CENTERLINE COMMUNICATIONS

750 West Center Street, Floor 3 / Suite 301
West Bridgewater, MA 02379 *Corporate Headquarters*
781.713.4725
617.249.0819

Centerline Communications
Ryan Clark
750 West Center Street, Floor 3
West Bridgewater, MA 02379
203-300-7310
rclark@clinellc.com

December 16, 2020

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Notice of Exempt Modification
366 Old Long Ridge Road Stamford, CT 06903
Latitude: 41.15306N
Longitude: 73.59250W
T-Mobile Site#: CTFF056A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 118' level of the existing 152' monopole tower at 366 Old Long Ridge Road Stamford, CT 06903. The 152' tower and property is owned by The Long Ridge Fire Company. T-Mobile now intends to replace six (6) of its existing antennas with three (3) new 600/700 MHz and (3) new 2500MHz antennas. The new antennas would be installed at the 118-foot level of the tower. A mount modification is to be conducted per recommendation in the attached Mount Analysis and further described on the attached construction drawings. The proposed modifications will make the site available for 5G at some point in the future.

Planned Modifications:

Remove and Replace:
(3) RFS-APX16DWV Antennas **(Remove)** - (3) AIR 6449 B41 L2500 MHz Antennas **(Replace)**
(3) LNX-6515DS-A1M Antennas **(Remove**) – (3) RFS-APXVAALL24 L600/700 MHz **(Replace)**
(3) RRUS11 B12 **(Remove) -** (3) RRU 4449 B71/B85 **(Replace)**

Install New:
(3) Radio 4415 B25
(3) Diplexers
(2) Fiber Hybrid Line

Existing to Remain:
(2) Fiber Hybrid Line
(3) AIR32 B66 L1900/L2100 MHz
(3) RRUS11 B4

Ground:
(2) Proposed New Cabinets
(2) Proposed Cable Conduits

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This facility was approved by the CT Siting Council Docket TS-T-Mobile-135-160707–on August 5, 2016, 366 Old Long Ridge Road Stamford, CT with conditions. We used the information from the previous filing. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Mayor David Martin, Chief Elected Official and David W. Woods, Deputy Director of Planning for the City of Stamford and Chief Daniel Dauplaise, The Long Ridge Fire Company as the property owner and the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S;A. § 16-50j-72(b)(2).

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

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

3. The proposed modifications 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 Communications 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, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Ryan Clark
Mobile: 203-300-7310
Fax: 508-819-3017
Office: 117 Carol Street Danbury, CT 06810
Email: rclark@clinellc.com

Attachments
cc: Mayor David Martin, City of Stamford-chief elected official
David W. Woods, Deputy Director of Planning for the City of Stamford
Chief Daniel Dauplaise, The Long Ridge Fire Company as tower and property owner

Exhibit A

Original Facility Approval

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@ct.gov

www.ct.gov/csc

August 5, 2016

Eric Dahl
Vertical Development
20 Commercial Street
Branford, CT 06405

RE: **TS-T-MOBILE-135-160707** – T-Mobile request for an order to approve tower sharing at an existing telecommunications facility located at 366 Old Long Ridge Road, Stamford, Connecticut.

Dear Mr. Dahl:

At a public meeting held on August 4, 2016, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the following conditions:

1. Reinforcements shall be made in accordance and consistent with the structural analysis report and modification drawings prepared by AECOM dated June 6, 2016 and stamped by Richard A. Sambor;
2. Within 45 days following completion of the equipment installation, T-Mobile shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations of the structural analysis;
3. Any deviation from the proposed installation as specified in the original tower share request and supporting materials with the Council shall render this decision invalid;
4. Any material changes to the proposed installation as specified in the original tower share request and supporting materials filed with the Council shall require an explicit request for modification to the Council pursuant to Connecticut General Statutes § 16-50aa, including all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65;
5. Not less than 45 days after completion of the proposed installation, the Council shall be notified in writing that the installation has been completed;
6. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by T-Mobile shall be removed within 60 days of the date the antenna ceased to function;
7. The validity of this action shall expire one year from the date of this letter; and
8. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

This decision is under the exclusive jurisdiction of the Council and applies only to this request for tower sharing dated July 6, 2016. This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower. Any deviation from the approved tower sharing request is enforceable under the provisions of Connecticut General Statutes § 16-50u.

The proposed shared use is to be implemented as specified in your letter dated July 6, 2016, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

CSC
CONNECTICUT SITING COUNCIL
Affirmative Action / Equal Opportunity Employer

Very truly yours,

Robert Stein MAB

Robert Stein
Chairman

RS/FOC/lm

c: The Honorable David Martin, Mayor, City of Stamford
Norman Cole, AICP, Land Use Bureau Chief, City of Stamford
Stuart Teitelbaum, Chief, Long Ridge Fire Co., Inc.

Exhibit B

Property Card

366 OLD LONG RIDGE ROAD

Location	366 OLD LONG RIDGE ROAD	**Mblu**	002/ 6549/ / /
Acct#	002-6549	**Owner**	LONG RIDGE FIRE CO INC
Assessment	$1,496,530	**Appraisal**	$2,137,900
PID	24275	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$1,817,440	$320,460	$2,137,900
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$1,272,210	$224,320	$1,496,530

Owner of Record

Owner	LONG RIDGE FIRE CO INC	**Sale Price**	$0
Co-Owner		**Book & Page**	0686/0581
Address	366 OLD LONG RIDGE RD STAMFORD, CT 06903-1133	**Sale Date**	01/14/1953
		Instrument	25

Ownership History

Ownership History				
Owner	**Sale Price**	**Book & Page**	**Instrument**	**Sale Date**
LONG RIDGE FIRE CO INC	$0	0686/0581	25	01/14/1953

Building Information

Building 1 : Section 1

Year Built: 1956
Living Area: 8,569

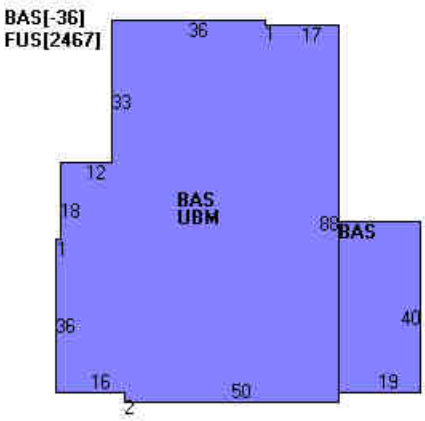
Building Attributes	
Field	**Description**
STYLE	Fire Station
MODEL	Ind/Comm

Grade	B
Stories:	1
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Minimum
Interior Wall 2	Drywall/Plaste
Interior Floor 1	Concrete Slab
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Partial A/C
Struct Class	
Bldg Use	Exmpt Comm MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrfld 218	
Usrfld 219	
1st Floor Use:	902C
Heat/AC	Heat/AC Pkgs
Frame Type	FireProofSteel
Baths/Plumbing	Average
Ceiling/Wall	Ceil & Mn Wall
Rooms/Prtns	Average
Wall Height	11.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/StamfordCTPhotos//\00\07\72\71.jpg)

Building Layout



(http://images.vgsi.com/photos/StamfordCTPhotos//Sketches/24275_2427

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	6,102	6,102
FUS	Upper Story, Finished	2,467	2,467
UBM	Basement, Unfinished	5,378	0
		13,947	8,569

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
OH1	Door Overhd Co	4.00 UNITS	$11,100	1
H04	Air Con/Sfla	9620.00 S.F	$18,040	1

Land

Land Use

Land Line Valuation

Use Code	902C	**Size (Acres)**	0.49
Description	Exmpt Comm MDL-94	**Depth**	
Zone	RA2	**Assessed Value**	$224,320
Neighborhood	0100	**Appraised Value**	$320,460
Alt Land Appr	No		
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
LP6	Patio Asphlt			480.00 S.F.	$1,310	1
FC1	Shed Wood			108.00 S.F.	$1,300	1
FC1	Shed Wood			560.00 S.F.	$6,720	1
RG4	Gar 1.0 Det			1008.00 S.F.	$39,690	1
CEL1	Cell Tower			3.00 SITES	$438,750	1
CSHD	Cell Equipment			56.00 S.F.	$2,020	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$1,817,440	$320,460	$2,137,900
2018	$1,817,440	$320,460	$2,137,900
2017	$1,817,440	$320,460	$2,137,900

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$1,272,210	$224,320	$1,496,530
2018	$1,272,210	$224,320	$1,496,530
2017	$1,272,210	$224,320	$1,496,530

Map: 14

0 100 200 300 400 500 Feet

City of Stamford, Connecticut

Assessment Parcel Map

Parcel data current as of October 2015.
Assessment Data displayed on this map as of October 2015 grand list.
Building and Paved Roads based on aerial flight from Spring 2013.
Map Coordinates based on NAD 83 Connecticut State Plane Feet.

Map Block Lot
Address
Parcel Id
Parcels
City Boundaries
Water Bodies
Streams and Rivers
Paved Roads
Buildings
Pools
Railroad

Map: 14

Exhibit C

Construction Drawings

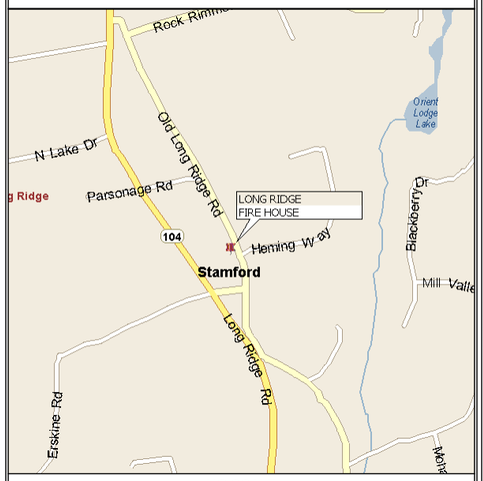
T-Mobile

SITE NAME:	**LONG RIDGE FIRE HOUSE**
SITE NUMBER:	**CTFF056A**
SITE TYPE:	**SELF-SUPPORT TOWER**
RF CONFIG:	**L600 & ANCHOR**
JURISDICTION:	**FAIRFIELD COUNTY**
SITE ADDRESS:	**366 OLD LONG RIDGE RD STAMFORD, CT 06903**

PROJECT SUMMARY

SITE NAME:	LONG RIDGE FIRE HOUSE
SITE NUMBER:	CTFF056A
SITE ADDRESS:	366 OLD LONG RIDGE RD STAMFORD, CT 06903
COUNTY:	FAIRFIELD
JURISDICTION:	FAIRFIELD COUNTY
NAD83	
LATITUDE:	41.15306° N
LONGITUDE:	73.59250° W
GROUND ELEVATION:	442' AMSL
CUSTOMER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 (913) 402-6500
OCCUPANCY TYPE:	UNMANNED
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION

AREA MAP



NO SCALE

LOCATION MAP

NO SCALE

DRAWING INDEX

SHEET #	SHEET DESCRIPTION	REV. #
T-1	TITLE SHEET	3
SP-1	SPECIFICATIONS	3
SP-2	SPECIFICATIONS	3
A-1	OVERALL SITE PLAN	3
A-2	ENLARGED SITE PLANS	3
A-3	BUILDING ELEVATIONS	3
A-4	ANTENNA LAYOUTS	3
A-5	ANTENNA DETAIL AND SPECIFICATIONS	3
A-5.1	MOUNTING DETAIL AND SLED ELEVATION	3
A-6	ANTENNA & RRU CONFIGURATION KEYS	3
E-1	PANEL SCHEDULE & ONE-LINE DIAGRAM	3
G-1	GROUNDING RISER DIAGRAM AND DETAILS	3

CONTACT INFORMATION

A&E FIRM:	B&T ENGINEERING, INC. 1717 S. BOULDER, STE. 300 TULSA, OK 74119	CONSTR. MANAGER:	T-MOBILE BRIAN PAUL Brian.Paul14@t-mobile.com (860) 550-5971
CONTACT:	ASHLEY SUSTEK		
PHONE:	(918) 587-4630	PROJECT MANAGER:	T-MOBILE MARK RICHARD mark.richard64@t-mobile.com (860) 648-1116

DRIVING DIRECTIONS

DEPART JFK AIRPORT, TURN LEFT ONTO 114TH ST, THEN IMMEDIATELY TURN RIGHT ONTO 150TH AVE. TURN RIGHT ONTO LEFFERTS BLVD. TAKE RAMP ONTO NASSAU EXPY. AT EXIT 1N, TAKE RAMP ONTO I-678. STAY ON I-678. STAY ON I-678. ROAD NAME CHANGES TO HUTCHINSON RIVER PKWY N. ROAD NAME CHANGES TO CT-15. AT EXIT 34, KEEP RIGHT ONTO RAMP. TURN LEFT ONTO CT-104. TURN RIGHT ONTO ERSKINE RD, THEN IMMEDIATELY TURN LEFT ONTO OLD LONG RIDGE RD AND ARRIVE AT LONG RIDGE FIRE HOUSE.

A/E DOCUMENT REVIEW STATUS

TITLE	SIGNATURE	DATE
T-MOBILE R.E. MGR.:		
T-MOBILE R.F. MGR.:		
T-MOBILE NetOps:		
T-MOBILE CONST. MGR.:		
INTERCONNECT:		
T-MOBILE SITE DEV. MGR.:		
PROPERTY OWNER:		
PLANNING:		

1		ACCEPTED: WITH OR NO COMMENTS, CONSTRUCTION MAY PROCEED
2		NOT ACCEPTED: RESOLVE COMMENTS AND RESUBMIT

ACCEPTANCE DOES NOT CONSTITUTE APPROVAL OF DESIGN, CALCULATIONS, ANALYSIS, TEST METHODS OF MATERIALS DEVELOPED OR SELECTED BY THE SUBCONTRACTOR AND DOES NOT RELIEVE SUBCONTRACTOR FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.

CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING/DWELLING	2018 CONNECTICUT STATE BUILDING CODE
STRUCTURAL	2018 CONNECTICUT STATE BUILDING CODE
MECHANICAL	2018 CONNECTICUT STATE BUILDING CODE
ELECTRICAL	NEC 2017

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES:

- REMOVE (6) EXISTING ANTENNAS.
- REMOVE (3) EXISTING RRUS.
- RELOCATE (3) EXISTING RRUS.
- REPLACE (2) (E) DUS41 & (1) XMU WITH (1) NEW BB 6630 IN (E) 6102 CABINET.
- MODIFY MOUNT PER RECOMMENDATIONS IN MOUNT MODIFICATION REPORT BY B+T GROUP DATED 7/9/19.
- INSTALL (1) NEW BB 6630 IN (E) RBS 6102 CABINET.
- INSTALL (6) NEW PANEL ANTENNAS.
- INSTALL (6) NEW RRUS.
- INSTALL (1) NEW 6x12 HCS.
- INSTALL (1) NEW 6160 SSC CABINET.
- INSTALL (1) NEW B160 BATTERY CABINET.

DO NOT SCALE DRAWINGS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17.
CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SEE SHEETS SP-1 & SP-2 FOR ADDITIONAL CONSTRUCTION NOTES

CALL CONNECTICUT ONE CALL
(800) 922-4455
CALL 3 WORKING DAYS
BEFORE YOU DIG!

811

B+T GRP

T-Mobile

CENTERLINE COMMUNICATIONS

SITE NUMBER:
CTFF056A

SITE NAME:
LONG RIDGE FIRE HOUSE

SITE ADDRESS:
366 OLD LONG RIDGE RD
STAMFORD, CT 06903

PROJECT NO:	135928.007.01
CHECKED BY:	GEH

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
B	9/6/19	JJD	PRELIMINARY REVIEW
0	9/12/19	JJD	CONSTRUCTION
1	10/22/20	SMM	CONSTRUCTION
2	11/12/20	JJD	CONSTRUCTION
3	11/13/20	JJD	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

11/13/20

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:	REVISION:
T-1	3

GENERAL REQUIREMENTS SECTION 01 10 00:

PART 1 GENERAL

1.1 INTENT:

A. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION. PLANS ARE NOT TO BE SCALED.

B. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY, HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH.

C. THE INTENTION OF DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.

D. CONFLICTS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING MATERIAL OR DOING ANY WORK. NO COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND THOSE ON THE DOCUMENTS. ANY DISCREPANCY SHALL BE REPORTED TO THE OWNER OR HIS AGENT FOR CONSIDERATION.

1.2 LICENSING REQUIREMENTS:

THE CONTRACTOR IS RESPONSIBLE FOR PROCUREMENT AND MAINTAINING OF ALL APPLICABLE LICENSES AND BONDS.

1.3 STORAGE:

ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION THAT DOES NOT OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

1.4 CLEAN UP:

THE CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH AT ALL TIMES. TRASH MUST BE REMOVED DAILY.

1.5 QUALITY ASSURANCE:

ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

PART 2 PRODUCTS – NOT APPLICABLE TO THIS SECTION

PART 3 EXECUTION – NOT APPLICABLE TO THIS SECTION

ELECTRICAL SECTION 16000:

PART 1 GENERAL

1.1 GENERAL CONDITIONS:

A. THE CONTRACTOR SHALL INSPECT THE SITE WHERE THIS WORK IS TO BE PERFORMED AND FULLY FAMILIARIZE HIMSELF WITH ALL CONDITIONS RELATED TO THIS PROJECT.

B. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND LICENSES AND SHALL MAKE ALL DEPOSITS AND PAY ALL FEES REQUIRED FOR THE PERFORMANCE OF WORK UNDER THIS SECTION.

C. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. DRAWINGS SHALL NOT BE SCALED TO DETERMINE DIMENSIONS.

1.2 LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES

A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, AND ALL APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES.

1.3 REFERENCES:

A. THE PUBLICATIONS LISTED BELOW FORM PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE OF THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION UNLESS OTHERWISE NOTED. EXCEPT AS MODIFIED BY THE REQUIREMENTS SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFIRM TO THE APPLICABLE PROVISIONS OF THESE PUBLICATIONS.

1. ANSI/IEEE (AMERICAN NATIONAL STANDARDS INSTITUTE)
2. IEEE (INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS)
3. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
4. ICEA (INSULATED CABLE ENGINEERS ASSOCIATION)
5. NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION)
6. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)
7. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
8. UL (UNDERWRITERS LABORATORIES, INC.)

1.4 SCOPE OF WORK:

A. WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL AND ASSOCIATED SERVICES REQUIRED TO COMPLETELY CONSTRUCT AND LEAVE READY FOR OPERATION SYSTEMS AS SHOWN ON THE DRAWINGS AND HEREIN DESCRIBED.

B. ALL ELECTRICAL EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY TESTED, ADJUSTED AND ALIGNED BY THE CONTRACTOR.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAINING, TRENCHES, BACKFILLING, AND REMOVAL AND EXCESS DIRT.

D. THE CONTRACTOR SHALL FURNISH TO THE OWNER, CERTIFICATES OF FINAL INSPECTION AND APPROVAL FROM THE INSPECTION AUTHORITIES HAVING JURISDICTION.

PART 2 PRODUCTS

2.1 GENERAL:

A. ALL ITEMS OF MATERIALS AND EQUIPMENT SHALL BE NEW, FREE FROM DEFECTS AND OF THE BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE.

B. ALL MATERIALS AND EQUIPMENT SHALL BE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AS SUITABLE FOR THE USE INTENDED.

C. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.

D. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING RATING EQUAL TO OR GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 10,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT.

2.2 MATERIALS AND EQUIPMENT:

A. CONDUIT:

1. RIGID GALVANIZED STEEL CONDUIT (RGS) SHALL BE HOT-DIP GALVANIZED INSIDE AND OUTSIDE INCLUDING ENDS AND THREADS AND ENAMELED OR LACQUERED INSIDE IN ADDITION TO GALVANIZING.
2. FLEXIBLE METAL CONDUIT SHALL BE GALVANIZED, ZINC-COATED STEEL, PVC COATED FOR OUTDOOR APPLICATIONS.
3. CONDUIT CLAMPS, STRAPS AND SUPPORTS SHALL BE STEEL OR MALLEABLE IRON. ALL FITTINGS SHALL BE COMPRESSION TYPE AND WATERTIGHT.
4. NON-METALLIC CONDUIT FITTINGS SHALL BE SCHEDULE 40 PVC, HEAVY-WALL RIGID WITH SOLVENT-CEMENT-TYPE JOINTS AS RECOMMENDED BY THE MANUFACTURER.

B. WIRE AND CABLE:

1. WIRE AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN, 600 VOLT, SIZES AS INDICATED, #12 AWG MINIMUM.
2. #10 AWG AND SMALLER CONDUCTORS SHALL BE SOLID AND #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.
3. SOLDERLESS, PRESSURE-TYPE CONNECTORS CONSTRUCTED OF HIGH-STRENGTH, NON-CORRODIBLE, TIN-PLATED COPPER DESIGNED TO FURNISH HIGH-PULLOUT STRENGTH AND HIGH CONDUCTIVITY JOINTS SHALL BE USED.
4. SUPPORT GRIPS SHALL BE SINGLE WEAVE, CLOSED MESH, HIGH-GRADE, NON-MAGNETIC, TIN-COATED BRONZE, CAPABLE OF SUPPORTING TEN TIMES THE CABLE DEAD WEIGHT, HUBBELL KELLEMS OR APPROVED EQUAL.

C. DISCONNECT SWITCHES:

1. DISCONNECT SWITCHES SHALL BE HEAVY DUTY, DEAD-FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE AND INTERLOCKED WITH COVER IN CLOSED POSITION, RATING AS INDICATED, UL LABELED FURNISHED IN NEMA 3R ENCLOSURE, SQUARE D CLASS 3110 OR APPROVED EQUAL.

D. SYSTEM GROUNDING:

1. GROUNDING CONDUCTOR SHALL BE BARE, SOLID TINNED COPPER, SIZE AS INDICATED, EXCEPT ABOVE GROUND GROUNDING CONDUCTORS SHALL BE INSULATED.
2. GROUND BUSSES SHALL BE BARE ANNEALED COPPER BARS OF RECTANGULAR CROSS SECTION.
3. CONNECTORS SHALL BE HIGH-CONDUCTIVITY, HEAVY DUTY, LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED. USE TWO-HOLE COMPRESSION LUGS WITH HEAT SHRINK FOR MECHANICAL CONNECTIONS.
4. EXOTHERMIC WELDED CONNECTIONS SHALL BE PROVIDED IN KIT FORM AND SELECTED FOR THE SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS TO BE CONNECTED.
5. GROUND RODS SHALL BE COPPER-CLAD STEEL WITH HIGH-STRENGTH STEEL CORE AND ELECTROLYTIC-GRADE COPPER OUTER SHEATH, MOLTEN WELDED TO CORE, 3/4"x10'-0".

E. OTHER MATERIALS:

1. THE CONTRACTOR SHALL PROVIDE OTHER MATERIALS, THOUGH NOT SPECIFICALLY DESCRIBED, WHICH ARE REQUIRED FOR A COMPLETELY OPERATIONAL SYSTEM AND PROPER INSTALLATION OF THE WORK.

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CENTERLINE COMMUNICATIONS

SITE NUMBER:
CTFF056A

SITE NAME:
LONG RIDGE FIRE HOUSE

SITE ADDRESS:
366 OLD LONG RIDGE RD
STAMFORD, CT 06903

PROJECT NO:	135928.007.01
CHECKED BY:	GEH

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
B	9/6/19	JJD	PRELIMINARY REVIEW
0	9/12/19	JJD	CONSTRUCTION
1	10/22/20	SMM	CONSTRUCTION
2	11/12/20	JJD	CONSTRUCTION
3	11/13/20	JJD	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER

11/13/20

SHEET NUMBER: SP-1

REVISION: 3

PART 3 EXECUTION

3.1 GENERAL:

A. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE W/ THE MANUFACTURER'S RECOMMENDATION

B. EQUIPMENT SHALL BE TIGHTLY COVER AND PROTECTED AGAINST DIRT OR WATER, AND AGAINST CHEMICAL OR MECHANICAL INJURY DURING INSTALLATION AND CONSTRUCTION PERIODS.

3.2 LABOR AND WORK:

A. ALL LABOR FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL SYSTEM SHALL BE DONE BY EXPERIENCED MECHANICS OF THE PROPER TRADES.

B. ALL ELECTRICAL EQUIPMENT FURNISHED SHALL BE ADJUSTED, ALIGNED AND TESTED BY THE CONTRACTOR AS REQUIRED TO PRODUCE THE INTENDED PERFORMANCE.

C. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE ALL LABELS AND ANY DEBRIS, CRATING OR CARTONS AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.

3.3 COORDINATION:

A. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE OWNER–FURNISHED EQUIPMENT DELIVERY SCHEDULE TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.

3.4 INSTALLATION:

A. CONDUIT

1. ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT AS HEREIN SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4 INCH NOMINAL SIZE SHALL BE USED.
2. PROVIDE RGS CONDUIT FOR ALL EXPOSED, EXTERIOR CONDUIT.
3. PROVIDE SCHEDULE 40 PVC OR RGS CONDUIT BELOW GRADE, 1" MINIMUM, UNLESS NOTED OTHERWISE. ALL 90 DEGREE BENDS TO ABOVE GRADE SHALL BE RGS, MINIMUM BURIAL DEPTH SHALL BE 30" CLEAR TO TOP OF CONDUIT, UNLESS NOTED OTHERWISE.
4. USE GALVANIZED FLEXIBLE STEEL CONDUIT WHERE DIRECT CONNECTION IS NOT DESIRABLE FOR REASONS EQUIPMENT MOVEMENT, VIBRATION OR FOR EASE OF MAINTENANCE. USE LIQUIDTIGHT, PVC COATED FLEXIBLE METAL CONDUIT FOR OUTDOOR APPLICATIONS.
5. INSTALL GALVANIZED FLEXIBLE STEEL CONDUIT AT ALL POINTS OF CONNECTION TO EQUIPMENT MOUNTED ON SUPPORTS TO ALLOW FOR EXPANSION AND CONTRACTION.
6. A RUN OF CONDUIT BETWEEN BOXES OR FITTINGS SHALL NOT CONTAIN MORE THE EQUIVALENT OF FOUR QURATER–BENDS INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE BOX OR FITTING. THE RADIUS OF BENDS SHALL NEVER BE SHORTER THAN THAT OF THE CORRESPONDING TRADE ELBOW.
7. WHERE CONDUIT HAS TO BE CUT IN THE FIELD, IT SHALL BE CUT SQUARE WITH A PIPE CUTTER USING CUTTING KNIVES.
8. ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATE SIZE MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF WIRE OR CABLE. CLEAR ALL BLOCKAGES AND REMOVE BURRS, DIRT AND DEBRIS.
9. INSTALL MULE TAPE IN ALL EMPTY CONDUIT IDENTIFY PULL STRINGS AT EACH END WITH ITS DESTINATION.
10. PROVIDE INSULATED GROUNDING BUSHINGS OR ALL CONDUITS STUBBED INTO EQUIPMENT ENCLOSURES OR STUBBED OUT FOR FUTURE USE BY OTHERS.
11. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION. TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLUGGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. CONTRACTOR SHALL REPLACE ANY CONDUIT CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.
12. INSTALL 3" RED METALLIC LOCATOR TAPE 12" ABOVE ALL UNDERGROUND CONDUIT AND WIRE.
13. CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.

B. WIRE AND CABLE:

1. ALL POWER WIRING SHALL BE COLOR CODED AS FOLLOWS

DESCRIPTION	120/270V	208Y/120V	480Y/277V
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	RED	ORANGE
PHASE C		BLUE	YELLOW
NEUTRAL	WHITE	WHITE	GRAY
GROUND	GREEN	GREEN	GREEN

2. SPLICES SHALL BE MADE ONLY AT OUTLETS, JUNCTION BOXES OR ACCESSIBLE RACEWAYS WITH PRESSURE–TYPE CONNECTORS.
3. PULLING LUBRICANT SHALL BE SOAPSTONE POWDER, POWDERED TALC OR A COMMERCIAL PULLING COMPOUND. NO SOAP SUDS, SOAP FLAKES, OIL OR GREASE SHALL BE USED, AS THESE MAY BE HARMFUL TO CABLE INSULATION. CONTRACTOR SHALL USE NYLON OR HEMP ROPE FOR PULLING CABLE TO AVOID SCORING THE CONDUIT.
4. CABLES SHALL BE NEATLY TRAINED, WITHOUT INTERLACING, AND BE OF SUFFICIENT LENGTH IN ALL BOXES, EQUIPMENT. ETC. TO PERMIT MAKING A NEAT ARRANGEMENT. CABLES SHALL BE SECURED IN A MANNER TO AVOID TENSION ON CONDUCTORS OR TERMINALS AND SHALL BE PROTECTED FROM MECHANICAL INJURY AND FROM MOISTURE. SHARP BENDS OVER CONDUIT BUSHINGS ARE PROHIBITED. DAMAGED CABLES SHALL BE REMOVED AND REPLACE AT THE CONTRACTOR'S EXPENSE.

C. DISCONNECT SWITCHES:

1. INSTALL DISCONNECT SWITCHED LEVEL AND PLUMB. CONNECT TO WIRING SYSTEM AND GROUND AS INDICATED.

D. GROUNDING:

1. ALL METALLIC PARTS OF ELECTRICAL EQUIPMENT WHICH DO NOT CARRY CURRENT SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 250 OF THE NATIONAL ELECTRIC CODE.
2. PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEMS INDICATED WITH ASSEMBLY OF MATERIALS, INCLUDING GROUNDING ELECTRODES, BONDING JUMPERS AND ADDITIONAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
3. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND IN THE SHORTEST AND STRAIGHTEST PATHS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.
4. TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR CONNECTORS AND BOLTS. WHERE MANUFACTURE'S TORQUING REQUIREMENTS ARE NOT AVAILABLE, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUES SPECIFIED IN UL 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
5. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS AND INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION.
6. ALL GROUND CONNECTIONS SHALL BE INSPECTED FOR TIGHTNESS. EXOTHERMIC–WELDED CONNECTIONS SHALL BE APPROVED BY THE CONSTRUCTION INSPECTOR BEFORE BEING PERMANENTLY CONCEALED.
7. APPLY CORROSION–RESISTANT FINISH TO FIELD CONNECTION AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATING HAVE BEEN DESTROYED. USE COPPER–BASED "NO–OX" OR APPROVED EQUAL.
8. A SEPARATE, CONTINUOUS, INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FEEDER AND BRACH CIRCUITS.
9. BOND ALL INSULATED GROUNDING BUSHINGS WITH A BARE #6 AWG GROUNDING CONDUCTOR TO A GROUND BUS OR GROUNDING LUG IN ENCLOSURE.
10. DIRECT BURIED GROUND CONDUCTORS SHALL BE INSTALLED AT A NOMINAL DEPTH OF 30" BELOW GRADE, UNLESS NOTED OTHERWISE.
11. ALL GROUNDING CONDUCTORS EMBEDDED IN OR PENETRATING CONCRETE SHALL BE INSULATED OR INSTALLED IN PVC CONDUIT.
12. INSTALL ELECTROLYTIC GROUNDING SYSTEM IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REMOVE SEALING TAPE FROM LEACHING AND BREATHER HOLES, INSTALL PROTECTIVE BOX FLUSH WITH GRADE.
13. DRIVE GROUND RODS UNTIL TOPS ARE 30" BELOW FINAL GRADE.
14. GROUNDING CONDUCTOR TO EQUIP[MENT GROUND LUGS:
    1) BOLTED TO EQUIPMENT HOUSING WITH STAINLESS STEEL BOLTS AND LOCK WASHERS.
    2) ALL EQUIPMENT TO BE GROUNDED SHALL BE FREE OF PAINT OR ANY OTHER MATERIAL COVERING BARE METAL AT THE POINT OF CONNECTION.

3.5 ACCEPTANCE TESTING:

1. PROVIDE PERSONNEL AND EQUIPMENT, MAKE REQUIRED TESTS AND SUBMIT TEST REPORTS UPON COMPLETE OF TESTS.
2. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, THE NON–COMPLYING ITEMS SHALL BE REMOVED FROM THE JOBSITE AND REPLACED WITH THE ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS PROMPTLY AFTER RECEIPT OF NOTICE OF SUCH NON–COMPLIANCE.

A. TEST PROCEDURES:

1. ALL FEEDERS SHALL HAVE THEIR INSULATION TESTED AFTER INSTALLATION, BUT BEFORE CONNECTION TO DEVICES. THE CONDUCTORS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS. TESTING SHALL BE FOR ONE MINUTE, USING 1000V DC. INVESTIGATE ANY VALUES LESS THAN 50 MEGOHMS.
2. PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING DEVICES FOR ELECTRICAL CONTINUITY AND PROPER POLARITY CONNECTIONS.
3. MEASURE AND RECORD VOLTAGES BETWEEN PHASES AN BETWEEN PHASE WIRE AND NEUTRALS. SUBMIT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES.
4. PERFORM GROUND TEST TO MEASURE GROUND RESISTANCE OF GROUNDING SYSTEM USING THE IEEE STANDARD 3–POINT "FALL–OF–POTENTIAL" METHOD. PROVIDE PLOTTED TEST VALUES AND LOCATION SKETCH. NOTIFY THE ENGINEER IMMEDIATELY IF MEASURED VALUE IS OVER 5 OHMS.

END OF SECTION

END OF SPECIFICATION

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11/13/20

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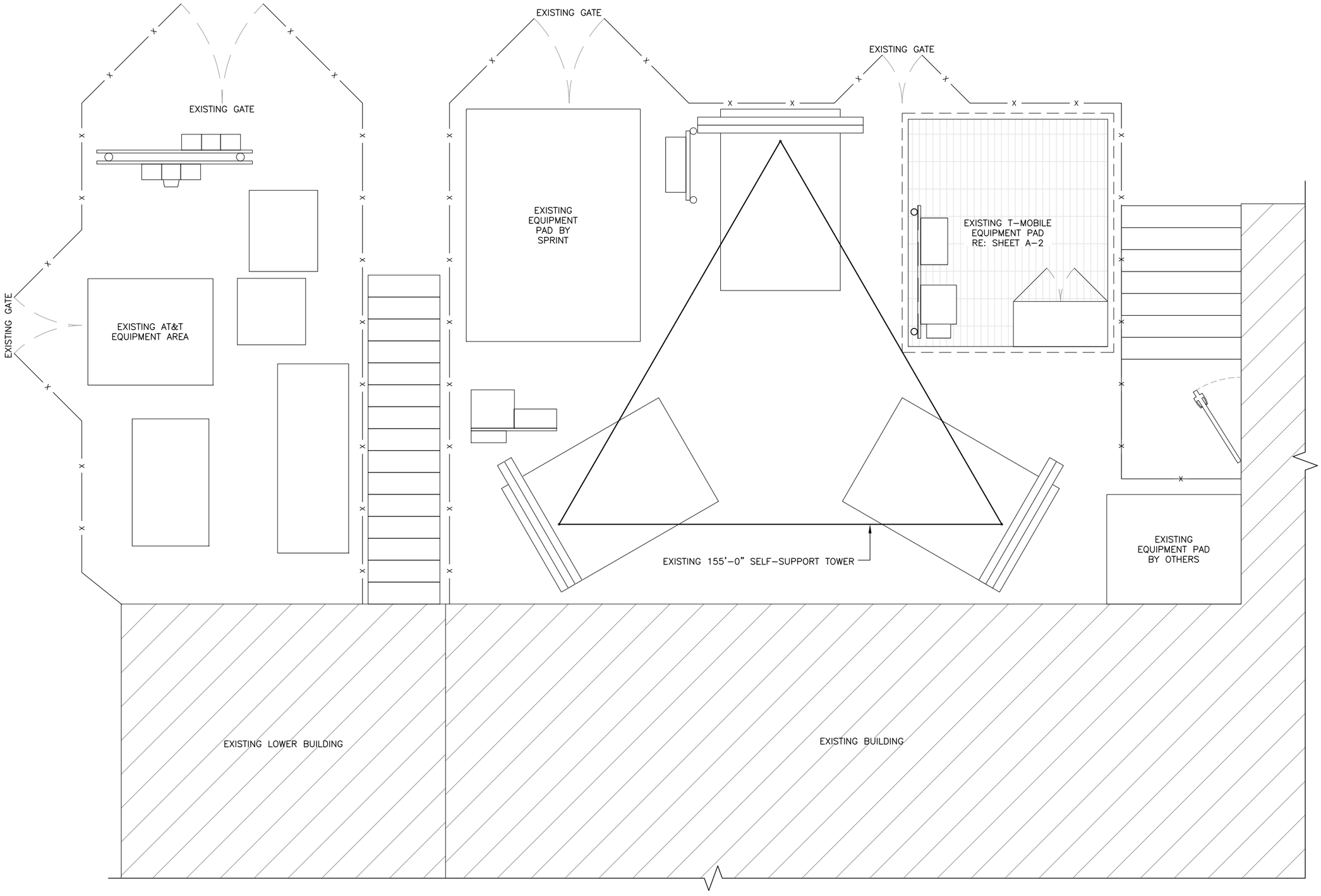
SP-2	3



1 OVERALL SITE PLAN

SCALE: 0' 1' 4' 8' 20'

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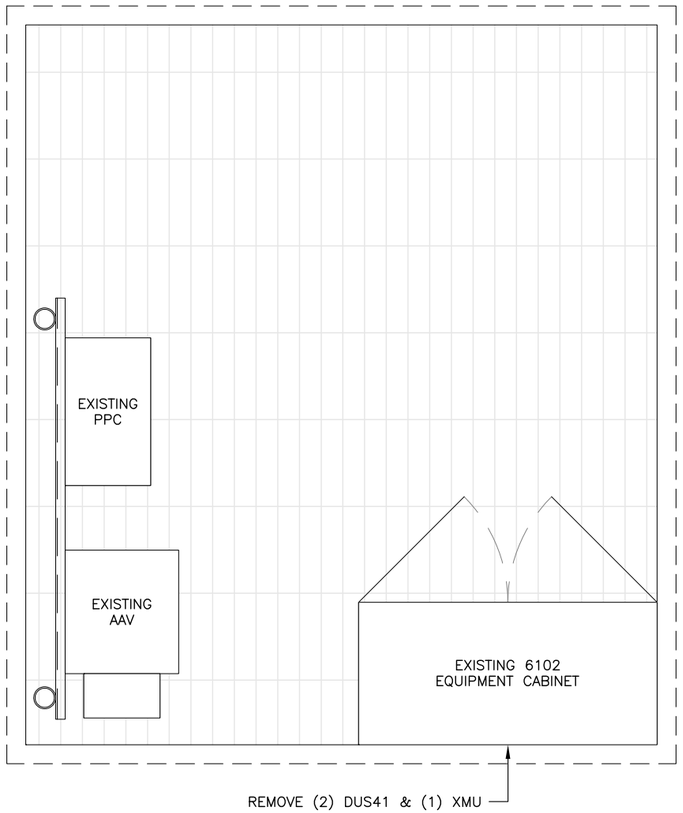
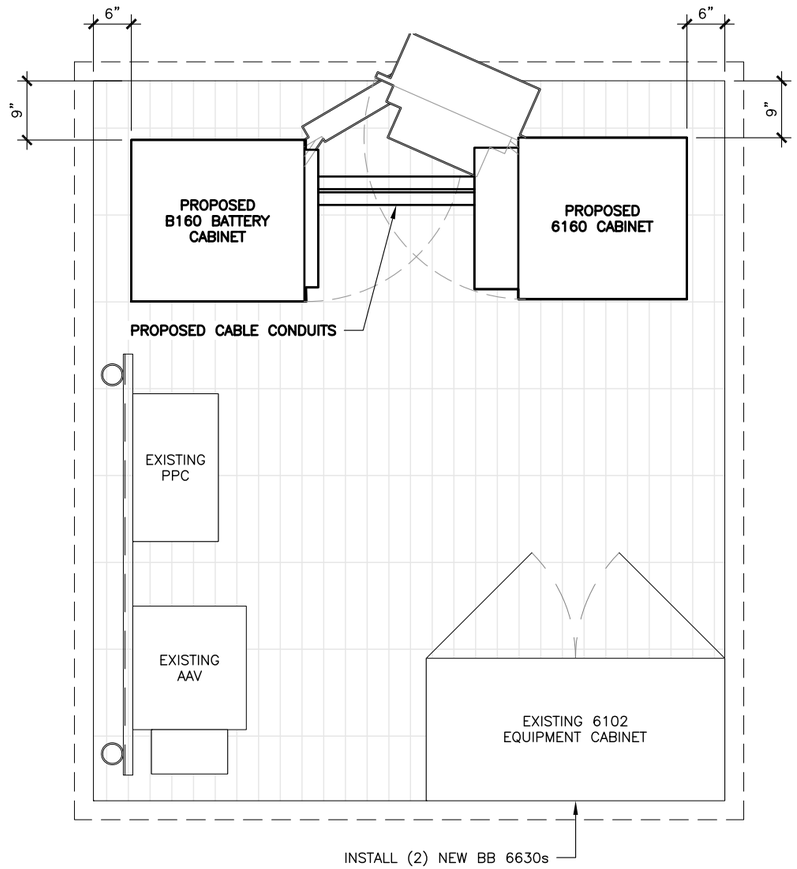


1 EXISTING ENLARGED SITE PLAN

SCALE: 0' 8' 16' 32' 48'

N



2 PROPOSED ENLARGED SITE PLAN

SCALE: 0' 8' 16' 32' 48'

N

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CENTERLINE COMMUNICATIONS

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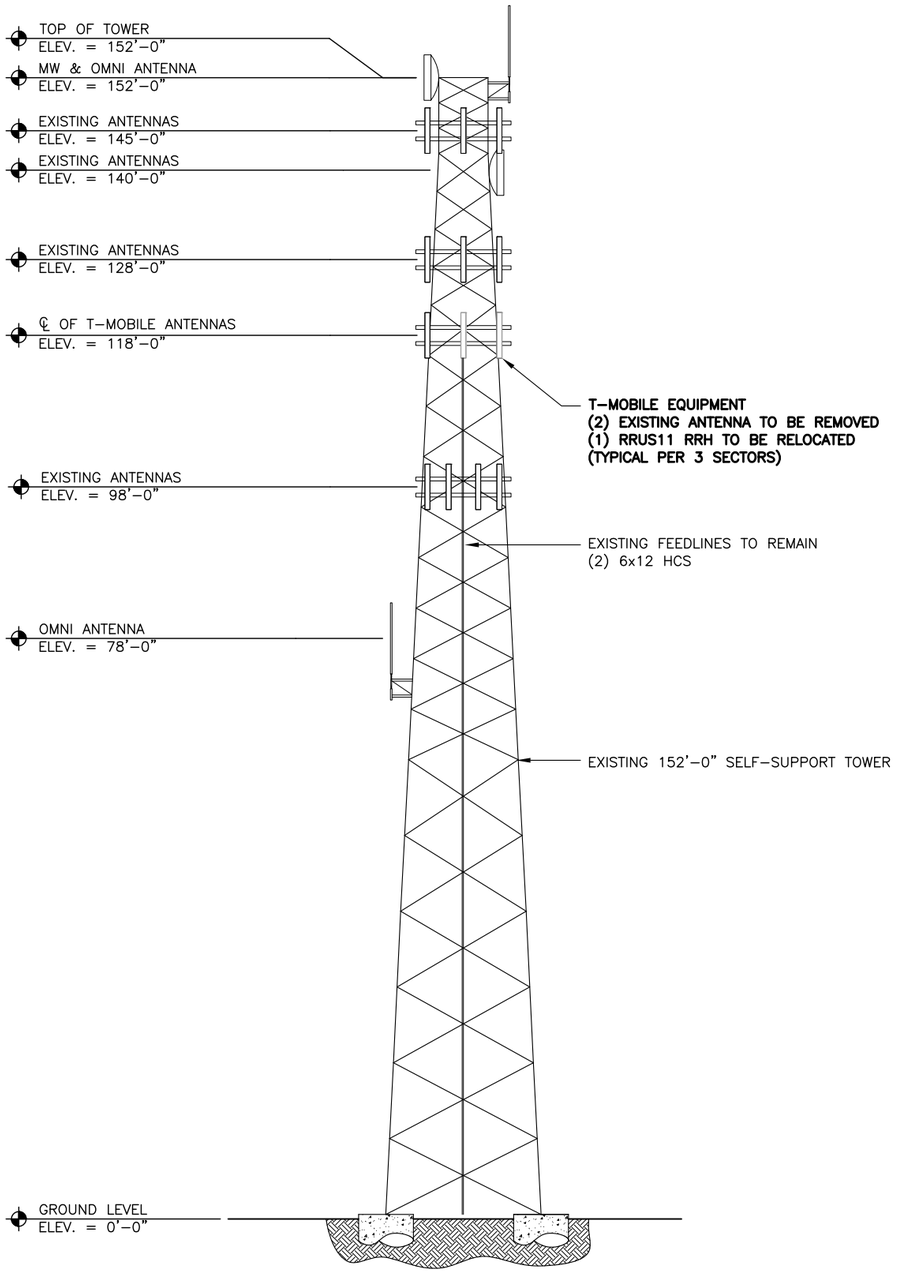

1 EXISTING TOWER ELEVATION
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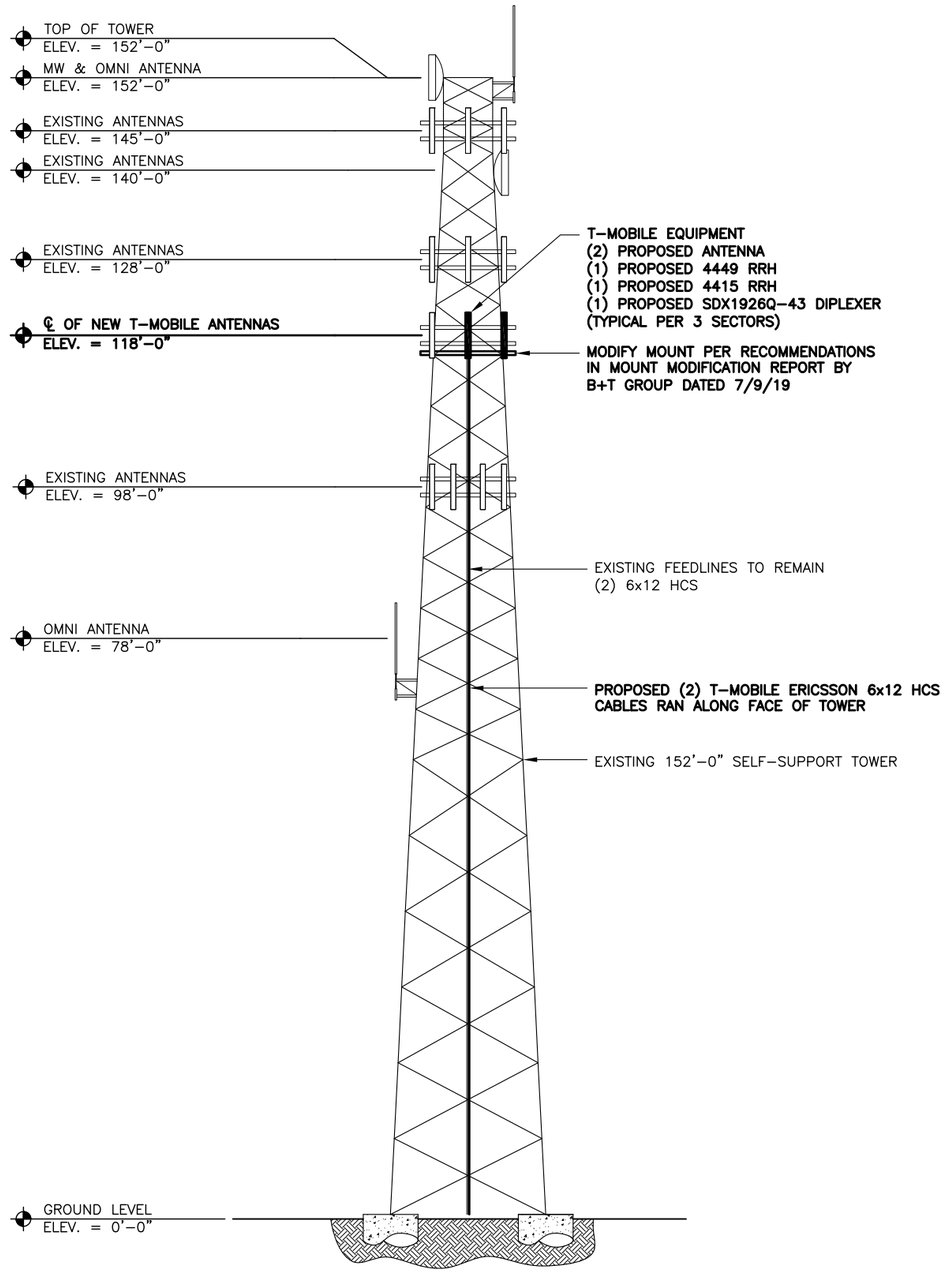

2 PROPOSED TOWER ELEVATION
SCALE: N.T.S.

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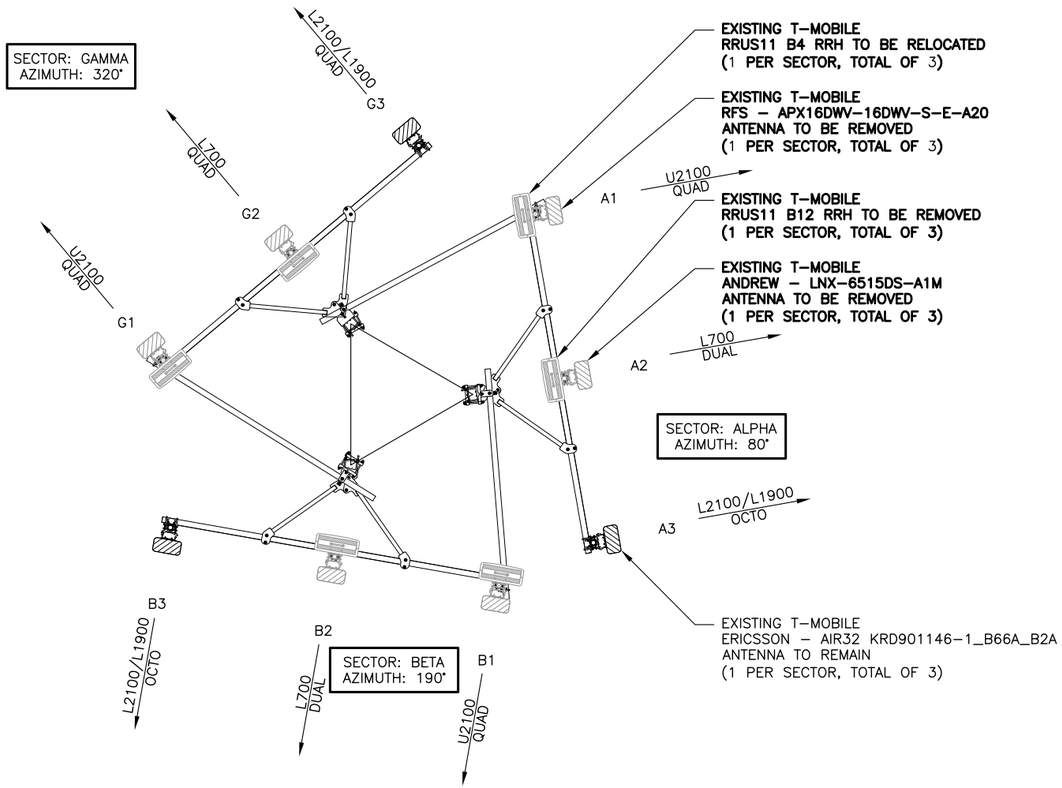
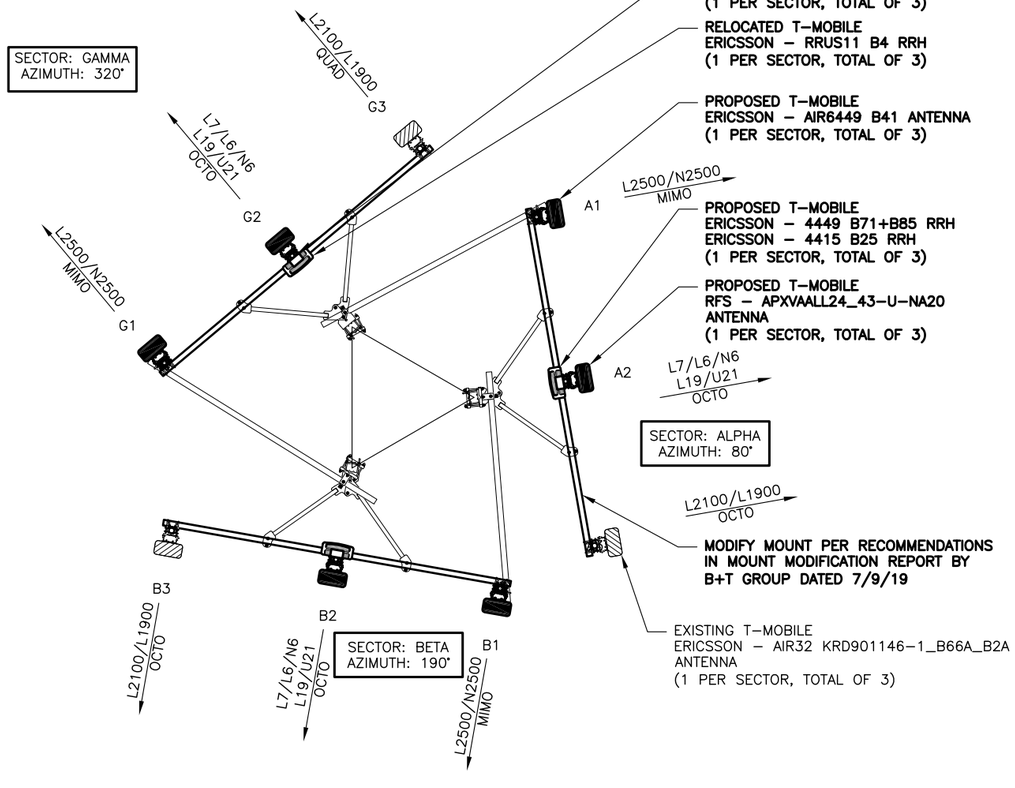
A-3	3



1 EXISTING AZIMUTH DETAIL
SCALE: N.T.S.



2 PROPOSED AZIMUTH DETAIL
SCALE: N.T.S.

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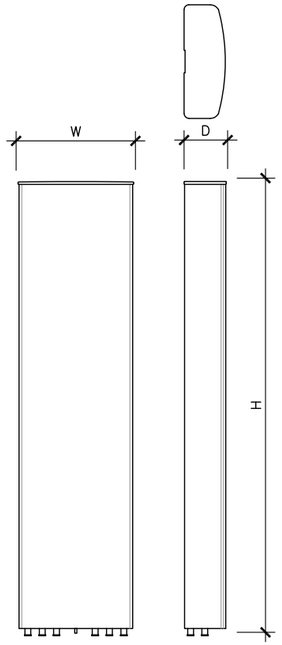
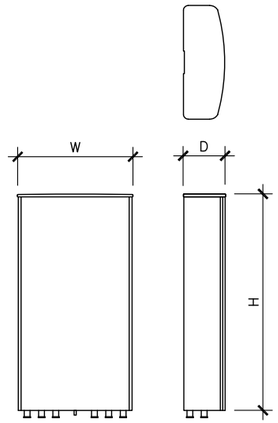
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:	REVISION:
A-4	3



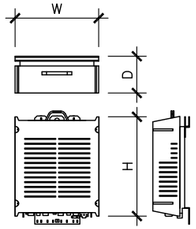
ANTENNA SPECS	
MANUFACTURER	RFS
MODEL #	APXVAALL24_43-U-NA20
WIDTH	24.0"
DEPTH	8.7"
HEIGHT	95.9"
WEIGHT	128.0 LBS

1 ANTENNA DETAIL
SCALE: N.T.S.



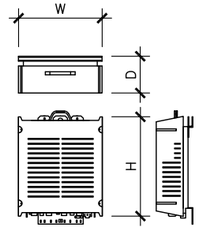
ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR6449 B41
WIDTH	20.6"
DEPTH	8.6"
HEIGHT	33.1"
WEIGHT	104.0 LBS

2 ANTENNA DETAIL
SCALE: N.T.S.



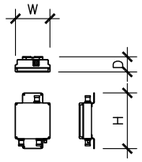
RRH SPECS	
MANUFACTURER	ERICSSON
MODEL #	4449 B71+B85
WIDTH	13.2"
DEPTH	9.4"
HEIGHT	17.9"
WEIGHT	70.5 LBS

3 RRH DETAIL
SCALE: N.T.S.



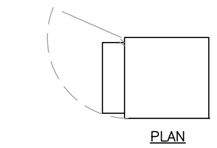
RRH SPECS	
MANUFACTURER	ERICSSON
MODEL #	4415 B25
WIDTH	13.4"
DEPTH	5.9"
HEIGHT	16.5"
WEIGHT	46.0 LBS

4 RRH DETAIL
SCALE: N.T.S.



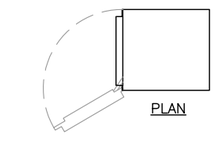
DIPLEXER SPECS	
MANUFACTURER	COMMSCOPE
MODEL #	SDX1926Q-43
WIDTH	6.93"
DEPTH	2.91"
HEIGHT	4.17"
WEIGHT	6.17 LBS

5 RRH DETAIL
SCALE: N.T.S.



ENCLOSURE SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	6160
WIDTH	25.6"
DEPTH	33.5"
HEIGHT	63"
WEIGHT	320 lbs

6 ENCLOSURE DETAIL
SCALE: N.T.S.



ENCLOSURE SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	B160
WIDTH	26"
DEPTH	26"
HEIGHT	63"
WEIGHT	295 lbs

7 ENCLOSURE DETAIL
SCALE: N.T.S.

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ANTENNA NOTES:

1. ANTENNA CONTRACTOR SHALL INSURE THAT ALL ANTENNA MOUNTING PIPES ARE PLUMB.
2. COAXIAL FEEDER & FIBER LENGTHS INDICATED ARE APPROXIMATE.
3. ANTENNA COAXIAL FEEDERS & ANTENNA JUMPERS SHALL BE COLOR CODED PER T–MOBILE REQUIREMENTS. IN ADDITION TO THE COLOR CODE IN THE ANTENNA KEY THE FOLLOWING CHECKER STRIPE SHALL BE ADDED TO EACH ANTENNA COAXIAL FEEDER & ANTENNA JUMPER.

   LTE L600 – WHITE–SOLID STRIPE
   LTE 700 – RED–BLACK CHECKER STRIPE
   LTE PCS – RED–GREEN CHECKER STRIPE
   LTE AWS – YELLOW–BLACK CHECKER STRIPE
   UMTS PCS – RED–WHITE CHECKER STRIPE
   UMTS AWS – GREEN–WHITE CHECKER STRIPE
   GSM PCS – BLACK–WHITE CHECKER STRIPE
4. UMTS AWS LINE 1 & 2 TO HAVE TMA, MOUNTED ON PIPE BEHIND ANTENNA POSITION #2.
5. MULTI–PORTS ANTENNAS: TERMINATE UNUSED ANTENNA PORTS WITH CONNECTOR CAP & WEATHERPROOF THOROUGHLY. JUMPERS FROM TMAS MUST TERMINATE TO OPPOSITE POLARIZATIONS IN EACH SECTOR,
6. CONTRACTOR MUST FOLLOW ALL MANUFACTURERS' RECOMMENDATIONS REGARDING THE INSTALLATION OF COAXIAL CABLES, CONNECTORS & ANTENNAS.
7. MINIMUM BEND RADIUS:

   LDF4–50A (1/2" HARD LINE) = 5"
   FSJ4–50B (1/2" SUPER FLEX) = 1 1/4"
   AVA5–50A (7/8" HARD LINE) = 10"
   AVA7–50A (1 5/8 HARD LINE) = 15"
   LDF7–50A (1 5/8" HARD LINE) = 20"
8. CONTRACTOR SHALL RECORD THE SERIAL, SECTOR & POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND FURNISH THE INFORMATION TO T–MOBILE.
9. WEATHERPROOF ALL ANTENNA CONNECTORS WITH SELF–AMALGAMATING TAPE.
10. ANTENNA CONTRACTOR SHALL PERFORM A "TAPE DROP" MEASUREMENT TO CONFIRM/VALIDATE ANTENNA CENTERLINE (ACL) HEIGHT. CONTRACTOR SHALL SUBMIT A COMPLETED HEIGHT VERIFICATION FORM TO THE CONSTRUCTION MANAGER.
11. ALL FIBER RUNS TO BE CONTAINED IN (1) NOKIA HYBRID DC–FIBER CABLE (P/N: ASU9325TYP01) FROM LOWER COVP TO UPPER COVP. HYBRID CABLE SHALL BE COLOR CODED PER T–MOBILE REQUIREMENTS.

ANTENNA KEY

SECTOR	STATUS	ANTENNA NUMBER	TYPE	COLOR CODE	ANTENNA VENDOR	MODEL #	AZIMUTH	ELEC. TILT	MECH TILT	RAD CENTER	COAXIAL FEEDER SIZE	COAXIAL FEEDER LENGTH	HYBRID CABLE FEEDER SIZE	HYBRID CABLE FEEDER LENGTH
ALPHA	**NEW**	**A–1**	**L2500 N2500**	**–**	**ERICSSON**	**AIR6449 B41**	**80°**	**2°**	**0°**	**118'–0"**	**–**	**–**	(1) 6x12 HCS	140'–0"
	NEW	**A–2**	**L700/L600 /N600**	**–**	**RFS**	**APXVAALL24_43–U–NA20**	**80°**	**2°**	**0°**	**118'–0"**	**–**	**–**		
			L700/L600 /N600	**–**				**2°**			**–**	**–**		
	EXISTING	A–3	L1900	–	ERICSSON	AIR32 KRD901146–1_B66A_B2A	80°	2°	0°	118'–0"	–	–		
			L2100	–				2°			–	–		
			L2100	–				2°			–	–		
			L1900	–				2°			–	–		
BETA	**NEW**	**B–1**	**L2500 N2500**	**–**	**ERICSSON**	**AIR6449 B41**	**190°**	**2°**	**0°**	**118'–0"**	**–**	**–**	(1) 6x12 HCS	140'–0"
	NEW	**B–2**	**L700/L600 /N600**	**–**	**RFS**	**APXVAALL24_43–U–NA20**	**190°**	**2°**	**0°**	**118'–0"**	**–**	**–**		
			L700/L600 /N600	**–**				**2°**			**–**	**–**		
	EXISTING	B–3	L1900	–	ERICSSON	AIR32 KRD901146–1_B66A_B2A	190°	2°	0°	118'–0"	–	–		
			L2100	–				2°			–	–		
			L2100	–				2°			–	–		
			L1900	–				2°			–	–		
GAMMA	**NEW**	**G–1**	**L2500 N2500**	**–**	**ERICSSON**	**AIR6449 B41**	**320°**	**2°**	**0°**	**118'–0"**	**–**	**–**	(1) 6x12 HCS	140'–0"
	NEW	**G–2**	**L700/L600 /N600**	**–**	**RFS**	**APXVAALL24_43–U–NA20**	**320°**	**2°**	**0°**	**118'–0"**	**–**	**–**		
			L700/L600 /N600	**–**				**2°**			**–**	**–**		
	EXISTING	G–3	L1900	–	ERICSSON	AIR32 KRD901146–1_B66A_B2A	320°	2°	0°	118'–0"	–	–		
			L2100	–				2°			–	–		
			L2100	–				2°			–	–		
			L1900	–				2°			–	–		

RRU/DIPLEXER KEY – ON BUILDING

SECTOR	VENDOR	EQUIPMENT	MODEL #	ELEVATION	QUANTITY	STATUS
MULTI	ERICSSON	RRU	RRUS11 B4	62'–0"	3	EXISTING
MULTI	**ERICSSON**	**RRU**	**4449 B71+B85**	**62'–0"**	**3**	**NEW**
MULTI	**ERICSSON**	**RRU**	**4415 B25**	**62'–0"**	**3**	**NEW**
MULTI	**COMMSCOPE**	**DIPLEXER**	**SDX1926Q–43**	**62'–0"**	**3**	**NEW**

1 ANTENNA, RRU & TMA SCHEDULE
SCALE: N.T.S.

B+T GRP

T···Mobile

CENTERLINE COMMUNICATIONS

SITE NUMBER:
CTFF056A

SITE NAME:
LONG RIDGE FIRE HOUSE

SITE ADDRESS:
366 OLD LONG RIDGE RD
STAMFORD, CT 06903

PROJECT NO:	135928.007.01
CHECKED BY:	GEH

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
B	9/6/19	JJD	PRELIMINARY REVIEW
0	9/12/19	JJD	CONSTRUCTION
1	10/22/20	SMM	CONSTRUCTION
2	11/12/20	JJD	CONSTRUCTION
3	11/13/20	JJD	CONSTRUCTION

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STATE OF CONNECTICUT 31627 LICENSED PROFESSIONAL ENGINEER

11/13/20

SHEET NUMBER: A-6
REVISION: 3

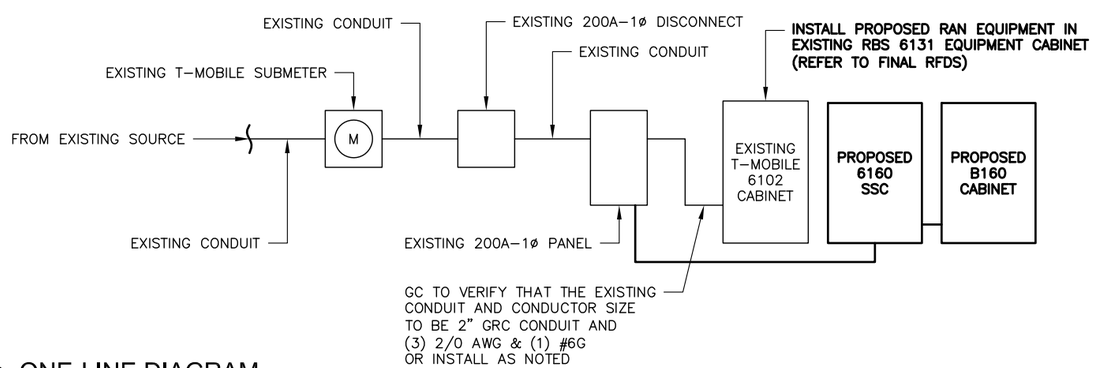
FINAL PANEL SCHEDULE							
LOAD	POLES	AMPS	BUS L1	BUS L2	AMPS	POLES	LOAD
NOT LABELED	2	60A	1	2	20A	1	NOT LABELD
			3	4	**100A**	2	6102
EMERSON PLUGS	1	20A	5	6			
FLOOD LIGHTS	1	15A	7	8			
GFCI	1	20A	9	10			
6160 SSC	**2**	**100A**	11	12			
			13	14			
			15	16			
			17	18			
			19	20			
			21	22			
			23	24			
			25	26			
			27	28			
			29	30			

RATED VOLTAGE: ■120/240 □_____. 1 PHASE, 3 WIRE	BRANCH POLES: □12 □24 ■30 □42	APPROVED MF'RS	
RATED AMPS: □100 ■200 □400 □_____.	CABINET: ■SURFACE □FLUSH	NEMA □1 ■3R □4X	
□MAIN LUGS ONLY MAIN 200 AMPS ■BREAKER □FUSED SWITCH	■HINGED DOOR	■KEYED DOOR LATCH	
□FUSED ■CIRCUIT BREAKER BRANCH DEVICES	□_____ TO BE GFCI BREAKERS	FULL NEUTRAL BUS	GROUND BAR
ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 10,000 AMPS SYMMETRICAL			

REPLACE EXISTING BREAKER IN POSITION 1 AND 3 WITH A NEW 2P 150A BREAKER
REPLACE EXISTING BREAKER IN POSITION 4 AND 6 WITH A NEW 2P 100A BREAKER
REPLACE EXISTING WIRES FOR EXISTING 6102 CABINET WITH (3) 2/0 AWG THWN (COPPER) AND (1) #6G AWG. MINIMUM CONDUIT SIZE TO BE 2".
IF 150A BREAKER WILL NOT PROPERLY FIT IN EXISTING PANEL, REPLACE (E) PANEL WITH SQUARE D PANEL QO12040M200RB (OR APPROVED EQUAL).
UPGRADE FEEDER WIRES TO MEET AMPACITY IF NEW PANEL IS REQUIRED.
FINAL PANEL DESIGN AND CALCULATIONS FOR WIRE SIZE WERE BASED OFF OF EXISTING DOCUMENTS AND PHOTOS

1 FINAL T-MOBILE PANEL DETAIL

SCALE: N.T.S.



2 ONE-LINE DIAGRAM

SCALE: N.T.S.

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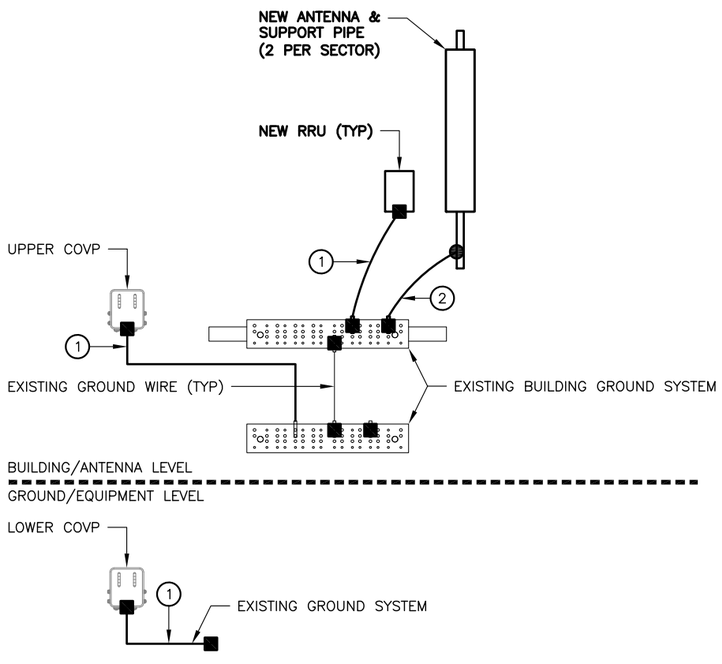
11/13/20

SHEET NUMBER:	REVISION:
E-1	3

LEGEND	
●	EXOTHERMIC CONNECTION
■	MECHANICAL CONNECTION
①	#2 AWG STRANDED INSULATED COPPER GROUND WIRE
②	#2 SOLID TINNED, BARE COPPER GROUND WIRE

TYPICAL SECTOR



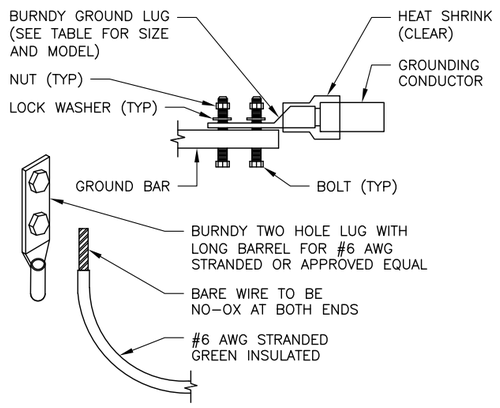
1 ANTENNA GROUND DIAGRAM

SCALE: N.T.S.

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6A–2TC38	3/8" – 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3A–2TC38	3/8" – 16 NC S 2 BOLT
#2 AWG STRANDED	YA2A–2TC38	3/8" – 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26–2TC38	3/8" – 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28–2N	1/2" – 16 NC S 2 BOLT

NOTES:

1. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.
2. COPPER SHIELD, ANTIOX, CR NO–OX OR APPROVED EQUAL SHALL BE PLACE WHERE ALL DISSIMILAR METALS CONNECT.
3. ALL LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

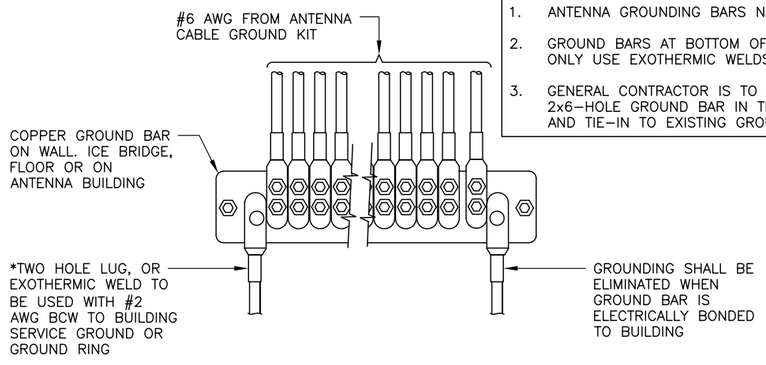


2 MECHANICAL LUG CONNECTION

SCALE: N.T.S.

NOTES:

1. ANTENNA GROUNDING BARS NOT TO USE INSULATORS.
2. GROUND BARS AT BOTTOM OF BUILDINGS SHALL ONLY USE EXOTHERMIC WELDS.
3. GENERAL CONTRACTOR IS TO FURNISH AND INSTALL A 2x6–HOLE GROUND BAR IN THE GBF OF THE RBS AND TIE–IN TO EXISTING GROUND RING.



3 GROUNDWIRE INSTALLATION

SCALE: N.T.S.

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11/13/20

SHEET NUMBER:	REVISION:
G-1	3

Exhibit D

Structural Analysis Report

Date: **November 13, 2020**

Jeff York
Centerline Communications
95 Ryan Drive, Suite 1
Raynham, MA 02767

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***T-Mobile* Co-Locate**	
	Site Number:	CTFF056A
	Site Name:	Long Ridge Fire House
Centerline Comm. Designation:	**Site Number:**	CTFF056A
	Site Name:	Long Ridge Fire House
Engineering Firm Designation:	**B+T Group Project Number:**	135928.008.01a
Site Data:	**366 Old Long Ridge Road, Stamford, Fairfield County, CT 06903** **Latitude *41° 9' 11.18"*, Longitude *-73° 35' 33.36"*** **155 Foot - Self Support Tower**	

Dear Jeff York,

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower.

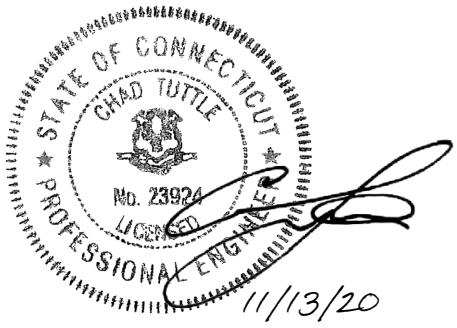
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

Proposed Equipment Configuration **Sufficient Capacity – 99.5%**

The jurisdiction has adopted the 2015 International Building Code. This analysis has been performed in accordance with the TIA-222-H Standard.

Structural analysis prepared by: Braden Tabb, P.E.

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564; Expires: 02/10/2021



Chad E. Tuttle, P.E.

tnxTower Report - version 8.0.7.5

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 155 ft. Self Support tower designed by ROHN and mapped by B+T Group in July of 2019. The tower has been modified by AECOM in June of 2016 to accommodate the additional loading and those modifications were incorporated in this analysis.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	116 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
115.0	118.0	3	Ericsson	AIR32 KRD901146-1_B66A_B2A	4	6X12
		3	Ericsson	AIR6449 B41		
		3	Ericsson	RRUS11 B4		
		3	Ericsson	Radio 4449 B71+B85		
		3	Ericsson	Radio 4415 B25		
		3	Rfs Celwave	APXVAALL24_43-U-NA20		
	115.0	3	Site Pro 1	SFR-K Sector Frame Reinforcement Kit		
		3	--	Horizontal 10.5' x 2.5" Std. Pipe		
		3	--	Sector Frames		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
155.5	155.5	1	Andrew	6 FT DISH	1	EW90
		1	--	Pipe Mount		
150.0	156.0	1	Generic	20' x 2" Dipole	1 1	1-5/8 7/8
	155.0	1	bird	101-90-06-0-03N		
	150.0	1	Generic	2' x 6" x 6" TMA		
		1	--	10' x 2" Mount Pipe		
		1	--	Standoff Mount		
147.0	147.0	6	Kaelus	TMA2117F00V1-1	12 1	1-5/8 1/4
		1	Quintel Tech.	QS665122B51317852		
		2	Quintel Tech.	QS665122B51517126		
		3	--	Standoff Mount		
139.5	139.5	1	Andrew	6 FT DISH	1	EW90
		1	--	Pipe Mount		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
135.0	145.0	1	Bird	101-90-06-0-03N	1	1-5/8
	135.0	1	--	Standoff Mount		
126.0	129.0	3	Alcatel Lucent	26" x 13" x 6"	3 1	1-1/4 7/8
		3	Alcatel Lucent	RRH1900-4x45		
		3	Alcatel Lucent	RRH2x50		
		3	Generic	9" x 9" x 3.75"		
		3	Rfs Celwave	APXVSPP18-C		
		3	Rfs Celwave	APXVTM14-ALU-I20		
	126.0	3	--	Sector Frames		
95.5	97.5	3	Alcatel Lucent	B13 RRH4X30-4R	3 1	1-1/4 1/2
		6	Commscope	HBXX-6517DS-A2M		
		6	Commscope	LNX-6514DS-A1M		
		3	Raycap	RRFDC-3315-PF-48		
	95.5	3	--	Sector Frames		
67.5	72.5	1	Generic	10' x 2" Dipole	1	7/8
	67.5	1	--	Standoff Mount		
56.0	57.5	1	Gps	5.5" x 3.5" GPS	1	1/2
	56.0	1	--	Standoff Mount		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Tower Data	Tower Mapping by B+T Group, Project No. 135928.005.01	Date: 07/24/2019	On File
Modification Data	Modification Drawings by AECOM	Date: 06/16/2016	Centerline
	Modification Details by B+T Group, Project No. 135928.005.01	Date: 07/24/2019	On File
Post Modification Report	AECOM	Date: 08/11/2017	Centerline
Mount Modification Data	Mount Modification Drawings by B+T Group, Project No. 135928.006.01	Date: 07/09/2019	On File
Foundation Data	*Information Not Available*		
Soil Properties	Geotech Report by DR. Clarence Welti	Date: 12/12/2012	Centerline
Existing Loading	Tower Mapping by B+T Group, Project No. 135928.005.01	Date: 07/24/2019	On File
Proposed Loading	Anchor RFDS	Date: 11/11/2020	Centerline

3.1) Analysis Method

tnxTower (version 8.0.7.5), 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) The tower and structures were maintained in accordance with the - TIA-222 standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	155 - 140	Leg	ROHN 2 STD	3	-4.576	33.157	13.8	Pass
T2	140 - 120	Leg	ROHN 2.5 EH	27	-18.214	78.162	23.3	Pass
T3	120 - 100	Leg	ROHN 2.5 EH	56	-41.301	61.456	67.2	Pass
T4	100 - 80	Leg	BT 135928 - 2.5XS with HSS 3.5x0.3125	77	-69.045	111.959	61.7	Pass
T5	80 - 60	Leg	BT 135928 - 3 XS with HSS 4x0.25	107	-96.667	147.366	65.6	Pass
T6	60 - 50	Leg	ROHN 4 EH	137	-107.775	183.172	58.8	Pass
T7	50 - 40	Leg	ROHN 4 EH	149	-121.100	183.248	66.1	Pass
T8	40 - 30	Leg	5 STD w/ HSS 6x0.375 HP [0.479]	161	-134.593	331.886	40.6	Pass
T9	30 - 20	Leg	5 STD w/ HSS 6x0.375 HP [0.479]	173	-147.786	331.959	44.5 53.8 (b)	Pass
T10	20 - 10	Leg	5 STD w/ (3) 1.5x0.5 PL (Stiff)	185	-161.336	174.105	92.7	Pass
T11	10 - 0	Leg	5 STD w/ (3) 1.5x0.5 PL (Stiff)	194	-173.202	174.105	99.5	Pass
T1	155 - 140	Diagonal	L1 1/2x1 1/2x1/8	11	-1.329	3.256	40.8	Pass
T2	140 - 120	Diagonal	L1 1/2x1 1/2x1/4	31	-2.524	4.391	57.5	Pass
T3	120 - 100	Diagonal	L2x2x1/4	58	-4.026	7.056	57.1 63.2 (b)	Pass
T4	100 - 80	Diagonal	L2 1/2x2 1/2x1/4	81	-5.487	10.825	50.7 81.8 (b)	Pass
T5	80 - 60	Diagonal	L2 1/2x2 1/2x1/4	111	-5.824	8.790	66.3 86.7 (b)	Pass
T6	60 - 50	Diagonal	L3x3x1/4	141	-6.534	11.848	55.1	Pass
T7	50 - 40	Diagonal	L3x3x5/16	153	-6.753	13.347	50.6	Pass
T8	40 - 30	Diagonal	L3x3x3/8	165	-6.910	14.644	47.2 75.5 (b)	Pass
T9	30 - 20	Diagonal	L3x3x3/8	177	-7.151	13.532	52.8 77.1 (b)	Pass
T10	20 - 10	Diagonal	L3 1/2x3 1/2x1/4	189	-6.836	14.354	47.6 64.0 (b)	Pass
T11	10 - 0	Diagonal	L3 1/2x3 1/2x1/4	198	-7.473	13.311	56.1 64.4 (b)	Pass
T4	100 - 80	Secondary Horizontal	L2 1/2x2 1/2x1/4	85	-1.197	14.265	8.4 14.6 (b)	Pass
T5	80 - 60	Secondary Horizontal	L2 1/2x2 1/2x1/4	115	-1.676	10.968	15.3 20.4 (b)	Pass
T6	60 - 50	Secondary Horizontal	L3x3x1/4	145	-1.869	17.613	10.6 17.0 (b)	Pass
T7	50 - 40	Secondary Horizontal	L3x3x1/4	157	-2.100	15.660	13.4 19.2 (b)	Pass
T8	40 - 30	Secondary	L3x3x1/4	170	-2.334	14.159	16.5	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
		Horizontal					21.3 (b)	
T9	30 - 20	Secondary Horizontal	L3x3x1/4	181	-2.563	12.738	20.1 23.4 (b)	Pass
T1	155 - 140	Top Girt	L2x2x1/4	6	-0.086	8.060	1.1 1.4 (b)	Pass
T2	140 - 120	Top Girt	L1 1/2x1 1/2x1/8	28	-0.059	1.184	5.0	Pass
							Summary	
						Leg (T11)	99.5	Pass
						Diagonal (T5)	86.7	Pass
						Secondary Horizontal (T9)	23.4	Pass
						Top Girt (T2)	5.0	Pass
						Bolt Checks	86.7	Pass
						RATING =	**99.5**	**Pass**

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	62.9	Pass
1	Base Foundation (Structure)	Base	13.8	Pass
1	Base Foundation (Soil Interaction)	Base	83.6	Pass

Structure Rating (max from all components) =	**99.5%**

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.
2) Rating per TIA-222-H Section 15.5.

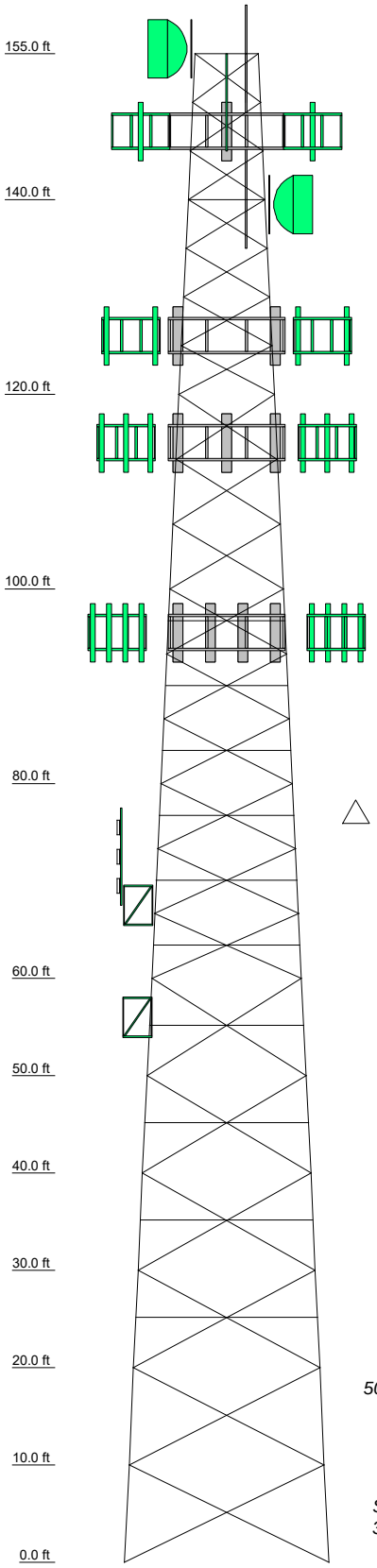
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	5 STD w/ (3) 1.5x0.5 PL (Stiff)		C		ROHN 4 EH		B	A	ROHN 2.5 EH		ROHN 2 STD
Leg Grade							A572-50				
Diagonals	L3 1/2x3 1/2x1/4		L3x3x3/8		L3x3x5/16	L3x3x1/4	L2 1/2x2 1/2x1/4		L2x2x1/4	L1 1/2x1 1/2x1/4	L1 1/2x1 1/2x1/8
Diagonal Grade	A572-50								A36		
Top Girts							N.A.			L1 1/2x1 1/2x1/8	L2x2x1/4
Sec. Horizontals	N.A.		L3x3x1/4				L2 1/2x2 1/2x1/4		N.A.		6.5
Face Width (ft)	21	19.129	18.1935	17.2581	16.3226	15.3871	13.5161	11.6452	9.77419	7.90323	
# Panels @ (ft)		6 @ 10					9 @ 6.66667			7 @ 5	
Weight (K)	16.9	1.3	2.1	2.0	1.5	1.3	2.5	2.2	1.2	1.1	0.4



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	BT 135928 - 2.5XS with HSS 3.5x0.3125	C	5 STD w/ HSS 6x0.375 HP [0.479]
B	BT 135928 - 3 XS with HSS 4x0.25		

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 Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 116 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 99.5%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 180 K
SHEAR: 21 K

UPLIFT: -150 K
SHEAR: 18 K

AXIAL 86 K
SHEAR 9 K *MOMENT 839 kip-ft*
TORQUE 5 kip-ft
50 mph WIND - 1.000 in ICE

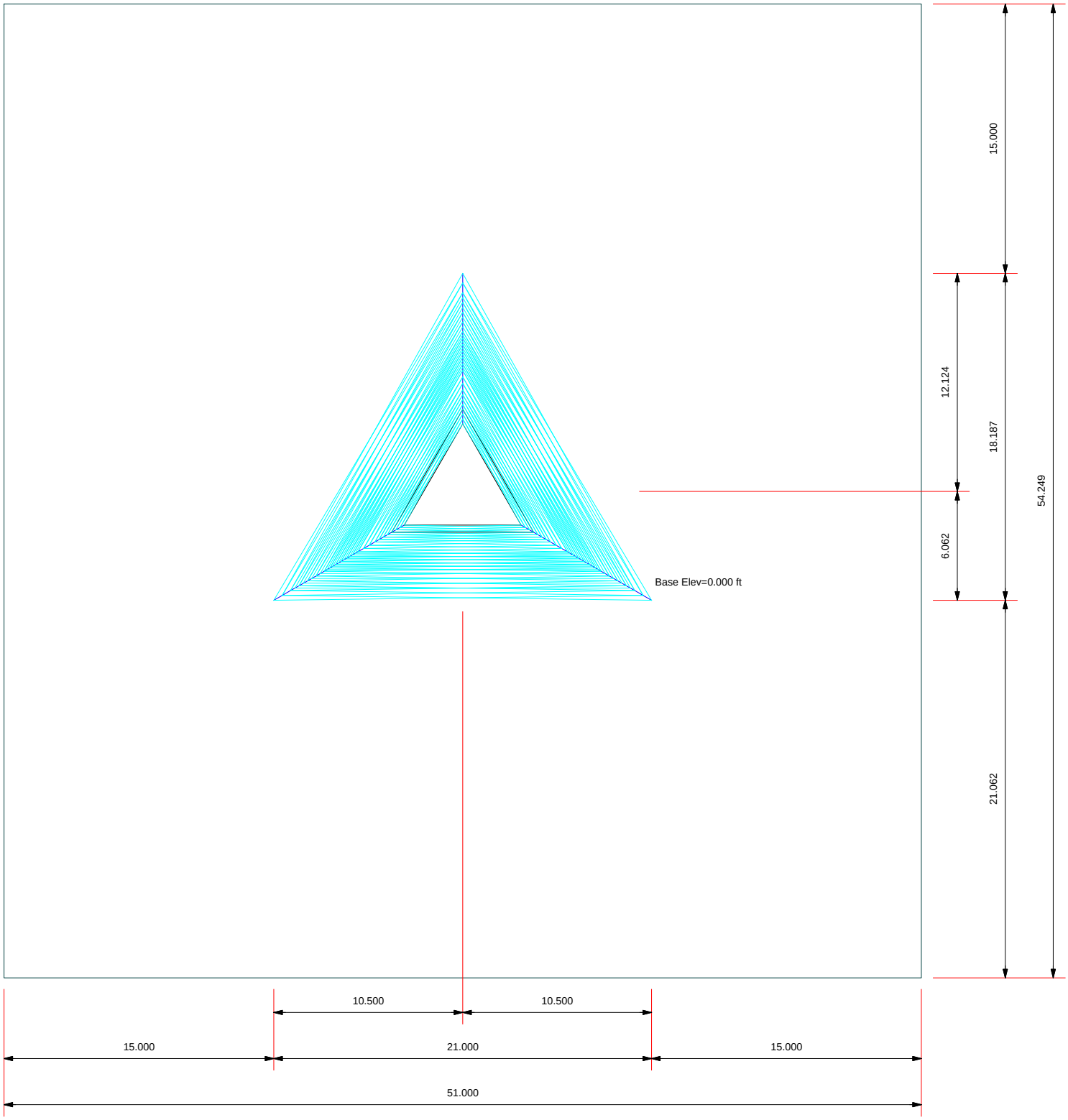
AXIAL 45 K
SHEAR 34 K *MOMENT 2995 kip-ft*
TORQUE 14 kip-ft
REACTIONS - 116 mph WIND

B+T Group
1717 S Boulder Ave. Ste 300
Tulsa, OK 74119
Phone: (918 587-4630
FAX:

Job: 135928.008.01 - Long Ridge Fire House, CT (Site# CTFF056A			
Project:			
Client: Centerline Communications	Drawn by: btabb	App'd:	
Code: TIA-222-H	Date: 10/29/20	Scale: NTS	
Path: C:\Users\btabb\tnx runs\135928_008_01_Long Ridge Fire House_CT.eri		Dwg No. E-1	

Plot Plan

Total Area - 0.06 Acres



B+T GRP

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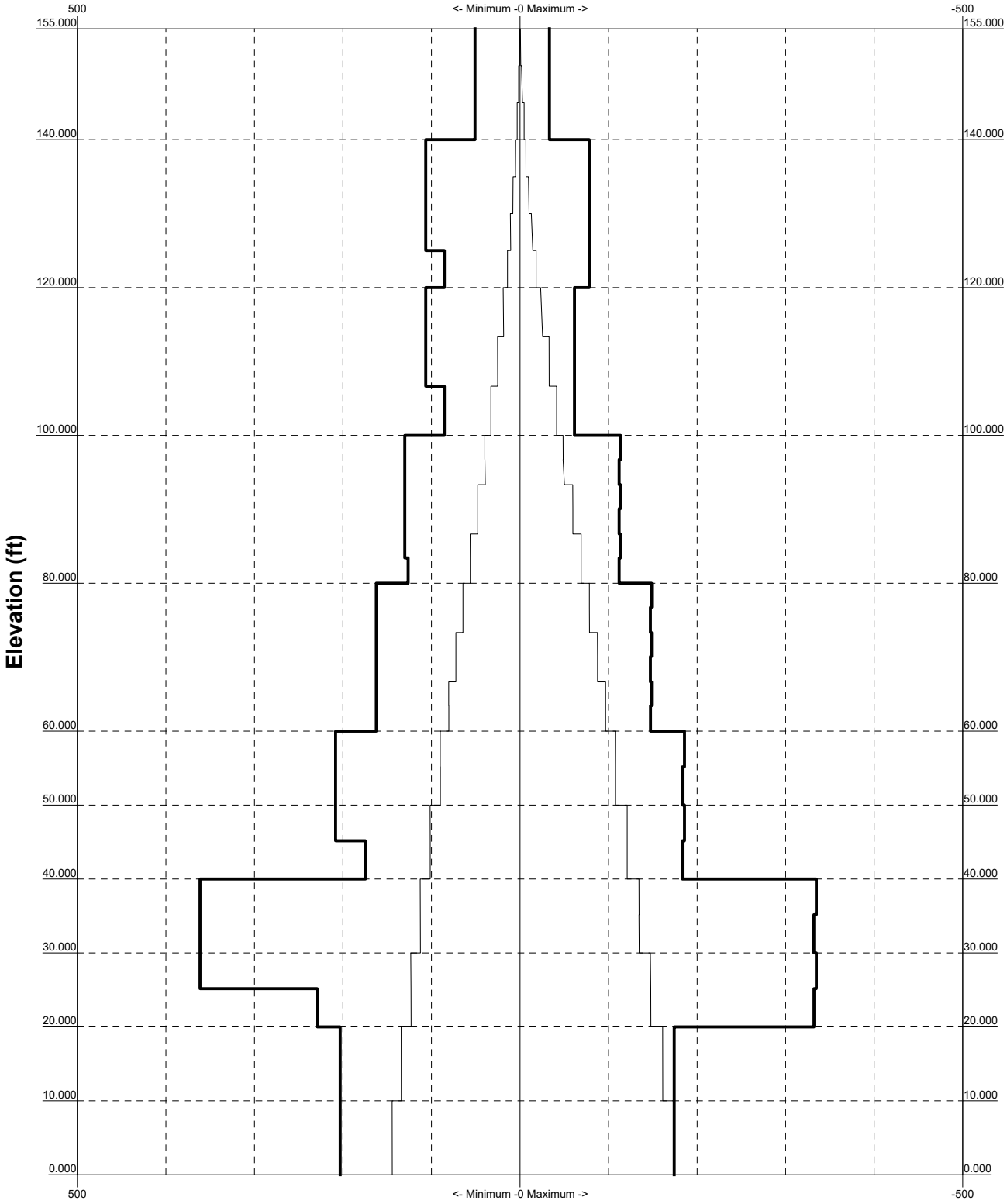
Job:	***135928.008.01 - Long Ridge Fire House, CT (Site# CTFF056A***		
Project:			
Client: Centerline Communications		Drawn by: S. Bhat	App'd:
Code: TIA-222-H		Date: 10/29/20	Scale: NTS
Path:			Dwg No. E-2

TIA-222-H - 116 mph/50 mph 1.000 in Ice Exposure B

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



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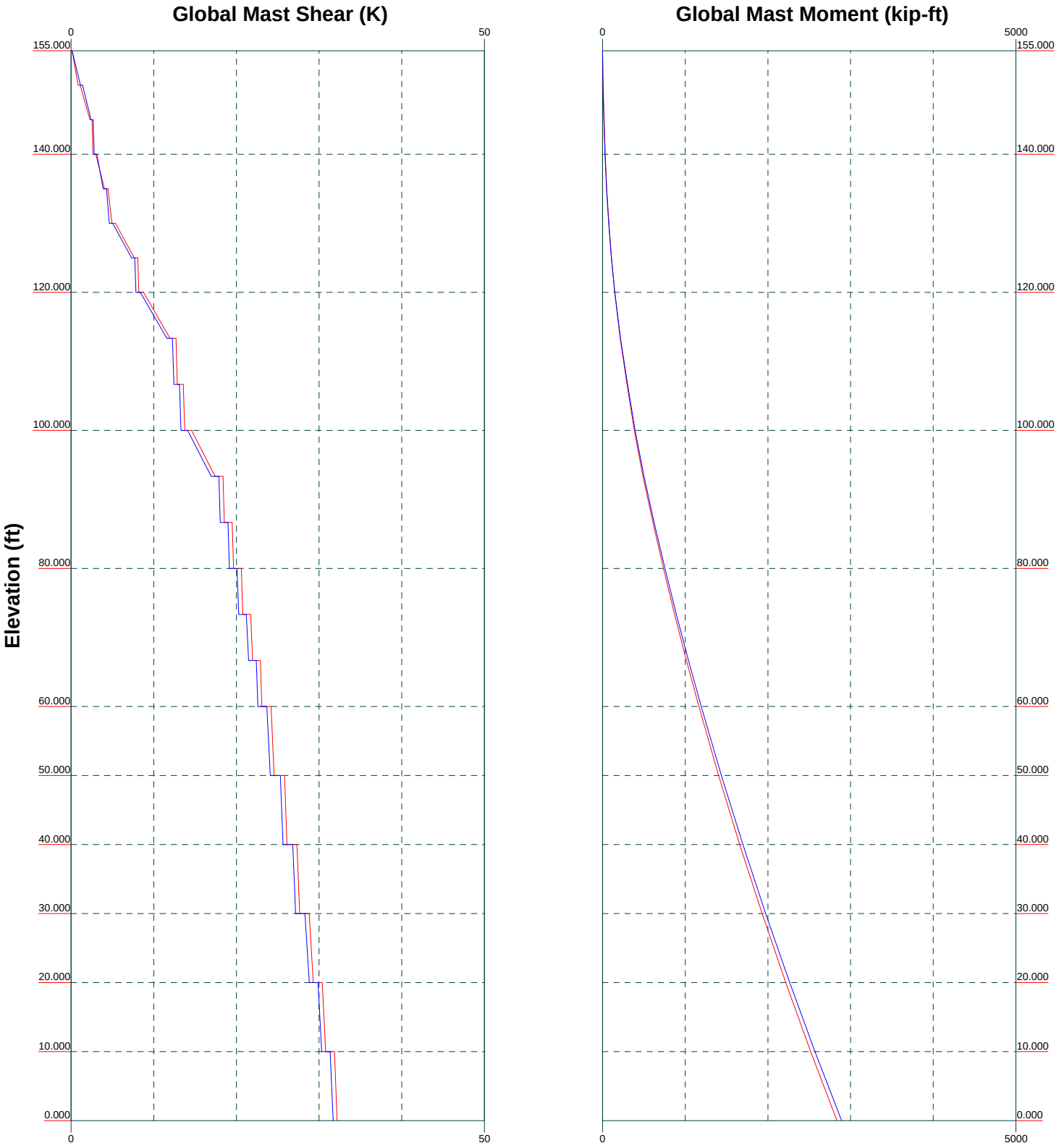
Tulsa, OK 74119
Phone: (918 587-4630
FAX:

Job: 135928.008.01 - Long Ridge Fire House, CT (Site# CTFF056A			
Project:			
Client: Centerline Communications	Drawn by: btabb	App'd:	
Code: TIA-222-H	Date: 10/29/20	Scale: NTS	
Path: C:\Users\btabb\tnx runs\135928_008_01_Long Ridge Fire House_CT.eri		Dwg No. E-3	

TIA-222-H - 116 mph/50 mph 1.000 in Ice Exposure B

Maximum Values

Vx Vz Mx Mz



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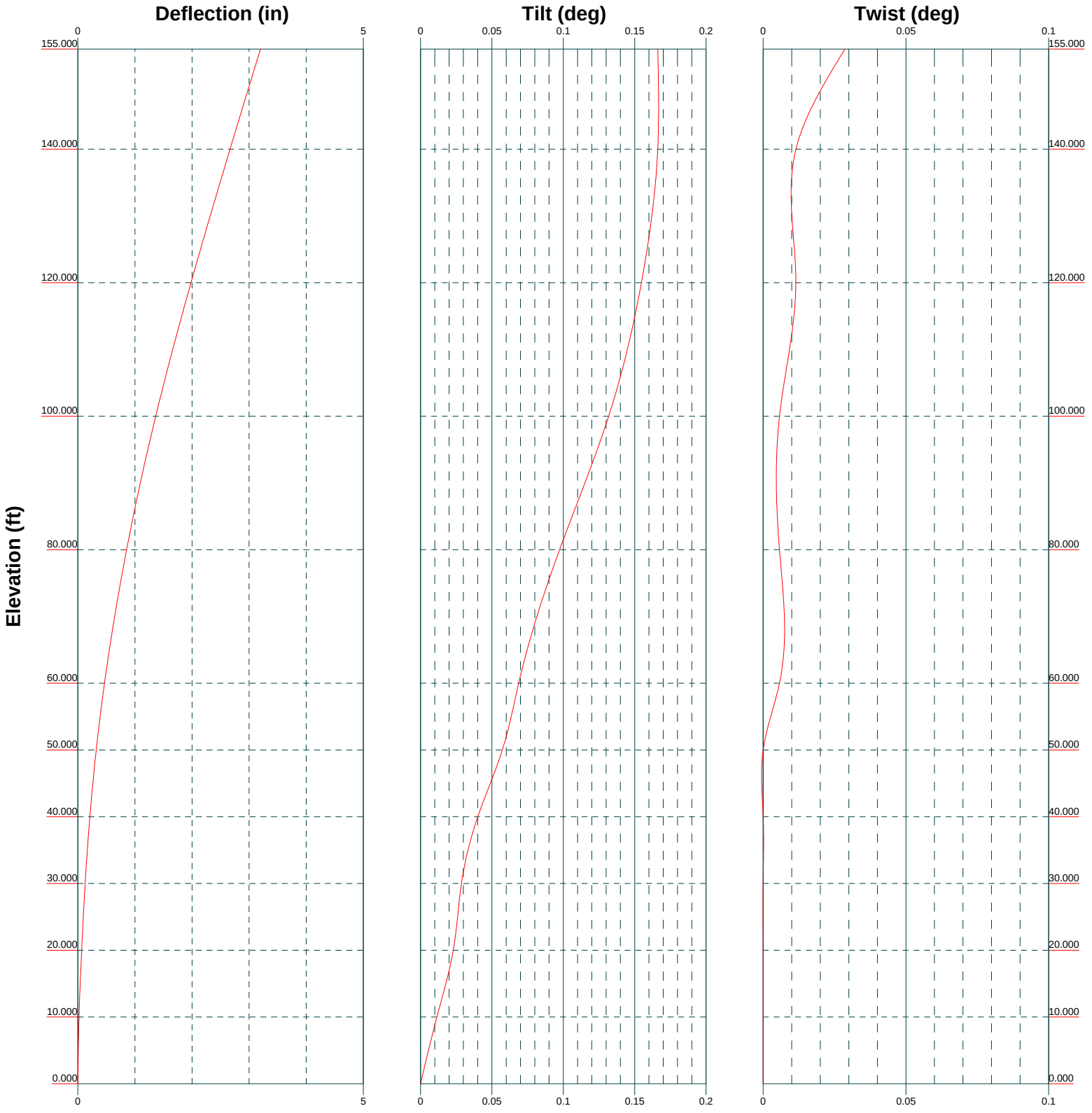
Job: 135928.008.01 - Long Ridge Fire House, CT (Site# CTFF056A		
Project:		
Client: Centerline Communications	Drawn by: S. Bhat	App'd:
Code: TIA-222-H	Date: 10/29/20	Scale: NTS
Path:		Dwg No. E-4

TIA-222-H - Service - 60 mph

Maximum Values



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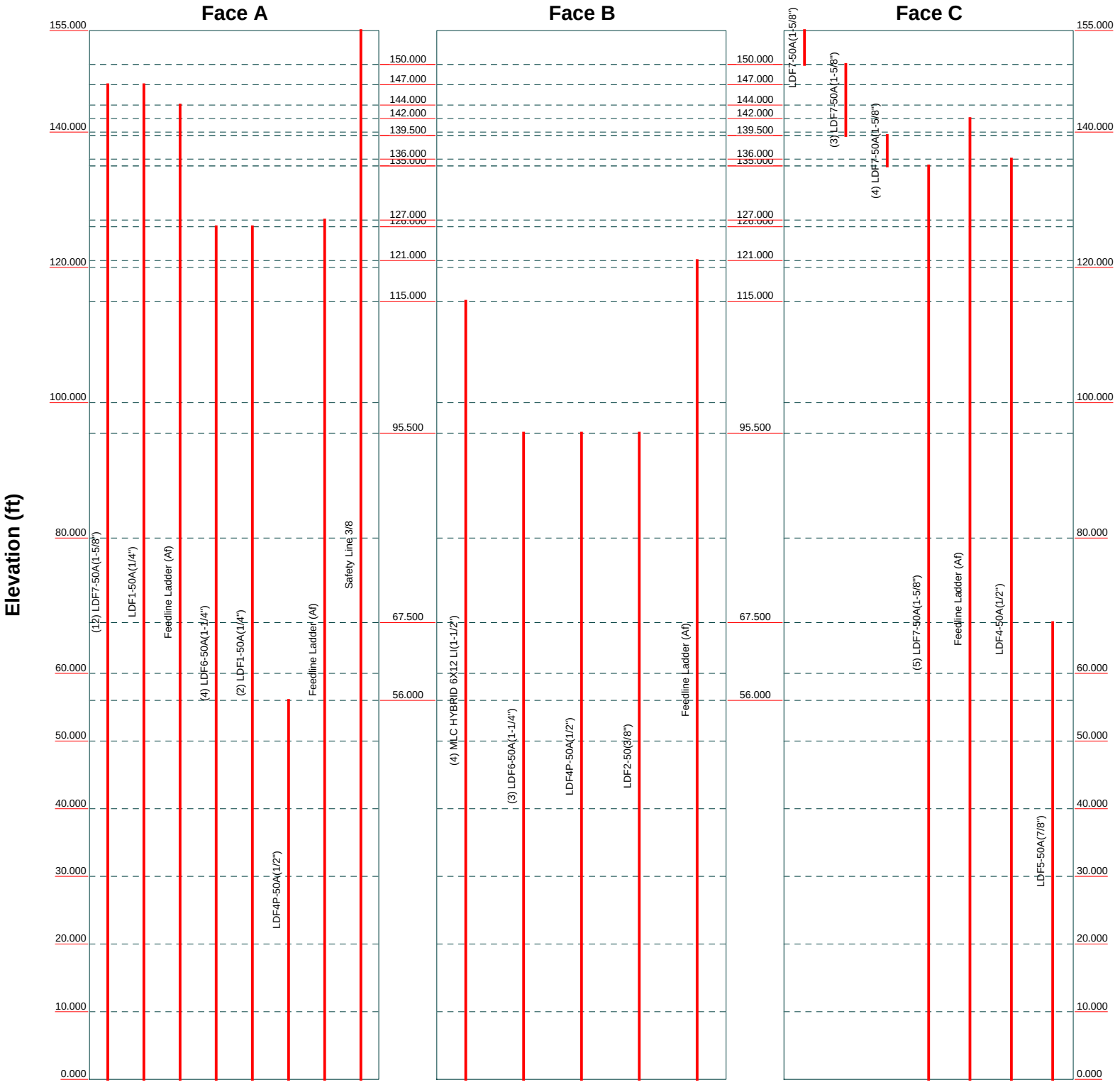
Job:	***135928.008.01 - Long Ridge Fire House, CT (Site# CTFF056A***		
Project:			
Client: Centerline Communications		Drawn by: S. Bhat	App'd:
Code: TIA-222-H		Date: 10/29/20	Scale: NTS
Path:			Dwg No. E-5

Feed Line Distribution Chart
0' - 155'

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



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

Job:	***135928.008.01 - Long Ridge Fire House, CT (Site# CTFF056A***		
Project:			
Client: Centerline Communications		Drawn by: S. Bhat	App'd:
Code: TIA-222-H		Date: 10/29/20	Scale: NTS
Path:			Dwg No. E-7

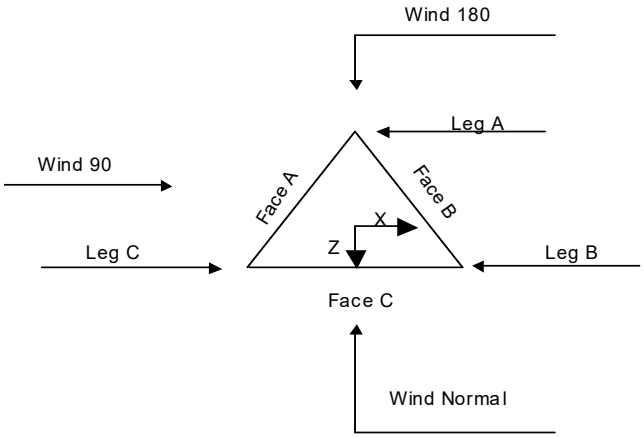
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 155.000 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 6.500 ft at the top and 21.000 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Tower base elevation above sea level: 442.000 ft.
Basic wind speed of 116 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.000 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.
TIA-222-H Annex S.
Pressures are calculated at each section.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Stress ratio used in tower member design is 1.05.
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-H Bracing Resist. Exemption
√	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H 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		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	155.000-140.000			6.500	1	15.000
T2	140.000-120.000			7.903	1	20.000
T3	120.000-100.000			9.774	1	20.000
T4	100.000-80.000			11.645	1	20.000
T5	80.000-60.000			13.516	1	20.000
T6	60.000-50.000			15.387	1	10.000
T7	50.000-40.000			16.323	1	10.000
T8	40.000-30.000			17.258	1	10.000
T9	30.000-20.000			18.194	1	10.000
T10	20.000-10.000			19.129	1	10.000
T11	10.000-0.000			20.065	1	10.000

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	155.000-140.000	5.000	X Brace	No	No	0.000	0.000
T2	140.000-120.000	5.000	X Brace	No	No	0.000	0.000
T3	120.000-100.000	6.667	X Brace	No	No	0.000	0.000
T4	100.000-80.000	6.667	X Brace	No	Yes	0.000	0.000

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
T5	80.000-60.000	6.667	X Brace	No	Yes	0.000	0.000
T6	60.000-50.000	10.000	X Brace	No	Yes	0.000	0.000
T7	50.000-40.000	10.000	X Brace	No	Yes	0.000	0.000
T8	40.000-30.000	10.000	X Brace	No	Yes	0.000	0.000
T9	30.000-20.000	10.000	X Brace	No	Yes	0.000	0.000
T10	20.000-10.000	10.000	X Brace	No	No	0.000	0.000
T11	10.000-0.000	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 155.000-140.000	Pipe	ROHN 2 STD	A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x1/8	A36 (36 ksi)
T2 140.000-120.000	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x1/4	A36 (36 ksi)
T3 120.000-100.000	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T4 100.000-80.000	Pipe	BT 135928 - 2.5XS with HSS 3.5x0.3125	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T5 80.000-60.000	Pipe	BT 135928 - 3 XS with HSS 4x0.25	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T6 60.000-50.000	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A572-50 (50 ksi)
T7 50.000-40.000	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A572-50 (50 ksi)
T8 40.000-30.000	Pipe	5 STD w/ HSS 6x0.375 HP [0.479]	A572-50 (50 ksi)	Equal Angle	L3x3x3/8	A572-50 (50 ksi)
T9 30.000-20.000	Pipe	5 STD w/ HSS 6x0.375 HP [0.479]	A572-50 (50 ksi)	Equal Angle	L3x3x3/8	A572-50 (50 ksi)
T10 20.000-10.000	Pipe	5 STD w/ (3) 1.5x0.5 PL (Stiff)	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T11 10.000-0.000	Pipe	5 STD w/ (3) 1.5x0.5 PL (Stiff)	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A572-50 (50 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
T1 155.000-140.000	Equal Angle	L2x2x1/4	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T2 140.000-120.000	Single Angle	L1 1/2x1 1/2x1/8	A36 (36 ksi)	Single Angle		A36 (36 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 100.000-80.000	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T5 80.000-60.000	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T6 60.000-50.000	Equal Angle	L3x3x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T7 50.000-40.000	Equal Angle	L3x3x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T8 40.000-30.000	Equal Angle	L3x3x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T9 30.000-20.000	Equal Angle	L3x3x1/4	A36 (36 ksi)	Equal Angle		A36 (36 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 155.000-140.000	0.000	0.188	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T2 140.000-120.000	0.000	0.188	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T3 120.000-100.000	0.000	0.188	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T4 100.000-80.000	0.000	0.188	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T5 80.000-60.000	0.000	0.188	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T6 60.000-50.000	0.000	0.313	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T7 50.000-40.000	0.000	0.313	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T8 40.000-30.000	0.000	0.250	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T9 30.000-20.000	0.000	0.250	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T10 20.000-10.000	0.000	0.250	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T11 10.000-0.000	0.000	0.250	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt

Tower Section Geometry *(cont'd)*

K Factors[1]

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1	Yes	No	1	1	1	1	1	1	1	1
155.000-140.000				1	1	1	1	1	1	1
T2	Yes	No	1	1	1	1	1	1	1	1
140.000-120.000				1	1	1	1	1	1	1
T3	Yes	No	1	1	1	1	1	1	1	1
120.000-100.000				1	1	1	1	1	1	1
T4	No	No	1	1	1	1	1	1	1	1
100.000-80.000				1	1	1	1	1	0.5	1
T5	No	No	1	1	1	1	1	1	1	1
80.000-60.000				1	1	1	1	1	0.5	1
T6	No	No	1	1	1	1	1	1	1	1
60.000-50.000				1	1	1	1	1	0.5	1
T7	No	No	1	1	1	1	1	1	1	1
50.000-40.000				1	1	1	1	1	0.5	1
T8	No	No	1	1	1	1	1	1	1	1
40.000-30.000				1	1	1	1	1	0.5	0.5
T9	No	No	1	1	1	1	1	1	1	1
30.000-20.000				1	1	1	1	1	0.5	0.5
T10	Yes	No	0.718	1	1	1	1	1	1	1
20.000-10.000				1	1	1	1	1	1	0.5
T11	Yes	No	0.718	1	1	1	1	1	1	1
10.000-0.000				1	1	1	1	1	1	0.5

[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	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	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
155.000-140.000														
T2	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
140.000-120.000														
T3	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
120.000-100.000														
T4	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
100.000-80.000														
T5	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
80.000-60.000														
T6	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
60.000-50.000														

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T7 50.000-40.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T8 40.000-30.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T9 30.000-20.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T10 20.000-10.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T11 10.000-0.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	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 155.000-140.000	Flange	0.625 A325N	4	0.500 A325N	1	0.500 A325N	1	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T2 140.000-120.000	Flange	0.625 A325N	4	0.500 A325N	1	0.500 A325N	1	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T3 120.000-100.000	Flange	0.625 A325N	4	0.500 A325N	1	0.500 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T4 100.000-80.000	Flange	0.750 A325N	4	0.500 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	1
T5 80.000-60.000	Flange	0.875 A325N	4	0.500 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	1
T6 60.000-50.000	Flange	0.875 A325N	0	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	1
T7 50.000-40.000	Flange	0.875 A325N	4	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	1
T8 40.000-30.000	Flange	1.000 A325N	0	0.500 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	1
T9 30.000-20.000	Flange	1.000 A325N	4	0.500 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	1
T10 20.000-10.000	Flange	1.000 A354-BC	0	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T11 10.000-0.000	Flange	1.000 A354-BC	0	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
FACE A *													
LDF7-50A(1-5/8")	A	No	No	Ar (CaAa)	147.000 - 0.000	-1.000	0	12	12	0.500	1.980		0.001
LDF1-50A(1/4")	A	No	No	Ar (CaAa)	147.000 - 0.000	-1.000	-0.08	1	1	0.345	0.345		0.000
Feedline Ladder (Af) *	A	No	No	Af (CaAa)	144.000 - 0.000	-1.000	0	1	1	3.000	3.000		0.008
LDF6-50A(1-1/4")	A	No	No	Ar (CaAa)	126.000 - 0.000	0.000	0.25	4	4	0.750	1.550		0.001
LDF1-50A(1/4") *	A	No	No	Ar (CaAa)	126.000 - 0.000	0.000	0.18	2	2	0.500	0.345		0.000
LDF4P-50A(1/2")	A	No	No	Ar (CaAa)	56.000 - 0.000	0.000	0.2	1	1	0.630	0.630		0.000
Feedline Ladder (Af) *	A	No	No	Af (CaAa)	127.000 - 0.000	0.000	0.22	1	1	3.000	3.000		0.008
Safety Line 3/8 *	A	No	No	Ar (CaAa)	155.000 - 0.000	0.000	0.5	1	1	0.375	0.375		0.000
FACE B *													
MLC HYBRID 6X12 LI(1-1/2") *	B	No	No	Ar (CaAa)	115.000 - 0.000	0.000	0.05	4	4	1.000 0.750	1.550		0.002
LDF6-50A(1-1/4")	B	No	No	Ar (CaAa)	95.500 - 0.000	0.000	0.13	3	3	0.850 0.750	1.550		0.001
LDF4P-50A(1/2")	B	No	No	Ar (CaAa)	95.500 - 0.000	0.000	0.1	1	1	0.630	0.630		0.000
LDF2-50(3/8")	B	No	No	Ar (CaAa)	95.500 - 0.000	2.000	0.14	1	1	0.440	0.440		0.000
Feedline Ladder (Af) *	B	No	No	Af (CaAa)	121.000 - 0.000	0.000	0.1	1	1	3.000	3.000		0.008
FACE C *													
LDF7-50A(1-5/8")	C	No	No	Ar (CaAa)	155.000 - 150.000	0.000	0.03	1	1	1.000	1.980		0.001
LDF7-50A(1-5/8")	C	No	No	Ar (CaAa)	150.000 - 139.500	0.000	0.03	3	3	1.000	1.980		0.001
LDF7-50A(1-5/8")	C	No	No	Ar (CaAa)	139.500 - 135.000	0.000	0.03	4	4	1.000	1.980		0.001
LDF7-50A(1-5/8")	C	No	No	Ar (CaAa)	135.000 - 0.000	0.000	0.03	5	5	1.000	1.980		0.001
Feedline Ladder (Af) *	C	No	No	Af (CaAa)	142.000 - 0.000	0.000	0.03	1	1	3.000	3.000		0.008
LDF4-50A(1/2") *	C	No	No	Ar (CaAa)	136.000 - 0.000	0.000	0	1	1	0.630	0.630		0.000
LDF5-50A(7/8") *	C	No	No	Ar (CaAa)	67.500 - 0.000	0.000	0.49	1	1	1.090	1.090		0.000
1.5" Flat PL	C	No	No	Af (CaAa)	15.000 - 0.000	0.000	0	1	1	3.000	3.000		0.001

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight klf
FACE A								
*								
FACE B								
*								
FACE C								

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	155.000-140.000	A	0.000	0.000	19.436	0.000	0.106
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	7.930	0.000	0.045
T2	140.000-120.000	A	0.000	0.000	66.594	0.000	0.446
		B	0.000	0.000	0.500	0.000	0.008
		C	0.000	0.000	29.719	0.000	0.248
T3	120.000-100.000	A	0.000	0.000	82.740	0.000	0.594
		B	0.000	0.000	19.300	0.000	0.279
		C	0.000	0.000	31.060	0.000	0.253
T4	100.000-80.000	A	0.000	0.000	82.740	0.000	0.594
		B	0.000	0.000	31.266	0.000	0.350
		C	0.000	0.000	31.060	0.000	0.253
T5	80.000-60.000	A	0.000	0.000	82.740	0.000	0.594
		B	0.000	0.000	33.840	0.000	0.360
		C	0.000	0.000	31.877	0.000	0.255
T6	60.000-50.000	A	0.000	0.000	41.748	0.000	0.298
		B	0.000	0.000	16.920	0.000	0.180
		C	0.000	0.000	16.620	0.000	0.130
T7	50.000-40.000	A	0.000	0.000	42.000	0.000	0.298
		B	0.000	0.000	16.920	0.000	0.180
		C	0.000	0.000	16.620	0.000	0.130
T8	40.000-30.000	A	0.000	0.000	42.000	0.000	0.298
		B	0.000	0.000	16.920	0.000	0.180
		C	0.000	0.000	16.620	0.000	0.130
T9	30.000-20.000	A	0.000	0.000	42.000	0.000	0.298
		B	0.000	0.000	16.920	0.000	0.180
		C	0.000	0.000	16.620	0.000	0.130
T10	20.000-10.000	A	0.000	0.000	42.000	0.000	0.298
		B	0.000	0.000	16.920	0.000	0.180
		C	0.000	0.000	19.120	0.000	0.132
T11	10.000-0.000	A	0.000	0.000	42.000	0.000	0.298
		B	0.000	0.000	16.920	0.000	0.180
		C	0.000	0.000	21.620	0.000	0.135

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	155.000-140.000	A	0.987	0.000	0.000	35.486	0.000	0.393
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	16.373	0.000	0.179
T2	140.000-120.000	A	0.975	0.000	0.000	117.791	0.000	1.386
		B		0.000	0.000	0.695	0.000	0.014
		C		0.000	0.000	56.880	0.000	0.718
T3	120.000-100.000	A	0.959	0.000	0.000	152.270	0.000	1.766
		B		0.000	0.000	35.671	0.000	0.561
		C		0.000	0.000	59.657	0.000	0.741
T4	100.000-80.000	A	0.940	0.000	0.000	151.606	0.000	1.744
		B		0.000	0.000	67.512	0.000	0.854
		C		0.000	0.000	59.389	0.000	0.732
T5	80.000-60.000	A	0.916	0.000	0.000	150.792	0.000	1.716
		B		0.000	0.000	74.122	0.000	0.900
		C		0.000	0.000	61.254	0.000	0.740
T6	60.000-50.000	A	0.895	0.000	0.000	76.467	0.000	0.856
		B		0.000	0.000	36.791	0.000	0.443
		C		0.000	0.000	32.257	0.000	0.380
T7	50.000-40.000	A	0.877	0.000	0.000	77.090	0.000	0.853
		B		0.000	0.000	36.571	0.000	0.438
		C		0.000	0.000	32.096	0.000	0.375
T8	40.000-30.000	A	0.855	0.000	0.000	76.667	0.000	0.839
		B		0.000	0.000	36.301	0.000	0.431
		C		0.000	0.000	31.900	0.000	0.369
T9	30.000-20.000	A	0.827	0.000	0.000	76.118	0.000	0.822
		B		0.000	0.000	35.952	0.000	0.423
		C		0.000	0.000	31.646	0.000	0.361
T10	20.000-10.000	A	0.786	0.000	0.000	75.320	0.000	0.798
		B		0.000	0.000	35.443	0.000	0.410
		C		0.000	0.000	34.561	0.000	0.371
T11	10.000-0.000	A	0.704	0.000	0.000	73.738	0.000	0.750
		B		0.000	0.000	34.436	0.000	0.387
		C		0.000	0.000	36.948	0.000	0.366

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	155.000-140.000	-3.116	-1.955	-2.967	-2.395
T2	140.000-120.000	-6.289	-4.558	-6.033	-4.432
T3	120.000-100.000	-4.429	-8.772	-4.444	-9.358
T4	100.000-80.000	-2.101	-8.205	-1.515	-9.143
T5	80.000-60.000	-2.112	-8.587	-1.519	-9.539
T6	60.000-50.000	-2.860	-9.225	-2.740	-10.414
T7	50.000-40.000	-3.013	-9.665	-2.984	-11.076
T8	40.000-30.000	-3.069	-9.838	-3.055	-11.326
T9	30.000-20.000	-3.161	-10.145	-3.164	-11.722
T10	20.000-10.000	-3.477	-10.379	-3.462	-11.709
T11	10.000-0.000	-3.509	-9.834	-3.509	-10.933

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	3	LDF7-50A(1-5/8")	140.00 - 147.00	0.6000	0.6000
T1	4	LDF1-50A(1/4")	140.00 - 147.00	0.6000	0.6000
T1	5	Feedline Ladder (Af)	140.00 - 144.00	0.6000	0.6000
T1	13	Safety Line 3/8	140.00 - 155.00	0.6000	0.6000
T1	26	LDF7-50A(1-5/8")	150.00 - 155.00	0.6000	0.6000
T1	27	LDF7-50A(1-5/8")	140.00 - 150.00	0.6000	0.6000
T1	32	Feedline Ladder (Af)	140.00 - 142.00	0.6000	0.6000
T2	3	LDF7-50A(1-5/8")	120.00 - 140.00	0.6000	0.6000
T2	4	LDF1-50A(1/4")	120.00 - 140.00	0.6000	0.6000
T2	5	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T2	7	LDF6-50A(1-1/4")	120.00 - 126.00	0.6000	0.6000
T2	8	LDF1-50A(1/4")	120.00 - 126.00	0.6000	0.6000
T2	11	Feedline Ladder (Af)	120.00 - 127.00	0.6000	0.6000
T2	13	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T2	22	Feedline Ladder (Af)	120.00 - 121.00	0.6000	0.6000
T2	27	LDF7-50A(1-5/8")	139.50 - 140.00	0.6000	0.6000
T2	28	LDF7-50A(1-5/8")	135.00 - 139.50	0.6000	0.6000
T2	29	LDF7-50A(1-5/8")	120.00 - 135.00	0.6000	0.6000
T2	32	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T2	34	LDF4-50A(1/2")	120.00 - 136.00	0.6000	0.6000
T3	3	LDF7-50A(1-5/8")	100.00 - 120.00	0.6000	0.6000
T3	4	LDF1-50A(1/4")	100.00 - 120.00	0.6000	0.6000
T3	5	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T3	7	LDF6-50A(1-1/4")	100.00 - 120.00	0.6000	0.6000
T3	8	LDF1-50A(1/4")	100.00 - 120.00	0.6000	0.6000
T3	11	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T3	13	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T3	17	MLC HYBRID 6X12 LI(1-1/2")	100.00 - 115.00	0.6000	0.6000
T3	22	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T3	29	LDF7-50A(1-5/8")	100.00 - 120.00	0.6000	0.6000
T3	32	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T3	34	LDF4-50A(1/2")	100.00 - 120.00	0.6000	0.6000
T4	3	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.6000
T4	4	LDF1-50A(1/4")	80.00 - 100.00	0.6000	0.6000
T4	5	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T4	7	LDF6-50A(1-1/4")	80.00 - 100.00	0.6000	0.6000
T4	8	LDF1-50A(1/4")	80.00 - 100.00	0.6000	0.6000
T4	11	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T4	13	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T4	17	MLC HYBRID 6X12 LI(1-1/2")	80.00 - 100.00	0.6000	0.6000
T4	19	LDF6-50A(1-1/4")	80.00 - 95.50	0.6000	0.6000
T4	20	LDF4P-50A(1/2")	80.00 - 95.50	0.6000	0.6000
T4	21	LDF2-50(3/8")	80.00 - 95.50	0.6000	0.6000
T4	22	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T4	29	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.6000
T4	32	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T4	34	LDF4-50A(1/2")	80.00 - 100.00	0.6000	0.6000
T5	3	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.6000
T5	4	LDF1-50A(1/4")	60.00 - 80.00	0.6000	0.6000
T5	5	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T5	7	LDF6-50A(1-1/4")	60.00 - 80.00	0.6000	0.6000
T5	8	LDF1-50A(1/4")	60.00 - 80.00	0.6000	0.6000
T5	11	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T5	13	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T5	17	MLC HYBRID 6X12 LI(1-1/2")	60.00 - 80.00	0.6000	0.6000
T5	19	LDF6-50A(1-1/4")	60.00 - 80.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	20	LDF4P-50A(1/2")	60.00 - 80.00	0.6000	0.6000
T5	21	LDF2-50(3/8")	60.00 - 80.00	0.6000	0.6000
T5	22	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T5	29	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.6000
T5	32	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T5	34	LDF4-50A(1/2")	60.00 - 80.00	0.6000	0.6000
T5	36	LDF5-50A(7/8")	60.00 - 67.50	0.6000	0.6000
T6	3	LDF7-50A(1-5/8")	50.00 - 60.00	0.6000	0.6000
T6	4	LDF1-50A(1/4")	50.00 - 60.00	0.6000	0.6000
T6	5	Feedline Ladder (Af)	50.00 - 60.00	0.6000	0.6000
T6	7	LDF6-50A(1-1/4")	50.00 - 60.00	0.6000	0.6000
T6	8	LDF1-50A(1/4")	50.00 - 60.00	0.6000	0.6000
T6	10	LDF4P-50A(1/2")	50.00 - 56.00	0.6000	0.6000
T6	11	Feedline Ladder (Af)	50.00 - 60.00	0.6000	0.6000
T6	13	Safety Line 3/8	50.00 - 60.00	0.6000	0.6000
T6	17	MLC HYBRID 6X12 LI(1-1/2")	50.00 - 60.00	0.6000	0.6000
T6	19	LDF6-50A(1-1/4")	50.00 - 60.00	0.6000	0.6000
T6	20	LDF4P-50A(1/2")	50.00 - 60.00	0.6000	0.6000
T6	21	LDF2-50(3/8")	50.00 - 60.00	0.6000	0.6000
T6	22	Feedline Ladder (Af)	50.00 - 60.00	0.6000	0.6000
T6	29	LDF7-50A(1-5/8")	50.00 - 60.00	0.6000	0.6000
T6	32	Feedline Ladder (Af)	50.00 - 60.00	0.6000	0.6000
T6	34	LDF4-50A(1/2")	50.00 - 60.00	0.6000	0.6000
T6	36	LDF5-50A(7/8")	50.00 - 60.00	0.6000	0.6000
T7	3	LDF7-50A(1-5/8")	40.00 - 50.00	0.6000	0.6000
T7	4	LDF1-50A(1/4")	40.00 - 50.00	0.6000	0.6000
T7	5	Feedline Ladder (Af)	40.00 - 50.00	0.6000	0.6000
T7	7	LDF6-50A(1-1/4")	40.00 - 50.00	0.6000	0.6000
T7	8	LDF1-50A(1/4")	40.00 - 50.00	0.6000	0.6000
T7	10	LDF4P-50A(1/2")	40.00 - 50.00	0.6000	0.6000
T7	11	Feedline Ladder (Af)	40.00 - 50.00	0.6000	0.6000
T7	13	Safety Line 3/8	40.00 - 50.00	0.6000	0.6000
T7	17	MLC HYBRID 6X12 LI(1-1/2")	40.00 - 50.00	0.6000	0.6000
T7	19	LDF6-50A(1-1/4")	40.00 - 50.00	0.6000	0.6000
T7	20	LDF4P-50A(1/2")	40.00 - 50.00	0.6000	0.6000
T7	21	LDF2-50(3/8")	40.00 - 50.00	0.6000	0.6000
T7	22	Feedline Ladder (Af)	40.00 - 50.00	0.6000	0.6000
T7	29	LDF7-50A(1-5/8")	40.00 - 50.00	0.6000	0.6000
T7	32	Feedline Ladder (Af)	40.00 - 50.00	0.6000	0.6000
T7	34	LDF4-50A(1/2")	40.00 - 50.00	0.6000	0.6000
T7	36	LDF5-50A(7/8")	40.00 - 50.00	0.6000	0.6000
T8	3	LDF7-50A(1-5/8")	30.00 - 40.00	0.6000	0.6000
T8	4	LDF1-50A(1/4")	30.00 - 40.00	0.6000	0.6000
T8	5	Feedline Ladder (Af)	30.00 - 40.00	0.6000	0.6000
T8	7	LDF6-50A(1-1/4")	30.00 - 40.00	0.6000	0.6000
T8	8	LDF1-50A(1/4")	30.00 - 40.00	0.6000	0.6000
T8	10	LDF4P-50A(1/2")	30.00 - 40.00	0.6000	0.6000
T8	11	Feedline Ladder (Af)	30.00 - 40.00	0.6000	0.6000
T8	13	Safety Line 3/8	30.00 - 40.00	0.6000	0.6000
T8	17	MLC HYBRID 6X12 LI(1-1/2")	30.00 - 40.00	0.6000	0.6000
T8	19	LDF6-50A(1-1/4")	30.00 - 40.00	0.6000	0.6000
T8	20	LDF4P-50A(1/2")	30.00 - 40.00	0.6000	0.6000
T8	21	LDF2-50(3/8")	30.00 - 40.00	0.6000	0.6000
T8	22	Feedline Ladder (Af)	30.00 - 40.00	0.6000	0.6000
T8	29	LDF7-50A(1-5/8")	30.00 - 40.00	0.6000	0.6000
T8	32	Feedline Ladder (Af)	30.00 - 40.00	0.6000	0.6000
T8	34	LDF4-50A(1/2")	30.00 - 40.00	0.6000	0.6000
T8	36	LDF5-50A(7/8")	30.00 - 40.00	0.6000	0.6000
T9	3	LDF7-50A(1-5/8")	20.00 - 30.00	0.6000	0.6000
T9	4	LDF1-50A(1/4")	20.00 - 30.00	0.6000	0.6000
T9	5	Feedline Ladder (Af)	20.00 - 30.00	0.6000	0.6000
T9	7	LDF6-50A(1-1/4")	20.00 - 30.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	8	LDF1-50A(1/4")	20.00 - 30.00	0.6000	0.6000
T9	10	LDF4P-50A(1/2")	20.00 - 30.00	0.6000	0.6000
T9	11	Feedline Ladder (Af)	20.00 - 30.00	0.6000	0.6000
T9	13	Safety Line 3/8	20.00 - 30.00	0.6000	0.6000
T9	17	MLC HYBRID 6X12 LI(1-1/2")	20.00 - 30.00	0.6000	0.6000
T9	19	LDF6-50A(1-1/4")	20.00 - 30.00	0.6000	0.6000
T9	20	LDF4P-50A(1/2")	20.00 - 30.00	0.6000	0.6000
T9	21	LDF2-50(3/8")	20.00 - 30.00	0.6000	0.6000
T9	22	Feedline Ladder (Af)	20.00 - 30.00	0.6000	0.6000
T9	29	LDF7-50A(1-5/8")	20.00 - 30.00	0.6000	0.6000
T9	32	Feedline Ladder (Af)	20.00 - 30.00	0.6000	0.6000
T9	34	LDF4-50A(1/2")	20.00 - 30.00	0.6000	0.6000
T9	36	LDF5-50A(7/8")	20.00 - 30.00	0.6000	0.6000
T10	3	LDF7-50A(1-5/8")	10.00 - 20.00	0.6000	0.6000
T10	4	LDF1-50A(1/4")	10.00 - 20.00	0.6000	0.6000
T10	5	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T10	7	LDF6-50A(1-1/4")	10.00 - 20.00	0.6000	0.6000
T10	8	LDF1-50A(1/4")	10.00 - 20.00	0.6000	0.6000
T10	10	LDF4P-50A(1/2")	10.00 - 20.00	0.6000	0.6000
T10	11	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T10	13	Safety Line 3/8	10.00 - 20.00	0.6000	0.6000
T10	17	MLC HYBRID 6X12 LI(1-1/2")	10.00 - 20.00	0.6000	0.6000
T10	19	LDF6-50A(1-1/4")	10.00 - 20.00	0.6000	0.6000
T10	20	LDF4P-50A(1/2")	10.00 - 20.00	0.6000	0.6000
T10	21	LDF2-50(3/8")	10.00 - 20.00	0.6000	0.6000
T10	22	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T10	29	LDF7-50A(1-5/8")	10.00 - 20.00	0.6000	0.6000
T10	32	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T10	34	LDF4-50A(1/2")	10.00 - 20.00	0.6000	0.6000
T10	36	LDF5-50A(7/8")	10.00 - 20.00	0.6000	0.6000
T10	38	1.5" Flat PL	10.00 - 15.00	1.0000	1.0000
T11	3	LDF7-50A(1-5/8")	0.00 - 10.00	0.6000	0.6000
T11	4	LDF1-50A(1/4")	0.00 - 10.00	0.6000	0.6000
T11	5	Feedline Ladder (Af)	0.00 - 10.00	0.6000	0.6000
T11	7	LDF6-50A(1-1/4")	0.00 - 10.00	0.6000	0.6000
T11	8	LDF1-50A(1/4")	0.00 - 10.00	0.6000	0.6000
T11	10	LDF4P-50A(1/2")	0.00 - 10.00	0.6000	0.6000
T11	11	Feedline Ladder (Af)	0.00 - 10.00	0.6000	0.6000
T11	13	Safety Line 3/8	0.00 - 10.00	0.6000	0.6000
T11	17	MLC HYBRID 6X12 LI(1-1/2")	0.00 - 10.00	0.6000	0.6000
T11	19	LDF6-50A(1-1/4")	0.00 - 10.00	0.6000	0.6000
T11	20	LDF4P-50A(1/2")	0.00 - 10.00	0.6000	0.6000
T11	21	LDF2-50(3/8")	0.00 - 10.00	0.6000	0.6000
T11	22	Feedline Ladder (Af)	0.00 - 10.00	0.6000	0.6000
T11	29	LDF7-50A(1-5/8")	0.00 - 10.00	0.6000	0.6000
T11	32	Feedline Ladder (Af)	0.00 - 10.00	0.6000	0.6000
T11	34	LDF4-50A(1/2")	0.00 - 10.00	0.6000	0.6000
T11	36	LDF5-50A(7/8")	0.00 - 10.00	0.6000	0.6000
T11	38	1.5" Flat PL	0.00 - 10.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C_AA_A Front	C_AA_A Side	Weight
			ft ft ft	°	ft	ft^2	ft^2	K

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
Pipe Mount [PM 601-1]	C	From Leg	0.500 0.000 0.000	0.000	155.500	No Ice 1/2" Ice 1" Ice	1.320 1.580 1.840	1.320 1.580 1.840	0.065 0.077 0.093
*									
20' x 2" Dipole	C	From Face	1.000 0.000 6.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	3.330 5.994 8.658	3.330 5.994 8.658	0.034 0.044 0.054
10' x 2" Mount Pipe	C	From Face	0.500 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	2.375 3.403 4.448	2.375 3.403 4.448	0.037 0.054 0.079
*									
101-90-06-0-03N	A	From Leg	3.000 0.000 5.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	3.148 4.313 4.932	3.148 4.313 4.932	0.038 0.062 0.092
2' x 6" x 6" TMA	A	From Leg	2.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.267 1.431 1.603	1.267 1.431 1.603	0.001 0.013 0.027
5' x 2" Pipe Mount	A	From Leg	3.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.188 1.496 1.807	1.188 1.496 1.807	0.018 0.027 0.040
Side Arm Mount [SO 701-1]	A	From Leg	3.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	0.850 1.140 1.430	1.670 2.340 3.010	0.065 0.079 0.093
Side Arm Mount [SO 601-1]	A	From Leg	1.500 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.040 1.410 1.780	5.320 6.430 7.670	0.159 0.196 0.241
12' horizontal x 2" Pipe Mount	A	From Face	3.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	2.400 3.625 4.867	2.400 3.625 4.867	0.100 0.119 0.145
*									
QS665122B51317852 w/ Mount Pipe	A	From Leg	3.000 0.000 0.000	0.000	147.000	No Ice 1/2" Ice 1" Ice	4.040 4.420 4.820	4.180 4.570 4.970	0.137 0.206 0.287
QS665122B51517126 w/ Mount Pipe	B	From Leg	3.000 0.000 0.000	0.000	147.000	No Ice 1/2" Ice 1" Ice	4.040 4.420 4.820	4.180 4.570 4.970	0.137 0.206 0.287
QS665122B51517126 w/ Mount Pipe	C	From Leg	3.000 0.000 0.000	0.000	147.000	No Ice 1/2" Ice 1" Ice	4.040 4.420 4.820	4.180 4.570 4.970	0.137 0.206 0.287
(2) TMA2117F00V1-1	A	From Leg	2.000 0.000 0.000	0.000	147.000	No Ice 1/2" Ice 1" Ice	1.228 1.367 1.513	0.520 0.621 0.729	0.018 0.027 0.039
(2) TMA2117F00V1-1	B	From Leg	2.000 0.000 0.000	0.000	147.000	No Ice 1/2" Ice 1" Ice	1.228 1.367 1.513	0.520 0.621 0.729	0.018 0.027 0.039
(2) TMA2117F00V1-1	C	From Leg	2.000 0.000 0.000	0.000	147.000	No Ice 1/2" Ice 1" Ice	1.228 1.367 1.513	0.520 0.621 0.729	0.018 0.027 0.039
Side Arm Mount [SO 203-3]	C	None		0.000	147.000	No Ice 1/2" Ice 1" Ice	6.680 8.050 9.550	6.680 8.050 9.550	0.375 0.458 0.568
*									
Pipe Mount [PM 601-1]	B	From Leg	0.500 0.000 0.000	0.000	139.500	No Ice 1/2" Ice 1" Ice	1.320 1.580 1.840	1.320 1.580 1.840	0.065 0.077 0.093
*									
(2) 14"X14"X0.5" Wi Fi	C	From Leg	0.500	0.000	136.000	No Ice	1.633	0.097	0.010

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
			0.000			1/2" Ice	1.793	0.188	0.018
			0.000			1" Ice	1.959	0.282	0.028
*									
101-90-06-0-03N	A	From Leg	3.000	0.000	135.000	No Ice	3.148	3.148	0.038
			0.000			1/2" Ice	4.313	4.313	0.062
			10.000			1" Ice	4.932	4.932	0.092
5' x 2" Pipe Mount	A	From Leg	3.000	0.000	135.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
Side Arm Mount [SO 701-1]	A	From Leg	3.000	0.000	135.000	No Ice	0.850	1.670	0.065
			0.000			1/2" Ice	1.140	2.340	0.079
			0.000			1" Ice	1.430	3.010	0.093
Side Arm Mount [SO 601-1]	A	From Leg	1.500	0.000	135.000	No Ice	1.040	5.320	0.159
			0.000			1/2" Ice	1.410	6.430	0.196
			0.000			1" Ice	1.780	7.670	0.241
12' horizontal x 2" Pipe Mount	A	From Face	3.000	0.000	135.000	No Ice	2.400	2.400	0.100
			0.000			1/2" Ice	3.625	3.625	0.119
			0.000			1" Ice	4.867	4.867	0.145
*									
APXVTM14-ALU-I20_TIA w/ Mount Pipe	A	From Leg	4.000	0.000	126.000	No Ice	6.580	4.959	0.077
			0.000			1/2" Ice	7.031	5.754	0.132
			3.000			1" Ice	7.473	6.472	0.193
APXVTM14-ALU-I20_TIA w/ Mount Pipe	B	From Leg	4.000	0.000	126.000	No Ice	6.580	4.959	0.077
			0.000			1/2" Ice	7.031	5.754	0.132
			3.000			1" Ice	7.473	6.472	0.193
APXVTM14-ALU-I20_TIA w/ Mount Pipe	C	From Leg	4.000	0.000	126.000	No Ice	6.580	4.959	0.077
			0.000			1/2" Ice	7.031	5.754	0.132
			3.000			1" Ice	7.473	6.472	0.193
APXVSPP18-C_TIA w/ Mount Pipe	A	From Leg	4.000	0.000	126.000	No Ice	8.262	7.471	0.090
			0.000			1/2" Ice	8.822	8.656	0.161
			3.000			1" Ice	9.346	9.556	0.239
APXVSPP18-C_TIA w/ Mount Pipe	B	From Leg	4.000	0.000	126.000	No Ice	8.262	7.471	0.090
			0.000			1/2" Ice	8.822	8.656	0.161
			3.000			1" Ice	9.346	9.556	0.239
APXVSPP18-C_TIA w/ Mount Pipe	C	From Leg	4.000	0.000	126.000	No Ice	8.262	7.471	0.090
			0.000			1/2" Ice	8.822	8.656	0.161
			3.000			1" Ice	9.346	9.556	0.239
26" x 13" x 6"	A	From Leg	4.000	0.000	126.000	No Ice	4.045	1.535	0.070
			0.000			1/2" Ice	4.298	1.714	0.097
			3.000			1" Ice	4.557	1.901	0.128
26" x 13" x 6"	B	From Leg	4.000	0.000	126.000	No Ice	4.045	1.535	0.070
			0.000			1/2" Ice	4.298	1.714	0.097
			3.000			1" Ice	4.557	1.901	0.128
26" x 13" x 6"	C	From Leg	4.000	0.000	126.000	No Ice	4.045	1.535	0.070
			0.000			1/2" Ice	4.298	1.714	0.097
			3.000			1" Ice	4.557	1.901	0.128
RRH1900-4x45	A	From Leg	4.000	0.000	126.000	No Ice	2.322	2.238	0.060
			0.000			1/2" Ice	2.527	2.441	0.083
			3.000			1" Ice	2.739	2.651	0.110
RRH1900-4x45	B	From Leg	4.000	0.000	126.000	No Ice	2.322	2.238	0.060
			0.000			1/2" Ice	2.527	2.441	0.083
			3.000			1" Ice	2.739	2.651	0.110
RRH1900-4x45	C	From Leg	4.000	0.000	126.000	No Ice	2.322	2.238	0.060
			0.000			1/2" Ice	2.527	2.441	0.083
			3.000			1" Ice	2.739	2.651	0.110
RRH2x50	A	From Leg	4.000	0.000	126.000	No Ice	1.701	1.282	0.053
			0.000			1/2" Ice	1.864	1.428	0.070

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
			3.000			1" Ice	2.035	1.580	0.090
RRH2x50	B	From Leg	4.000	0.000	126.000	No Ice	1.701	1.282	0.053
			0.000			1/2" Ice	1.864	1.428	0.070
			3.000			1" Ice	2.035	1.580	0.090
RRH2x50	C	From Leg	4.000	0.000	126.000	No Ice	1.701	1.282	0.053
			0.000			1/2" Ice	1.864	1.428	0.070
			3.000			1" Ice	2.035	1.580	0.090
9" x 9" x 3.75"	A	From Leg	4.000	0.000	126.000	No Ice	0.675	0.281	0.010
			0.000			1/2" Ice	0.779	0.356	0.016
			3.000			1" Ice	0.890	0.438	0.023
9" x 9" x 3.75"	B	From Leg	4.000	0.000	126.000	No Ice	0.675	0.281	0.010
			0.000			1/2" Ice	0.779	0.356	0.016
			3.000			1" Ice	0.890	0.438	0.023
9" x 9" x 3.75"	C	From Leg	4.000	0.000	126.000	No Ice	0.675	0.281	0.010
			0.000			1/2" Ice	0.779	0.356	0.016
			3.000			1" Ice	0.890	0.438	0.023
7' x 2" Pipe Mount	A	From Leg	4.000	0.000	126.000	No Ice	1.663	1.663	0.026
			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
7' x 2" Pipe Mount	B	From Leg	4.000	0.000	126.000	No Ice	1.663	1.663	0.026
			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
7' x 2" Pipe Mount	C	From Leg	4.000	0.000	126.000	No Ice	1.663	1.663	0.026
			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
6' x 2" Mount Pipe	A	From Leg	2.000	0.000	126.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
9' x 2" Pipe Mount	B	From Leg	2.000	0.000	126.000	No Ice	2.138	2.138	0.065
			0.000			1/2" Ice	3.066	3.066	0.081
			0.000			1" Ice	4.010	4.010	0.103
Sector Mount [SM 503-3]	C	None		0.000	126.000	No Ice	30.430	30.430	1.690
						1/2" Ice	43.020	43.020	2.296
						1" Ice	55.430	55.430	3.097
*									
APXVAALL24_43-U-NA20 _TIA w/ Mount Pipe	A	From Leg	4.000	0.000	115.000	No Ice	20.480	10.869	0.183
			0.000			1/2" Ice	21.231	12.393	0.318
			3.000			1" Ice	21.990	13.942	0.465
APXVAALL24_43-U-NA20 _TIA w/ Mount Pipe	B	From Leg	4.000	0.000	115.000	No Ice	20.480	10.869	0.183
			0.000			1/2" Ice	21.231	12.393	0.318
			3.000			1" Ice	21.990	13.942	0.465
APXVAALL24_43-U-NA20 _TIA w/ Mount Pipe	C	From Leg	4.000	0.000	115.000	No Ice	20.480	10.869	0.183
			0.000			1/2" Ice	21.231	12.393	0.318
			3.000			1" Ice	21.990	13.942	0.465
AIR32 KRD901146-1_B66A_B2A w/ Mount Pipe	A	From Leg	4.000	0.000	115.000	No Ice	11.557	6.070	0.153
			0.000			1/2" Ice	12.086	6.867	0.238
			3.000			1" Ice	12.607	7.583	0.330
AIR32 KRD901146-1_B66A_B2A w/ Mount Pipe	B	From Leg	4.000	0.000	115.000	No Ice	11.557	6.070	0.153
			0.000			1/2" Ice	12.086	6.867	0.238
			3.000			1" Ice	12.607	7.583	0.330
AIR32 KRD901146-1_B66A_B2A w/ Mount Pipe	C	From Leg	4.000	0.000	115.000	No Ice	11.557	6.070	0.153
			0.000			1/2" Ice	12.086	6.867	0.238
			3.000			1" Ice	12.607	7.583	0.330
AIR6449 B41 w/ Mount Pipe	A	From Leg	4.000	0.000	115.000	No Ice	5.893	3.284	0.118
			0.000			1/2" Ice	6.257	3.742	0.167
			3.000			1" Ice	6.630	4.217	0.221
AIR6449 B41 w/ Mount Pipe	B	From Leg	4.000	0.000	115.000	No Ice	5.893	3.284	0.118

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
			0.000			1/2" Ice	6.257	3.742	0.167
			3.000			1" Ice	6.630	4.217	0.221
AIR6449 B41 w/ Mount Pipe	C	From Leg	4.000	0.000	115.000	No Ice	5.893	3.284	0.118
			0.000			1/2" Ice	6.257	3.742	0.167
			3.000			1" Ice	6.630	4.217	0.221
RRUS11 B4	A	From Leg	4.000	0.000	115.000	No Ice	2.833	1.182	0.051
			0.000			1/2" Ice	3.043	1.330	0.072
			3.000			1" Ice	3.259	1.485	0.095
RRUS11 B4	B	From Leg	4.000	0.000	115.000	No Ice	2.833	1.182	0.051
			0.000			1/2" Ice	3.043	1.330	0.072
			3.000			1" Ice	3.259	1.485	0.095
RRUS11 B4	C	From Leg	4.000	0.000	115.000	No Ice	2.833	1.182	0.051
			0.000			1/2" Ice	3.043	1.330	0.072
			3.000			1" Ice	3.259	1.485	0.095
Radio 4449 B12+B71	A	From Leg	4.000	0.000	115.000	No Ice	1.650	1.163	0.074
			0.000			1/2" Ice	1.810	1.301	0.090
			3.000			1" Ice	1.978	1.447	0.109
Radio 4449 B12+B71	B	From Leg	4.000	0.000	115.000	No Ice	1.650	1.163	0.074
			0.000			1/2" Ice	1.810	1.301	0.090
			3.000			1" Ice	1.978	1.447	0.109
Radio 4449 B12+B71	C	From Leg	4.000	0.000	115.000	No Ice	1.650	1.163	0.074
			0.000			1/2" Ice	1.810	1.301	0.090
			3.000			1" Ice	1.978	1.447	0.109
Radio 4415 B25	A	From Leg	4.000	0.000	115.000	No Ice	1.857	0.872	0.050
			0.000			1/2" Ice	2.027	0.999	0.064
			3.000			1" Ice	2.205	1.137	0.081
Radio 4415 B25	B	From Leg	4.000	0.000	115.000	No Ice	1.857	0.872	0.050
			0.000			1/2" Ice	2.027	0.999	0.064
			3.000			1" Ice	2.205	1.137	0.081
Radio 4415 B25	C	From Leg	4.000	0.000	115.000	No Ice	1.857	0.872	0.050
			0.000			1/2" Ice	2.027	0.999	0.064
			3.000			1" Ice	2.205	1.137	0.081
(4) L 2.5x2.5x3/16x6'	A	From Leg	4.000	0.000	115.000	No Ice	1.500	0.005	0.025
			0.000			1/2" Ice	1.918	0.024	0.034
			-4.000			1" Ice	2.343	0.049	0.048
(4) L 2.5x2.5x3/16x6'	B	From Leg	4.000	0.000	115.000	No Ice	1.500	0.005	0.025
			0.000			1/2" Ice	1.918	0.024	0.034
			-4.000			1" Ice	2.343	0.049	0.048
(4) L 2.5x2.5x3/16x6'	C	From Leg	4.000	0.000	115.000	No Ice	1.500	0.005	0.025
			0.000			1/2" Ice	1.918	0.024	0.034
			-4.000			1" Ice	2.343	0.049	0.048
10.5' x 2.875" Horizontal Mount Pipe	A	From Leg	4.000	0.000	115.000	No Ice	3.019	0.030	0.061
			0.000			1/2" Ice	4.101	0.070	0.083
			-3.000			1" Ice	5.200	0.130	0.112
10.5' x 2.875" horizontal mount pipe	B	From Leg	4.000	0.000	115.000	No Ice	3.019	0.030	0.061
			0.000			1/2" Ice	4.101	0.070	0.083
			-3.000			1" Ice	5.200	0.130	0.112
10.5' x 2.875" horizontal mount pipe	C	From Leg	4.000	0.000	115.000	No Ice	3.019	0.030	0.061
			0.000			1/2" Ice	4.101	0.070	0.083
			-3.000			1" Ice	5.200	0.130	0.112
7' x 2" Pipe Mount	A	From Leg	4.000	0.000	115.000	No Ice	1.663	1.663	0.026
			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
7' x 2" Pipe Mount	B	From Leg	4.000	0.000	115.000	No Ice	1.663	1.663	0.026
			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
7' x 2" Pipe Mount	C	From Leg	4.000	0.000	115.000	No Ice	1.663	1.663	0.026

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000				1/2" Ice	2.391	2.391	0.038
			0.000				1" Ice	2.825	2.825	0.055
Sector Mount [SM 502-3]	C	None			0.000	115.000	No Ice	29.820	29.820	1.673
							1/2" Ice	42.210	42.210	2.266
							1" Ice	54.430	54.430	3.052
*										
(2) LNX-6514DS-A1M_TIA w/ Mount Pipe	A	From Leg	4.000		0.000	95.500	No Ice	8.411	7.082	0.065
			0.000				1/2" Ice	8.975	8.273	0.134
			2.000				1" Ice	9.505	9.185	0.211
(2) LNX-6514DS-A1M_TIA w/ Mount Pipe	B	From Leg	4.000		0.000	95.500	No Ice	8.411	7.082	0.065
			0.000				1/2" Ice	8.975	8.273	0.134
			2.000				1" Ice	9.505	9.185	0.211
(2) LNX-6514DS-A1M_TIA w/ Mount Pipe	C	From Leg	4.000		0.000	95.500	No Ice	8.411	7.082	0.065
			0.000				1/2" Ice	8.975	8.273	0.134
			2.000				1" Ice	9.505	9.185	0.211
(2) HBXX-6517DS-A2M_TIA w/ Mount Pipe	A	From Leg	4.000		0.000	95.500	No Ice	8.765	6.963	0.078
			0.000				1/2" Ice	9.342	8.182	0.148
			2.000				1" Ice	9.889	9.144	0.225
(2) HBXX-6517DS-A2M_TIA w/ Mount Pipe	B	From Leg	4.000		0.000	95.500	No Ice	8.765	6.963	0.078
			0.000				1/2" Ice	9.342	8.182	0.148
			2.000				1" Ice	9.889	9.144	0.225
(2) HBXX-6517DS-A2M_TIA w/ Mount Pipe	C	From Leg	4.000		0.000	95.500	No Ice	8.765	6.963	0.078
			0.000				1/2" Ice	9.342	8.182	0.148
			2.000				1" Ice	9.889	9.144	0.225
B13 RRH4X30-4R	A	From Leg	4.000		0.000	95.500	No Ice	2.160	1.620	0.057
			0.000				1/2" Ice	2.350	1.794	0.077
			2.000				1" Ice	2.548	1.975	0.099
B13 RRH4X30-4R	B	From Leg	4.000		0.000	95.500	No Ice	2.160	1.620	0.057
			0.000				1/2" Ice	2.350	1.794	0.077
			2.000				1" Ice	2.548	1.975	0.099
B13 RRH4X30-4R	C	From Leg	4.000		0.000	95.500	No Ice	2.160	1.620	0.057
			0.000				1/2" Ice	2.350	1.794	0.077
			2.000				1" Ice	2.548	1.975	0.099
RRFDC-3315-PF-48	A	From Leg	0.500		0.000	95.500	No Ice	3.364	2.192	0.021
			0.000				1/2" Ice	3.597	2.395	0.050
			2.000				1" Ice	3.838	2.606	0.082
RRFDC-3315-PF-48	B	From Leg	0.500		0.000	95.500	No Ice	3.364	2.192	0.021
			0.000				1/2" Ice	3.597	2.395	0.050
			2.000				1" Ice	3.838	2.606	0.082
RRFDC-3315-PF-48	C	From Leg	0.500		0.000	95.500	No Ice	3.364	2.192	0.021
			0.000				1/2" Ice	3.597	2.395	0.050
			2.000				1" Ice	3.838	2.606	0.082
4' x 2" Pipe Mount	A	From Leg	4.000		0.000	95.500	No Ice	0.785	0.785	0.029
			0.000				1/2" Ice	1.028	1.028	0.035
			3.000				1" Ice	1.281	1.281	0.044
4' x 2" Pipe Mount	B	From Leg	4.000		0.000	95.500	No Ice	0.785	0.785	0.029
			0.000				1/2" Ice	1.028	1.028	0.035
			3.000				1" Ice	1.281	1.281	0.044
4' x 2" Pipe Mount	C	From Leg	4.000		0.000	95.500	No Ice	0.785	0.785	0.029
			0.000				1/2" Ice	1.028	1.028	0.035
			3.000				1" Ice	1.281	1.281	0.044
Sector Mount [SM 502-3]	C	None			0.000	95.500	No Ice	29.820	29.820	1.673
							1/2" Ice	42.210	42.210	2.266
							1" Ice	54.430	54.430	3.052
*										
10' x 2" Dipole	C	From Leg	4.000		0.000	67.500	No Ice	1.665	1.665	0.017
			0.000				1/2" Ice	2.997	2.997	0.022

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
			5.000			1" Ice	4.329	4.329	0.027
Side Arm Mount [SO 306-1]	C	From Leg	2.000	0.000	67.500	No Ice	0.410	2.260	0.042
			0.000			1/2" Ice	0.810	3.830	0.062
			0.000			1" Ice	1.230	5.480	0.094
*									
5.5" x 3.5" GPS	C	From Leg	3.000	0.000	56.000	No Ice	0.160	0.160	0.001
			0.000			1/2" Ice	0.214	0.214	0.003
			1.500			1" Ice	0.275	0.275	0.006
Side Arm Mount [SO 203-1]	C	From Leg	1.500	0.000	56.000	No Ice	1.780	3.790	0.125
			0.000			1/2" Ice	2.240	4.470	0.153
			0.000			1" Ice	2.750	5.210	0.189
*									
** Red. memebers in Loading**									
(2) L2x2x1/4 (4.81')	A	From Face	0.000	0.000	17.500	No Ice	1.000	0.005	0.010
			0.000			1/2" Ice	1.348	0.021	0.016
			0.000			1" Ice	1.704	0.044	0.027
(2) L2x2x1/4 (4.81')	B	From Face	0.000	0.000	17.500	No Ice	1.000	0.005	0.010
			0.000			1/2" Ice	1.348	0.021	0.016
			0.000			1" Ice	1.704	0.044	0.027
(2) L2x2x1/4 (4.81')	C	From Face	0.000	0.000	17.500	No Ice	1.000	0.005	0.010
			0.000			1/2" Ice	1.348	0.021	0.016
			0.000			1" Ice	1.704	0.044	0.027
(2) L2x2x1/4 (5.54')	A	From Face	0.000	0.000	17.500	No Ice	1.200	0.005	0.023
			0.000			1/2" Ice	1.615	0.021	0.030
			0.000			1" Ice	2.037	0.044	0.043
(2) L2x2x1/4 (5.54')	B	From Face	0.000	0.000	17.500	No Ice	1.200	0.005	0.023
			0.000			1/2" Ice	1.615	0.021	0.030
			0.000			1" Ice	2.037	0.044	0.043
(2) L2x2x1/4 (5.54')	C	From Face	0.000	0.000	17.500	No Ice	1.200	0.005	0.023
			0.000			1/2" Ice	1.615	0.021	0.030
			0.000			1" Ice	2.037	0.044	0.043
*									
(2) L2x2x1/4 (4.56')	A	From Face	0.000	0.000	22.500	No Ice	1.000	0.005	0.010
			0.000			1/2" Ice	1.348	0.021	0.016
			0.000			1" Ice	1.704	0.044	0.027
(2) L2x2x1/4 (4.56')	B	From Face	0.000	0.000	22.500	No Ice	1.000	0.005	0.010
			0.000			1/2" Ice	1.348	0.021	0.016
			0.000			1" Ice	1.704	0.044	0.027
(2) L2x2x1/4 (4.56')	C	From Face	0.000	0.000	22.500	No Ice	1.000	0.005	0.010
			0.000			1/2" Ice	1.348	0.021	0.016
			0.000			1" Ice	1.704	0.044	0.027
(2) L2x2x1/4 (4.56')	A	From Face	0.000	0.000	27.500	No Ice	1.000	0.005	0.010
			0.000			1/2" Ice	1.348	0.021	0.016
			0.000			1" Ice	1.704	0.044	0.027
(2) L2x2x1/4 (4.56')	B	From Face	0.000	0.000	27.500	No Ice	1.000	0.005	0.010
			0.000			1/2" Ice	1.348	0.021	0.016
			0.000			1" Ice	1.704	0.044	0.027
(2) L2x2x1/4 (4.56')	C	From Face	0.000	0.000	27.500	No Ice	1.000	0.005	0.010
			0.000			1/2" Ice	1.348	0.021	0.016
			0.000			1" Ice	1.704	0.044	0.027
*									
(2) L2x2x1/4 (5.31')	A	From Face	0.000	0.000	22.500	No Ice	1.200	0.005	0.023
			0.000			1/2" Ice	1.615	0.021	0.030
			0.000			1" Ice	2.037	0.044	0.043
(2) L2x2x1/4 (5.31')	B	From Face	0.000	0.000	22.500	No Ice	1.200	0.005	0.023
			0.000			1/2" Ice	1.615	0.021	0.030

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	2.037	0.044	0.043
(2) L2x2x1/4 (5.31')	C	From Face	0.000	0.000	22.500	No Ice	1.200	0.005	0.023
			0.000			1/2" Ice	1.615	0.021	0.030
			0.000			1" Ice	2.037	0.044	0.043
(2) L2x2x1/4 (5.31')	A	From Face	0.000	0.000	27.500	No Ice	1.200	0.005	0.023
			0.000			1/2" Ice	1.615	0.021	0.030
			0.000			1" Ice	2.037	0.044	0.043
(2) L2x2x1/4 (5.31')	B	From Face	0.000	0.000	27.500	No Ice	1.200	0.005	0.023
			0.000			1/2" Ice	1.615	0.021	0.030
			0.000			1" Ice	2.037	0.044	0.043
(2) L2x2x1/4 (5.31')	C	From Face	0.000	0.000	27.500	No Ice	1.200	0.005	0.023
			0.000			1/2" Ice	1.615	0.021	0.030
			0.000			1" Ice	2.037	0.044	0.043
*									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
Andrew 6 FT DISH	C	Paraboloid w/Shroud (HP)	From Leg	1.000	-90.000		155.500	6.000	No Ice	28.270	0.143
				0.000					1/2" Ice	29.050	0.292
				0.000					1" Ice	29.831	0.441
*											
Andrew 6 FT DISH	B	Paraboloid w/Shroud (HP)	From Leg	1.000	0.000		139.500	6.000	No Ice	28.270	0.143
				0.000					1/2" Ice	29.050	0.292
				0.000					1" Ice	29.831	0.441
*											

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice

Comb. No.	Description
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	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	155 - 140	Leg	Max Tension	23	3.276	-0.087	-0.001
			Max. Compression	2	-4.576	0.026	-0.012
			Max. Mx	22	1.424	0.170	-0.001
			Max. My	12	-0.846	-0.008	0.156
			Max. Vy	2	0.299	0.000	0.000
			Max. Vx	24	0.736	0.000	0.000
		Diagonal	Max Tension	5	1.254	0.000	0.000
			Max. Compression	2	-1.329	0.000	0.000
			Max. Mx	37	0.146	0.012	0.002
			Max. My	27	0.114	0.012	0.002
			Max. Vy	37	0.013	0.012	0.002
			Max. Vx	27	-0.001	0.000	0.000
		Top Girt	Max Tension	2	0.093	0.000	0.000
			Max. Compression	5	-0.086	0.000	0.000
			Max. Mx	26	0.000	-0.046	0.000
			Max. My	26	-0.004	0.000	0.001

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	26	0.028	0.000	0.000
			Max. Vx	26	-0.001	0.000	0.000
T2	140 - 120	Leg	Max Tension	23	14.244	-0.205	-0.001
			Max. Compression	2	-18.214	0.254	0.010
			Max. Mx	14	7.041	0.428	0.002
			Max. My	17	-1.711	-0.013	-0.490
			Max. Vy	22	0.635	-0.206	-0.001
			Max. Vx	16	-0.572	-0.005	0.079
		Diagonal	Max Tension	20	2.518	0.000	0.000
			Max. Compression	20	-2.524	0.000	0.000
			Max. Mx	38	0.365	0.022	-0.002
			Max. My	28	-0.726	0.021	0.003
			Max. Vy	38	0.020	0.022	-0.002
			Max. Vx	28	-0.001	0.000	0.000
		Top Girt	Max Tension	18	0.107	0.000	0.000
			Max. Compression	5	-0.059	0.000	0.000
			Max. Mx	26	0.029	-0.041	0.000
			Max. My	26	0.035	0.000	0.001
			Max. Vy	26	-0.021	0.000	0.000
			Max. Vx	26	-0.001	0.000	0.000
T3	120 - 100	Leg	Max Tension	23	33.022	0.078	-0.004
			Max. Compression	10	-41.301	0.041	0.005
			Max. Mx	14	13.307	0.838	-0.006
			Max. My	8	-3.400	-0.043	-0.831
			Max. Vy	14	0.871	-0.604	-0.006
			Max. Vx	20	0.813	-0.039	-0.509
		Diagonal	Max Tension	21	4.116	0.000	0.000
			Max. Compression	20	-4.187	0.000	0.000
			Max. Mx	27	1.024	0.043	0.005
			Max. My	28	-1.239	0.033	0.005
			Max. Vy	37	0.031	0.040	0.005
			Max. Vx	28	-0.002	0.000	0.000
T4	100 - 80	Leg	Max Tension	23	56.250	0.113	-0.006
			Max. Compression	10	-69.045	-0.235	0.003
			Max. Mx	6	31.941	0.479	0.001
			Max. My	8	-4.922	-0.050	-0.490
			Max. Vy	22	-0.674	-0.371	0.000
			Max. Vx	8	0.552	0.005	0.193
		Diagonal	Max Tension	12	5.322	0.000	0.000
			Max. Compression	12	-5.487	0.000	0.000
			Max. Mx	27	1.197	0.078	-0.007
			Max. My	27	1.063	0.078	0.008
			Max. Vy	37	0.044	0.072	0.006
			Max. Vx	27	-0.002	0.000	0.000
		Secondary Horizontal	Max Tension	10	1.197	0.026	-0.000
			Max. Compression	10	-1.197	0.000	0.000
			Max. Mx	27	-0.106	0.064	0.008
			Max. My	37	0.102	0.064	0.009
			Max. Vy	27	-0.043	0.064	0.008
			Max. Vx	37	0.002	0.000	0.000
T5	80 - 60	Leg	Max Tension	23	80.489	0.223	-0.000
			Max. Compression	10	-96.667	-0.372	0.002
			Max. Mx	10	-96.629	0.535	0.001
			Max. My	24	-11.751	-0.091	0.398
			Max. Vy	10	0.282	0.535	0.001
			Max. Vx	24	-0.170	-0.074	0.281
		Diagonal	Max Tension	12	5.640	0.000	0.000
			Max. Compression	12	-5.824	0.000	0.000
			Max. Mx	27	1.162	0.087	-0.008
			Max. My	27	-1.421	0.061	0.009

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	37	0.048	0.085	-0.007
			Max. Vx	27	0.002	0.000	0.000
		Secondary Horizontal	Max Tension	10	1.676	0.033	0.002
			Max. Compression	10	-1.676	0.000	0.000
			Max. Mx	28	-0.169	0.076	0.010
			Max. My	37	0.138	0.060	0.010
			Max. Vy	28	-0.047	0.076	0.010
			Max. Vx	37	0.002	0.000	0.000
T6	60 - 50	Leg	Max Tension	23	90.139	0.238	-0.005
			Max. Compression	10	-107.775	-0.724	0.008
			Max. Mx	10	-107.697	0.974	-0.003
			Max. My	24	-12.675	-0.164	0.829
			Max. Vy	10	0.357	0.974	-0.003
			Max. Vx	20	0.235	-0.184	-0.807
		Diagonal	Max Tension	25	6.271	0.072	-0.003
			Max. Compression	12	-6.534	0.000	0.000
			Max. Mx	38	1.402	0.132	0.011
			Max. My	2	-6.292	0.019	0.016
			Max. Vy	37	0.062	0.131	-0.008
			Max. Vx	27	0.003	0.000	0.000
		Secondary Horizontal	Max Tension	10	1.869	0.037	-0.000
			Max. Compression	10	-1.869	0.000	0.000
			Max. Mx	38	-0.251	0.108	0.017
			Max. My	37	-0.225	0.108	0.018
			Max. Vy	38	-0.060	0.108	0.017
			Max. Vx	37	-0.003	0.000	0.000
T7	50 - 40	Leg	Max Tension	23	101.586	0.469	-0.013
			Max. Compression	10	-121.100	-0.675	0.007
			Max. Mx	10	-121.024	1.080	-0.000
			Max. My	24	-13.358	-0.164	0.829
			Max. Vy	10	-0.396	1.080	-0.000
			Max. Vx	24	0.250	-0.164	0.829
		Diagonal	Max Tension	25	6.394	0.099	0.007
			Max. Compression	12	-6.753	0.000	0.000
			Max. Mx	10	5.773	0.135	0.017
			Max. My	2	5.107	0.132	0.018
			Max. Vy	37	0.069	0.126	0.014
			Max. Vx	27	-0.004	0.000	0.000
		Secondary Horizontal	Max Tension	10	2.100	0.056	-0.000
			Max. Compression	10	-2.100	0.000	0.000
			Max. Mx	38	-0.001	0.088	0.014
			Max. My	22	-0.201	0.055	0.018
			Max. Vy	38	-0.059	0.088	0.014
			Max. Vx	37	0.003	0.000	0.000
T8	40 - 30	Leg	Max Tension	23	112.792	0.476	-0.010
			Max. Compression	10	-134.593	-0.948	0.008
			Max. Mx	10	-134.443	1.483	-0.001
			Max. My	24	-14.714	-0.190	0.866
			Max. Vy	10	0.501	1.483	-0.001
			Max. Vx	24	-0.245	-0.190	0.866
		Diagonal	Max Tension	13	6.548	0.103	-0.006
			Max. Compression	12	-6.910	0.000	0.000
			Max. Mx	37	0.894	0.202	-0.016
			Max. My	27	-2.505	0.185	0.019
			Max. Vy	37	0.085	0.202	-0.016
			Max. Vx	27	0.004	0.000	0.000
		Secondary Horizontal	Max Tension	10	2.334	0.056	0.005

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	10	-2.334	0.000	0.000
			Max. Mx	32	-0.335	0.137	0.018
			Max. My	37	0.009	0.137	0.018
			Max. Vy	32	-0.066	0.137	0.018
			Max. Vx	37	0.003	0.000	0.000
T9	30 - 20	Leg	Max Tension	23	123.394	0.643	-0.014
			Max. Compression	10	-147.786	0.237	0.006
			Max. Mx	10	-147.552	1.305	-0.001
			Max. My	24	-15.494	-0.190	0.866
			Max. Vy	10	-0.499	1.305	-0.001
			Max. Vx	20	-0.228	-0.212	-0.847
		Diagonal	Max Tension	25	6.674	0.112	0.008
			Max. Compression	10	-7.151	0.000	0.000
			Max. Mx	37	2.235	0.151	0.018
			Max. My	36	-0.843	0.136	-0.020
			Max. Vy	37	0.082	0.151	0.018
			Max. Vx	36	-0.004	0.000	0.000
		Secondary Horizontal	Max Tension	10	2.563	0.065	0.006
			Max. Compression	10	-2.563	0.000	0.000
			Max. Mx	31	-0.224	0.096	0.017
			Max. My	37	-0.277	0.095	0.018
			Max. Vy	31	-0.063	0.096	0.017
			Max. Vx	37	-0.003	0.000	0.000
T10	20 - 10	Leg	Max Tension	23	134.250	-0.217	-0.006
			Max. Compression	10	-161.336	0.394	0.011
			Max. Mx	33	9.330	-1.045	-0.001
			Max. My	24	-17.146	-0.054	1.010
			Max. Vy	33	-0.196	-1.045	-0.001
			Max. Vx	20	0.177	-0.051	-0.996
		Diagonal	Max Tension	12	7.014	0.000	0.000
			Max. Compression	12	-6.836	0.000	0.000
			Max. Mx	38	1.116	0.234	0.018
			Max. My	37	-2.468	0.202	-0.024
			Max. Vy	37	0.085	0.232	-0.018
			Max. Vx	37	0.004	0.000	0.000
T11	10 - 0	Leg	Max Tension	23	144.434	-0.473	-0.017
			Max. Compression	10	-173.202	0.000	-0.000
			Max. Mx	31	-70.750	0.821	0.002
			Max. My	24	-17.612	-0.054	1.010
			Max. Vy	14	-0.104	-0.462	0.007
			Max. Vx	20	-0.169	-0.051	-0.996
		Diagonal	Max Tension	12	7.065	0.000	0.000
			Max. Compression	10	-7.473	0.000	0.000
			Max. Mx	24	3.376	0.194	-0.016
			Max. My	24	7.022	0.167	0.026
			Max. Vy	38	0.075	0.135	0.025
			Max. Vx	36	0.004	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	167.184	16.886	-10.036
	Max. H_x	18	167.184	16.886	-10.036
	Max. H_z	7	-132.931	-14.156	8.390

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. Vert	7	-132.931	-14.156	8.390
	Min. H_x	7	-132.931	-14.156	8.390
	Min. H_z	18	167.184	16.886	-10.036
Leg B	Max. Vert	10	179.630	-18.312	-10.627
	Max. H_x	23	-149.731	15.798	9.153
	Max. H_z	23	-149.731	15.798	9.153
	Min. Vert	23	-149.731	15.798	9.153
	Min. H_x	10	179.630	-18.312	-10.627
	Min. H_z	10	179.630	-18.312	-10.627
Leg A	Max. Vert	2	171.012	-0.275	19.960
	Max. H_x	21	17.866	3.167	1.371
	Max. H_z	2	171.012	-0.275	19.960
	Min. Vert	15	-134.134	0.212	-16.636
	Min. H_x	8	11.565	-3.172	0.854
	Min. H_z	15	-134.134	0.212	-16.636

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	37.764	0.000	0.000	-9.328	5.620	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	45.317	-0.751	-32.306	-2835.388	113.756	-10.727
0.9 Dead+1.0 Wind 0 deg - No Ice	33.988	-0.751	-32.306	-2832.589	112.070	-10.727
1.2 Dead+1.0 Wind 30 deg - No Ice	45.317	14.241	-25.222	-2238.688	-1229.168	-1.395
0.9 Dead+1.0 Wind 30 deg - No Ice	33.988	14.241	-25.222	-2235.890	-1230.854	-1.395
1.2 Dead+1.0 Wind 60 deg - No Ice	45.317	26.054	-14.492	-1264.063	-2299.594	-7.768
0.9 Dead+1.0 Wind 60 deg - No Ice	33.988	26.054	-14.492	-1261.265	-2301.280	-7.768
1.2 Dead+1.0 Wind 90 deg - No Ice	45.317	32.550	0.526	64.385	-2846.514	-14.036
0.9 Dead+1.0 Wind 90 deg - No Ice	33.988	32.550	0.526	67.184	-2848.200	-14.036
1.2 Dead+1.0 Wind 120 deg - No Ice	45.317	29.763	17.332	1506.964	-2584.956	-1.372
0.9 Dead+1.0 Wind 120 deg - No Ice	33.988	29.763	17.332	1509.763	-2586.642	-1.372
1.2 Dead+1.0 Wind 150 deg - No Ice	45.317	16.821	28.443	2480.874	-1488.128	12.511
0.9 Dead+1.0 Wind 150 deg - No Ice	33.988	16.821	28.443	2483.673	-1489.814	12.511
1.2 Dead+1.0 Wind 180 deg - No Ice	45.317	0.524	30.133	2642.678	-67.780	8.566
0.9 Dead+1.0 Wind 180 deg - No Ice	33.988	0.524	30.133	2645.476	-69.466	8.566
1.2 Dead+1.0 Wind 210 deg - No Ice	45.317	-14.237	25.177	2207.964	1244.184	0.071
0.9 Dead+1.0 Wind 210 deg - No Ice	33.988	-14.237	25.177	2210.763	1242.498	0.071
1.2 Dead+1.0 Wind 240 deg - No Ice	45.317	-27.782	15.479	1313.706	2435.169	9.298
0.9 Dead+1.0 Wind 240 deg -	33.988	-27.782	15.479	1316.505	2433.483	9.298

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						
1.2 Dead+1.0 Wind 270 deg - No Ice	45.317	-32.769	-0.756	-121.681	2891.309	13.968
0.9 Dead+1.0 Wind 270 deg - No Ice	33.988	-32.769	-0.756	-118.883	2889.623	13.968
1.2 Dead+1.0 Wind 300 deg - No Ice	45.317	-28.358	-16.586	-1495.414	2522.182	0.988
0.9 Dead+1.0 Wind 300 deg - No Ice	33.988	-28.358	-16.586	-1492.616	2520.496	0.988
1.2 Dead+1.0 Wind 330 deg - No Ice	45.317	-17.048	-28.727	-2545.424	1534.734	-13.628
0.9 Dead+1.0 Wind 330 deg - No Ice	33.988	-17.048	-28.727	-2542.625	1533.048	-13.628
1.2 Dead+1.0 Ice+1.0 Temp	85.893	0.000	0.000	-23.173	19.933	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	85.893	-0.151	-8.694	-784.597	41.126	-2.781
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	85.893	3.998	-7.025	-640.723	-327.901	-0.890
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	85.893	7.172	-4.023	-370.835	-611.332	-2.585
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	85.893	8.865	0.107	-8.136	-755.396	-4.621
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	85.893	8.165	4.737	390.391	-690.903	-1.481
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	85.893	4.548	7.725	652.889	-382.759	2.793
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	85.893	0.106	8.323	709.088	5.104	2.358
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	85.893	-3.997	7.016	592.742	368.069	0.630
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	85.893	-7.463	4.189	336.500	671.473	2.885
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	85.893	-8.908	-0.152	-45.050	801.396	4.607
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	85.893	-7.937	-4.619	-432.192	719.472	1.406
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	85.893	-4.593	-7.781	-707.496	429.113	-3.012
Dead+Wind 0 deg - Service	37.764	-0.211	-9.098	-804.677	35.756	-3.021
Dead+Wind 30 deg - Service	37.764	4.011	-7.103	-636.634	-342.437	-0.393
Dead+Wind 60 deg - Service	37.764	7.337	-4.081	-362.161	-643.890	-2.187
Dead+Wind 90 deg - Service	37.764	9.167	0.148	11.956	-797.914	-3.953
Dead+Wind 120 deg - Service	37.764	8.382	4.881	418.215	-724.254	-0.386
Dead+Wind 150 deg - Service	37.764	4.737	8.010	692.487	-415.365	3.523
Dead+Wind 180 deg - Service	37.764	0.148	8.486	738.054	-15.368	2.412
Dead+Wind 210 deg - Service	37.764	-4.009	7.090	615.630	354.107	0.020
Dead+Wind 240 deg - Service	37.764	-7.824	4.359	363.790	689.512	2.619
Dead+Wind 270 deg - Service	37.764	-9.229	-0.213	-40.444	817.970	3.934
Dead+Wind 300 deg - Service	37.764	-7.986	-4.671	-427.314	714.016	0.278
Dead+Wind 330 deg - Service	37.764	-4.801	-8.090	-723.017	435.932	-3.838

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.000	-37.764	0.000	0.000	37.764	0.000	0.000%
2	-0.751	-45.317	-32.306	0.751	45.317	32.306	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
3	-0.751	-33.988	-32.306	0.751	33.988	32.306	0.000%
4	14.241	-45.317	-25.222	-14.241	45.317	25.222	0.000%
5	14.241	-33.988	-25.222	-14.241	33.988	25.222	0.000%
6	26.054	-45.317	-14.492	-26.054	45.317	14.492	0.000%
7	26.054	-33.988	-14.492	-26.054	33.988	14.492	0.000%
8	32.550	-45.317	0.526	-32.550	45.317	-0.526	0.000%
9	32.550	-33.988	0.526	-32.550	33.988	-0.526	0.000%
10	29.763	-45.317	17.332	-29.763	45.317	-17.332	0.000%
11	29.763	-33.988	17.332	-29.763	33.988	-17.332	0.000%
12	16.821	-45.317	28.443	-16.821	45.317	-28.443	0.000%
13	16.821	-33.988	28.443	-16.821	33.988	-28.443	0.000%
14	0.524	-45.317	30.133	-0.524	45.317	-30.133	0.000%
15	0.524	-33.988	30.133	-0.524	33.988	-30.133	0.000%
16	-14.237	-45.317	25.177	14.237	45.317	-25.177	0.000%
17	-14.237	-33.988	25.177	14.237	33.988	-25.177	0.000%
18	-27.782	-45.317	15.479	27.782	45.317	-15.479	0.000%
19	-27.782	-33.988	15.479	27.782	33.988	-15.479	0.000%
20	-32.769	-45.317	-0.756	32.769	45.317	0.756	0.000%
21	-32.769	-33.988	-0.756	32.769	33.988	0.756	0.000%
22	-28.358	-45.317	-16.586	28.358	45.317	16.586	0.000%
23	-28.358	-33.988	-16.586	28.358	33.988	16.586	0.000%
24	-17.048	-45.317	-28.727	17.048	45.317	28.727	0.000%
25	-17.048	-33.988	-28.727	17.048	33.988	28.727	0.000%
26	0.000	-85.893	0.000	0.000	85.893	0.000	0.000%
27	-0.151	-85.893	-8.694	0.151	85.893	8.694	0.000%
28	3.998	-85.893	-7.025	-3.998	85.893	7.025	0.000%
29	7.172	-85.893	-4.023	-7.172	85.893	4.023	0.000%
30	8.865	-85.893	0.107	-8.865	85.893	-0.107	0.000%
31	8.165	-85.893	4.737	-8.165	85.893	-4.737	0.000%
32	4.548	-85.893	7.725	-4.548	85.893	-7.725	0.000%
33	0.106	-85.893	8.323	-0.106	85.893	-8.323	0.000%
34	-3.997	-85.893	7.016	3.997	85.893	-7.016	0.000%
35	-7.463	-85.893	4.189	7.463	85.893	-4.189	0.000%
36	-8.908	-85.893	-0.152	8.908	85.893	0.152	0.000%
37	-7.937	-85.893	-4.619	7.937	85.893	4.619	0.000%
38	-4.593	-85.893	-7.781	4.593	85.893	7.781	0.000%
39	-0.211	-37.764	-9.098	0.211	37.764	9.098	0.000%
40	4.011	-37.764	-7.103	-4.011	37.764	7.103	0.000%
41	7.337	-37.764	-4.081	-7.337	37.764	4.081	0.000%
42	9.167	-37.764	0.148	-9.167	37.764	-0.148	0.000%
43	8.382	-37.764	4.881	-8.382	37.764	-4.881	0.000%
44	4.737	-37.764	8.010	-4.737	37.764	-8.010	0.000%
45	0.148	-37.764	8.486	-0.148	37.764	-8.486	0.000%
46	-4.009	-37.764	7.090	4.009	37.764	-7.090	0.000%
47	-7.824	-37.764	4.359	7.824	37.764	-4.359	0.000%
48	-9.229	-37.764	-0.213	9.229	37.764	0.213	0.000%
49	-7.986	-37.764	-4.671	7.986	37.764	4.671	0.000%
50	-4.801	-37.764	-8.090	4.801	37.764	8.090	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	155 - 140	3.513	50	0.178	0.026
T2	140 - 120	2.950	50	0.174	0.014

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T3	120 - 100	2.225	50	0.163	0.010
T4	100 - 80	1.566	50	0.140	0.007
T5	80 - 60	1.015	50	0.110	0.005
T6	60 - 50	0.587	50	0.079	0.003
T7	50 - 40	0.422	50	0.066	0.003
T8	40 - 30	0.291	50	0.051	0.002
T9	30 - 20	0.184	50	0.043	0.002
T10	20 - 10	0.095	43	0.034	0.001
T11	10 - 0	0.026	43	0.017	0.001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
155.500	Andrew 6 FT DISH	50	3.513	0.178	0.026	556538
150.000	20' x 2" Dipole	50	3.324	0.177	0.021	556538
147.000	QS665122B51317852 w/ Mount Pipe	50	3.212	0.176	0.019	347836
139.500	Andrew 6 FT DISH	50	2.931	0.174	0.014	178504
136.000	(2) 14"X14"X0.5" Wi Fi	50	2.802	0.172	0.013	144018
135.000	101-90-06-0-03N	50	2.765	0.172	0.012	136396
126.000	APXVTM14-ALU-I20_TIA w/ Mount Pipe	50	2.437	0.167	0.010	92373
115.000	APXVAALL24_43-U-NA20_TIA w/ Mount Pipe	50	2.052	0.158	0.009	62771
95.500	(2) LNX-6514DS-A1M_TIA w/ Mount Pipe	50	1.432	0.133	0.007	40697
67.500	10' x 2" Dipole	50	0.733	0.090	0.004	38429
56.000	5.5" x 3.5" GPS	50	0.517	0.074	0.003	34537
27.500	(2) L2x2x1/4 (4.56')	43	0.160	0.041	0.002	68253
22.500	(2) L2x2x1/4 (4.56')	43	0.116	0.037	0.001	95321
17.500	(2) L2x2x1/4 (4.81')	43	0.075	0.030	0.001	51578

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	155 - 140	12.301	24	0.618	0.092
T2	140 - 120	10.346	24	0.605	0.051
T3	120 - 100	7.816	24	0.569	0.034
T4	100 - 80	5.507	24	0.489	0.026
T5	80 - 60	3.586	11	0.386	0.019
T6	60 - 50	2.083	11	0.279	0.012
T7	50 - 40	1.499	11	0.231	0.010
T8	40 - 30	1.037	11	0.181	0.008
T9	30 - 20	0.656	11	0.151	0.006
T10	20 - 10	0.339	11	0.120	0.004
T11	10 - 0	0.092	11	0.060	0.002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
155.500	Andrew 6 FT DISH	24	12.301	0.618	0.092	199607
150.000	20' x 2" Dipole	24	11.647	0.614	0.076	199607
147.000	QS665122B51317852 w/ Mount Pipe	24	11.256	0.611	0.068	124754
139.500	Andrew 6 FT DISH	24	10.281	0.604	0.050	62307
136.000	(2) 14"X14"X0.5" Wi Fi	24	9.829	0.600	0.044	47813
135.000	101-90-06-0-03N	24	9.701	0.599	0.043	44678
126.000	APXVTM14-ALU-I20_TIA w/ Mount Pipe	24	8.559	0.584	0.036	28076
115.000	APXVAALL24_43-U-NA20_TIA w/ Mount Pipe	24	7.211	0.553	0.032	18405
95.500	(2) LNX-6514DS-A1M_TIA w/ Mount Pipe	11	5.039	0.467	0.024	11730
67.500	10' x 2" Dipole	11	2.597	0.317	0.015	10966
56.000	5.5" x 3.5" GPS	11	1.835	0.260	0.011	9831
27.500	(2) L2x2x1/4 (4.56')	11	0.571	0.145	0.005	19431
22.500	(2) L2x2x1/4 (4.56')	11	0.414	0.130	0.005	27234
17.500	(2) L2x2x1/4 (4.81')	11	0.267	0.107	0.004	14697

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	155	Leg	A325N	0.625	4	0.819	20.340	0.040 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.500	1	1.254	3.806	0.330 ✔	1.05	Member Block Shear
		Top Girt	A325N	0.500	1	0.093	6.199	0.015 ✔	1.05	Gusset Bearing
T2	140	Leg	A325N	0.625	4	3.561	20.340	0.175 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.500	1	2.518	6.199	0.406 ✔	1.05	Gusset Bearing
		Top Girt	A325N	0.500	1	0.107	3.806	0.028 ✔	1.05	Member Block Shear
T3	120	Leg	A325N	0.625	4	8.255	20.340	0.406 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.500	1	4.116	6.199	0.664 ✔	1.05	Gusset Bearing
T4	100	Leg	A325N	0.750	4	14.050	30.101	0.467 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.500	1	5.322	6.199	0.859 ✔	1.05	Gusset Bearing
		Secondary Horizontal	A325N	0.625	1	1.197	7.830	0.153 ✔	1.05	Gusset Bearing
T5	80	Leg	A325N	0.875	4	20.105	41.556	0.484 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.500	1	5.640	6.199	0.910 ✔	1.05	Gusset Bearing
		Secondary Horizontal	A325N	0.625	1	1.676	7.830	0.214 ✔	1.05	Gusset Bearing
T6	60	Diagonal	A325N	0.625	1	6.271	12.675	0.495 ✔	1.05	Member Bearing
		Secondary Horizontal	A325N	0.625	1	1.869	10.440	0.179 ✔	1.05	Member Bearing

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T7	50	Leg	A325N	0.875	4	25.369	41.556	0.610 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	6.394	13.050	0.490 ✔	1.05	Gusset Bearing
		Secondary Horizontal	A325N	0.625	1	2.100	10.440	0.201 ✔	1.05	Member Bearing
T8	40	Diagonal	A325N	0.500	1	6.548	8.265	0.792 ✔	1.05	Gusset Bearing
		Secondary Horizontal	A325N	0.625	1	2.334	10.440	0.224 ✔	1.05	Member Bearing
T9	30	Leg	A325N	1.000	4	30.793	54.517	0.565 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.500	1	7.151	8.836	0.809 ✔	1.05	Bolt Shear
		Secondary Horizontal	A325N	0.625	1	2.563	10.440	0.245 ✔	1.05	Gusset Bearing
T10	20	Diagonal	A325N	0.625	1	7.014	10.440	0.672 ✔	1.05	Gusset Bearing
T11	10	Diagonal	A325N	0.625	1	7.065	10.440	0.677 ✔	1.05	Gusset Bearing

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	155 - 140	ROHN 2 STD	15.022	5.007	76.3 K=1.00	1.075	-4.576	31.578	0.145 [1] ✔
T2	140 - 120	ROHN 2.5 EH	20.029	5.007	65.0 K=1.00	2.254	-18.214	74.440	0.245 [1] ✔
T3	120 - 100	ROHN 2.5 EH	20.029	6.676	86.7 K=1.00	2.254	-41.301	58.530	0.706 [1] ✔
T4	100 - 80	BT 135928 - 2.5XS with HSS 3.5x0.3125	20.029	3.417	45.5 K=1.00	2.756	-69.045	106.628	0.648 [1] ✔
T5	80 - 60	BT 135928 - 3 XS with HSS 4x0.25	20.029	3.407	36.5 K=1.00	3.437	-96.667	140.349	0.689 [1] ✔
T6	60 - 50	ROHN 4 EH	10.015	5.155	41.9 K=1.00	4.407	-107.775	174.450	0.618 [1] ✔
T7	50 - 40	ROHN 4 EH	10.015	5.147	41.8 K=1.00	4.407	-121.100	174.522	0.694 [1] ✔
T8	40 - 30	5 STD w/ HSS 6x0.375 HP [0.479]	10.015	5.139	34.2 K=1.00	7.650	-134.593	316.082	0.426 [1] ✔
T9	30 - 20	5 STD w/ HSS 6x0.375 HP [0.479]	10.015	5.133	34.1 K=1.00	7.650	-147.786	316.151	0.467 [1] ✔
T10	20 - 10	5 STD w/ (3) 1.5x0.5 PL (Stiff)	10.015	10.015	45.9 K=0.72	4.300	-161.336	165.814	0.973 [1] ✔
T11	10 - 0	5 STD w/ (3) 1.5x0.5 PL (Stiff)	10.015	10.015	45.9 K=0.72	4.300	-173.202	165.814	1.045 [1] ✔

[1] P_u / ϕP_n controls

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	155 - 140	L1 1/2x1 1/2x1/8	9.156	4.495	182.1 K=1.00	0.359	-1.329	3.101	0.429 [1] ✔
T2	140 - 120	L1 1/2x1 1/2x1/4	10.772	5.279	216.9 K=1.00	0.688	-2.524	4.182	0.604 [1] ✔
T3	120 - 100	KL/R > 200 (C) - 31 L2x2x1/4	13.150	6.513	199.9 K=1.00	0.938	-4.026	6.720	0.599 [1] ✔
T4	100 - 80	L2 1/2x2 1/2x1/4	14.793	7.437	181.8 K=1.00	1.190	-5.487	10.310	0.532 [1] ✔
T5	80 - 60	L2 1/2x2 1/2x1/4	16.485	8.253	201.7 K=1.00	1.190	-5.824	8.371	0.696 [1] ✔
T6	60 - 50	KL/R > 200 (C) - 111 L3x3x1/4	18.747	9.428	191.1 K=1.00	1.440	-6.534	11.284	0.579 [1] ✔
T7	50 - 40	L3x3x5/16	19.544	9.826	200.2 K=1.00	1.780	-6.753	12.712	0.531 [1] ✔
T8	40 - 30	KL/R > 200 (C) - 153 L3x3x3/8	20.354	10.179	208.1 K=1.00	2.110	-6.910	13.946	0.495 [1] ✔
T9	30 - 20	KL/R > 200 (C) - 165 L3x3x3/8	21.174	10.589	216.5 K=1.00	2.110	-7.151	12.888	0.555 [1] ✔
T10	20 - 10	KL/R > 200 (C) - 177 L3 1/2x3 1/2x1/4	22.002	10.879	188.1 K=1.00	1.690	-6.836	13.671	0.500 [1] ✔
T11	10 - 0	L3 1/2x3 1/2x1/4	22.840	11.297	195.3 K=1.00	1.690	-7.473	12.677	0.590 [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	100 - 80	L2 1/2x2 1/2x1/4	13.197	6.479	158.3 K=1.00	1.190	-1.197	13.585	0.088 [1] ✔
T5	80 - 60	L2 1/2x2 1/2x1/4	15.069	7.389	180.6 K=1.00	1.190	-1.676	10.445	0.160 [1] ✔
T6	60 - 50	L3x3x1/4	15.841	7.733	156.8 K=1.00	1.440	-1.869	16.774	0.111 [1] ✔
T7	50 - 40	L3x3x1/4	16.777	8.201	166.2 K=1.00	1.440	-2.100	14.914	0.141 [1] ✔
T8	40 - 30	L3x3x1/4	17.713	8.625	174.8	1.440	-2.334	13.484	0.173 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T9	30 - 20	L3x3x1/4	18.650	9.093	K=1.00 184.3 K=1.00	1.440	-2.563	12.132	0.211 [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	155 - 140	L2x2x1/4	6.500	6.094	187.0 K=1.00	0.938	-0.086	7.676	0.011 [1]
T2	140 - 120	L1 1/2x1 1/2x1/8 KL/R > 200 (C) - 28	7.903	7.455	302.1 K=1.00	0.359	-0.059	1.127	0.053 [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	155 - 140	ROHN 2 STD	15.022	5.007	76.3	1.075	3.276	48.354	0.068 [1]
T2	140 - 120	ROHN 2.5 EH	20.029	5.007	65.0	2.254	14.245	101.409	0.140 [1]
T3	120 - 100	ROHN 2.5 EH	20.029	6.676	86.7	2.254	33.022	101.409	0.326 [1]
T4	100 - 80	BT 135928 - 2.5XS with HSS 3.5x0.3125	20.029	3.259	43.4	2.756	56.250	124.013	0.454 [1]
T5	80 - 60	BT 135928 - 3 XS with HSS 4x0.25	20.029	3.269	35.0	3.437	80.490	154.673	0.520 [1]
T6	60 - 50	ROHN 4 EH	10.015	4.860	39.5	4.407	90.139	198.335	0.454 [1]
T7	50 - 40	ROHN 4 EH	10.015	4.868	39.6	4.407	101.586	198.335	0.512 [1]
T8	40 - 30	5 STD w/ HSS 6x0.375 HP [0.479]	10.015	4.875	32.4	7.650	112.792	344.240	0.328 [1]
T9	30 - 20	5 STD w/ HSS 6x0.375 HP [0.479]	10.015	4.882	32.5	7.650	123.394	344.240	0.358 [1]
T10	20 - 10	5 STD w/ (3) 1.5x0.5 PL	10.015	10.015	64.0	4.300	134.250	193.494	0.694 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T11	10 - 0	(Stiff) 5 STD w/ (3) 1.5x0.5 PL (Stiff)	10.015	10.015	64.0	4.300	144.434	193.494	0.746 [1]

[1] P_u / ϕP_n controls

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	155 - 140	L1 1/2x1 1/2x1/8	9.156	4.495	118.7	0.211	1.254	9.176	0.137 [1]
T2	140 - 120	L1 1/2x1 1/2x1/4	10.772	5.279	143.9	0.398	2.518	17.332	0.145 [1]
T3	120 - 100	L2x2x1/4	12.616	6.249	125.2	0.586	4.116	25.505	0.161 [1]
T4	100 - 80	L2 1/2x2 1/2x1/4	14.239	7.162	111.8	0.775	5.322	33.726	0.158 [1]
T5	80 - 60	L2 1/2x2 1/2x1/4	16.485	8.253	128.8	0.775	5.640	33.726	0.167 [1]
T6	60 - 50	L3x3x1/4	18.747	9.428	121.7	0.939	6.271	45.794	0.137 [1]
T7	50 - 40	L3x3x5/16	19.544	9.826	127.9	1.159	6.394	56.512	0.113 [1]
T8	40 - 30	L3x3x3/8	20.354	10.179	133.8	1.407	6.548	68.578	0.095 [1]
T9	30 - 20	L3x3x3/8	21.174	10.589	139.2	1.407	6.674	68.578	0.097 [1]
T10	20 - 10	L3 1/2x3 1/2x1/4	22.002	10.879	121.1	1.127	7.014	54.935	0.128 [1]
T11	10 - 0	L3 1/2x3 1/2x1/4	22.840	11.297	125.7	1.127	7.065	54.935	0.129 [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	100 - 80	L2 1/2x2 1/2x1/4	13.197	6.479	202.2	0.752	1.197	32.707	0.037 [1]
T5	80 - 60	L2 1/2x2 1/2x1/4	15.069	7.389	230.6	0.752	1.676	32.707	0.051 [1]
T6	60 - 50	L3x3x1/4	15.841	7.733	199.6	0.939	1.869	40.863	0.046 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T7	50 - 40	L3x3x1/4	16.777	8.201	211.6	0.939	2.100	40.863	0.051 [1]
T8	40 - 30	L3x3x1/4	17.713	8.625	222.6	0.939	2.334	40.863	0.057 [1]
T9	30 - 20	L3x3x1/4	18.650	9.093	234.7	0.939	2.563	40.863	0.063 [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	155 - 140	L2x2x1/4	6.500	6.094	124.2	0.586	0.093	25.505	0.004 [1]
T2	140 - 120	L1 1/2x1 1/2x1/8	7.903	7.455	197.7	0.211	0.107	9.176	0.012 [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	155 - 140	Leg	ROHN 2 STD	3	-4.576	33.157	13.8	Pass
T2	140 - 120	Leg	ROHN 2.5 EH	27	-18.214	78.162	23.3	Pass
T3	120 - 100	Leg	ROHN 2.5 EH	56	-41.301	61.456	67.2	Pass
T4	100 - 80	Leg	BT 135928 - 2.5XS with HSS 3.5x0.3125	77	-69.045	111.959	61.7	Pass
T5	80 - 60	Leg	BT 135928 - 3 XS with HSS 4x0.25	107	-96.667	147.366	65.6	Pass
T6	60 - 50	Leg	ROHN 4 EH	137	-107.775	183.172	58.8	Pass
T7	50 - 40	Leg	ROHN 4 EH	149	-121.100	183.248	66.1	Pass
T8	40 - 30	Leg	5 STD w/ HSS 6x0.375 HP [0.479]	161	-134.593	331.886	40.6	Pass
T9	30 - 20	Leg	5 STD w/ HSS 6x0.375 HP [0.479]	173	-147.786	331.959	44.5 53.8 (b)	Pass
T10	20 - 10	Leg	5 STD w/ (3) 1.5x0.5 PL (Stiff)	185	-161.336	174.105	92.7	Pass
T11	10 - 0	Leg	5 STD w/ (3) 1.5x0.5 PL (Stiff)	194	-173.202	174.105	99.5	Pass
T1	155 - 140	Diagonal	L1 1/2x1 1/2x1/8	11	-1.329	3.256	40.8	Pass
T2	140 - 120	Diagonal	L1 1/2x1 1/2x1/4	31	-2.524	4.391	57.5	Pass
T3	120 - 100	Diagonal	L2x2x1/4	58	-4.026	7.056	57.1 63.2 (b)	Pass
T4	100 - 80	Diagonal	L2 1/2x2 1/2x1/4	81	-5.487	10.825	50.7 81.8 (b)	Pass
T5	80 - 60	Diagonal	L2 1/2x2 1/2x1/4	111	-5.824	8.790	66.3 86.7 (b)	Pass

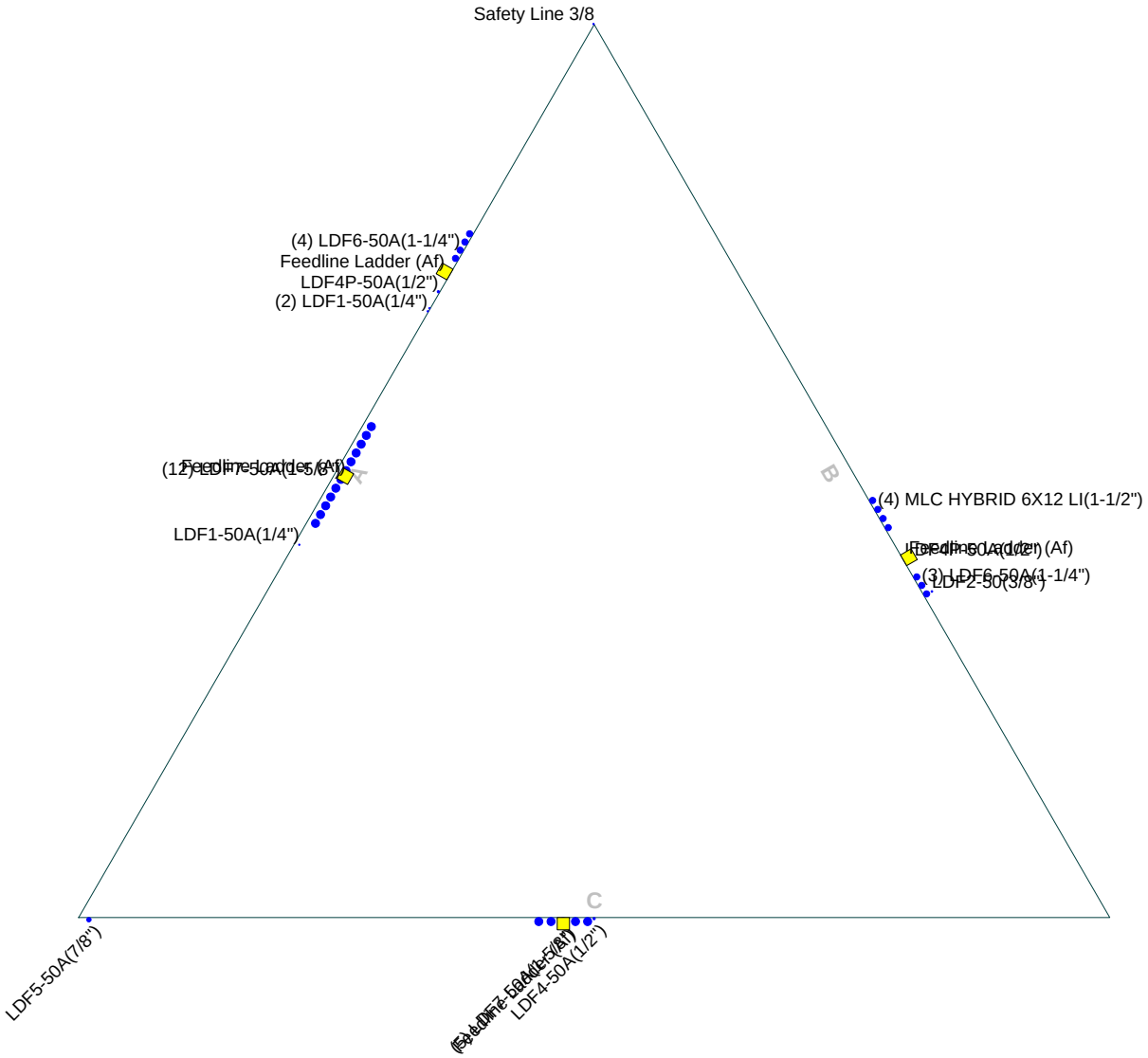
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T6	60 - 50	Diagonal	L3x3x1/4	141	-6.534	11.848	55.1	Pass
T7	50 - 40	Diagonal	L3x3x5/16	153	-6.753	13.347	50.6	Pass
T8	40 - 30	Diagonal	L3x3x3/8	165	-6.910	14.644	47.2	Pass
							75.5 (b)	
T9	30 - 20	Diagonal	L3x3x3/8	177	-7.151	13.532	52.8	Pass
							77.1 (b)	
T10	20 - 10	Diagonal	L3 1/2x3 1/2x1/4	189	-6.836	14.354	47.6	Pass
							64.0 (b)	
T11	10 - 0	Diagonal	L3 1/2x3 1/2x1/4	198	-7.473	13.311	56.1	Pass
							64.4 (b)	
T4	100 - 80	Secondary Horizontal	L2 1/2x2 1/2x1/4	85	-1.197	14.265	8.4	Pass
							14.6 (b)	
T5	80 - 60	Secondary Horizontal	L2 1/2x2 1/2x1/4	115	-1.676	10.968	15.3	Pass
							20.4 (b)	
T6	60 - 50	Secondary Horizontal	L3x3x1/4	145	-1.869	17.613	10.6	Pass
							17.0 (b)	
T7	50 - 40	Secondary Horizontal	L3x3x1/4	157	-2.100	15.660	13.4	Pass
							19.2 (b)	
T8	40 - 30	Secondary Horizontal	L3x3x1/4	170	-2.334	14.159	16.5	Pass
							21.3 (b)	
T9	30 - 20	Secondary Horizontal	L3x3x1/4	181	-2.563	12.738	20.1	Pass
							23.4 (b)	
T1	155 - 140	Top Girt	L2x2x1/4	6	-0.086	8.060	1.1	Pass
							1.4 (b)	
T2	140 - 120	Top Girt	L1 1/2x1 1/2x1/8	28	-0.059	1.184	5.0	Pass
							Summary	
						Leg (T11)	99.5	Pass
						Diagonal (T5)	86.7	Pass
						Secondary Horizontal (T9)	23.4	Pass
						Top Girt (T2)	5.0	Pass
						Bolt Checks	86.7	Pass
						RATING =	**99.5**	**Pass**

APPENDIX B

BASE LEVEL DRAWING

Feed Line Plan

Round Flat App In Face App Out Face



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

Job:	***135928.008.01 - Long Ridge Fire House, CT (Site# CTFF056A***		
Project:			
Client: Centerline Communications		Drawn by: S. Bhat	App'd:
Code: TIA-222-H		Date: 10/29/20	Scale: NTS
Path:			Dwg No. E-7

APPENDIX C

ADDITIONAL CALCULATIONS

PROJECT	**135928.008.01 - Long Ridge Fire House, CT**
SUBJECT	**Reinforced Tower Legs**
DATE	**10/29/20**

v3.4.1

B+T GRP
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(918) 587-4630

Tower Information	
TIA-222 Rev.	H
Apply TIA-222-H Section 15.5	Yes

Calculation Type	Original Member				Modification						BP & Angle?	Section Geometry																Leg Capacity									Results
												Custom Area Input			Custom MOIxx Input			Custom MOIyy Input																			
	Elevation (ft)	Leg Type	Diameter (in)	Thickness (in)	Type	Diameter (in)	Thickness (in)	Analysis Method	Intermediate Connection	Leg Crushing?		Area LEG (in^2)	Area MOD (in^2	Area Gross (in^2	I LEG (in^4)	I MOD (in^4)	I Gross (in^4)	I LEG (in^4)	I MOD (in^4)	I Gross (in^4)	Leg Comp. Load Pu (k)	Leg Fy (ksi)	Reinf. Fy (ksi)	L (in)	a (in)	Gap (in)	K Leg	K Mod	K Comp.	Custom h (in)	Fe (ksi)	Fcr (ksi)	Φ	Leg Crushing Capacity (k)	Reinf. Leg Tension Yield Capacity (k)	Reinf. Leg Comp. Capacity (k)	Original leg Capacity (k)	Spacing Req.	Leg Load Final Rating	
Analysis	80-100	Pipe	2.88	0.276	Half Pipe	3.50	0.313	Built Up	Pinned	No	No										69.035	50	50	41.0	24.0		1.0	1.00	1.0		41.9356	30.4	0.90		171.8	104.3	87.8	Exceeded @ 1.09	63.0%	Passing
Analysis	60-80	Pipe	3.50	0.3	Half Pipe	4.00	0.250	Built Up	Pinned	No	No										96.694	50	50	40.9	24.0		1.0	1.00	1.0		57.6602	34.8	0.90		202.0	140.5	123.5	Exceeded @ 1.15	65.5%	Passing
Analysis	30-40	Pipe	5.56	0.258	Half Pipe	6.63	0.375	Built Up	Pinned	No	No										134.41	50	50	61.7	24.0		1.0	1.00	1.0		157.453	43.8	0.90		359.1	314.4	178.8	O.K. @ 0.72	40.7%	Passing
Analysis	20-30	Pipe	5.56	0.258	Half Pipe	6.63	0.375	Built Up	Pinned	No	No										147.7	50	50	61.7	24.0		1.0	1.00	1.0		157.453	43.8	0.90		359.1	314.4	178.8	O.K. @ 0.72	44.7%	Passing
Analysis	0-20	Custom			Custom			Built Up	Fixed	Yes	No	4.30	2.25	6.55	15.2	14.3	29.4	15.2	14.3	29.4	173.4	50	50	120.0	10.0	0.0	1.0	0.86	1.0		0.55988	0.5	0.90	193.5	294.8	2.9	165.9	Exceeded @ 1.05	99.6%	Passing

Anchor Rod Check for Self Supporting Towers

v8.4.4

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119

Site Data	
Site#:	CTFF056A
Site Name:	Long Ridge Fire House, C
Project #:	135928.008.01
TIA Rev.	H
Apply TIA-222-H Section 15.5	Yes
Seismic Design Category:	B
No. of Mods:	0
Grout Present:	No

Leg Base Reactions			
		Wind/Ice	
Download, Pu:		180.0	kips
Download Shear, Vu:		21.0	kips
Uplift, Pu:		150.0	kips
Uplift Shear, Vu:		18.0	kips

Anchor Rod Data				
	Existing			
Qty:	4			
Diam:	1			in
Rod Material:	. BC (1/4 to 2-1/2 incl.)			
$l_{ar:}$	1.00			in
Strength (Fu):	125			ksi
Yield (Fy):	109			ksi
Gross Area (Ag):	3.14			in^2
Net Area (An):	2.42			in^2

Anchor Rod Calculations			
	Existing		
Put (k):	37.50		
ϕRnt (k):	56.81		
Puc (k):	45.00		
ϕRnc (k):	77.05		
ϕRnb (k):	76.77		
Uplift Vu (k):	4.50		
Download Vu (k):	5.25		
ϕRnv (k):	36.82		
ϕRnvc (k):	34.67		
Uplift Mu (k-in):	0.00		
Download Mu (k-in):	0.00		
ϕMn (k-in):	15.41		
Anchor Rod Stress Ratio:	**0.660**		

Anchor Rod Rating: **62.9%** **Pass**

Eccentric Load Calculations		
e=		in

Drilled Pier Foundation

Site # :	CTFF056A
Project Site Name:	Long Ridge Fire House
Project Number:	135928.008.01

TIA-222 Revison:	H
Tower Type:	Self Support

Applied Loads	Comp.	Uplift
Moment (kip-ft)	0	0
Axial Force (kips)	180	150
Shear Force (kips)	21	18

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	60	ksi

Pier Design Data		
Depth	21	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 21' below grade		
Pier Diameter	4.5	ft
Rebar Quantity	15	
Rebar Size	8	
Clear Cover to Ties	3	in
Tie Size	4	
Tie Spacing		in

Rebar & Pier Options
Embedded Pole Inputs
Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	11.30	11.30
Soil Safety Factor	8.60	10.03
Max Moment (kip-ft)	180.30	154.55
Rating*	*14.7%*	*12.6%*
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	139.11	139.11
End Bearing (kips)	238.56	-
Weight of Concrete (kips)	42.49	31.87
Total Capacity (kips)	377.67	170.97
Axial (kips)	222.49	150.00
Rating*	*56.1%*	*83.6%*
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	11.46	10.76
Critical Moment (kip-ft)	180.25	154.01
Critical Moment Capacity	1457.84	1065.66
Rating*	*11.8%*	*13.8%*
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	17.34	17.34
Critical Shear (kip)	37.46	32.11
Critical Shear Capacity	394.86	229.56
Rating*	*9.0%*	*13.3%*

Soil Interaction Rating*	**83.6%**
Structural Foundation Rating*	**13.8%**

Min. Steel is assumed

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐

Go to Soil Calculations

Soil Profile

Groundwater Depth	5	# of Layers	5

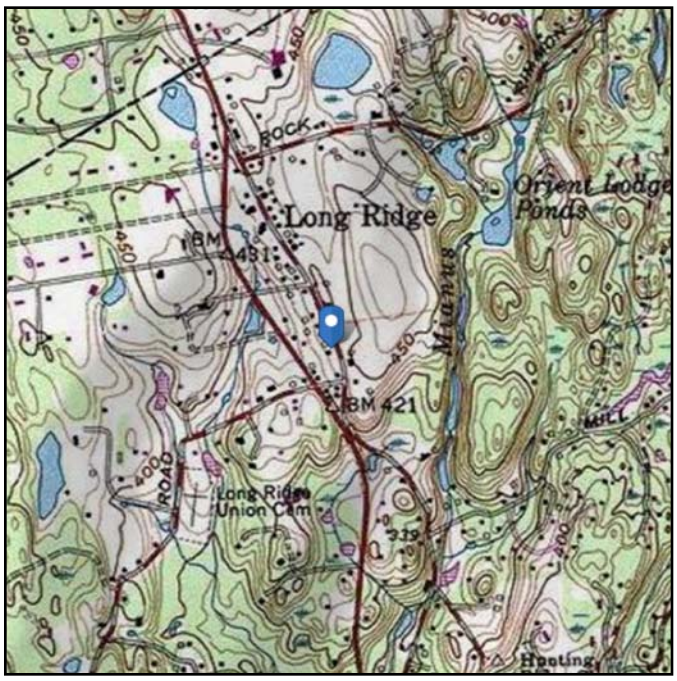
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3.33	3.33	120	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3.33	5	1.67	120	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	5	9	4	58	87.6	0	30	0.000	0.000	0.82	0.82			Cohesionless
4	9	13.5	4.5	58	87.6	0	30	0.000	0.000	0.82	0.82			Cohesionless
5	13.5	21	7.5	73	87.6	0	36	0.000	0.000	0.82	0.82	20		Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 442.37 ft (NAVD 88)
Latitude: 41.153056
Longitude: -73.5925



Wind

Results:

Wind Speed:	116 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph
Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4
Date Accessed:	Thu Oct 22 2020

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

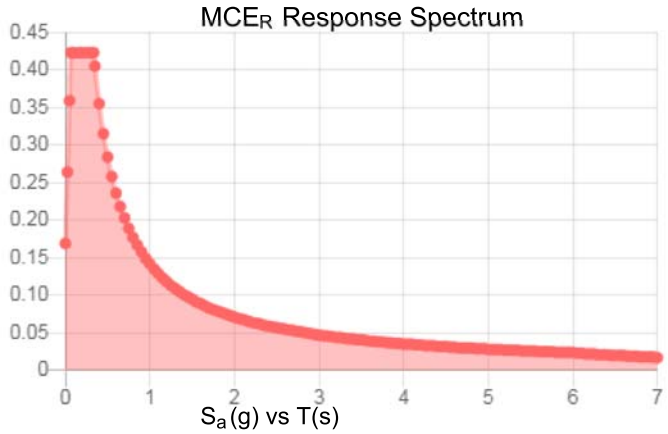
Seismic

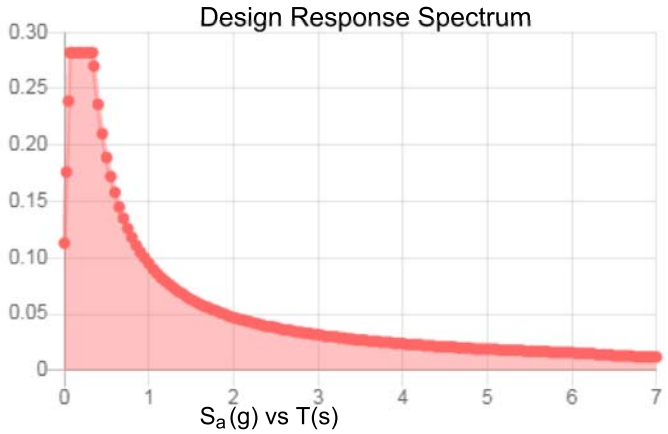
Site Soil Class: D - Default (see Section 11.4.3)

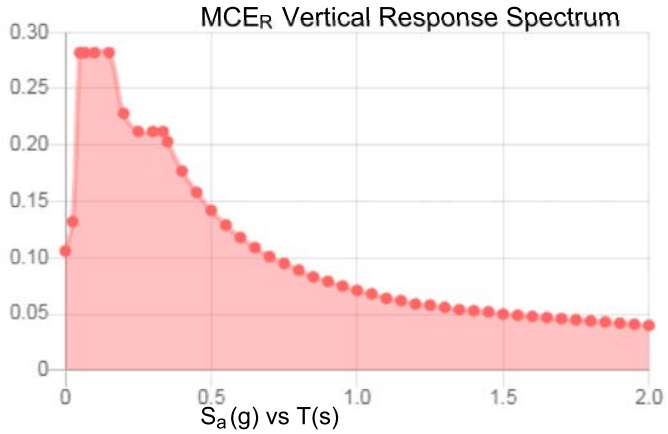
Results:

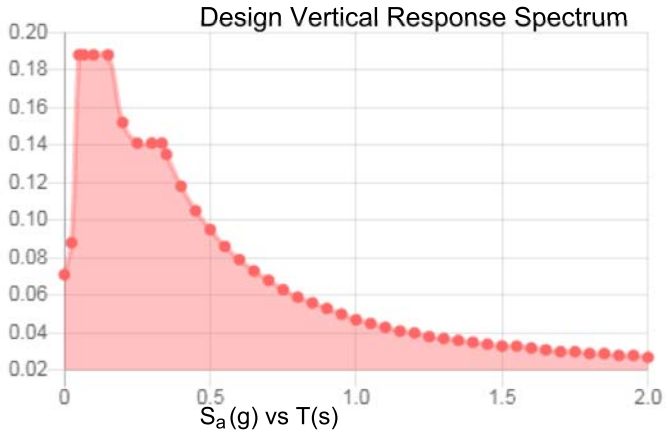
S_S :	0.267	S_{D1} :	0.095
S_1 :	0.059	T_L :	6
F_a :	1.586	PGA :	0.161
F_v :	2.4	PGA_M :	0.238
S_{MS} :	0.423	F_{PGA} :	1.478
S_{M1} :	0.142	I_e :	1
S_{DS} :	0.282	C_v :	0.834

Seismic Design Category B









Data Accessed: Thu Oct 22 2020

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Oct 22 2020

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

July 9, 2019

Peter Fales
Centerline Communications, LLC.
95 Ryan Drive Suite 1
Raynham, MA 02767
(508) 386-0863

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

Subject:	**Appurtenance Mount Modification Report**	
Carrier Designation:	**Site Number:**	CTFF056A
	Site Name:	Long Ridge Fire House
Engineering Firm Designation:	**B+T Group Project Number:**	135928.006.01
Site Data:	**366 Old Long Ridge Rd, Stamford, CT, 06903, Fairfield County** **Latitude *41.15305*°, Longitude *-73.59250*°** **Self-Support Tower** **(3) 10.5'Sector Mount**	

Dear Mr. Fales,

B+T Group is pleased to submit this **"Appurtenance Mount Modification Report"** to determine the structural integrity of the antenna mount on the above-mentioned structure.

The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level for the mount under the following load case to be:

Existing + Proposed Equipment Note: See Table 1 for the final loading configuration	**Sufficient Capacity** **(Passing at 58.6%)**

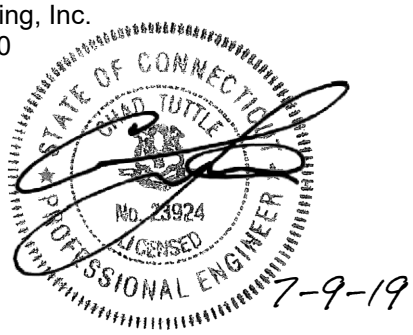
The analysis has been performed in accordance with the ANSI/TIA-222-G Standard. This analysis utilizes an ultimate 3-second gust wind speed of 120 mph converted to an equivalent 93 mph nominal 3-second gust wind speed per Section 1609.3.1 for use with ANSI/TIA-222-G as required by the 2015 International Building Code. Exposure Category C and Risk Category II were used in this analysis.

All modifications and 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 *Centerline Communications, LLC*. If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural modification prepared by: Lokesh Narayanappa

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564 Expires: 02/10/2020



7-9-19

Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

The appurtenance mount consists of SitePro1 sector mounts, Part# VFA10-U at 118 ft., attached to self-support tower at 366 Old Long Ridge Rd, Stamford, CT, 06903, Fairfield County. The proposed antenna loading information was obtained from Centerline Communications, LLC. All information provided to B+T Group was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-G-2-2005 Structural Standard for Antenna Supporting Structures and Antennas – Addendum 2 using a 3-second gust wind speed of 93 mph with no ice and 50 mph with 0.75-inch escalated ice thickness. Exposure Category C with topographic factor 1 and Risk Category II were used in this analysis. In addition, the sector mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30mph. The mount was analyzed under 30º increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed and Existing Equipment Information

Loading	RAD Ctr. Elev. (ft.)	Position	Qty.	Manufacturer	Model / Type	Note
Proposed	118	3	3	RFS	APXVAARR24_43-U-NA20	1
		2	3	Ericsson	Radio 4449 B71+B12	2
Existing	118	1	3	Ericsson	AIR32 KRD901146-1_B66A_B2A	3
		4	3	RFS	APX16DWV-16DWV-S-E-A20	
		2	3	Ericsson	RRUS11 B4	

Note:
(1) Proposed Antenna to be installed on the Existing Mount Pipe.
(2) Proposed Equipment to be installed on the Mount.
(3) Existing Equipment to be installed on the Mount.

Table 2 - Documents Provided

Documents	Remarks	Reference	Source
RFDS	Existing Loading Proposed Loading	Date: 05/03/2019	Centerline Communications, LLC.
Failing MA	B+T Group	Date: 06/17/2019	On File

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 17.0.2), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses and deflections for various loading cases. Selected output from the analysis is included in Appendix A.

Manufacturers drawing were used to create the model.

3.2) Assumptions

1. The mount was built in accordance with the manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.

4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
   The following assumptions have been included in the analysis of the mount

Component	Section	Length	Note
Mount Pipe	2" Std. Pipe	8'-0"	In All Positions.

6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
9. The following material grades were assumed (Unless Noted Otherwise):
   a) Connection Bolts : ASTM A325
   b) Steel Pipe : ASTM A53 (GR. 35)
   c) HSS (Round) : ASTM 500 (GR. B-42)
   d) HSS (Rectangular) : ASTM 500 (GR. B-46)
   e) Channel : ASTM A36 (GR. 36)
   f) Steel Solid Rod : ASTM A36 (GR. 36)
   g) Steel Plate : ASTM A36 (GR. 36)
   h) Steel Angle : ASTM A36 (GR. 36)
   i) UNISTRUT : ASTM A570 (GR. 33)

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 antenna mounting system.

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

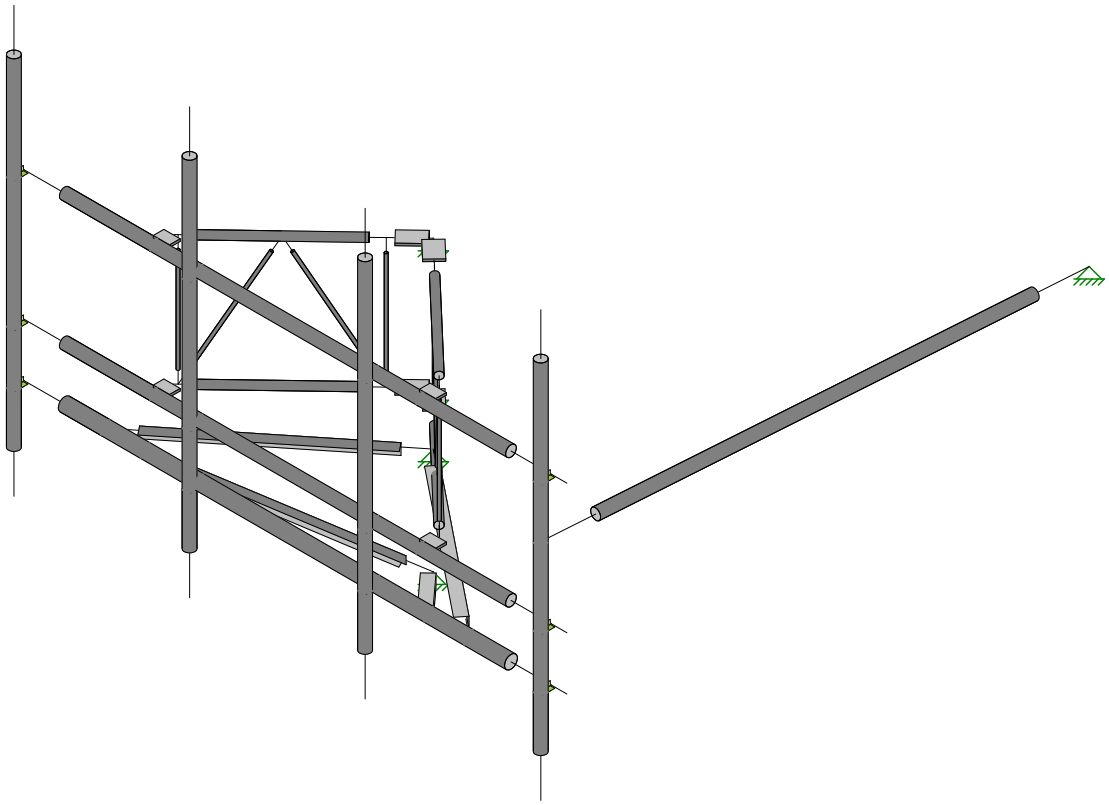
Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Face Horizontals	118	53.0	Pass
-	Support Arms	118	31.3	Pass
-	Diagonals	118	9.3	Pass
-	Verticals	118	4.2	Pass
-	Connection Plates	118	24.4	Pass
-	Mount Pipes	118	58.6	Pass
-	Tieback	118	11.3	Pass
-	Additional Site Pro Stabilizer Kit (SFR-K)	118	16.5	Pass
-	Additional Horizontal Pipe	118	29.7	Pass

4.1) Structural Notes:

1) All modifications proposed in this report shall be installed in accordance with the attached drawing for the determined available structural capacity to be effective.
2) If the loading differs from that described in Table 1 of this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
3) B+T Group certifies that carrier's entire antenna structure will support the equipment deployment.
4) No erection or modification of the structure shall be made without approval of the structural engineer.

APPENDIX A

(RISA-3D Output)



Envelope Only Solution

B+T Group	CTFF056A - Long Ridge Fire House	SK - 1
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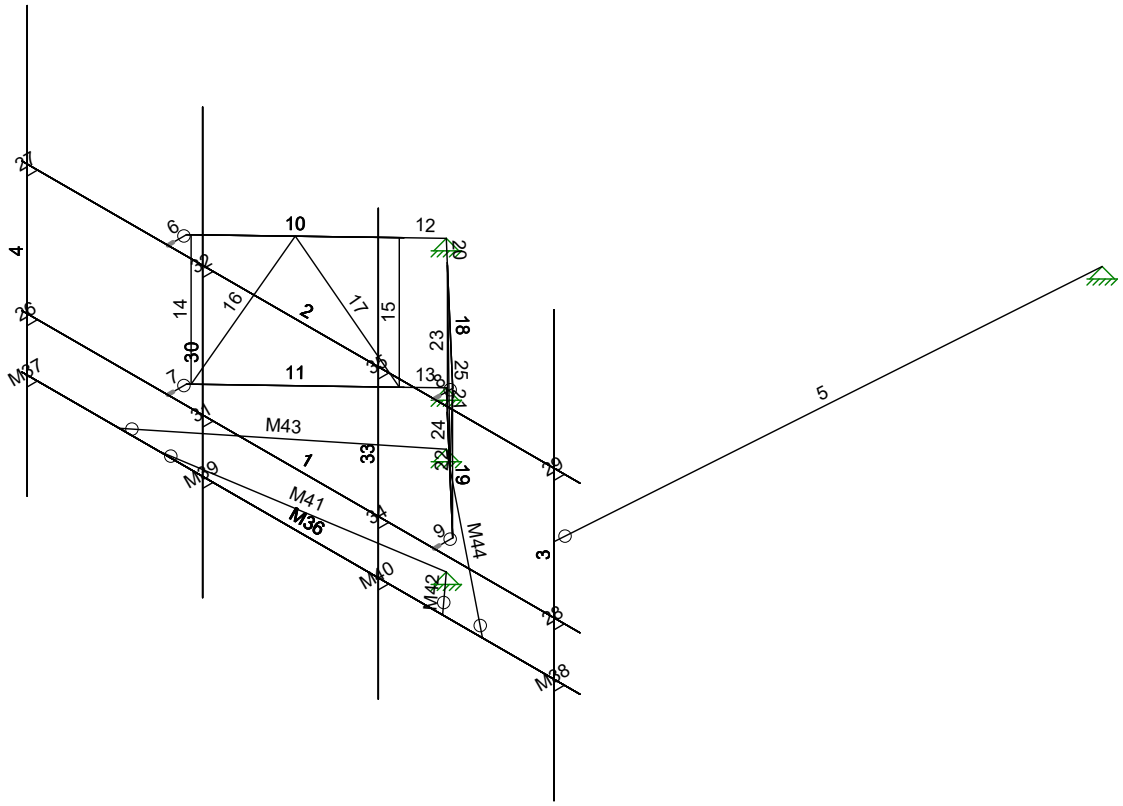

Envelope Only Solution

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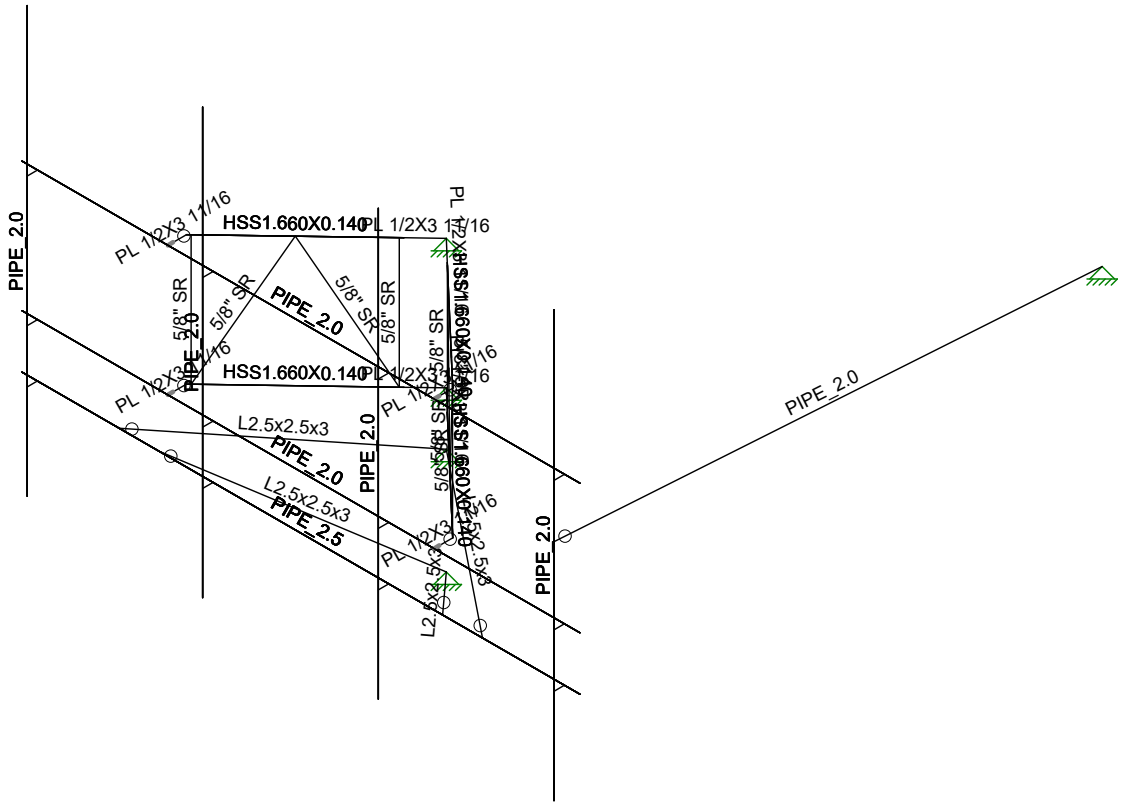

Envelope Only Solution

B+T Group	CTFF056A - Long Ridge Fire House	SK - 3
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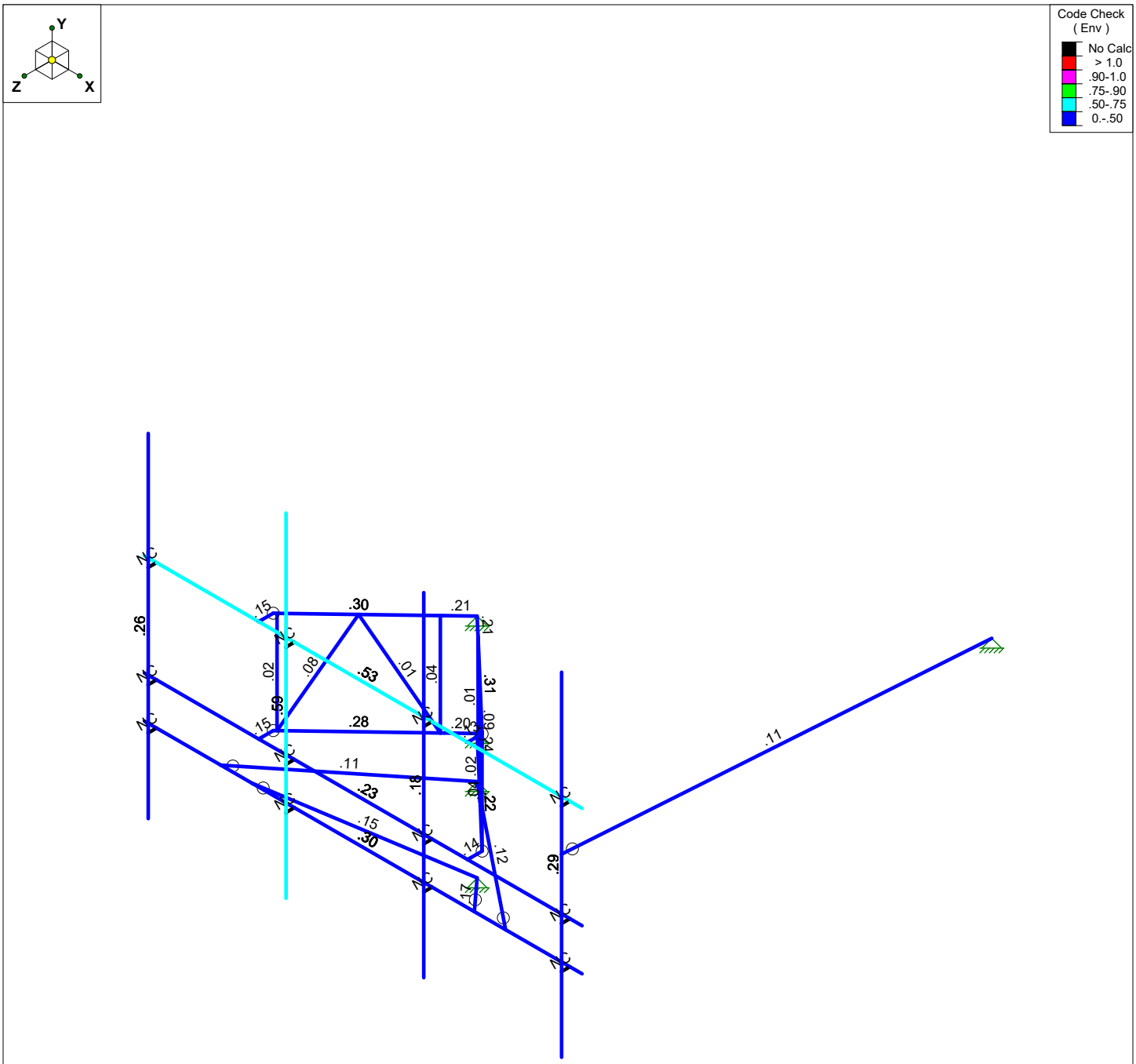

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CTFF056A - Long Ridge Fire House	SK - 4
LHN		July 9, 2019 at 9:36 AM
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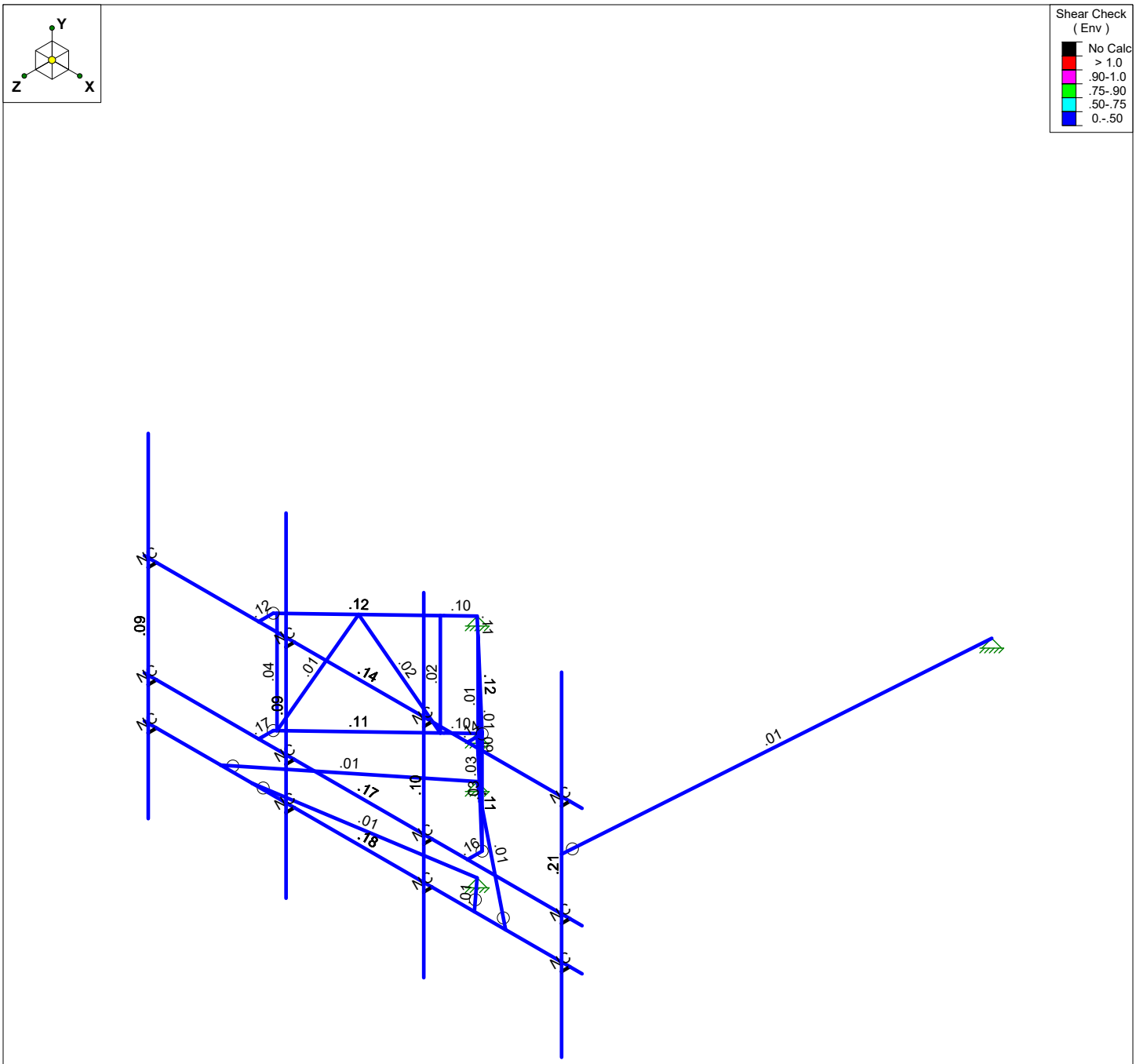

Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CTFF056A - Long Ridge Fire House	SK - 5
LHN		July 9, 2019 at 9:36 AM
135928.006.01		135928_006_01_Long Ridge Fire ...

PROJECT	**135928.006.01 - Long Ridge Fire House, CT**				**KSC**
SUBJECT	**Sector Mount- Mount Analysis**				
DATE	**07/09/19**	PAGE	1	OF	5

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B+T GRP

INPUT

[REF: ANSI/TIA-222-G2005]

Tower Type		:	SST		
Tower Height		:	152	ft	
Mount Elevation		:	118	ft	
Antenna Elevation		:	118	ft	
Crest Height		:	0	ft	
Structure Class		:	II		[Table 2-1]
Exposure Category		:	C		[Sec. 2.6.5]
Topography Category		:	1		[Sec. 2.6.6.2]
Wind Velocity	V	:	93	mph	[Annex B]
Ice wind Velocity	V_i	:	50	mph	[Annex B]
Service Velocity	V_s	:	30	mph	[Annex B]
Base Ice thickness	t_i	:	0.75	in	[Annex B]

ANTENNAS

	Manufacturer	Model	Height (in)	Front Width	Side Width	Weight (lbs)	Shape	Quantity	Location (%)
Mount Pipe **3**									
	Ericsson	AIR32 KRD901146-1_B66A_B2A (Octo)	56.60	12.90	8.70	105.80	Flat	0.5	40
	Ericsson	AIR32 KRD901146-1_B66A_B2A (Octo)	56.60	12.90	8.70	105.80	Flat	0.5	75
Mount Pipe **30**									
	RFS	APXVAARR24_43-U-NA20 (Octo)	95.90	24.00	8.70	128.00	Flat	0.5	5
	RFS	APXVAARR24_43-U-NA20 (Octo)	95.90	24.00	8.70	128.00	Flat	0.5	95
Mount Pipe **4**									
	RFS	APX16DWV-16DWV-S-E-A20 (Quad)	55.90	13.30	3.15	40.70	Flat	0.5	30
	RFS	APX16DWV-16DWV-S-E-A20 (Quad)	55.90	13.30	3.15	40.70	Flat	0.5	80
Mount Pipe **33**									
	Ericsson	RRUS11 B4	19.70	17.00	7.20	50.70	Flat	1	40
	Ericsson	Radio 4449 B71+B12	14.95	13.19	9.25	75.00	Flat	1	65
Mount Pipe									
Mount Pipe									

PROJECT	**135928.006.01 - Long Ridge Fire Hous KSC**				
SUBJECT	**Sector Mount Mount Analysis**				
DATE	**07/09/19**	PAGE	1	OF	5

B+T Group
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INPUT

[REF: ANSI/TIA-222-G2005]

	Member Number	Section Set	Wind Projection (in)	Length (in)	Perimeter (in)	Shape	D_c (in)
	1	MF-H1	2.38	126.00	7.46	Round	2.38
	2	MF-H1	2.38	126.00	7.46	Round	2.38
	3	MF-P1	2.38	96.00	7.46	Round	2.38
	4	MF-P1	2.38	96.00	7.46	Round	2.38
	5	F1-T1	2.38	116.02	7.46	Round	2.38
	6	F1-C1	0.50	4.19	8.38	Flat	3.72
	7	F1-C1	0.50	4.19	8.38	Flat	3.72
	8	F1-C1	0.50	4.19	8.38	Flat	3.72
	9	F1-C1	0.50	4.19	8.38	Flat	3.72
	10	F1-S1	1.66	34.75	5.22	Round	1.66
	11	F1-S1	1.66	34.75	5.22	Round	1.66
	12	F1-C1	0.50	6.76	8.38	Flat	3.72
	13	F1-C1	0.50	6.76	8.38	Flat	3.72
	14	F1-V1	0.63	29.26	1.96	Round	0.63
	15	F1-V1	0.63	29.26	1.96	Round	0.63
	16	F1-D1	0.63	33.65	1.96	Round	0.63
	17	F1-D1	0.63	33.65	1.96	Round	0.63
	18	F1-S1	1.66	34.75	5.22	Round	1.66
	19	F1-S1	1.66	34.75	5.22	Round	1.66
	20	F1-C1	0.50	6.76	8.38	Flat	3.72
	21	F1-C1	0.50	6.76	8.38	Flat	3.72
	22	F1-V1	0.63	29.26	1.96	Round	0.63
	23	F1-V1	0.63	29.26	1.96	Round	0.63
	24	F1-D1	0.63	33.65	1.96	Round	0.63
	25	F1-D1	0.63	33.65	1.96	Round	0.63
	30	MF-P1	2.38	96.00	7.46	Round	2.38
	33	MF-P1	2.38	96.00	7.46	Round	2.38
	M36	New horizontal	2.88	126.00	9.03	Round	2.88
	M41	sfr-k	2.50	51.73	10.00	Flat	3.54
	M42	sfr-k	2.50	51.73	10.00	Flat	3.54
	M43	sfr-k	2.50	52.51	10.00	Flat	3.54
	M44	sfr-k	2.50	52.51	10.00	Flat	3.54

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	MF-H1	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	F1-S1	HSS1.660...	Beam	Pipe	A53 Gr.B	Typical	.625	.184	.184	.368
3	F1-V1	5/8" SR	Column	BAR	A36 Gr.36	Typical	.307	.007	.007	.015
4	F1-D1	5/8" SR	HBrace	BAR	A36 Gr.36	Typical	.307	.007	.007	.015
5	F1-T1	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	F1-C1	PL 1/2X3 ...	Beam	RECT	A36 Gr.36	Typical	1.844	.038	2.089	.141
7	MF-P1	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	sfr-k	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011
9	New horiz...	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(de...	Section/Shape	Type	Design List	Material	Design Rules
1	1	1	2			MF-H1	Beam	Pipe	A53 Gr.B	Typical
2	2	3	4			MF-H1	Beam	Pipe	A53 Gr.B	Typical
3	3	6	7			MF-P1	Column	Pipe	A53 Gr.B	Typical
4	4	8	9			MF-P1	Column	Pipe	A53 Gr.B	Typical
5	5	N55	18			F1-T1	Beam	Pipe	A53 Gr.B	Typical
6	6	19	5		90	F1-C1	Beam	RECT	A36 Gr.36	Typical
7	7	20	10		90	F1-C1	Beam	RECT	A36 Gr.36	Typical
8	8	21	11		90	F1-C1	Beam	RECT	A36 Gr.36	Typical
9	9	22	13		90	F1-C1	Beam	RECT	A36 Gr.36	Typical
10	10	5	25			F1-S1	Beam	Pipe	A53 Gr.B	Typical
11	11	10	26			F1-S1	Beam	Pipe	A53 Gr.B	Typical
12	12	25	12		90	F1-C1	Beam	RECT	A36 Gr.36	Typical
13	13	26	24		90	F1-C1	Beam	RECT	A36 Gr.36	Typical
14	14	28	27			F1-V1	Column	BAR	A36 Gr.36	Typical
15	15	31	30			F1-V1	Column	BAR	A36 Gr.36	Typical
16	16	28	29			F1-D1	HBrace	BAR	A36 Gr.36	Typical
17	17	29	31			F1-D1	HBrace	BAR	A36 Gr.36	Typical
18	18	11	32			F1-S1	Beam	Pipe	A53 Gr.B	Typical
19	19	13	33			F1-S1	Beam	Pipe	A53 Gr.B	Typical
20	20	32	12		90	F1-C1	Beam	RECT	A36 Gr.36	Typical
21	21	33	24		90	F1-C1	Beam	RECT	A36 Gr.36	Typical
22	22	35	34			F1-V1	Column	BAR	A36 Gr.36	Typical
23	23	38	37			F1-V1	Column	BAR	A36 Gr.36	Typical
24	24	34	36			F1-D1	HBrace	BAR	A36 Gr.36	Typical
25	25	37	36			F1-D1	HBrace	BAR	A36 Gr.36	Typical
26	26	40	15			RIGID	None	None	RIGID	Typical
27	27	42	17			RIGID	None	None	RIGID	Typical
28	28	39	14			RIGID	None	None	RIGID	Typical
29	29	41	16			RIGID	None	None	RIGID	Typical
30	30	43	44			MF-P1	Column	Pipe	A53 Gr.B	Typical
31	31	47	45			RIGID	None	None	RIGID	Typical
32	32	48	46			RIGID	None	None	RIGID	Typical
33	33	49	50			MF-P1	Column	Pipe	A53 Gr.B	Typical
34	34	53	51			RIGID	None	None	RIGID	Typical
35	35	54	52			RIGID	None	None	RIGID	Typical
36	M36	N57A	N58			New horizontal	Beam	Pipe	A53 Gr.B	Typical
37	M37	N62	N60			RIGID	None	None	RIGID	Typical
38	M38	N61	N59			RIGID	None	None	RIGID	Typical
39	M39	N64	N63			RIGID	None	None	RIGID	Typical
40	M40	N66	N65			RIGID	None	None	RIGID	Typical
41	M41	N68	N71		180	sfr-k	Beam	Single Angle	A36 Gr.36	Typical
42	M42	N68	N72		90	sfr-k	Beam	Single Angle	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(de...	Section/Shape	Type	Design List	Material	Design Rules
43	M43	N67	N70		180	sfr-k	Beam	Single Angle	A36 Gr.36	Typical
44	M44	N67	N69		90	sfr-k	Beam	Single Angle	A36 Gr.36	Typical

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	DL		-1			20			
2	0 Wind - No Ice	WLZ					20	32		
3	90 Wind - No Ice	WLX					20	32		
4	0 Wind - Ice	WLZ					20	32		
5	90 Wind - Ice	WLX					20	32		
6	0 Wind - Service	WLZ					20	32		
7	90 Wind - Service	WLX					20	32		
8	Ice	OL1					20	32		
9	Live Load a	LL				1				
10	Live Load b	LL				1				
11	Live Load c	LL				1				
12	Live Load d	LL				1				
13	Maint LL 1	LL					1			
14	Maint LL 2	LL					1			
15	Maint LL 3	LL					1			
16	Maint LL 4	LL					1			
17	Maint LL 5	LL					1			
18	Maint LL 6	LL					1			
19	Maint LL 7	LL								
20	Maint LL 8	LL								
21	Maint LL 9	LL								
22	Maint LL 10	LL								

Load Combinations

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..
1	1.4 Dead	Yes	Y		1	1.4																		
2	0.9 D + 1.6 - 0 W	Yes	Y		1	.9	2	1.6																
3	0.9 D + 1.6 - 30 W	Yes	Y		1	.9	2	1.3...	3	.8														
4	0.9 D + 1.6 - 60 W	Yes	Y		1	.9	3	1.3...	2	.8														
5	0.9 D + 1.6 - 90 W	Yes	Y		1	.9	3	1.6																
6	0.9 D + 1.6 - 120 W	Yes	Y		1	.9	3	1.3...	2	-.8														
7	0.9 D + 1.6 - 150 W	Yes	Y		1	.9	2	-1.3...	3	.8														
8	0.9 D + 1.6 - 180 W	Yes	Y		1	.9	2	-1.6																
9	0.9 D + 1.6 - 210 W	Yes	Y		1	.9	2	-1.3...	3	-.8														
10	0.9 D + 1.6 - 240 W	Yes	Y		1	.9	3	-1.3...	2	-.8														
11	0.9 D + 1.6 - 270 W	Yes	Y		1	.9	3	-1.6																
12	0.9 D + 1.6 - 300 W	Yes	Y		1	.9	3	-1.3...	2	.8														
13	0.9 D + 1.6 - 330 W	Yes	Y		1	.9	2	1.3...	3	-.8														
14	1.2 D + 1.6 - 0 W	Yes	Y		1	1.2	2	1.6																
15	1.2 D + 1.6 - 30 W	Yes	Y		1	1.2	2	1.3...	3	.8														
16	1.2 D + 1.6 - 60 W	Yes	Y		1	1.2	3	1.3...	2	.8														
17	1.2 D + 1.6 - 90 W	Yes	Y		1	1.2	3	1.6																
18	1.2 D + 1.6 - 120 W	Yes	Y		1	1.2	3	1.3...	2	-.8														
19	1.2 D + 1.6 - 150 W	Yes	Y		1	1.2	2	-1.3...	3	.8														
20	1.2 D + 1.6 - 180 W	Yes	Y		1	1.2	2	-1.6																
21	1.2 D + 1.6 - 210 W	Yes	Y		1	1.2	2	-1.3...	3	-.8														
22	1.2 D + 1.6 - 240 W	Yes	Y		1	1.2	3	-1.3...	2	-.8														
23	1.2 D + 1.6 - 270 W	Yes	Y		1	1.2	3	-1.6																
24	1.2 D + 1.6 - 300 W	Yes	Y		1	1.2	3	-1.3...	2	.8														

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
25	1.2 D + 1.6 - 330 W	Yes	Y		1	1.2	2	1.3...	3	-.8																
26	0.9 D + 1.6 - 0 W/Ice	Yes	Y		1	.9	4	1.6			8	1														
27	0.9 D + 1.6 - 30 W/Ice	Yes	Y		1	.9	4	1.3...	5	.8	8	1														
28	0.9 D + 1.6 - 60 W/Ice	Yes	Y		1	.9	5	1.3...	4	.8	8	1														
29	0.9 D + 1.6 - 90 W/Ice	Yes	Y		1	.9	5	1.6			8	1														
30	0.9 D + 1.6 - 120 W/Ice	Yes	Y		1	.9	5	1.3...	4	-.8	8	1														
31	0.9 D + 1.6 - 150 W/Ice	Yes	Y		1	.9	4	-1.3...	5	.8	8	1														
32	0.9 D + 1.6 - 180 W/Ice	Yes	Y		1	.9	4	-1.6			8	1														
33	0.9 D + 1.6 - 210 W/Ice	Yes	Y		1	.9	4	-1.3...	5	-.8	8	1														
34	0.9 D + 1.6 - 240 W/Ice	Yes	Y		1	.9	5	-1.3...	4	-.8	8	1														
35	0.9 D + 1.6 - 270 W/Ice	Yes	Y		1	.9	5	-1.6			8	1														
36	0.9 D + 1.6 - 300 W/Ice	Yes	Y		1	.9	5	-1.3...	4	.8	8	1														
37	0.9 D + 1.6 - 330 W/Ice	Yes	Y		1	.9	4	1.3...	5	-.8	8	1														
38	1.2 D + 1.0 - 0 W/Ice	Yes	Y		1	1.2	4	1			8	1														
39	1.2 D + 1.0 - 30 W/Ice	Yes	Y		1	1.2	4	.866	5	.5	8	1														
40	1.2 D + 1.0 - 60 W/Ice	Yes	Y		1	1.2	5	.866	4	.5	8	1														
41	1.2 D + 1.0 - 90 W/Ice	Yes	Y		1	1.2	5	1			8	1														
42	1.2 D + 1.0 - 120 W/Ice	Yes	Y		1	1.2	5	.866	4	-.5	8	1														
43	1.2 D + 1.0 - 150 W/Ice	Yes	Y		1	1.2	4	-.866	5	.5	8	1														
44	1.2 D + 1.0 - 180 W/Ice	Yes	Y		1	1.2	4	-1			8	1														
45	1.2 D + 1.0 - 210 W/Ice	Yes	Y		1	1.2	4	-.866	5	-.5	8	1														
46	1.2 D + 1.0 - 240 W/Ice	Yes	Y		1	1.2	5	-.866	4	-.5	8	1														
47	1.2 D + 1.0 - 270 W/Ice	Yes	Y		1	1.2	5	-1			8	1														
48	1.2 D + 1.0 - 300 W/Ice	Yes	Y		1	1.2	5	-.866	4	.5	8	1														
49	1.2 D + 1.0 - 330 W/Ice	Yes	Y		1	1.2	4	.866	5	-.5	8	1														
50	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	6	1			9	1.5														
51	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	6	.866	7	.5	9	1.5														
52	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	7	.866	6	.5	9	1.5														
53	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	7	1			9	1.5														
54	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	7	.866	6	-.5	9	1.5														
55	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	6	-.866	7	.5	9	1.5														
56	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	6	-1			9	1.5														
57	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	6	-.866	7	-.5	9	1.5														
58	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	7	-.866	6	-.5	9	1.5														
59	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	7	-1			9	1.5														
60	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	7	-.866	6	.5	9	1.5														
61	1.2 D + 1.5 LL a + Serv..	Yes	Y		1	1.2	6	.866	7	-.5	9	1.5														
62	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	6	1			10	1.5														
63	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	6	.866	7	.5	10	1.5														
64	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	7	.866	6	.5	10	1.5														
65	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	7	1			10	1.5														
66	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	7	.866	6	-.5	10	1.5														
67	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	6	-.866	7	.5	10	1.5														
68	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	6	-1			10	1.5														
69	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	6	-.866	7	-.5	10	1.5														
70	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	7	-.866	6	-.5	10	1.5														
71	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	7	-1			10	1.5														
72	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	7	-.866	6	.5	10	1.5														
73	1.2 D + 1.5 LL b + Serv..	Yes	Y		1	1.2	6	.866	7	-.5	10	1.5														
74	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	6	1			11	1.5														
75	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	6	.866	7	.5	11	1.5														
76	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	7	.866	6	.5	11	1.5														
77	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	7	1			11	1.5														
78	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	7	.866	6	-.5	11	1.5														
79	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	6	-.866	7	.5	11	1.5														
80	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	6	-1			11	1.5														
81	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	6	-.866	7	-.5	11	1.5														

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
82	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	7	-.866	6	-.5	11	1.5														
83	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	7	-1			11	1.5														
84	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	7	-.866	6	.5	11	1.5														
85	1.2 D + 1.5 LL c + Serv..	Yes	Y		1	1.2	6	.866	7	-.5	11	1.5														
86	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	6	1			12	1.5														
87	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	6	.866	7	.5	12	1.5														
88	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	7	.866	6	.5	12	1.5														
89	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	7	1			12	1.5														
90	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	7	.866	6	-.5	12	1.5														
91	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	6	-.866	7	.5	12	1.5														
92	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	6	-1			12	1.5														
93	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	6	-.866	7	-.5	12	1.5														
94	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	7	-.866	6	-.5	12	1.5														
95	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	7	-1			12	1.5														
96	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	7	-.866	6	.5	12	1.5														
97	1.2 D + 1.5 LL d + Serv..	Yes	Y		1	1.2	6	.866	7	-.5	12	1.5														
98	1.2 D + 1.5 LL Maint (1)	Yes	Y		1	1.2					13	1.5														
99	1.2 D + 1.5 LL Maint (2)	Yes	Y		1	1.2					14	1.5														
100	1.2 D + 1.5 LL Maint (3)	Yes	Y		1	1.2					15	1.5														
101	1.2 D + 1.5 LL Maint (4)	Yes	Y		1	1.2					16	1.5														
102	1.2 D + 1.5 LL Maint (5)	Yes	Y		1	1.2					17	1.5														
103	1.2 D + 1.5 LL Maint (6)	Yes	Y		1	1.2					18	1.5														

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	3	Y	-.053	%40
2	3	Y	-.053	%75
3	3	Y	0	0
4	3	Y	0	0
5	3	Y	0	0
6	30	Y	-.064	%5
7	30	Y	-.064	%95
8	30	Y	0	0
9	30	Y	0	0
10	30	Y	0	0
11	4	Y	-.02	%30
12	4	Y	-.02	%80
13	4	Y	0	0
14	4	Y	0	0
15	4	Y	0	0
16	33	Y	-.051	%40
17	33	Y	-.075	%65
18	33	Y	0	0
19	33	Y	0	0
20	33	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	3	Z	-.09	%40
2	3	Z	-.09	%75
3	3	Z	0	0
4	3	Z	0	0
5	3	Z	0	0
6	30	Z	-.279	%5
7	30	Z	-.279	%95

Member Point Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
8	30	Z	0	0
9	30	Z	0	0
10	30	Z	0	0
11	4	Z	-.091	%30
12	4	Z	-.091	%80
13	4	Z	0	0
14	4	Z	0	0
15	4	Z	0	0
16	33	Z	-.077	%40
17	33	Z	-.045	%65
18	33	Z	0	0
19	33	Z	0	0
20	33	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	3	X	-.06	%40
2	3	X	-.06	%75
3	3	X	0	0
4	3	X	0	0
5	3	X	0	0
6	30	X	-.101	%5
7	30	X	-.101	%95
8	30	X	0	0
9	30	X	0	0
10	30	X	0	0
11	4	X	-.021	%30
12	4	X	-.021	%80
13	4	X	0	0
14	4	X	0	0
15	4	X	0	0
16	33	X	-.033	%40
17	33	X	-.032	%65
18	33	X	0	0
19	33	X	0	0
20	33	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	3	Z	-.034	%40
2	3	Z	-.034	%75
3	3	Z	0	0
4	3	Z	0	0
5	3	Z	0	0
6	30	Z	-.094	%5
7	30	Z	-.094	%95
8	30	Z	0	0
9	30	Z	0	0
10	30	Z	0	0
11	4	Z	-.035	%30
12	4	Z	-.035	%80
13	4	Z	0	0
14	4	Z	0	0
15	4	Z	0	0
16	33	Z	-.031	%40
17	33	Z	-.02	%65

Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
18	33	Z	0	0
19	33	Z	0	0
20	33	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	3	X	-.025	%40
2	3	X	-.025	%75
3	3	X	0	0
4	3	X	0	0
5	3	X	0	0
6	30	X	-.042	%5
7	30	X	-.042	%95
8	30	X	0	0
9	30	X	0	0
10	30	X	0	0
11	4	X	-.014	%30
12	4	X	-.014	%80
13	4	X	0	0
14	4	X	0	0
15	4	X	0	0
16	33	X	-.016	%40
17	33	X	-.015	%65
18	33	X	0	0
19	33	X	0	0
20	33	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	3	Z	-.009	%40
2	3	Z	-.009	%75
3	3	Z	0	0
4	3	Z	0	0
5	3	Z	0	0
6	30	Z	-.029	%5
7	30	Z	-.029	%95
8	30	Z	0	0
9	30	Z	0	0
10	30	Z	0	0
11	4	Z	-.009	%30
12	4	Z	-.009	%80
13	4	Z	0	0
14	4	Z	0	0
15	4	Z	0	0
16	33	Z	-.008	%40
17	33	Z	-.005	%65
18	33	Z	0	0
19	33	Z	0	0
20	33	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	3	X	-.006	%40
2	3	X	-.006	%75
3	3	X	0	0

Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
4	3	X	0	0
5	3	X	0	0
6	30	X	-.01	%5
7	30	X	-.01	%95
8	30	X	0	0
9	30	X	0	0
10	30	X	0	0
11	4	X	-.002	%30
12	4	X	-.002	%80
13	4	X	0	0
14	4	X	0	0
15	4	X	0	0
16	33	X	-.003	%40
17	33	X	-.003	%65
18	33	X	0	0
19	33	X	0	0
20	33	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	3	Y	-.085	%40
2	3	Y	-.085	%75
3	3	Y	0	0
4	3	Y	0	0
5	3	Y	0	0
6	30	Y	-.227	%5
7	30	Y	-.227	%95
8	30	Y	0	0
9	30	Y	0	0
10	30	Y	0	0
11	4	Y	-.074	%30
12	4	Y	-.074	%80
13	4	Y	0	0
14	4	Y	0	0
15	4	Y	0	0
16	33	Y	-.069	%40
17	33	Y	-.046	%65
18	33	Y	0	0
19	33	Y	0	0
20	33	Y	0	0

Member Point Loads (BLC 13 : Maint LL 1)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	2	Y	-.25	%5

Member Point Loads (BLC 14 : Maint LL 2)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	1	Y	-.25	%5

Member Point Loads (BLC 15 : Maint LL 3)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	10	Y	-.25	%50

Member Point Loads (BLC 16 : Maint LL 4)

Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]

Member Point Loads (BLC 16 : Maint LL 4) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	11	Y	-.25	%50

Member Point Loads (BLC 17 : Maint LL 5)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	18	Y	-.25	%50

Member Point Loads (BLC 18 : Maint LL 6)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	19	Y	-.25	%50

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	1	Z	-.006	-.006	0	0
2	2	Z	-.006	-.006	0	0
3	3	Z	-.006	-.006	0	0
4	4	Z	-.006	-.006	0	0
5	5	Z	-.006	-.006	0	0
6	6	Z	-.002	-.002	0	0
7	7	Z	-.002	-.002	0	0
8	8	Z	-.002	-.002	0	0
9	9	Z	-.002	-.002	0	0
10	10	Z	-.004	-.004	0	0
11	11	Z	-.004	-.004	0	0
12	12	Z	-.002	-.002	0	0
13	13	Z	-.002	-.002	0	0
14	14	Z	-.002	-.002	0	0
15	15	Z	-.002	-.002	0	0
16	16	Z	-.002	-.002	0	0
17	17	Z	-.002	-.002	0	0
18	18	Z	-.004	-.004	0	0
19	19	Z	-.004	-.004	0	0
20	20	Z	-.002	-.002	0	0
21	21	Z	-.002	-.002	0	0
22	22	Z	-.002	-.002	0	0
23	23	Z	-.002	-.002	0	0
24	24	Z	-.002	-.002	0	0
25	25	Z	-.002	-.002	0	0
26	30	Z	-.006	-.006	0	0
27	33	Z	-.006	-.006	0	0
28	M36	Z	-.008	-.008	0	0
29	M41	Z	-.011	-.011	0	0
30	M42	Z	-.011	-.011	0	0
31	M43	Z	-.011	-.011	0	0
32	M44	Z	-.011	-.011	0	0

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	1	X	-.006	-.006	0	0
2	2	X	-.006	-.006	0	0
3	3	X	-.006	-.006	0	0
4	4	X	-.006	-.006	0	0
5	5	X	-.006	-.006	0	0
6	6	X	-.002	-.002	0	0
7	7	X	-.002	-.002	0	0

Member Distributed Loads (BLC 3 : 90 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
8	8	X	-.002	-.002	0	0
9	9	X	-.002	-.002	0	0
10	10	X	-.004	-.004	0	0
11	11	X	-.004	-.004	0	0
12	12	X	-.002	-.002	0	0
13	13	X	-.002	-.002	0	0
14	14	X	-.002	-.002	0	0
15	15	X	-.002	-.002	0	0
16	16	X	-.002	-.002	0	0
17	17	X	-.002	-.002	0	0
18	18	X	-.004	-.004	0	0
19	19	X	-.004	-.004	0	0
20	20	X	-.002	-.002	0	0
21	21	X	-.002	-.002	0	0
22	22	X	-.002	-.002	0	0
23	23	X	-.002	-.002	0	0
24	24	X	-.002	-.002	0	0
25	25	X	-.002	-.002	0	0
26	30	X	-.006	-.006	0	0
27	33	X	-.006	-.006	0	0
28	M36	X	-.008	-.008	0	0
29	M41	X	-.011	-.011	0	0
30	M42	X	-.011	-.011	0	0
31	M43	X	-.011	-.011	0	0
32	M44	X	-.011	-.011	0	0

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	1	Z	-.002	-.002	0	0
2	2	Z	-.002	-.002	0	0
3	3	Z	-.002	-.002	0	0
4	4	Z	-.002	-.002	0	0
5	5	Z	-.002	-.002	0	0
6	6	Z	-.007	-.007	0	0
7	7	Z	-.007	-.007	0	0
8	8	Z	-.007	-.007	0	0
9	9	Z	-.007	-.007	0	0
10	10	Z	-.002	-.002	0	0
11	11	Z	-.002	-.002	0	0
12	12	Z	-.006	-.006	0	0
13	13	Z	-.006	-.006	0	0
14	14	Z	-.003	-.003	0	0
15	15	Z	-.003	-.003	0	0
16	16	Z	-.002	-.002	0	0
17	17	Z	-.002	-.002	0	0
18	18	Z	-.002	-.002	0	0
19	19	Z	-.002	-.002	0	0
20	20	Z	-.006	-.006	0	0
21	21	Z	-.006	-.006	0	0
22	22	Z	-.003	-.003	0	0
23	23	Z	-.003	-.003	0	0
24	24	Z	-.002	-.002	0	0
25	25	Z	-.002	-.002	0	0
26	30	Z	-.002	-.002	0	0
27	33	Z	-.002	-.002	0	0
28	M36	Z	-.003	-.003	0	0

Member Distributed Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
29	M41	Z	-.008	-.008	0	0
30	M42	Z	-.008	-.008	0	0
31	M43	Z	-.008	-.008	0	0
32	M44	Z	-.008	-.008	0	0

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	1	X	-.002	-.002	0	0
2	2	X	-.002	-.002	0	0
3	3	X	-.002	-.002	0	0
4	4	X	-.002	-.002	0	0
5	5	X	-.002	-.002	0	0
6	6	X	-.007	-.007	0	0
7	7	X	-.007	-.007	0	0
8	8	X	-.007	-.007	0	0
9	9	X	-.007	-.007	0	0
10	10	X	-.002	-.002	0	0
11	11	X	-.002	-.002	0	0
12	12	X	-.006	-.006	0	0
13	13	X	-.006	-.006	0	0
14	14	X	-.003	-.003	0	0
15	15	X	-.003	-.003	0	0
16	16	X	-.002	-.002	0	0
17	17	X	-.002	-.002	0	0
18	18	X	-.002	-.002	0	0
19	19	X	-.002	-.002	0	0
20	20	X	-.006	-.006	0	0
21	21	X	-.006	-.006	0	0
22	22	X	-.003	-.003	0	0
23	23	X	-.003	-.003	0	0
24	24	X	-.002	-.002	0	0
25	25	X	-.002	-.002	0	0
26	30	X	-.002	-.002	0	0
27	33	X	-.002	-.002	0	0
28	M36	X	-.003	-.003	0	0
29	M41	X	-.008	-.008	0	0
30	M42	X	-.008	-.008	0	0
31	M43	X	-.008	-.008	0	0
32	M44	X	-.008	-.008	0	0

Member Distributed Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	1	Z	-.0003	-.0003	0	0
2	2	Z	-.0003	-.0003	0	0
3	3	Z	-.0003	-.0003	0	0
4	4	Z	-.0003	-.0003	0	0
5	5	Z	-.0003	-.0003	0	0
6	6	Z	-.0002	-.0002	0	0
7	7	Z	-.0002	-.0002	0	0
8	8	Z	-.0002	-.0002	0	0
9	9	Z	-.0002	-.0002	0	0
10	10	Z	-.0002	-.0002	0	0
11	11	Z	-.0002	-.0002	0	0
12	12	Z	-.0002	-.0002	0	0
13	13	Z	-.0002	-.0002	0	0
14	14	Z	-.0001	-.0001	0	0

Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
15	15	Z	-.0001	-.0001	0	0
16	16	Z	-.0001	-.0001	0	0
17	17	Z	-.0001	-.0001	0	0
18	18	Z	-.0002	-.0002	0	0
19	19	Z	-.0002	-.0002	0	0
20	20	Z	-.0002	-.0002	0	0
21	21	Z	-.0002	-.0002	0	0
22	22	Z	-.0001	-.0001	0	0
23	23	Z	-.0001	-.0001	0	0
24	24	Z	-.0001	-.0001	0	0
25	25	Z	-.0001	-.0001	0	0
26	30	Z	-.0003	-.0003	0	0
27	33	Z	-.0003	-.0003	0	0
28	M36	Z	-.0004	-.0004	0	0
29	M41	Z	-.001	-.001	0	0
30	M42	Z	-.001	-.001	0	0
31	M43	Z	-.001	-.001	0	0
32	M44	Z	-.001	-.001	0	0

Member Distributed Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	1	X	-.0003	-.0003	0	0
2	2	X	-.0003	-.0003	0	0
3	3	X	-.0003	-.0003	0	0
4	4	X	-.0003	-.0003	0	0
5	5	X	-.0003	-.0003	0	0
6	6	X	-.0002	-.0002	0	0
7	7	X	-.0002	-.0002	0	0
8	8	X	-.0002	-.0002	0	0
9	9	X	-.0002	-.0002	0	0
10	10	X	-.0002	-.0002	0	0
11	11	X	-.0002	-.0002	0	0
12	12	X	-.0002	-.0002	0	0
13	13	X	-.0002	-.0002	0	0
14	14	X	-.0001	-.0001	0	0
15	15	X	-.0001	-.0001	0	0
16	16	X	-.0001	-.0001	0	0
17	17	X	-.0001	-.0001	0	0
18	18	X	-.0002	-.0002	0	0
19	19	X	-.0002	-.0002	0	0
20	20	X	-.0002	-.0002	0	0
21	21	X	-.0002	-.0002	0	0
22	22	X	-.0001	-.0001	0	0
23	23	X	-.0001	-.0001	0	0
24	24	X	-.0001	-.0001	0	0
25	25	X	-.0001	-.0001	0	0
26	30	X	-.0003	-.0003	0	0
27	33	X	-.0003	-.0003	0	0
28	M36	X	-.0004	-.0004	0	0
29	M41	X	-.001	-.001	0	0
30	M42	X	-.001	-.001	0	0
31	M43	X	-.001	-.001	0	0
32	M44	X	-.001	-.001	0	0

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]

Member Distributed Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	1	Y	-.008	-.008	0	0
2	2	Y	-.008	-.008	0	0
3	3	Y	-.008	-.008	0	0
4	4	Y	-.008	-.008	0	0
5	5	Y	-.008	-.008	0	0
6	6	Y	-.011	-.011	0	0
7	7	Y	-.011	-.011	0	0
8	8	Y	-.011	-.011	0	0
9	9	Y	-.011	-.011	0	0
10	10	Y	-.007	-.007	0	0
11	11	Y	-.007	-.007	0	0
12	12	Y	-.011	-.011	0	0
13	13	Y	-.011	-.011	0	0
14	14	Y	-.005	-.005	0	0
15	15	Y	-.005	-.005	0	0
16	16	Y	-.005	-.005	0	0
17	17	Y	-.005	-.005	0	0
18	18	Y	-.007	-.007	0	0
19	19	Y	-.007	-.007	0	0
20	20	Y	-.011	-.011	0	0
21	21	Y	-.011	-.011	0	0
22	22	Y	-.005	-.005	0	0
23	23	Y	-.005	-.005	0	0
24	24	Y	-.005	-.005	0	0
25	25	Y	-.005	-.005	0	0
26	30	Y	-.008	-.008	0	0
27	33	Y	-.008	-.008	0	0
28	M36	Y	-.01	-.01	0	0
29	M41	Y	-.011	-.011	0	0
30	M42	Y	-.011	-.011	0	0
31	M43	Y	-.011	-.011	0	0
32	M44	Y	-.011	-.011	0	0

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

Joint Loads and Enforced Displacements (BLC 9 : Live Load a)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	15	L	Y	-.5

Joint Loads and Enforced Displacements (BLC 10 : Live Load b)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	45	L	Y	-.5

Joint Loads and Enforced Displacements (BLC 11 : Live Load c)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	51	L	Y	-.5

Joint Loads and Enforced Displacements (BLC 12 : Live Load d)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	14	L	Y	-.5

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	12	max	.566	6	.651	41	1.257	2	0	103	0	103	0	103
2		min	-.673	24	-.1	11	-1.824	20	0	1	0	1	0	1
3	18	max	.116	17	.059	41	.91	23	0	103	0	103	0	103
4		min	-.112	23	.015	9	-.913	17	0	1	0	1	0	1
5	24	max	.526	16	.629	40	.551	17	0	103	0	103	0	103
6		min	-.493	10	-.109	10	-.422	11	0	1	0	1	0	1
7	N67	max	.808	5	.068	44	1.558	3	0	103	0	103	0	103
8		min	-.994	23	.01	4	-2.359	21	0	1	0	1	0	1
9	N68	max	1.28	93	1.73	47	2.286	47	0	103	0	103	0	103
10		min	-.992	51	-.078	4	-.118	5	0	1	0	1	0	1
11	Totals:	max	1.913	5	2.86	41	2.89	14						
12		min	-1.913	23	.716	11	-2.89	8						

Envelope AISC 13th(360-05): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*M...	.....	Eqn
1	30	PIPE_2.0	.586	2.75	20	.086	6.167		50	14.916	32.13	1.872	1.872	3	H1-1b
2	2	PIPE_2.0	.530	7.766	16	.145	2.844		14	8.922	32.13	1.872	1.872	...	H1-1b
3	18	HSS1.660X0....	.313	0	16	.122	2.896		29	15.959	19.688	.801	.801	...	H1-1b
4	10	HSS1.660X0....	.304	0	14	.119	2.896		41	15.959	19.688	.801	.801	...	H1-1b
5	M36	PIPE_2.5	.297	8.641	22	.179	8.641		22	20.573	50.715	3.596	3.596	...	H1-1b
6	3	PIPE_2.0	.293	3.75	17	.211	5.167		22	14.916	32.13	1.872	1.872	...	H1-1b
7	11	HSS1.660X0....	.282	1.448	101	.114	2.896		28	15.959	19.688	.801	.801	...	H1-1b
8	4	PIPE_2.0	.262	6.167	50	.093	5.25		51	14.916	32.13	1.872	1.872	...	H1-1b
9	21	PL 1/2X3 11/16	.244	0	29	.089	0	y	39	53.221	59.738	.622	4.589	...	H1-1b
10	1	PIPE_2.0	.233	7	16	.169	7.766		22	8.922	32.13	1.872	1.872	...	H1-1b
11	19	HSS1.660X0....	.224	2.836	29	.112	2.896		40	15.959	19.688	.801	.801	...	H1-1b
12	12	PL 1/2X3 11/16	.214	0	40	.104	0	y	42	53.221	59.738	.622	4.589	...	H1-1b
13	20	PL 1/2X3 11/16	.214	0	41	.107	.563	y	29	53.221	59.738	.622	4.589	...	H1-1b
14	13	PL 1/2X3 11/16	.205	0	41	.104	0	y	28	53.221	59.738	.622	4.589	...	H1-1b
15	33	PIPE_2.0	.180	6.167	23	.099	6.167		15	14.916	32.13	1.872	1.872	...	H1-1b
16	M42	L2.5x2.5x3	.165	2.111	45	.008	0	y	18	15.814	29.192	.873	1.717	...	H2-1
17	M41	L2.5x2.5x3	.154	2.111	45	.008	4.311	y	31	15.814	29.192	.873	1.727	...	H2-1
18	6	PL 1/2X3 11/16	.151	.25	14	.118	0	y	15	58.394	59.738	.622	4.589	...	H1-1b
19	7	PL 1/2X3 11/16	.149	.25	42	.165	.25	y	54	58.394	59.738	.622	4.589	...	H1-1b
20	9	PL 1/2X3 11/16	.145	.25	89	.165	0	y	29	58.394	59.738	.622	4.589	...	H1-1b
21	8	PL 1/2X3 11/16	.126	.25	16	.144	.25	y	28	58.394	59.738	.622	4.589	...	H1-1b
22	M44	L2.5x2.5x3	.124	0	3	.014	0	z	29	15.531	29.192	.873	1.972	...	H2-1
23	5	PIPE_2.0	.113	4.834	23	.006	0		47	10.523	32.13	1.872	1.872	...	H1-1b
24	M43	L2.5x2.5x3	.107	0	32	.011	0	y	30	15.531	29.192	.873	1.782	...	H2-1
25	25	5/8" SR	.093	0	29	.013	0		18	1.495	9.94	.104	.104	...	H1-...
26	16	5/8" SR	.075	2.804	40	.013	0		15	1.495	9.94	.104	.104	3	H1-...
27	15	5/8" SR	.042	2.438	41	.016	2.438		19	1.978	9.94	.104	.104	...	H1-...
28	22	5/8" SR	.041	2.438	29	.027	0		16	1.978	9.94	.104	.104	...	H1-...
29	24	5/8" SR	.024	2.804	11	.026	0		22	1.495	9.94	.104	.104	...	H1-...
30	14	5/8" SR	.024	2.438	9	.036	0		14	1.978	9.94	.104	.104	...	H1-...
31	23	5/8" SR	.011	2.438	10	.013	2.438		18	1.978	9.94	.104	.104	...	H1-...
32	17	5/8" SR	.010	0	10	.023	2.804		20	1.495	9.94	.104	.104	...	H1-...

APPENDIX B

(Modification Drawings)

MI CHECKLIST

REQUIRED	REPORT ITEM	BRIEF DESCRIPTION
		PRE-CONSTRUCTION
X	MI CHECKLIST DRAWING	THIS CHECKLIST SHALL BE INCLUDED IN THE MI REPORT.
N/A	EOR APPROVED SHOP DRAWINGS	FABRICATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW. THE CONTRACTOR SHALL PROVIDE APPROVED SHOP DRAWINGS TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	ASSEMBLY DRAWINGS	ONCE THE PRE-MODIFICATION MAPPING IS COMPLETE, PRIOR TO FABRICATION, THE CONTRACTOR SHALL PROVIDE DETAILED ASSEMBLY DRAWINGS. THESE ARE TO INCLUDE, BUT ARE NOT LIMITED TO, A VISUAL LAYOUT OF NEW REINFORCEMENT, EXISTING REINFORCEMENT CONFIGURATION, PORTHOLES, MOUNTS, STEP PEGS, SAFETY CLIMBS AND ANY OTHER MISCELLANEOUS ITEMS WHICH MAY AFFECT SUCCESSFUL INSTALLATION OF MODIFICATIONS ON THE TOWER. THESE DRAWINGS SHALL BE SUBMITTED TO THE EOR FOR APPROVAL. APPROVED ASSEMBLY DRAWINGS SHALL BE SUBMITTED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	FABRICATION INSPECTION	A LETTER FROM THE FABRICATOR, STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	FABRICATOR CERTIFIED WELD INSPECTION	A VISUAL OBSERVATION BY CWI OF A PORTION OF WELDING ON THE PROPOSED STRUCTURAL MEMBERS IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL TEST REPORT (MTR)	MILL CERTIFICATION SHALL BE PROVIDED FOR ALL STEEL AS SPECIFIED IN THE MODIFICATION DRAWINGS AND THIS DOCUMENTATION SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR NDE INSPECTION	CRITICAL SHOP WELDS THAT REQUIRE TESTING ARE NOTED ON THESE CONTRACT DRAWINGS. A CERTIFIED WELD INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	THE MATERIAL SHIPPING LIST SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
		CONSTRUCTION (PERFORMED BY CONTRACTOR)
X	CONSTRUCTION INSPECTIONS	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE CONTRACT DRAWINGS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	CONTRACTOR'S CERTIFIED WELD INSPECTION	A CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST AS NECESSARY ALL FIELD WELDS. A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	ON SITE COLD GALVANIZING VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED AS SPECIFIED IN THE MODIFICATION DRAWINGS.
X	GC AS-BUILT DOCUMENTS	THE GENERAL CONTRACTOR SHALL SUBMIT A COPY OF THE CONTRACT DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD DUE TO FIELD CONDITIONS.
		POST-CONSTRUCTION
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTORS REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.
X	PHOTOGRAPHS	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI WHICH DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
ADDITIONAL TESTING AND INSPECTIONS:		
NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MI REPORT AND N/A DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT		

MODIFICATION INSPECTION NOTES:

GENERAL

THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT B+T GROUP.

MI INSPECTOR

THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ONSITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS

THE MI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT.

GENERAL CONTRACTOR

THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE MI INSPECTIONS
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST.

RECOMMENDATIONS

THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

CANCELLATION OR DELAYS IN SCHEDULED MI

IF THE GC AND MI INSPECTOR AGREE TO A DATE ON WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, CARRIER SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF CARRIER CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

CORRECTION OF FAILING MI'S

IF THE MODIFICATION INSPECTOR FAILS THE MI ("FAILED MI"), THE GC SHALL WORK WITH CARRIER TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
- OR, WITH CARRIER'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION
- THE ADDITIONAL COST INCURRED IN THE SECOND SUPERVISION PROCESS WOULD BE BORNE BY THE GENERAL CONTRACTOR.

MI VERIFICATION INSPECTIONS

CARRIER RESERVES THE RIGHT TO CONDUCT A MI VERIFICATION INSPECTION TO VERIFY THE ACCURACY AND COMPLETENESS OF PREVIOUSLY COMPLETED MI INSPECTION(S) ON TOWER MODIFICATION PROJECTS.

ALL VERIFICATION INSPECTIONS SHALL BE HELD TO THE SAME SPECIFICATIONS AND REQUIREMENTS IN THE CONTRACT DOCUMENTS.

VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASSING MI" OR "PASS AS NOTED MI" REPORT FOR THE ORIGINAL PROJECT.

REQUIRED PHOTOS

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
  - RAW MATERIALS
  - PHOTOS OF ALL CRITICAL DETAILS
  - FOUNDATION MODIFICATIONS
  - WELD PREPARATION
  - BOLT INSTALLATION AND TORQUE
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
  - PHOTOS OF MODIFIED SECTIONS INDIVIDUALLY INDICATING ELEVATION
  - FINAL INFIELD CONDITION

PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

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T-Mobile

CENTERLINE COMMUNICATIONS

LONG RIDGE
FIRE HOUSE
366 OLD LONG RIDGE RD
STAMFORD, CT 06903
FAIRFIELD
EXISTING SECTOR
AT 118'-00"

PROJECT NO:	135928.006.01
CHECKED BY:	LHN

ISSUED FOR:

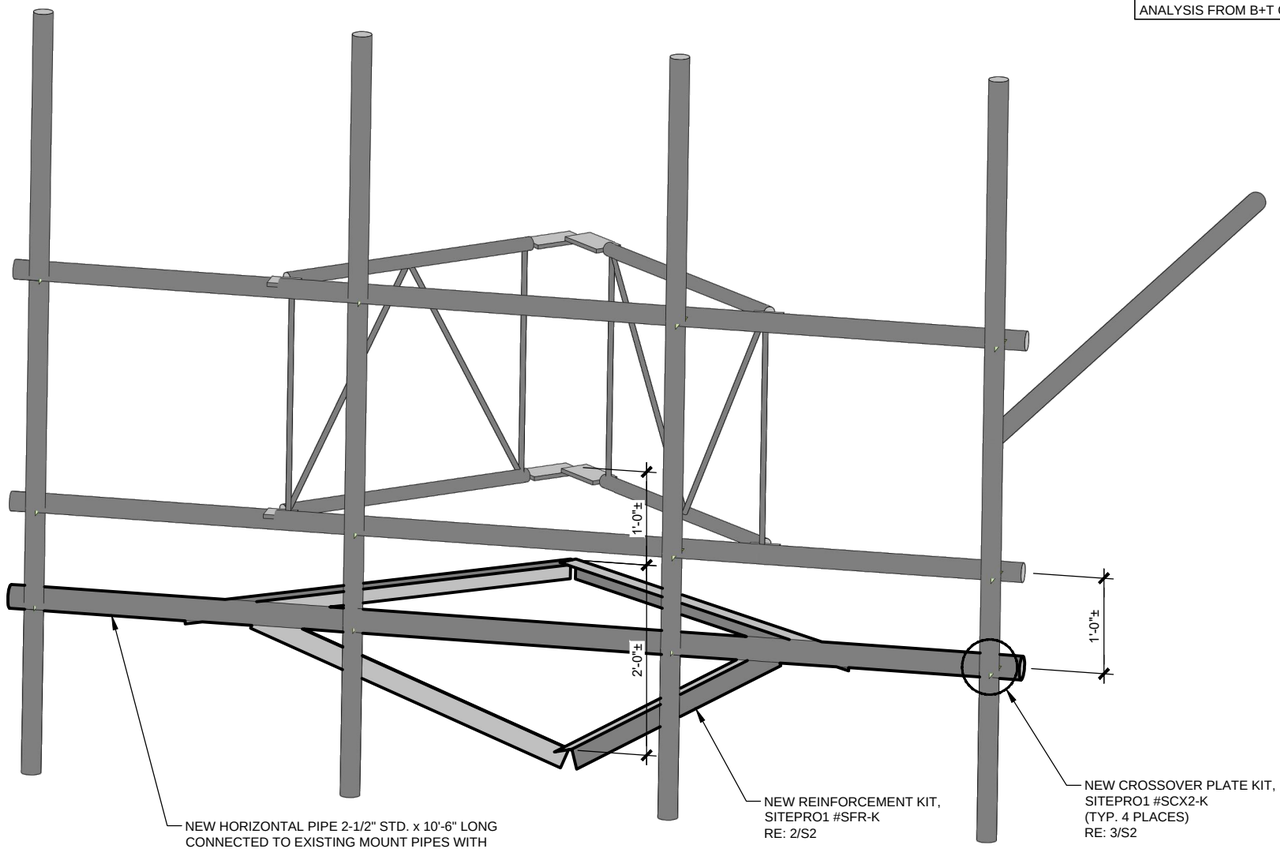
REV	DATE	DRWN	DESCRIPTION
0	07/09/19	PMS	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

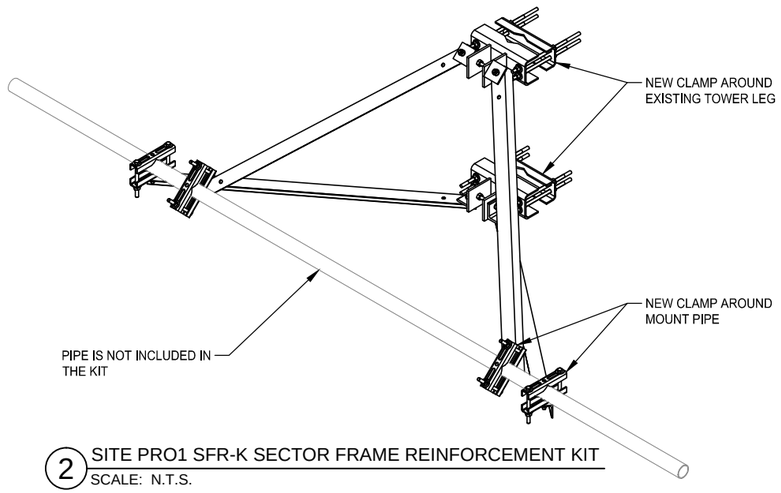
STATE OF CONNECTICUT
LEONARD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
7-9-19

SHEET NUMBER:	REVISION:
S1	0

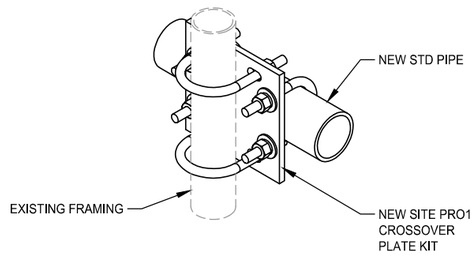
MODIFICATIONS BASED ON THE FAILING STRUCTURAL ANALYSIS FROM B+T GROUP DATED 06/17/19 AND ACCOMPANIED BY ANALYSIS FROM B+T GROUP DATED 07/09/19



1 MODIFIED SECTOR FRAME (TYP. ALL SECTORS)
SCALE: N.T.S.



2 SITE PRO1 SFR-K SECTOR FRAME REINFORCEMENT KIT
SCALE: N.T.S.



3 SITE PRO1 SCX2-K CROSSOVER PLATE KIT
SCALE: N.T.S.

GENERAL NOTES

1.1 CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO THE MOBILIZING ON THE SITE FOR INSTALLATION OF THE MOUNT MODIFICATION AND SHALL NOTIFY THE ENGINEER OF RECORD IF THE FIELD CONDITIONS VARY FROM WHAT IS SHOWN ON THE DRAWINGS. IN ADDITION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD PRIOR TO MOBILIZING AT THE SITE IF THE MOUNT REINFORCEMENT SHOWN WILL NEED TO BE REVISED TO SATISFY FIELD CONDITIONS

1.2 CONTRACTOR SHALL RELOCATE NON-ANTENNA EQUIPMENT ALONG THE EXISTING PIPE MOUNT THAT IT IS MOUNTED TO, TO ALLOW FOR INSTALLATION OF MOUNT REINFORCEMENT. ENGINEER OF RECORD WILL BE NOTIFIED IF NON-ANTENNA EQUIPMENT NEEDS TO BE RELOCATED TO ANY OTHER EXISTING MEMBERS TO ALLOW FOR INSTALLATION OF MOUNT MODIFICATION.

1.3 MODIFICATION SHALL BE COMPLETED PRIOR TO ADDING THE PROPOSED APPURTENANCES.

1.4 ALL WORK SHALL COMPLY WITH THE TIA-222-G STANDARD, TIA-1019-A STANDARD, AS WELL AS ANY OTHER GOVERNING BUILDING CODES.

1.5 FIELD WORK WILL BE DONE AROUND EXISTING COAXIAL CABLE AND EQUIPMENT. ALL WORK SHALL BE DONE IN A MANNER SUCH THAT NO DAMAGE OCCURS TO THE EXISTING EQUIPMENT OR THE STRUCTURE.

1.6 A MINIMUM OF TWO COATS OF ZINGA COLD GALVANIZING COMPOUND (OR APPROVED EQUIVALENT) SHALL BE APPLIED TO ANY FIELD CUTS OR FIELD DRILLED HOLES.

1.7 THE USE OF A GAS TORCH OR WELDER WILL NOT BE PERMITTED ON THE TOWER WITHOUT THE CONSENT OF THE OWNER.

1.8 ALL FIELD CONNECTIONS SHALL BE MADE WITH A325N BOLTS, U.N.O.

1.9 IN LIEU OF TEMPORARY BRACING, CONTRACTOR MAY HAVE A STABILITY ANALYSIS PERFORMED BY AN ENGINEER LICENSED IN THE STATE THE TOWER IS LOCATED. THE ANALYSIS SHALL USE A MINIMUM WIND SPEED OF 45 mph (3-SEC) PER TIA-1019.

1.10 ALL CUTTING AND WELDING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH CCUSA POLICY "CUTTING AND WELDING PLAN" (DOC #ENG-PLN-10015) ON AN ONGOING BASIS THROUGHOUT THE ENTIRE LIFE OF THE PROJECT.

1.11 DIMENSIONS WITH "±" MUST BE WITHIN 3" OF THE INDICATED DIMENSION.

FABRICATION

2.1 ALL WORK SHALL BE DONE IN ACCORDANCE WITH A.I.S.C. "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."

2.2 STRUCTURAL STEEL SHALL MEET THE FOLLOWING SPECIFICATIONS:

	YIELD	ASTM SPECS
STEEL PIPE, U.N.O.	35ksi	A53 GR.B

2.3 ALL NEW MATERIAL INCLUDING STRUCTURAL STEEL AND FASTENERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 AND A153.

2.4 WELDING SHALL MEET ANSI/AWS D1.1 STRUCTURAL WELDING CODE (LATEST REVISION). ELECTRODES SHALL BE E80 SERIES.

2.5 CONTRACTOR SHALL PROVIDE SHOP FABRICATION DRAWINGS TO B+T GROUP 5 DAYS PRIOR TO FABRICATION.

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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

STATE OF CONNECTICUT · CHAD TUTTLE · No. 23924 · LICENSED PROFESSIONAL ENGINEER
7-9-19

SHEET NUMBER:	REVISION:
S2	0

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTFF056A

Long Ridge Fire House
366 Old Long Ridge Road
Stamford, Connecticut 06903

December 14, 2020

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**57.74%**

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

December 14, 2020

T-Mobile
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CTFF056A - Long Ridge Fire House

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **366 Old Long Ridge Road** in **Stamford, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile 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 ($\mu W/cm^2$). 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.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 366 Old Long Ridge Road in Stamford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

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

5) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

8) 1 NR channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

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

10) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

11) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

12) The antenna mounting height centerline of the proposed antennas is 118 feet above ground level (AGL).

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

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd
Height (AGL):	118 feet	Height (AGL):	118 feet	Height (AGL):	118 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	38,477.89	ERP (W):	38,477.89	ERP (W):	38,477.89
Antenna A1 MPE %:	**9.93%**	Antenna B1 MPE %:	**9.93%**	Antenna C1 MPE %:	**9.93%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 16.45 dBd
Height (AGL):	118 feet	Height (AGL):	118 feet	Height (AGL):	118 feet
Channel Count:	9	Channel Count:	9	Channel Count:	9
Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts
ERP (W):	11,010.27	ERP (W):	11,010.27	ERP (W):	11,010.27
Antenna A2 MPE %:	**4.32%**	Antenna B2 MPE %:	**4.32%**	Antenna C2 MPE %:	**4.32%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	118 feet	Height (AGL):	118 feet	Height (AGL):	118 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A3 MPE %:	**2.25%**	Antenna B3 MPE %:	**2.25%**	Antenna C3 MPE %:	**2.25%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	16.51%
Nextel	0.45%
AT&T	2.55%
Sprint	3.57%
City of Stamford	2.39%
Various Others	11.97%
Verizon	20.3%
Site Total MPE % :	57.74%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	16.51%
T-Mobile Sector B Total:	16.51%
T-Mobile Sector C Total:	16.51%
Site Total MPE % :	57.74%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE	1	19238.94	118.0	49.67	2500 MHz LTE	1000	4.97%
T-Mobile 2500 MHz NR	1	19238.94	118.0	49.67	2500 MHz NR	1000	4.97%
T-Mobile 600 MHz LTE	2	591.73	118.0	3.06	600 MHz LTE	400	0.76%
T-Mobile 600 MHz NR	1	1577.94	118.0	4.07	600 MHz NR	400	1.02%
T-Mobile 700 MHz LTE	2	695.22	118.0	3.59	700 MHz LTE	467	0.77%
T-Mobile 1900 MHz LTE	2	2104.51	118.0	10.87	1900 MHz LTE	1000	1.09%
T-Mobile 2100 MHz UMTS	2	1324.71	118.0	6.84	2100 MHz UMTS	1000	0.68%
T-Mobile 1900 MHz LTE	2	2056.61	118.0	10.62	1900 MHz LTE	1000	1.06%
T-Mobile 2100 MHz LTE	2	2307.55	118.0	11.92	2100 MHz LTE	1000	1.19%
						Total:	**16.51%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

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 T-Mobile 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:

T-Mobile Sector	Power Density Value (%)
Sector A:	16.51%
Sector B:	16.51%
Sector C:	16.51%
T-Mobile Maximum MPE % (Sector A):	16.51%
Site Total:	57.74%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **57.74%** 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.

Exhibit G

Mailing Receipts/Proof of Notice

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1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

UPS Access Point™
TIENDA ECUADOR
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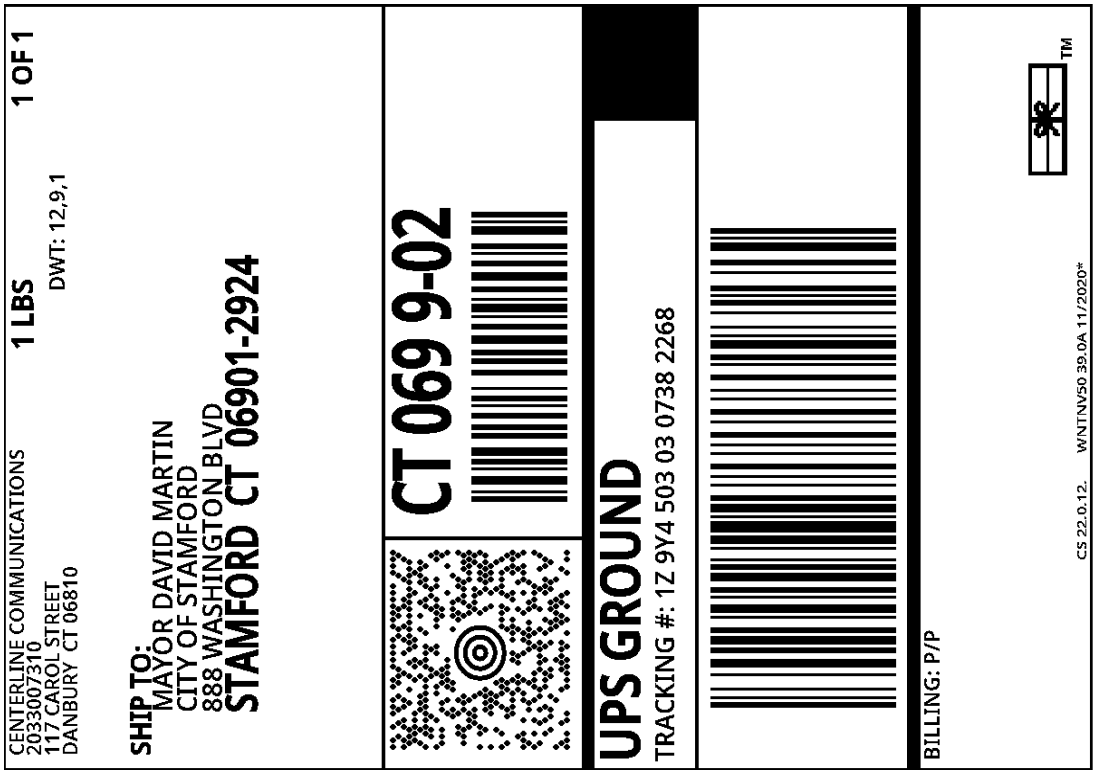
DANBURY ,CT 06810

UPS Access Point™
THE UPS STORE
42 LAKE AVENUE EXT
DANBURY ,CT 06811

UPS Access Point™
CVS STORE # 1109
7 DURANT AVE
BETHEL ,CT 06801

FOLD HERE



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