January 14, 2019

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

Re:	**Notice of Exempt Modification – Antenna Swap**
Property Address:	**57 COOK DRIVE UNCASVILLE (Montville), CT 06382**
Applicant:	**AT&T Mobility, LLC**

Dear Ms. Bachman:

On behalf of AT&T, please accept this **re- application** (due to an incomplete structural analysis) as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16- 50j-72(b) (2).

AT&T currently maintains a wireless telecommunications facility consisting of nine (9) wireless telecommunication antennas at an antenna center line height of 180-feet on an existing 193 foot –guyed tower, owned by WIRELESS SOLUTIONS, LLC & ROBERT KINGSBOROUGH. AT&T now intends to · INSTALL (5) NEW RRU'S AT GRADE, INSTALL (6) NEW RRU'S, (2) PER SECTOR, INSTALL (6) NEW PANEL ANTENNAS, (2) PER SECTOR, REMOVE (6) EXISTING PANEL ANTENNAS, (2) PER SECTOR, REMOVE (6) DIPLEXERS, (2) PER SECTOR, REMOVE (3) TMA's, (1) PER SECTOR, INSTALL (3) LOW BAND COMBINERS, (1) PER SECTOR, INSTALL (3) LOW BAND COMBINERS AT GRADE, INSTALL (1 NEW DC-6 SURGE SUPPRESSION DOME, INSTALL (1) NEW 18-PAIR FIBER TRUNK, INSTALL (2) NEW 6/C DC CABLES, and SWITCH BB TO (2) 5216 AND ADD 2ND XMU + IDLe

This facility was approved by the Montville Planning and Zoning commission on January 14,1997 for the site plan submitted by Wireless Solutions LLC and Robert W. Kingsborough to install a 180-foot radio and antenna tower for wireless communication purposes at the property located at 57 Cook Drive, Montville, Ct. Shown on Assessors Map 98, lot 2. SEE ATTACHED.

The following is a list of subsequent decisions by the Connecticut Siting Council:

EM-AT&T-086-181029 - AT&T notice of intent to modify an existing telecommunications facility located at 57 Cook Drive, Uncasville **(Montville)**, Connecticut. Incomplete Letter Decision - Denial

EM-CING-086-080618 - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 57 Cook Road, Montville, Connecticut. **Withdrawn**.

EM-CING-086-080922 - New Cingular Wireless PCS, LLC notice of intent to modify an

existing telecommunications facility located at 57 Cook Drive, **Montville**, Connecticut.

EM-CING-086-130130 - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 57 Cook Drive, Uncasville (**Montville**), Connecticut.

EM-AT&T-086-140210- American Telephone & Telegraph (AT&T) notice of intent to modify an existing telecommunications facility located at 57 Cook Drive, Uncasville (**Montville**), Connecticut. Decision. Extension Request and CSC Decision. Extension Request and CSC Decision. Extension Request and CSC Decision..

EM-CING-086-140909 – New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 57 Cook Drive, **Montville**, Connecticut. Decision. Extension Request and CSC Decision.

Please accept this letter pursuant to Regulation of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-5I0j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent Ronald K. McDaniel, Mayor, Montville Town Hall, 2nd Floor 310 Norwich New London Tpke. Uncasville, CT 06382 Lucy Beit, Assessor Montville Town Hall, Ground Floor, Room 4 310 Norwich-New London Tpke. Uncasville, CT 06382 and the property owner and tower owner, WIRELESS SOLUTIONS, LLC & ROBERT KINGSBOROUGH P.O. BOX 374 UNCASVILLE, CT 06382

The planned modifications to AT&T's 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 tower. AT&T's replacement antennas will be installed at the 180-foot level of the 193-foot guyed tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require and extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the RF Emissions Compliance Report, included in Tab 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included in Tab 3).

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitutes an exempt modification under

R.C.S.A. §16-50j-72(b) (2).

Sincerely,

David Barbagallo

CC w/enclosures:

Honorable Ronald K. McDaniel, Mayor, Montville Town Hall
City Assessor, Lucy Beit, Montville Town Hall
Property Owner and Tower Owner, WIRELESS SOLUTIONS, LLC & ROBERT KINGSBOROUGH
.

TEL: 848-8549
FAX: 848-2354

TOWN OF MONTVILLE
PLANNING & ZONING COMMISSION

310 NORWICH-NEW LONDON TPKE.
UNCASVILLE, CONNECTICUT 06382-2599

LEGAL NOTICE

The Montville Planning and Zoning Commission at its meeting held on January 14, 1997, took the following action:

APPROVED the site plan submitted by **Wireless Solutions, LLC and Robert W. Kingsborough** to install a 180' radio tower and antenna for wireless communication purposes on property located at 57 Cook Drive, Montville, Ct. Shown on Assessor's Map 98, Lot 2.

APPROVED modifications to approved subdivision plans of **Lochdale Estates Subdivision** to eliminate the requirement that dry sewers be installed in Phase II and Phase III.

The application of **Christy's Market, Inc./Jack D'Elia** was withdrawn.

Maps and documentation concerning the above applications are on file in the office of the Town Planner, Town Hall Annex, Montville, Ct.

Dated at Montville, Ct. this 15th day of January, 1997.

MONTVILLE PLANNING AND ZONING COMMISSION
Gregory Majewski, Chairman

PUBLISH IN THE NEW LONDON DAY January 17, 1997.

PLEASE REFERENCE PURCHASE ORDER 6100 F 1 ON INVOICE.

PROJECT NOTES

1. SITE INFORMATION OBTAINED FROM THE FOLLOWING:
   A. PLAN ENTITLED "UNCASVILLE" PREPARED BY DEWBERRY ENGINEERS INC. OF PARSIPPANY, NJ LAST REVISED 09/04/2014.
   B. LIMITED FIELD OBSERVATION BY MASER CONSULTING ON 05/22/2018.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC/GOVERNING AUTHORITIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
4. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE AS A RESULT OF CONSTRUCTION OF THIS FACILITY AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
6. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND CONSTRUCTION DRAWINGS.
8. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS MUST BE VERIFIED. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
9. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY POTENTIALLY DANGEROUS EXPOSURE LEVELS.
10. THE PROPOSED FACILITY WILL CAUSE NO INCREASE IN STORM WATER RUNOFF, THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
11. NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY AS TO CAUSE A NUISANCE.
12. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS IS REQUIRED).
13. THE FACILITY DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
14. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTHS WITH RF ENGINEERING PRIOR TO INSTALLATION.
15. THE TOWER, MOUNTS AND ANTENNAS SHALL BE DESIGNED TO MEET EIA/TIA-222-G AS PER IBC REQUIREMENTS.
16. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
17. CONTRACTOR MUST FIELD LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
18. CONSTRUCTION SHALL NOT COMMENCE UNTIL COMPLETION OF A PASSING STRUCTURAL ANALYSIS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. THE STRUCTURAL ANALYSIS IS TO BE PERFORMED BY OTHERS.
19. CONTRACTOR SHALL CONTACT STATE SPECIFIC ONE CALL SYSTEM THREE WORKING DAYS PRIOR TO ANY EARTH MOVING ACTIVITIES.

at&t

SITE NAME: MONTVILLE EAST
FA NUMBER: 10035116
SITE NUMBER: CTL02171
3C - MRCTB030895
4C - MRCTB031936
5C - MRCTB031457
6C - MRCTB031324
57 COOK DRIVE
UNCASVILLE, CT 06382
NEW LONDON COUNTY

VICINITY MAP

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND 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 THE LATEST EDITIONS OF THE FOLLOWING CODES.

1. 2018 CONNECTICUT STATE BUILDING CODE, INCORPORATING THE 2015 IBC
2. 2017 NATIONAL ELECTRICAL CODE - NFPA 70
3. 2017 NFPA 101
4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION 360-10
5. AMERICAN CONCRETE INSTITUTE
6. TIA-222-G
7. TIA 607 FOR GROUNDING
8. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81 IEEE C2 LATEST EDITION
9. TELCORDIA GR-1275
10. ANSI T1.311
11. PROPOSED USE: UNMANNED TELECOM FACILITY
12. HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.
13. CONSTRUCTION TYPE: IIB
14. USE GROUP: U

PROJECT INFORMATION

SITE INFORMATION

LATITUDE:	41.4749919° N
LONGITUDE:	72.1050269° W
JURISDICTION:	NEW LONDON COUNTY

APPLICANT/LESSEE

COMPANY:	NEW CINGULAR WIRELESS PCS, LLC
ADDRESS:	550 COCHITUATE ROAD
CITY, STATE, ZIP:	FRAMINGHAM, MA 01701

LANDLORD

COMPANY:	WIRELESS SOLUTIONS, LLC & ROBERT KINGSBOROUGH
ADDRESS:	P.O. BOX 374
CITY, STATE, ZIP:	UNCASVILLE, CT 06382

CLIENT REPRESENTATIVE

COMPANY:	SMARTLINK, LLC
ADDRESS:	85 RANGEWAY ROAD, BUILDING 3, STE. 102
CITY, STATE, ZIP:	NORTH BILLERICA, MA 01862
CONTACT:	TODD OLIVER
E-MAIL:	TODD.OLIVER@SMARTLINKLLC.COM

SITE ACQUISITION

COMPANY:	SMARTLINK, LLC
ADDRESS:	85 RANGEWAY ROAD, BUILDING 3, STE. 102
CITY, STATE, ZIP:	NORTH BILLERICA, MA 01862
CONTACT:	SHARON KEEFE
E-MAIL:	SHARON.KEEFE@SMARTLINKLLC.COM

CONSTRUCTION MANAGER

COMPANY:	SMARTLINK, LLC
ADDRESS:	85 RANGEWAY ROAD, BUILDING 3, STE. 102
CITY, STATE, ZIP:	NORTH BILLERICA, MA 01862
CONTACT:	MARK DONNELLY
E-MAIL:	MARK.DONNELLY@SMARTLINKLLC.COM

ENGINEER

COMPANY:	MASER CONSULTING P.A.
ADDRESS:	331 NEWMAN SPRINGS ROAD, SUITE 203
CITY, STATE, ZIP:	RED BANK, NJ 07701
CONTACT:	ROBERT ANDREWS
PHONE:	(856) 797-0412
E-MAIL:	RANDREWS@MASERCONSULTING.COM

PROJECT DESCRIPTION/ SCOPE OF WORK

- INSTALL (5) NEW RRU'S AT GRADE
- INSTALL (6) NEW RRU'S, (2) PER SECTOR
- INSTALL (6) NEW PANEL ANTENNAS, (2) PER SECTOR
- REMOVE (6) EXISTING PANEL ANTENNAS, (2) PER SECTOR
- REMOVE (6) DIPLEXERS, (2) PER SECTOR
- REMOVE (3) TMA's, (1) PER SECTOR
- INSTALL (3) LOW BAND COMBINERS, (1) PER SECTOR
- INSTALL (3) LOW BAND COMBINERS AT GRADE
- INSTALL (1 NEW DC-6 SURGE SUPPRESSION DOME
- INSTALL (1) NEW 18-PAIR FIBER TRUNK
- INSTALL (2) NEW 6/C DC CABLES
- SWITCH BB TO (2) 5216 AND ADD 2ND XMU + IDLe
- ADD (1) RBS 6630
- ADD (1) GE RECTIFIER TO EXISTING POWER PLANT

PROPOSED PROJECT SCOPE BASED ON RFDS ID# 2311012, VERSION 3.00, LAST UPDATED 07/18/2018.

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C-1	COMPOUND PLAN
C-2	EQUIPMENT LAYOUT AND ELEVATION VIEW
C-3	ANTENNA LAYOUTS AND ANTENNA SCHEDULE
A-1	CONSTRUCTION DETAILS
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A-3	CONSTRUCTION DETAILS
A-4	RF PLUMBING DIAGRAM
G-1	GROUNDING DETAILS AND NOTES

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SCALE:	JOB NUMBER:
AS SHOWN	18946024A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
2	10/18/18	REVISED PER COMMENTS	AJC	RA
1	09/27/18	FOR CONSTRUCTION	AJC	RA
0	08/10/18	FOR REVIEW	AJC	RA

STATE OF CONNECTICUT
PETROS T. SOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER – LICENSE NUMBER: 32677
LICENSED PROFESSIONAL ENGINEER

SITE NAME:

MONTVILLE EAST
FA# 10035116
SITE# CTL02171

57 COOK DRIVE
UNCASVILLE, CT 06382
NEW LONDON COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1894
email: solutions@maserconsulting.com

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1

GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5O HMS OR LESS.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
5. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
6. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
7. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE EQUIPMENT GROUND RING WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
10. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. ALL BENDS SHALL BE MADE WITH 12" RADIUS OR LARGER.
12. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
13. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS EXCEPT FOR GROUND BAR CONNECTION FROM MGB TO OUTSIDE EXTERIOR GROUND SHALL ALL BE CADWELD CONNECTIONS.
14. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
15. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO THE TOWER GROUND BAR.
16. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
17. ALL EXTERIOR AND INTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
18. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
19. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
20. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G. NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
21. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/4" IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.
22. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

    CONTRACTOR - SMARTLINK
    SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
    OWNER - AT&T (NEW CINGULAR WIRELESS PCS, LLC)

23. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
24. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
25. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
26. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
27. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
28. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
29. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
30. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
31. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
32. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE RESPONSIBLE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
33. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
34. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.
35. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
36. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
37. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
38. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
39. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
40. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
41. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
42. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR.
43. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
44. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
45. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS.
46. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
47. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
48. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
49. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION, ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
50. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN ALERT OF DANGEROUS EXPOSURE LEVELS.

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SCALE :	JOB NUMBER :
AS SHOWN	18946024A

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2	10/18/18	REVISED PER COMMENTS	AJC	RA
1	09/27/18	FOR CONSTRUCTION	AJC	RA
0	08/10/18	[illegible]	AJC	RA

STATE OF CONNECTICUT · PETROS TSOUKALAS · 32577 · LICENSED · PROFESSIONAL ENGINEER

PETROS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

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SITE NAME:

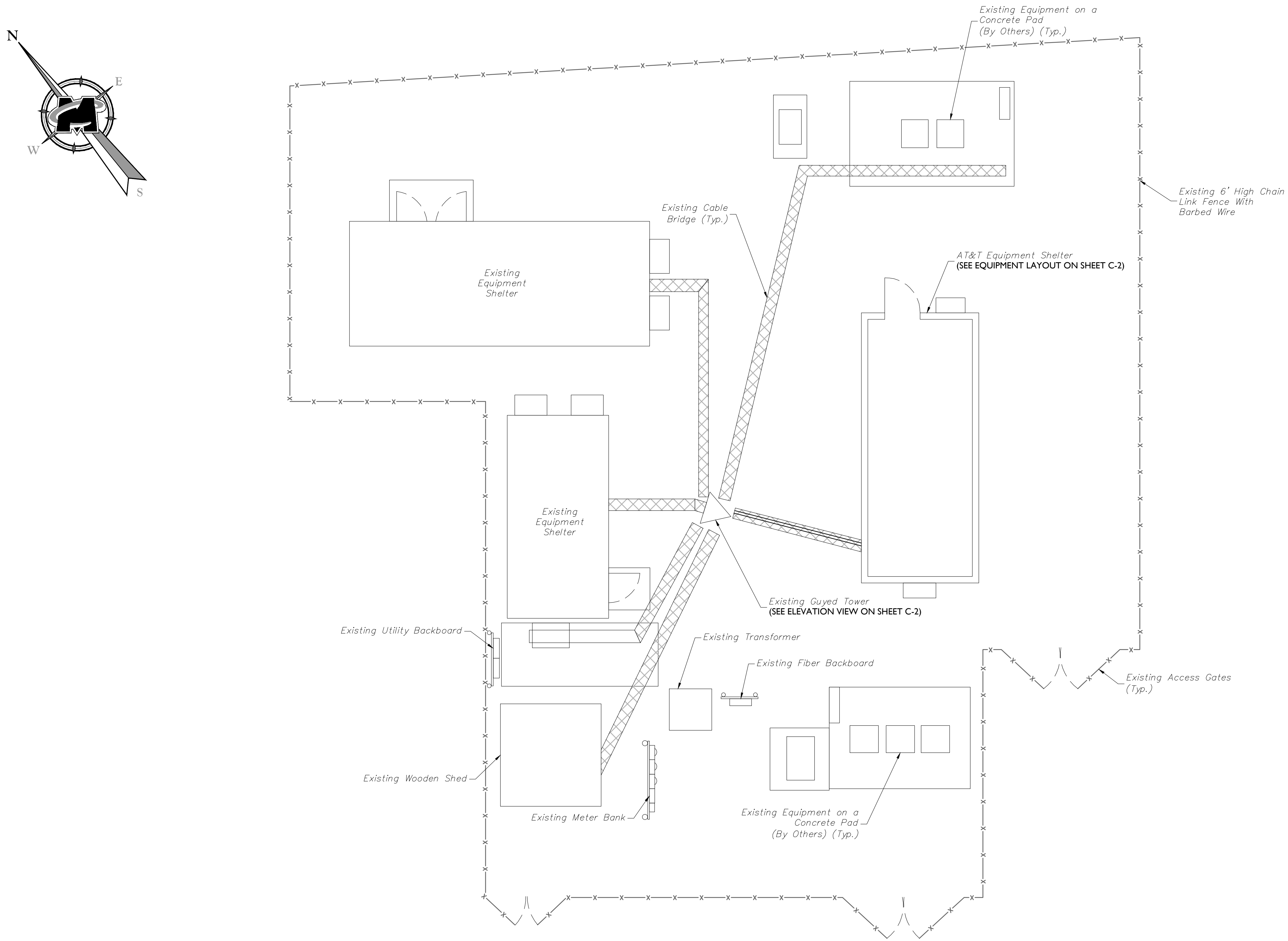
MONTVILLE EAST
FA# 10035116
SITE# CTL02171

57 COOK DRIVE
UNCASVILLE, CT 06382
NEW LONDON COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1894
email: solutions@maserconsulting.com

SHEET TITLE :
GENERAL NOTES

SHEET NUMBER :
GN-1



COMPOUND PLAN

5 4 3 2 1 0 2.5 5 10

SCALE : 1" = 5' FOR 22"X34"
(SCALE : 1" = 10' FOR 11"X17")

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0	08/10/18	[illegible]	AJC	RA

STATE OF CONNECTICUT
PETROS TSOUKALAS
32577
LICENSED
PROFESSIONAL ENGINEER

PETROS G. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

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SITE# CTL02171

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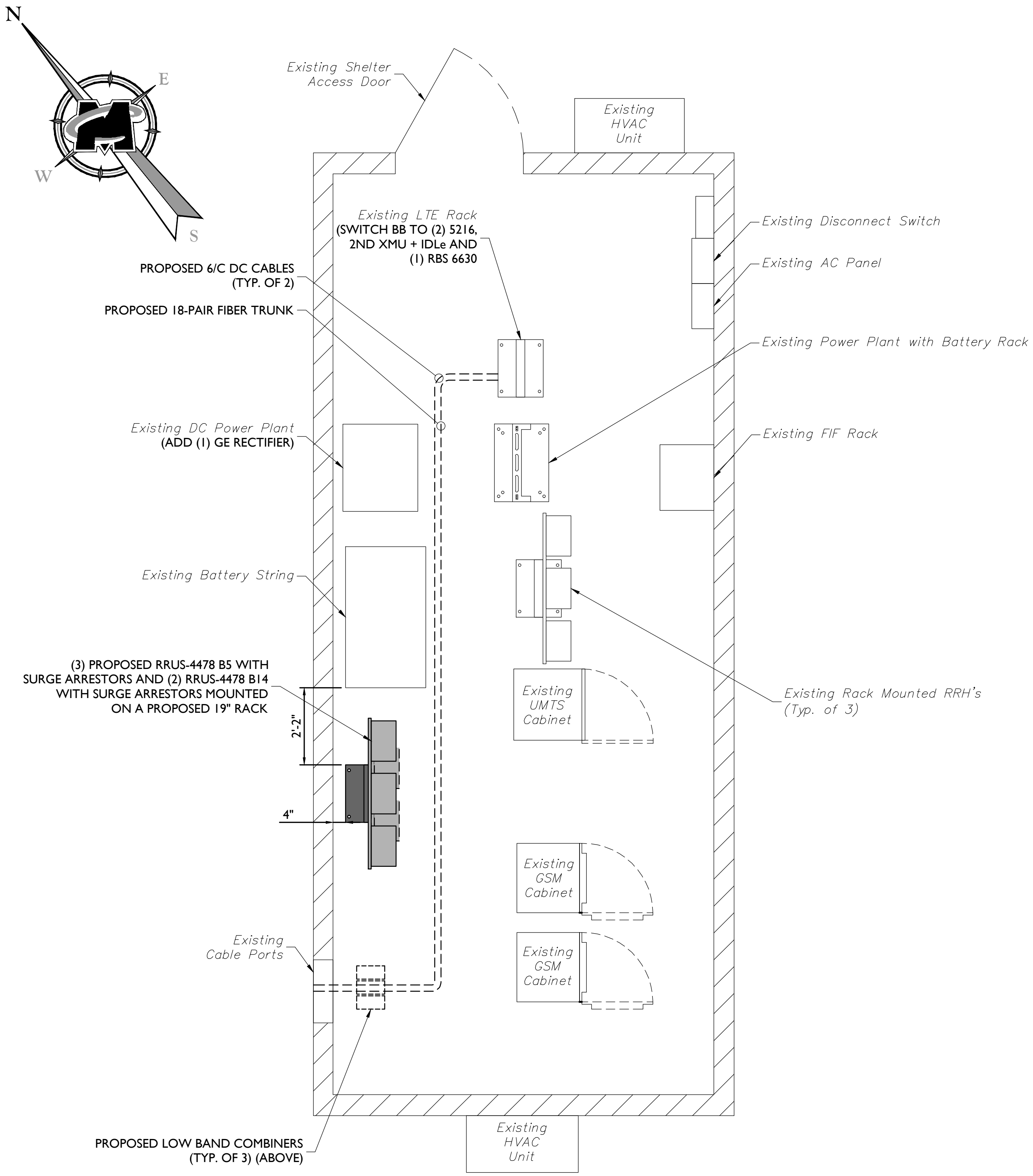
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1894
email: solutions@maserconsulting.com

SHEET TITLE :
COMPOUND PLAN

SHEET NUMBER :
C-1



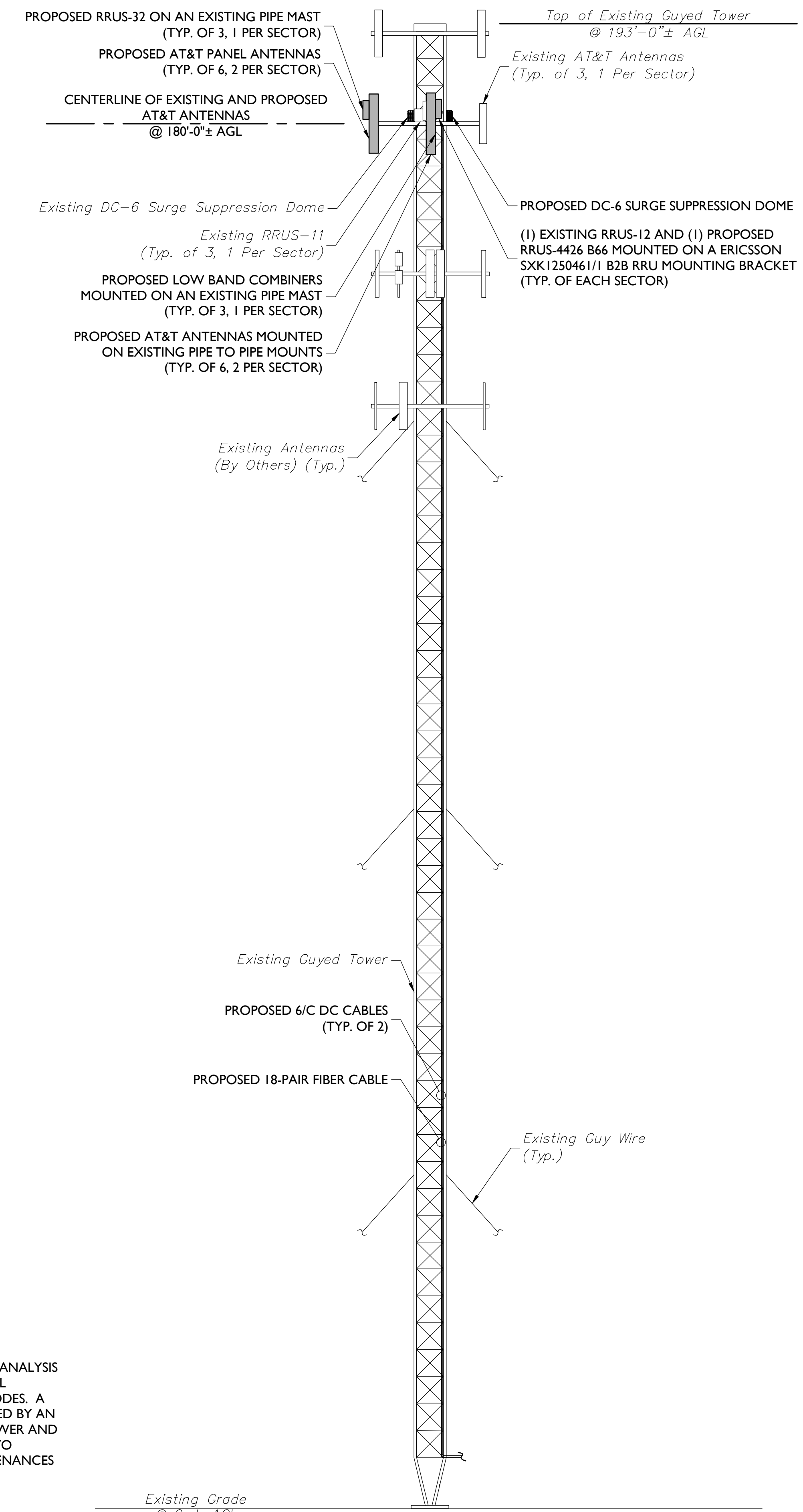
EQUIPMENT LAYOUT

SCALE : 1" = 2' FOR 22"X34"
(SCALE : 1" = 4' FOR 11"X17")

STRUCTURAL NOTES:

1. MASER CONSULTING P.A. HAS NOT BEEN CONTRACTED TO PERFORM A STRUCTURAL ANALYSIS ON THIS TOWER AND THEREFORE ASSUMES NO RESPONSIBILITY FOR THE STRUCTURAL CAPACITY AS REQUIRED UNDER THE MOST CURRENT LOCAL, STATE AND FEDERAL CODES. A STRUCTURAL ANALYSIS OF THE TOWER AND TOWER FOUNDATION MUST BE PREPARED BY AN APPROPRIATE LICENSED STRUCTURAL ENGINEER CERTIFYING THAT THE EXISTING TOWER AND ANY REQUIRED IMPROVEMENTS AND REINFORCEMENTS HAVE SUFFICIENT CAPACITY TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, SUPPORTS, CABLES AND APPURTENANCES COMPLIES WITH THE MOST CURRENT LOCAL, STATE AND FEDERAL CODES.

2. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY IMPROVEMENTS AND REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, CABLES, SUPPORTS AND APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.



ELEVATION VIEW

SCALE : 1" = 10' FOR 22"X34"
(SCALE : 1" = 20' FOR 11"X17")

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STATE OF CONNECTICUT PETROS TSOUKALAS LICENSED PROFESSIONAL ENGINEER

PETROS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32477

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SITE NAME:

MONTVILLE EAST
FA# 10035116
SITE# CTL02171

57 COOK DRIVE
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NEW LONDON COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
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Phone: 732.383.1950
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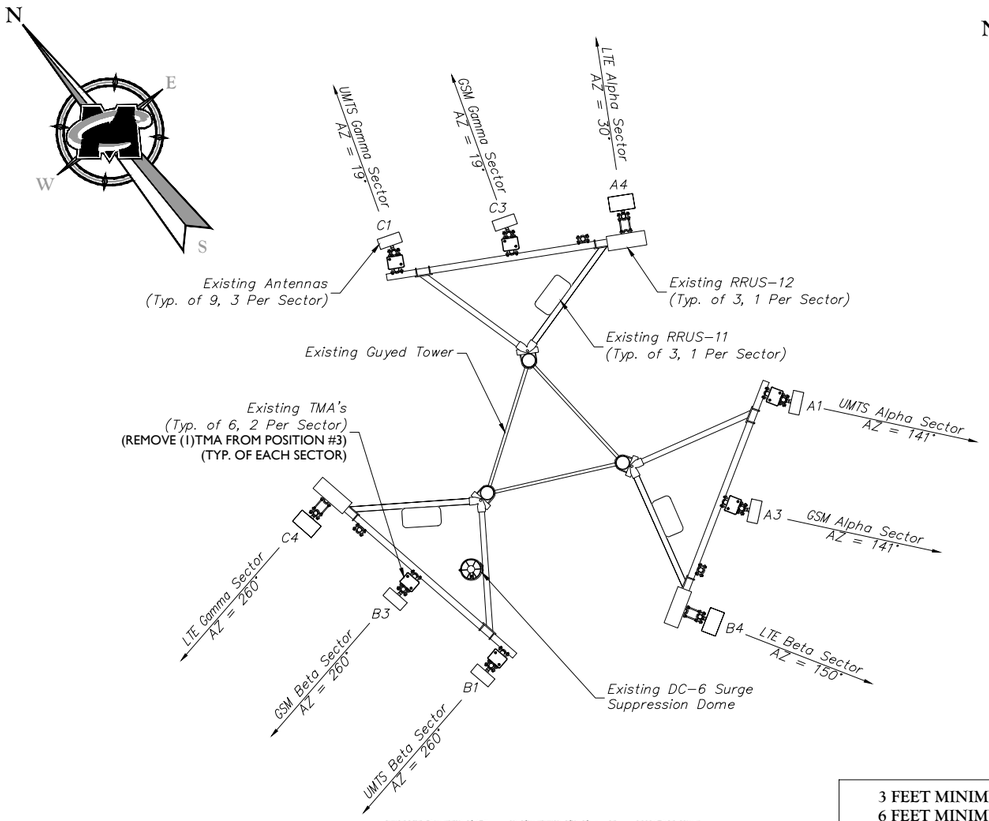
email: solutions@maserconsulting.com

SHEET TITLE :
EQUIPMENT LAYOUT AND ELEVATION VIEW

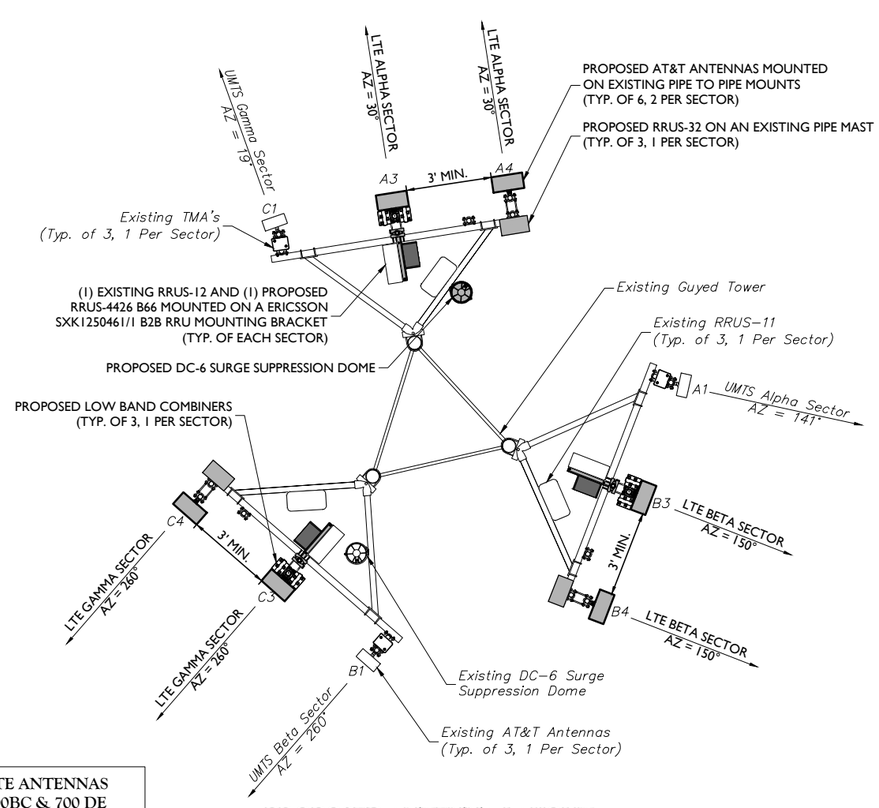
SHEET NUMBER :
C-2



EXISTING ANTENNA LAYOUT

NOT TO SCALE

3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS
6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE
8 INCH MINIMUM SEPARATION BETWEEN BACK OF PANEL ANTENNA AND EXISTING/PROPOSED EQUIPMENT



PROPOSED ANTENNA LAYOUT

NOT TO SCALE

ANTENNA SCHEDULE

SECTOR		EXISTING ANTENNA	PROPOSED ANTENNA	TECHNOLOGY	ANTENNA STATUS	HEIGHT (in)	WIDTH (in)	DEPTH (in)	WEIGHT (lbs)	ANTENNA AZIMUTH (DEG.)	ANT. CL. ELEV. (ft.)	REMOTE RADIO/TMA CONFIGURATION	TRANSMISSION CABLE		
													QUANTITY	TYPE	STATUS
Sector 1	1	POWERWAVE 7770	POWERWAVE 7770	UMTS	EXISTING	55.00	11.00	5.00	35.00	141	180	(2) LGP 21901 DIPLEXER (EXISTING) (1) TT19-08BP111-001 TMA (EXISTING)	2	1 1/4" COAX	EXISTING
	2												2	1 1/4" COAX	EXISTING
	3	POWERWAVE 7770	CCI TPA-65R-LCUUUU-H8	LTE	PROPOSED	96.00	14.40	8.60	87.60	30	180	(1) RRUS-4478 B5 (P) (AT GRADE) (1) RRUS-4478 B14 (AT GRADE) (1) RRUS 4426 B66 (P) (1) DBCT108F1V92-1 (P) (1) DBCT108F1V92-1 (P) (AT GRADE) (1) RRUS-12 (E)	1/2	FIBER/DC	PROPOSED
	4	COMMSCOPE SBNH-1D6565C	CCI HPA-65R-BUU-H8	LTE	PROPOSED	92.80	14.40	7.30	65.60	30	180	(1) RRUS-11 (E) (1) RRUS-32 (P)			
Sector 2	5	POWERWAVE 7770	POWERWAVE 7770	UMTS	EXISTING	55.00	11.00	5.00	35.00	260	180	(2) LGP 21901 DIPLEXER (EXISTING) (1) TT19-08BP111-001 TMA (EXISTING)	2	1 1/4" COAX	EXISTING
	6												2	1 1/4" COAX	EXISTING
	7	POWERWAVE 7770	QUINTEL QS66512-2	LTE	PROPOSED	72.00	12.00	9.60	123.00	150	180	(1) RRUS-4478 B5 (P) (AT GRADE) (1) RRUS-4478 B14 (P) (AT GRADE) (1) RRUS 4426 B66 (P) (1) DBCT108F1V92-1 (P) (1) DBCT108F1V92-1 (P) (AT GRADE) (1) RRUS-12 (E)	-	-	-
	8	KMW AM-X-CD-16-65-00T-RET	CCI HPA-65R-BUU-H8	LTE	PROPOSED	92.80	14.40	7.30	65.60	150	180	(1) RRUS-11 (E) (1) RRUS-32 (P)			
Sector 3	9	POWERWAVE 7770	POWERWAVE 7770	UMTS	EXISTING	55.00	11.00	5.00	35.00	19	180	(2) LGP 21901 DIPLEXER (EXISTING) (1) TT19-08BP111-001 TMA (EXISTING)	2	1 1/4" COAX	EXISTING
	10												2	1 1/4" COAX	EXISTING
	11	POWERWAVE 7770	CCI TPA-65R-LCUUUU-H8	LTE	PROPOSED	96.00	14.40	8.60	87.60	260	180	(1) RRUS-4478 B5 (P) (AT GRADE) RRUS-4478 B14 (P) (SHARED WITH BETA) (1) RRUS 4426 B66 (P) (1) DBCT108F1V92-1 (P) (1) DBCT108F1V92-1 (P) (AT GRADE) (1) RRUS-12 (E)	-	-	-
	12	KMW AM-X-CD-17-65-00T-RET	CCI HPA-65R-BUU-H8	LTE	PROPOSED	92.80	14.40	7.30	65.60	260	18	(1) RRUS-11 (E) (1) RRUS-32 (P)	1/2	FIBER/DC	EXISTING

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SCALE: AS SHOWN

JOB NUMBER: 18946024A

REV	DATE	DESCRIPTION	BY	CHECKED BY
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1	09/27/18	FOR CONSTRUCTION	AJC	RA
0	08/10/18	[illegible]	AJC	RA

STATE OF CONNECTICUT
PETROS TSOUKALAS
PETROS G. TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER – LICENSE NUMBER: 32677
LICENSED PROFESSIONAL ENGINEER

SITE NAME:

MONTVILLE EAST
FA# 10035116
SITE# CTL02171

57 COOK DRIVE
UNCASVILLE, CT 06382
NEW LONDON COUNTY

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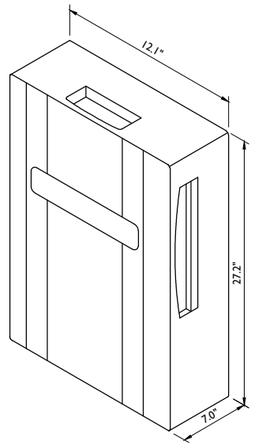
Fax: 732.383.1894
email: solutions@maserconsulting.com

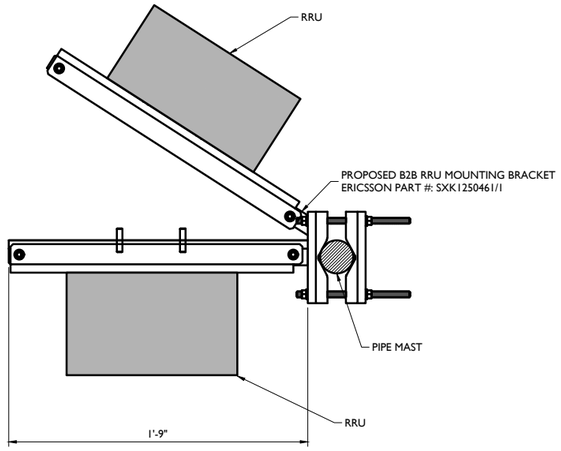
SHEET TITLE: ELEVATION VIEW, ANTENNA LAYOUT AND ANTENNA SCHEDULE

SHEET NUMBER: C-3

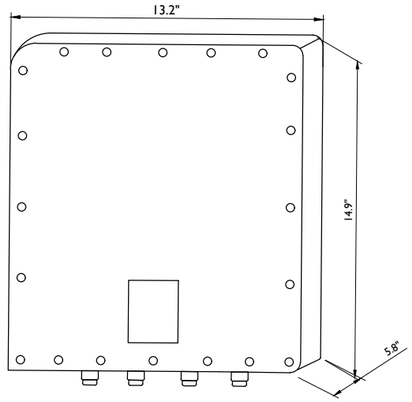


RRUS-32 DIMENSIONS (H X W X D): 27.2" X 12.1" X 7.0" (INCLUDES SUNSHIELD)
WEIGHT: 53 LBS

RRUS-32 DETAIL
NOT TO SCALE

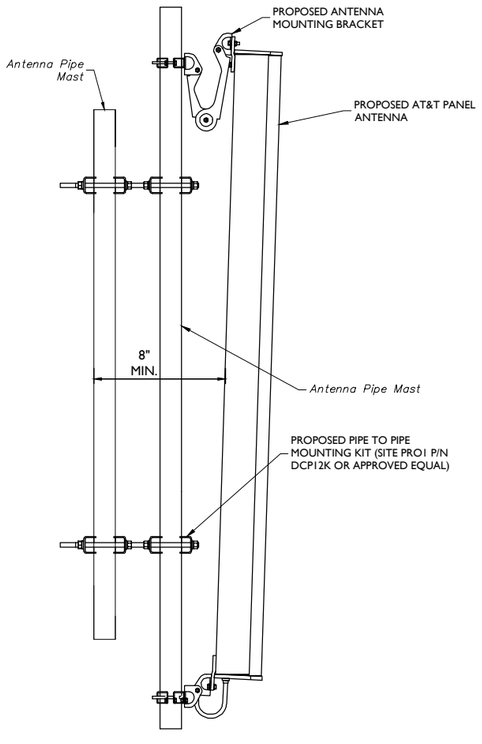


RRU MOUNTING DETAIL
NOT TO SCALE



RRUS 4426 B66 DIMENSIONS (H X W X D): 14.9" X 13.2" X 5.9"
(INCLUDES SUNSHIELD) WEIGHT: 48 LBS

RRUS 4426 B66 DETAIL
NOT TO SCALE



ANTENNA MOUNTING DETAIL
NOT TO SCALE

3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS
6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE
8 INCH MINIMUM SEPARATION BETWEEN BACK OF PANEL ANTENNA AND EXISTING/PROPOSED EQUIPMENT

WEIGHT = 68.0 LBS
CCI HPA-65R-BUU-H8

WEIGHT = 111.0 LBS
QUINTEL QS66512-2

WEIGHT =75 LBS
CCI TPA-65R-LCUUUU-H8

ANTENNA DETAILS
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STATE OF CONNECTICUT — PETROS S. SOUKALAS — 32917 — LICENSED PROFESSIONAL ENGINEER

PETROS S. SOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32917

SITE NAME:

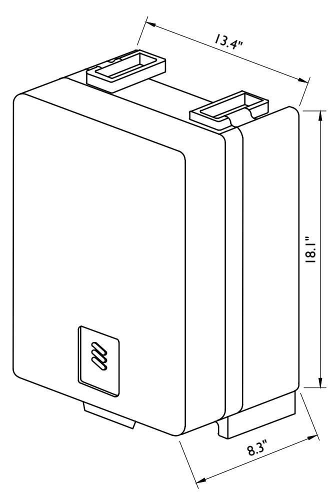
MONTVILLE EAST
FA# 10035116
SITE# CTL02171

57 COOK DRIVE
UNCASVILLE, CT 06382
NEW LONDON COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1894
email: solutions@maserconsulting.com

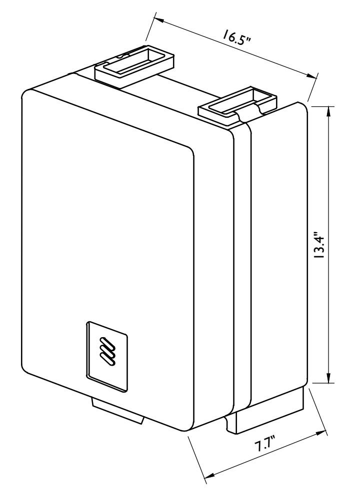
SHEET TITLE : CONSTRUCTION DETAILS

SHEET NUMBER : A-1



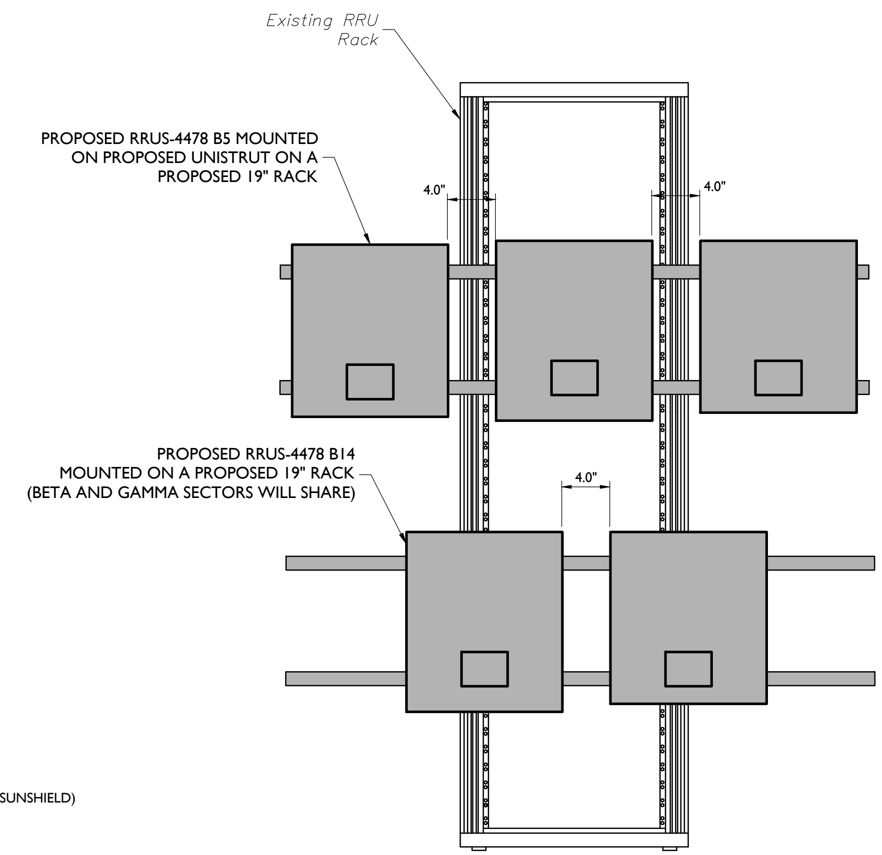
DIMENSIONS (H X W X D): 18.1"H X 13.4"W X 8.3"D (INCLUDES SUNSHIELD)
WEIGHT: 59.4 LBS

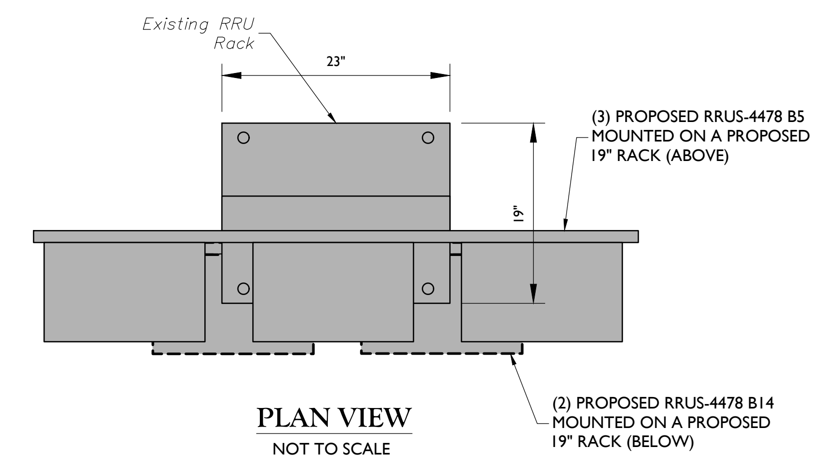
RRUS-4478 B14 DETAIL
NOT TO SCALE



DIMENSIONS (H X W X D): 16.5"H X 13.4"W X 7.7"D (INCLUDES SUNSHIELD)
WEIGHT: 59.9 LBS

RRU-4478-B5 DETAIL
NOT TO SCALE





PLAN VIEW
NOT TO SCALE

NOTE:

MOUNT RRU'S TO UNISTRUT WITH 3/8"Ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS THROUGH EQUIPMENT MOUNTING HOLES. SUBCONTRACTOR SHALL SUPPLY.

RRU RACK MOUNTED DETAIL
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STATE OF CONNECTICUT · PETROS TSOUKALAS · 32577 · LICENSED · PROFESSIONAL ENGINEER

PETROS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

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SITE# CTL02171

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UNCASVILLE, CT 06382
NEW LONDON COUNTY

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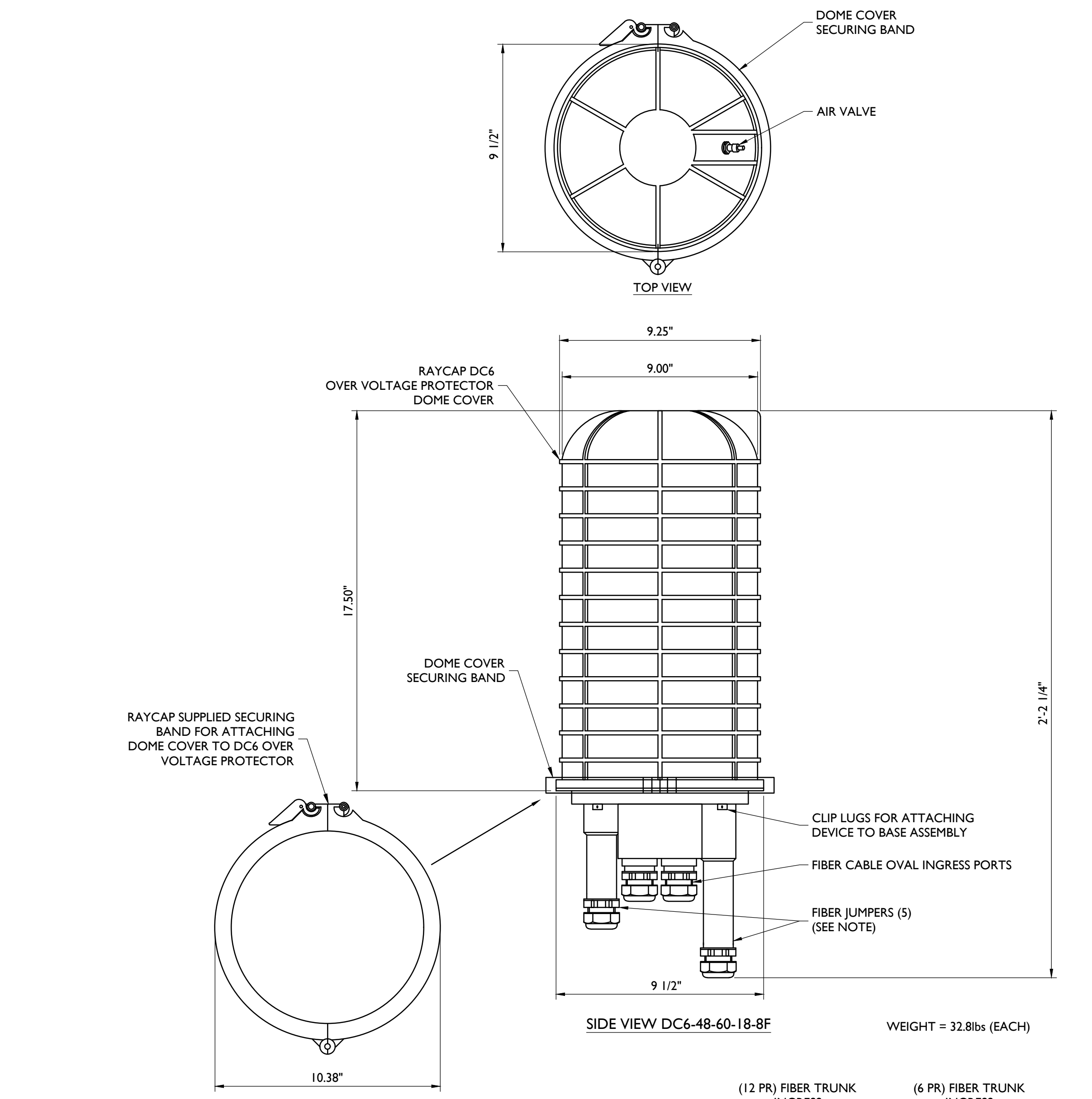
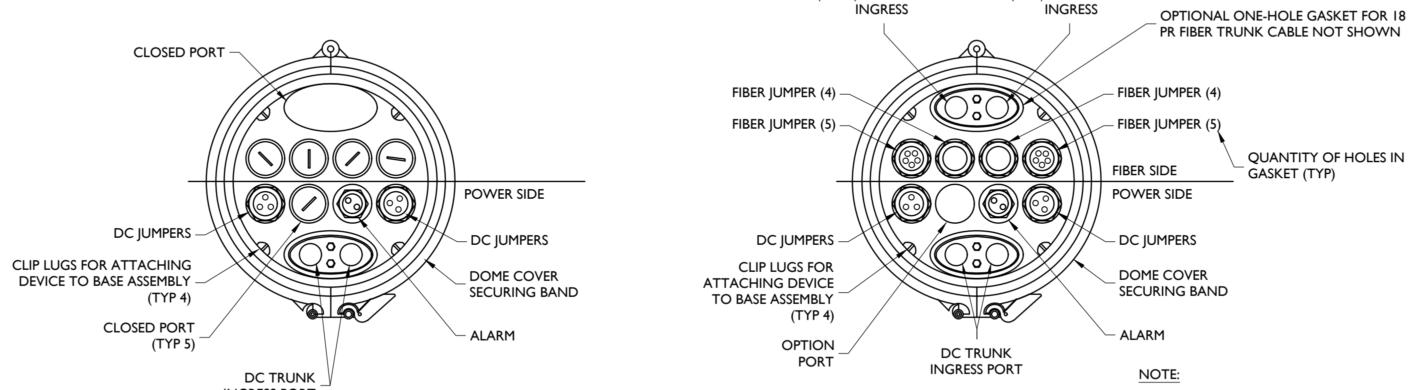
Fax: 732.383.1894
email: solutions@maserconsulting.com

SHEET TITLE :
EQUIPMENT LAYOUT AND ELEVATION VIEW

SHEET NUMBER :
A-2





BOTTOM VIEW
DC6-48-60-0-8F

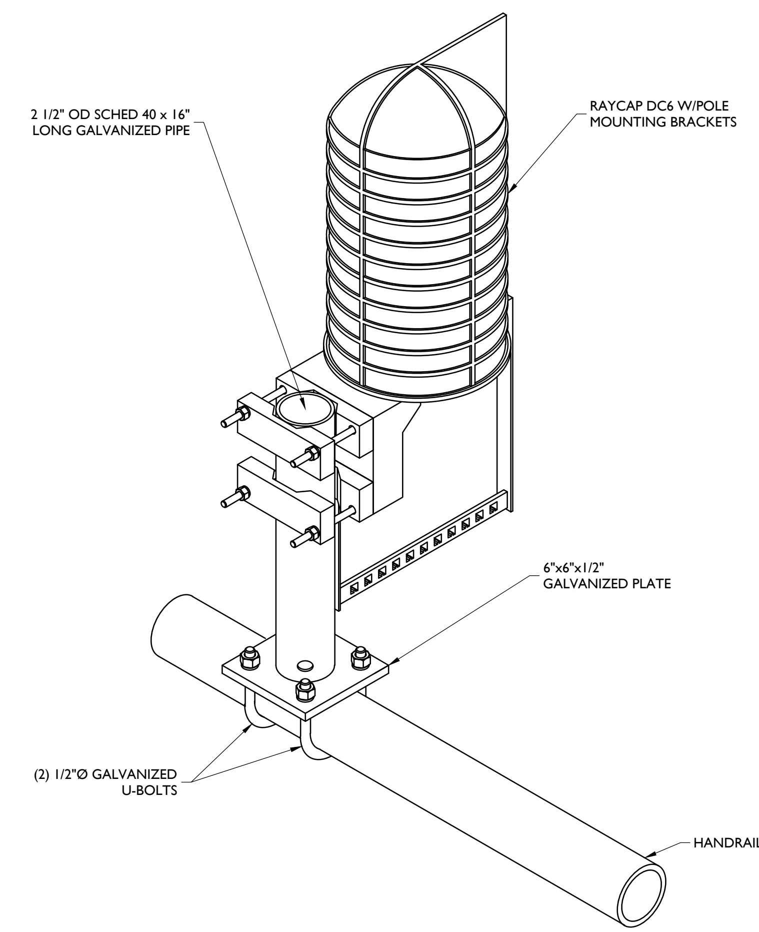
BOTTOM VIEW
DC6-48-60-18-8F

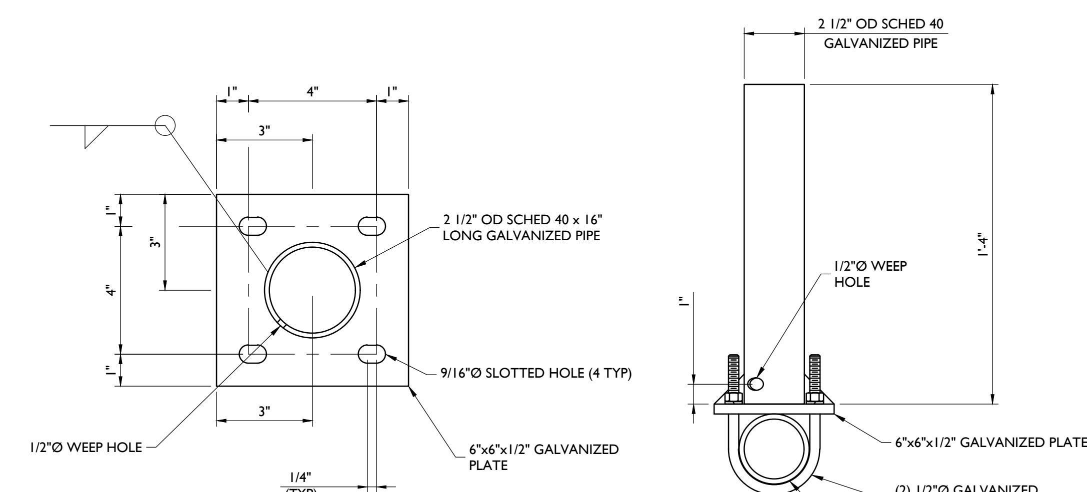
NOTE:

REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC-TO-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

DC6 SURGE SUPPRESSION DOME DETAIL

NOT TO SCALE





DC6 SURGE SUPPRESSION DOME MOUNTING DETAIL (PIPE)

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1	09/27/18	FOR CONSTRUCTION	AJC	RA
0	08/10/18	ISS[illegible]	AJC	RA

STATE OF CONNECTICUT · PETROS TSOUKALAS · 32577 · LICENSED · PROFESSIONAL ENGINEER

PETROS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32577

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

SITE NAME:

MONTVILLE EAST
FA# 10035116
SITE# CTL02171

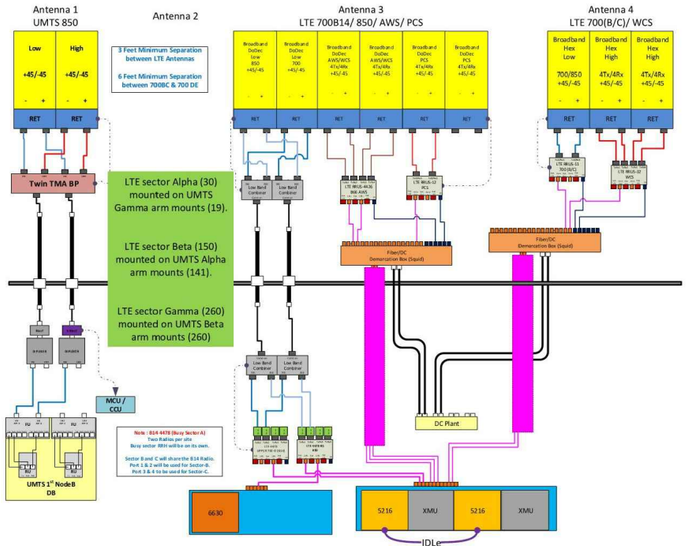
57 COOK DRIVE
UNCASVILLE, CT 06382
NEW LONDON COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Phone: 732.383.1950
Fax: 732.383.1894
email: solutions@maserconsulting.com

SHEET TITLE :
EQUIPMENT LAYOUT AND ELEVATION VIEW

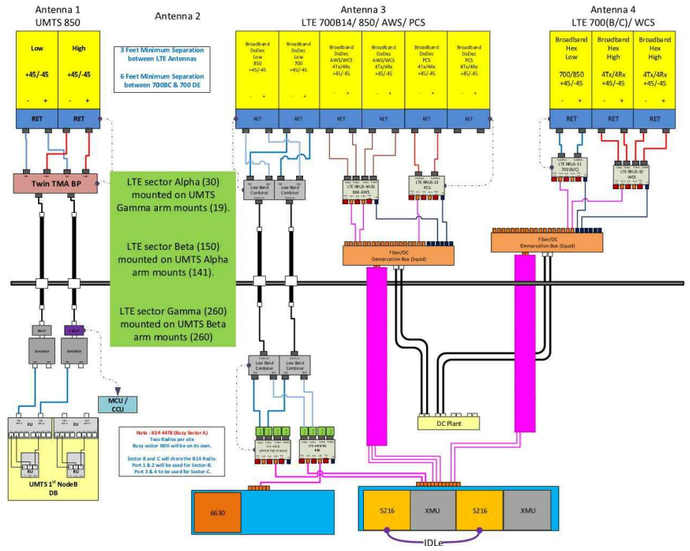
SHEET NUMBER :
A-3

Diagram - Sector A | Diagram File Name - FN_5G_CT2171_LTE_6C_A_B_C_R1.3.vsd
Atoll Site Name - CTV2171 | Location Name - MONTVILLE EAST | Market - CONNECTICUT | Market Cluster - NEW ENGLAND
Comments: "Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson."



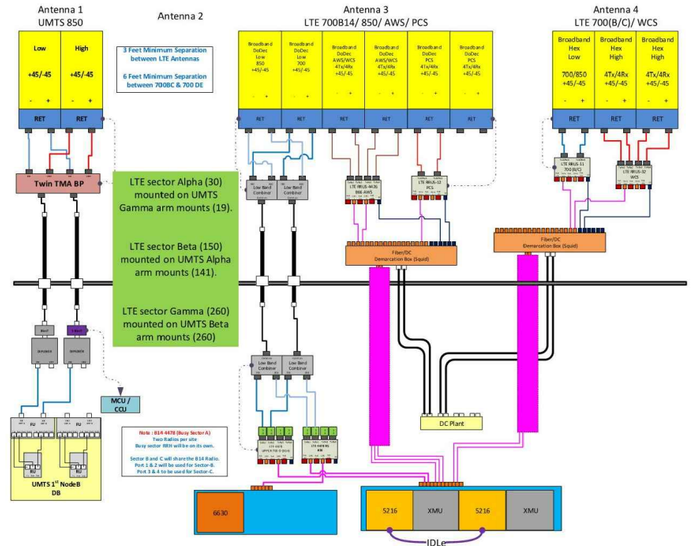
ALPHA SECTOR

Diagram - Sector B | Diagram File Name - FN_5G_CT2171_LTE_6C_A_B_C_R1.3.vsd
Atoll Site Name - CTV2171 | Location Name - MONTVILLE EAST | Market - CONNECTICUT | Market Cluster - NEW ENGLAND
Comments: "Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson."



BETA SECTOR

Diagram - Sector C | Diagram File Name - FN_5G_CT2171_LTE_6C_A_B_C_R1.3.vsd
Atoll Site Name - CTV2171 | Location Name - MONTVILLE EAST | Market - CONNECTICUT | Market Cluster - NEW ENGLAND
Comments: "Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson."



GAMMA SECTOR

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_CONNECTICUT_CTV2171_2018-LTE-Multi-Carrier_LTE_rx855w_2051A0GHYT_10035116_25907_04-02-2018_Final-Approved_v3.00", LAST REVISED 07/18/2018.

RF PLUMBING DIAGRAMS

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALLB11.COM

SCALE : AS SHOWN
JOB NUMBER : 18946024A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
2	10/18/18	REVISED PER COMMENTS	AJC	RA
1	09/27/18	FOR CONSTRUCTION	AJC	RA
0	08/10/18		AJC	RA

STATE OF CONNECTICUT — PETROS S. SOUKALAS — 32677 — LICENSED PROFESSIONAL ENGINEER

PETROS S. SOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER – LICENSE NUMBER: 32677

SITE NAME:

MONTVILLE EAST
FA# 10035116
SITE# CTL02171

57 COOK DRIVE
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NEW LONDON COUNTY

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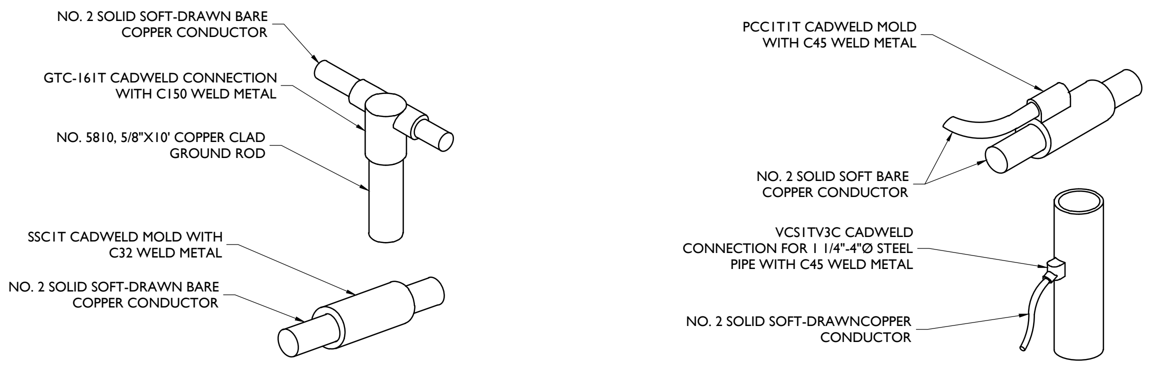
email: solutions@maserconsulting.com

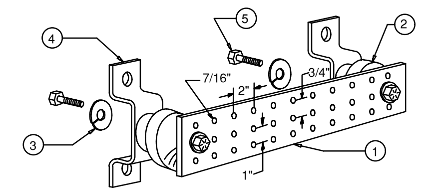
SHEET TITLE :
EQUIPMENT LAYOUT AND ELEVATION VIEW

SHEET NUMBER :
A-4



CADWELD DETAILS

NOT TO SCALE



LEGEND

1- TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO. CAT. NO. B-6142 OR EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.

2- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4

3- 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8

4- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-5056

5- 5/8-11 X 1" HHCS BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

6- EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

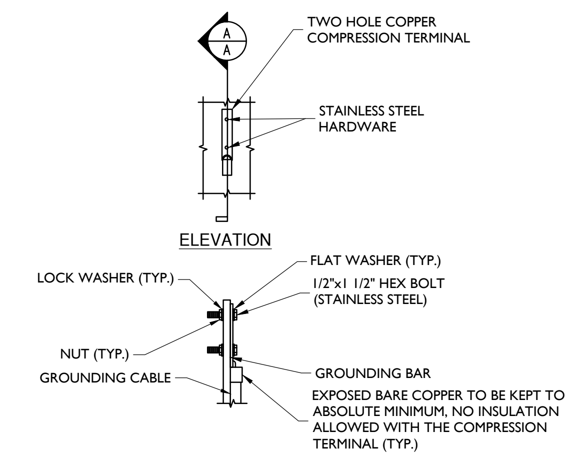
CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLT RETURN BAR (#2)
RECTIFIER FRAMES.

SECTION "A" - SURGE ABSORBERS

INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

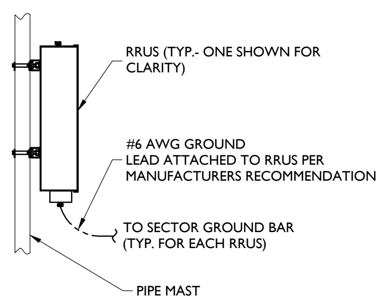
MASTER GROUND BAR

NOT TO SCALE



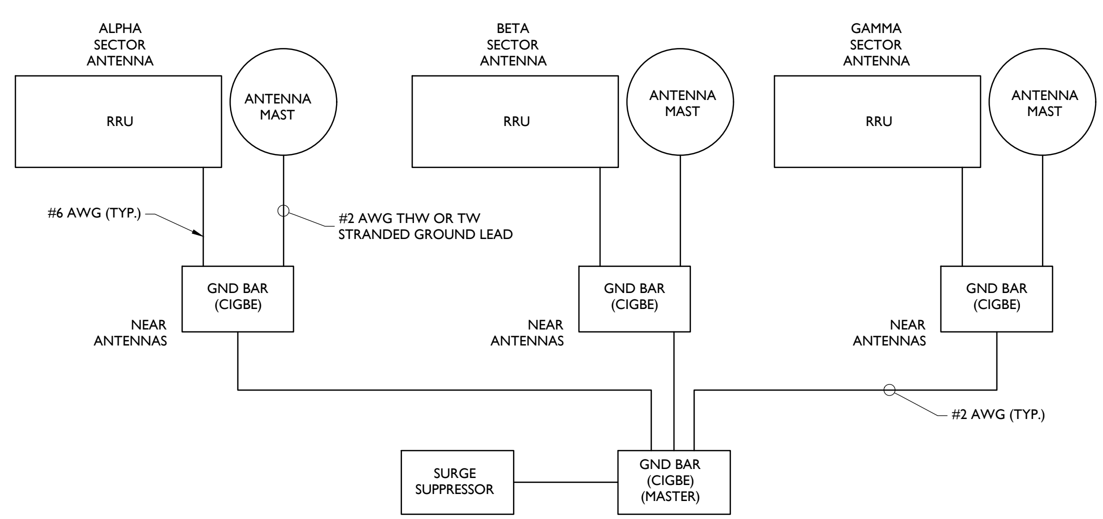
TYPICAL GROUND BAR CONNECTION DETAIL

NOT TO SCALE

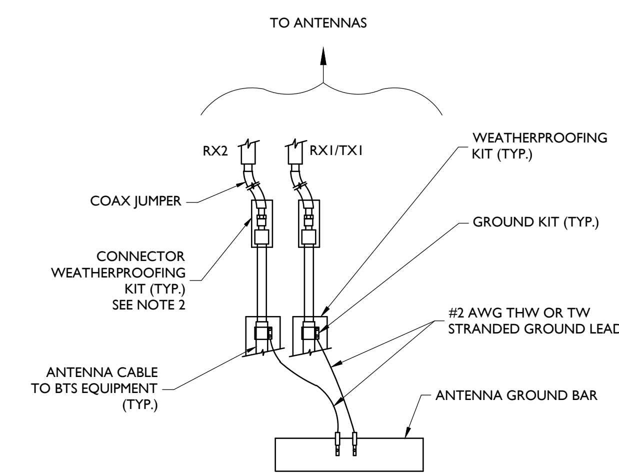


RRU GROUNDING

NOT TO SCALE



SCHEMATIC DIAGRAM GROUNDING SYSTEM

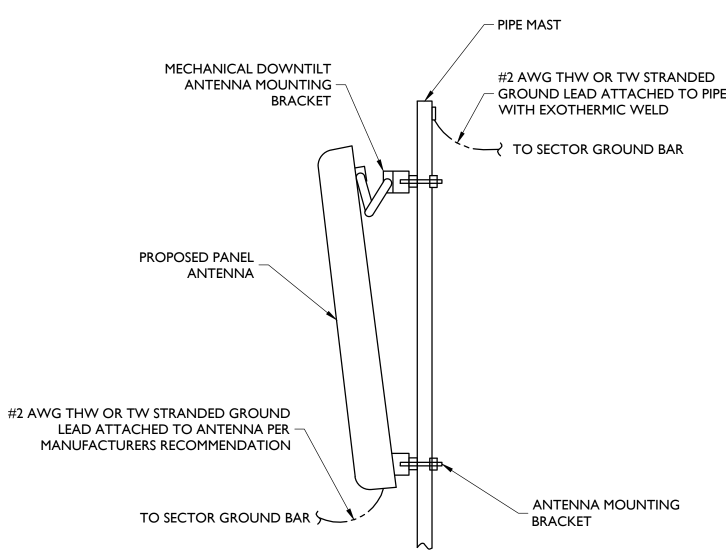


NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

TYPICAL GROUND WIRE TO GROUNDING BAR

NOT TO SCALE



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SCALE:	JOB NUMBER:
AS SHOWN	18946024A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
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2	10/18/18	REVISED PER COMMENTS	AJC	RA
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0	08/10/18	FOR REVIEW	AJC	RA

PETROS TSOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: 32677

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Red Bank, NJ 07701
Phone: 732.383.1950
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email: solutions@maserconsulting.com

SHEET TITLE:
GROUNDING DETAILS

SHEET NUMBER:
G-1

MASER CONSULTING
— CONNECTICUT —

Guyed Tower Analysis

FOR

CTL02171

FA # 10035116
Uncasville, CT 06382
New London County

Scope: 3C-MRCTB030895
4C-MRCTB031936
5C-MRCTB031457
6C-MRCTB031324

Tower Utilization: 99.7%

December 14, 2018

Prepared For

AT&T
550 Cochituate Road
Framingham, MA 01701

Prepared By

Maser Consulting Connecticut
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
T: 732.383.1950

Petros E. Tsoukalas, P.E.
Geographic Discipline Leader
Connecticut License No.: 32557

MC Project No. 18946024A

Objective:

The objective of this report is to determine the capacity of the existing guyed tower at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

Introduction:

Maser Consulting Connecticut has performed limited field observations on May 22, 2018 to verify the existing condition of the structure and to locate and quantify the existing wireless appurtenances where possible, from ground level. Maser Consulting Connecticut has reviewed the following documents in completing this report:

• Structural Analysis prepared by GPD Group, dated January 23, 2015.
• Structural Analysis prepared by Hudson Design Group, dated March 14, 2013.
• RFDS 2311012 provided by Smartlink, dated July 18, 2018.

The proposed AT&T equipment is to be supported on an existing antenna support mount constructed of structural steel antenna support pipes supported by pipes at a centerline of approximately 180'-0" above ground level. This report is based only upon this information.

Codes, Standards and Loading:

Maser Consulting Connecticut utilized the following codes and standards:

- 2018 Connecticut State Building Code, Incorporating the 2015 IBC
- Structural Standards for Antenna Supporting Structures and Antennas ANSI/TIA-222-G
    - Ultimate Wind Speed – 135 mph (3 Second Gust)
    - Basic Wind Speed – 105 mph (3 Second Gust)
    - Exposure Category – B
    - Structural Class – II
    - Topographic Category – 1
    - Ice Wind – 50 mph
    - Ice Thickness – 0.75"
- Specification for Structural Steel Buildings ANSI/AISC 360-10, American Institute of Steel Construction (AISC)

Maser Consulting Connecticut understands the final AT&T loading to be the following:

Quantity	Manufacturer	Antenna/ Appurtenance	Status	Sector
3	POWERWAVE	7770	Existing	Alpha, Beta, & Gamma
2	**CCI**	**TPA-65R-LCUUUU-H8**	**Proposed**	**Alpha & Gamma**
3	**CCI**	**HPA-65R-BUU-H8**	**Proposed**	**Alpha, Beta, & Gamma**
1	**QUINTEL**	**QS66512-2**	**Proposed**	**Beta**
3	**ERICSSON**	**RRUS 4426 B66**	**Proposed**	**Alpha, Beta, & Gamma**
6	**KAELUS**	**DBCT108F1V92-1**	**Proposed**	**Alpha, Beta, & Gamma**
3	ERICSSON	RRUS 12	Existing	Alpha, Beta, & Gamma
3	**ERICSSON**	**RRUS 32**	**Proposed**	**Alpha, Beta, & Gamma**
6	POWERWAVE	TT19-08BP111-001	Existing	Alpha, Beta, & Gamma
2	**RAYCAP**	**DC6-48-60-18-8F**	**Existing/Proposed**	**Alpha & Gamma**
3	**ERICSSON**	**RRUS 11**	**Existing**	**Alpha, Beta, & Gamma**

Analysis Approach & Assumptions:

The analysis approach used in this structural analysis is based on the premise that if the existing guyed structure is structurally adequate to support the existing and proposed equipment per the aforementioned codes and standards, or if the increase in the forces in the structure are deemed to be negligible or acceptable, then the proposed equipment can be installed as intended. Tower Numerics, tnx Tower, a tower analysis and design program, designed specifically for the telecommunications industry and for all applicable codes and standards was used for this structural analysis.

General Site Design Assumption:

- All engineering services are performed on the basis that the information used is current and correct.
- It is assumed that the telecommunication equipment supports, antenna supports, and existing structure have been designed by a registered licensed professional engineer for the existing loads acting on the structure, as required by all applicable codes, prior to the proposed modifications listed within this report, if any.
- It is assumed that information provided by the client regarding the structure itself, the antenna models, feed lines, and other relevant information is current and correct.
- It is the responsibility of the client to ensure that the information provided to Maser Consulting Connecticut and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that the original design, material production, fabrication, and erection of the existing structure was performed in accordance with accepted industry design standards and in accordance with all applicable codes. Further, it is assumed that the existing structure and appurtenances have been properly maintained in accordance with all applicable codes and manufacturer's specifications and no structural defects and/or deterioration to the structural members has occurred.
- It is assumed all other existing appurtenances, antennas, cables, etc. belonging to others have been installed and supported per code and per specifications so as not to damage any existing structural support members, and that any contributing loads from adjacent equipment has been taken into consideration for their design.
- All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Maser Consulting Connecticut is not responsible for the conclusion, opinions, and recommendations made by others based on the information we supply.

Site Specific Design Parameters:

The following design parameters have been utilized in this report:

- *Structural Steel Angles are assumed to be constructed of A36 Steel*
- *Structural Steel Pipes are assumed to be constructed of A53 Grade B Steel*
- *The proposed CCI TPA-65R-LCUUUU-H8 shall be mounted in position 3 in Alpha and Gamma sector*
- *The proposed CCI HPA-65R-BUU-H8 shall be mounted in position 4 in all sectors*
- *The proposed Quintel QS66512-2 shall be mounted in position 3 in Beta sector*
- *The proposed RRUS-4478 B5, and RRUS-4478 B14 shall be mounted on the existing Unistrut at Grade level.*
- *The proposed RRUS 4436 B66, DBCT108F1V92-1 shall be mounted in position 3 in all sectors*
- *The proposed RRUS-32 shall be mounted in position 4 in all sectors*
- *This analysis assumes the referenced structural analysis is accurate and a current representation of what is currently on the tower.*

Calculations:

The calculations are found in Appendix A of this report.

Conclusion:

The existing guyed tower was analyzed for the loading in the applicable codes and standards. The tower has been determined to be structurally **ADEQUATE** to support the proposed and existing loading, based upon the aforementioned assumptions. The guyed tower has been determined to be stressed to a maximum of **99.7%** of its structural capacity with the maximum usage occurring at the tower bolts. Therefore, the proposed **AT&T** installation **CAN** be installed as intended in all sectors.

Additionally, Maser Consulting Connecticut has compared the foundation reactions from this analysis to the previous referenced analysis foundation calculations. Due to the minimal increase in reactions, the foundations have been determined to be **ADEQUATE** to support the existing and proposed loading. Therefore, the proposed **AT&T** installation **CAN** be installed as intended in all sectors.

Maser Consulting Connecticut reserves the right to amend this report if additional information about the existing members is provided. Any change to the installation will require a revision to this structural analysis.

We appreciate the opportunity to be of service on this project. If you should have any questions or require any additional information, please do not hesitate to call our office.

Sincerely,

Maser Consulting Connecticut

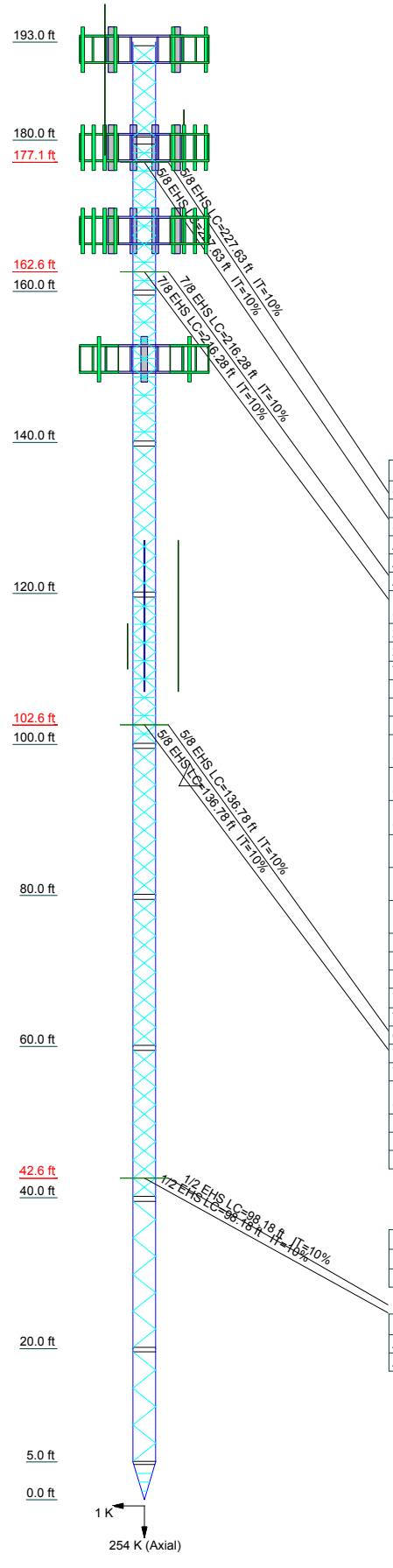
Petros E. Tsoukalas, P.E.
Geographic Discipline Leader

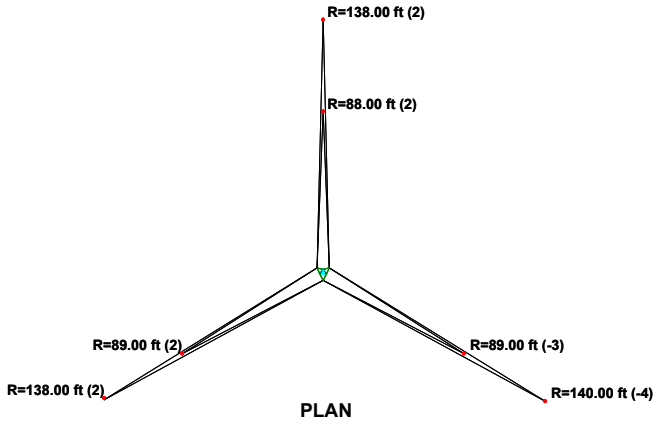
Carol Luengas
Engineer

R:\Projects\2018\18946000A\18946024A\Structural\Tower Analysis\Rev 3\Word\10035116.CTL02171.SA.Rev 1.docx

APPENDIX A

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11
Legs	ROHN 2.5 EH					ROHN 3 EH					
Leg Grade	A572-50										
Diagonals	L2x2x1/4			ROHN TS1.5x11 ga	L2x2x1/4	ROHN TS1.5x16 ga	L1 3/4x1 3/4x3/16	ROHN TS1.5x11 ga	ROHN TS1.5x16 ga	A	N.A.
Diagonal Grade	A36			A53-B-42	A36	A53-B-42	A36	A53-B-42			N.A.
Top Girts	L2x2x1/4		ROHN TS1.5x11 ga		L2x2x1/4	ROHN TS1.5x16 ga	ROHN TS1.5x11 ga	ROHN TS1.5x11 ga	ROHN TS1.5x16 ga	A	B
Bottom Girts	L2x2x1/4		ROHN TS1.5x11 ga		L2x2x1/4	ROHN TS1.5x16 ga	ROHN TS1.5x11 ga	ROHN TS1.5x11 ga	ROHN TS1.5x16 ga	A	N.A.
Horizontals	N.A.					N.A.					B
Sec. Horizontals	L2x2x1/4			N.A.	L2x2x1/4	N.A.		N.A.			
Face Width (ft)	3.42					75 @ 2.41667					
# Panels @ (ft)	0.8	3.7	1.4	0.9	2.5	0.8	1.1	1.6	0.7	0.6	0.3
Weight (K)	14.5										





DESIGNED APPURTENANCE LOADING

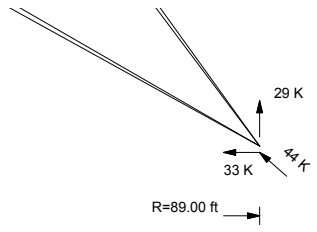
TYPE	ELEVATION	TYPE	ELEVATION
SBNH-1D6565B (T-Mobile)	192.7	(2) LPA-80063/8CF (Verizon)	168
SBNH-1D6565B (T-Mobile)	192.7	(2) LPA-80063/8CF (Verizon)	168
SBNH-1D6565B (T-Mobile)	192.7	(2) LPA-80063/8CF (Verizon)	168
APXV9TM14-C-I20 (T-Mobile)	192.7	BXA-171063-12CF (Verizon)	168
APXV9TM14-C-I20 (T-Mobile)	192.7	BXA-171063-12CF (Verizon)	168
APXV9TM14-C-I20 (T-Mobile)	192.7	BXA-171063-12CF (Verizon)	168
10' Boom Gate w/3 - 2 3/8" Pipe (Tapered) (3) (T-Mobile)	192	BXA-70063/6CF (Verizon)	168
		BXA-70063/6CF (Verizon)	168
20' Omni (Unknown)	188	BXA-70063/6CF (Verizon)	168
2.5" Dia 7' Omni (Unknown)	181	(2) B25 RRH4x30-4R (Verizon)	168
TPA-65R-LCUUUU-H8 (ATI)	180	(2) B25 RRH4x30-4R (Verizon)	168
HPA-65R-BUU-H8 (ATI)	180	(2) B25 RRH4x30-4R (Verizon)	168
HPA-65R-BUU-H8 (ATI)	180	7' Whip (Unknown)	154.5 - 154
HPA-65R-BUU-H8 (ATI)	180	7' Whip (Unknown)	154.5 - 154
RRUS 12 + RRUS 4426 B66 shielded (ATI)	180	7' Whip (Unknown)	154.5 - 154
RRUS 12 + RRUS 4426 B66 shielded (ATI)	180	APXVTM14-ALU (Sprint)	151
RRUS 12 + RRUS 4426 B66 shielded (ATI)	180	RFS APXV9ERR18-C (Sprint)	151
		RFS APXV9ERR18-C (Sprint)	151
RRUS11 B12 (Partiall Shielded by 11.9" Antenna) (ATI)	180	RFS APXV9ERR18-C (Sprint)	151
		RRH-2X50-800 (Sprint)	151
RRUS11 B12 (Partiall Shielded by 11.9" Antenna) (ATI)	180	RRH-2X50-800 (Sprint)	151
		RRH-2X50-800 (Sprint)	151
RRUS11 B12 (Partiall Shielded by 11.9" Antenna) (ATI)	180	RRH-4X45-1900 (3) (Sprint)	151
		RRH8x20-25 (3) (Sprint)	151
RRUS 32 (ATI)	180	APXVTM14-ALU (Sprint)	151
RRUS 32 (ATI)	180	Rohn 6'x15' Boom Mount (3) (Sprint)	151
RRUS 32 (ATI)	180	APXVTM14-ALU (Sprint)	151
7770 (ATI)	180	10' dipole (Unknown)	124
TPA-65R-LCUUUU-H8 (ATI)	180	Pirod 4' Side Mount Standoff (1) (Unknown)	119.5
Quintel QS66512-2 w/m pipe (ATI)	180	20' Omni (Unknown)	117
7770 (ATI)	180	20' Omni (Unknown)	117
7770 (ATI)	180	6' Yagi (Unknown)	113
10' Boom Gate w/3 - 2 3/8" Pipe (Tapered) (3) (ATI)	179	Pirod 4' Side Mount Standoff (1) (Unknown)	108
14' T Arm round (Verizon)	168	Pirod 4' Side Mount Standoff (1) (Unknown)	108
14' T Arm round (Verizon)	168		
14' T Arm round (Verizon)	168		

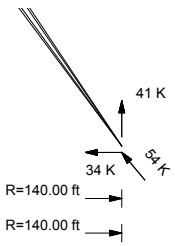
SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN TS1.5x11 ga	C	4 @ 1.16667
B	L4x4x1/4		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A53-B-42	42 ksi	63 ksi
A36	36 ksi	58 ksi			





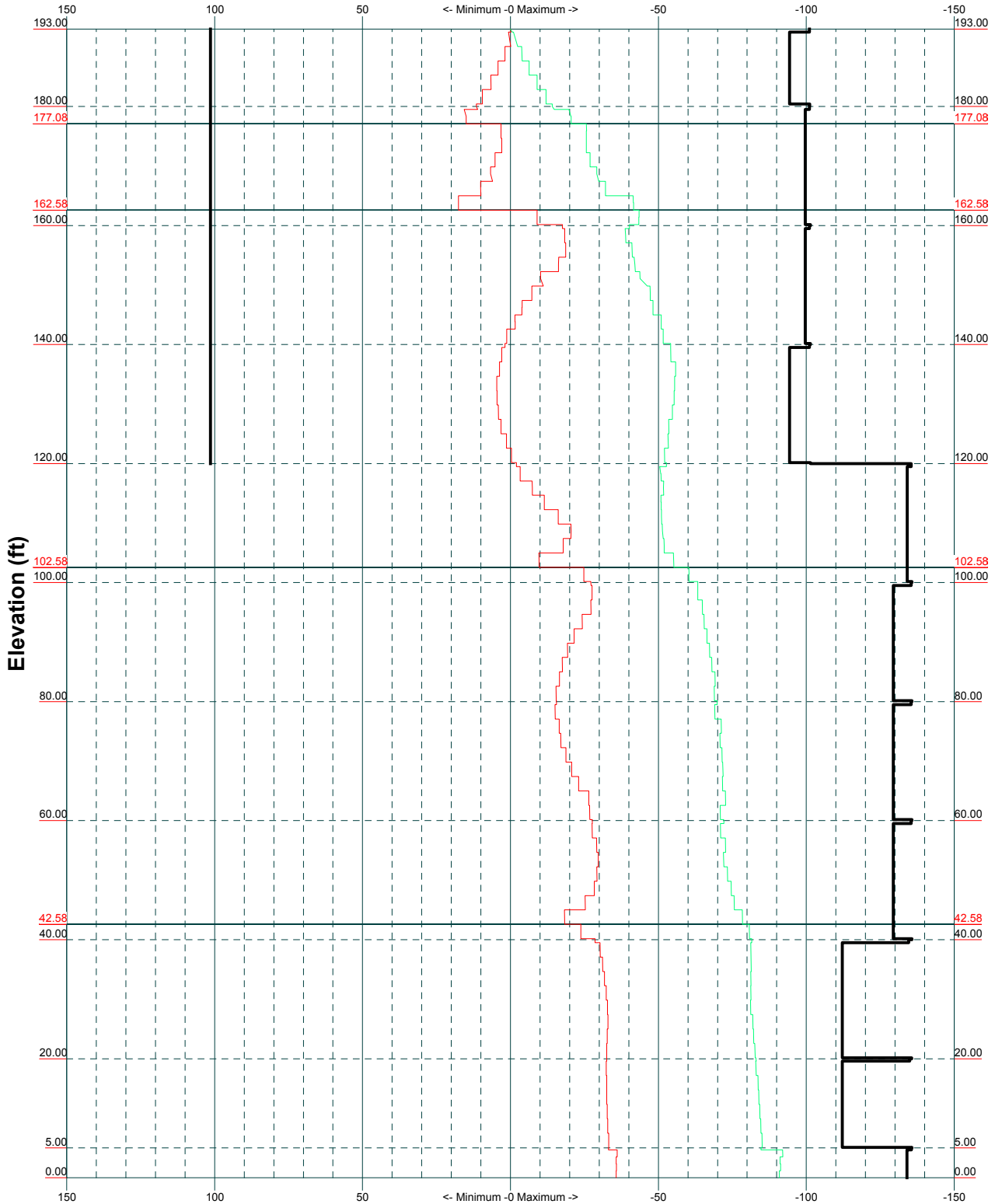
ALL REACTIONS ARE FACTORED

Maser Consulting
2000 Midlantic Drive, Suite 100
Mt. Laurel, NJ 08054
Phone: (856) 797-0412
FAX:

Job: *18946024A*			
Project: *CTL02171*			
Client: AT&T	Drawn by: CLuengas		App'd:
Code: TIA-222-G	Date: 12/14/18		Scale: NTS
Path: R:\Projects\2018\18946000A\18946024A\Structural\Tower Analysis\Rev 3\TNX\CTL02171.eri			Dwg No. E-1

TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure B

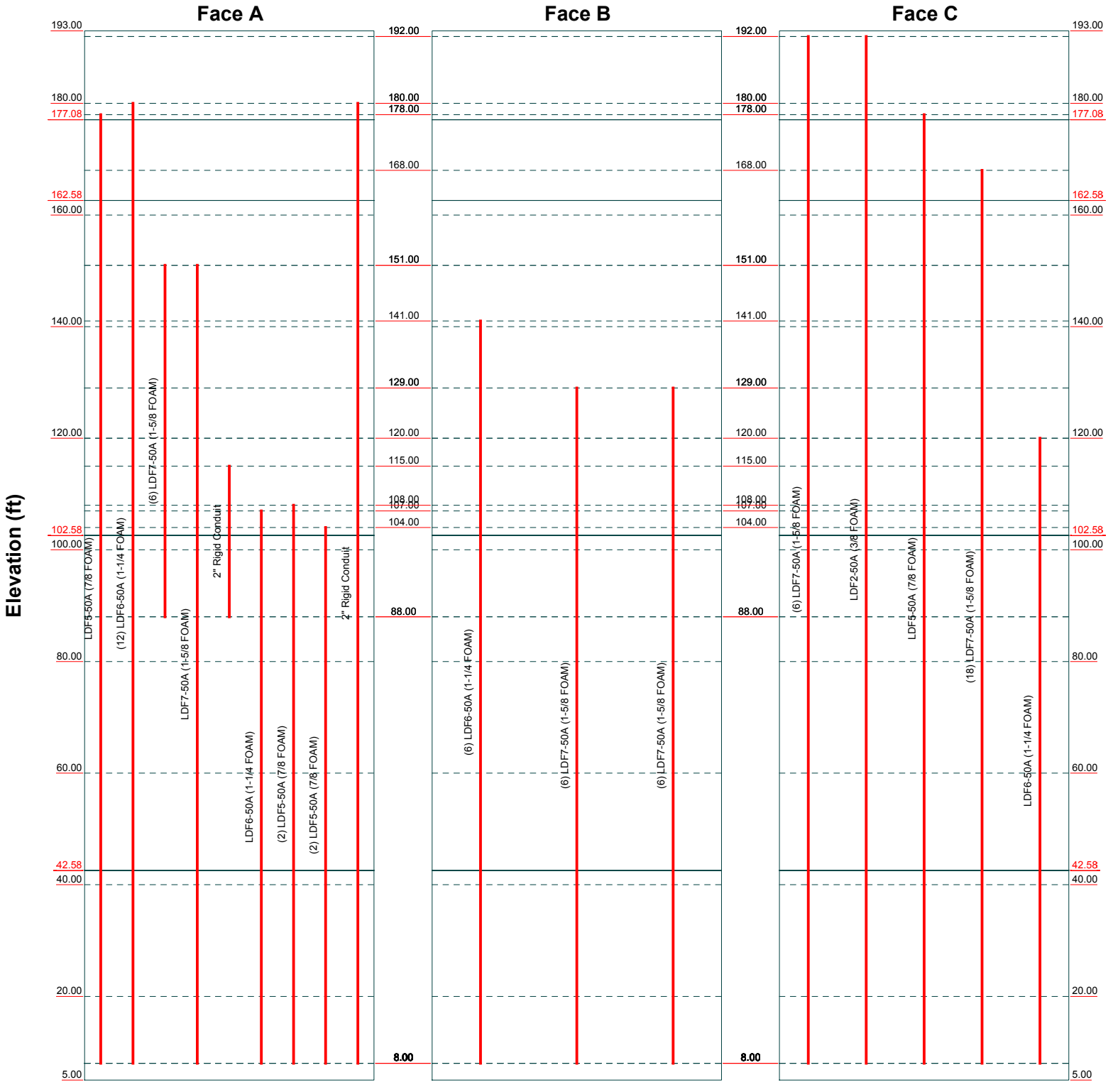
Leg Capacity ——— Leg Compression (K)



Maser Consulting 2000 Midlantic Drive, Suite 100 Mt. Laurel, NJ 08054 Phone: (856) 797-0412 FAX:	Job: ***18946024A***		
	Project: ***CTL02171***		
	Client: AT&T	Drawn by: CLuengas	App'd:
	Code: TIA-222-G	Date: 12/14/18	Scale: NTS
	Path: R:\Projects\2018\18946000A\18946024A\Structural\Tower Analysis\Rev 3\TNX\CTL02171.eri		Dwg No. E-3

Feed Line Distribution Chart
5' - 193'

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



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Job: ***18946024A***			
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Path: R:\Projects\2018\18946000A\18946024A\Structural\Tower Analysis\Rev 3\TNX\CTL02171.eri			Dwg No. E-7

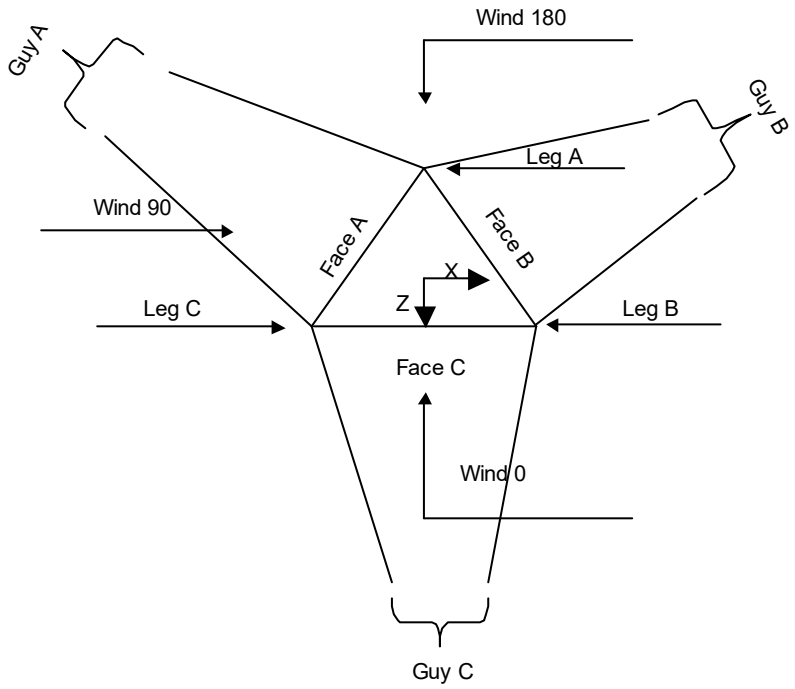
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 193.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 3.42 ft at the top and tapered at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in New London County, Connecticut.
ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
Basic wind speed of 105 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Weld together tower sections have flange connections..
Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..
Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
Welds are fabricated with ER-70S-6 electrodes..
Pressures are calculated at each section.
Safety factor used in guy design is 1.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	193.00-180.00			3.42	1	13.00
T2	180.00-160.00			3.42	1	20.00
T3	160.00-140.00			3.42	1	20.00
T4	140.00-120.00			3.42	1	20.00
T5	120.00-100.00			3.42	1	20.00
T6	100.00-80.00			3.42	1	20.00
T7	80.00-60.00			3.42	1	20.00
T8	60.00-40.00			3.42	1	20.00
T9	40.00-20.00			3.42	1	20.00
T10	20.00-5.00			3.42	1	15.00
T11	5.00-0.00			3.42	1	5.00

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	193.00-180.00	2.42	X Brace	No	No	6.0000	5.0000
T2	180.00-160.00	2.42	X Brace	No	Yes	6.0000	2.0000
T3	160.00-140.00	2.42	X Brace	No	Yes	6.0000	2.0000
T4	140.00-120.00	2.42	CX Brace	No	No	6.0000	2.0000
T5	120.00-100.00	2.42	X Brace	No	Yes	6.0000	2.0000
T6	100.00-80.00	2.42	CX Brace	No	No	6.0000	2.0000
T7	80.00-60.00	2.42	X Brace	No	No	6.0000	2.0000
T8	60.00-40.00	2.42	CX Brace	No	No	6.0000	2.0000
T9	40.00-20.00	2.42	K Brace Left	No	No	6.0000	2.0000
T10	20.00-5.00	2.42	K Brace Left	No	No	5.0000	1.0000
T11	5.00-0.00	1.17	X Brace	No	Yes	4.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 193.00-180.00	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T2 180.00-160.00	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T3 160.00-140.00	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T4 140.00-120.00	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)
T5 120.00-100.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T6 100.00-80.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)
T7 80.00-60.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T8 60.00-40.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)
T9 40.00-20.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)
T10 20.00-5.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)
T11 5.00-0.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe		A53-B-42 (42 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 193.00-180.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T2 180.00-160.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T3 160.00-140.00	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)
T4 140.00-120.00	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)
T5 120.00-100.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T6 100.00-80.00	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)
T7 80.00-60.00	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)
T8 60.00-40.00	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)
T9 40.00-20.00	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)
T10 20.00-5.00	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)	Pipe	ROHN TS1.5x11 ga	A53-B-42 (42 ksi)
T11 5.00-0.00	Equal Angle	L4x4x1/4	A36 (36 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T11 5.00-0.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L4x4x1/4	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
T2 180.00-160.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Pipe		A36 (36 ksi)
T3 160.00-140.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Pipe		A36 (36 ksi)
T5 120.00-100.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Pipe		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 193.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	Mid-Pt	36.0000	36.0000
T2 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	Mid-Pt	36.0000	36.0000
T3 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	Mid-Pt	36.0000	36.0000
T4 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	Mid-Pt	36.0000	36.0000
T5 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	Mid-Pt	36.0000	36.0000
T6 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	Mid-Pt	36.0000	36.0000
T7 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	Mid-Pt	36.0000	36.0000
T8 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	Mid-Pt	36.0000	36.0000
T9 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	Mid-Pt	36.0000	36.0000
T10 20.00-5.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	Mid-Pt	36.0000	36.0000
T11 5.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	Mid-Pt	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1	Yes	Yes	1	1	1	1	1	1	1	1
193.00-180.00				1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1
180.00-160.00				1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1
160.00-140.00				1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T6	Yes	Yes	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
20.00-5.00				1	1	1	1	1	1	1
T11 5.00-0.00	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	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 193.00-180.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 160.00-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 20.00-5.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 5.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	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 193.00-180.00	Flange	0.7500 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T2 180.00-160.00	Flange	0.7500 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T3 160.00-140.00	Flange	0.7500 A325N	4	0.6250 A325X	1	0.5000 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.6250 A325X	1	0.6250 A325N	0
T4 140.00-120.00	Flange	0.7500 A325N	4	0.6250 A325N	1	0.5000 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.5000 A325N	1	0.6250 A325N	0
T5 120.00-100.00	Flange	0.7500 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T6 100.00-80.00	Flange	0.7500 A325N	4	0.5000 A490X	1	0.5000 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.5000 A490X	1	0.6250 A325N	0
T7 80.00-60.00	Flange	0.7500 A325N	4	0.6250 A325X	1	0.5000 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.6250 A325X	1	0.6250 A325N	0
T8 60.00-40.00	Flange	0.7500 A325N	4	0.5000 A325X	1	0.5000 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.5000 A325X	1	0.6250 A325N	0
T9 40.00-20.00	Flange	0.7500 A325N	4	0.6250 A490X	1	0.5000 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.6250 A490X	1	0.6250 A325N	0
T10 20.00-5.00	Flange	0.7500 A325N	4	0.5000 A490X	1	0.5000 A325N	1	0.5000 A490X	1	0.6250 A325N	0	0.5000 A490X	1	0.6250 A325N	0

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.
T11 5.00-0.00	Flange	0.7500 A325N	4	0.7500 A325N	0	0.5000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
162.583	EHS	A	7/8	7.97	10%	19000	1.581	210.20	138.00	0.0000	2.00	100%
		B	7/8	7.97	10%	19000	1.581	216.08	140.00	0.0000	-4.00	100%
		C	7/8	7.97	10%	19000	1.581	210.20	138.00	0.0000	2.00	100%
102.583	EHS	A	5/8	4.24	10%	21000	0.813	132.20	88.00	0.0000	2.00	100%
		B	5/8	4.24	10%	21000	0.813	136.67	89.00	0.0000	-3.00	100%
		C	5/8	4.24	10%	21000	0.813	132.85	89.00	0.0000	2.00	100%
42.5833	EHS	A	1/2	2.69	10%	21000	0.517	94.98	88.00	0.0000	2.00	100%
		B	1/2	2.69	10%	21000	0.517	98.10	89.00	0.0000	-3.00	100%
		C	1/2	2.69	10%	21000	0.517	95.88	89.00	0.0000	2.00	100%
177.083	EHS	A	5/8	4.24	10%	21000	0.813	221.47	138.00	0.0000	2.00	100%
		B	5/8	4.24	10%	21000	0.813	227.44	140.00	0.0000	-4.00	100%
		C	5/8	4.24	10%	21000	0.813	221.47	138.00	0.0000	2.00	100%

Guy Data *(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
162.583	Torque Arm	7.33	0.0000	Channel	A36 (36 ksi)	Channel	C15x50
102.583	Torque Arm	7.33	0.0000	Channel	A36 (36 ksi)	Channel	C15x40
42.5833	Torque Arm	7.33	0.0000	Channel	A36 (36 ksi)	Channel	C12x25
177.083	Torque Arm	7.33	0.0000	Channel	A36 (36 ksi)	Channel	C15x50

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
162.58	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	
102.58	A572-50	Solid Round				A572-50	Solid Round	

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
42.58	(50 ksi) A572-50 (50 ksi)	Solid Round				(50 ksi) A572-50 (50 ksi)	Solid Round	
177.08	(50 ksi) A572-50 (50 ksi)	Solid Round				(50 ksi) A572-50 (50 ksi)	Solid Round	

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
162.583	0.33	0.34	0.33		4.32 3.6 sec/pulse	4.56 3.7 sec/pulse	4.32 3.6 sec/pulse	
102.583	0.11	0.11	0.11		1.66 2.2 sec/pulse	1.77 2.3 sec/pulse	1.68 2.2 sec/pulse	
42.5833	0.05	0.05	0.05		0.86 1.6 sec/pulse	0.92 1.7 sec/pulse	0.88 1.6 sec/pulse	
177.083	0.18	0.18	0.18		4.63 3.7 sec/pulse	4.88 3.8 sec/pulse	4.63 3.7 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
162.583	No	No	1	1	1	1	1	1
102.583	No	No	1	1	1	1	1	1
42.5833	No	No	1	1	1	1	1	1
177.083	No	No	1	1	1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
162.583	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
102.583	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
42.5833	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
177.083	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
162.583	A	82.29	22	5	1.6435
	B	79.29	22	5	1.6374
	C	82.29	22	5	1.6435
102.583	A	52.29	20	4	1.5707
	B	49.79	19	4	1.5630
	C	52.29	20	4	1.5707
42.5833	A	22.29	17	4	1.4423
	B	19.79	17	4	1.4252
	C	22.29	17	4	1.4423
177.083	A	89.54	23	5	1.6575
	B	86.54	23	5	1.6518
	C	89.54	23	5	1.6575

Guy-Tensioning Information

				Temperature At Time Of Tensioning													
				0 F		20 F		40 F		60 F		80 F		100 F		120 F	
Guy Elevation ft		H ft	V ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft
162.583	A	135.93	160.58	9.325	3.70	8.870	3.89	8.418	4.09	7.970	4.32	7.526	4.57	7.088	4.85	6.656	5.16
	B	137.93	166.58	9.288	3.92	8.845	4.11	8.406	4.33	7.970	4.56	7.538	4.82	7.112	5.10	6.692	5.42
	C	135.93	160.58	9.325	3.70	8.870	3.89	8.418	4.09	7.970	4.32	7.526	4.57	7.088	4.85	6.656	5.16
102.583	A	85.96	100.58	5.040	1.40	4.772	1.48	4.506	1.56	4.240	1.66	3.976	1.77	3.713	1.89	3.453	2.04
	B	86.96	105.58	5.005	1.50	4.749	1.59	4.494	1.67	4.240	1.77	3.987	1.89	3.736	2.01	3.486	2.15
	C	86.96	100.58	5.050	1.41	4.779	1.49	4.509	1.58	4.240	1.68	3.972	1.79	3.707	1.92	3.443	2.06
42.5833	A	85.96	40.58	3.678	0.63	3.347	0.70	3.017	0.77	2.690	0.86	2.366	0.98	2.046	1.14	1.734	1.34
	B	86.96	45.58	3.637	0.68	3.320	0.75	3.004	0.83	2.690	0.92	2.379	1.04	2.072	1.19	1.773	1.40
	C	86.96	40.58	3.681	0.64	3.349	0.71	3.019	0.79	2.690	0.88	2.365	1.00	2.044	1.16	1.731	1.37
177.083	A	135.93	175.08	4.932	3.99	4.700	4.18	4.469	4.40	4.240	4.63	4.013	4.89	3.789	5.17	3.568	5.49
	B	137.93	181.08	4.915	4.22	4.688	4.42	4.463	4.64	4.240	4.88	4.019	5.14	3.800	5.43	3.585	5.76
	C	135.93	175.08	4.932	3.99	4.700	4.18	4.469	4.40	4.240	4.63	4.013	4.89	3.789	5.17	3.568	5.49

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	192.00 - 8.00	6	3	1.9800	1.9800		0.82
LDF2-50A (3/8 FOAM)	C	No	Ar (CaAa)	192.00 - 8.00	1	1	0.4400	0.4400		0.08
LDF5-50A (7/8 FOAM)	A	No	Ar (CaAa)	178.00 - 8.00	1	1	1.0900	1.0900		0.33
LDF5-50A (7/8 FOAM)	C	No	Ar (CaAa)	178.00 - 8.00	1	1	1.0900	1.0900		0.33
LDF6-50A (1-1/4 FOAM)	A	No	Ar (CaAa)	180.00 - 8.00	12	12	1.5500	1.5500		0.66
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	168.00 - 8.00	18	6	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	A	No	Ar (CaAa)	151.00 - 88.00	6	6	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	A	No	Ar (CaAa)	151.00 - 8.00	1	1	1.9800	1.9800		0.82
LDF6-50A (1-1/4 FOAM)	B	No	Ar (CaAa)	141.00 - 8.00	6	3	1.5500	1.5500		0.66

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1-5/8 FOAM)	B	No	Ar (CaAa)	129.00 - 8.00	6	6	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	B	No	Ar (CaAa)	129.00 - 8.00	6	6	1.9800	1.9800		0.82
LDF6-50A (1-1/4 FOAM)	C	No	Ar (CaAa)	120.00 - 8.00	1	1	1.5500	1.5500		0.66
2" Rigid Conduit	A	No	Ar (CaAa)	115.00 - 88.00	1	1	2.0000	2.0000		2.80
LDF6-50A (1-1/4 FOAM)	A	No	Ar (CaAa)	107.00 - 8.00	1	1	1.5500	1.5500		0.66
LDF5-50A (7/8 FOAM)	A	No	Ar (CaAa)	108.00 - 8.00	2	2	1.0900	1.0900		0.33
LDF5-50A (7/8 FOAM)	A	No	Ar (CaAa)	104.00 - 8.00	2	2	1.0900	1.0900		0.33
2" Rigid Conduit	A	No	Ar (CaAa)	180.00 - 8.00	1	1	2.0000	2.0000		2.80

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	193.00-180.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	14.784	0.000	0.06
T2	180.00-160.00	A	0.000	0.000	43.162	0.000	0.22
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	55.114	0.000	0.22
T3	160.00-140.00	A	0.000	0.000	58.626	0.000	0.28
		B	0.000	0.000	0.930	0.000	0.00
		C	0.000	0.000	98.100	0.000	0.40
T4	140.00-120.00	A	0.000	0.000	71.100	0.000	0.34
		B	0.000	0.000	39.984	0.000	0.17
		C	0.000	0.000	98.100	0.000	0.40
T5	120.00-100.00	A	0.000	0.000	77.801	0.000	0.39
		B	0.000	0.000	66.120	0.000	0.28
		C	0.000	0.000	101.200	0.000	0.41
T6	100.00-80.00	A	0.000	0.000	75.816	0.000	0.37
		B	0.000	0.000	66.120	0.000	0.28
		C	0.000	0.000	101.200	0.000	0.41
T7	80.00-60.00	A	0.000	0.000	59.160	0.000	0.28
		B	0.000	0.000	66.120	0.000	0.28
		C	0.000	0.000	101.200	0.000	0.41
T8	60.00-40.00	A	0.000	0.000	59.160	0.000	0.28
		B	0.000	0.000	66.120	0.000	0.28
		C	0.000	0.000	101.200	0.000	0.41
T9	40.00-20.00	A	0.000	0.000	59.160	0.000	0.28
		B	0.000	0.000	66.120	0.000	0.28
		C	0.000	0.000	101.200	0.000	0.41
T10	20.00-5.00	A	0.000	0.000	35.496	0.000	0.17
		B	0.000	0.000	39.672	0.000	0.17
		C	0.000	0.000	60.720	0.000	0.25
T11	5.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00

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	193.00-180.00	A	1.784	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	29.536	0.000	0.60
T2	180.00-160.00	A	1.767	0.000	0.000	118.175	0.000	1.82
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	86.029	0.000	2.09
T3	160.00-140.00	A	1.745	0.000	0.000	160.370	0.000	2.45
		B		0.000	0.000	1.735	0.000	0.03
		C		0.000	0.000	129.464	0.000	3.56
T4	140.00-120.00	A	1.720	0.000	0.000	193.797	0.000	2.94
		B		0.000	0.000	92.566	0.000	1.53
		C		0.000	0.000	128.925	0.000	3.53
T5	120.00-100.00	A	1.692	0.000	0.000	216.683	0.000	3.22
		B		0.000	0.000	162.970	0.000	2.56
		C		0.000	0.000	138.174	0.000	3.64
T6	100.00-80.00	A	1.658	0.000	0.000	222.424	0.000	3.12
		B		0.000	0.000	162.337	0.000	2.52
		C		0.000	0.000	137.309	0.000	3.60
T7	80.00-60.00	A	1.617	0.000	0.000	176.111	0.000	2.37
		B		0.000	0.000	161.562	0.000	2.47
		C		0.000	0.000	136.251	0.000	3.56
T8	60.00-40.00	A	1.564	0.000	0.000	174.216	0.000	2.30
		B		0.000	0.000	160.557	0.000	2.41
		C		0.000	0.000	134.875	0.000	3.49
T9	40.00-20.00	A	1.486	0.000	0.000	171.459	0.000	2.19
		B		0.000	0.000	159.096	0.000	2.33
		C		0.000	0.000	132.874	0.000	3.40
T10	20.00-5.00	A	1.361	0.000	0.000	100.233	0.000	1.21
		B		0.000	0.000	94.060	0.000	1.31
		C		0.000	0.000	77.804	0.000	1.96
T11	5.00-0.00	A	1.159	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	193.00-180.00	0.0000	1.6996	0.0000	0.5878
T2	180.00-160.00	-0.9470	1.0145	-0.6155	0.1208
T3	160.00-140.00	-0.8992	1.4070	-0.7088	0.2566
T4	140.00-120.00	-0.3617	0.7395	-0.5609	-0.0154
T5	120.00-100.00	-0.0935	0.4478	-0.2229	-0.1171
T6	100.00-80.00	-0.0731	0.4807	-0.2404	-0.1263
T7	80.00-60.00	0.1151	0.6221	-0.0747	-0.0325
T8	60.00-40.00	0.1158	0.6262	-0.0724	-0.0345
T9	40.00-20.00	0.1182	0.6391	-0.0727	-0.0398
T10	20.00-5.00	0.1155	0.6244	-0.0614	-0.0427
T11	5.00-0.00	0.0000	0.0000	0.0000	0.0000

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	LDF7-50A (1-5/8 FOAM)	180.00 - 192.00	0.6000	0.3200
T1	2	LDF2-50A (3/8 FOAM)	180.00 - 192.00	0.6000	0.3200
T2	1	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.1810
T2	2	LDF2-50A (3/8 FOAM)	160.00 - 180.00	0.6000	0.1810
T2	3	LDF5-50A (7/8 FOAM)	160.00 - 178.00	0.6000	0.1810
T2	4	LDF5-50A (7/8 FOAM)	160.00 - 178.00	0.6000	0.1810
T2	5	LDF6-50A (1-1/4 FOAM)	160.00 - 180.00	0.6000	0.1810
T2	6	LDF7-50A (1-5/8 FOAM)	160.00 - 168.00	0.6000	0.1810
T2	17	2" Rigid Conduit	160.00 - 180.00	0.6000	0.1810
T3	1	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.1898
T3	2	LDF2-50A (3/8 FOAM)	140.00 - 160.00	0.6000	0.1898
T3	3	LDF5-50A (7/8 FOAM)	140.00 - 160.00	0.6000	0.1898
T3	4	LDF5-50A (7/8 FOAM)	140.00 - 160.00	0.6000	0.1898
T3	5	LDF6-50A (1-1/4 FOAM)	140.00 - 160.00	0.6000	0.1898
T3	6	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.1898
T3	7	LDF7-50A (1-5/8 FOAM)	140.00 - 151.00	0.6000	0.1898
T3	8	LDF7-50A (1-5/8 FOAM)	140.00 - 151.00	0.6000	0.1898
T3	9	LDF6-50A (1-1/4 FOAM)	140.00 - 141.00	0.6000	0.1898
T3	17	2" Rigid Conduit	140.00 - 160.00	0.6000	0.1898
T4	1	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.3750
T4	2	LDF2-50A (3/8 FOAM)	120.00 - 140.00	0.6000	0.3750
T4	3	LDF5-50A (7/8 FOAM)	120.00 - 140.00	0.6000	0.3750
T4	4	LDF5-50A (7/8 FOAM)	120.00 - 140.00	0.6000	0.3750
T4	5	LDF6-50A (1-1/4 FOAM)	120.00 - 140.00	0.6000	0.3750
T4	6	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.3750
T4	7	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.3750
T4	8	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.3750
T4	9	LDF6-50A (1-1/4 FOAM)	120.00 - 140.00	0.6000	0.3750
T4	10	LDF7-50A (1-5/8 FOAM)	120.00 - 129.00	0.6000	0.3750
T4	11	LDF7-50A (1-5/8 FOAM)	120.00 -	0.6000	0.3750

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			129.00		
T4	17	2" Rigid Conduit	120.00 - 140.00	0.6000	0.3750
T5	1	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	2	LDF2-50A (3/8 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	3	LDF5-50A (7/8 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	4	LDF5-50A (7/8 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	5	LDF6-50A (1-1/4 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	6	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	7	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	8	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	9	LDF6-50A (1-1/4 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	10	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	11	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	12	LDF6-50A (1-1/4 FOAM)	100.00 - 120.00	0.6000	0.1927
T5	13	2" Rigid Conduit	100.00 - 115.00	0.6000	0.1927
T5	14	LDF6-50A (1-1/4 FOAM)	100.00 - 107.00	0.6000	0.1927
T5	15	LDF5-50A (7/8 FOAM)	100.00 - 108.00	0.6000	0.1927
T5	16	LDF5-50A (7/8 FOAM)	100.00 - 104.00	0.6000	0.1927
T5	17	2" Rigid Conduit	100.00 - 120.00	0.6000	0.1927
T6	1	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	2	LDF2-50A (3/8 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	3	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	4	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	5	LDF6-50A (1-1/4 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	6	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	7	LDF7-50A (1-5/8 FOAM)	88.00 - 100.00	0.6000	0.3752
T6	8	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	9	LDF6-50A (1-1/4 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	10	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	11	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	12	LDF6-50A (1-1/4 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	13	2" Rigid Conduit	88.00 - 100.00	0.6000	0.3752
T6	14	LDF6-50A (1-1/4 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	15	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	16	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.3752
T6	17	2" Rigid Conduit	80.00 - 100.00	0.6000	0.3752
T7	1	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	2	LDF2-50A (3/8 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	3	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	4	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	5	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	6	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	8	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	9	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	0.6000	0.3674

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	10	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	11	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	12	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	14	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	15	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	16	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.3674
T7	17	2" Rigid Conduit	60.00 - 80.00	0.6000	0.3674
T8	1	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	2	LDF2-50A (3/8 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	3	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	4	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	5	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	6	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	8	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	9	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	10	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	11	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	12	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	14	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	15	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	16	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.3941
T8	17	2" Rigid Conduit	40.00 - 60.00	0.6000	0.3941
T9	1	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	2	LDF2-50A (3/8 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	3	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	4	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	5	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	6	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	8	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	9	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	10	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	11	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	12	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	14	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	15	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	16	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5539
T9	17	2" Rigid Conduit	20.00 - 40.00	0.6000	0.5539
T10	1	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	2	LDF2-50A (3/8 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	3	LDF5-50A (7/8 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	4	LDF5-50A (7/8 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	5	LDF6-50A (1-1/4 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	6	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	8	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	9	LDF6-50A (1-1/4 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	10	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	11	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	12	LDF6-50A (1-1/4 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	14	LDF6-50A (1-1/4 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	15	LDF5-50A (7/8 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	16	LDF5-50A (7/8 FOAM)	8.00 - 20.00	0.6000	0.5625
T10	17	2" Rigid Conduit	8.00 - 20.00	0.6000	0.5625

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
10' Boom Gate w/3 - 2 3/8" Pipe (Tapered) (3) (T-Mobile)	A	None		0.0000	192.00	No Ice	35.30	35.30	1.75
						1/2" Ice	46.40	46.40	2.40
						1" Ice	57.50	57.50	3.05
20' Omni (Unknown)	C	From Leg	5.00 0.00 0.00	0.0000	188.00	No Ice 1/2" Ice 1" Ice	6.00 8.03 10.08	6.00 8.03 10.08	0.04 0.08 0.14
2.5" Dia 7' Omni (Unknown)	B	From Leg	5.00 0.00 0.00	0.0000	181.00	No Ice 1/2" Ice 1" Ice	1.75 2.45 2.87	1.75 2.45 2.87	0.03 0.04 0.06
10' Boom Gate w/3 - 2 3/8" Pipe (Tapered) (3) (AT&T)	A	None		0.0000	179.00	No Ice	35.30	35.30	1.75
						1/2" Ice	46.40	46.40	2.40
						1" Ice	57.50	57.50	3.05
7770 (AT&T)	A	From Leg	5.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	5.51 5.87 6.23	2.93 3.27 3.63	0.04 0.07 0.11
7770 (AT&T)	B	From Leg	5.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	5.51 5.87 6.23	2.93 3.27 3.63	0.04 0.07 0.11
7770 (AT&T)	C	From Leg	5.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	5.51 5.87 6.23	2.93 3.27 3.63	0.04 0.07 0.11
TPA-65R-LCUUUU-H8 (AT&T)	A	From Leg	5.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	13.30 13.90 14.50	8.82 9.42 10.03	0.08 0.15 0.24
Quintel QS66512-2 w/m pipe (AT&T)	B	From Leg	5.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	8.85 9.61 10.39	8.94 10.33 11.73	0.14 0.22 0.31
TPA-65R-LCUUUU-H8 (AT&T)	C	From Leg	5.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	13.30 13.90 14.50	8.82 9.42 10.03	0.08 0.15 0.24
HPA-65R-BUU-H8 (AT&T)	A	From Leg	5.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	12.98 13.56 14.15	7.52 8.09 8.67	0.07 0.14 0.22
HPA-65R-BUU-H8 (AT&T)	B	From Leg	5.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	12.98 13.56 14.15	7.52 8.09 8.67	0.07 0.14 0.22
HPA-65R-BUU-H8 (AT&T)	C	From Leg	5.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	12.98 13.56 14.15	7.52 8.09 8.67	0.07 0.14 0.22
RRUS 12 + RRUS 4426 B66 shielded (AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	0.00 0.01 0.02	0.02 0.10 0.19	0.10 0.10 0.10
RRUS 12 + RRUS 4426 B66 shielded (AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	0.00 0.01 0.02	0.02 0.10 0.19	0.10 0.10 0.10
RRUS 12 + RRUS 4426 B66 shielded (AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	0.00 0.01 0.02	0.02 0.10 0.19	0.10 0.10 0.10
RRUS11 B12 (Partiall Shielded by 11.9" Antenna) (AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	0.88 1.02 1.16	1.18 1.33 1.48	0.05 0.06 0.07
RRUS11 B12 (Partiall Shielded by 11.9" Antenna) (AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	0.88 1.02 1.16	1.18 1.33 1.48	0.05 0.06 0.07
RRUS11 B12 (Partiall Shielded by 11.9" Antenna) (AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	0.88 1.02 1.16	1.18 1.33 1.48	0.05 0.06 0.07

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
RRUS 32 (AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	2.74 2.96 3.19	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 32 (AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	2.72 2.94 3.17	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 32 (AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	2.72 2.94 3.17	1.67 1.86 2.05	0.05 0.07 0.10
14' T Arm round (Verizon)	A	From Leg	1.50 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	3.50 5.25 7.88	1.60 2.40 3.60	0.34 0.41 0.49
14' T Arm round (Verizon)	B	From Leg	1.50 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	3.50 5.25 7.88	1.60 2.40 3.60	0.34 0.41 0.49
14' T Arm round (Verizon)	C	From Leg	1.50 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	3.50 5.25 7.88	1.60 2.40 3.60	0.34 0.41 0.49
SBNH-1D6565B (T-Mobile)	A	From Leg	5.00 0.00 0.00	0.0000	192.70	No Ice 1/2" Ice 1" Ice	8.17 8.63 9.10	6.83 7.79 8.62	0.07 0.14 0.21
SBNH-1D6565B (T-Mobile)	B	From Leg	5.00 0.00 0.00	0.0000	192.70	No Ice 1/2" Ice 1" Ice	8.17 8.63 9.10	6.83 7.79 8.62	0.07 0.14 0.21
SBNH-1D6565B (T-Mobile)	C	From Leg	5.00 0.00 0.00	0.0000	192.70	No Ice 1/2" Ice 1" Ice	8.17 8.63 9.10	6.83 7.79 8.62	0.07 0.14 0.21
APXV9TM14-C-I20 (T-Mobile)	A	From Leg	5.00 0.00 0.00	0.0000	192.70	No Ice 1/2" Ice 1" Ice	6.34 6.72 7.10	3.61 3.97 4.33	0.06 0.09 0.14
APXV9TM14-C-I20 (T-Mobile)	B	From Leg	5.00 0.00 0.00	0.0000	192.70	No Ice 1/2" Ice 1" Ice	6.34 6.72 7.10	3.61 3.97 4.33	0.06 0.09 0.14
APXV9TM14-C-I20 (T-Mobile)	C	From Leg	5.00 0.00 0.00	0.0000	192.70	No Ice 1/2" Ice 1" Ice	6.34 6.72 7.10	3.61 3.97 4.33	0.06 0.09 0.14
(2) LPA-80063/8CF (Verizon)	A	From Leg	2.50 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	13.62 14.21 14.82	12.17 12.77 13.37	0.04 0.14 0.24
(2) LPA-80063/8CF (Verizon)	B	From Leg	2.50 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	13.62 14.21 14.82	12.17 12.77 13.37	0.04 0.14 0.24
(2) LPA-80063/8CF (Verizon)	C	From Leg	2.50 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	13.62 14.21 14.82	12.17 12.77 13.37	0.04 0.14 0.24
BXA-171063-12CF (Verizon)	A	From Leg	2.50 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	4.80 5.25 5.71	3.63 4.06 4.51	0.01 0.04 0.07
BXA-171063-12CF (Verizon)	B	From Leg	2.50 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	4.80 5.25 5.71	3.63 4.06 4.51	0.01 0.04 0.07
BXA-171063-12CF (Verizon)	C	From Leg	2.50 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	4.80 5.25 5.71	3.63 4.06 4.51	0.01 0.04 0.07
BXA-70063/6CF (Verizon)	A	From Leg	2.50 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	7.57 8.02 8.47	4.16 4.60 5.04	0.02 0.06 0.11

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
BXA-70063/6CF	B	From Leg	2.50	0.00	0.0000	168.00	No Ice	7.57	4.16	0.02
(Verizon)			0.00				1/2" Ice	8.02	4.60	0.06
			0.00				1" Ice	8.47	5.04	0.11
BXA-70063/6CF	C	From Leg	2.50	0.00	0.0000	168.00	No Ice	7.57	4.16	0.02
(Verizon)			0.00				1/2" Ice	8.02	4.60	0.06
			0.00				1" Ice	8.47	5.04	0.11
(2) B25 RRH4x30-4R	A	From Leg	2.50	0.00	0.0000	168.00	No Ice	2.12	1.29	0.05
(Verizon)			0.00				1/2" Ice	2.31	1.45	0.07
			0.00				1" Ice	2.50	1.61	0.09
(2) B25 RRH4x30-4R	B	From Leg	2.50	0.00	0.0000	168.00	No Ice	2.12	1.29	0.05
(Verizon)			0.00				1/2" Ice	2.31	1.45	0.07
			0.00				1" Ice	2.50	1.61	0.09
(2) B25 RRH4x30-4R	C	From Leg	2.50	0.00	0.0000	168.00	No Ice	2.12	1.29	0.05
(Verizon)			0.00				1/2" Ice	2.31	1.45	0.07
			0.00				1" Ice	2.50	1.61	0.09
10' Boom Gate w/3 2 - 3/8"	A	None			0.0000	151.00	No Ice	39.20	39.20	1.50
Pipe (Vertical) (3)							1/2" Ice	51.70	51.70	2.10
(Sprint)							1" Ice	64.20	64.20	2.70
APXV9TM14-ALU	A	From Leg	5.00	0.00	0.0000	151.00	No Ice	6.34	3.61	0.06
(Sprint)			0.00				1/2" Ice	6.72	3.97	0.10
			0.00				1" Ice	7.10	4.33	0.15
APXV9TM14-ALU	B	From Leg	5.00	0.00	0.0000	151.00	No Ice	6.34	3.61	0.06
(Sprint)			0.00				1/2" Ice	6.72	3.97	0.10
			0.00				1" Ice	7.10	4.33	0.15
APXV9TM14-ALU	C	From Leg	5.00	0.00	0.0000	151.00	No Ice	6.34	3.61	0.06
(Sprint)			0.00				1/2" Ice	6.72	3.97	0.10
			0.00				1" Ice	7.10	4.33	0.15
RFS APXV9ERR18-C	A	From Leg	5.00	0.00	0.0000	151.00	No Ice	8.02	7.23	0.08
(Sprint)			0.00				1/2" Ice	8.48	8.19	0.15
			0.00				1" Ice	8.94	9.02	0.23
RFS APXV9ERR18-C	B	From Leg	5.00	0.00	0.0000	151.00	No Ice	8.02	7.23	0.08
(Sprint)			0.00				1/2" Ice	8.48	8.19	0.15
			0.00				1" Ice	8.94	9.02	0.23
RFS APXV9ERR18-C	C	From Leg	5.00	0.00	0.0000	151.00	No Ice	8.02	7.23	0.08
(Sprint)			0.00				1/2" Ice	8.48	8.19	0.15
			0.00				1" Ice	8.94	9.02	0.23
RRH-2X50-800	A	From Leg	5.00	0.00	0.0000	151.00	No Ice	2.13	2.46	0.06
(Sprint)			0.00				1/2" Ice	2.32	2.66	0.09
			0.00				1" Ice	2.51	2.86	0.12
RRH-2X50-800	B	From Leg	5.00	0.00	0.0000	151.00	No Ice	2.13	2.46	0.06
(Sprint)			0.00				1/2" Ice	2.32	2.66	0.09
			0.00				1" Ice	2.51	2.86	0.12
RRH-2X50-800	B	From Leg	5.00	0.00	0.0000	151.00	No Ice	2.13	2.46	0.06
(Sprint)			0.00				1/2" Ice	2.32	2.66	0.09
			0.00				1" Ice	2.51	2.86	0.12
RRH-4X40-1900	A	From Leg	5.00	0.00	0.0000	151.00	No Ice	2.13	2.46	0.06
(Sprint)			0.00				1/2" Ice	2.32	2.66	0.09
			0.00				1" Ice	2.51	2.86	0.12
RRH-4X40-1900	B	From Leg	5.00	0.00	0.0000	151.00	No Ice	2.13	2.46	0.06
(Sprint)			0.00				1/2" Ice	2.32	2.66	0.09
			0.00				1" Ice	2.51	2.86	0.12
RRHH-2500	C	From Leg	5.00	0.00	0.0000	151.00	No Ice	2.13	2.46	0.06
(Sprint)			0.00				1/2" Ice	2.32	2.66	0.09
			0.00				1" Ice	2.51	2.86	0.12
7' Whip	C	From Leg	4.00	0.00	0.0000	154.00 - 154.50	No Ice	1.74	1.74	0.04
(Unknown)			0.00				1/2" Ice	2.60	2.60	0.05
			0.00				1" Ice	3.29	3.29	0.08

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
7' Whip	B	From Leg	4.00	0.0000	154.00 - 154.50	No Ice	1.74	1.74	0.04
(Unknown)			0.00			1/2" Ice	2.60	2.60	0.05
			0.00			1" Ice	3.29	3.29	0.08
7' Whip	B	From Leg	4.00	0.0000	154.00 - 154.50	No Ice	1.74	1.74	0.04
(Unknown)			0.00			1/2" Ice	2.60	2.60	0.05
			0.00			1" Ice	3.29	3.29	0.08
10' dipole	B	From Leg	2.00	0.0000	124.00	No Ice	3.00	3.00	0.02
(Unknown)			0.00			1/2" Ice	4.03	4.03	0.04
			0.00			1" Ice	5.03	5.03	0.07
Pirod 4' Side Mount Standoff	C	From Leg	4.00	0.0000	119.50	No Ice	2.72	2.72	0.05
(1)			0.00			1/2" Ice	4.91	4.91	0.09
(Unknown)			0.00			1" Ice	7.10	7.10	0.13
6' Yagi	C	From Leg	1.00	0.0000	113.00	No Ice	0.00	0.00	0.00
(Unknown)			0.00			1/2" Ice	0.00	0.00	0.00
			0.00			1" Ice	0.00	0.00	0.00
Pirod 4' Side Mount Standoff	B	From Leg	2.00	0.0000	108.00	No Ice	2.72	2.72	0.05
(1)			0.00			1/2" Ice	4.91	4.91	0.09
(Unknown)			0.00			1" Ice	7.10	7.10	0.13
20' Omni	B	From Leg	4.00	0.0000	117.00	No Ice	6.00	6.00	0.04
(Unknown)			0.00			1/2" Ice	8.03	8.03	0.08
			0.00			1" Ice	10.08	10.08	0.14
Pirod 4' Side Mount Standoff	A	From Leg	2.00	0.0000	108.00	No Ice	2.72	2.72	0.05
(1)			0.00			1/2" Ice	4.91	4.91	0.09
(Unknown)			0.00			1" Ice	7.10	7.10	0.13
20' Omni	A	From Leg	4.00	0.0000	117.00	No Ice	6.00	6.00	0.04
(Unknown)			0.00			1/2" Ice	8.03	8.03	0.08
			0.00			1" Ice	10.08	10.08	0.14

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1	186.50	1.181	28	47.575	A	7.551	6.229	6.229	45.20	0.000	0.000
193.00-180.00					B	7.551	6.229		45.20	0.000	0.000
					C	7.551	6.229		45.20	14.784	0.000
T2	170.00	1.15	28	73.192	A	15.686	9.583	9.583	37.93	43.162	0.000
180.00-160.00					B	15.686	9.583		37.93	0.000	0.000
					C	15.686	9.583		37.93	55.114	0.000
T3	150.00	1.11	27	73.192	A	14.625	10.378	9.583	38.33	58.626	0.000
160.00-140.00					B	14.625	10.378		38.33	0.930	0.000
					C	14.625	10.378		38.33	98.100	0.000
T4	130.00	1.065	26	73.192	A	0.000	18.167	9.583	52.75	71.100	0.000
140.00-120.00					B	0.000	18.167		52.75	39.984	0.000
					C	0.000	18.167		52.75	98.100	0.000
T5	110.00	1.016	24	74.233	A	15.429	11.667	11.667	43.06	77.801	0.000
120.00-100.00					B	15.429	11.667		43.06	66.120	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	15.429	11.667		43.06	101.200	0.000
T6	90.00	0.959	23	74.233	A	0.000	20.110	11.667	58.01	75.816	0.000
100.00-80.00					B	0.000	20.110		58.01	66.120	0.000
					C	0.000	20.110		58.01	101.200	0.000
T7 80.00-60.00	70.00	0.892	21	74.233	A	8.938	12.449	11.667	54.55	59.160	0.000
					B	8.938	12.449		54.55	66.120	0.000
					C	8.938	12.449		54.55	101.200	0.000
T8 60.00-40.00	50.00	0.811	19	74.233	A	0.000	20.110	11.667	58.01	59.160	0.000
					B	0.000	20.110		58.01	66.120	0.000
					C	0.000	20.110		58.01	101.200	0.000
T9 40.00-20.00	30.00	0.701	17	74.233	A	0.000	16.279	11.667	71.67	59.160	0.000
					B	0.000	16.279		71.67	66.120	0.000
					C	0.000	16.279		71.67	101.200	0.000
T10 20.00-5.00	12.50	0.7	17	55.675	A	0.000	12.405	8.750	70.54	35.496	0.000
					B	0.000	12.405		70.54	39.672	0.000
					C	0.000	12.405		70.54	60.720	0.000
T11 5.00-0.00	2.50	0.7	17	10.091	A	2.271	3.136	3.136	58.00	0.000	0.000
					B	2.271	3.136		58.00	0.000	0.000
					C	2.271	3.136		58.00	0.000	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	186.50	1.181	6	1.7836	51.439	A	7.551	27.426	13.958	39.91	0.000	0.000
193.00-180.00						B	7.551	27.426		39.91	0.000	0.000
						C	7.551	27.426		39.91	29.536	0.000
T2	170.00	1.15	6	1.7672	79.082	A	15.686	49.084	21.365	32.99	118.175	0.000
180.00-160.00						B	15.686	49.084		32.99	0.000	0.000
						C	15.686	49.084		32.99	86.029	0.000
T3	150.00	1.11	6	1.7452	79.009	A	14.625	49.388	21.218	33.15	160.370	0.000
160.00-140.00						B	14.625	49.388		33.15	1.735	0.000
						C	14.625	49.388		33.15	129.464	0.000
T4	130.00	1.065	6	1.7204	78.926	A	0.000	49.327	21.053	42.68	193.797	0.000
140.00-120.00						B	0.000	49.327		42.68	92.566	0.000
						C	0.000	49.327		42.68	128.925	0.000
T5	110.00	1.016	6	1.6919	79.873	A	15.429	49.050	22.946	35.59	216.683	0.000
120.00-100.00						B	15.429	49.050		35.59	162.970	0.000
						C	15.429	49.050		35.59	138.174	0.000
T6 100.00-80.00	90.00	0.959	5	1.6583	79.761	A	0.000	49.834	22.722	45.60	222.424	0.000
						B	0.000	49.834		45.60	162.337	0.000
						C	0.000	49.834		45.60	137.309	0.000
T7 80.00-60.00	70.00	0.892	5	1.6171	79.624	A	8.938	41.435	22.448	44.56	176.111	0.000
						B	8.938	41.435		44.56	161.562	0.000
						C	8.938	41.435		44.56	136.251	0.000
T8 60.00-40.00	50.00	0.811	4	1.5636	79.445	A	0.000	48.137	22.091	45.89	174.216	0.000
						B	0.000	48.137		45.89	160.557	0.000
						C	0.000	48.137		45.89	134.875	0.000
T9 40.00-20.00	30.00	0.701	4	1.4858	79.186	A	0.000	35.322	21.572	61.07	171.459	0.000
						B	0.000	35.322		61.07	159.096	0.000
						C	0.000	35.322		61.07	132.874	0.000
T10 20.00-5.00	12.50	0.7	4	1.3612	59.078	A	0.000	25.845	15.556	60.19	100.233	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						B	0.000	25.845		60.19	94.060	0.000
						C	0.000	25.845		60.19	77.804	0.000
T11 5.00-0.00	2.50	0.7	4	1.1589	11.112	A	2.271	6.528	5.212	59.24	0.000	0.000
						B	2.271	6.528		59.24	0.000	0.000
						C	2.271	6.528		59.24	0.000	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	186.50	1.181	9	47.575	A	7.551	6.229	6.229	45.20	0.000	0.000
193.00-180.00					B	7.551	6.229		45.20	0.000	0.000
					C	7.551	6.229		45.20	14.784	0.000
T2	170.00	1.15	9	73.192	A	15.686	9.583	9.583	37.93	43.162	0.000
180.00-160.00					B	15.686	9.583		37.93	0.000	0.000
					C	15.686	9.583		37.93	55.114	0.000
T3	150.00	1.11	9	73.192	A	14.625	10.378	9.583	38.33	58.626	0.000
160.00-140.00					B	14.625	10.378		38.33	0.930	0.000
					C	14.625	10.378		38.33	98.100	0.000
T4	130.00	1.065	8	73.192	A	0.000	18.167	9.583	52.75	71.100	0.000
140.00-120.00					B	0.000	18.167		52.75	39.984	0.000
					C	0.000	18.167		52.75	98.100	0.000
T5	110.00	1.016	8	74.233	A	15.429	11.667	11.667	43.06	77.801	0.000
120.00-100.00					B	15.429	11.667		43.06	66.120	0.000
					C	15.429	11.667		43.06	101.200	0.000
T6	90.00	0.959	8	74.233	A	0.000	20.110	11.667	58.01	75.816	0.000
100.00-80.00					B	0.000	20.110		58.01	66.120	0.000
					C	0.000	20.110		58.01	101.200	0.000
T7 80.00-60.00	70.00	0.892	7	74.233	A	8.938	12.449	11.667	54.55	59.160	0.000
					B	8.938	12.449		54.55	66.120	0.000
					C	8.938	12.449		54.55	101.200	0.000
T8 60.00-40.00	50.00	0.811	6	74.233	A	0.000	20.110	11.667	58.01	59.160	0.000
					B	0.000	20.110		58.01	66.120	0.000
					C	0.000	20.110		58.01	101.200	0.000
T9 40.00-20.00	30.00	0.701	5	74.233	A	0.000	16.279	11.667	71.67	59.160	0.000
					B	0.000	16.279		71.67	66.120	0.000
					C	0.000	16.279		71.67	101.200	0.000
T10 20.00-5.00	12.50	0.7	5	55.675	A	0.000	12.405	8.750	70.54	35.496	0.000
					B	0.000	12.405		70.54	39.672	0.000
					C	0.000	12.405		70.54	60.720	0.000
T11 5.00-0.00	2.50	0.7	5	10.091	A	2.271	3.136	3.136	58.00	0.000	0.000
					B	2.271	3.136		58.00	0.000	0.000
					C	2.271	3.136		58.00	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.06	0.78	A	0.29	2.324	28	1	1	11.262	0.84	64.91	C
193.00-180.00			B	0.29	2.324		1	1	11.262			
			C	0.29	2.324		1	1	11.262			
T2	0.44	1.46	A	0.345	2.183	28	1	1	21.573	2.39	119.61	C
180.00-160.00		TA 2.25	B	0.345	2.183		1	1	21.573			
			C	0.345	2.183		1	1	21.573			
T3	0.69	1.43	A	0.342	2.191	27	1	1	20.987	2.95	147.45	C
160.00-140.00			B	0.342	2.191		1	1	20.987			
			C	0.342	2.191		1	1	20.987			
T4	0.91	0.87	A	0.248	2.443	26	1	1	10.620	3.00	150.23	C
140.00-120.00			B	0.248	2.443		1	1	10.620			
			C	0.248	2.443		1	1	10.620			
T5	1.08	1.62	A	0.365	2.137	24	1	1	22.683	3.23*	161.41	C
120.00-100.00		TA 0.90	B	0.365	2.137		1	1	22.683			
			C	0.365	2.137		1	1	22.683			
T6	1.06	0.83	A	0.271	2.376	23	1	1	11.873	3.05*	152.42	C
100.00-80.00			B	0.271	2.376		1	1	11.873			
			C	0.271	2.376		1	1	11.873			
T7	0.97	1.10	A	0.288	2.328	21	1	1	16.349	2.84*	141.86	C
80.00-60.00			B	0.288	2.328		1	1	16.349			
			C	0.288	2.328		1	1	16.349			
T8	0.97	1.03	A	0.271	2.376	19	1	1	11.873	2.50	124.80	C
60.00-40.00		TA 0.56	B	0.271	2.376		1	1	11.873			
			C	0.271	2.376		1	1	11.873			
T9	0.97	0.74	A	0.219	2.533	17	1	1	9.411	2.09	104.72	C
40.00-20.00			B	0.219	2.533		1	1	9.411			
			C	0.219	2.533		1	1	9.411			
T10	0.58	0.64	A	0.223	2.522	17	1	1	7.181	1.31	87.33	C
20.00-5.00			B	0.223	2.522		1	1	7.181			
			C	0.223	2.522		1	1	7.181			
T11 5.00-0.00	0.00	0.33	A	0.536	1.858	17	1	1	4.482	0.12	23.77	C
			B	0.536	1.858		1	1	4.482			
			C	0.536	1.858		1	1	4.482			
Sum Weight:	7.73	14.53			*2.1A_g limit					24.32		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.06	0.78	A	0.29	2.324	28	0.8	1	9.752	0.76	58.41	A
193.00-180.00			B	0.29	2.324		0.8	1	9.752			
			C	0.29	2.324		0.8	1	9.752			
T2	0.44	1.46	A	0.345	2.183	28	0.8	1	18.435	2.23	111.58	A
180.00-160.00		TA 2.25	B	0.345	2.183		0.8	1	18.435			
			C	0.345	2.183		0.8	1	18.435			
T3	0.69	1.43	A	0.342	2.191	27	0.8	1	18.062	2.80	140.20	A
160.00-140.00			B	0.342	2.191		0.8	1	18.062			
			C	0.342	2.191		0.8	1	18.062			
T4	0.91	0.87	A	0.248	2.443	26	0.8	1	10.620	3.00	150.23	A
140.00-120.00			B	0.248	2.443		0.8	1	10.620			
			C	0.248	2.443		0.8	1	10.620			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T5	1.08	1.62	A	0.365	2.137	24	0.8	1	19.597	3.23*	161.41	C
120.00-100.00		TA 0.90	B	0.365	2.137		0.8	1	19.597			
			C	0.365	2.137		0.8	1	19.597			
T6	1.06	0.83	A	0.271	2.376	23	0.8	1	11.873	3.05*	152.42	A
100.00-80.00			B	0.271	2.376		0.8	1	11.873			
			C	0.271	2.376		0.8	1	11.873			
T7	0.97	1.10	A	0.288	2.328	21	0.8	1	14.561	2.84*	141.86	A
80.00-60.00			B	0.288	2.328		0.8	1	14.561			
			C	0.288	2.328		0.8	1	14.561			
T8	0.97	1.03	A	0.271	2.376	19	0.8	1	11.873	2.50	124.80	A
60.00-40.00		TA 0.56	B	0.271	2.376		0.8	1	11.873			
			C	0.271	2.376		0.8	1	11.873			
T9	0.97	0.74	A	0.219	2.533	17	0.8	1	9.411	2.09	104.72	A
40.00-20.00			B	0.219	2.533		0.8	1	9.411			
			C	0.219	2.533		0.8	1	9.411			
T10	0.58	0.64	A	0.223	2.522	17	0.8	1	7.181	1.31	87.33	A
20.00-5.00			B	0.223	2.522		0.8	1	7.181			
			C	0.223	2.522		0.8	1	7.181			
T11 5.00-0.00	0.00	0.33	A	0.536	1.858	17	0.8	1	4.028	0.11	21.36	C
			B	0.536	1.858		0.8	1	4.028			
			C	0.536	1.858		0.8	1	4.028			
Sum Weight:	7.73	14.53			*2.1A_g limit					23.92		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.06	0.78	A	0.29	2.324	28	0.85	1	10.129	0.77	59.04	B
193.00-180.00			B	0.29	2.324		0.85	1	10.129			
			C	0.29	2.324		0.85	1	10.129			
T2	0.44	1.46	A	0.345	2.183	28	0.85	1	19.220	2.21	110.46	B
180.00-160.00		TA 2.25	B	0.345	2.183		0.85	1	19.220			
			C	0.345	2.183		0.85	1	19.220			
T3	0.69	1.43	A	0.342	2.191	27	0.85	1	18.793	2.72	136.09	A
160.00-140.00			B	0.342	2.191		0.85	1	18.793			
			C	0.342	2.191		0.85	1	18.793			
T4	0.91	0.87	A	0.248	2.443	26	0.85	1	10.620	2.94	146.95	A
140.00-120.00			B	0.248	2.443		0.85	1	10.620			
			C	0.248	2.443		0.85	1	10.620			
T5	1.08	1.62	A	0.365	2.137	24	0.85	1	20.369	3.23*	161.41	C
120.00-100.00		TA 0.90	B	0.365	2.137		0.85	1	20.369			
			C	0.365	2.137		0.85	1	20.369			
T6	1.06	0.83	A	0.271	2.376	23	0.85	1	11.873	3.05*	152.42	A
100.00-80.00			B	0.271	2.376		0.85	1	11.873			
			C	0.271	2.376		0.85	1	11.873			
T7	0.97	1.10	A	0.288	2.328	21	0.85	1	15.008	2.82	140.76	A
80.00-60.00			B	0.288	2.328		0.85	1	15.008			
			C	0.288	2.328		0.85	1	15.008			
T8	0.97	1.03	A	0.271	2.376	19	0.85	1	11.873	2.45	122.30	A
60.00-40.00		TA 0.56	B	0.271	2.376		0.85	1	11.873			
			C	0.271	2.376		0.85	1	11.873			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T9	0.97	0.74	A	0.219	2.533	17	0.85	1	9.411	2.05	102.56	A
40.00-20.00			B	0.219	2.533		0.85	1	9.411			
			C	0.219	2.533		0.85	1	9.411			
T10	0.58	0.64	A	0.223	2.522	17	0.85	1	7.181	1.28	85.60	A
20.00-5.00			B	0.223	2.522		0.85	1	7.181			
			C	0.223	2.522		0.85	1	7.181			
T11 5.00-0.00	0.00	0.33	A	0.536	1.858	17	0.85	1	4.141	0.11	21.96	C
			B	0.536	1.858		0.85	1	4.141			
			C	0.536	1.858		0.85	1	4.141			
Sum Weight:	7.73	14.53			*2.1A_g limit					23.62		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.60	2.65	A	0.68	1.776	6	1	1	29.408	0.33	25.30	C
193.00-180.00			B	0.68	1.776		1	1	29.408			
			C	0.68	1.776		1	1	29.408			
T2	3.92	5.07	A	0.819	1.831	6	1	1	59.879	0.77	38.46	C
180.00-160.00		TA 3.88	B	0.819	1.831		1	1	59.879			
			C	0.819	1.831		1	1	59.879			
T3	6.04	4.92	A	0.81	1.824	6	1	1	58.751	0.82	40.89	C
160.00-140.00			B	0.81	1.824		1	1	58.751			
			C	0.81	1.824		1	1	58.751			
T4	7.99	2.95	A	0.625	1.791	6	1	1	37.480	0.82*	40.82	C
140.00-120.00			B	0.625	1.791		1	1	37.480			
			C	0.625	1.791		1	1	37.480			
T5	9.42	5.10	A	0.807	1.822	6	1	1	59.141	0.79*	39.38	C
120.00-100.00		TA 1.68	B	0.807	1.822		1	1	59.141			
			C	0.807	1.822		1	1	59.141			
T6	9.24	2.87	A	0.625	1.791	5	1	1	37.859	0.74*	37.13	C
100.00-80.00			B	0.625	1.791		1	1	37.859			
			C	0.625	1.791		1	1	37.859			
T7	8.40	3.46	A	0.633	1.787	5	1	1	40.630	0.69*	34.50	C
80.00-60.00			B	0.633	1.787		1	1	40.630			
			C	0.633	1.787		1	1	40.630			
T8	8.20	2.91	A	0.606	1.8	4	1	1	35.983	0.63*	31.27	C
60.00-40.00		TA 1.15	B	0.606	1.8		1	1	35.983			
			C	0.606	1.8		1	1	35.983			
T9	7.92	1.94	A	0.446	1.98	4	1	1	23.220	0.54*	26.94	C
40.00-20.00			B	0.446	1.98		1	1	23.220			
			C	0.446	1.98		1	1	23.220			
T10	4.48	1.46	A	0.437	1.995	4	1	1	16.883	0.40*	26.77	C
20.00-5.00			B	0.437	1.995		1	1	16.883			
			C	0.437	1.995		1	1	16.883			
T11 5.00-0.00	0.00	0.67	A	0.792	1.81	4	1	1	8.011	0.05	9.39	C
			B	0.792	1.81		1	1	8.011			
			C	0.792	1.81		1	1	8.011			
Sum Weight:	66.23	40.70			*2.1A_g limit					6.57		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.60	2.65	A	0.68	1.776	6	0.8	1	27.898	0.31	24.17	A
193.00-180.00			B	0.68	1.776		0.8	1	27.898			
			C	0.68	1.776		0.8	1	27.898			
T2	3.92	5.07	A	0.819	1.831	6	0.8	1	56.742	0.74	36.93	A
180.00-160.00		TA 3.88	B	0.819	1.831		0.8	1	56.742			
			C	0.819	1.831		0.8	1	56.742			
T3	6.04	4.92	A	0.81	1.824	6	0.8	1	55.826	0.79	39.52	A
160.00-140.00			B	0.81	1.824		0.8	1	55.826			
			C	0.81	1.824		0.8	1	55.826			
T4	7.99	2.95	A	0.625	1.791	6	0.8	1	37.480	0.82*	40.82	C
140.00-120.00			B	0.625	1.791		0.8	1	37.480			
			C	0.625	1.791		0.8	1	37.480			
T5	9.42	5.10	A	0.807	1.822	6	0.8	1	56.055	0.79*	39.38	C
120.00-100.00		TA 1.68	B	0.807	1.822		0.8	1	56.055			
			C	0.807	1.822		0.8	1	56.055			
T6	9.24	2.87	A	0.625	1.791	5	0.8	1	37.859	0.74*	37.13	C
100.00-80.00			B	0.625	1.791		0.8	1	37.859			
			C	0.625	1.791		0.8	1	37.859			
T7	8.40	3.46	A	0.633	1.787	5	0.8	1	38.842	0.69*	34.50	C
80.00-60.00			B	0.633	1.787		0.8	1	38.842			
			C	0.633	1.787		0.8	1	38.842			
T8	8.20	2.91	A	0.606	1.8	4	0.8	1	35.983	0.63*	31.27	C
60.00-40.00		TA 1.15	B	0.606	1.8		0.8	1	35.983			
			C	0.606	1.8		0.8	1	35.983			
T9	7.92	1.94	A	0.446	1.98	4	0.8	1	23.220	0.54*	26.94	C
40.00-20.00			B	0.446	1.98		0.8	1	23.220			
			C	0.446	1.98		0.8	1	23.220			
T10	4.48	1.46	A	0.437	1.995	4	0.8	1	16.883	0.40*	26.77	C
20.00-5.00			B	0.437	1.995		0.8	1	16.883			
			C	0.437	1.995		0.8	1	16.883			
T11 5.00-0.00	0.00	0.67	A	0.792	1.81	4	0.8	1	7.557	0.04	8.86	C
			B	0.792	1.81		0.8	1	7.557			
			C	0.792	1.81		0.8	1	7.557			
Sum Weight:	66.23	40.70			*2.1A_g limit					6.49		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.60	2.65	A	0.68	1.776	6	0.85	1	28.276	0.32	24.26	B
193.00-180.00			B	0.68	1.776		0.85	1	28.276			
			C	0.68	1.776		0.85	1	28.276			
T2	3.92	5.07	A	0.819	1.831	6	0.85	1	57.526	0.74	37.05	B
180.00-160.00		TA 3.88	B	0.819	1.831		0.85	1	57.526			
			C	0.819	1.831		0.85	1	57.526			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T3	6.04	4.92	A	0.81	1.824	6	0.85	1	56.558	0.79	39.39	A
160.00-140.00			B	0.81	1.824		0.85	1	56.558			
			C	0.81	1.824		0.85	1	56.558			
T4	7.99	2.95	A	0.625	1.791	6	0.85	1	37.480	0.82*	40.82	C
140.00-120.00			B	0.625	1.791		0.85	1	37.480			
			C	0.625	1.791		0.85	1	37.480			
T5	9.42	5.10	A	0.807	1.822	6	0.85	1	56.826	0.79*	39.38	C
120.00-100.00		TA 1.68	B	0.807	1.822		0.85	1	56.826			
			C	0.807	1.822		0.85	1	56.826			
T6	9.24	2.87	A	0.625	1.791	5	0.85	1	37.859	0.74*	37.13	C
100.00-80.00			B	0.625	1.791		0.85	1	37.859			
			C	0.625	1.791		0.85	1	37.859			
T7	8.40	3.46	A	0.633	1.787	5	0.85	1	39.289	0.69*	34.50	C
80.00-60.00			B	0.633	1.787		0.85	1	39.289			
			C	0.633	1.787		0.85	1	39.289			
T8	8.20	2.91	A	0.606	1.8	4	0.85	1	35.983	0.63*	31.27	C
60.00-40.00		TA 1.15	B	0.606	1.8		0.85	1	35.983			
			C	0.606	1.8		0.85	1	35.983			
T9	7.92	1.94	A	0.446	1.98	4	0.85	1	23.220	0.54*	26.94	C
40.00-20.00			B	0.446	1.98		0.85	1	23.220			
			C	0.446	1.98		0.85	1	23.220			
T10	4.48	1.46	A	0.437	1.995	4	0.85	1	16.883	0.40*	26.77	C
20.00-5.00			B	0.437	1.995		0.85	1	16.883			
			C	0.437	1.995		0.85	1	16.883			
T11 5.00-0.00	0.00	0.67	A	0.792	1.81	4	0.85	1	7.671	0.04	8.99	C
			B	0.792	1.81		0.85	1	7.671			
			C	0.792	1.81		0.85	1	7.671			
Sum Weight:	66.23	40.70			*2.1A_g limit					6.49		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.06	0.78	A	0.29	2.324	9	1	1	11.262	0.28	21.19	C
193.00-180.00			B	0.29	2.324		1	1	11.262			
			C	0.29	2.324		1	1	11.262			
T2	0.44	1.46	A	0.345	2.183	9	1	1	21.573	0.78	39.06	C
180.00-160.00		TA 2.25	B	0.345	2.183		1	1	21.573			
			C	0.345	2.183		1	1	21.573			
T3	0.69	1.43	A	0.342	2.191	9	1	1	20.987	0.96	48.15	C
160.00-140.00			B	0.342	2.191		1	1	20.987			
			C	0.342	2.191		1	1	20.987			
T4	0.91	0.87	A	0.248	2.443	8	1	1	10.620	0.98	49.06	C
140.00-120.00			B	0.248	2.443		1	1	10.620			
			C	0.248	2.443		1	1	10.620			
T5	1.08	1.62	A	0.365	2.137	8	1	1	22.683	1.05*	52.71	C
120.00-100.00		TA 0.90	B	0.365	2.137		1	1	22.683			
			C	0.365	2.137		1	1	22.683			
T6	1.06	0.83	A	0.271	2.376	8	1	1	11.873	1.00*	49.77	C
100.00-80.00			B	0.271	2.376		1	1	11.873			
			C	0.271	2.376		1	1	11.873			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T7	0.97	1.10	A	0.288	2.328	7	1	1	16.349	0.93*	46.32	C
80.00-60.00			B	0.288	2.328		1	1	16.349			
			C	0.288	2.328		1	1	16.349			
T8	0.97	1.03	A	0.271	2.376	6	1	1	11.873	0.81	40.75	C
60.00-40.00		TA 0.56	B	0.271	2.376		1	1	11.873			
			C	0.271	2.376		1	1	11.873			
T9	0.97	0.74	A	0.219	2.533	5	1	1	9.411	0.68	34.20	C
40.00-20.00			B	0.219	2.533		1	1	9.411			
			C	0.219	2.533		1	1	9.411			
T10	0.58	0.64	A	0.223	2.522	5	1	1	7.181	0.43	28.51	C
20.00-5.00			B	0.223	2.522		1	1	7.181			
			C	0.223	2.522		1	1	7.181			
T11 5.00-0.00	0.00	0.33	A	0.536	1.858	5	1	1	4.482	0.04	7.76	C
			B	0.536	1.858		1	1	4.482			
			C	0.536	1.858		1	1	4.482			
Sum Weight:	7.73	14.53			*2.1A_g limit					7.94		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.06	0.78	A	0.29	2.324	9	0.8	1	9.752	0.25	19.07	A
193.00-180.00			B	0.29	2.324		0.8	1	9.752			
			C	0.29	2.324		0.8	1	9.752			
T2	0.44	1.46	A	0.345	2.183	9	0.8	1	18.435	0.73	36.44	A
180.00-160.00		TA 2.25	B	0.345	2.183		0.8	1	18.435			
			C	0.345	2.183		0.8	1	18.435			
T3	0.69	1.43	A	0.342	2.191	9	0.8	1	18.062	0.92	45.78	A
160.00-140.00			B	0.342	2.191		0.8	1	18.062			
			C	0.342	2.191		0.8	1	18.062			
T4	0.91	0.87	A	0.248	2.443	8	0.8	1	10.620	0.98	49.06	A
140.00-120.00			B	0.248	2.443		0.8	1	10.620			
			C	0.248	2.443		0.8	1	10.620			
T5	1.08	1.62	A	0.365	2.137	8	0.8	1	19.597	1.05*	52.71	C
120.00-100.00		TA 0.90	B	0.365	2.137		0.8	1	19.597			
			C	0.365	2.137		0.8	1	19.597			
T6	1.06	0.83	A	0.271	2.376	8	0.8	1	11.873	1.00*	49.77	A
100.00-80.00			B	0.271	2.376		0.8	1	11.873			
			C	0.271	2.376		0.8	1	11.873			
T7	0.97	1.10	A	0.288	2.328	7	0.8	1	14.561	0.93*	46.32	A
80.00-60.00			B	0.288	2.328		0.8	1	14.561			
			C	0.288	2.328		0.8	1	14.561			
T8	0.97	1.03	A	0.271	2.376	6	0.8	1	11.873	0.81	40.75	A
60.00-40.00		TA 0.56	B	0.271	2.376		0.8	1	11.873			
			C	0.271	2.376		0.8	1	11.873			
T9	0.97	0.74	A	0.219	2.533	5	0.8	1	9.411	0.68	34.20	A
40.00-20.00			B	0.219	2.533		0.8	1	9.411			
			C	0.219	2.533		0.8	1	9.411			
T10	0.58	0.64	A	0.223	2.522	5	0.8	1	7.181	0.43	28.51	A
20.00-5.00			B	0.223	2.522		0.8	1	7.181			
			C	0.223	2.522		0.8	1	7.181			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T11 5.00-0.00	0.00	0.33	A	0.536	1.858	5	0.8	1	4.028	0.03	6.98	C
			B	0.536	1.858		0.8	1	4.028			
			C	0.536	1.858		0.8	1	4.028			
Sum Weight:	7.73	14.53			*2.1A_g limit					7.81		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.06	0.78	A	0.29	2.324	9	0.85	1	10.129	0.25	19.28	B
193.00-180.00			B	0.29	2.324		0.85	1	10.129			
			C	0.29	2.324		0.85	1	10.129			
T2	0.44	1.46	A	0.345	2.183	9	0.85	1	19.220	0.72	36.07	B
180.00-160.00		TA 2.25	B	0.345	2.183		0.85	1	19.220			
			C	0.345	2.183		0.85	1	19.220			
T3	0.69	1.43	A	0.342	2.191	9	0.85	1	18.793	0.89	44.44	A
160.00-140.00			B	0.342	2.191		0.85	1	18.793			
			C	0.342	2.191		0.85	1	18.793			
T4	0.91	0.87	A	0.248	2.443	8	0.85	1	10.620	0.96	47.98	A
140.00-120.00			B	0.248	2.443		0.85	1	10.620			
			C	0.248	2.443		0.85	1	10.620			
T5	1.08	1.62	A	0.365	2.137	8	0.85	1	20.369	1.05*	52.71	C
120.00-100.00		TA 0.90	B	0.365	2.137		0.85	1	20.369			
			C	0.365	2.137		0.85	1	20.369			
T6	1.06	0.83	A	0.271	2.376	8	0.85	1	11.873	1.00*	49.77	A
100.00-80.00			B	0.271	2.376		0.85	1	11.873			
			C	0.271	2.376		0.85	1	11.873			
T7	0.97	1.10	A	0.288	2.328	7	0.85	1	15.008	0.92	45.96	A
80.00-60.00			B	0.288	2.328		0.85	1	15.008			
			C	0.288	2.328		0.85	1	15.008			
T8	0.97	1.03	A	0.271	2.376	6	0.85	1	11.873	0.80	39.93	A
60.00-40.00		TA 0.56	B	0.271	2.376		0.85	1	11.873			
			C	0.271	2.376		0.85	1	11.873			
T9	0.97	0.74	A	0.219	2.533	5	0.85	1	9.411	0.67	33.49	A
40.00-20.00			B	0.219	2.533		0.85	1	9.411			
			C	0.219	2.533		0.85	1	9.411			
T10	0.58	0.64	A	0.223	2.522	5	0.85	1	7.181	0.42	27.95	A
20.00-5.00			B	0.223	2.522		0.85	1	7.181			
			C	0.223	2.522		0.85	1	7.181			
T11 5.00-0.00	0.00	0.33	A	0.536	1.858	5	0.85	1	4.141	0.04	7.17	C
			B	0.536	1.858		0.85	1	4.141			
			C	0.536	1.858		0.85	1	4.141			
Sum Weight:	7.73	14.53			*2.1A_g limit					7.71		

Force Totals (Does not include forces on guys)

Load Case	*Vertical Forces* K	*Sum of Forces X* K	*Sum of Forces Z* K	*Sum of Torques* kip-ft
Leg Weight	5.49			
Bracing Weight	9.04			
Total Member Self-Weight	14.53			
Guy Weight	4.05			
Total Weight	35.79			
Wind 0 deg - No Ice		0.04	-32.68	0.45
Wind 30 deg - No Ice		16.01	-27.72	1.57
Wind 60 deg - No Ice		26.25	-15.20	2.16
Wind 90 deg - No Ice		29.52	-0.04	2.15
Wind 120 deg - No Ice		26.36	15.22	1.68
Wind 150 deg - No Ice		15.78	27.41	0.73
Wind 180 deg - No Ice		-0.04	32.28	-0.47
Wind 210 deg - No Ice		-16.01	27.72	-1.57
Wind 240 deg - No Ice		-26.66	15.44	-2.19
Wind 270 deg - No Ice		-29.52	0.04	-2.15
Wind 300 deg - No Ice		-25.95	-14.98	-1.63
Wind 330 deg - No Ice		-15.78	-27.41	-0.73
Member Ice	26.17			
Guy Ice	17.95			
Total Weight Ice	157.06			
Wind 0 deg - Ice		0.01	-9.69	0.18
Wind 30 deg - Ice		4.81	-8.34	0.40
Wind 60 deg - Ice		8.28	-4.79	0.52
Wind 90 deg - Ice		9.55	-0.01	0.50
Wind 120 deg - Ice		8.33	4.81	0.34
Wind 150 deg - Ice		4.79	8.32	0.09
Wind 180 deg - Ice		-0.01	9.62	-0.18
Wind 210 deg - Ice		-4.81	8.34	-0.40
Wind 240 deg - Ice		-8.34	4.83	-0.52
Wind 270 deg - Ice		-9.55	0.01	-0.50
Wind 300 deg - Ice		-8.27	-4.77	-0.34
Wind 330 deg - Ice		-4.79	-8.32	-0.09
Total Weight	35.79			
Wind 0 deg - Service		0.01	-10.67	0.15
Wind 30 deg - Service		5.23	-9.05	0.51
Wind 60 deg - Service		8.57	-4.96	0.71
Wind 90 deg - Service		9.64	-0.01	0.70
Wind 120 deg - Service		8.61	4.97	0.55
Wind 150 deg - Service		5.15	8.95	0.24
Wind 180 deg - Service		-0.01	10.54	-0.15
Wind 210 deg - Service		-5.23	9.05	-0.51
Wind 240 deg - Service		-8.71	5.04	-0.72
Wind 270 deg - Service		-9.64	0.01	-0.70
Wind 300 deg - Service		-8.47	-4.89	-0.53
Wind 330 deg - Service		-5.15	-8.95	-0.24

Load Combinations

Comb. No.	*Description*
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy

Comb. No.	Description
4	1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

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	193 - 180	Leg	Max Tension	8	11.50	-0.08	0.75
			Max. Compression	10	-14.15	-0.07	0.05
			Max. Mx	11	-10.39	-0.73	0.04
			Max. My	2	-11.79	0.08	-0.78
			Max. Vy	6	1.57	0.07	0.04
			Max. Vx	2	-1.67	0.01	-0.08
		Diagonal	Max Tension	5	2.10	0.00	0.00
			Max. Compression	6	-2.21	0.00	0.00
			Max. Mx	10	1.57	0.02	0.00
			Max. My	7	-1.49	-0.01	-0.00
			Max. Vy	23	-0.02	0.02	-0.00
			Max. Vx	7	-0.00	-0.01	-0.00
		Top Girt	Max Tension	6	0.35	0.00	0.00
			Max. Compression	4	-0.34	0.00	0.00
			Max. Mx	22	0.02	-0.02	0.00
			Max. My	10	-0.17	0.00	0.00
			Max. Vy	22	0.02	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Bottom Girt	Max Tension	12	0.62	0.00	0.00
			Max. Compression	6	-0.53	0.00	0.00
			Max. Mx	14	0.13	-0.02	0.00
			Max. My	10	0.34	0.00	0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
T2	180 - 160	Leg	Max Tension	8	17.56	-0.00	0.08
			Max. Compression	10	-43.46	0.44	-0.25
			Max. Mx	10	0.80	2.70	-1.01
			Max. My	13	-13.68	-0.04	2.98
			Max. Vy	10	4.42	1.36	-0.72
			Max. Vx	2	4.97	0.07	1.53
		Diagonal	Max Tension	2	6.10	-0.00	0.02
			Max. Compression	8	-7.72	0.00	0.00
			Max. Mx	9	2.02	-0.13	0.03
			Max. My	7	-4.81	0.06	-0.05
			Max. Vy	9	-0.06	0.00	0.00
			Max. Vx	7	0.03	0.06	-0.05
		Secondary Horizontal	Max Tension	7	3.73	-0.10	-0.00
			Max. Compression	9	-3.08	-0.04	-0.01
			Max. Mx	8	3.44	-0.11	-0.01
			Max. My	8	-2.24	-0.01	-0.02
			Max. Vy	8	0.07	0.00	0.00
			Max. Vx	8	0.01	0.00	0.00
		Top Girt	Max Tension	10	2.40	0.00	0.00
			Max. Compression	8	-2.65	0.00	0.00
			Max. Mx	14	-0.22	-0.02	0.00
			Max. My	10	-1.55	0.00	0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Bottom Girt	Max Tension	10	5.46	0.00	0.00
			Max. Compression	12	-3.47	0.00	0.00
			Max. Mx	20	1.91	-0.02	0.00
			Max. My	10	-1.36	0.00	0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Guy A	Bottom Tension	7	17.69		
			Top Tension	7	17.94		
			Top Cable Vert	7	13.84		
			Top Cable Norm	7	11.41		
			Top Cable Tan	7	0.08		
			Bot Cable Vert	7	-13.31		
			Bot Cable Norm	7	11.65		
			Bot Cable Tan	7	0.14		
		Guy A	Bottom Tension	8	9.09		
			Top Tension	8	9.23		
			Top Cable Vert	8	7.40		
			Top Cable Norm	8	5.52		
			Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-7.05		
			Bot Cable Norm	8	5.74		
			Bot Cable Tan	8	0.01		
		Guy B	Bottom Tension	11	18.04		
			Top Tension	11	18.30		
			Top Cable Vert	11	14.25		
			Top Cable Norm	11	11.49		
			Top Cable Tan	11	0.08		
			Bot Cable Vert	11	-13.70		
			Bot Cable Norm	11	11.74		
			Bot Cable Tan	11	0.14		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Guy B	Bottom Tension	12	9.12		
			Top Tension	12	9.27		
			Top Cable Vert	12	7.48		
			Top Cable Norm	12	5.47		
			Top Cable Tan	12	0.00		
			Bot Cable Vert	12	-7.13		
			Bot Cable Norm	12	5.69		
			Bot Cable Tan	12	0.00		
		Guy C	Bottom Tension	5	17.86		
			Top Tension	5	18.12		
			Top Cable Vert	5	13.97		
			Top Cable Norm	5	11.53		
			Top Cable Tan	5	0.08		
			Bot Cable Vert	5	-13.44		
			Bot Cable Norm	5	11.77		
			Bot Cable Tan	5	0.14		
		Guy C	Bottom Tension	4	9.15		
			Top Tension	4	9.29		
			Top Cable Vert	4	7.44		
			Top Cable Norm	4	5.56		
			Top Cable Tan	4	0.00		
			Bot Cable Vert	4	-7.10		
			Bot Cable Norm	4	5.77		
			Bot Cable Tan	4	0.00		
		Torque Arm Top	Max Tension	11	13.15	-9.92	-0.00
			Max. Compression	11	-6.50	-47.03	0.00
			Max. Mx	12	-4.45	-49.25	-0.00
			Max. My	10	4.78	-40.56	-0.00
			Max. Vy	12	13.54	-49.25	-0.00
			Max. Vx	10	-0.00	-40.56	-0.00
		Torque Arm Top	Max Tension	5	5.90	0.00	0.00
			Max. Compression	11	-2.48	-25.09	0.00
			Max. Mx	12	-1.43	-26.41	-0.00
			Max. My	10	2.32	-22.11	-0.00
			Max. Vy	12	7.31	-26.41	-0.00
			Max. Vx	10	-0.00	-22.11	-0.00
T3	160 - 140	Leg	Max Tension	2	1.83	0.02	0.25
			Max. Compression	12	-54.19	0.14	0.11
			Max. Mx	10	-36.74	-1.58	0.84
			Max. My	2	-36.51	-0.07	-1.78
			Max. Vy	10	4.42	0.63	-0.33
			Max. Vx	2	4.97	0.03	0.71
		Diagonal	Max Tension	7	4.32	0.00	0.00
			Max. Compression	13	-6.17	0.01	0.01
			Max. Mx	26	-1.65	0.08	0.01
			Max. My	12	-0.86	0.08	0.01
			Max. Vy	26	-0.05	0.08	0.01
			Max. Vx	12	-0.00	0.08	0.01
		Secondary Horizontal	Max Tension	11	1.95	0.00	0.00
			Max. Compression	7	-0.62	0.00	0.00
			Max. Mx	15	1.24	0.04	-0.01
			Max. My	2	1.81	0.01	-0.01
			Max. Vy	15	-0.04	0.04	-0.01
			Max. Vx	2	0.01	0.00	0.00
		Top Girt	Max Tension	21	0.73	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	20	0.64	0.01	0.00
			Max. My	10	0.67	0.00	-0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Bottom Girt	Max Tension	10	0.92	0.00	0.00
			Max. Compression	12	-0.00	0.00	0.00
			Max. Mx	21	0.65	0.01	0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
T4	140 - 120	Leg	Max Tension	2	4.61	-0.00	-0.04
			Max. Compression	12	-55.82	-0.18	-0.10
			Max. Mx	12	-46.93	-0.46	-0.23
			Max. My	8	-45.60	-0.01	0.50
			Max. Vy	12	-1.85	-0.15	-0.08
			Max. Vx	8	2.02	-0.00	0.17
		Diagonal	Max Tension	12	1.50	0.00	0.00
			Max. Compression	12	-2.00	0.00	0.00
			Max. Mx	15	-0.53	0.02	0.00
			Max. My	10	-0.66	0.00	0.00
			Max. Vy	15	0.02	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Top Girt	Max Tension	15	1.05	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	0.91	0.01	0.00
			Max. Vy	14	0.02	0.00	0.00
		Bottom Girt	Max Tension	23	0.92	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	0.91	0.01	0.00
			Max. Vy	14	0.02	0.00	0.00
T5	120 - 100	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-63.33	0.00	0.01
			Max. Mx	9	-40.01	3.24	-1.91
			Max. My	3	-40.12	-0.04	3.77
			Max. Vy	9	-3.62	3.24	-1.91
			Max. Vx	3	-3.92	-0.04	3.77
		Diagonal	Max Tension	10	3.74	0.00	0.00
			Max. Compression	13	-6.34	0.00	0.00
			Max. Mx	4	1.85	0.10	-0.00
			Max. My	3	-3.82	0.04	-0.03
			Max. Vy	17	-0.05	0.08	-0.00
			Max. Vx	3	0.01	0.04	-0.03
		Secondary Horizontal	Max Tension	3	4.84	0.00	0.00
			Max. Compression	7	-1.68	0.00	0.00
			Max. Mx	4	3.03	0.07	-0.00
			Max. My	11	-1.60	-0.02	-0.01
			Max. Vy	4	0.05	0.07	-0.00
			Max. Vx	11	0.01	-0.02	-0.01
		Top Girt	Max Tension	2	1.14	0.00	0.00
			Max. Compression	12	-0.13	0.00	0.00
			Max. Mx	14	0.71	-0.02	0.00
			Max. My	4	0.73	0.00	-0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	4	0.00	0.00	0.00
		Bottom Girt	Max Tension	10	3.87	0.00	0.00
			Max. Compression	12	-2.15	0.00	0.00
			Max. Mx	14	1.19	-0.02	0.00
			Max. My	10	-0.52	0.00	-0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
		Guy A	Bottom Tension	7	14.15		
			Top Tension	7	14.23		
			Top Cable Vert	7	10.85		
			Top Cable Norm	7	9.21		
			Top Cable Tan	7	0.00		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Bot Cable Vert	7	-10.67		
			Bot Cable Norm	7	9.30		
			Bot Cable Tan	7	0.09		
		Guy B	Bottom Tension	11	14.46		
			Top Tension	11	14.55		
			Top Cable Vert	11	11.26		
			Top Cable Norm	11	9.21		
			Top Cable Tan	11	0.00		
			Bot Cable Vert	11	-11.07		
			Bot Cable Norm	11	9.30		
			Bot Cable Tan	11	0.09		
		Guy C	Bottom Tension	5	14.17		
			Top Tension	5	14.26		
			Top Cable Vert	5	10.82		
			Top Cable Norm	5	9.28		
			Top Cable Tan	5	0.00		
			Bot Cable Vert	5	-10.63		
			Bot Cable Norm	5	9.37		
			Bot Cable Tan	5	0.09		
		Torque Arm Top	Max Tension	5	10.99	0.00	0.00
			Max. Compression	5	-5.99	0.00	0.00
			Max. Mx	11	-1.10	-38.52	0.00
			Max. My	10	-5.10	-30.32	-0.00
			Max. Vy	11	10.59	-38.52	0.00
			Max. Vx	10	-0.00	-30.32	-0.00
T6	100 - 80	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-69.87	-0.32	-0.19
			Max. Mx	4	-35.71	-0.82	0.48
			Max. My	8	-36.29	0.01	-0.95
			Max. Vy	4	-3.01	-0.82	0.48
			Max. Vx	8	-3.48	0.01	-0.95
		Diagonal	Max Tension	3	2.16	0.00	0.00
			Max. Compression	3	-2.68	0.00	0.00
			Max. Mx	26	0.18	0.01	0.00
			Max. My	22	-0.50	0.00	0.00
			Max. Vy	26	0.01	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Top Girt	Max Tension	10	0.85	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	0.72	0.01	0.00
			Max. Vy	14	-0.01	0.00	0.00
		Bottom Girt	Max Tension	10	0.55	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	0.51	0.01	0.00
			Max. Vy	14	-0.01	0.00	0.00
T7	80 - 60	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-72.74	0.41	0.24
			Max. Mx	11	-54.52	-0.91	-0.24
			Max. My	8	-49.45	0.01	0.91
			Max. Vy	10	-1.93	-0.17	0.08
			Max. Vx	2	-2.18	-0.01	-0.19
		Diagonal	Max Tension	11	1.83	0.00	0.00
			Max. Compression	11	-2.77	0.00	0.00
			Max. Mx	26	-1.13	0.05	0.00
			Max. My	11	-2.76	0.00	0.00
			Max. Vy	26	-0.03	0.05	0.00
			Max. Vx	11	0.00	0.00	0.00
		Top Girt	Max Tension	15	1.06	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	1.00	0.01	0.00
			Max. My	10	0.55	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	14	0.01	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Bottom Girt	Max Tension	17	1.05	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	17	1.05	0.01	0.00
			Max. My	10	0.76	0.00	0.00
			Max. Vy	17	0.01	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
T8	60 - 40	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	19	-81.55	-0.55	-0.14
			Max. Mx	11	-45.02	2.67	-0.55
			Max. My	13	-44.97	0.81	2.64
			Max. Vy	4	-2.74	-1.42	0.56
			Max. Vx	8	-2.94	0.23	-1.52
		Diagonal	Max Tension	3	4.72	0.00	0.00
			Max. Compression	11	-4.75	0.00	0.00
			Max. Mx	26	0.86	0.01	0.00
			Max. My	10	-2.75	0.00	0.00
			Max. Vy	26	0.01	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Top Girt	Max Tension	10	1.12	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	17	0.89	0.01	0.00
			Max. My	10	0.40	0.00	0.00
			Max. Vy	17	-0.01	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Bottom Girt	Max Tension	13	1.92	0.00	0.00
			Max. Compression	11	-0.81	0.00	0.00
			Max. Mx	14	0.94	0.01	0.00
			Max. My	10	0.39	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Guy A	Bottom Tension	9	8.35		
			Top Tension	9	8.37		
			Top Cable Vert	9	3.60		
			Top Cable Norm	9	7.56		
			Top Cable Tan	9	0.00		
			Bot Cable Vert	9	-3.53		
			Bot Cable Norm	9	7.57		
			Bot Cable Tan	9	0.04		
		Guy B	Bottom Tension	13	8.53		
			Top Tension	13	8.55		
			Top Cable Vert	13	4.00		
			Top Cable Norm	13	7.56		
			Top Cable Tan	13	0.00		
			Bot Cable Vert	13	-3.92		
			Bot Cable Norm	13	7.57		
			Bot Cable Tan	13	0.04		
		Guy C	Bottom Tension	3	8.28		
			Top Tension	3	8.30		
			Top Cable Vert	3	3.54		
			Top Cable Norm	3	7.51		
			Top Cable Tan	3	0.00		
			Bot Cable Vert	3	-3.46		
			Bot Cable Norm	3	7.52		
			Bot Cable Tan	3	0.04		
		Torque Arm Top	Max Tension	11	9.00	0.00	0.00
			Max. Compression	11	-4.98	0.00	0.00
			Max. Mx	13	-0.27	-14.20	-0.00
			Max. My	10	-4.34	-10.62	-0.00
			Max. Vy	13	3.93	-14.20	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	10	-0.00	-10.62	-0.00
T9	40 - 20	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	23	-83.02	-0.50	0.10
			Max. Mx	6	-66.74	-1.25	-0.67
			Max. My	2	-66.62	0.04	1.41
			Max. Vy	4	-2.75	-0.97	0.38
			Max. Vx	8	-2.95	0.16	-1.03
		Diagonal	Max Tension	5	3.31	0.00	0.00
			Max. Compression	7	-3.74	0.00	0.00
			Max. Mx	24	-0.34	0.01	0.00
			Max. My	15	0.01	0.00	-0.00
			Max. Vy	24	-0.01	0.00	0.00
			Max. Vx	15	0.00	0.00	0.00
		Top Girt	Max Tension	12	1.41	0.00	0.00
			Max. Compression	6	-1.07	0.00	0.00
			Max. Mx	14	0.28	0.01	0.00
			Max. Vy	14	0.01	0.00	0.00
		Bottom Girt	Max Tension	8	0.32	0.00	0.00
			Max. Compression	6	-0.06	0.00	0.00
			Max. Mx	19	0.23	0.01	0.00
			Max. Vy	19	0.01	0.00	0.00
T10	20 - 5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.09	1.41	0.54
			Max. Mx	24	-84.81	2.55	1.20
			Max. My	23	-84.51	-0.22	-2.80
			Max. Vy	26	-13.71	2.55	1.21
			Max. Vx	22	15.76	-0.22	-2.80
		Diagonal	Max Tension	5	1.17	0.00	0.00
			Max. Compression	7	-1.05	0.00	0.00
			Max. Mx	26	0.85	0.01	0.00
			Max. My	10	0.25	0.00	0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Top Girt	Max Tension	20	0.40	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	19	0.33	0.01	0.00
			Max. My	10	0.33	0.00	0.00
			Max. Vy	19	-0.01	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Bottom Girt	Max Tension	15	8.59	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	8.46	0.01	0.00
			Max. Vy	14	-0.01	0.00	0.00
T11	5 - 0	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	23	-92.04	0.16	-0.10
			Max. Mx	23	-83.76	-3.11	-0.23
			Max. My	25	-83.72	-3.11	-0.24
			Max. Vy	15	16.49	-3.11	-0.23
			Max. Vx	2	-0.22	-1.86	-0.02
		Horizontal	Max Tension	23	0.12	0.20	-0.10
			Max. Compression	26	-1.45	0.13	-0.04
			Max. Mx	15	-0.63	0.50	-0.20
			Max. My	15	-0.63	0.42	-0.21
			Max. Vy	6	0.30	0.40	-0.17
			Max. Vx	2	0.15	0.25	-0.08
		Top Girt	Max Tension	15	11.39	0.49	-0.27
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	24	11.36	0.64	-0.21
			Max. My	15	11.34	0.49	-0.28
			Max. Vy	25	-0.07	0.64	-0.21
			Max. Vx	18	-0.03	0.62	-0.21

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	23	253.90	0.08	0.04
	Max. H_x	12	137.23	0.57	0.34
	Max. H_z	4	136.47	-0.61	0.37
	Max. M_x	1	0.00	0.01	0.02
	Max. M_z	1	0.00	0.01	0.02
	Max. Torsion	10	0.09	0.06	-0.04
	Min. Vert	1	101.13	0.01	0.02
	Min. H_x	4	136.47	-0.61	0.37
	Min. H_z	8	136.74	0.01	-0.68
	Min. M_x	1	0.00	0.01	0.02
	Min. M_z	1	0.00	0.01	0.02
	Min. Torsion	3	-0.33	-0.44	0.15
Guy C @ 138 ft Elev 2 ft Azimuth 240 deg	Max. Vert	10	-2.14	-1.19	0.69
	Max. H_x	10	-2.14	-1.19	0.69
	Max. H_z	4	-40.62	-30.06	17.34
	Min. Vert	4	-40.62	-30.06	17.34
	Min. H_x	4	-40.62	-30.06	17.34
	Min. H_z	10	-2.14	-1.19	0.69
Guy B @ 140 ft Elev -4 ft Azimuth 120 deg	Max. Vert	6	-2.38	1.31	0.76
	Max. H_x	12	-41.05	29.78	17.19
	Max. H_z	12	-41.05	29.78	17.19
	Min. Vert	12	-41.05	29.78	17.19
	Min. H_x	6	-2.38	1.31	0.76
	Min. H_z	6	-2.38	1.31	0.76
Guy A @ 138 ft Elev 2 ft Azimuth 0 deg	Max. Vert	2	-2.14	0.00	-1.38
	Max. H_x	11	-22.13	1.10	-18.60
	Max. H_z	2	-2.14	0.00	-1.38
	Min. Vert	8	-40.67	-0.00	-34.75
	Min. H_x	5	-22.20	-1.09	-18.66
	Min. H_z	8	-40.67	-0.00	-34.75
Guy C @ 89 ft Elev 2 ft Azimuth 240 deg	Max. Vert	10	-0.34	-0.30	0.17
	Max. H_x	10	-0.34	-0.30	0.17
	Max. H_z	3	-27.57	-28.57	16.79
	Min. Vert	5	-27.62	-28.88	16.36
	Min. H_x	5	-27.62	-28.88	16.36
	Min. H_z	10	-0.34	-0.30	0.17
Guy B @ 89 ft Elev -3 ft Azimuth 120 deg	Max. Vert	6	-0.40	0.30	0.17
	Max. H_x	11	-29.37	28.87	16.34
	Max. H_z	13	-29.37	28.59	16.82
	Min. Vert	11	-29.37	28.87	16.34
	Min. H_x	6	-0.40	0.30	0.17

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy A @ 88 ft Elev 2 ft Azimuth 0 deg	Min. H_z	6	-0.40	0.30	0.17
	Max. Vert	2	-0.34	0.00	-0.34
	Max. H_x	10	-23.82	0.44	-28.59
	Max. H_z	2	-0.34	0.00	-0.34
	Min. Vert	7	-27.88	-0.26	-33.17
	Min. H_x	6	-23.87	-0.44	-28.62
	Min. H_z	7	-27.88	-0.26	-33.17

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	101.13	-0.01	-0.02	0.00	0.00	0.09
1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy	161.16	0.03	-0.10	0.00	0.00	0.23
1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy	151.03	0.44	-0.15	0.00	0.00	0.33
1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy	136.47	0.61	-0.37	0.00	0.00	0.33
1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy	150.36	0.34	-0.32	0.00	0.00	0.27
1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy	159.58	0.11	0.04	0.00	0.00	0.27
1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy	150.51	-0.10	0.42	0.00	0.00	0.21
1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy	136.74	-0.01	0.68	0.00	0.00	0.05
1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy	151.36	0.10	0.42	0.00	0.00	-0.08
1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy	161.46	-0.06	0.04	0.00	0.00	-0.09
1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy	152.07	-0.29	-0.32	0.00	0.00	-0.05
1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy	137.23	-0.57	-0.34	0.00	0.00	-0.04
1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy	151.89	-0.40	-0.11	0.00	0.00	0.08
1.2 Dead+1.0 Ice+1.0 Temp+Guy	251.32	-0.02	-0.08	0.00	0.00	0.21
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	253.88	-0.01	-0.15	0.00	0.00	0.22
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	253.30	0.01	-0.14	0.00	0.00	0.23
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	252.76	0.04	-0.11	0.00	0.00	0.22
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	253.09	0.05	-0.07	0.00	0.00	0.22
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	253.57	0.04	-0.05	0.00	0.00	0.22
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	253.14	0.02	-0.03	0.00	0.00	0.22
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	252.82	-0.02	-0.02	0.00	0.00	0.21
1.2 Dead+1.0 Wind 210	253.35	-0.06	-0.03	0.00	0.00	0.20

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
deg+1.0 Ice+1.0 Temp+1.0 Guy 1.2 Dead+1.0 Wind 240	253.90	-0.08	-0.04	0.00	0.00	0.21
deg+1.0 Ice+1.0 Temp+1.0 Guy 1.2 Dead+1.0 Wind 270	253.39	-0.08	-0.07	0.00	0.00	0.22
deg+1.0 Ice+1.0 Temp+1.0 Guy 1.2 Dead+1.0 Wind 300	252.95	-0.06	-0.10	0.00	0.00	0.21
deg+1.0 Ice+1.0 Temp+1.0 Guy 1.2 Dead+1.0 Wind 330	253.39	-0.04	-0.14	0.00	0.00	0.21
deg+1.0 Ice+1.0 Temp+1.0 Guy Dead+Wind 0 deg - Service+Guy	101.60	-0.00	-0.24	0.00	0.00	0.10
Dead+Wind 30 deg - Service+Guy	101.61	0.10	-0.20	0.00	0.00	0.12
Dead+Wind 60 deg - Service+Guy	101.64	0.19	-0.13	0.00	0.00	0.12
Dead+Wind 90 deg - Service+Guy	101.69	0.21	-0.02	0.00	0.00	0.12
Dead+Wind 120 deg - Service+Guy	101.76	0.19	0.10	0.00	0.00	0.11
Dead+Wind 150 deg - Service+Guy	101.71	0.10	0.17	0.00	0.00	0.10
Dead+Wind 180 deg - Service+Guy	101.68	-0.01	0.21	0.00	0.00	0.08
Dead+Wind 210 deg - Service+Guy	101.66	-0.12	0.17	0.00	0.00	0.06
Dead+Wind 240 deg - Service+Guy	101.64	-0.20	0.10	0.00	0.00	0.05
Dead+Wind 270 deg - Service+Guy	101.54	-0.22	-0.01	0.00	0.00	0.06
Dead+Wind 300 deg - Service+Guy	101.49	-0.20	-0.12	0.00	0.00	0.07
Dead+Wind 330 deg - Service+Guy	101.52	-0.11	-0.20	0.00	0.00	0.08

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-35.79	0.00	-0.00	35.79	-0.00	0.008%
2	0.06	-42.40	-57.93	-0.06	42.40	57.93	0.003%
3	28.42	-42.14	-49.22	-28.42	42.14	49.22	0.004%
4	49.59	-41.88	-28.70	-49.59	41.88	28.70	0.002%
5	56.74	-42.11	-0.07	-56.73	42.11	0.07	0.003%
6	50.08	-42.36	28.91	-50.08	42.36	-28.91	0.005%
7	28.31	-42.11	49.17	-28.31	42.11	-49.16	0.003%
8	-0.06	-41.88	57.29	0.06	41.88	-57.29	0.002%
9	-28.42	-42.14	49.22	28.42	42.14	-49.22	0.004%
10	-50.14	-42.40	29.02	50.14	42.40	-29.02	0.003%
11	-56.74	-42.16	0.07	56.73	42.16	-0.06	0.004%
12	-49.52	-41.92	-28.59	49.52	41.92	28.59	0.002%
13	-28.31	-42.16	-49.17	28.31	42.16	49.16	0.004%
14	0.00	-163.41	0.00	-0.00	163.41	-0.00	0.002%
15	0.01	-163.62	-14.18	-0.01	163.62	14.18	0.002%
16	7.05	-163.41	-12.21	-7.05	163.41	12.21	0.001%
17	12.21	-163.20	-7.06	-12.21	163.20	7.06	0.002%
18	14.09	-163.39	-0.01	-14.09	163.39	0.01	0.001%
19	12.27	-163.59	7.08	-12.27	163.59	-7.08	0.001%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
20	7.04	-163.39	12.21	-7.04	163.39	-12.21	0.001%
21	-0.01	-163.20	14.11	0.01	163.20	-14.10	0.002%
22	-7.05	-163.41	12.21	7.05	163.41	-12.21	0.001%
23	-12.28	-163.62	7.10	12.27	163.62	-7.09	0.002%
24	-14.09	-163.42	0.01	14.09	163.42	-0.01	0.001%
25	-12.20	-163.23	-7.05	12.20	163.23	7.04	0.003%
26	-7.04	-163.42	-12.21	7.04	163.42	12.21	0.001%
27	0.01	-35.84	-11.82	-0.01	35.84	11.82	0.004%
28	5.80	-35.79	-10.05	-5.80	35.79	10.04	0.003%
29	10.12	-35.74	-5.86	-10.12	35.74	5.86	0.002%
30	11.58	-35.78	-0.01	-11.58	35.78	0.01	0.003%
31	10.22	-35.83	5.90	-10.22	35.83	-5.90	0.004%
32	5.78	-35.78	10.03	-5.78	35.78	-10.03	0.003%
33	-0.01	-35.74	11.69	0.01	35.74	-11.69	0.002%
34	-5.80	-35.79	10.05	5.80	35.79	-10.04	0.003%
35	-10.23	-35.84	5.92	10.23	35.84	-5.92	0.004%
36	-11.58	-35.79	0.01	11.58	35.79	-0.01	0.004%
37	-10.11	-35.74	-5.83	10.11	35.74	5.83	0.003%
38	-5.78	-35.79	-10.03	5.78	35.79	10.03	0.003%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00004478
2	Yes	18	0.00000001	0.00004926
3	Yes	17	0.00000001	0.00007727
4	Yes	13	0.00000001	0.00006834
5	Yes	17	0.00000001	0.00006070
6	Yes	17	0.00006631	0.00008930
7	Yes	17	0.00000001	0.00006071
8	Yes	13	0.00000001	0.00006563
9	Yes	17	0.00000001	0.00007859
10	Yes	18	0.00000001	0.00005009
11	Yes	17	0.00006575	0.00008203
12	Yes	13	0.00000001	0.00006964
13	Yes	17	0.00000001	0.00008062
14	Yes	10	0.00000001	0.00005575
15	Yes	13	0.00000001	0.00008157
16	Yes	13	0.00000001	0.00005863
17	Yes	12	0.00000001	0.00007661
18	Yes	13	0.00000001	0.00004498
19	Yes	13	0.00000001	0.00006325
20	Yes	13	0.00000001	0.00004689
21	Yes	12	0.00000001	0.00007298
22	Yes	13	0.00000001	0.00005435
23	Yes	13	0.00000001	0.00007608
24	Yes	13	0.00000001	0.00005660
25	Yes	12	0.00010000	0.00009619
26	Yes	13	0.00000001	0.00006180
27	Yes	10	0.00000001	0.00007746
28	Yes	10	0.00000001	0.00005702
29	Yes	10	0.00000001	0.00004138
30	Yes	10	0.00000001	0.00005379
31	Yes	10	0.00000001	0.00006918
32	Yes	10	0.00000001	0.00005440

33	Yes	10	0.00000001	0.00004212
34	Yes	10	0.00000001	0.00005832
35	Yes	10	0.00000001	0.00007957
36	Yes	10	0.00000001	0.00006430
37	Yes	10	0.00000001	0.00005222
38	Yes	10	0.00000001	0.00006321

Maximum Tower Deflections - Service Wind

Section No.	*Elevation* *ft*	*Horz. Deflection* *in*	*Gov. Load Comb.*	*Tilt* °	*Twist* °
T1	193 - 180	0.791	33	0.0147	0.0181
T2	180 - 160	0.789	37	0.0208	0.0150
T3	160 - 140	0.906	37	0.0483	0.0133
T4	140 - 120	1.068	37	0.0208	0.0149
T5	120 - 100	1.044	37	0.0252	0.0133
T6	100 - 80	0.924	37	0.0211	0.0108
T7	80 - 60	0.838	37	0.0351	0.0098
T8	60 - 40	0.634	37	0.0586	0.0086
T9	40 - 20	0.379	37	0.0506	0.0055
T10	20 - 5	0.211	37	0.0472	0.0151
T11	5 - 0	0.055	37	0.0515	0.0053

Critical Deflections and Radius of Curvature - Service Wind

Elevation *ft*	*Appurtenance*	*Gov. Load Comb.*	*Deflection* *in*	*Tilt* °	*Twist* °	*Radius of Curvature* *ft*
192.70	SBNH-1D6565B	33	0.791	0.0148	0.0180	103673
192.00	10' Boom Gate w/3 - 2 3/8" Pipe (Tapered) (3)	33	0.790	0.0148	0.0178	103673
188.00	20' Omni	33	0.786	0.0154	0.0169	103673
181.00	2.5" Dia 7' Omni	37	0.786	0.0196	0.0152	44795
180.00	7770	37	0.789	0.0208	0.0150	42615
179.00	10' Boom Gate w/3 - 2 3/8" Pipe (Tapered) (3)	37	0.792	0.0221	0.0147	41243
177.08	Guy	37	0.799	0.0250	0.0142	40090
168.00	14' T Arm round	37	0.846	0.0411	0.0129	39350
162.58	Guy	37	0.885	0.0475	0.0131	39383
154.50	7' Whip	37	0.956	0.0440	0.0138	226355
154.25	7' Whip	37	0.958	0.0437	0.0138	290712
154.00	7' Whip	37	0.961	0.0434	0.0138	311649
151.00	10' Boom Gate w/3 2 - 3/8" Pipe (Vertical) (3)	37	0.989	0.0385	0.0142	66131
124.00	10' dipole	37	1.063	0.0227	0.0136	33301
119.50	Pirod 4' Side Mount Standoff (1)	37	1.041	0.0254	0.0132	47234
117.00	20' Omni	37	1.027	0.0258	0.0130	65103
113.00	6' Yagi	37	1.002	0.0252	0.0125	174569
108.00	Pirod 4' Side Mount Standoff (1)	37	0.970	0.0232	0.0119	118479
102.58	Guy	37	0.937	0.0214	0.0112	46953
42.58	Guy	37	0.407	0.0522	0.0047	31565

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	193 - 180	7.194	10	0.1518	0.1193
T2	180 - 160	7.596	10	0.1831	0.1044
T3	160 - 140	8.632	10	0.3374	0.1023
T4	140 - 120	9.900	10	0.1845	0.1080
T5	120 - 100	10.026	10	0.1545	0.0921
T6	100 - 80	9.244	10	0.2054	0.0768
T7	80 - 60	8.182	10	0.3632	0.0673
T8	60 - 40	6.241	10	0.5332	0.0575
T9	40 - 20	3.912	10	0.5028	0.0419
T10	20 - 5	2.056	10	0.4777	0.0490
T11	5 - 0	0.524	10	0.4963	0.0217

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
192.70	SBNH-1D6565B	10	7.202	0.1519	0.1189	21326
192.00	10' Boom Gate w/3 - 2 3/8" Pipe (Tapered) (3)	10	7.221	0.1522	0.1182	21326
188.00	20' Omni	10	7.335	0.1551	0.1138	21326
181.00	2.5" Dia 7' Omni	10	7.559	0.1770	0.1056	9201
180.00	7770	10	7.596	0.1831	0.1044	8742
179.00	10' Boom Gate w/3 - 2 3/8" Pipe (Tapered) (3)	10	7.634	0.1901	0.1031	8445
177.08	Guy	10	7.710	0.2056	0.1027	8170
168.00	14' T Arm round	10	8.146	0.2938	0.1014	7823
162.58	Guy	10	8.465	0.3310	0.1017	7646
154.50	7' Whip	10	9.014	0.3203	0.1044	42800
154.25	7' Whip	10	9.032	0.3187	0.1045	44715
154.00	7' Whip	10	9.050	0.3171	0.1046	45927
151.00	10' Boom Gate w/3 2 - 3/8" Pipe (Vertical) (3)	10	9.260	0.2934	0.1060	12028
124.00	10' dipole	10	10.100	0.1330	0.0961	4296
119.50	Pirod 4' Side Mount Standoff (1)	10	10.014	0.1563	0.0917	5062
117.00	20' Omni	10	9.944	0.1624	0.0893	5848
113.00	6' Yagi	10	9.807	0.1638	0.0859	8034
108.00	Pirod 4' Side Mount Standoff (1)	10	9.604	0.1607	0.0821	15159
102.58	Guy	10	9.361	0.1893	0.0784	11470
42.58	Guy	10	4.189	0.5113	0.0422	5832

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	193	Leg	A325N	0.7500	4	2.87	29.82	0.096 ✔	1	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
		Diagonal	A325N	0.6250	2	1.11	12.43	0.089 ✔	1	Bolt Shear
		Top Girt	A325N	0.6250	2	0.18	12.43	0.014 ✔	1	Bolt Shear
		Bottom Girt	A325N	0.6250	2	0.31	12.43	0.025 ✔	1	Bolt Shear
T2	180	Leg	A325N	0.7500	4	3.35	29.82	0.112 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	2	3.86	12.43	0.311 ✔	1	Bolt Shear
		Top Girt	A325N	0.6250	2	1.32	12.43	0.107 ✔	1	Bolt Shear
		Bottom Girt	A325N	0.6250	2	2.73	12.43	0.220 ✔	1	Bolt Shear
T3	160	Leg	A325N	0.7500	4	4.52	29.82	0.151 ✔	1	Bolt Tension
		Diagonal	A325X	0.6250	1	4.32	10.44	0.413 ✔	1	Member Bearing
		Top Girt	A325N	0.5000	1	0.73	7.95	0.091 ✔	1	Bolt Shear
		Bottom Girt	A325N	0.5000	1	0.92	7.95	0.116 ✔	1	Bolt Shear
T4	140	Leg	A325N	0.7500	4	4.40	29.82	0.147 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	2.00	12.43	0.161 ✔	1	Bolt Shear
		Top Girt	A325N	0.5000	1	1.05	7.95	0.132 ✔	1	Bolt Shear
		Bottom Girt	A325N	0.5000	1	0.92	7.95	0.116 ✔	1	Bolt Shear
T5	120	Leg	A325N	0.7500	4	5.28	29.82	0.177 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	2	3.17	12.43	0.255 ✔	1	Bolt Shear
		Top Girt	A325N	0.6250	2	0.57	12.43	0.046 ✔	1	Bolt Shear
		Bottom Girt	A325N	0.6250	2	1.93	12.43	0.156 ✔	1	Bolt Shear
T6	100	Leg	A325N	0.7500	4	5.82	29.82	0.195 ✔	1	Bolt Tension
		Diagonal	A490X	0.5000	1	2.16	4.17	0.519 ✔	1	Member Bearing
		Top Girt	A325N	0.5000	1	0.85	4.17	0.204 ✔	1	Member Bearing
		Bottom Girt	A325N	0.5000	1	0.55	4.17	0.133 ✔	1	Member Bearing
T7	80	Leg	A325N	0.7500	4	6.01	29.82	0.201 ✔	1	Bolt Tension
		Diagonal	A325X	0.6250	1	1.83	7.83	0.234 ✔	1	Member Bearing
		Top Girt	A325N	0.5000	1	1.06	7.95	0.134 ✔	1	Bolt Shear
		Bottom Girt	A325N	0.5000	1	1.05	7.95	0.132 ✔	1	Bolt Shear
T8	60	Leg	A325N	0.7500	4	6.80	29.82	0.228 ✔	1	Bolt Tension
		Diagonal	A325X	0.5000	1	4.72	8.62	0.548 ✔	1	Member Bearing
		Top Girt	A325N	0.5000	1	1.12	7.95	0.141 ✔	1	Bolt Shear
		Bottom Girt	A325N	0.5000	1	1.92	7.95	0.241 ✔	1	Bolt Shear
T9	40	Leg	A325N	0.7500	4	6.92	29.82	0.232 ✔	1	Bolt Tension
		Diagonal	A490X	0.6250	1	3.31	5.26	0.629 ✔	1	Member Bearing
		Top Girt	A325N	0.5000	1	1.41	4.17	0.340 ✔	1	Member Bearing
		Bottom Girt	A325N	0.5000	1	0.32	4.17	0.077 ✔	1	Member Bearing
T10	20	Leg	A325N	0.7500	4	7.07	29.82	0.237 ✔	1	Bolt Tension
		Diagonal	A490X	0.5000	1	1.17	8.62	0.136 ✔	1	Member Bearing
		Top Girt	A325N	0.5000	1	0.40	7.95	0.050 ✔	1	Bolt Shear
		Bottom Girt	A490X	0.5000	1	8.59	8.62	0.997 ✔	1	Member Bearing
T11	5	Leg	A325N	0.7500	4	7.57	29.82	0.254 ✔	1	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T2	162.58 (A) (594)	7/8 EHS	7.97	79.70	17.94	47.82	1.000	2.666 ✔
	162.58 (A) (595)	7/8 EHS	7.97	79.70	17.91	47.82	1.000	2.670 ✔
	162.58 (B) (590)	7/8 EHS	7.97	79.70	18.30	47.82	1.000	2.613 ✔
	162.58 (B) (591)	7/8 EHS	7.97	79.70	18.10	47.82	1.000	2.642 ✔
	162.58 (C) (586)	7/8 EHS	7.97	79.70	17.88	47.82	1.000	2.674 ✔
	162.58 (C) (587)	7/8 EHS	7.97	79.70	18.12	47.82	1.000	2.640 ✔
	177.08 (A) (630)	5/8 EHS	4.24	42.40	9.23	25.44	1.000	2.757 ✔
	177.08 (A) (631)	5/8 EHS	4.24	42.40	9.23	25.44	1.000	2.755 ✔
	177.08 (B) (626)	5/8 EHS	4.24	42.40	9.27	25.44	1.000	2.745 ✔
	177.08 (B) (627)	5/8 EHS	4.24	42.40	9.13	25.44	1.000	2.788 ✔
	177.08 (C) (622)	5/8 EHS	4.24	42.40	9.15	25.44	1.000	2.781 ✔
	177.08 (C) (623)	5/8 EHS	4.24	42.40	9.29	25.44	1.000	2.739 ✔
T5	102.58 (A) (606)	5/8 EHS	4.24	42.40	14.23	25.44	1.000	1.788 ✔
	102.58 (A) (607)	5/8 EHS	4.24	42.40	14.10	25.44	1.000	1.804 ✔
	102.58 (B) (602)	5/8 EHS	4.24	42.40	14.55	25.44	1.000	1.749 ✔
	102.58 (B) (603)	5/8 EHS	4.24	42.40	14.48	25.44	1.000	1.757 ✔
	102.58 (C) (598)	5/8 EHS	4.24	42.40	14.07	25.44	1.000	1.809 ✔
	102.58 (C) (599)	5/8 EHS	4.24	42.40	14.26	25.44	1.000	1.785 ✔
T8	42.58 (A) (618)	1/2 EHS	2.69	26.90	8.37	16.14	1.000	1.929 ✔
	42.58 (A) (619)	1/2 EHS	2.69	26.90	8.31	16.14	1.000	1.942 ✔
	42.58 (B) (614)	1/2 EHS	2.69	26.90	8.55	16.14	1.000	1.888 ✔
	42.58 (B) (615)	1/2 EHS	2.69	26.90	8.49	16.14	1.000	1.902 ✔
	42.58 (C) (610)	1/2 EHS	2.69	26.90	8.23	16.14	1.000	1.962 ✔
	42.58 (C) (611)	1/2 EHS	2.69	26.90	8.30	16.14	1.000	1.944 ✔

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	193 - 180	ROHN 2.5 EH	13.00	0.42	5.4 K=1.00	2.2535	-14.15	101.19	0.140 [1] ✔
T2	180 - 160	ROHN 2.5 EH	20.00	1.21	15.7 K=1.00	2.2535	-43.46	99.60	0.436 [1] ✔
T3	160 - 140	ROHN 2.5 EH	20.00	0.17	2.2 K=1.00	2.2535	-54.19	101.38	0.535 [1] ✔
T4	140 - 120	ROHN 2.5 EH	20.00	2.42	31.4 K=1.00	2.2535	-55.82	94.36	0.592 [1] ✔
T5	120 - 100	ROHN 3 EH	20.00	0.17	1.8 K=1.00	3.0159	-63.33	135.69	0.467 [1] ✔
T6	100 - 80	ROHN 3 EH	20.00	2.42	25.5 K=1.00	3.0159	-69.16	129.41	0.534 [1] ✔
T7	80 - 60	ROHN 3 EH	20.00	2.42	25.5 K=1.00	3.0159	-72.74	129.41	0.562 [1] ✔
T8	60 - 40	ROHN 3 EH	20.00	2.42	25.5 K=1.00	3.0159	-80.83	129.41	0.625 [1] ✔
T9	40 - 20	ROHN 3 EH	20.00	2.42	51.0 K=2.00	3.0159	-82.70	112.18	0.737 [1] ✔
T10	20 - 5	ROHN 3 EH	15.00	2.42	51.0 K=2.00	3.0159	-85.09	112.18	0.759 [1] ✔
T11	5 - 0	ROHN 3 EH	5.38	1.25	13.2 K=1.00	3.0159	-92.04	133.99	0.687 [1] ✔

[1] $P_u / \phi P_n$ 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	193 - 180	L2x2x1/4	4.19	1.75	70.3 K=1.31	0.9380	-2.21	23.44	0.094 [1] ✔
T2	180 - 160	L2x2x1/4	4.19	1.75	70.3 K=1.31	0.9380	-7.72	23.44	0.330 [1] ✔
T3	160 - 140	L2x2x1/4	4.19	1.83	72.1 K=1.28	0.9380	-6.17	23.12	0.267 [1] ✔
T4	140 - 120	ROHN TS1.5x11 ga	4.19	3.89	95.4 K=1.00	0.5202	-2.00	11.24	0.178 [1] ✔
T5	120 - 100	L2x2x1/4	4.19	1.72	69.5 K=1.32	0.9380	-6.34	23.56	0.269 [1] ✔
T6	100 - 80	ROHN TS1.5x16 ga	4.19	3.83	90.1	0.2627	-2.68	6.03	0.444 [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	80 - 60	L1 3/4x1 3/4x3/16	4.19	1.80	77.1 K=1.00	0.6211	-2.77	14.72	0.188 [1] ✔
T8	60 - 40	ROHN TS1.5x11 ga	4.19	3.83	93.9 K=1.23	0.5202	-4.75	11.45	0.415 [1] ✔
T9	40 - 20	ROHN TS1.5x16 ga	4.19	3.83	90.1 K=1.00	0.2627	-3.74	6.03	0.621 [1] ✔
T10	20 - 5	ROHN TS1.5x11 ga	4.19	3.83	93.9 K=1.00	0.5202	-1.05	11.45	0.092 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T11	5 - 0	L4x4x1/4	2.39	2.10	75.9 K=2.39	1.9400	-1.45	45.32	0.032 [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 $\frac{P_u}{\phi P_n}$
T2	180 - 160	L2x2x1/4	3.42	3.18	91.3 K=1.46	0.9380	-3.08	19.59	0.157 [1] ✔
T3	160 - 140	L2x2x1/4	3.42	3.18	91.3 K=1.46	0.9380	-0.62	19.59	0.031 [1] ✔
T5	120 - 100	L2x2x1/4	3.42	3.13	90.8 K=1.47	0.9380	-1.68	19.69	0.086 [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	193 - 180	L2x2x1/4	3.42	2.78	102.7 K=1.20	0.9380	-0.34	17.44	0.019 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	L2x2x1/4	3.42	2.78	102.7 K=1.20	0.9380	-2.65	17.44	0.152 [1] ✔
T5	120 - 100	L2x2x1/4	3.42	2.73	101.9 K=1.22	0.9380	-0.13	17.59	0.008 [1] ✔
T9	40 - 20	ROHN TS1.5x16 ga	3.42	3.13	73.6 K=1.00	0.2627	-1.07	7.12	0.151 [1] ✔

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	193 - 180	L2x2x1/4	3.42	2.78	102.7 K=1.20	0.9380	-0.53	17.44	0.031 [1] ✔
T2	180 - 160	L2x2x1/4	3.42	2.78	102.7 K=1.20	0.9380	-3.47	17.44	0.199 [1] ✔
T3	160 - 140	ROHN TS1.5x11 ga	3.42	3.18	77.9 K=1.00	0.5202	-0.00	13.54	0.000 [1] ✔
T5	120 - 100	L2x2x1/4	3.42	2.73	101.9 K=1.22	0.9380	-2.15	17.59	0.122 [1] ✔
T8	60 - 40	ROHN TS1.5x11 ga	3.42	3.13	76.7 K=1.00	0.5202	-0.81	13.71	0.059 [1] ✔
T9	40 - 20	ROHN TS1.5x16 ga	3.42	3.13	73.6 K=1.00	0.2627	-0.06	7.12	0.008 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160 (588)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-4.41	419.50	0.011
T2	180 - 160 (589)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-4.53	419.50	0.011
T2	180 - 160 (592)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-4.66	419.50	0.011
T2	180 - 160 (593)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-4.62	419.50	0.011
T2	180 - 160 (596)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-4.45	419.50	0.011
T2	180 - 160 (597)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-4.52	419.50	0.011
T2	180 - 160 (624)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-1.45	419.50	0.003

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T2	180 - 160 (625)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-1.52	419.50	0.004
T2	180 - 160 (628)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-1.56	419.50	0.004
T2	180 - 160 (629)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-1.56	419.50	0.004
T2	180 - 160 (632)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-1.43	419.50	0.003
T2	180 - 160 (633)	C15x50	3.67	3.55	49.1 K=1.00	14.7000	-1.50	419.50	0.004
T5	120 - 100 (600)	C15x40	3.67	3.52	47.7 K=1.00	11.8000	-1.10	339.16	0.003
T5	120 - 100 (601)	C15x40	3.67	3.52	47.7 K=1.00	11.8000	-1.13	339.16	0.003
T5	120 - 100 (604)	C15x40	3.67	3.52	47.7 K=1.00	11.8000	-5.97	339.16	0.018
T5	120 - 100 (605)	C15x40	3.67	3.52	47.7 K=1.00	11.8000	-5.99	339.16	0.018
T5	120 - 100 (608)	C15x40	3.67	3.52	47.7 K=1.00	11.8000	-1.10	339.16	0.003
T5	120 - 100 (609)	C15x40	3.67	3.52	47.7 K=1.00	11.8000	-5.93	339.16	0.017
T8	60 - 40 (612)	C12x25	3.67	3.52	54.2 K=1.00	7.3500	-0.14	204.04	0.001
T8	60 - 40 (613)	C12x25	3.67	3.52	54.2 K=1.00	7.3500	-4.87	204.04	0.024
T8	60 - 40 (616)	C12x25	3.67	3.52	54.2 K=1.00	7.3500	-4.98	204.04	0.024
T8	60 - 40 (617)	C12x25	3.67	3.52	54.2 K=1.00	7.3500	-4.92	204.04	0.024
T8	60 - 40 (620)	C12x25	3.67	3.52	54.2 K=1.00	7.3500	-0.15	204.04	0.001
T8	60 - 40 (621)	C12x25	3.67	3.52	54.2 K=1.00	7.3500	-0.28	204.04	0.001

Torque-Arm Top Bending Design Data

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
T2	180 - 160 (588)	C15x50	-48.59	145.26	0.335	0.00	22.06	0.000
T2	180 - 160 (589)	C15x50	-48.64	145.26	0.335	-0.00	22.06	0.000
T2	180 - 160 (592)	C15x50	-49.24	145.26	0.339	-0.00	22.06	0.000
T2	180 - 160 (593)	C15x50	-48.64	145.26	0.335	0.00	22.06	0.000
T2	180 - 160 (596)	C15x50	-49.25	145.26	0.339	-0.00	22.06	0.000
T2	180 - 160 (597)	C15x50	-48.70	145.26	0.335	0.00	22.06	0.000
T2	180 - 160 (624)	C15x50	-26.33	145.26	0.181	0.00	22.06	0.000
T2	180 - 160 (625)	C15x50	-26.33	145.26	0.181	0.00	22.06	0.000
T2	180 - 160 (628)	C15x50	-26.36	145.26	0.181	-0.00	22.06	0.000
T2	180 - 160 (629)	C15x50	-26.33	145.26	0.181	0.00	22.06	0.000
T2	180 - 160 (632)	C15x50	-26.41	145.26	0.182	-0.00	22.06	0.000
T2	180 - 160 (633)	C15x50	-26.38	145.26	0.182	0.00	22.06	0.000
T5	120 - 100 (600)	C15x40	-37.09	125.55	0.295	-0.00	18.55	0.000
T5	120 - 100 (601)	C15x40	-37.21	125.55	0.296	0.00	18.55	0.000
T5	120 - 100 (604)	C15x40	-37.70	125.55	0.300	-0.00	18.55	0.000
T5	120 - 100 (605)	C15x40	-36.25	125.55	0.289	0.00	18.55	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T5	120 - 100 (608)	C15x40	-38.52	125.55	0.307	0.00	18.55	0.000
T5	120 - 100 (609)	C15x40	-36.38	125.55	0.290	0.00	18.55	0.000
T8	60 - 40 (612)	C12x25	-12.69	65.07	0.195	-0.00	10.37	0.000
T8	60 - 40 (613)	C12x25	-11.94	65.07	0.184	-0.00	10.37	0.000
T8	60 - 40 (616)	C12x25	-13.50	65.07	0.207	0.00	10.37	0.000
T8	60 - 40 (617)	C12x25	-11.84	65.07	0.182	-0.00	10.37	0.000
T8	60 - 40 (620)	C12x25	-14.18	65.07	0.218	0.00	10.37	0.000
T8	60 - 40 (621)	C12x25	-12.82	65.07	0.197	0.00	10.37	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T2	180 - 160 (588)	C15x50	0.011	0.335	0.000	0.340 ✔	1.000	4.8.1 ✔
T2	180 - 160 (589)	C15x50	0.011	0.335	0.000	0.340 ✔	1.000	4.8.1 ✔
T2	180 - 160 (592)	C15x50	0.011	0.339	0.000	0.344 ✔	1.000	4.8.1 ✔
T2	180 - 160 (593)	C15x50	0.011	0.335	0.000	0.340 ✔	1.000	4.8.1 ✔
T2	180 - 160 (596)	C15x50	0.011	0.339	0.000	0.344 ✔	1.000	4.8.1 ✔
T2	180 - 160 (597)	C15x50	0.011	0.335	0.000	0.341 ✔	1.000	4.8.1 ✔
T2	180 - 160 (624)	C15x50	0.003	0.181	0.000	0.183 ✔	1.000	4.8.1 ✔
T2	180 - 160 (625)	C15x50	0.004	0.181	0.000	0.183 ✔	1.000	4.8.1 ✔
T2	180 - 160 (628)	C15x50	0.004	0.181	0.000	0.183 ✔	1.000	4.8.1 ✔
T2	180 - 160 (629)	C15x50	0.004	0.181	0.000	0.183 ✔	1.000	4.8.1 ✔
T2	180 - 160 (632)	C15x50	0.003	0.182	0.000	0.184 ✔	1.000	4.8.1 ✔
T2	180 - 160 (633)	C15x50	0.004	0.182	0.000	0.183 ✔	1.000	4.8.1 ✔
T5	120 - 100 (600)	C15x40	0.003	0.295	0.000	0.297 ✔	1.000	4.8.1 ✔
T5	120 - 100 (601)	C15x40	0.003	0.296	0.000	0.298 ✔	1.000	4.8.1 ✔
T5	120 - 100 (604)	C15x40	0.018	0.300	0.000	0.309 ✔	1.000	4.8.1 ✔
T5	120 - 100 (605)	C15x40	0.018	0.289	0.000	0.298 ✔	1.000	4.8.1 ✔
T5	120 - 100 (608)	C15x40	0.003	0.307	0.000	0.308 ✔	1.000	4.8.1 ✔
T5	120 - 100 (609)	C15x40	0.017	0.290	0.000	0.299 ✔	1.000	4.8.1 ✔

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T8	60 - 40 (612)	C12x25	0.001	0.195	0.000	0.195 ✔	1.000	4.8.1 ✔
T8	60 - 40 (613)	C12x25	0.024	0.184	0.000	0.196 ✔	1.000	4.8.1 ✔
T8	60 - 40 (616)	C12x25	0.024	0.207	0.000	0.220 ✔	1.000	4.8.1 ✔
T8	60 - 40 (617)	C12x25	0.024	0.182	0.000	0.194 ✔	1.000	4.8.1 ✔
T8	60 - 40 (620)	C12x25	0.001	0.218	0.000	0.218 ✔	1.000	4.8.1 ✔
T8	60 - 40 (621)	C12x25	0.001	0.197	0.000	0.198 ✔	1.000	4.8.1 ✔

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	193 - 180	ROHN 2.5 EH	13.00	0.42	5.4	2.2535	11.50	101.41	0.113 [1] ✔
T2	180 - 160	ROHN 2.5 EH	20.00	1.21	15.7	2.2535	17.56	101.41	0.173 [1] ✔
T3	160 - 140	ROHN 2.5 EH	20.00	0.17	2.2	2.2535	1.83	101.41	0.018 [1] ✔
T4	140 - 120	ROHN 2.5 EH	20.00	2.42	31.4	2.2535	4.61	101.41	0.045 [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	193 - 180	L2x2x1/4	4.19	1.75	38.4	0.5629	2.10	24.49	0.086 [1] ✔
T2	180 - 160	L2x2x1/4	4.19	1.75	38.4	0.5629	6.10	24.49	0.249 [1] ✔
T3	160 - 140	L2x2x1/4	4.19	1.83	38.4	0.5629	4.32	24.49	0.176 [1] ✔
T4	140 - 120	ROHN TS1.5x11 ga	4.19	3.89	95.4	0.5202	1.50	19.67	0.076 [1] ✔
T5	120 - 100	L2x2x1/4	4.19	1.72	37.7	0.5629	3.74	24.49	0.153 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T6	100 - 80	ROHN TS1.5x16 ga	4.19	3.83	90.1	0.2627	2.16	9.93	0.218 [1]
T7	80 - 60	L1 3/4x1 3/4x3/16	4.19	1.80	42.8	0.3604	1.83	15.68	0.117 [1]
T8	60 - 40	ROHN TS1.5x11 ga	4.19	3.83	93.9	0.5202	4.72	19.67	0.240 [1]
T9	40 - 20	ROHN TS1.5x16 ga	4.19	3.83	90.1	0.2627	3.31	9.93	0.333 [1]
T10	20 - 5	ROHN TS1.5x11 ga	4.19	3.83	93.9	0.5202	1.17	19.67	0.060 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T11	5 - 0	L4x4x1/4	1.60	1.30	12.5	1.9400	0.12	62.86	0.002 [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 $\frac{P_u}{\phi P_n}$
T2	180 - 160	L2x2x1/4	3.42	3.18	62.7	0.9380	3.73	30.39	0.123 [1]
T3	160 - 140	L2x2x1/4	3.42	3.18	62.7	0.9380	1.95	30.39	0.064 [1]
T5	120 - 100	L2x2x1/4	3.42	3.13	61.6	0.9380	4.84	30.39	0.159 [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 $\frac{P_u}{\phi P_n}$

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	193 - 180	L2x2x1/4	3.42	2.78	62.7	0.5629	0.35	24.49	0.014 [1] ✔
T2	180 - 160	L2x2x1/4	3.42	2.78	62.7	0.5629	2.40	24.49	0.098 [1] ✔
T3	160 - 140	ROHN TS1.5x11 ga	3.42	3.18	77.9	0.5202	0.73	19.67	0.037 [1] ✔
T4	140 - 120	ROHN TS1.5x11 ga	3.42	3.18	77.9	0.5202	1.05	19.67	0.053 [1] ✔
T5	120 - 100	L2x2x1/4	3.42	2.73	61.6	0.5629	1.14	24.49	0.046 [1] ✔
T6	100 - 80	ROHN TS1.5x16 ga	3.42	3.13	73.6	0.2627	0.85	9.93	0.086 [1] ✔
T7	80 - 60	ROHN TS1.5x11 ga	3.42	3.13	76.7	0.5202	1.06	19.67	0.054 [1] ✔
T8	60 - 40	ROHN TS1.5x11 ga	3.42	3.13	76.7	0.5202	1.12	19.67	0.057 [1] ✔
T9	40 - 20	ROHN TS1.5x16 ga	3.42	3.13	73.6	0.2627	1.41	9.93	0.142 [1] ✔
T10	20 - 5	ROHN TS1.5x11 ga	3.42	3.13	76.7	0.5202	0.40	19.67	0.020 [1] ✔
T11	5 - 0	L4x4x1/4	3.19	2.90	27.8	1.9400	11.39	62.86	0.181 [1] ✔

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	193 - 180	L2x2x1/4	3.42	2.78	62.7	0.5629	0.62	24.49	0.025 [1] ✔
T2	180 - 160	L2x2x1/4	3.42	2.78	62.7	0.5629	5.46	24.49	0.223 [1] ✔
T3	160 - 140	ROHN TS1.5x11 ga	3.42	3.18	77.9	0.5202	0.92	19.67	0.047 [1] ✔
T4	140 - 120	ROHN TS1.5x11 ga	3.42	3.18	77.9	0.5202	0.92	19.67	0.047 [1] ✔
T5	120 - 100	L2x2x1/4	3.42	2.73	61.6	0.5629	3.87	24.49	0.158 [1] ✔
T6	100 - 80	ROHN TS1.5x16 ga	3.42	3.13	73.6	0.2627	0.55	9.93	0.056 [1] ✔
T7	80 - 60	ROHN TS1.5x11 ga	3.42	3.13	76.7	0.5202	1.05	19.67	0.054 [1] ✔
T8	60 - 40	ROHN TS1.5x11 ga	3.42	3.13	76.7	0.5202	1.92	19.67	0.098 [1] ✔
T9	40 - 20	ROHN TS1.5x16 ga	3.42	3.13	73.6	0.2627	0.32	9.93	0.032 [1] ✔
T10	20 - 5	ROHN TS1.5x11 ga	3.42	3.13	76.7	0.5202	8.59	19.67	0.437 [1] ✔

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
									✔

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T2	180 - 160 (588)	C15x50	3.67	3.55	49.1	14.7000	4.76	476.28	0.010
T2	180 - 160 (589)	C15x50	3.67	3.55	49.1	14.7000	4.46	476.28	0.009
T2	180 - 160 (592)	C15x50	3.67	3.55	49.1	14.7000	4.61	476.28	0.010
T2	180 - 160 (593)	C15x50	3.67	3.55	49.1	14.7000	4.58	476.28	0.010
T2	180 - 160 (596)	C15x50	3.67	3.55	49.1	14.7000	4.78	476.28	0.010
T2	180 - 160 (597)	C15x50	3.67	3.55	49.1	14.7000	4.43	476.28	0.009
T2	180 - 160 (624)	C15x50	3.67	3.55	49.1	14.7000	0.28	476.28	0.001
T2	180 - 160 (625)	C15x50	3.67	3.55	49.1	14.7000	0.14	476.28	0.000
T2	180 - 160 (628)	C15x50	3.67	3.55	49.1	14.7000	0.17	476.28	0.000
T2	180 - 160 (629)	C15x50	3.67	3.55	49.1	14.7000	0.14	476.28	0.000
T2	180 - 160 (632)	C15x50	3.67	3.55	49.1	14.7000	0.31	476.28	0.001
T2	180 - 160 (633)	C15x50	3.67	3.55	49.1	14.7000	0.13	476.28	0.000
T5	120 - 100 (600)	C15x40	3.67	3.52	47.7	11.8000	3.83	382.32	0.010
T5	120 - 100 (601)	C15x40	3.67	3.52	47.7	11.8000	3.80	382.32	0.010
T5	120 - 100 (604)	C15x40	3.67	3.52	47.7	11.8000	3.89	382.32	0.010
T5	120 - 100 (605)	C15x40	3.67	3.52	47.7	11.8000	3.72	382.32	0.010
T5	120 - 100 (608)	C15x40	3.67	3.52	47.7	11.8000	3.90	382.32	0.010
T5	120 - 100 (609)	C15x40	3.67	3.52	47.7	11.8000	3.69	382.32	0.010
T8	60 - 40 (612)	C12x25	3.67	3.52	54.2	7.3500	3.47	238.14	0.015
T8	60 - 40 (613)	C12x25	3.67	3.52	54.2	7.3500	3.36	238.14	0.014
T8	60 - 40 (616)	C12x25	3.67	3.52	54.2	7.3500	3.41	238.14	0.014
T8	60 - 40 (617)	C12x25	3.67	3.52	54.2	7.3500	3.47	238.14	0.015
T8	60 - 40 (620)	C12x25	3.67	3.52	54.2	7.3500	3.52	238.14	0.015
T8	60 - 40 (621)	C12x25	3.67	3.52	54.2	7.3500	3.38	238.14	0.014

Torque-Arm Top Bending Design Data

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
T2	180 - 160 (588)	C15x50	-39.79	145.26	0.274	0.00	22.06	0.000
T2	180 - 160 (589)	C15x50	-39.25	145.26	0.270	0.00	22.06	0.000
T2	180 - 160 (592)	C15x50	-40.20	145.26	0.277	0.00	22.06	0.000
T2	180 - 160 (593)	C15x50	-39.40	145.26	0.271	0.00	22.06	0.000
T2	180 - 160 (596)	C15x50	-40.56	145.26	0.279	-0.00	22.06	0.000
T2	180 - 160 (597)	C15x50	-39.18	145.26	0.270	-0.00	22.06	0.000
T2	180 - 160 (624)	C15x50	-25.30	145.26	0.174	0.00	22.06	0.000
T2	180 - 160 (625)	C15x50	-25.12	145.26	0.173	0.00	22.06	0.000
T2	180 - 160 (628)	C15x50	-25.21	145.26	0.174	-0.00	22.06	0.000
T2	180 - 160 (629)	C15x50	-25.12	145.26	0.173	0.00	22.06	0.000
T2	180 - 160 (632)	C15x50	-25.45	145.26	0.175	-0.00	22.06	0.000
T2	180 - 160 (633)	C15x50	-25.17	145.26	0.173	-0.00	22.06	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T5	120 - 100 (600)	C15x40	-32.17	125.55	0.256	-0.00	18.55	0.000
T5	120 - 100 (601)	C15x40	-32.22	125.55	0.257	-0.00	18.55	0.000
T5	120 - 100 (604)	C15x40	-33.53	125.55	0.267	-0.00	18.55	0.000
T5	120 - 100 (605)	C15x40	-31.89	125.55	0.254	-0.00	18.55	0.000
T5	120 - 100 (608)	C15x40	-33.61	125.55	0.268	0.00	18.55	0.000
T5	120 - 100 (609)	C15x40	-31.97	125.55	0.255	0.00	18.55	0.000
T8	60 - 40 (612)	C12x25	-11.84	65.07	0.182	-0.00	10.37	0.000
T8	60 - 40 (613)	C12x25	-11.75	65.07	0.181	0.00	10.37	0.000
T8	60 - 40 (616)	C12x25	-13.25	65.07	0.204	-0.00	10.37	0.000
T8	60 - 40 (617)	C12x25	-11.78	65.07	0.181	0.00	10.37	0.000
T8	60 - 40 (620)	C12x25	-13.19	65.07	0.203	0.00	10.37	0.000
T8	60 - 40 (621)	C12x25	-12.01	65.07	0.185	0.00	10.37	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T2	180 - 160 (588)	C15x50	0.010	0.274	0.000	0.279 ✔	1.000	4.8.1 ✔
T2	180 - 160 (589)	C15x50	0.009	0.270	0.000	0.275 ✔	1.000	4.8.1 ✔
T2	180 - 160 (592)	C15x50	0.010	0.277	0.000	0.282 ✔	1.000	4.8.1 ✔
T2	180 - 160 (593)	C15x50	0.010	0.271	0.000	0.276 ✔	1.000	4.8.1 ✔
T2	180 - 160 (596)	C15x50	0.010	0.279	0.000	0.284 ✔	1.000	4.8.1 ✔
T2	180 - 160 (597)	C15x50	0.009	0.270	0.000	0.274 ✔	1.000	4.8.1 ✔
T2	180 - 160 (624)	C15x50	0.001	0.174	0.000	0.174 ✔	1.000	4.8.1 ✔
T2	180 - 160 (625)	C15x50	0.000	0.173	0.000	0.173 ✔	1.000	4.8.1 ✔
T2	180 - 160 (628)	C15x50	0.000	0.174	0.000	0.174 ✔	1.000	4.8.1 ✔
T2	180 - 160 (629)	C15x50	0.000	0.173	0.000	0.173 ✔	1.000	4.8.1 ✔
T2	180 - 160 (632)	C15x50	0.001	0.175	0.000	0.176 ✔	1.000	4.8.1 ✔
T2	180 - 160 (633)	C15x50	0.000	0.173	0.000	0.173 ✔	1.000	4.8.1 ✔
T5	120 - 100 (600)	C15x40	0.010	0.256	0.000	0.261 ✔	1.000	4.8.1 ✔
T5	120 - 100 (601)	C15x40	0.010	0.257	0.000	0.262 ✔	1.000	4.8.1 ✔
T5	120 - 100 (604)	C15x40	0.010	0.267	0.000	0.272 ✔	1.000	4.8.1 ✔
T5	120 - 100 (605)	C15x40	0.010	0.254	0.000	0.259 ✔	1.000	4.8.1 ✔
T5	120 - 100 (608)	C15x40	0.010	0.268	0.000	0.273	1.000	4.8.1 ✔

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T5	120 - 100 (609)	C15x40	0.010	0.255	0.000	0.259	1.000	4.8.1
T8	60 - 40 (612)	C12x25	0.015	0.182	0.000	0.189	1.000	4.8.1
T8	60 - 40 (613)	C12x25	0.014	0.181	0.000	0.188	1.000	4.8.1
T8	60 - 40 (616)	C12x25	0.014	0.204	0.000	0.211	1.000	4.8.1
T8	60 - 40 (617)	C12x25	0.015	0.181	0.000	0.188	1.000	4.8.1
T8	60 - 40 (620)	C12x25	0.015	0.203	0.000	0.210	1.000	4.8.1
T8	60 - 40 (621)	C12x25	0.014	0.185	0.000	0.192	1.000	4.8.1

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	193 - 180	Leg	ROHN 2.5 EH	1	-14.15	101.19	14.0	Pass
		Diagonal	L2x2x1/4	11	-2.21	23.44	9.4	Pass
		Top Girt	L2x2x1/4	5	-0.34	17.44	1.9	Pass
		Bottom Girt	L2x2x1/4	9	-0.53	17.44	3.1	Pass
T2	180 - 160	Leg	ROHN 2.5 EH	40	-43.46	99.60	43.6	Pass
		Diagonal	L2x2x1/4	52	-7.72	23.44	33.0	Pass
		Secondary Horizontal	L2x2x1/4	56	-3.08	19.59	15.7	Pass
		Top Girt	L2x2x1/4	43	-2.65	17.44	15.2	Pass
		Bottom Girt	L2x2x1/4	47	5.46	24.49	22.3	Pass
		Guy A@162.583	7/8	594	17.94	47.82	37.5	Pass
		Guy A@177.083	5/8	631	9.23	25.44	36.3	Pass
		Guy B@162.583	7/8	590	18.30	47.82	38.3	Pass
		Guy B@177.083	5/8	626	9.27	25.44	36.4	Pass
		Guy C@162.583	7/8	587	18.12	47.82	37.9	Pass
		Guy C@177.083	5/8	623	9.29	25.44	36.5	Pass
		Torque Arm Top@162.583	C15x50	592	-4.66	419.50	34.4	Pass
		Torque Arm Top@177.083	C15x50	632	-1.43	419.50	18.4	Pass
T3	160 - 140	Leg	ROHN 2.5 EH	122	-54.19	101.38	53.5	Pass
		Diagonal	L2x2x1/4	195	-6.17	23.12	26.7	Pass
		Secondary Horizontal	L2x2x1/4	199	1.95	30.39	6.4	Pass
		Top Girt	ROHN TS1.5x11 ga	124	0.73	19.67	3.7	Pass
		Bottom Girt	ROHN TS1.5x11 ga	128	0.92	19.67	4.7	Pass
T4	140 - 120	Leg	ROHN 2.5 EH	203	-55.82	94.36	59.2	Pass
		Diagonal	ROHN TS1.5x11 ga	211	-2.00	11.24	17.8	Pass
		Top Girt	ROHN TS1.5x11 ga	205	1.05	19.67	5.3	Pass
		Bottom Girt	ROHN TS1.5x11 ga	209	0.92	19.67	4.7	Pass
T5	120 - 100	Leg	ROHN 3 EH	260	-63.33	135.69	46.7	Pass
		Diagonal	L2x2x1/4	269	-6.34	23.56	26.9	Pass
		Secondary Horizontal	L2x2x1/4	284	4.84	30.39	15.9	Pass
		Top Girt	L2x2x1/4	262	1.14	24.49	4.6	Pass
		Bottom Girt	L2x2x1/4	266	3.87	24.49	15.8	Pass
		Guy A@102.583	5/8	606	14.23	25.44	55.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Guy B@102.583	5/8	602	14.55	25.44	57.2	Pass
		Guy C@102.583	5/8	599	14.26	25.44	56.0	Pass
		Torque Arm Top@102.583	C15x40	604	-5.97	339.16	30.9	Pass
T6	100 - 80	Leg	ROHN 3 EH	341	-69.16	129.41	53.4	Pass
		Diagonal	ROHN TS1.5x16 ga	396	-2.68	6.03	44.4	Pass
		Top Girt	ROHN TS1.5x16 ga	344	0.85	9.93	8.6	Pass
		Bottom Girt	ROHN TS1.5x16 ga	347	0.55	9.93	5.6	Pass
T7	80 - 60	Leg	ROHN 3 EH	398	-72.74	129.41	56.2	Pass
		Diagonal	L1 3/4x1 3/4x3/16	406	-2.77	14.72	18.8	Pass
		Top Girt	ROHN TS1.5x11 ga	400	1.06	19.67	5.4	Pass
		Bottom Girt	ROHN TS1.5x11 ga	404	1.05	19.67	5.4	Pass
T8	60 - 40	Leg	ROHN 3 EH	455	-80.83	129.41	62.5	Pass
		Diagonal	ROHN TS1.5x11 ga	465	-4.75	11.45	41.5	Pass
		Top Girt	ROHN TS1.5x11 ga	458	1.12	19.67	5.7	Pass
		Bottom Girt	ROHN TS1.5x11 ga	460	1.92	19.67	9.8	Pass
		Guy A@42.5833	1/2	618	8.37	16.14	51.9	Pass
		Guy B@42.5833	1/2	614	8.55	16.14	53.0	Pass
		Guy C@42.5833	1/2	611	8.30	16.14	51.4	Pass
		Torque Arm Top@42.5833	C12x25	616	-4.98	204.04	22.0	Pass
T9	40 - 20	Leg	ROHN 3 EH	512	-82.70	112.18	73.7	Pass
		Diagonal	ROHN TS1.5x16 ga	542	-3.74	6.03	62.1	Pass
		Top Girt	ROHN TS1.5x16 ga	514	-1.07	7.12	15.1	Pass
		Bottom Girt	ROHN TS1.5x16 ga	519	0.32	9.93	3.2	Pass
T10	20 - 5	Leg	ROHN 3 EH	545	-85.09	112.18	75.9	Pass
		Diagonal	ROHN TS1.5x11 ga	569	-1.05	11.45	9.2	Pass
		Top Girt	ROHN TS1.5x11 ga	548	0.40	19.67	2.0	Pass
		Bottom Girt	ROHN TS1.5x11 ga	550	8.59	19.67	43.7	Pass
T11	5 - 0	Leg	ROHN 3 EH	572	-92.04	133.99	68.7	Pass
		Horizontal	L4x4x1/4	583	-1.45	45.32	3.2	Pass
		Top Girt	L4x4x1/4	574	11.39	62.86	18.1	Pass
							Summary	
						Leg (T10)	75.9	Pass
						Diagonal (T9)	62.1	Pass
						Horizontal (T11)	3.2	Pass
						Secondary Horizontal (T5)	15.9	Pass
						Top Girt (T11)	18.1	Pass
						Bottom Girt (T10)	43.7	Pass
						Guy A (T5)	55.9	Pass
						Guy B (T5)	57.2	Pass
						Guy C (T5)	56.0	Pass
						Torque Arm Top (T2)	34.4	Pass
						Bolt Checks	99.7	Pass
						RATING =	**99.7**	**Pass**

SITESAFE
RF COMPLIANCE EXPERTS

8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 ● 703.276.1169 fax
info@sitesafe.com ● www.sitesafe.com

Smartlink on behalf of AT&T Mobility, LLC Site FA – 10035116 Site ID – CTL2171 (MRCTB031324-MRCTB030895-MRCTB031457-MRCTB031936) USID – 25907 Site Name – MONTVILLE EAST

57 Cook Drive
Uncasville, CT 06382

Latitude: N41-28-29.99
Longitude: W72-6-18.19
Structure Type: Guyed

Report generated date: October 17, 2018
Report by: Zyotty Thamsil
Customer Contact: David Barbagallo

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Table of Contents

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	No
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
FCC & AT&T Compliant?	Will Be Compliant
Optional AT&T Mitigation Items?	No

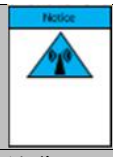
The following documents were provided by the client and were utilized to create this report:

RFDS: RFDS 10035116

CD's: 10035116_AE201_180927_CTL02171_Rev 1_3C-4C-5C-6C

RF Powers Used: RFDS 10035116

1.2 Signage Summary

AT&T Signage Locations	 Information 1	 Information 2	 Notice	 Notice 2	 Caution	 Caution 2	 Warning	 Warning 2	 Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

1.3 Fall Arrest Anchor Point Summary

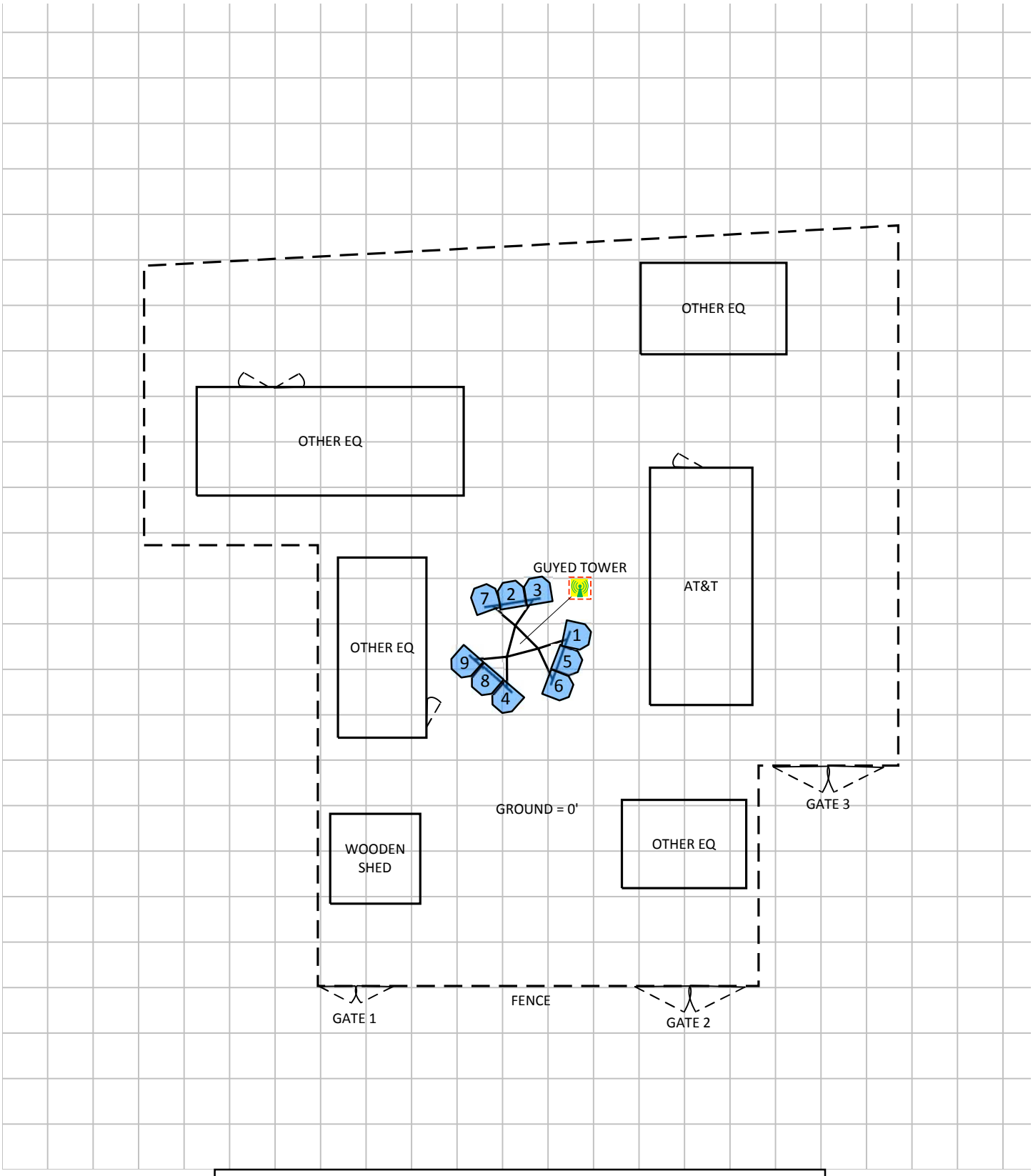
Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N

2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Elevation View

Site Scale Map For: MONTVILLE EAST



(Feet)

0 7.5 15.1

www.sitesafe.com
Site Name:MONTVILLE EAST
10/17/2018 4:03:30 PM

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Sign Legend

Caution 1 | Caution 2 | Notice 2 | Notice 1 | Warning | Warning 2 | Info 1 | Info 2 | RF Safety Plan

Barrier

Proposed Barriers/ Signs

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Radio Count	Total ERP (Watts)	Ant Gain (dBd)	Z (AGL)	MDT	EDT
1	AT&T MOBILITY LLC (SPARE)	Powerwave 7770	Panel	850		141	82	4.6	0	ERP	Watt	0	0	11.51	177.7'	0'	0'
2	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	763	LTE	30	61.9	8	2951.413	ERP	Watt	1	2951.4	13.56	176'	2'	10'
2	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	850	LTE	30	63	8	1000	ERP	Watt	1	1000	13.56	176'	2'	6'
2	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	1900	LTE	30	68.2	8	3664.276	ERP	Watt	1	3664.3	13.86	176'	2'	7'
2	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	1900	LTE	30	68.2	8	3664.276	ERP	Watt	1	3664.3	13.86	176'	2'	7'
2	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	850	5G	30	63	8	1000	ERP	Watt	0	1000	13.56	176'	2'	6'
2	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	2100	LTE	30	65.2	8	3837.072	ERP	Watt	1	3837.1	13.96	176'	2'	8'
2	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	2100	LTE	30	65.2	8	3837.072	ERP	Watt	1	3837.1	13.96	176'	2'	8'
3	AT&T MOBILITY LLC	CCI Antennas HPA-65R-BUU-H8	Panel	737	LTE	30	64.9	7.7	1475.707	ERP	Watt	1	1475.7	13.26	176.2'	2'	6'
3	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas HPA-65R-BUU-H8	Panel	2300	LTE	30	63.3	7.7	1285.287	ERP	Watt	1	1285.3	15.26	176.2'	2'	8'
4	AT&T MOBILITY LLC (SPARE)	Powerwave 7770	Panel	850		260	82	4.6	0	ERP	Watt	0	0	11.51	177.7'	0'	0'
5	AT&T MOBILITY LLC (PROPOSED)	Quintel QS66512-2	Panel	763	LTE	150	69	6	2951.413	ERP	Watt	1	2951.4	11.46	177'	0'	6'
5	AT&T MOBILITY LLC (PROPOSED)	Quintel QS66512-2	Panel	850	LTE	150	63	6	1000	ERP	Watt	1	1000	10.96	177'	0'	6'
5	AT&T MOBILITY LLC (PROPOSED)	Quintel QS66512-2	Panel	1900	LTE	150	68	6	3664.376	ERP	Watt	1	3664.4	14.16	177'	0'	3'
5	AT&T MOBILITY LLC (PROPOSED)	Quintel QS66512-2	Panel	1900	LTE	150	68	6	3664.376	ERP	Watt	1	3664.4	14.16	177'	0'	3'
5	AT&T MOBILITY LLC (PROPOSED)	Quintel QS66512-2	Panel	850	5G	150	63	6	1000	ERP	Watt	0	1000	10.96	177'	0'	6'
5	AT&T MOBILITY LLC (PROPOSED)	Quintel QS66512-2	Panel	2100	LTE	150	57	6	3837.072	ERP	Watt	1	3837.1	14.76	177'	0'	3'
5	AT&T MOBILITY LLC (PROPOSED)	Quintel QS66512-2	Panel	2100	LTE	150	57	6	3837.072	ERP	Watt	1	3837.1	14.76	177'	0'	3'
6	AT&T MOBILITY LLC	CCI Antennas HPA-65R-BUU-H8	Panel	737	LTE	150	64.9	7.7	1475.707	ERP	Watt	1	1475.7	13.26	176.2'	0'	6'

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Radio Count	Total ERP (Watts)	Ant Gain (dBd)	Z (AGL)	MDT	EDT
6	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas HPA-65R-BUU-H8	Panel	2300	LTE	150	63.3	7.7	1285.287	ERP	Watt	1	1285.3	15.26	176.2'	0'	3'
7	AT&T MOBILITY LLC (SPARE)	Powerwave 7770	Panel	850		19	82	4.6	0	ERP	Watt	0	0	11.51	177.7'	0'	0'
8	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	763	LTE	260	61.9	8	2951.413	ERP	Watt	1	2951.4	13.56	176'	0'	3'
8	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	850	LTE	260	63	8	1000	ERP	Watt	1	1000	13.56	176'	0'	3'
8	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	1900	LTE	260	68.2	8	3664.376	ERP	Watt	1	3664.4	13.86	176'	0'	4'
8	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	1900	LTE	260	68.2	8	3664.376	ERP	Watt	1	3664.4	13.86	176'	0'	4'
8	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	850	5G	260	63	8	1000	ERP	Watt	0	1000	13.56	176'	0'	3'
8	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	2100	LTE	260	65.2	8	3837.072	ERP	Watt	1	3837.1	13.96	176'	0'	4'
8	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas TPA-65R-LCUUUU-H8	Panel	2100	LTE	260	65.2	8	3837.072	ERP	Watt	1	3837.1	13.96	176'	0'	4'
9	AT&T MOBILITY LLC	CCI Antennas HPA-65R-BUU-H8	Panel	737	LTE	260	64.9	7.7	1475.707	ERP	Watt	0	1475.7	13.26	176.2'	0'	3'
9	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas HPA-65R-BUU-H8	Panel	2300	LTE	260	63.3	7.7	1285.287	ERP	Watt	0	1285.3	15.26	176.2'	0'	4'

NOTE: X, Y and Z indicate relative position of the bottom of the antenna to the origin location on the site, displayed in the model results diagram. Specifically, the Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. The distance to the bottom of the antenna is calculated by subtracting half of the length of the antenna from the antenna centerline. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

Note: The 2300 MHz LTE technology is being added to an existing antenna.

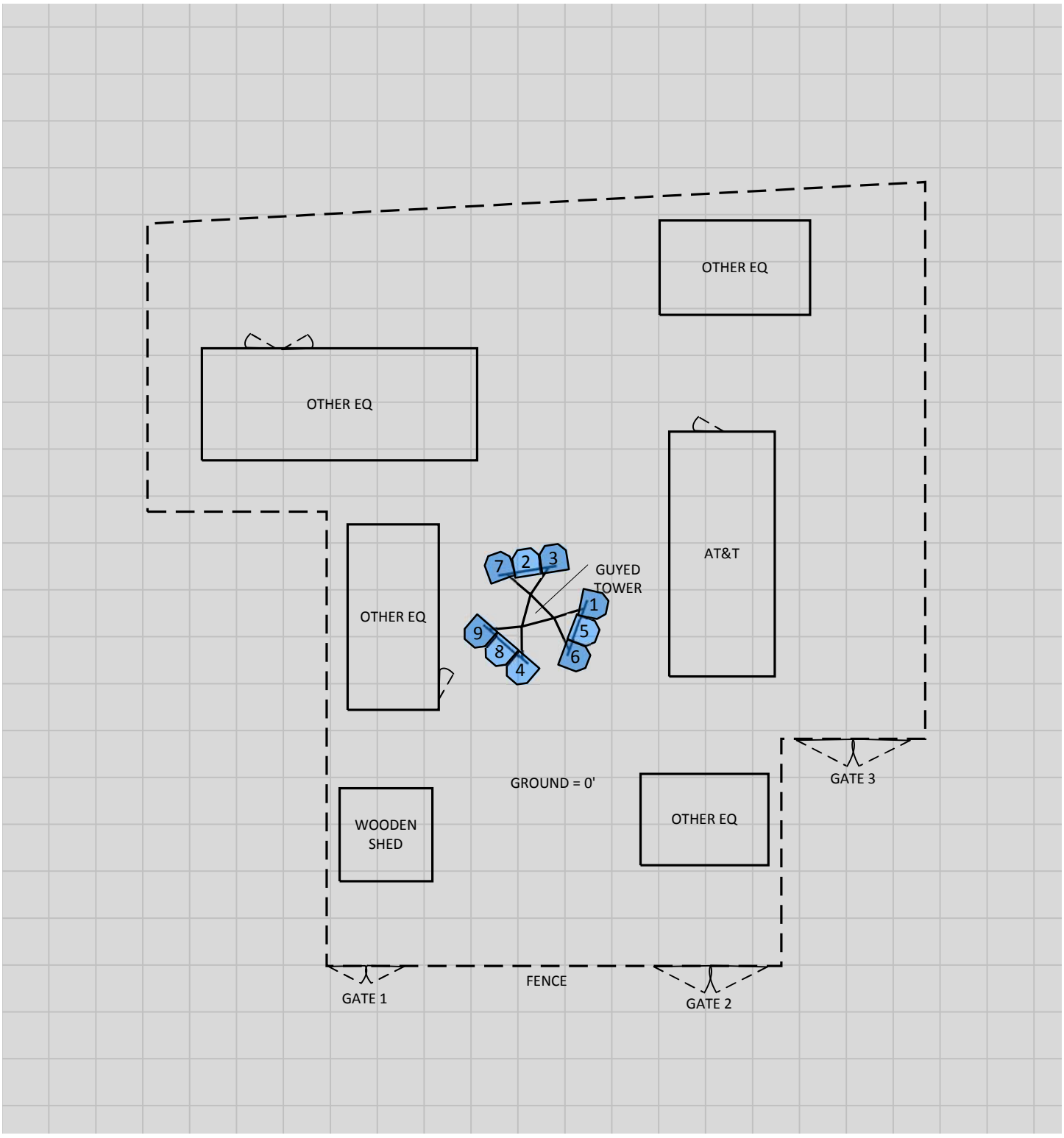
4 Emission Predictions

In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

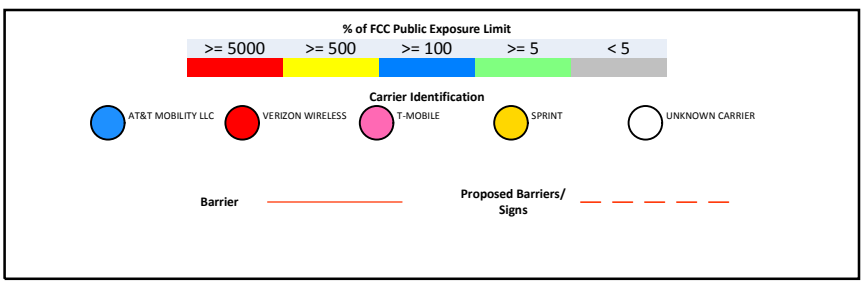
- Ground = 0'

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: MONTVILLE EAST



% of FCC Public Exposure Limit
Spatial average 0' - 6'



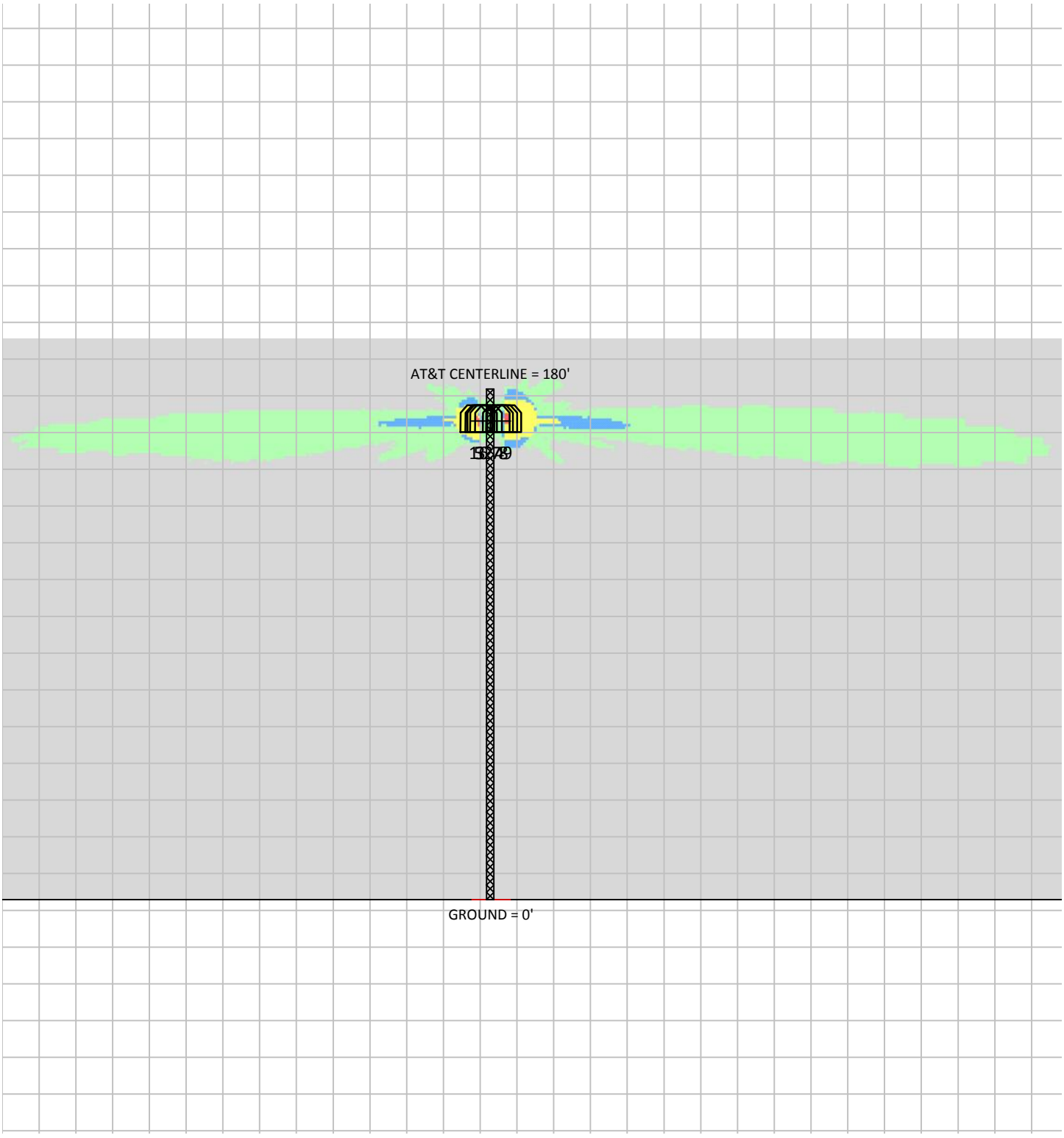
(Feet)

0 8 16

www.sitesafe.com
Site Name:MONTVILLE EAST
10/17/2018 4:02:58 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: MONTVILLE EAST
Elevation View



% of FCC Public Exposure Limit

% of FCC Public Exposure Limit

>= 5000	>= 500	>= 100	>= 5	< 5

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Barrier ——— **Proposed Barriers/ Signs** — — — — —

(Feet)

0 26.4 52.8

www.sitesafe.com
Site Name:MONTVILLE EAST
10/17/2018 3:59:35 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Site Access Location

(1) Yellow Caution 2B sign(s) required on the base of the guyed tower.

Notes:

- Data concerning all other carriers on site was unavailable and therefore not included in this report.
- Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or data supplied regarding them. All remediation is based on a worst-case scenario.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Sitesafe, LLC., in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio-frequency Radiation; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Zyotty Thamsil.

October 17, 2018

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

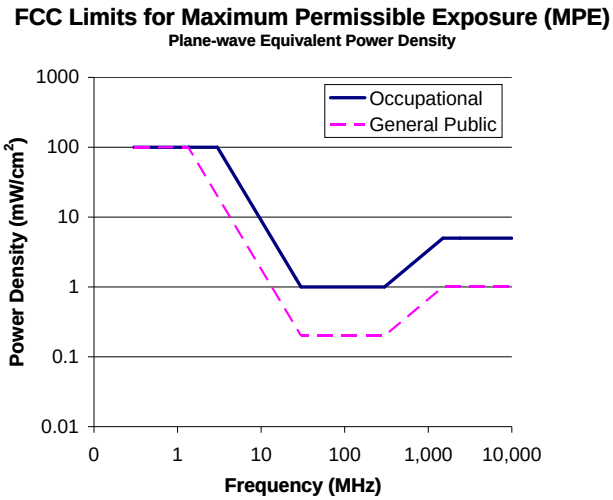
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –
- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lock Out Tag Out procedure aimed to control the unexpected energization or start up of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3 foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit.
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone**.
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers**.
- Yellow represents areas predicted to exceed Occupational MPE limits. Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur, but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.

Gain (of an antenna) – The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antennas as compared to an omni directional antenna.

General Population/Uncontrolled Environment – Defined by the FCC, as an area where exposure to RF energy may occur to persons who are **unaware** of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The maximum levels of RF exposure a person may be exposed to without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are **aware** of the

potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of Radio Frequency radiation on Humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency (RF) – The frequencies of electromagnetic waves which are used for radio communications. Approximately 3 kHz to 300 GHz.

Radio Frequency Exposure (RFE) – The amount of RF power density that a person is or might be exposed to.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average power density an average sized human will be exposed to at a location.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix F – References

The following references can be followed for further information about RF Health and Safety.

Sitesafe, LLC.
http://www.sitesafe.com
FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety
National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org
Institute of Electrical and Electronics Engineers, Inc., (IEEE)
http://www.ieee.org
American National Standards Institute (ANSI)
http://www.ansi.org
Environmental Protection Agency (EPA)
http://www.epa.gov/radtown/wireless-tech.html
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/
Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/
International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org
World Health Organization (WHO)
http://www.who.int/peh-emf/en/
National Cancer Institute
http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones
American Cancer Society (ACS)
http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?siteareа=PED
European Commission Scientific Committee on Emerging and Newly Identified Health Risks
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf
Fairfax County, Virginia Public School Survey
http://www.fcps.edu/fts/safety-security/RFEESurvey/
UK Health Protection Agency Advisory Group on Non-ionising Radiation
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368
Norwegian Institute of Public Health
http://www.fhi.no/dokumenter/545eea7147.pdf

Property Location 57 COOK RD | Map ID 040/ 013/ 000/ / | Bldg Name SFR & L LSE & TOWER | State Use 1010
Vision ID 2568 | Account # K0555700 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | Print Date 9/11/2017 10:37:52 A

CURRENT OWNER

KINGSBOROUGH ROBERT W & KAR

57 COOK RD

UNCASVILLE CT 06382

TOPO		UTILITIES		STRT / ROAD		LOCATION	
1	Level	7	Electric	2	Semi-Improve	S	Mohegan Schl
		5	Well			F	Mohegan
		6	Septic				

SUPPLEMENTAL DATA

Alt Parcel ID	040/013-000		
Census	695100		
Dev Lot			
Subdiv			
Map #		Callback	R
Zoning Notes	C3		
Gis ID	040/013-000	ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
Res Land	1-1	60,800	42,560
Res Exces	1-2	330	230
Dwelling	1-3	306,940	214,860
Res OB	1-4	696,810	487,770
Forest	6-2	103,750	6,970
	Total	1,168,630	752,390

6086

MONTVILLE, CT

RECORD OF OWNERSHIP

	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
KINGSBOROUGH ROBERT W & KAREN A	0546	0511	03-04-2010	U	I	0	29
KINGSBOROUGH ROBERT W	0292	0446	10-23-1996		I	0	
KINGSBOROUGH ROBERT W & D L MARIE	0207	0299	11-12-1988		I	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed
2016	1-1	42,560	2015	1-1	53,760	2014	1-1	53,760
	1-2	230		1-2	410		1-2	410
	1-3	214,860		1-3	172,880		1-3	172,880
	1-4	487,770		1-4	487,770		1-4	487,770
	Total	752,390		Total	718,600		Total	718,600

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD	NBHD Name	Street Index Name	Tracing	Batch
0001				

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	302,740
Appraised XF (B) Value (Bldg)	4,200
Appraised OB (B) Value (Bldg)	696,810
Appraised Land Value (Bldg)	164,880
Special Land Value	6,970
Total Appraised Parcel Value	1,168,630
Valuation Method	C
Adjustment	
Total Appraised Parcel Value	1,168,630

NOTES

AT&T ANTENNAE =$163,600 PER SITE = $654,400

L: OLD MAPBLOLOT WAS 098/002-000

VC09: ADDITION

CELL TOWER VALUE = $2000 MO LESS

25% EXPENSES = $18,000 CAPPED AT 11%

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments
B2017-0123	04-20-2017	79		15,000		0		VERIZON TO REPL
B2015-0505	11-17-2015	79	Misc	33,434		100	10-27-2016	CA-THREE ANTEN
B2015-0345	08-13-2015	79		15,000		100		REPL ANTENNA PA
E2015-0022	02-09-2015	00		5,700		100	02-11-2015	CA-REPAIR/RELOC
B2015-0035	02-03-2015	79	Misc	8,000		100	08-03-2015	CA-3 RADIO HEAD
B2014-0221	06-25-2014	79	Misc	15,000		100		REPLACE 6 ANTEN
B2013-0052	03-20-2013	79	Misc	129,000		100		STRUCTURAL CHA

VISIT / CHANGE HISTORY

Date	Type	IS	ID	Cd	Purpost/Result
03-28-2013			BAA	BN	BAA No Change
09-12-2011			RH	00	Interior + Exterior Inspe
07-01-2011			KN	09	All Refused- Estimated
10-26-2009			LB	08	Interior Refused-Exteri

LAND LINE VALUATION SECTION

B	Use co	Description	Zone	D	Fronta	Depth	Units		Unit Price	I. Fact	S.A.	Ac Di	C. Fact	St. Idx	Adj	Notes	Special Pricing Spec Use	Special Pricing Spec Calc	S Adj	Adj Unit Pric	Land Value
1	1010	Single Family	C-3				160,000	SF	0.38	1.000	5	1.000	1.00	002	1.00		0		1.000		60,800
1	1010	Single Family	C3				0	AC	2,500.00	1.000	0	1.000	1.00	002	1.00		0		0.000		330
1	700	Forest	C-3				42	AC	2,500.00	1.000	0	1.000	1.00	002	1.00		240		0.000		103,750
1	4340	Cell Tower						SF	2,500.00	1.000		1.000	1.00		1.00		0		0.000		0
							Total Card Land Units		45.303	AC	Parcel Total Land Area		45.3031						Total Land Value		164,880

Property Location	57 COOK RD		Map ID	040/ 013/ 000/ /	Bldg Name	SFR & L LSE & TOWER	State Use 1010
Vision ID 2568		Account # K0555700		Bldg # 1	Sec # 1 of 1	Card # 1 of 1	Print Date 9/11/2017 10:37:52 A

CONSTRUCTION DETAIL

Element	Cd	Description
Style	01	Ranch
Model	01	Residential
Grade:	11	B
Stories:	1	
Occupancy	1	
Exterior Wall A	25	Vinyl Siding
Exterior Wall B		
Roof Structure:	03	Gable
Roof Cover	03	Asphalt
Interior Wall A	05	Drywall
Interior Wall B		
Interior Flr A	14	Carpet
Interior Flr B		
Heat Fuel	02	Oil
Heat Type:	05	Hot Water
AC Type:	01	None
Total Bedrooms	05	5 Bedrooms
Total Bthrms:	3	
Total Half Baths	0	0
Total Xtra Fixtrs	0	
Total Rooms:	9	
Bath Style:	02	Average
Kitchen Style:	02	Average
Whirlpool Tub		
Fireplaces	1	
Fin Bsmnt		
Fin Bsmnt Qual		
Attic Access	01	None
Basement Gara	0	
	1	
MH Basement		
MHP/Complex		

CONSTRUCTION DETAIL (CONTINUED)

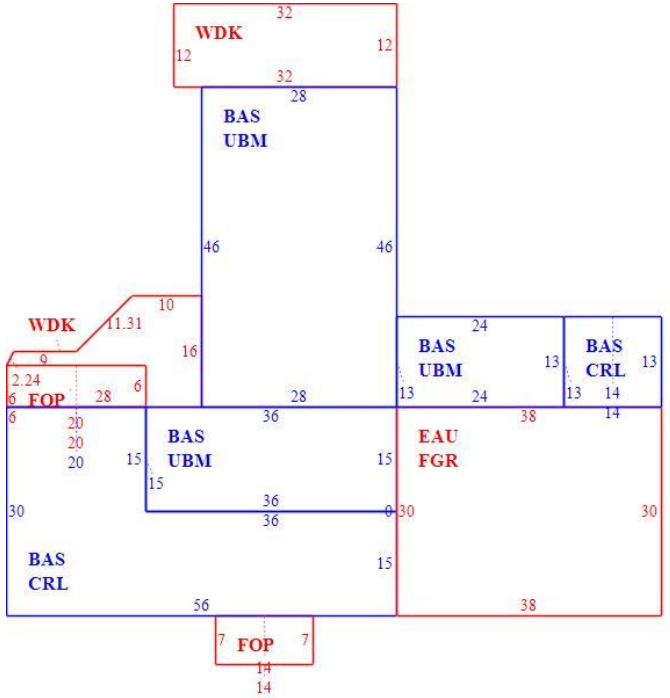
Element	Cd	Description

MIXED USE

Code	Description	Percentage
1010	Single Family	100
		0
		0

COST / MARKET VALUATION

Base Rate	90.00
RCN	
Net Other Adj	
Year Built	1989
Effective Year Built	
Depreciation Code	G
Remodel Rating	MJ
Year Remodeled	2009
Depreciation %	16
Functional Obsol	
Economic Obsol	
Cost Trend Factor	1
Condition	
% Complete	
	84
RCNLD	302,740
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	Su	Sub Type	Lan	Units	Unit Price	Year	Pct	Depre	Conditio	Qu		Apprais Va
SHD1	Shed			B	168	12.00	1999	50	0.00	AV	A	1.00	1,010
KIT	Kitchen			B	1	5000.00	2000	84	1.00			0.00	4,200
CELL	Cell Tower			B	4	163600.0	2009	100	0.00			0.00	654,400
CELS	Cell Shed			B	240	100.00	2009	50	0.00	AV	08	1.00	12,000
CELS	Cell Shed			B	240	100.00	2009	50	0.00	AV	08	1.00	12,000
CELS	Cell Shed			B	144	100.00	2009	50	0.00	AV	08	1.00	7,200
CELS	Cell Shed			B	192	100.00	2009	50	0.00	AV	08	1.00	9,600
FN3	6' Chain Fen			B	100	12.00	2009	50	0.00	AV	08	1.00	600

BUILDING SUB-AREA SUMMARY SECTION

Subarea	Description	Living	Gross	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	3,462	3,462		79.60	275,560
CRL	Crawl Space	0	1,322		0.00	0
EAU	Unfinished Expansion Attic	0	1,140		14.31	16,317
FGR	Garage	0	1,140		23.88	27,222
FOP	Open Porch	0	218		12.05	2,627
UBM	Basement	0	2,140		15.92	34,067
WDK	Wood Deck	0	719		6.42	4,617
	Ttl Gross Liv / Lease Area	3,462	10,141			

Delivered
Thursday 1/17/2019 at 12:15 pm

DELIVERED

Signature not required

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM

Smartlink LLC
Dave Barbagallo
265 Lincoln St
KENSINGTON, CT US 06037
860 681-7708

TO

Wireless Solutions LLC
Ken Thomas
UNCASVILLE, CT US 06382
860 608-0202

774185751562

FedEx Express Saver

1 lbs / 0.45 kgs

DELIVERY ATTEMPTS
1

DELIVERED TO
Residence

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
1 lbs / 0.45 kgs

TERMS
Not Available

PACKAGING
FedEx Pak

SPECIAL HANDLING SECTION
Deliver Weekday, Residential Delivery

STANDARD TRANSIT
1/17/2019 by 8:00 pm

SHIP DATE
Mon 1/14/2019

ACTUAL DELIVERY
Thu 1/17/2019 12:15 pm

Travel History

Local Scan Time

Expand History

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LANGUAGE

Change Country

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774185130774

Delivered
Thursday 1/17/2019 at 11:39 am

DELIVERED

Signed for by: C.ONSTANCE

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM

Smartlink LLC
Dave Barbagallo
265 Lincoln St
KENSINGTON, CT US 06037
860 681-7708

TO

Montville Town Hall
Mayor Ronald K. McDaniel
UNCASVILLE, CT US 06382
860 848-6778

Shipment Facts

DELIVERY ATTEMPTS
1

DELIVERED TO
Receptionist/Front Desk

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
1 lbs / 0.45 kgs

TERMS
Not Available

PACKAGING
FedEx Pak

SPECIAL HANDLING SECTION
Deliver Weekday

STANDARD TRANSIT
1/17/2019 by 4:30 pm

SHIP DATE
Mon 1/14/2019

ACTUAL DELIVERY
Thu 1/17/2019 11:39 am

Travel History

Local Scan Time

Expand History

FedEx Compatible

Developer Resource Center

FedEx Cross Border

LANGUAGE

Change Country

English

FOLLOW FEDEX

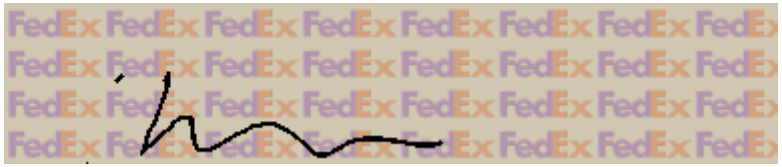
Ask FedEx

774184803523

Delivered
Thursday 1/17/2019 at 11:38 am

DELIVERED

Signed for by: L.BEIT



GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM

Smartlink LLC
Dave Barbagallo
265 Lincoln St
KENSINGTON, CT US 06037
860 681-7708

TO

Montville Town Hall
Lucy Beit
UNCASVILLE, CT US 06382
860 848-6774

Shipment Facts

DELIVERY ATTEMPTS
1

DELIVERED TO
Receptionist/Front Desk

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
1 lbs / 0.45 kgs

TERMS
Not Available

PACKAGING
FedEx Pak

SPECIAL HANDLING SECTION
Deliver Weekday

STANDARD TRANSIT
1/17/2019 by 4:30 pm

SHIP DATE
Mon 1/14/2019

ACTUAL DELIVERY
Thu 1/17/2019 11:38 am

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English

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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

October 31, 2018

David Barbagallo
Smartlink, LLC
85 Rangeway Road, Building3, Suite 102
North Billerica, MA 01862-2105

RE: **EM-AT&T-086-181029** – AT&T notice of intent to modify an existing telecommunications facility located at 57 Cook Drive, Uncasville (Montville), Connecticut.

Dear Mr. Barbagallo:

The Connecticut Siting Council (Council) received a notice of intent to modify the above-referenced facility on October 29, 2018.

According to Section 16-50j-71 of the Regulations of Connecticut State Agencies, "…any modification, as defined in Section 16-50j-2a of the Regulations of Connecticut State Agencies, to an existing tower site, except as specified in Sections 16-50j-72 and 16-50j-88 of the Regulations of Connecticut State Agencies, may have a substantial adverse environmental effect."

Staff has reviewed this exempt modification request for completeness and has identified a deficiency in the Structural Analysis (SA) Report provided with the filing. The Structural Analysis Report provided is prepared by Maser Consulting and dated October 5, 2018. The Council had received a request for exempt modification from Sprint for the same facility in August of 2018. Staff observed that, the equipment shown on the Designed Appurtenance Loading table, on Drawing No. E1 of Appendix A of the SA Report is highly inconsistent with that of the Sprint submission, which is the most recently submitted SA Report for this tower. The above-referenced request for exempt modification does not include Sprint's approved equipment; Please see Sprint's exempt modification filing for this facility, which may be found on the Council's website under the Decisions page in Montville under the filing number EM-SPRINT-086-180828 or by following the link:

https://www.ct.gov/csc/lib/csc/ems/montville/cookrd/sprint/em-sprint-086-180828_filing_cookdr.pdf

Therefore, the exempt modification request is incomplete at this time. The Council recommends that Smartlink provide an updated Structural Analysis Report for the facility that includes proposed and approved equipment by Sprint and other entities that are located at this facility on or before December 3, 2018. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to December 3, 2018.

This notice of incompletion shall have the effect of tolling the Federal Communications Commission (FCC) 60-day timeframe in accordance with Paragraph 217 of the FCC Wireless Infrastructure Report and Order issued on October 21, 2014 (FCC 14-153).

Thank you for your attention to this matter. Should you have any questions, please feel free to contact me at 860-827-2951.

Sincerely,

Melanie Bachman
Executive Director

MAB/FOC/IN

c: The Honorable Ronald K. McDaniel, Mayor, Town of Montville
Marcia Vlaun, Town Planner, Town of Montville