	0.311	0.009
(2) 7020.00	C	From Leg	4.000	0.000	110.000	No Ice	0.102	0.175	0.002
(P)			0.000			1/2" Ice	0.147	0.239	0.005
			2.000			1" Ice	0.199	0.311	0.009
RRUS 32 B2	A	From Leg	4.000	0.000	110.000	No Ice	2.731	1.668	0.053
(P)			0.000			1/2" Ice	2.953	1.855	0.074
			2.000			1" Ice	3.182	2.049	0.098
RRUS 32 B2	B	From Leg	4.000	0.000	110.000	No Ice	2.731	1.668	0.053
(P)			0.000			1/2" Ice	2.953	1.855	0.074
			2.000			1" Ice	3.182	2.049	0.098
RRUS 32 B2	C	From Leg	4.000	0.000	110.000	No Ice	2.731	1.668	0.053
(P)			0.000			1/2" Ice	2.953	1.855	0.074
			2.000			1" Ice	3.182	2.049	0.098
ATSBT-BOTTOM-FF-4G	A	From Leg	4.000	0.000	110.000	No Ice	0.174	0.095	0.002
(P)			0.000			1/2" Ice	0.229	0.140	0.003
			2.000			1" Ice	0.292	0.193	0.006
ATSBT-BOTTOM-FF-4G	B	From Leg	4.000	0.000	110.000	No Ice	0.174	0.095	0.002
(P)			0.000			1/2" Ice	0.229	0.140	0.003
			2.000			1" Ice	0.292	0.193	0.006
ATSBT-BOTTOM-FF-4G	C	From Leg	4.000	0.000	110.000	No Ice	0.174	0.095	0.002
(P)			0.000			1/2" Ice	0.229	0.140	0.003
			2.000			1" Ice	0.292	0.193	0.006
RRUS 32	A	From Leg	4.000	0.000	110.000	No Ice	2.857	1.777	0.055
(P)			0.000			1/2" Ice	3.083	1.968	0.077
			2.000			1" Ice	3.316	2.166	0.103
RRUS 32	B	From Leg	4.000	0.000	110.000	No Ice	2.857	1.777	0.055
(P)			0.000			1/2" Ice	3.083	1.968	0.077
			2.000			1" Ice	3.316	2.166	0.103
RRUS 32	C	From Leg	4.000	0.000	110.000	No Ice	2.857	1.777	0.055
(P)			0.000			1/2" Ice	3.083	1.968	0.077
			2.000			1" Ice	3.316	2.166	0.103
(2) TPX-070821	A	From Leg	4.000	0.000	110.000	No Ice	0.469	0.101	0.008
(P)			0.000			1/2" Ice	0.559	0.147	0.011
			2.000			1" Ice	0.656	0.202	0.016
(2) TPX-070821	B	From Leg	4.000	0.000	110.000	No Ice	0.469	0.101	0.008
(P)			0.000			1/2" Ice	0.559	0.147	0.011
			2.000			1" Ice	0.656	0.202	0.016
(2) TPX-070821	C	From Leg	4.000	0.000	110.000	No Ice	0.469	0.101	0.008
(P)			0.000			1/2" Ice	0.559	0.147	0.011
			2.000			1" Ice	0.656	0.202	0.016
DC6-48-60-18-8F	B	From Leg	4.000	0.000	110.000	No Ice	0.917	0.917	0.019

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
(P)			0.000			1/2" Ice	1.458	1.458	0.037
			2.000			1" Ice	1.643	1.643	0.057
5 Hor x 2" x 2" Tube Mount	A	From Face	1.000	0.000	110.000	No Ice	1.000	0.033	0.100
(E-Per Photo)			0.000			1/2" Ice	1.348	0.059	0.110
			2.000			1" Ice	1.704	0.093	0.124
5 Hor x 2" x 2" Tube Mount	B	From Face	1.000	0.000	110.000	No Ice	1.000	0.033	0.100
(E-Per Photo)			0.000			1/2" Ice	1.348	0.059	0.110
			2.000			1" Ice	1.704	0.093	0.124
5 Hor x 2" x 2" Tube Mount	C	From Face	1.000	0.000	110.000	No Ice	1.000	0.033	0.100
(E-Per Photo)			0.000			1/2" Ice	1.348	0.059	0.110
			2.000			1" Ice	1.704	0.093	0.124
5 Hor x 2" x 2" Tube Mount	A	From Face	1.000	0.000	110.000	No Ice	1.000	0.033	0.100
(E-Per Photo)			0.000			1/2" Ice	1.348	0.059	0.110
			-2.000			1" Ice	1.704	0.093	0.124
5 Hor x 2" x 2" Tube Mount	B	From Face	1.000	0.000	110.000	No Ice	1.000	0.033	0.100
(E-Per Photo)			0.000			1/2" Ice	1.348	0.059	0.110
			-2.000			1" Ice	1.704	0.093	0.124
5 Hor x 2" x 2" Tube Mount	C	From Face	1.000	0.000	110.000	No Ice	1.000	0.033	0.100
(E-Per Photo)			0.000			1/2" Ice	1.348	0.059	0.110
			-2.000			1" Ice	1.704	0.093	0.124
(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) 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) 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
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
						1" Ice	6.570	6.570	0.280
Sector Mount [SM 406-3]	C	None		0.000	110.000	No Ice	19.830	19.830	0.923
(E)						1/2" Ice	29.410	29.410	1.326
						1" Ice	38.990	38.990	1.729
V									
APXV18-206517S-C w/	A	From Leg	1.000	0.000	100.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
APXV18-206517S-C w/	B	From Leg	1.000	0.000	100.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
APXV18-206517S-C w/	C	From Leg	1.000	0.000	100.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
V									
BULLET III	B	From Leg	3.000	0.000	40.000	No Ice	0.066	0.066	0.000
(E-Leg Per Photo)			0.000			1/2" Ice	0.101	0.101	0.002
			6.000			1" Ice	0.144	0.144	0.003
Side Arm Mount [SO 701-1]	B	From Leg	1.500	0.000	40.000	No Ice	0.850	1.670	0.065
(E-Leg Per Photo)			0.000			1/2" Ice	1.140	2.340	0.079
			0.000			1" Ice	1.430	3.010	0.093
V									

Dishes

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 ft²	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 1/2" Ice 1" Ice	3.720 4.010 4.300	0.012 0.030 0.050
Dragonwave A-ANT-23G-2-C (E)	B	Paraboloid w/Shroud (HP)	From Leg	5.000 0.000 2.000	90.000		120.000	2.175	No Ice 1/2" Ice 1" Ice	3.720 4.010 4.300	0.012 0.030 0.050
Dragonwave A-ANT-23G-2-C (E) **v**	C	Paraboloid w/Shroud (HP)	From Leg	5.000 0.000 2.000	10.000		120.000	2.175	No Ice 1/2" Ice 1" Ice	3.720 4.010 4.300	0.012 0.030 0.050

Truss-Leg Properties

Section Designation	Area in²	Area Ice in²	Self Weight K	Ice Weight K	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in²
Pirod 105245	1090.334	3109.276	0.677	1.040	7.572	21.592	5.301
Pirod 105217	2130.748	6346.467	0.619	2.106	7.398	22.036	5.301
B+T_BU876312_Pirod 105217 w/ (2) 1.25SR	2297.598	6300.249	0.793	2.078	7.978	21.876	7.753

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	1.2D+1.6W (pattern 1) 0 deg - No Ice
4	1.2D+1.6W (pattern 2) 0 deg - No Ice
5	0.9 Dead+1.6 Wind 0 deg - No Ice
6	1.2 Dead+1.6 Wind 30 deg - No Ice
7	1.2D+1.6W (pattern 1) 30 deg - No Ice
8	1.2D+1.6W (pattern 2) 30 deg - No Ice
9	0.9 Dead+1.6 Wind 30 deg - No Ice
10	1.2 Dead+1.6 Wind 60 deg - No Ice
11	1.2D+1.6W (pattern 1) 60 deg - No Ice
12	1.2D+1.6W (pattern 2) 60 deg - No Ice
13	0.9 Dead+1.6 Wind 60 deg - No Ice
14	1.2 Dead+1.6 Wind 90 deg - No Ice
15	1.2D+1.6W (pattern 1) 90 deg - No Ice
16	1.2D+1.6W (pattern 2) 90 deg - No Ice
17	0.9 Dead+1.6 Wind 90 deg - No Ice
18	1.2 Dead+1.6 Wind 120 deg - No Ice
19	1.2D+1.6W (pattern 1) 120 deg - No Ice
20	1.2D+1.6W (pattern 2) 120 deg - No Ice

Comb. No.	Description
21	0.9 Dead+1.6 Wind 120 deg - No Ice
22	1.2 Dead+1.6 Wind 150 deg - No Ice
23	1.2D+1.6W (pattern 1) 150 deg - No Ice
24	1.2D+1.6W (pattern 2) 150 deg - No Ice
25	0.9 Dead+1.6 Wind 150 deg - No Ice
26	1.2 Dead+1.6 Wind 180 deg - No Ice
27	1.2D+1.6W (pattern 1) 180 deg - No Ice
28	1.2D+1.6W (pattern 2) 180 deg - No Ice
29	0.9 Dead+1.6 Wind 180 deg - No Ice
30	1.2 Dead+1.6 Wind 210 deg - No Ice
31	1.2D+1.6W (pattern 1) 210 deg - No Ice
32	1.2D+1.6W (pattern 2) 210 deg - No Ice
33	0.9 Dead+1.6 Wind 210 deg - No Ice
34	1.2 Dead+1.6 Wind 240 deg - No Ice
35	1.2D+1.6W (pattern 1) 240 deg - No Ice
36	1.2D+1.6W (pattern 2) 240 deg - No Ice
37	0.9 Dead+1.6 Wind 240 deg - No Ice
38	1.2 Dead+1.6 Wind 270 deg - No Ice
39	1.2D+1.6W (pattern 1) 270 deg - No Ice
40	1.2D+1.6W (pattern 2) 270 deg - No Ice
41	0.9 Dead+1.6 Wind 270 deg - No Ice
42	1.2 Dead+1.6 Wind 300 deg - No Ice
43	1.2D+1.6W (pattern 1) 300 deg - No Ice
44	1.2D+1.6W (pattern 2) 300 deg - No Ice
45	0.9 Dead+1.6 Wind 300 deg - No Ice
46	1.2 Dead+1.6 Wind 330 deg - No Ice
47	1.2D+1.6W (pattern 1) 330 deg - No Ice
48	1.2D+1.6W (pattern 2) 330 deg - No Ice
49	0.9 Dead+1.6 Wind 330 deg - No Ice
50	1.2 Dead+1.0 Ice+1.0 Temp
51	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
52	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
53	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
54	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
55	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
56	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
57	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
58	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
59	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
60	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
61	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
62	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
63	Dead+Wind 0 deg - Service
64	Dead+Wind 30 deg - Service
65	Dead+Wind 60 deg - Service
66	Dead+Wind 90 deg - Service
67	Dead+Wind 120 deg - Service
68	Dead+Wind 150 deg - Service
69	Dead+Wind 180 deg - Service
70	Dead+Wind 210 deg - Service
71	Dead+Wind 240 deg - Service
72	Dead+Wind 270 deg - Service
73	Dead+Wind 300 deg - Service
74	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	120 - 117.667	Leg	Max Tension	42	0.132	0.000	-0.000
			Max. Compression	55	-3.642	0.095	0.040
			Max. Mx	34	-1.450	-0.312	0.103
			Max. My	2	-1.081	-0.031	-0.322
			Max. Vy	14	-1.738	-0.000	-0.000
			Max. Vx	2	1.635	-0.000	-0.000
		Diagonal	Max Tension	14	3.210	0.000	0.000
			Max. Compression	14	-3.272	0.000	0.000
			Max. Mx	60	0.829	0.004	0.000
			Max. My	59	0.098	0.000	0.000
			Max. Vy	60	-0.006	0.000	0.000
			Max. Vx	59	-0.000	0.000	0.000
		Top Girt	Max Tension	10	2.168	-0.132	-0.001
			Max. Compression	34	-2.091	0.079	-0.002
			Max. Mx	2	1.028	-0.235	-0.000
			Max. My	2	0.578	-0.235	-0.009
			Max. Vy	2	0.141	-0.235	-0.000
			Max. Vx	2	-0.005	-0.235	-0.009
T2	117.667 - 110	Leg	Max Tension	13	13.661	0.025	-0.037
			Max. Compression	18	-16.583	0.043	0.035
			Max. Mx	14	-14.539	0.712	-0.065
			Max. My	2	-16.120	-0.061	-0.677
			Max. Vy	34	-2.036	0.366	-0.129
			Max. Vx	2	-2.117	0.036	0.383
		Diagonal	Max Tension	14	2.867	0.000	0.000
			Max. Compression	14	-2.928	0.000	0.000
			Max. Mx	56	0.643	-0.003	-0.000
			Max. My	14	-2.921	-0.000	0.001
			Max. Vy	56	0.007	-0.003	-0.000
			Max. Vx	14	-0.001	-0.000	0.001
		Horizontal	Max Tension	26	0.325	0.000	0.000
			Max. Compression	5	-0.188	0.000	0.000
			Max. Mx	50	0.203	0.011	0.000
			Max. My	14	0.074	0.000	0.000
			Max. Vy	50	-0.012	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
		Top Girt	Max Tension	34	0.254	0.000	0.000
			Max. Compression	45	-0.186	0.000	0.000
			Max. Mx	50	0.083	0.012	0.000
			Max. My	14	0.059	0.000	0.000
			Max. Vy	50	-0.014	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
		Bottom Girt	Max Tension	26	0.947	0.000	0.000
			Max. Compression	18	-0.986	0.000	0.000
			Max. Mx	50	0.011	0.012	0.000
			Max. My	14	0.187	0.000	0.000
			Max. Vy	50	-0.014	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
T3	110 - 90	Leg	Max Tension	13	70.614	1.033	0.100
			Max. Compression	18	-77.724	0.513	-0.024
			Max. Mx	2	-19.405	1.229	-0.105
			Max. My	6	-3.474	0.025	-1.216
			Max. Vy	18	-3.904	0.513	-0.024
			Max. Vx	6	3.381	-0.006	-0.427
		Diagonal	Max Tension	14	4.999	0.000	0.000
			Max. Compression	14	-4.976	0.000	0.000
			Max. Mx	59	1.037	-0.005	-0.000
			Max. My	14	-4.877	-0.000	0.004
			Max. Vy	59	0.009	-0.005	-0.000
			Max. Vx	14	-0.002	-0.000	0.004
		Horizontal	Max Tension	26	1.357	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	5	-1.107	0.000	0.000
			Max. Mx	51	0.153	0.013	0.000
			Max. My	14	0.123	0.000	0.000
			Max. Vy	51	-0.013	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
		Top Girt	Max Tension	18	1.775	0.000	0.000
			Max. Compression	10	-1.749	0.000	0.000
			Max. Mx	50	0.022	0.010	0.000
			Max. My	14	-0.023	0.000	0.000
			Max. Vy	50	0.012	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
		Bottom Girt	Max Tension	26	2.248	0.000	0.000
			Max. Compression	2	-2.275	0.000	0.000
			Max. Mx	50	0.085	0.013	0.000
			Max. My	14	0.439	0.000	0.000
			Max. Vy	50	-0.014	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
T4	90 - 70	Leg	Max Tension	13	128.430	2.484	0.160
			Max. Compression	18	-138.122	-0.459	0.042
			Max. Mx	2	-138.037	-2.645	0.088
			Max. My	6	-5.922	0.013	2.181
			Max. Vy	2	-4.403	-0.444	0.017
			Max. Vx	6	3.672	0.020	0.345
		Diagonal	Max Tension	14	7.595	-0.004	0.000
			Max. Compression	14	-7.612	0.000	0.000
			Max. Mx	59	0.776	-0.008	-0.001
			Max. My	6	-4.529	0.002	0.005
			Max. Vy	59	0.011	-0.008	-0.001
			Max. Vx	6	-0.002	0.002	0.005
		Secondary Horizontal	Max Tension	14	3.283	0.000	0.000
			Max. Compression	14	-3.144	-0.003	-0.003
			Max. Mx	34	-1.176	-0.012	-0.005
			Max. My	6	0.163	-0.011	-0.006
			Max. Vy	62	0.016	-0.009	-0.000
			Max. Vx	6	0.003	0.000	0.000
		Top Girt	Max Tension	18	1.887	0.000	0.000
			Max. Compression	10	-1.730	0.000	0.000
			Max. Mx	50	0.022	0.017	0.000
			Max. My	14	-0.391	0.000	0.000
			Max. Vy	50	-0.017	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
		Bottom Girt	Max Tension	26	2.783	0.000	0.000
			Max. Compression	2	-3.164	0.000	0.000
			Max. Mx	50	0.087	0.021	0.000
			Max. My	14	0.837	0.000	0.000
			Max. Vy	50	-0.019	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
T5	70 - 52.6146	Leg	Max Tension	13	173.436	-0.168	-0.003
			Max. Compression	2	-185.474	0.107	-0.000
			Max. Mx	2	-138.067	3.990	-0.129
			Max. My	6	-6.521	0.032	-3.333
			Max. Vy	2	-4.437	3.990	-0.129
			Max. Vx	6	3.681	0.032	-3.333
		Diagonal	Max Tension	14	6.407	0.000	0.000
			Max. Compression	14	-7.009	0.000	0.000
			Max. Mx	59	1.229	-0.008	-0.000
			Max. My	14	-6.980	0.001	0.006
			Max. Vy	59	0.012	-0.008	-0.000
			Max. Vx	14	-0.003	0.001	0.006
		Horizontal	Max Tension	26	2.418	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	5	-2.164	0.000	0.000
			Max. Mx	50	0.250	0.022	0.000
			Max. My	14	0.059	0.000	0.000
			Max. Vy	50	-0.018	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
		Top Girt	Max Tension	18	2.341	0.000	0.000
			Max. Compression	10	-1.975	0.000	0.000
			Max. Mx	50	0.065	0.021	0.000
			Max. My	14	-0.719	0.000	0.000
			Max. Vy	50	-0.019	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
T6	52.6146 - 50	Leg	Max Tension	13	183.012	-0.195	0.047
			Max. Compression	34	-195.500	3.479	0.107
			Max. Mx	2	-195.457	3.496	-0.040
			Max. My	6	-7.280	0.093	-2.021
			Max. Vy	18	-5.683	3.483	-0.068
			Max. Vx	6	3.588	0.093	-2.021
		Diagonal	Max Tension	14	4.988	0.000	0.000
			Max. Compression	14	-5.266	0.000	0.000
			Max. Mx	59	1.222	-0.008	-0.000
			Max. My	34	-3.974	-0.001	-0.001
			Max. Vy	59	0.012	-0.008	-0.000
			Max. Vx	34	0.000	0.000	0.000
		Horizontal	Max Tension	26	1.334	0.000	0.000
			Max. Compression	5	-1.152	0.000	0.000
			Max. Mx	50	0.244	0.022	0.000
			Max. My	14	0.091	0.000	0.000
			Max. Vy	50	0.018	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
		Bottom Girt	Max Tension	26	1.924	0.000	0.000
			Max. Compression	5	-1.765	0.000	0.000
			Max. Mx	50	0.068	0.025	0.000
			Max. My	14	-0.255	0.000	0.000
			Max. Vy	50	0.020	0.000	0.000
			Max. Vx	14	-0.000	0.000	0.000
T7	50 - 40	Leg	Max Tension	13	177.412	-3.211	-0.116
			Max. Compression	34	-188.691	8.196	0.110
			Max. Mx	10	176.735	-8.656	-0.056
			Max. My	46	-6.715	-0.248	14.494
			Max. Vy	10	0.655	-8.656	-0.056
			Max. Vx	38	1.368	-0.254	-14.480
		Diagonal	Max Tension	37	6.254	0.000	0.000
			Max. Compression	10	-6.519	0.000	0.000
			Max. Mx	10	1.057	0.133	0.019
			Max. My	14	-0.276	-0.101	-0.032
			Max. Vy	61	0.030	0.060	-0.000
			Max. Vx	14	0.006	0.000	0.000
T8	40 - 20	Leg	Max Tension	13	188.647	-8.121	-0.032
			Max. Compression	34	-203.312	7.555	0.040
			Max. Mx	10	183.793	-8.656	-0.056
			Max. My	46	-7.862	-0.248	14.494
			Max. Vy	53	-0.207	-3.438	0.020
			Max. Vx	46	0.804	-0.248	14.494
		Diagonal	Max Tension	35	2.722	0.058	-0.003
			Max. Compression	17	-3.327	0.000	0.000
			Max. Mx	34	1.894	0.127	0.008
			Max. My	12	0.277	0.105	-0.011
			Max. Vy	59	-0.036	0.076	0.010
			Max. Vx	53	0.003	0.000	0.000
T9	20 - 0	Leg	Max Tension	13	198.604	-6.812	-0.022
			Max. Compression	2	-217.314	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	34	-211.078	7.555	0.040
			Max. My	6	-10.008	-0.257	-10.079
			Max. Vy	10	-0.794	-6.911	-0.019
			Max. Vx	46	1.102	-0.277	10.073
		Diagonal	Max Tension	13	4.469	0.000	0.000
			Max. Compression	34	-5.104	0.000	0.000
			Max. Mx	34	1.894	0.071	0.005
			Max. My	9	-3.831	-0.027	-0.013
			Max. Vy	60	0.037	0.053	-0.010
			Max. Vx	59	-0.003	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	34	224.248	15.463	-8.795
	Max. H_x	34	224.248	15.463	-8.795
	Max. H_z	13	-203.931	-14.212	8.027
	Min. Vert	13	-203.931	-14.212	8.027
	Min. H_x	13	-203.931	-14.212	8.027
	Min. H_z	34	224.248	15.463	-8.795
Leg B	Max. Vert	18	223.943	-15.451	-8.798
	Max. H_x	45	-203.875	14.180	8.041
	Max. H_z	45	-203.875	14.180	8.041
	Min. Vert	45	-203.875	14.180	8.041
	Min. H_x	18	223.943	-15.451	-8.798
	Min. H_z	18	223.943	-15.451	-8.798
Leg A	Max. Vert	2	224.252	0.014	17.791
	Max. H_x	16	10.902	1.262	0.805
	Max. H_z	2	224.252	0.014	17.791
	Min. Vert	29	-202.837	-0.009	-16.255
	Min. H_x	40	9.709	-1.262	0.732
	Min. H_z	29	-202.837	-0.009	-16.255

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	24.563	0.000	0.000	-0.762	1.742	0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	29.476	0.034	-24.179	-1856.988	-1.296	0.289
1.2D+1.6W (pattern 1) 0 deg - No Ice	29.476	0.034	-22.261	-1637.538	-1.296	0.237
1.2D+1.6W (pattern 2) 0 deg - No Ice	29.476	0.030	-21.402	-1723.021	-1.129	0.202
0.9 Dead+1.6 Wind 0 deg - No Ice	22.107	0.034	-24.179	-1849.567	-1.810	0.294
1.2 Dead+1.6 Wind 30 deg - No Ice	29.476	12.004	-20.640	-1588.811	-925.702	1.879
1.2D+1.6W (pattern 1) 30 deg - No Ice	29.476	11.049	-18.985	-1399.508	-816.391	1.832

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
1.2D+1.6W (pattern 2) 30 deg - No Ice	29.476	10.697	-18.377	-1479.332	-862.485	1.772
0.9 Dead+1.6 Wind 30 deg - No Ice	22.107	12.004	-20.640	-1582.419	-922.602	1.882
1.2 Dead+1.6 Wind 60 deg - No Ice	29.476	20.540	-11.839	-917.365	-1591.258	2.625
1.2D+1.6W (pattern 1) 60 deg - No Ice	29.476	18.887	-10.885	-808.200	-1402.186	2.626
1.2D+1.6W (pattern 2) 60 deg - No Ice	29.476	18.277	-10.527	-853.343	-1480.697	2.538
0.9 Dead+1.6 Wind 60 deg - No Ice	22.107	20.540	-11.839	-913.556	-1585.555	2.628
1.2 Dead+1.6 Wind 90 deg - No Ice	29.476	23.866	-0.075	-9.494	-1837.080	2.996
1.2D+1.6W (pattern 1) 90 deg - No Ice	29.476	21.955	-0.075	-9.473	-1618.481	3.044
1.2D+1.6W (pattern 2) 90 deg - No Ice	29.476	21.259	-0.071	-9.324	-1710.946	2.952
0.9 Dead+1.6 Wind 90 deg - No Ice	22.107	23.866	-0.075	-9.208	-1830.453	2.997
1.2 Dead+1.6 Wind 120 deg - No Ice	29.476	20.960	12.039	921.506	-1609.144	2.067
1.2D+1.6W (pattern 1) 120 deg - No Ice	29.476	19.299	11.080	811.782	-1419.092	2.124
1.2D+1.6W (pattern 2) 120 deg - No Ice	29.476	18.561	10.654	854.665	-1493.374	2.068
0.9 Dead+1.6 Wind 120 deg - No Ice	22.107	20.960	12.039	918.168	-1603.422	2.066
1.2 Dead+1.6 Wind 150 deg - No Ice	29.476	11.922	20.610	1584.091	-916.722	1.296
1.2D+1.6W (pattern 1) 150 deg - No Ice	29.476	10.966	18.955	1394.771	-807.437	1.344
1.2D+1.6W (pattern 2) 150 deg - No Ice	29.476	10.622	18.351	1474.770	-853.804	1.340
0.9 Dead+1.6 Wind 150 deg - No Ice	22.107	11.922	20.610	1578.160	-913.688	1.292
1.2 Dead+1.6 Wind 180 deg - No Ice	29.476	-0.023	23.629	1827.339	4.211	-0.048
1.2D+1.6W (pattern 1) 180 deg - No Ice	29.476	-0.023	21.721	1609.014	4.210	0.004
1.2D+1.6W (pattern 2) 180 deg - No Ice	29.476	-0.019	21.013	1699.580	4.046	0.039
0.9 Dead+1.6 Wind 180 deg - No Ice	22.107	-0.023	23.629	1820.435	3.671	-0.052
1.2 Dead+1.6 Wind 210 deg - No Ice	29.476	-11.951	20.595	1581.410	923.207	-1.551
1.2D+1.6W (pattern 1) 210 deg - No Ice	29.476	-10.996	18.940	1392.091	813.920	-1.509
1.2D+1.6W (pattern 2) 210 deg - No Ice	29.476	-10.644	18.331	1471.923	860.003	-1.445
0.9 Dead+1.6 Wind 210 deg - No Ice	22.107	-11.951	20.595	1575.495	919.102	-1.555
1.2 Dead+1.6 Wind 240 deg - No Ice	29.476	-20.959	12.048	921.211	1612.367	-2.339
1.2D+1.6W (pattern 1) 240 deg - No Ice	29.476	-19.297	11.089	811.488	1422.315	-2.342
1.2D+1.6W (pattern 2) 240 deg - No Ice	29.476	-18.556	10.656	854.081	1496.431	-2.252
0.9 Dead+1.6 Wind 240 deg - No Ice	22.107	-20.959	12.048	917.876	1605.590	-2.342
1.2 Dead+1.6 Wind 270 deg -	29.476	-23.858	0.024	1.163	1840.341	-2.813

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
No Ice						
1.2D+1.6W (pattern 1) 270 deg - No Ice	29.476	-21.947	0.024	1.185	1621.743	-2.861
1.2D+1.6W (pattern 2) 270 deg - No Ice	29.476	-21.252	0.019	1.002	1714.208	-2.768
0.9 Dead+1.6 Wind 270 deg - No Ice	22.107	-23.858	0.024	1.397	1832.658	-2.814
1.2 Dead+1.6 Wind 300 deg - No Ice	29.476	-20.532	-11.778	-911.200	1595.309	-2.338
1.2D+1.6W (pattern 1) 300 deg - No Ice	29.476	-18.879	-10.824	-802.035	1406.236	-2.392
1.2D+1.6W (pattern 2) 300 deg - No Ice	29.476	-18.273	-10.474	-847.464	1484.915	-2.338
0.9 Dead+1.6 Wind 300 deg - No Ice	22.107	-20.532	-11.778	-907.421	1588.544	-2.336
1.2 Dead+1.6 Wind 330 deg - No Ice	29.476	-11.934	-20.649	-1590.725	922.521	-1.120
1.2D+1.6W (pattern 1) 330 deg - No Ice	29.476	-10.978	-18.994	-1401.423	813.208	-1.165
1.2D+1.6W (pattern 2) 330 deg - No Ice	29.476	-10.634	-18.390	-1481.411	859.592	-1.163
0.9 Dead+1.6 Wind 330 deg - No Ice	22.107	-11.934	-20.649	-1584.323	918.395	-1.116
1.2 Dead+1.0 Ice+1.0 Temp	83.627	0.000	0.000	-0.163	10.364	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	83.627	0.010	-7.528	-585.760	9.527	0.246
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	83.627	3.753	-6.472	-504.024	-282.618	0.596
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	83.627	6.482	-3.743	-291.897	-495.354	0.724
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	83.627	7.472	-0.019	-2.237	-571.782	0.742
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	83.627	6.516	3.751	291.231	-496.830	0.447
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	83.627	3.731	6.463	502.855	-280.311	0.174
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	83.627	-0.008	7.471	581.926	11.135	-0.196
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	83.627	-3.742	6.462	502.478	302.104	-0.530
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	83.627	-6.519	3.758	291.521	517.764	-0.670
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	83.627	-7.470	0.008	0.487	592.519	-0.702
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	83.627	-6.477	-3.725	-290.204	516.055	-0.506
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	83.627	-3.733	-6.471	-504.235	301.598	-0.136
Dead+Wind 0 deg - Service	24.563	0.008	-5.782	-443.548	0.944	0.069
Dead+Wind 30 deg - Service	24.563	2.871	-4.936	-379.567	-219.562	0.438
Dead+Wind 60 deg - Service	24.563	4.912	-2.831	-219.379	-378.330	0.627
Dead+Wind 90 deg - Service	24.563	5.707	-0.018	-2.800	-436.985	0.728
Dead+Wind 120 deg - Service	24.563	5.012	2.879	219.288	-382.625	0.497
Dead+Wind 150 deg - Service	24.563	2.851	4.929	377.336	-217.444	0.300
Dead+Wind 180 deg - Service	24.563	-0.006	5.651	435.354	2.257	-0.014
Dead+Wind 210 deg - Service	24.563	-2.858	4.925	376.697	221.495	-0.364
Dead+Wind 240 deg - Service	24.563	-5.012	2.881	219.218	385.898	-0.561
Dead+Wind 270 deg - Service	24.563	-5.705	0.006	-0.258	440.268	-0.683
Dead+Wind 300 deg - Service	24.563	-4.910	-2.817	-217.908	381.800	-0.558
Dead+Wind 330 deg - Service	24.563	-2.854	-4.938	-380.022	221.309	-0.256

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	-24.563	0.000	0.000	24.563	0.000	0.000%
2	0.034	-29.476	-24.179	-0.034	29.476	24.179	0.000%
3	0.034	-29.476	-22.261	-0.034	29.476	22.261	0.000%
4	0.030	-29.476	-21.402	-0.030	29.476	21.402	0.000%
5	0.034	-22.107	-24.179	-0.034	22.107	24.179	0.000%
6	12.004	-29.476	-20.640	-12.004	29.476	20.640	0.000%
7	11.049	-29.476	-18.985	-11.049	29.476	18.985	0.000%
8	10.697	-29.476	-18.377	-10.697	29.476	18.377	0.000%
9	12.004	-22.107	-20.640	-12.004	22.107	20.640	0.000%
10	20.540	-29.476	-11.839	-20.540	29.476	11.839	0.000%
11	18.887	-29.476	-10.885	-18.887	29.476	10.885	0.000%
12	18.277	-29.476	-10.527	-18.277	29.476	10.527	0.000%
13	20.540	-22.107	-11.839	-20.540	22.107	11.839	0.000%
14	23.866	-29.476	-0.075	-23.866	29.476	0.075	0.000%
15	21.955	-29.476	-0.075	-21.955	29.476	0.075	0.000%
16	21.259	-29.476	-0.071	-21.259	29.476	0.071	0.000%
17	23.866	-22.107	-0.075	-23.866	22.107	0.075	0.000%
18	20.960	-29.476	12.039	-20.960	29.476	-12.039	0.000%
19	19.299	-29.476	11.080	-19.299	29.476	-11.080	0.000%
20	18.561	-29.476	10.654	-18.561	29.476	-10.654	0.000%
21	20.960	-22.107	12.039	-20.960	22.107	-12.039	0.000%
22	11.922	-29.476	20.610	-11.922	29.476	-20.610	0.000%
23	10.966	-29.476	18.955	-10.966	29.476	-18.955	0.000%
24	10.622	-29.476	18.351	-10.622	29.476	-18.351	0.000%
25	11.922	-22.107	20.610	-11.922	22.107	-20.610	0.000%
26	-0.023	-29.476	23.629	0.023	29.476	-23.629	0.000%
27	-0.023	-29.476	21.721	0.023	29.476	-21.721	0.000%
28	-0.019	-29.476	21.013	0.019	29.476	-21.013	0.000%
29	-0.023	-22.107	23.629	0.023	22.107	-23.629	0.000%
30	-11.951	-29.476	20.595	11.951	29.476	-20.595	0.000%
31	-10.996	-29.476	18.940	10.996	29.476	-18.940	0.000%
32	-10.644	-29.476	18.331	10.644	29.476	-18.331	0.000%
33	-11.951	-22.107	20.595	11.951	22.107	-20.595	0.000%
34	-20.959	-29.476	12.048	20.959	29.476	-12.048	0.000%
35	-19.297	-29.476	11.089	19.297	29.476	-11.089	0.000%
36	-18.556	-29.476	10.656	18.556	29.476	-10.656	0.000%
37	-20.959	-22.107	12.048	20.959	22.107	-12.048	0.000%
38	-23.858	-29.476	0.024	23.858	29.476	-0.024	0.000%
39	-21.947	-29.476	0.024	21.947	29.476	-0.024	0.000%
40	-21.252	-29.476	0.019	21.252	29.476	-0.019	0.000%
41	-23.858	-22.107	0.024	23.858	22.107	-0.024	0.000%
42	-20.532	-29.476	-11.778	20.532	29.476	11.778	0.000%
43	-18.879	-29.476	-10.824	18.879	29.476	10.824	0.000%
44	-18.273	-29.476	-10.474	18.273	29.476	10.474	0.000%
45	-20.532	-22.107	-11.778	20.532	22.107	11.778	0.000%
46	-11.934	-29.476	-20.649	11.934	29.476	20.649	0.000%
47	-10.978	-29.476	-18.994	10.978	29.476	18.994	0.000%
48	-10.634	-29.476	-18.390	10.634	29.476	18.390	0.000%
49	-11.934	-22.107	-20.649	11.934	22.107	20.649	0.000%
50	0.000	-83.627	0.000	-0.000	83.627	0.000	0.000%
51	0.010	-83.627	-7.528	-0.010	83.627	7.528	0.000%
52	3.753	-83.627	-6.472	-3.753	83.627	6.472	0.000%
53	6.482	-83.627	-3.743	-6.482	83.627	3.743	0.000%
54	7.472	-83.627	-0.019	-7.472	83.627	0.019	0.000%
55	6.516	-83.627	3.751	-6.516	83.627	-3.751	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
56	3.731	-83.627	6.463	-3.731	83.627	-6.463	0.000%
57	-0.008	-83.627	7.471	0.008	83.627	-7.471	0.000%
58	-3.742	-83.627	6.462	3.742	83.627	-6.462	0.000%
59	-6.519	-83.627	3.758	6.519	83.627	-3.758	0.000%
60	-7.470	-83.627	0.008	7.470	83.627	-0.008	0.000%
61	-6.477	-83.627	-3.725	6.477	83.627	3.725	0.000%
62	-3.733	-83.627	-6.471	3.733	83.627	6.471	0.000%
63	0.008	-24.563	-5.782	-0.008	24.563	5.782	0.000%
64	2.871	-24.563	-4.936	-2.871	24.563	4.936	0.000%
65	4.912	-24.563	-2.831	-4.912	24.563	2.831	0.000%
66	5.707	-24.563	-0.018	-5.707	24.563	0.018	0.000%
67	5.012	-24.563	2.879	-5.012	24.563	-2.879	0.000%
68	2.851	-24.563	4.929	-2.851	24.563	-4.929	0.000%
69	-0.006	-24.563	5.651	0.006	24.563	-5.651	0.000%
70	-2.858	-24.563	4.925	2.858	24.563	-4.925	0.000%
71	-5.012	-24.563	2.881	5.012	24.563	-2.881	0.000%
72	-5.705	-24.563	0.006	5.705	24.563	-0.006	0.000%
73	-4.910	-24.563	-2.817	4.910	24.563	2.817	0.000%
74	-2.854	-24.563	-4.938	2.854	24.563	4.938	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	0.00001413
3	Yes	4	0.00000001	0.00001515
4	Yes	4	0.00000001	0.00001425
5	Yes	4	0.00000001	0.00000718
6	Yes	4	0.00000001	0.00002254
7	Yes	4	0.00000001	0.00002017
8	Yes	4	0.00000001	0.00002167
9	Yes	4	0.00000001	0.00001726
10	Yes	4	0.00000001	0.00002066
11	Yes	4	0.00000001	0.00002002
12	Yes	4	0.00000001	0.00002034
13	Yes	4	0.00000001	0.00001352
14	Yes	4	0.00000001	0.00001995
15	Yes	4	0.00000001	0.00001886
16	Yes	4	0.00000001	0.00001936
17	Yes	4	0.00000001	0.00001318
18	Yes	4	0.00000001	0.00001508
19	Yes	4	0.00000001	0.00001570
20	Yes	4	0.00000001	0.00001506
21	Yes	4	0.00000001	0.00000863
22	Yes	4	0.00000001	0.00001868
23	Yes	4	0.00000001	0.00001828
24	Yes	4	0.00000001	0.00001816
25	Yes	4	0.00000001	0.00001162
26	Yes	4	0.00000001	0.00001768
27	Yes	4	0.00000001	0.00001853
28	Yes	4	0.00000001	0.00001765
29	Yes	4	0.00000001	0.00000828
30	Yes	4	0.00000001	0.00002044
31	Yes	4	0.00000001	0.00001907
32	Yes	4	0.00000001	0.00001981

33	Yes	4	0.00000001	0.00001456
34	Yes	4	0.00000001	0.00001719
35	Yes	4	0.00000001	0.00001671
36	Yes	4	0.00000001	0.00001696
37	Yes	4	0.00000001	0.00001183
38	Yes	4	0.00000001	0.00001925
39	Yes	4	0.00000001	0.00001853
40	Yes	4	0.00000001	0.00001876
41	Yes	4	0.00000001	0.00001226
42	Yes	4	0.00000001	0.00001910
43	Yes	4	0.00000001	0.00001930
44	Yes	4	0.00000001	0.00001892
45	Yes	4	0.00000001	0.00001092
46	Yes	4	0.00000001	0.00001928
47	Yes	4	0.00000001	0.00001852
48	Yes	4	0.00000001	0.00001867
49	Yes	4	0.00000001	0.00001237
50	Yes	4	0.00000001	0.00002712
51	Yes	4	0.00000001	0.00026300
52	Yes	4	0.00000001	0.00026645
53	Yes	4	0.00000001	0.00027044
54	Yes	4	0.00000001	0.00026680
55	Yes	4	0.00000001	0.00026320
56	Yes	4	0.00000001	0.00026672
57	Yes	4	0.00000001	0.00027052
58	Yes	4	0.00000001	0.00026702
59	Yes	4	0.00000001	0.00026413
60	Yes	4	0.00000001	0.00026785
61	Yes	4	0.00000001	0.00027139
62	Yes	4	0.00000001	0.00026717
63	Yes	4	0.00000001	0.00001094
64	Yes	4	0.00000001	0.00001131
65	Yes	4	0.00000001	0.00001164
66	Yes	4	0.00000001	0.00001132
67	Yes	4	0.00000001	0.00001096
68	Yes	4	0.00000001	0.00001130
69	Yes	4	0.00000001	0.00001161
70	Yes	4	0.00000001	0.00001129
71	Yes	4	0.00000001	0.00001096
72	Yes	4	0.00000001	0.00001132
73	Yes	4	0.00000001	0.00001164
74	Yes	4	0.00000001	0.00001130

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 117.667	6.578	71	0.508	0.095
T2	117.667 - 110	6.326	71	0.508	0.091
T3	110 - 90	5.494	71	0.498	0.071
T4	90 - 70	3.476	71	0.420	0.043
T5	70 - 52.6146	1.898	71	0.296	0.027
T6	52.6146 - 50	0.923	71	0.202	0.013
T7	50 - 40	0.812	71	0.185	0.012
T8	40 - 20	0.477	71	0.133	0.007
T9	20 - 0	0.103	71	0.048	0.002

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	71	6.578	0.508	0.095	98096
120.000	LLPX310R w/ Mount Pipe	71	6.578	0.508	0.095	98096
110.000	7770.00 w/ Mount Pipe	71	5.494	0.498	0.071	29714
100.000	APXV18-206517S-C w/ Mount Pipe	71	4.443	0.468	0.053	14002
40.000	BULLET III	71	0.477	0.133	0.007	11992

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 117.667	27.552	18	2.130	0.402
T2	117.667 - 110	26.497	18	2.130	0.385
T3	110 - 90	23.005	34	2.091	0.300
T4	90 - 70	14.548	34	1.761	0.184
T5	70 - 52.6146	7.937	34	1.241	0.113
T6	52.6146 - 50	3.859	2	0.843	0.056
T7	50 - 40	3.395	34	0.775	0.049
T8	40 - 20	1.997	2	0.554	0.029
T9	20 - 0	0.431	2	0.199	0.010

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	18	27.552	2.130	0.402	26679
120.000	LLPX310R w/ Mount Pipe	18	27.552	2.130	0.402	26679
110.000	7770.00 w/ Mount Pipe	34	23.005	2.091	0.300	7125
100.000	APXV18-206517S-C w/ Mount Pipe	34	18.599	1.963	0.224	3363
40.000	BULLET III	2	1.997	0.554	0.029	2833

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	4.146	24.851	0.167 ✔	1	Bolt DS
T3	110	Leg	A325N	0.625	5	15.545	24.851	0.626 ✔	1	Bolt DS
T4	90	Leg	A325N	0.750	5	27.625	35.785	0.772 ✔	1	Bolt DS
T6	52.6146	Leg	A325N	1.000	6	30.502	53.014	0.575 ✔	1	Bolt Tension

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
T7	50	Leg	A325N	1.000	6	29.569	53.014	0.558 ✔	1	Bolt Tension
		Diagonal	A325N	1.000	1	6.254	10.663	0.586 ✔	1	Member Block Shear
T8	40	Leg	A325N	1.000	6	31.441	53.014	0.593 ✔	1	Bolt Tension
		Diagonal	A325N	1.000	1	2.722	10.663	0.255 ✔	1	Member Block Shear
T9	20	Diagonal	A325N	1.000	1	4.469	10.663	0.419 ✔	1	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 117.667	1 1/2	2.333	2.333	74.7 K=1.00	1.767	-3.642	52.899	0.069 [1] ✔
T2	117.667 - 110	1 1/2	7.667	2.333	74.7 K=1.00	1.767	-14.212	52.899	0.269 [1] ✔
T3	110 - 90	1 3/4	20.002	2.396	65.7 K=1.00	2.405	-73.325	78.927	0.929 [1] ✔
T4	90 - 70	2	20.002	1.196	28.7 K=1.00	3.142	-132.022	133.113	0.992 [1] ✔
T5	70 - 52.6146	2 1/2	17.387	2.341	44.9 K=1.00	4.909	-185.474	190.559	0.973 [1] ✔
T6	52.6146 - 50	2 1/2	2.615	2.031	39.0 K=1.00	4.909	-192.083	197.641	0.972 [1] ✔
T7	50 - 40	Pirod 105245	10.017	10.017	37.8 K=1.00	5.301	-188.691	214.859	0.878 [1] ✔
T8	40 - 20	Pirod 105217	20.033	10.017	37.8 K=1.00	5.301	-203.312	214.859	0.946 [1] ✔
T9	20 - 0	B+T_BU876312_Pirod 105217 w/ (2) 1.25SR	20.033	10.017	64.0 K=2.62	7.753	-217.314	258.578	0.840 [1] ✔

[1] $P_u / \phi P_n$ controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T7	50 - 40	0.5	1.471	120.0	238.565	0.196	1.369	3.446	0.398 ✔

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T8	40 - 20	0.5	1.471	120.0	238.565	0.196	0.805	3.335	0.243 ✔
T9	20 - 0	0.5	1.455	118.8	348.898	0.196	1.103	3.388	0.327 ✔

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 117.667	3/4	2.917	2.813	126.0 K=0.70	0.442	-3.272	6.287	0.520 [1] ✔
T2	117.667 - 110	5/8	4.206	2.028	140.2 K=0.90	0.307	-2.928	3.527	0.830 [1] ✔
T3	110 - 90	3/4	4.628	2.246	129.4 K=0.90	0.442	-4.976	5.962	0.835 [1] ✔
T4	90 - 70	7/8	5.051	2.448	120.9 K=0.90	0.601	-7.612	9.300	0.819 [1] ✔
T5	70 - 52.6146	7/8	5.122	2.462	121.6 K=0.90	0.601	-7.009	9.192	0.762 [1] ✔
T6	52.6146 - 50	7/8	5.365	2.582	127.5 K=0.90	0.601	-5.266	8.361	0.630 [1] ✔
T7	50 - 40	L2 1/2x2 1/2x3/16	11.416	4.982	120.8 K=1.00	0.902	-6.519	13.558	0.481 [1] ✔
T8	40 - 20	L2 1/2x2 1/2x3/16	12.503	5.627	136.4 K=1.00	0.902	-3.099	10.950	0.283 [1] ✔
T9	20 - 0	L2 1/2x2 1/2x3/16	13.796	6.327	153.4 K=1.00	0.902	-5.104	8.662	0.589 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	117.667 - 110	3/4	3.500	3.375	151.2 K=0.70	0.442	-0.188	4.366	0.043 [1] ✔
T3	110 - 90	3/4	3.870	3.724	166.8 K=0.70	0.442	-1.107	3.586	0.309 [1] ✔
T5	70 - 52.6146	7/8	4.585	4.377	168.1 K=0.70	0.601	-2.164	4.809	0.450 [1] ✔
T6	52.6146 - 50	7/8	4.944	4.736	181.9 K=0.70	0.601	-1.152	4.107	0.281 [1] ✔

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	90 - 70	1 1/4	4.458	4.291	115.3 K=0.70	1.227	-3.144	20.839	0.151 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 117.667	5x3/8	3.500	2.531	280.6 K=1.00	1.875	-2.091	5.380	0.389 [1] ✔
		KL/R > 200 (C) - 4							
T2	117.667 - 110	7/8	3.500	3.375	129.6 K=0.70	0.601	-0.186	8.088	0.023 [1] ✔
T3	110 - 90	3/4	3.510	3.365	150.7 K=0.70	0.442	-1.749	4.393	0.398 [1] ✔
T4	90 - 70	1	4.013	3.846	129.2 K=0.70	0.785	-1.730	10.626	0.163 [1] ✔
T5	70 - 52.6146	1	4.526	4.317	145.1 K=0.70	0.785	-1.975	8.432	0.234 [1] ✔

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	117.667 - 110	7/8	3.500	3.375	129.6 K=0.70	0.601	-0.986	8.088	0.122 [1] ✔
T3	110 - 90	3/4	3.990	3.844	172.2 K=0.70	0.442	-2.275	3.366	0.676 [1] ✔
T4	90 - 70	1	4.487	4.321	145.2 K=0.70	0.785	-3.164	8.418	0.376 [1] ✔
T6	52.6146 - 50	1	4.988	4.779	160.6 K=0.70	0.785	-1.765	6.881	0.257 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 117.667	1 1/2	2.333	2.333	74.7	1.767	0.132	79.522	0.002 [1] ✓
T2	117.667 - 110	1 1/2	7.667	0.333	10.7	1.234	13.661	60.151	0.227 [1 #] ✓
T3	110 - 90	1 3/4	20.002	0.417	11.4	1.794	70.614	87.466	0.807 [1 #] ✓
T4	90 - 70	2	20.002	0.500	12.0	3.142	128.430	141.372	0.908 [1 #] ✓
T5	70 - 52.6146	2 1/2	17.387	2.341	44.9	4.909	173.436	220.893	0.785 [1] ✓
T6	52.6146 - 50	2 1/2	2.615	0.583	11.2	4.909	183.012	220.893	0.829 [1] ✓
T7	50 - 40	Pirod 105245	10.017	10.017	37.8	5.301	177.412	238.565	0.744 [1] ✓
T8	40 - 20	Pirod 105217	20.033	10.017	37.8	5.301	188.647	238.565	0.791 [1] ✓
T9	20 - 0	B+T_BU876312_Pirod 105217 w/ (2) 1.25SR	20.033	10.017	31.3	7.753	198.604	348.898	0.569 [1] ✓

[1] P_u / ϕP_n controls
[#] Based on net area of leg in section below

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T7	50 - 40	0.5	1.471	120.0	238.565	0.196	1.369	3.446	0.398 ✓
T8	40 - 20	0.5	1.471	120.0	238.565	0.196	0.805	3.335	0.243 ✓
T9	20 - 0	0.5	1.455	118.8	348.898	0.196	1.103	3.388	0.327 ✓

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 117.667	3/4	2.917	2.813	180.0	0.442	3.210	19.880	0.161 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	117.667 - 110	5/8	4.206	2.028	155.8	0.307	2.867	13.806	0.208 [1]
T3	110 - 90	3/4	4.628	2.246	143.8	0.442	4.999	19.880	0.251 [1]
T4	90 - 70	7/8	5.051	2.448	134.3	0.601	7.595	27.059	0.281 [1]
T5	70 - 52.6146	7/8	5.122	2.462	135.1	0.601	6.407	27.059	0.237 [1]
T6	52.6146 - 50	7/8	5.365	2.582	141.6	0.601	4.988	27.059	0.184 [1]
T7	50 - 40	L2 1/2x2 1/2x3/16	11.416	4.982	80.1	0.518	6.254	22.546	0.277 [1]
T8	40 - 20	L2 1/2x2 1/2x3/16	11.930	5.383	86.2	0.518	2.722	22.546	0.121 [1]
T9	20 - 0	L2 1/2x2 1/2x3/16	13.796	6.327	100.8	0.518	4.469	22.546	0.198 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	117.667 - 110	3/4	3.500	3.375	216.0	0.442	0.325	19.880	0.016 [1]
T3	110 - 90	3/4	3.870	3.724	238.3	0.442	1.357	19.880	0.068 [1]
T5	70 - 52.6146	7/8	4.585	4.377	240.1	0.601	2.418	27.059	0.089 [1]
T6	52.6146 - 50	7/8	4.944	4.736	259.8	0.601	1.334	27.059	0.049 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	90 - 70	1 1/4	4.458	4.291	164.8	1.227	3.283	55.223	0.059 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 117.667	5x3/8	3.500	2.531	280.6	1.875	2.168	60.750	0.036 [1] ✔
T2	117.667 - 110	7/8	3.500	3.375	185.1	0.601	0.254	27.059	0.009 [1] ✔
T3	110 - 90	3/4	3.510	3.365	215.3	0.442	1.775	19.880	0.089 [1] ✔
T4	90 - 70	1	4.013	3.846	184.6	0.785	1.887	35.343	0.053 [1] ✔
T5	70 - 52.6146	1	4.526	4.317	207.2	0.785	2.341	35.343	0.066 [1] ✔

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	117.667 - 110	7/8	3.500	3.375	185.1	0.601	0.947	27.059	0.035 [1] ✔
T3	110 - 90	3/4	3.990	3.844	246.0	0.442	2.248	19.880	0.113 [1] ✔
T4	90 - 70	1	4.487	4.321	207.4	0.785	2.783	35.343	0.079 [1] ✔
T6	52.6146 - 50	1	4.988	4.779	229.4	0.785	1.924	35.343	0.054 [1] ✔

[1] P_u / ϕP_n controls

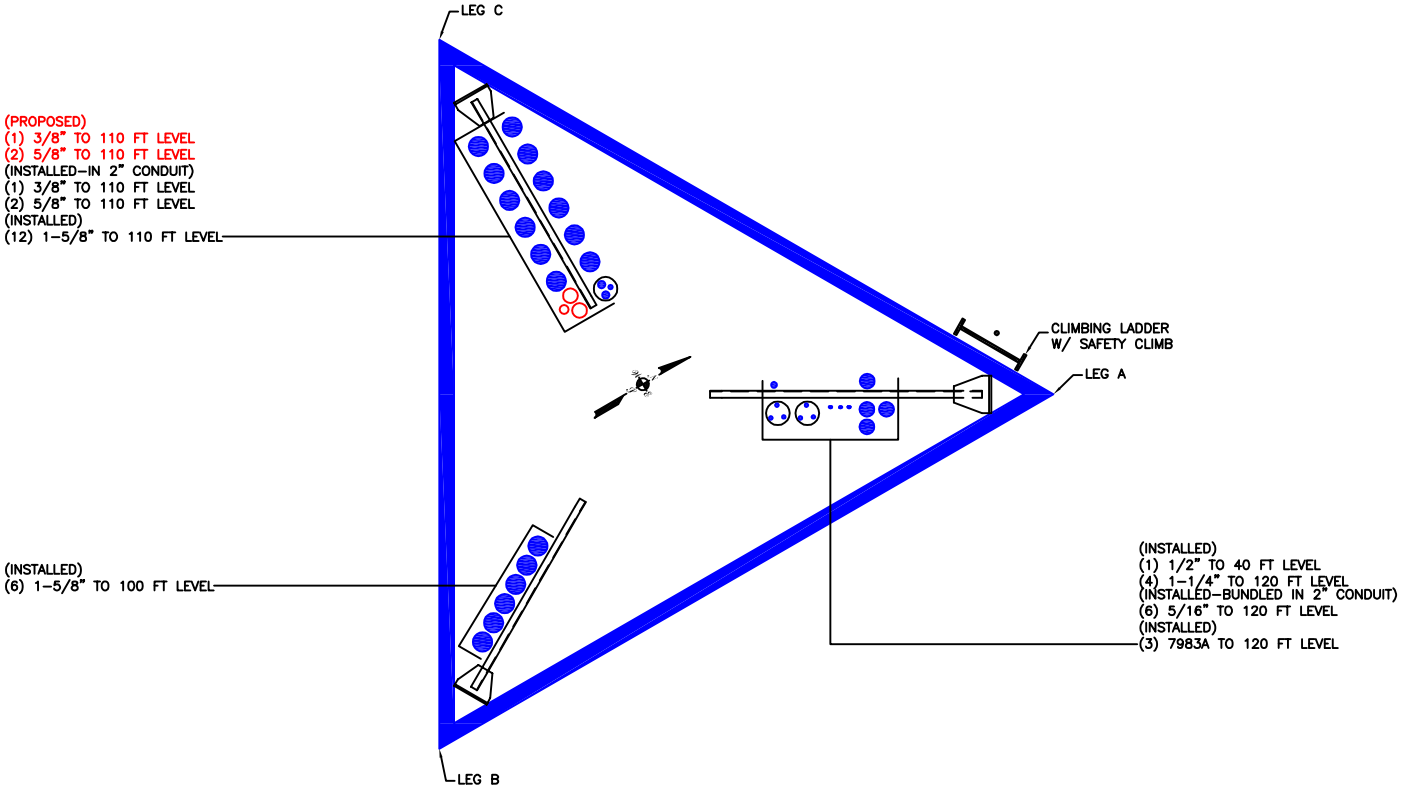
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	120 - 117.667	Leg	1 1/2	2	-3.642	52.899	6.9	Pass
T2	117.667 - 110	Leg	1 1/2	14	-14.212	52.899	26.9	Pass
T3	110 - 90	Leg	1 3/4	43	-73.325	78.927	92.9	Pass
T4	90 - 70	Leg	2	107	-132.022	133.113	99.2	Pass
T5	70 - 52.6146	Leg	2 1/2	189	-185.474	190.559	97.3	Pass
T6	52.6146 - 50	Leg	2 1/2	243	-192.083	197.641	97.2	Pass
T7	50 - 40	Leg	Pirod 105245	254	-188.691	214.859	87.8	Pass
T8	40 - 20	Leg	Pirod 105217	263	-203.312	214.859	94.6	Pass
T9	20 - 0	Leg	B+T_BU876312_Pirod 105217 w/ (2) 1.25SR	280	-217.314	258.578	84.0	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	øP$_{allow}$ K	% Capacity	Pass Fail
T1	120 - 117.667	Diagonal	3/4	8	-3.272	6.287	52.0	Pass
T2	117.667 - 110	Diagonal	5/8	23	-2.928	3.527	83.0	Pass
T3	110 - 90	Diagonal	3/4	52	-4.976	5.962	83.5	Pass
T4	90 - 70	Diagonal	7/8	116	-7.612	9.300	81.9	Pass
T5	70 - 52.6146	Diagonal	7/8	236	-7.009	9.192	76.2	Pass
T6	52.6146 - 50	Diagonal	7/8	249	-5.266	8.361	63.0	Pass
T7	50 - 40	Diagonal	L2 1/2x2 1/2x3/16	260	-6.519	13.558	48.1 58.6 (b)	Pass
T8	40 - 20	Diagonal	L2 1/2x2 1/2x3/16	267	-3.099	10.950	28.3	Pass
T9	20 - 0	Diagonal	L2 1/2x2 1/2x3/16	281	-5.104	8.662	58.9	Pass
T2	117.667 - 110	Horizontal	3/4	35	-0.188	4.366	4.3	Pass
T3	110 - 90	Horizontal	3/4	64	-1.107	3.586	30.9	Pass
T5	70 - 52.6146	Horizontal	7/8	234	-2.164	4.809	45.0	Pass
T6	52.6146 - 50	Horizontal	7/8	244	-1.152	4.107	28.1	Pass
T4	90 - 70	Secondary Horizontal	1 1/4	121	-3.144	20.839	15.1	Pass
T1	120 - 117.667	Top Girt	5x3/8	4	-2.091	5.380	38.9	Pass
T2	117.667 - 110	Top Girt	7/8	18	-0.186	8.088	2.3	Pass
T3	110 - 90	Top Girt	3/4	46	-1.749	4.393	39.8	Pass
T4	90 - 70	Top Girt	1	110	-1.730	10.626	16.3	Pass
T5	70 - 52.6146	Top Girt	1	191	-1.975	8.432	23.4	Pass
T2	117.667 - 110	Bottom Girt	7/8	21	-0.986	8.088	12.2	Pass
T3	110 - 90	Bottom Girt	3/4	48	-2.275	3.366	67.6	Pass
T4	90 - 70	Bottom Girt	1	112	-3.164	8.418	37.6	Pass
T6	52.6146 - 50	Bottom Girt	1	245	-1.765	6.881	25.7	Pass
						Summary		
						Leg (T4)	99.2	Pass
						Diagonal (T3)	83.5	Pass
						Horizontal (T5)	45.0	Pass
						Secondary Horizontal (T4)	15.1	Pass
						Top Girt (T3)	39.8	Pass
						Bottom Girt (T3)	67.6	Pass
						Bolt Checks	77.2	Pass
						RATING =	**99.2**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876312

APPENDIX C

ADDITIONAL CALCULATIONS

B+T GRP	PROJECT :	108127.003.01		ELEVATION :	0-20
	CLIENT :	AT&T Mobility		DESIGN BY :	
	BU NO. :	876312	DATE : 13-01-2017	REVIEW BY :	

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

Design Criteria

TIA Revision:	G

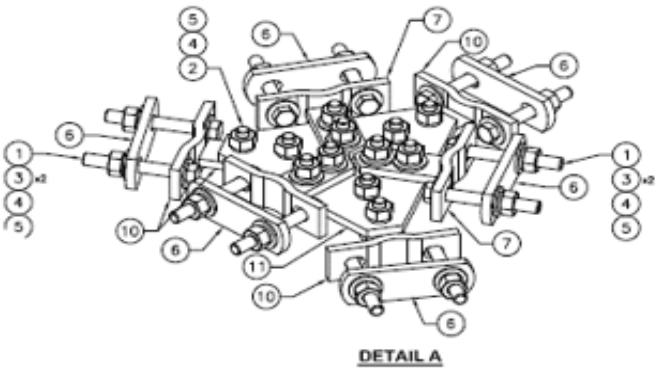
Youngs Modulus,	E:	29000	ksi

Existing Rods:	Grade (Fy) :	50	ksi
Tension Load:		198.604	kips
Compression Load:		217.314	kips

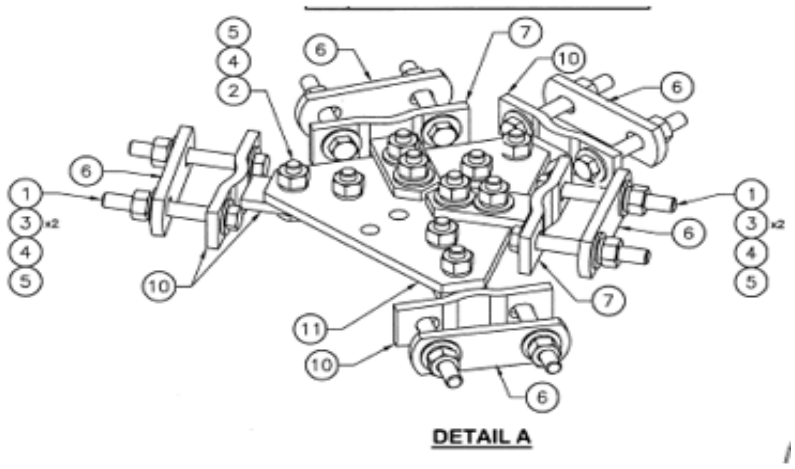
Existing PiRod Leg Part Number:	105217	
Existing Tie Rod Diameter:	1.5	in
Diagonal Spacing:	10	ft

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 Capcity:	**349**	kips
% Tension Rating:	**56.9%**	**Pass**
Compression Capacity:	**297**	kips
% Compression Rating:	**84.0%**	**Pass**

tnx Adjustments

Kx and Ky -Leg:	**2.620**	in
Equivalent Diameter:	**1.814**	in

Anchor Rod Check for Self Supporting Towers

TIA-222-G, Section 4.9.9 Rev. 6.1

CROWN CASTLE

Site Data	
BU#:	**876312**
Site Name:	**Montowese Amodio Self Store, CT**
App #:	**374178 Rev. 1**

Reactions		
Eta Factor, η	**0.55**	Detail Type
Uplift, Pu:	**204**	kips
Shear, Vu:	**16**	kips

l_{ar}:		in
Mu = 0.65*l_{ar}*V_u		ft-kips

Anchor Rod Data		
Qty:	**6**	
Diam:	**1**	in
Rod Material:	**A687**	
Strength (Fu):	150	ksi
Yield (Fy):	105	ksi

* Rod Circle:		in
* e:		in
* # of Rods		1 or 2

Mu= Pu x e:		ft-kips

** Only enter rod circle, offset (e) and number of anchor rods at the extreme fiber to consider if eccentric load due to leg reinforcement exist.*

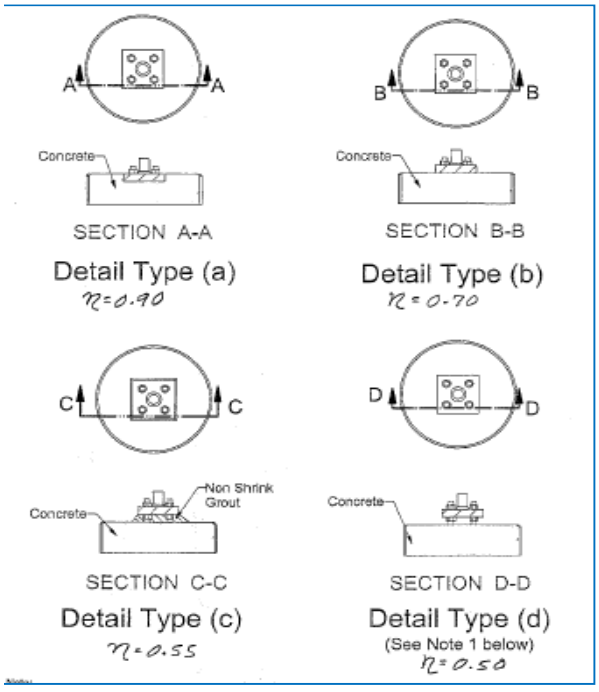


Figure 4-4 of TIA-222-G

Anchor Rod Results:

Max Rod (Cu+ Vu/ή):	38.8	Kips
Design Axial, Φ*Fu*Anet:	72.7	Kips
Anchor Rod Stress Ratio:	53.4%	

If Applicable;

Anchor Rod Results with Bending Considered:

When the clear distance from the top of concrete to the bottom of level nut excceeds 1.0 times the diameter of the anchor rod, the following interaction equation shall also be satisfied (see Figure 4-4 of Rev. G):

$$(V_u/\phi R_{nv})^2 + [(P_u/\phi R_{nt}) + (M_u/\phi R_{nm})]^2 <= 1$$

$\phi R_{nv}=\phi*0.45*F_{ub}*A_b=$		kips
$\phi R_{nt}=\phi*F_u*A_{net}=$		kips
$\phi R_{nm}=\phi*F_y*Z=$		ft-kips

Maximum Acceptable Ratio:	**105**	%
Governing Stress Ratio:	**53.4%**	**Pass**

B+T GRP

Project No: 108127.003.01
PROJECT NAME Montowese Amodio Self Store, CT

Rev G

PILE FOUNDATION CALCULATIONS

Reactions from TNX

Compression =	224.0	kips
Uplift =	204.0	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 =	73.5	kips

Allowable Pile capacity

Number of piles =	6.0	
Compression =	427.5	kips
Tension =	180.0	kips

Foundation Result:

Compression =	**52.4%**
Tension =	**80.5%**

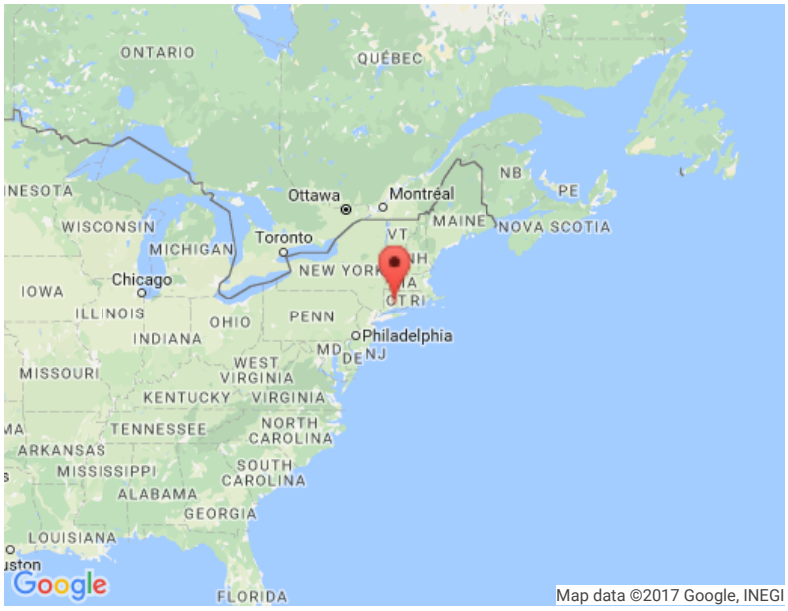
Search Results

Query Date: Fri Jan 13 2017
Latitude: 41.3555
Longitude: -72.8903

ASCE 7-10 Windspeeds (3-sec peak gust in mph*):

Risk Category I: 114
Risk Category II: 125
Risk Category III-IV: 135
MRI 10-Year:** 77
MRI 25-Year:** 87
MRI 50-Year:** 94
MRI 100-Year:** 101

ASCE 7-05 Windspeed:
110 (3-sec peak gust in mph)
ASCE 7-93 Windspeed:
82 (fastest mile in mph)



*Miles per hour
**Mean Recurrence Interval

Users should consult with local building officials to determine if there are community-specific wind speed requirements that govern.

Print your results

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Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT2173

Hamden SE
2755 State Street
Hamden, CT 6517

February 28, 2017

Centerline Communications Project Number: 950006-039

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**7.08 %**

February 28, 2017

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

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

Centerline Communications, LLC ("Centerline") 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 population 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 population 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.

Population 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 performed 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
UMTS	1900 MHz (PCS)	2	30
LTE	700 MHz	2	60
LTE	1900 MHz (PCS)	2	60
GSM	850 MHz	2	30
LTE	2300 MHz (WCS)	2	60

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	112
A	2	CCI HPA-65R-BUU-H6	112
A	3	Quintel QS66512-2	112
B	1	Powerwave 7770	112
B	2	CCI HPA-65R-BUU-H6	112
B	3	Quintel QS66512-2	112
C	1	Powerwave 7770	112
C	2	CCI HPA-65R-BUU-H6	112
C	3	Quintel QS66512-2	112

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	0.89
Antenna A2	CCI HPA-65R-BUU-H6	700 MHz / 1900 MHz (PCS)	11.95 / 14.75	4	240	5,462.56	2.43
Antenna A3	Quintel QS66512-2	850 MHz / 2300 MHz (WCS)	11.35 / 14.85	4	180	4,484.66	1.63
						Sector A Composite MPE%	**4.96**
Antenna B1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	0.89
Antenna B2	CCI HPA-65R-BUU-H6	700 MHz / 1900 MHz (PCS)	11.95 / 14.75	4	240	5,462.56	2.43
Antenna B3	Quintel QS66512-2	850 MHz / 2300 MHz (WCS)	11.35 / 14.85	4	180	4,484.66	1.63
						Sector B Composite MPE%	**4.96**
Antenna C1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	0.89
Antenna C2	CCI HPA-65R-BUU-H6	700 MHz / 1900 MHz (PCS)	11.95 / 14.75	4	240	5,462.56	2.43
Antenna C3	Quintel QS66512-2	850 MHz / 2300 MHz (WCS)	11.35 / 14.85	4	180	4,484.66	1.63
						Sector C Composite MPE%	**4.96**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, the sector with the largest calculated MPE% is Sector ABC. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Sector Value	**4.96 %**
MetroPCS	1.38 %
Clearwire	0.15 %
Sprint	0.59 %
Site Total MPE %:	**7.08 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	4.96 %
AT&T Sector B Total:	4.96 %
AT&T Sector C Total:	4.96 %
Site Total:	7.08 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology (All Sectors)	# 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	409.37	112	2.62	850 MHz	567	0.46%
AT&T 2300 MHz (WCS) LTE	2	1,832.95	112	11.73	2300 MHz (WCS)	1000	1.17%
						Total:	4.96%

Table 6: AT&T Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population 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 population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	4.96 %
Sector B:	4.96 %
Sector C:	4.96 %
AT&T Maximum Total (per sector):	4.96 %
Site Total:	7.08 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.08 %** of the allowable FCC established general population 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.

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