NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
420 Main Street, Sturbridge MA 01566
860-209-4690
denise@northeastsitesolutions.com

March, 19 2018

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

RE: Exempt Modification Application
7 HOSKINS ROAD, BLOOMFIELD, CT 06002
Latitude: 41.89284000
Longitude: -72.76550600
T-Mobile Site#: CTHA142G-NSD-CMP2

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing 185-foot self-supporting tower located at 7 Hoskins Road, Bloomfield CT 06002. T-Mobile currently has approval for nine (9) antennas at the 140.6-foot level of the existing 185-foot tower. The property and the tower are both owned by Eversource. T-Mobile now intends to install one (1) IBR1300 Dish. The new dish would be installed at the 140.6-foot and level of the tower. T-Mobile also intends to add a new generator to the existing 10x20 lease area and a new 3x3 pad with supporting propane tank.

Planned Tower Modifications:
Remove: NONE

Remove and Replace:
NONE

Install New:
(1)IBR1300 Dish
(1)Fiber line
(2)CAT6 Cables

Existing to Remain:
(2) Hybrid
(6) RRU
(6) APX18 Antenna – 1900/2100 Mhz
(3) LNX6515 Antenna – 700 Mhz

This facility was approved by the CT Siting Council. Per the attached Petition No. 1112 – Dated August 28, 2014. Approval for Cellco to replace the existing 180-foot supporting tower with a 185-foot self-supporting tower. Please see attached.

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Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Mayor Joan A. Gamble and Jose Giner, Zoning Enforcement Director of the Town of Bloomfield, as well as the tower owner (Eversource) and property owner (Eversource).

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

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

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

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

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

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

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

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

Sincerely,

Denise Sabo
Mobile: 860-209-4690
Fax: 413-521-0558
Office: 4 Angela's Way, Burlington CT 06013
Email: denise@northeastsitesolutions.com

Attachments
cc: Mayor Suzette DeBeatham-Brown, as elected official
Jose Giner, Zoning Enforcement Director
Eversource - as tower owner & property owner

Exhibit A

Petition No. 1112
Cellco Partnership d/b/a Verizon Wireless
Bloomfield, Connecticut
Staff Report
August 28, 2014

On July 28, 2014, the Connecticut Siting Council (Council) received a petition from Cellco Partnership d/b/a Verizon Wireless (Cellco) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the replacement and extension of an existing telecommunications facility owned by The Connecticut Light and Power Company (CL&P) located west of St. Andrews Road in Bloomfield. Cellco sent notice to abutting property owners and the Towns of Bloomfield and Simsbury on July 28, 2014. No written comments were received from either Town or any of the abutters.

A field review of the proposed project was conducted on August 18, 2014. The following people attended the field review: Council member Daniel Lynch, Jr., Council staff member Robert Mercier, Cellco representative Attorney Kenneth Baldwin, CL&P representatives John Morissette and Steve Florio, and Simsbury Police Lieutenant Fred Sifodaskalakis.

The site is located on a 40-acre parcel owned by CL&P and is accessed from a separate parcel at 5-7 St. Andrews Road. The existing tower was approved in 1993 in Docket 158. A paved access drive ascends west to the site, generally along an existing CL&P transmission corridor, to a ridge top at 412 feet above mean sea level. The existing tower and fenced compound is adjacent to the east side of the transmission corridor.

Existing tower users include CL&P with multiple whip antennas and dish antennas, AT&T with an antenna array at 158 feet, Cellco with an antenna array at 150 feet and the Towns of Simsbury and Bloomfield both of which utilize the tower for emergency communications. Cellco seeks to upgrade their antennas to support LTE services but the current tower is at structural capacity and cannot be economically reinforced to accommodate the new equipment. Cellco would be responsible for construction of the new tower, transferring equipment to the new tower, and the removal of the existing tower. CL&P would own the new tower.

Cellco proposes to replace the existing 180-foot self-supporting lattice tower with a 185-foot self-supporting lattice tower. The proposed tower would be five feet higher to compensate for a five foot elevation loss between the proposed tower site and the existing tower site. Antennas for all carriers/users, including Cellco, would be mounted approximately five feet higher on the new tower to maintain the existing antenna height above ground level.

The new tower would be constructed adjacent to Cellco's existing equipment shelter, approximately 75 feet southwest of the existing tower and partially within the existing compound. The existing compound would be expanded by 2,150 square feet to the south and west to accommodate the new tower and associated ice bridge. A level spreader would be installed on the west side of the compound to control any runoff coming from the compound area.

Approximately 17 trees with a diameter of 6 inches or greater would be removed to expand the compound. Some tree trimming may be necessary along the access drive to facilitate heavy equipment required to deliver materials to the site. The nearest wetland is 140 feet north of the construction area. A vernal pool is located approximately 260 feet north of the new compound fence. Cellco would implement best management practices from March 1 to September 15 to reduce impacts to vernal pool obligate species.

The new tower would maintain the existing aircraft hazard lighting elevations and pattern as the tower is approximately 4.5 miles south from Runway 6 at Bradley International Airport. The site is in a remote area surrounded by extensive woodland with no nearby structures. The proposed tower would have no effect on existing views.

Staff recommends approval with the following conditions:

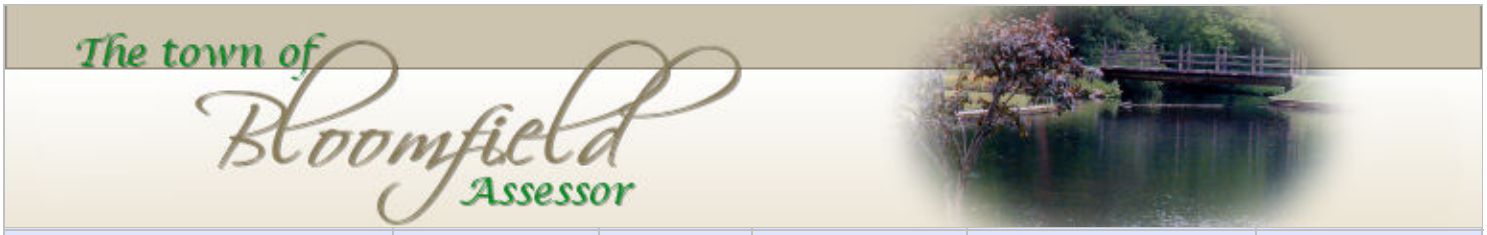
- Unless otherwise approved by the Council, the existing tower shall be removed within 180 days of the installation and operation of the new lattice tower;
- The Council shall be notified in writing when the existing tower is removed and the new tower is operational;
- Submit a final structural report depicting final tower loading; and
- Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by the Petitioner shall be removed within 60 days of the date the antenna ceased to function.

Existing tower from CL&P right-of-way, view west.

South side of compound - proposed tower location by white dome. Compound would be expanded to the left (west).

Northwest corner of compound. Compound would be expanded towards rocks in photo.

Exhibit B



Owner and Parcel Information

Owner Name	CONN LIGHT & POWER CO ATTN: PROPERTY TAX DEPT	**Today's Date**	August 16, 2017
Mailing Address	P O BOX 270	**Parcel ID**	8110 (Account #: R93240)
	HARTFORD, CT 06141	**Fire District**	C
Location Address	7 HOSKINS RD	**Census Tract**	0000
Map / Lot	637 / 1117	**Acreage**	38.33
Use Class / Description	109 Vacant with OutBldg	**Parcel Map**	Show Parcel Map Owner List By Radius
Assessing Neighborhood	0001A	**Utilities**	

Current Appraised Value Information

Building Value	XF Value	OB Value	Land Value	Special Land Value	Total Appraised Value	Net Appraised Value	Current Assessment
$ 0	$ 0	$ 18,000	$ 296,300		$ 314,300	$ 314,300	$ 72,300

Assessment History

Year	Building	OB/Misc	Land	Total Assessment
Current	0	$ 12,600	$ 59,700	$ 72,300
2016	0	$ 12,600	$ 59,700	$ 72,300
2013	0	$ 12,600	$ 70,760	$ 83,360

Land Information

Use	Class	Zoning	Area	Value
Vacant with OutBldg	R	R-80	1.84 AC	$ 70,500
Forest	S	R-80	34.66 AC	$ 217,600
Residential Land	R	R-80	1.83 AC	$ 8,200

Building Information

No Building Information available for this parcel.

Out Buildings / Extra Features

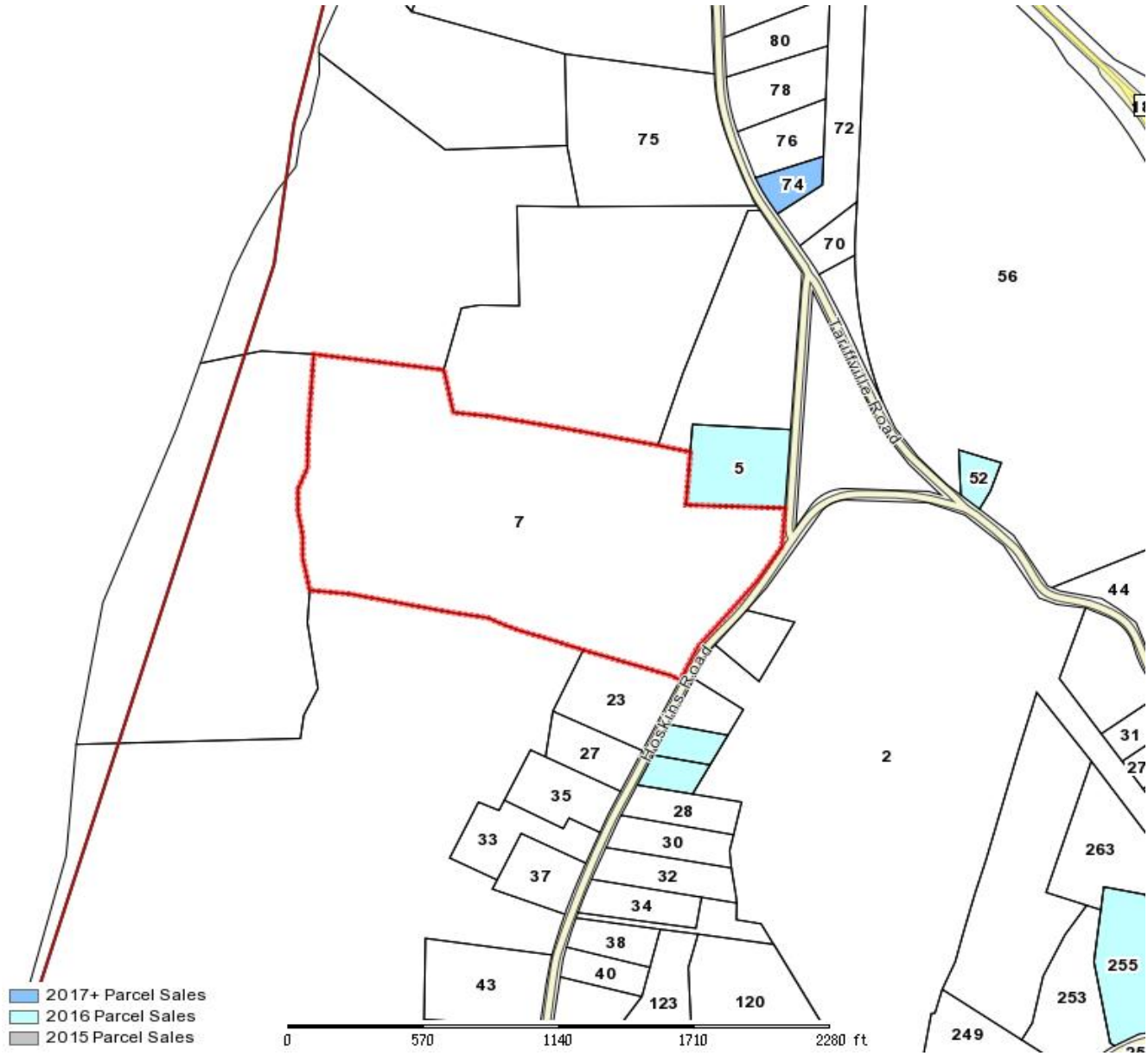
Description	Sub Description	Area	Year Built	Value
Pump House		480 S.F.	1962	$ 14,400
Pump House		120 S.F.	1986	$ 3,600

Sale Information

Sale Date	Sale Price	Deed Book/Page	Sale Qualification	Reason	Vacant or Improved	Owner
00/00/0000		292/ 97	Unqualified	Old sale- Validity unknown	Vacant	CONN LIGHT & POWER CO ATTN: PROPERTY TAX DEPT

Permit Information

Permit ID	Issue Date	Type	Description	Amount	Inspection Date	% Complete	Date Complete	Comments
B-16-7633		CM	Commercial	$ 35,000		0		ANTENNAS



Town of Bloomfield			
Parcel: 8110 Acres: 38.33			
Name:	CONN LIGHT & POWER CO	Land Value	296300
Site:	7 HOSKINS RD	Building Value	0
Sale:	0 on 0000-00-00 Reason=U Qual=34	Misc Value	0
Mail:	P O BOX 270 HARTFORD, CT 06141	Just Value	314300
		Assessed Value	0
		Exempt Value	0
		Taxable Value	0

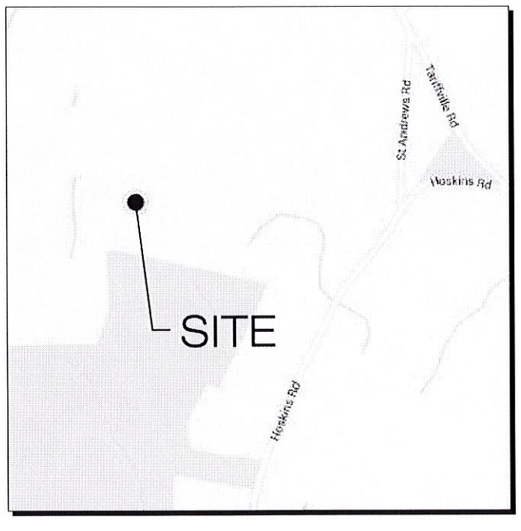
Date printed: 08/16/17 : 09:13:51

Exhibit C

T-Mobile

NORTHEAST, LLC.

NEW SITE DEVELOPMENT (NSD)
"EVERSOURCE"
CTHA142G
7 HOSKINS ROAD
BLOOMFIELD, CT 06002



VICINITY MAP
SCALE: 1" = 500'

DRAWING INDEX

SITE INFORMATION

T-MOBILE SITE NAME: "EVERSOURCE"
T-MOBILE SITE NUMBER: CTHA142G
SITE ADDRESS: 7 HOSKINS ROAD, BLOOMFIELD, CT 06002

SITE TYPE/DESCRIPTION: INSTALL (1) NEW MICROWAVE ANTENNA & ASSOCIATED CABLING ON EXIST. MOUNT. IN ADDITION, INSTALL NEW GENERATOR ON EXIST. EQUIPMENT PAD & NEW PROPANE TANK ON NEW 3'x3' CONCRETE PAD.

PROPERTY OWNER: EVERSOURCE
P.O. BOX 270
HARTFORD, CT 06141

LEASING CONTACT: MATTHEW BANDLE
(508) 642-8801

CONSTRUCTION CONTACT: KEITH BALSEWICZ
(860) 733-2880

ENGINEER CONTACT: ROBERT BURNS
(860) 663-1697 x206

LATITUDE: 41°53'33.4795"N
LONGITUDE: 72°45'56.5386"W
ELEVATION: 408'± AMSL
MAP: 637
LOT: 1117
MUNICIPALITY: BLOOMFIELD
ZONING DISTRICT: R-80

APPLICANT:
T-MOBILE
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

POWER PROVIDER:
EVERSOURCE (800) 286-2000

TELCO PROVIDER:
FRONTIER: (800)-921-8102

CALL BEFORE YOU DIG:
811

CODE COMPLIANCE INFORMATION:
STATE OF CONNECTICUT BUILDING CODE, LATEST EDITION
ANSI/TIA-222-G
NATIONAL ELECTRIC CODE, LATEST EDITION

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

T-Mobile
NORTHEAST, LLC.
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002
OFFICE: (860)-692-7100

NSS
NORTHEAST
SITE SOLUTIONS

APPROVALS

LANDLORD: _____ DATE: _____
RF ENGINEER: _____ DATE: _____
CONSTRUCTION: _____ DATE: _____
OPERTATIONS: _____ DATE: _____
SITE ACQ.: _____ DATE: _____

CONSTRUCTION DOCUMENTS

NO	DATE	REVISION
0	12/09/16	FOR REVIEW: RCB
1	03/21/17	FOR REVIEW: RCB
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3	02/14/18	CLIENT REVISIONS: RCB
4		
5		
6		

DESIGN PROFESSIONALS OF RECORD

PROF: SCOTT M. CHASSE P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

T-MOBILE
"EVERSOURCE"

SITE ADDRESS: 7 HOSKINS ROAD, BLOOMFIELD, CT 06002

APT FILING NUMBER: CT409140

SITE NUMBER: CTHA142G

DRAWN BY: CSH | CHECKED BY: RCB

DATE: 12/09/16

CONFIGURATION

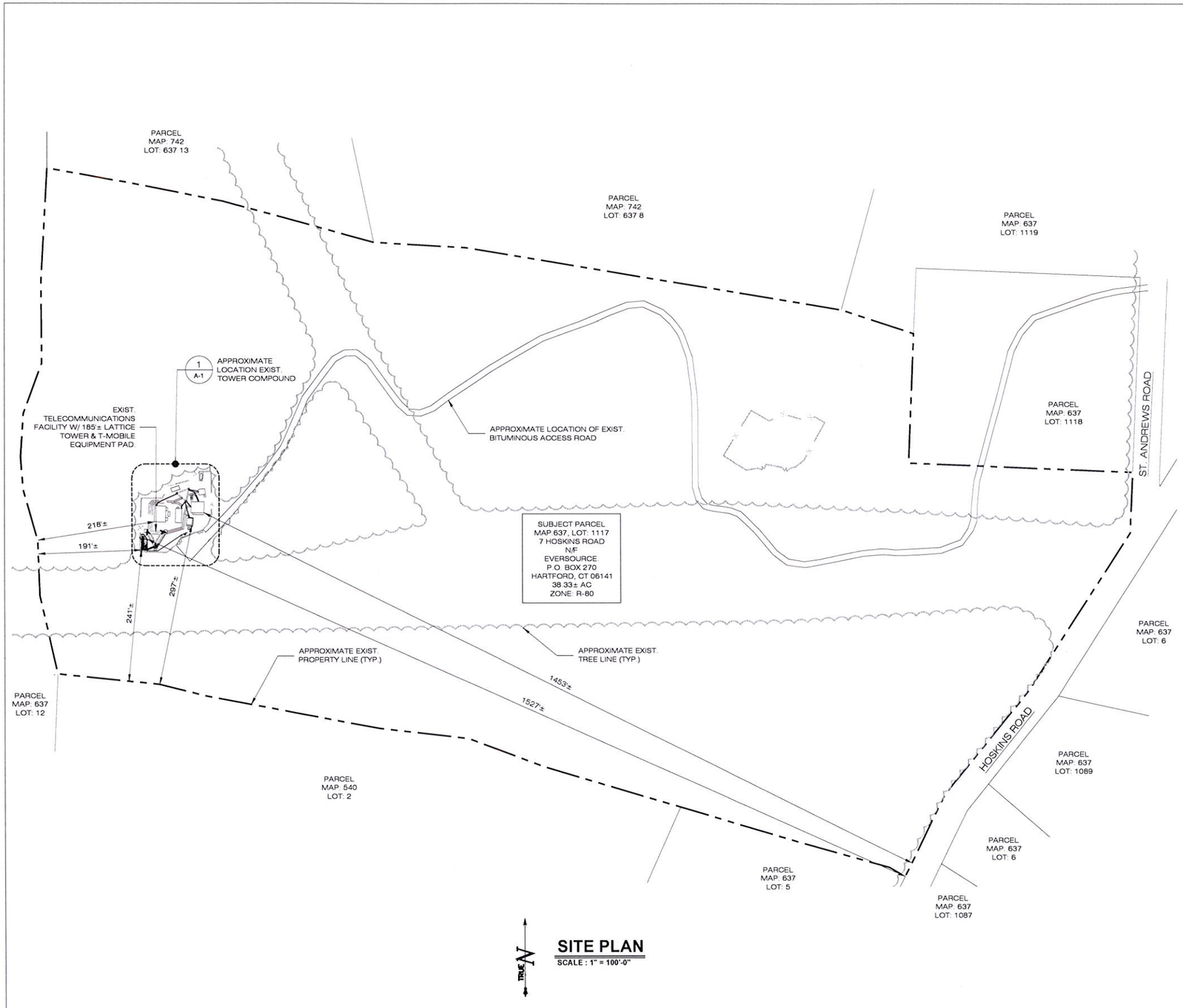
707B

REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM.

SHEET TITLE: TITLE SHEET & INDEX

SHEET NUMBER: T-1

STATE OF CONNECTICUT
SCOTT M. CHASSE
No. 19728
LICENSED PROFESSIONAL ENGINEER



SITE PLAN

SCALE : 1" = 100'-0"

BULK TABLE

BLOOMFIELD
7 HOSKINS ROAD
BLOOMFIELD, CT 06002
MAP 637
LOT 1117
ZONED R-80

ITEM:	ALLOWABLE:	EXISTING:	NEW:
MIN. LOT AREA (SF)	80,000 (1.84 AC.)	1,669,655 (38.33 AC.)	NC
MIN. FRONT YARD (FT)	50	1,453±	NC
MIN. SIDE YARD (EACH) (FT)	35	297±	241±
MIN. REAR YARD (FT)	50	218±	191±
MAX. BUILDING HEIGHT (FT)/STORIES	35/2	12/1	NC
MAX. BUILDING COVERAGE (%)	15.0	0.1	NC
MIN. LOT WIDTH (FT.)	200	723	NC

NA = NOT APPLICABLE NC = NO CHANGE

SITE PLAN NOTES:

PROPERTY OWNER: EVERSOURCE
P.O. BOX 270
HARTFORD, CT 06141

1) NEW USE: INSTALLATION OF PERSONAL WIRELESS SERVICES FACILITY ON EXISTING 185'± AGL LATTICE TOWER W/ NEW GROUND EQUIPMENT AT THE BASE OF THE TOWER.
2) BOUNDARY, SITE & TOPOGRAPHIC INFORMATION TAKEN FROM TOWN OF BLOOMFIELD GEOGRAPHIC INFORMATION SYSTEMS AND CONNECTICUT ENVIRONMENTAL CONDITIONS ONLINE AND SUPPLEMENTED WITH FIELD MEASUREMENTS.
3) NO ADDITIONAL PARKING IS NEEDED, AS THE NEW GROUND FACILITY INSTALLATION IS UNMANNED & VISITED APPROXIMATELY ONCE/MONTH FOR ROUTINE MAINTENANCE. ACCORDINGLY, THE NEW DEVELOPMENT WILL NOT ADVERSELY CHANGE OR AFFECT TRAFFIC PATTERNS;
4) SUBJECT FACILITY ON-SITE IS LOCATED WITHIN ZONE X FLOOD ZONE DESIGNATION (FIRM FLOOD INSURANCE RATE MAP #09003C0194F).
5) NEW EQUIPMENT SPACE WILL BE OUTFITTED WITH TWO 150W EXTERIOR LIGHT W/ MOTION DETECTOR (RAB H101B)
6) NO STORMWATER DRAINAGE, WATER SUPPLY, SEWAGE DISPOSAL, REFUSE STORAGE, IS REQUIRED, AS THE NEW INSTALLATION IS FOR AN UNMANNED FACILITY;
7) ALL NEW UTILITIES FOR NEW EQUIPMENT WILL BE PROVIDED FROM NEARBY SERVICES CURRENTLY SERVICING THE SITE; CONNECTIONS TO SHALL BE DETERMINED BY A LOCAL UTILITY REPRESENTATIVE.
8) NO DUST, FUMES, ODORS, OR VIBRATIONS WILL OCCUR AS A RESULT OF THE NEW INSTALLATION.

LEGEND

CONCRETE CURB	UTILITY POLE
DROP CURB	BOLLARD
WALL	CHAIN LINK FENCE
EDGE OF PAVEMENT	STOCKADE FENCE
OVERHEAD WIRES	FENCE OTHER
STRUCTURE - MANHOLE	TOP/BOTTOM OF CURB
STRUCTURE - TELEPHONE	SPOT ELEVATION
STRUCTURE - DRAINAGE	CONCRETE
WATER VALVE	TREE LINE
WATER METER	MONUMENT
FIRE HYDRANT	HEDGE
DRAINAGE INLET	TREE
SIGN	HANDICAP PARKING
LIGHT POLE	PARKING STALL COUNT

ALL-POINTS
TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

T-Mobile
NORTHEAST, LLC.
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002
OFFICE: (860)-692-7100

NSS
NORTHEAST
SITE SOLUTIONS

APPROVALS

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COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

T-MOBILE
"EVERSOURCE"

SITE ADDRESS: 7 HOSKINS ROAD, BLOOMFIELD, CT 06002

APT FILING NUMBER: CT409140

SITE NUMBER: CTHA142G

DRAWN BY: CSH CHECKED BY: RCB

DATE: 12/09/16

CONFIGURATION

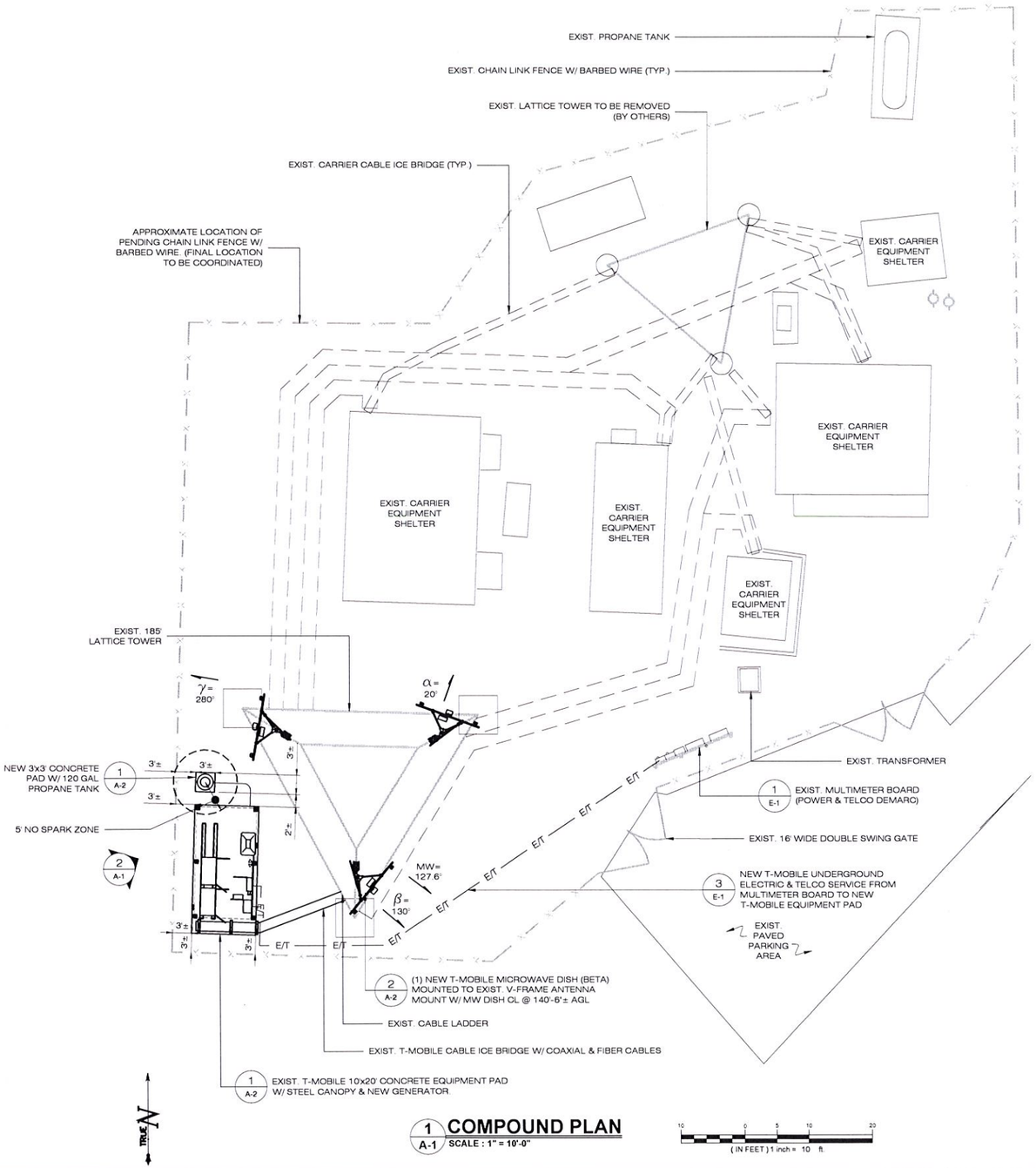
707B

REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM.

SHEET TITLE: SITE PLAN

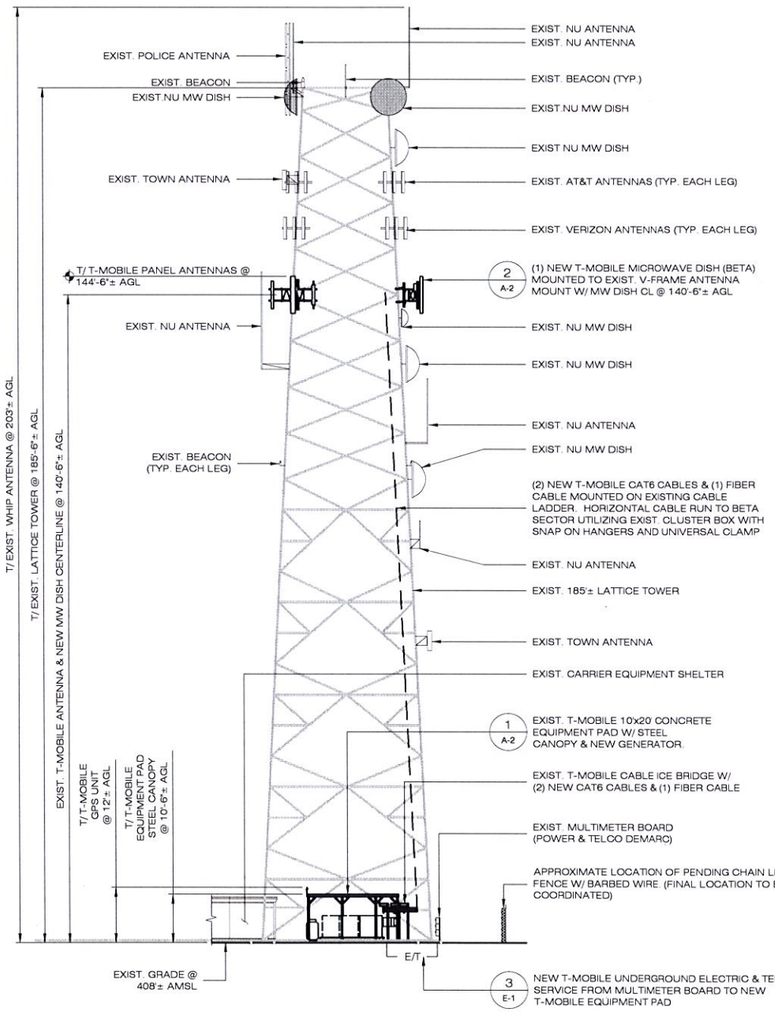
SHEET NUMBER: SP-1

STATE OF CONNECTICUT
SCOTT M. CHASSE
No. 19728
LICENSED
PROFESSIONAL ENGINEER



1 A-1 COMPOUND PLAN
SCALE : 1" = 10'-0"

(IN FEET) 1 inch = 10 ft.



2 A-1 WEST ELEVATION
SCALE : 1/16" = 1'-0"

(IN FEET) 1 inch = 16 ft.

ALL-POINTS TECHNOLOGY CORPORATION
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NORTHEAST SITE SOLUTIONS

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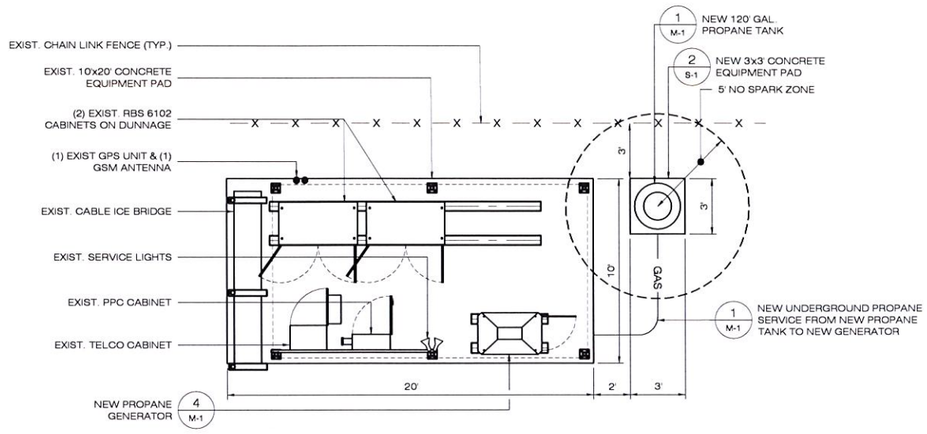
SHEET TITLE:
COMPOUND PLAN & ELEVATION

SHEET NUMBER: A-1

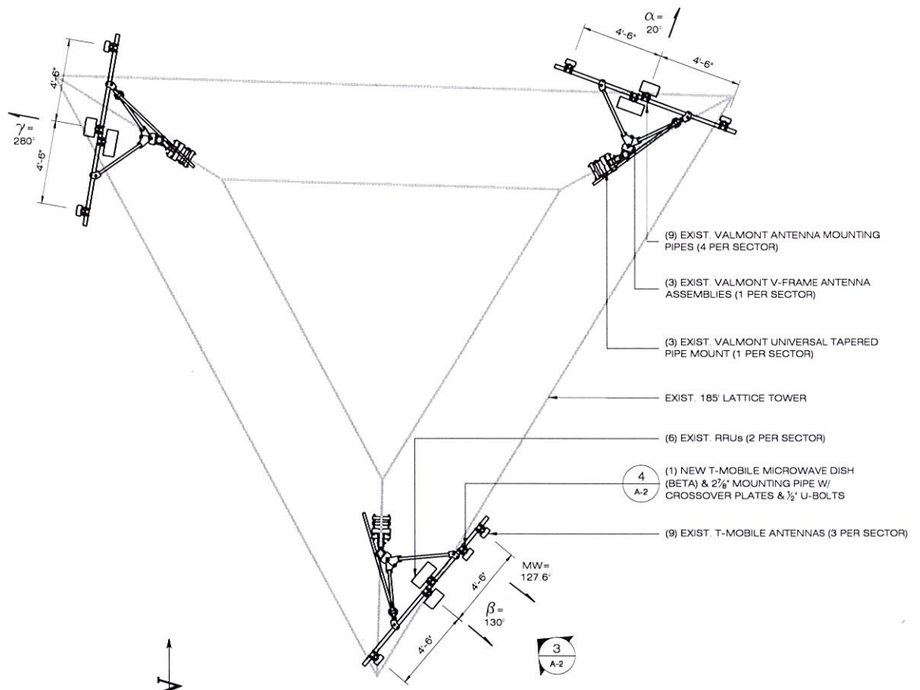
STATE OF CONNECTICUT
SCOTT M. CHASSE
No. 19728
LICENSED PROFESSIONAL ENGINEER



TRUE N

1 A-2 10' X 20' EQUIPMENT PAD

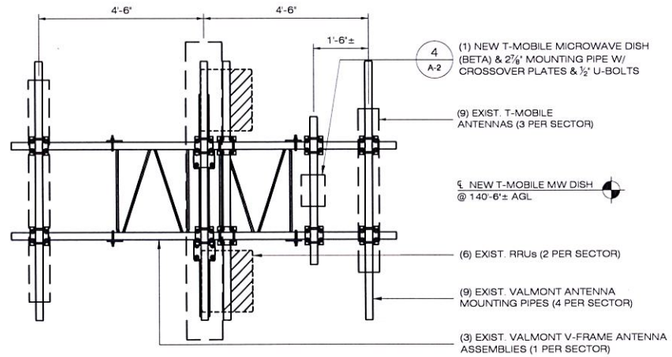
SCALE : 1/4" = 1'-0"



TRUE N

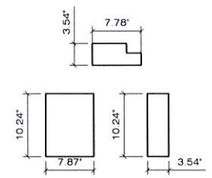
2 A-2 ANTENNA MOUNTING PLAN

SCALE : ¼"=1'-0"



3 A-2 BETA ANTENNA MOUNTING DETAIL

SCALE : ½" = 1'-0"



IBR 1300 SERIES
INTELLIGENT BACKHAUL RADIO

8.82 lbs
0.56 SF

MW ANTENNA

4 A-2 ANTENNA DETAIL

SCALE : ½" = 1'-0"

ALL-POINTS TECHNOLOGY CORPORATION
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COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE
KILLINGWORTH, CT 06419

NOTE:

T-MOBILE
"EVERSOURCE"

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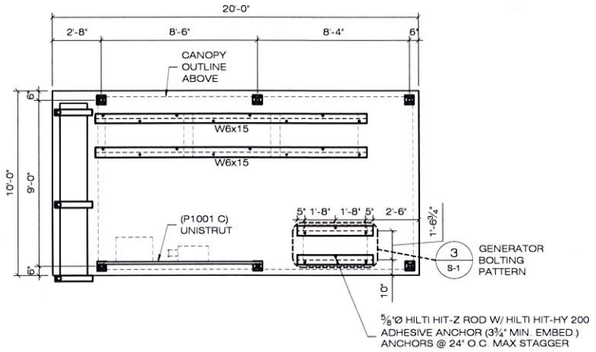
SHEET TITLE:

ANTENNA & EQUIPMENT DETAILS

SHEET NUMBER:

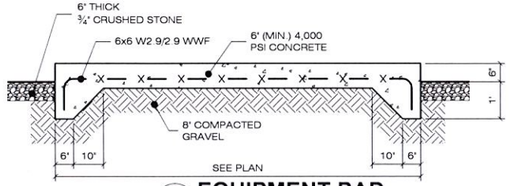
A-2

STATE OF CONNECTICUT
SCOTT M. CHASSE
No. 19728
LICENSED PROFESSIONAL ENGINEER

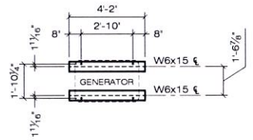


TRUE N

1 S-1 EQUIPMENT PAD
SCALE : ¼" = 1'-0"



2 S-1 EQUIPMENT PAD
SCALE : ½" = 1'-0"



3 S-1 GENERATOR BOLTING PATTERN
SCALE : ¼" = 1'-0"

STRUCTURAL NOTES & SPECIFICATIONS

STEEL:

1. CONTRACTORS SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. THE ENGINEER SHALL BE NOTIFIED OF ANY CONDITIONS WHICH PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
3. STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A992 (FY-50 KSI), UNLESS OTHERWISE NOTED.
4. STEEL PIPE SHALL CONFORM TO ASTM A53, GRADE B, STEEL PIPE DIAMETERS NOTED ON THE DRAWINGS ARE NOMINAL.
5. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE ¾" DIAMETER MINIMUM AND SHALL HAVE MINIMUM OF TWO BOLTS, UNLESS NOTED OTHERWISE ON THE DRAWINGS. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
6. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅝" DIAMETER GALVANIZED ASTM A 307 BOLTS UNLESS OTHERWISE NOTED.
7. ALL STEEL MATERIAL EXPOSED TO WEATHER SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIPPED GALVANIZED) COATINGS" ON IRON AND STEEL PRODUCTS.
8. ALL BOLTS ANCHORS AND MISCELLANEOUS HARDWARE EXPOSED TO WEATHER SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE."
9. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH COLD ZINC, "GALVANOX", "DRY GALV", "ZINC IT", OR APPROVED EQUIVALENT, IN ACCORDANCE WITH MANUFACTURERS GUIDELINES. TOUCH UP DAMAGED NON GALVANIZED STEEL WITH SAME PAINT APPLIED IN SHOP OR FIELD.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES." ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION" 9TH EDITION. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED. SEE NOTE 9.
11. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
12. CONTRACTOR TO REMOVE AND RE-INSTALL ALL FIRE PROOFING AS REQUIRED DURING CONSTRUCTION.
13. MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 (OR EQUAL).
14. STEEL HSS STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GR. B.
15. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP, WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1⅝"x1⅝"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.

CONCRETE:

1. APPLY A QUALITY CONCRETE SEALER SUCH AS THEROSEAL® TO EXPOSED CONCRETE IN ACCORDANCE WITH MANUFACTURERS APPLICATIONS DIRECTIONS.
2. GRAVEL SUB BASE AND CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL.
3. CONCRETE FOR FENCE AND ICE BRIDGE SUPPORT SHALL BE 3000 PSI AIR ENTRAINED (4%-6%) NORMAL WEIGHT CONCRETE.
4. ALL CAST IN PLACE CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318 AND ACI 301.
5. THE FOLLOWING MINIMUM CONCRETE COVER OVER REINFORCING STEEL SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
   - 5.1. CONCRETE CAST AGAINST EARTH ... 3 INCHES.
   - 5.2. CONCRETE EXPOSED TO EARTH OR WATER
   - 5.3. #6 AND LARGER .....2 INCHES
   - 5.4. #5 AND SMALLER .....1 1/2 INCHES

ALL EXPOSED CONCRETE EDGES SHALL BE PROVIDED WITH A ¾"x¾" CHAMFER UNLESS NOTED OTHERWISE.

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APPROVALS	
LANDLORD:	DATE:
RF ENGINEER:	DATE:
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CONSTRUCTION DOCUMENTS

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DESIGN PROFESSIONALS OF RECORD

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COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

T-MOBILE "EVERSOURCE"

SITE ADDRESS: 7 HOSKINS ROAD, BLOOMFIELD, CT 06002

APT FILING NUMBER: CT409140

SITE NUMBER: CTHA142G

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CONFIGURATION

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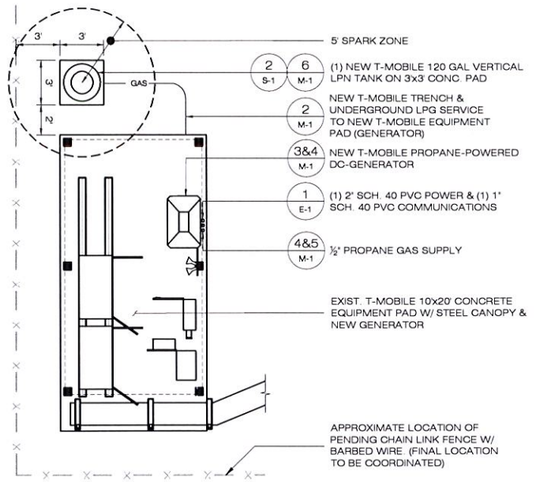
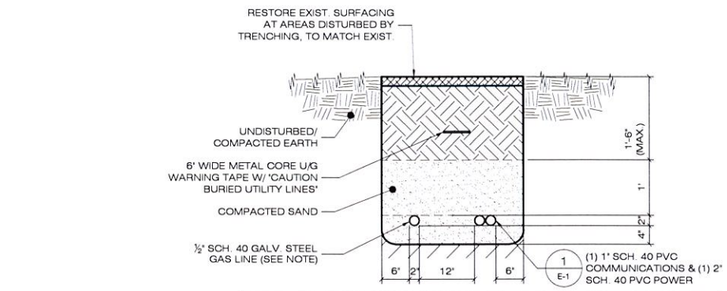
SHEET TITLE: STRUCTURAL DETAILS

SHEET NUMBER: S-1

STATE OF CONNECTICUT
SCOTT M. CHASSE
19128
LICENSED PROFESSIONAL ENGINEER

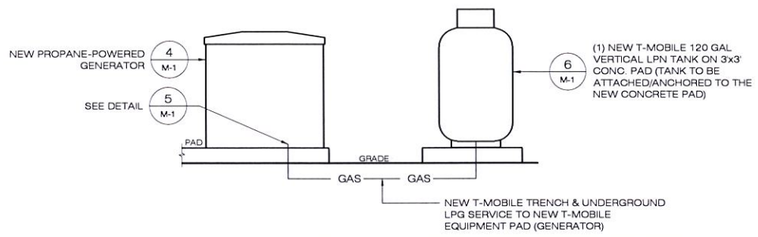


1 PARTIAL SITE PLAN
M-1 SCALE : 1" = 5'-0"



NOTE:
STEEL PIPE INSTALLED UNDERGROUND SHALL BE INSTALLED IN ACCORDANCE WITH NFPA54. UNDERGROUND PIPING SHALL COMPLY WITH ONE OR MORE OF THE FOLLOWING:
1. THE PIPING SHALL BE MADE OF CORROSION RESISTANT MATERIAL THAT IS SUITABLE FOR BURIAL.
2. PIPE SHALL HAVE A FACTORY APPLIED ELECTRICALLY INSULATING COATING. FITTINGS AND JOINTS BETWEEN SECTIONS OF COATED PIPE SHALL BE COATED IN ACCORDANCE WITH COATING MANUFACTURER'S INSTRUCTIONS
3. THE PIPING SHALL HAVE A CATHODIC PROTECTION SYSTEM INSTALLED AND THE SYSTEM BE MAINTAINED.

2 PROPANE GAS TRENCH
M-1 SCALE : N.T.S.



NOTE: ALL VALVES USED IN METALLIC PIPING SYSTEMS MUST HAVE PRESSURE CONTAINING PARTS OF STEEL, DUCTILE (NODULAR) IRON, MALLEABLE IRON OR BRASS. ALL MATERIALS USED, INCLUDING VALVE SEAT DISCS, PACKING, SEALS AND DIAPHRAGMS MUST BE RESISTANT TO THE ACTION OF LP GAS UNDER SERVICE CONDITIONS. MANY VALVES ARE LISTED BY INDEPENDENT TESTING LABORATORIES FOR USE IN LP GAS SERVICE. THESE CAN BE USED AS RECOMMENDED BY THE MANUFACTURER. OTHER VALVES CAN BE USED, BUT MUST COMPLY WITH THE REQUIREMENTS OF NFPA 58 AND SHOULD BE RECOMMENDED BY THE MANUFACTURER FOR LP GAS SERVICE TO BE SURE THAT ALL THE COMPONENT PARTS OF THE VALVE ARE APPROVED FOR LP GAS SERVICE. VALVES USED WITH POLYETHYLENE PIPE AND TUBING MUST MEET THE REQUIREMENTS OF ASTM D2513 AND BE SO MARKED

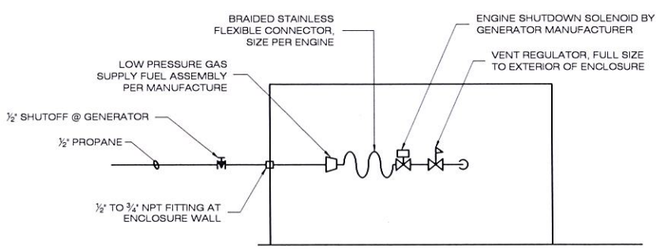
3 PROPANE CONNECTION DIAGRAM
M-1 SCALE : N.T.S.

MECHANICAL NOTES & SPECIFICATIONS

1. THE MECHANICAL SUBCONTRACTOR SHALL COORDINATE ALL WORK TO BE PERFORMED WITH THE GENERAL AND ELECTRICAL CONTRACTORS. ANY WORK DONE BY THIS CONTRACTOR WHICH INTERFERES WITH WORK BY OTHERS AND WHICH WAS NOT FIRST COORDINATED SHALL BE REMOVED AND RELOCATED AT CONTRACTOR'S EXPENSE.
2. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL UTILITIES AND THE PLACEMENT OF ALL EQUIPMENT PRIOR TO THE START OF HIS WORK. NO EXTRAS WILL BE ALLOWED DUE TO EQUIPMENT LOCATION CHANGE FROM THAT ON THE DRAWING.
3. IT IS THE INTENT THAT THE WORK SHALL BE COMPLETE IN EVERY RESPECT AND THAT ANY MATERIAL OR WORK NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, BUT NECESSARY TO FULLY COMPLETE THE WORK, SHALL BE PROVIDED.
4. THE LOCATION OF SOME ITEMS SHOWN ON THE DRAWINGS MAY BE APPROXIMATE AND THE OWNER SHALL HAVE THE RIGHT TO MAKE MINOR REVISIONS BEFORE THE WORK IS INSTALLED WITHOUT ADDITIONAL COST.
5. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY VALVES, AND ALL CONTROL DEVICES REQUIRED FOR PROPER COMPLETION OF UTILITY PIPING.
6. ALL WORK SHALL BE IN ACCORDANCE WITH 2015 INTERNATIONAL PLUMBING CODE, 2015 INTERNATIONAL MECHANICAL CODE, AND 2015 INTERNATIONAL FUEL GAS CODE WITH CONNECTICUT STATE SUPPLEMENTS.
7. PROPANE GAS DEMAND IS 140,000 BTU/HR. 35 PSI RECOMMENDED AT THE TWO STAGE REGULATOR & 10 PSI AT THE SINGLE STAGE REGULATOR.
8. PIPE MEETING THE FOLLOWING SPECIFICATIONS SHALL BE USED:
   - WROUGHT-IRON PIPE ANSI B36.10M, WELDED AND SEAMLESS WROUGHT STEEL PIPE.
   - STEEL PIPE ASTN A53, SPECIFICATION FOR PIPE, STEEL, BLACK AND HOT-DIPPED, ZINC-COATED WELDED AND SEAMLESS.
   - STEEL PIPE ASTM A106, SPECIFICATION FOR SEAMLESS CARBON STEEL PIPE FOR HIGH-TEMPERATURE SERVICE.
   - BRASS PIPE ASTM B43, SPECIFICATION FOR SEAMLESS RED BRASS PIPE, STANDARD SIZES.
   - COPPER PIPE ASTM B42, SPECIFICATION FOR SEAMLESS COPPER PIPE, STANDARD SIZES.
   - POLYETHYLENE PIPE ASTM D2513, SPECIFICATION FOR THERMOPLASTIC GAS PRESSURE PIPE, TUBING AND FITTINGS.

   NOTE THAT PIPE MUST BE RECOMMENDED BY THE MANUFACTURER FOR USE WITH LP GAS. POLYETHYLENE PIPE MUST BE MARKED IN COMPLIANCE WITH THE PRODUCT MARKING REQUIREMENTS OF ASTM D2513, AND MUST INCLUDE:

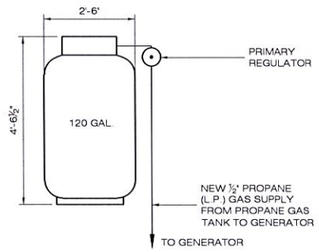
   THE MANUFACTURER'S NAME OR TRADEMARK, THE STANDARD DIMENSIONAL RATIO (SDR) OF THE PIPE, THE SIZE OF PIPE, THE DESIGNATION POLYETHYLENE (PE), THE DATE MANUFACTURED AND THE DESIGNATION ASTM D2513.
9. PE PLASTIC PIPING MAY NOT BE USED FOR GAS PIPING INSIDE OR BENEATH BUILDINGS, OR FOR VENTING GAS PRESSURE REGULATORS.
10. THE NEW ABOVE-GROUND PROPANE PIPING SERVICE LINES MUST MEET ALL NYS CODE REGULATIONS.
11. THE FOLLOWING SPECIFICATIONS SHALL BE USED FOR PE FITTINGS:
    - ASTM D2683 SPECIFICATION FOR SOCKET TYPE POLYETHYLENE FITTINGS FOR OUTSIDE DIAMETER CONTROLLED PE PIPE AND TUBING.
    - ASTM D3261 SPECIFICATION FOR BUTT FUSION POLYETHYLENE (PE) PLASTIC FITTINGS FOR POLYETHYLENE (PE) PIPE AND TUBING.
    - ASTM F1055 STANDARD SPECIFICATION FOR ELECTROFUSION TYPE PE FITTINGS FOR OUTSIDE DIAMETER CONTROLLED PE PIPE AND TUBING AND MUST BE RECOMMENDED FOR LP GAS USE BY THE MANUFACTURER.



NOTE: INSTALL COMPONENTS IN ACCORDANCE W/ GENERATOR MANUFACTURERS INSTRUCTIONS.

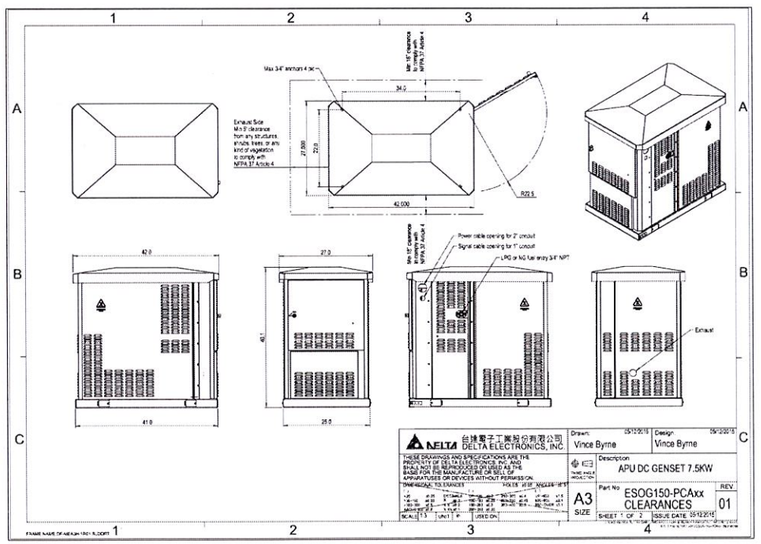
5 GENERATOR CONNECTION DETAIL
M-1 SCALE : N.T.S.

NOTES:
1. PROPANE TANKS SHALL BE REFILLED FROM HOSE PULLED FROM A REFILLING VEHICLE PARKED AT THE EXISTING PARKING AREA.
2. ALL ABOVE-GROUND GAS SERVICE LINES MUST MEET CT CODE REGULATIONS.



VERTICAL VIEW

6 PROPANE TANK DETAIL
M-1 SCALE : ½" = 1'-0"



4 PROPANE GENERATOR SCHEMATICS
M-1 SCALE : ¼" = 1'-0"

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CONSTRUCTION DOCUMENTS

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DESIGN PROFESSIONALS OF RECORD

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COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

T-MOBILE "EVERSOURCE"

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APT FILING NUMBER:	CT409140
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CONFIGURATION

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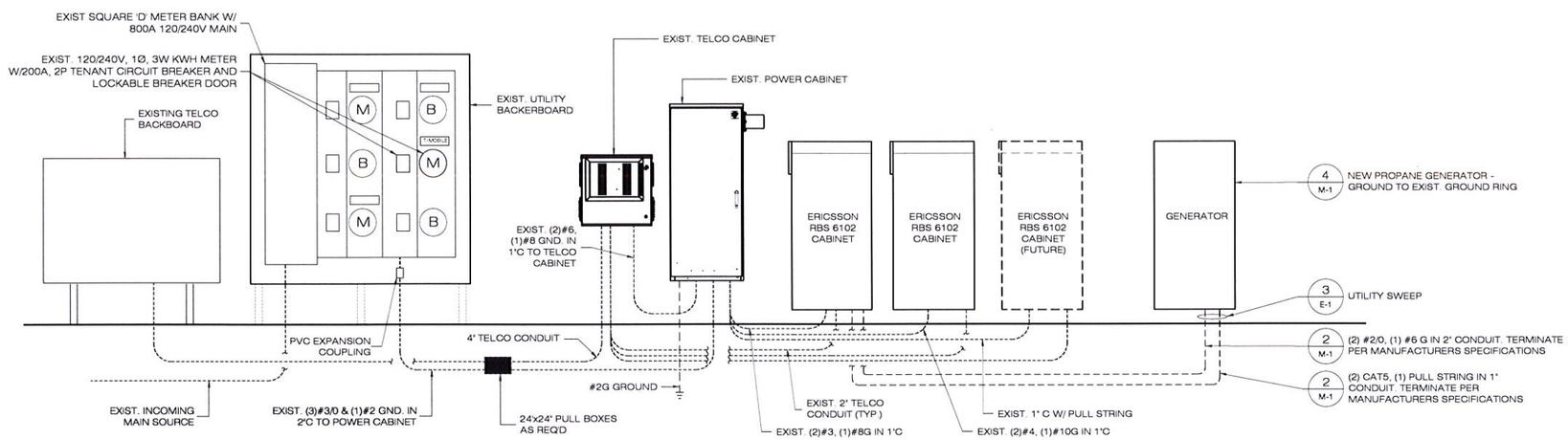
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM.

SHEET TITLE:
MECHANICAL CONNECTICUT & DETAILS

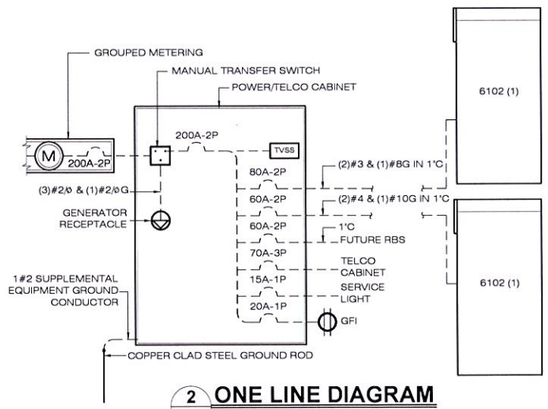
SHEET NUMBER:
M-1

STATE OF CONNECTICUT SCOTT CHASSE No. 27128 LICENSED PROFESSIONAL ENGINEER



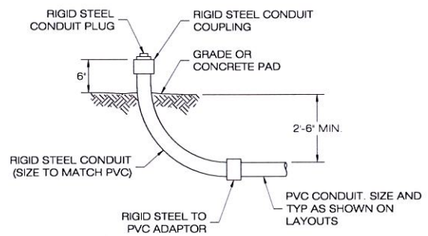
1 E-1 POWER RISER DIAGRAM

SCALE : N.T.S.



2 E-1 ONE LINE DIAGRAM

SCALE : N.T.S.



3 E-1 UTILITY SWEEP

SCALE : NTS

ELECTRICAL LEGEND

U.O.N.	UNLESS OTHERWISE NOTED		NEW PANEL BOARD, SURFACE MOUNTED
WP	WEATHERPROOF		
GFI	GROUND FAULT INTERRUPTER		EXISTING PANEL BOARD, SURFACE MOUNTED
A	AMPERE		
V	VOLT	T	DRY TYPE TRANSFORMER
KWH	KILOWATT - HOUR	M	METER
C	CONDUIT		CIRCUIT BREAKER
G	GROUND		NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
⏚	GROUND	F	FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
MGB	MASTER GROUND BAR		
	1/4"x8"x24" COPPER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER w/ BUILT-IN FUSES, SURFACE MOUNTED
EGB	EQUIPMENT GROUND BAR		
	¼"x4"x12" OR ½"x4"x18" COPPER		DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE
	GROUND COPPER WIRE, SIZE AS NOTED		
	EXPOSED WIRING	J	JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.
	COAXIAL CABLE		EXPOSED WIRING
⊙	5/8"x8' COPPER CLAD STEEL GROUND ROD		HOME RUNS, MINIMUM 2#10 + 1#10G IN 3/4" CONDUIT U.O.N.
	EXOTHERMIC (CADWELD) OR MECHANICAL (COMPRESSION TYPE) CONNECTION	A.F.F.	ABOVE FINISHED FLOOR

ELECTRICAL AND GROUNDING NOTES

1) ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS of THE NATIONAL ELECTRICAL CODE (NEC) as WELL as APPLICABLE STATE & LOCAL CODES.
2) ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED & PROCURED PER SPECIFICATION REQUIREMENTS.
3) THE ELECTRICAL WORK INCLUDES ALL LABOR & MATERIAL DESCRIBED BY DRAWINGS & SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING & APPROVED ELECTRICAL SYSTEM.
4) GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, & IS RESPONSIBLE FOR OBTAINING SAID PERMITS & COORDINATION OF INSPECTIONS.
5) ELECTRICAL & TELCO WIRING OUTSIDE A BUILDING & EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS or SCHEDULE 80 PVC (as PERMITTED BY CODE) & WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL or NONMETALLIC CONDUITS.
6) BURIED CONDUIT SHALL BE SCHEDULE 80 PVC, UON.
7) ELECTRICAL WIRING SHALL BE COPPER w/ TYPE XHHW, THWN, or THINSULATION.
8) RUN ELECTRICAL CONDUIT or CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT & LESSEE/LICENSEE CELL SITE POWER PEDESTAL as INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION w/ UTILITY COMPANY.
9) RUN TELCO CONDUIT or CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT & LESSEE/LICENSEE CELL SITE TELCO CABINET & BTS CABINET as INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE @ EACH END.
10) WHERE CONDUIT BETWEEN BTS & LESSEE/LICENSEE CELL SITE POWER PEDESTAL & BETWEEN BTS & LESSEE/LICENSEE CELL SITE TELCO SERVICE CABINET ARE U/G USE PVC, SCH.40 CONDUIT. ABOVE THE GROUND PORTION of THESE CONDUITS SHALL BE PVC CONDUIT.
11) ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12) POWER PEDESTAL SUPPLIED BY LESSE/LICENSEE.
13) GROUNDING SHALL COMPLY w/ NEC ART. 250.
14) GROUND COAXIAL CABLE SHIELDS MINIMUM @ BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY LESSEE/LICENSEE.
15) USE #6 COPPER STRANDED WIRE w/ GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) & #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING as INDICATED ON THE DRAWING.
16) ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS or EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT w/ GALVANIZED STEEL.
17) ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST & STRAIGHTEST PATH POSSIBLE, EXCEPT as OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT @ RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT @ 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS w/IN 7 FEET of LESSEE/LICENSEE EQUIPMENT or CABINET TO MASTER GROUND BAR.
18) CONNECTIONS TO GROUND BARS SHALL BE MADE w/ TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19) APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20) BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, & ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
21) BOND ANTENNA EGBS & MGB TO GROUND RING.
22) TEST COMPLETED GROUND SYSTEM & RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.

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CONFIGURATION

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SHEET TITLE:
ELECTRICAL WIRING PLAN & DETAILS

SHEET NUMBER:
E-1

STATE OF CONNECTICUT
SCOTT M. CHASSE
No. 19728
LICENSED PROFESSIONAL ENGINEER

Exhibit D

ALL-POINTS TECHNOLOGY CORPORATION

STRUCTURAL ANALYSIS REPORT
185' SELF-SUPPORTING TOWER
BLOOMFIELD, CONNECTICUT

Prepared for
T-Mobile

T-Mobile Site #CTHA142G

February 27, 2018

APT Project #CT1071511

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⊗ 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

STRUCTURAL ANALYSIS REPORT
185' SELF-SUPPORTING TOWER
BLOOMFIELD, CONNECTICUT
prepared for
T-Mobile

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a structural analysis of Northeast Utilities' (Eversource Energy) 185-foot self-supporting tower. The analysis was performed for T-Mobile's proposed installation of one Fastback Networks IBR 1300 microwave radio at 140' as detailed below. The equipment will be mounted on an existing sector mount and is to be fed by one fiber line and two Cat 6 cables.

APT's analysis indicates the tower and foundation meet the requirements of the Connecticut State Building Code and TIA-222 with T-Mobile's proposed equipment. Deflection values were also found to be within Northeast Utilities Substation Standards requirements.

INTRODUCTION:

A structural analysis was performed on the above-mentioned communications tower by APT for T-Mobile. The tower is located at 7 Hoskins Road in Bloomfield, Connecticut. The structure is a 185-foot galvanized steel self-supporting tower manufactured by Sabre Communications Corporation. The tower features pipe legs with angle steel bracing members.

APT did not performed a site visit for this analysis. The analysis relied solely on the following documents:

Document	Remarks	Date	Source
Geotechnical Testing Report	Design Earth Technology #2014.15	10/14/2014	NU
Structural Design Report	Sabre Communications #127272	8/19/2015	NU
Final Erection Drawings	Sabre Communications #127272	9/26/2015	NU
Feedline Plan	Centek Engineering	12/7/2016	T-Mobile
Construction Drawings	APT Filing no. CT409140	12/9/2016	APT
RFDS/antenna rec	T-Mobile site no. CTHA142A	2/14/2017	T-Mobile

The analysis was performed in accordance with TIA-222-G using the following antenna inventory (proposed equipment shown in **bold** text; reserved equipment shown in *italic* text):

Carrier	Elev.	Antenna	Mount	Coax.
	185'	Beacon	Leg	3/8"
NU	185'	20', 14' omnidirectional whips, 20' 8-bay dipole, ANT450F10 omni	Pipes on legs	(3) 1-5/8", (2) 7/8", 1/2"
NU	183'	(3) 8' dishes with radome	(3) pipes on legs	(6) EW-63
NU	172'	8' dish with radome	Pipe on leg	(2) EW-63
NU	*171'*	*(2) 6' dishes with radome*	*(2) pipes on legs*	*(4) EW-63*
Town/NU	165'	PR-900 Paraflector, ANT450F10 omni	Pipe on leg, 3' sidearm	(2) 7/8"
AT&T	165'	(3) SBNH-1D8585C, (6) OPA-65R-LCUU-H8 panels, (12) RRHs, (3) A2 Modules, (3) E15Z01P13, (1) D-box	(3) 12' sector mounts	(6) 1-5/8", (6) power, (3) fiber
Verizon	155'	(6) HBXX-6517DS, (6) LNX-6514DS panels, (9) RRHs, (2) D-boxes	(3) 12' sector mounts	(6) 1-5/8", (2) hybrid
T-Mobile	140'	(3) APXV18-206516, (3) LNX-6515DS, (3) APXV18-206517 panels, (6) RRUS-11 RRHs, (1) cylindrical 'squid' D-box	(3) 12' sector mounts	(2) 6x12 hybrid
T-Mobile	**140'**	**Fastback IBR 1300 radio**	**On above mount**	**(2) Cat 6, (1) fiber**
NU	*135'*	*6' dish with radome*	*Pipe on leg*	*(2) EW-63*
NU	135'	4' dish with radome	Pipe on leg	EW-90
NU	125'	8' dish with radome	Pipe on leg	(2) EW-63
NU	125'	20' omnidirectional whip, 12' dipole	(2) 6' sidearms	(2) 7/8"
NU	111'	12' single dipole	6' sidearm	7/8"
NU	108'	14' omnidirectional whip	6' sidearm	7/8"
	103'	(3) Obstruction lights	Legs	3/8"
NU	100'	8' dish with radome	Pipe on leg	(2) EW-63
NU	90.5'	3' omnidirectional whip	3' sidearm	7/8"
NU	87'	12' single dipole	6' sidearm	7/8"
NU	*69'*	*10' 4-bay dipole*	*6' sidearm*	*7/8"*
Town	66'	18" square panel	3' sidearm	Cat5e

RIGOROUS STRUCTURAL ANALYSIS:

Methodology:

The structural analysis was done in accordance with the Connecticut State Building Code and TIA-222, Revision G (TIA), Structural Standard for Antenna Supporting Structures and Antennas.

The analysis was conducted using a 3-second gust wind speed of 105 miles per hour with no ice and 50-mph with 1" radial ice in accordance with the TIA-222-G standard. The following additional design criteria were used:

Structure Class:	III
Topographic Category:	2
Exposure Category:	C
Crest Height:	200'

Analysis Results:

Analysis of the tower was conducted in accordance with the criteria outlined herein with antenna changes as previously described. The following table summarizes the results of the analysis based on stresses of individual leg and bracing members:

Elevation	Leg Capacity	Bracing Capacity
180'-185'	2%	19%
160'-180'	12%	76%
140'-160'	36%	59%
120'-140'	69%	85%
100'-120'	65%	91%
80'-100'	74%	70%
60'-80'	65%	78%
40'-60'	85%	88%
20'-40'	77%	100%
0'-20'	75%	90%

Bracing, Splice and Anchor Bolts:

Bracing, splice and anchor bolts were evaluated under the proposed loading. All evaluated bolts were found to be adequately sized to support the proposed loads.

Base Foundation:

Evaluation of the existing base foundation was performed from original Sabre foundation drawings. The base foundation was found to be adequately sized to support the proposed equipment. Factored base reactions imposed with the additional antennas were calculated as follows:

Reaction	Original Design	Calculated
Compression	775 k	705.9 k
Uplift	656 k	603.2 k
Shear	132 k	122.6 k
OTM	23690 ft-k	21551 ft-k

Deflection:

Combined twist and sway was evaluated per Northeast Utilities Substation Standard SUB 090, Section 7 under service wind as well as design wind speeds. The tower was found to be within the allowable 0.5 degree total maximum. Results are summarized as follows:

Load Case	Tilt	Twist	Combined Max.
Service Wind – 60-mph	0.0827˚	0.0022˚	0.0827˚
Design Wind – 105-mph	0.4604˚	0.0122˚	0.4606˚

CONCLUSIONS AND RECOMMENDATIONS:

APT's structural analysis indicates that the 185-foot self-supporting tower and foundation located at 7 Hoskins Road in Bloomfield, Connecticut meets the requirements of the Connecticut State Building Code and TIA-222 with T-Mobile's proposed equipment.

LIMITATIONS:

This report is based on the following:

1. Tower is properly installed and maintained.
2. All members are in an undeteriorated condition.
3. All required members are in place.
4. All bolts are in place and are properly tightened.
5. Tower is in plumb condition.
6. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.

All-Points Technology Corporation, P.C. (APT) is not responsible for modifications completed prior to or hereafter which APT is not or was not directly involved. Modifications include but are not limited to:

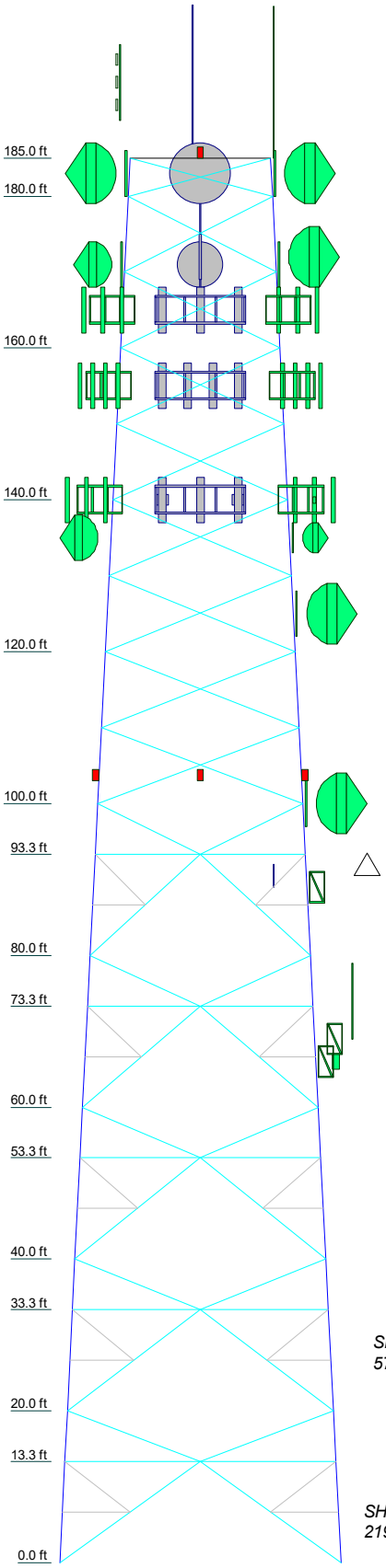
1. Replacing or strengthening bracing members.
2. Reinforcing vertical members in any manner.
3. Adding or relocating torque arms or guys.
4. Installing antenna mounting gates or side arms.

APT hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon the information contained and set forth herein. If you are aware of any information which is contrary to that which is contained herein, or you are aware of any defects arising from the original design, material, fabrication and erection deficiencies, you should disregard this report and immediately contact APT. APT disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

Appendix A

Tower Schematic

Section	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	P12.75x.5		P10.75x.5		P10.75x.365		P8.625x.5		P8.625x.322				P6.625x.280		
Leg Grade	A572-50														
Diagonals	L6x6x1/2				L6x6x3/8				L4x6x1/2	B	L5x5x3/8		L5x5x5/16	L4x4x1/4	A
Diagonal Grade	A36														
Top Girts	N.A.														C
Horizontals	L5x5x5/16	N.A.	L5x5x5/16	N.A.	L5x5x5/16	N.A.	L4x4x5/16	N.A.	L4x4x5/16			N.A.			
Red. Horizontals	L3 1/2x4x5/16	N.A.	L3x3x5/16	N.A.	L3x3x5/16	N.A.	L3x3x1/4	N.A.	L3x3x1/4			N.A.			
Red. Diagonals	L3 1/2x4x5/16	N.A.	L3x3x5/16	N.A.	L3x3x5/16	N.A.	L3x3x1/4	N.A.	L3x3x1/4			N.A.			
Red. Hips	L3 1/2x3 1/2x1/4	N.A.	L3 1/2x3 1/2x1/4	N.A.	L3 1/2x3 1/2x1/4	N.A.	L3x3x1/4	N.A.	L3x3x1/4			N.A.			
Face Width (ft)	37	35	33.6667	33	31.6667	31	29.6667	29	27.6667	27	25	23	21	19	18.5
# Panels @ (ft)	1 @ 13.3333	D	1 @ 13.3333	D	1 @ 13.3333	D	1 @ 13.3333	D	1 @ 13.3333	D	8 @ 10				1 @ 5
Weight (lb) 59654.3	7427.4	3428.3	6612.9	2620.1	5254.3	2252.8	4877.9	2237.1	4302.4	1886.4	5824.3	4358.6	4131.7	2913.0	1527.2



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
LED beacon (NU)	185	ALU B66a RRH4x45w/bracket (Verizon)	155
20' x 3" omni whip (NU)	185	DB-T1-6Z-8AB-0Z (Verizon)	155
Tower Top Amplifier (NU)	185	DB-T1-6Z-8AB-0Z (Verizon)	155
Telewave ANT450F10	185	Rohn 6' x 12' Boom Gate (1) (Verizon)	155
20' 8 Bay Dipole (Bloomfield PD)	185	Rohn 6' x 12' Boom Gate (1) (Verizon)	155
14' x 3" Dia Omni (NU)	185	Rohn 6' x 12' Boom Gate (1) (Verizon)	155
Telewave ANT450F10 (NU)	185 - 165	(2) HBXX-6517DS (Verizon)	155
6'x4 1/2" Pipe Mount (NU)	183	(2) HBXX-6517DS (Verizon)	155
6'x4 1/2" Pipe Mount (NU)	183	(2) HBXX-6517DS (Verizon)	155
8' Dish (NU)	183	(2) LNX-6514DS-VTM (Verizon)	155
8' Dish (NU)	183	(2) LNX-6514DS-VTM (Verizon)	155
8' Dish (NU)	183	(2) LNX-6514DS-VTM (Verizon)	155
6'x4 1/2" Pipe Mount (NU)	172	20' x 3" Dia Omni (NU)	145 - 125
8' Dish (NU)	172	LNX-6515DS-T4M (T-Mobile)	140
6'x4 1/2" Pipe Mount (NU)	171	LNX-6515DS-T4M (T-Mobile)	140
6'x4 1/2" Pipe Mount (NU)	171	(2) Ericsson RRUS-11 (T-Mobile)	140
6' dish with radome	171	(2) Ericsson RRUS-11 (T-Mobile)	140
6' dish with radome	171	(2) Ericsson RRUS-11 (T-Mobile)	140
(2) OPA-65R-LCUU-H8 (ATI)	165	T-Mobile Mini-Squid (T-Mobile)	140
(2) OPA-65R-LCUU-H8 (ATI)	165	Fastback IBR 1300 (T-Mobile)	140
(2) OPA-65R-LCUU-H8 (ATI)	165	4'x2 7/8" Pipe Mount (T-Mobile)	140
RRUS-11 (ATI)	165	12' T-frame sector mnt	140
RRUS-11 (ATI)	165	12' T-frame sector mnt	140
RRUS-11 (ATI)	165	12' T-frame sector mnt	140
RRUS-12 (ATI)	165	LNX-6515DS-T4M (T-Mobile)	140
RRUS-12 (ATI)	165	APXV18-206516 (T-Mobile)	140
RRUS-12 (ATI)	165	APXV18-206516 (T-Mobile)	140
RRUS-32 (ATI)	165	APXV18-206516 (T-Mobile)	140
RRUS-32 (ATI)	165	APXV18-206517 (T-Mobile)	140
RRUS-32 (ATI)	165	APXV18-206517 (T-Mobile)	140
RRUS-E2 (ATI)	165	APXV18-206517 (T-Mobile)	140
RRUS-E2 (ATI)	165	4'x4 1/2" Pipe Mount (NU)	135
RRUS-E2 (ATI)	165	4' dish (NU)	135
A2 (ATI)	165	6' dish with radome	135
A2 (ATI)	165	6'x4 1/2" Pipe Mount (NU)	125
A2 (ATI)	165	Rohn 6' Side-Arm(1) (NU)	125
E15Z01P13 (ATI)	165	Rohn 6' Side-Arm(1) (NU)	125
E15Z01P13 (ATI)	165	8' Dish (NU)	125
E15Z01P13 (ATI)	165	12' single dipole (NU)	125
DC6-48-60-18-8F Surge Arrestor (ATI)	165	14' x 3" Dia Omni (NU)	114.5
Rohn 6' x 12' Boom Gate (1) (ATI)	165	12' Dipole (NU)	111
Rohn 6' x 12' Boom Gate (1) (ATI)	165	Rohn 6' Side-Arm(1) (NU)	109
Rohn 6' x 12' Boom Gate (1) (ATI)	165	Rohn 6' Side-Arm(1) (NU)	108
ROHN 3-ft Side Arm (NU)	165	Obstruction light (NU)	103
SBNH-1D8585C (ATI)	165	Obstruction light (NU)	103
3' x 6' Paraflactor (Simsbury PD)	165	Obstruction light (NU)	103
6'x3" Pipe Mount (Simsbury PD)	165	6'x4 1/2" Pipe Mount (NU)	100
SBNH-1D8585C (ATI)	165	8' Dish (NU)	100
SBNH-1D8585C (ATI)	165	3' x 2" omni whip (NU)	92 - 89
RRH2x40-AWS (Verizon)	155	3' sidearm (NU)	89
RRH2x40-AWS (Verizon)	155	Rohn 6' Side-Arm(1) (NU)	87
RRH2x40-AWS (Verizon)	155	12' Dipole (NU)	87
RRH2x40-07-U (Verizon)	155	10' 4-bay dipole (NU)	79 - 69
RRH2x40-07-U (Verizon)	155	6' sidearm (NU)	69
RRH2x40-07-U (Verizon)	155	2' square panel (NU)	66
ALU B66a RRH4x45w/bracket (Verizon)	155	3' sidearm (NU)	66
ALU B66a RRH4x45w/bracket (Verizon)	155		

SHI
577

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L3 1/2x3 1/2x1/4	C	L5x5x5/16
B	L6x6x3/8	D	1 @ 6.66667

MATERIAL STRENGTH

SHE
2199

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

TORQUE 25 kip-ft
REACTIONS - 105 mph WIND

All-Points Technology Corporation
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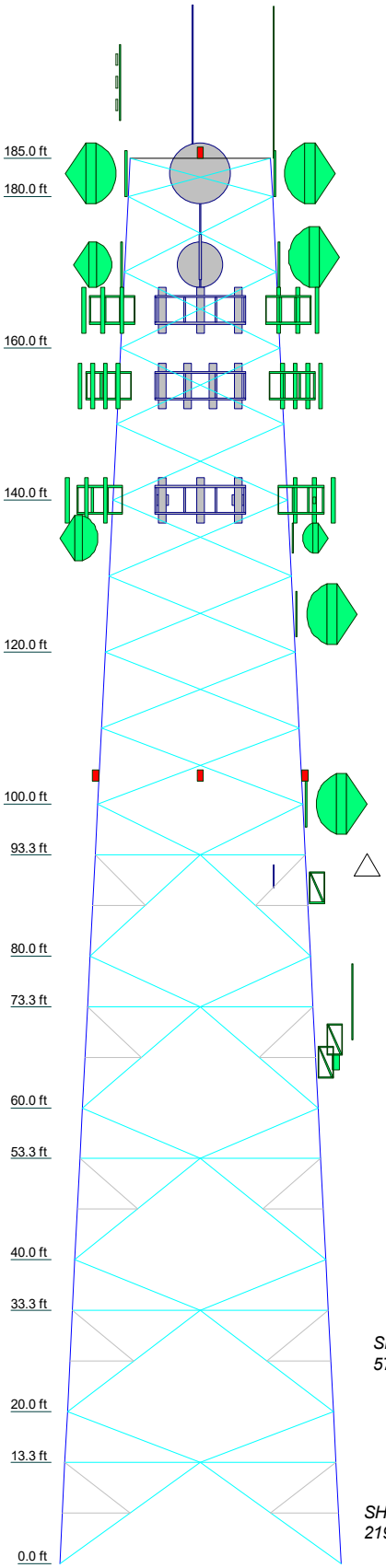
Phone: (603) 496-5853
FAX: (603) 447-2124

Job: ***185' Self-Supporting Tower***			
Project: ***CT1071511 Bloomfield***			
Client: T-Mobile; Site #CTHA142H	Drawn by: Rob Adair		App'd:
Code: TIA-222-G	Date: 02/27/18		Scale: NTS
Path: Z:\Shared\NH Office\Jobs\4 T-Mobile\CT1071510 Bloomfield CTHA142A\CT1071511 Bloomfield.en			Dwg No. E-1

Section	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	P12.75x.5		P10.75x.5		P10.75x.365		P8.625x.5		P8.625x.322				P6.625x.280		
Leg Grade	A572-50														
Diagonals	L6x6x1/2		L6x6x3/8						L4x6x1/2	B	L5x5x3/8	L5x5x5/16		L4x4x1/4	A
Diagonal Grade	A36														
Top Girts	N.A.														C
Horizontals	L5x5x5/16	N.A.	L5x6x5/16	N.A.	L5x5x5/16	N.A.	L4x4x5/16	N.A.	L4x4x5/16			N.A.			
Red. Horizontals	L3 1/2x4x5/16	N.A.	L3x3x5/16	N.A.	L3x3x5/16	N.A.	L3x3x1/4	N.A.	L3x3x1/4			N.A.			
Red. Diagonals	L3 1/2x4x5/16	N.A.	L3x3x5/16	N.A.	L3x3x5/16	N.A.	L3x3x1/4	N.A.	L3x3x1/4			N.A.			
Red. Hips	L3 1/2x3 1/2x1/4	N.A.	L3 1/2x3 1/2x1/4	N.A.	L3 1/2x3 1/2x1/4	N.A.	L3x3x1/4	N.A.	L3x3x1/4			N.A.			
Face Width (ft)	37	35	33.6667	33	31.6667	31	29.6667	29	27.6667	27	25	23	21	19	18.5
# Panels @ (ft)	1 @ 13.3333	D	1 @ 13.3333	D	1 @ 13.3333	D	1 @ 13.3333	D	1 @ 13.3333	D		8 @ 10			1 @ 5
Weight (lb) 59654.3	7427.4	3428.3	6612.9	2620.1	5254.3	2252.8	4877.9	2237.1	4302.4	1886.4	5824.3	4358.6	4131.7	2913.0	1527.2



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L3 1/2x3 1/2x1/4	C	L5x5x5/16
B	L6x6x3/8	D	1 @ 6.66667

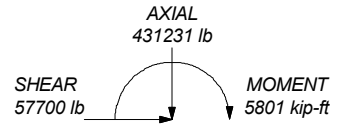
MATERIAL STRENGTH

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

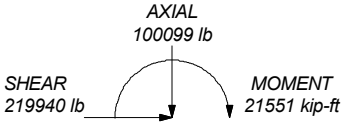
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 705920 lb
SHEAR: 122571 lb

UPLIFT: -603205 lb
SHEAR: 108420 lb



TORQUE 21 kip-ft
50 mph WIND - 1.0000 in ICE



TORQUE 25 kip-ft
REACTIONS - 105 mph WIND

All-Points Technology Corporation
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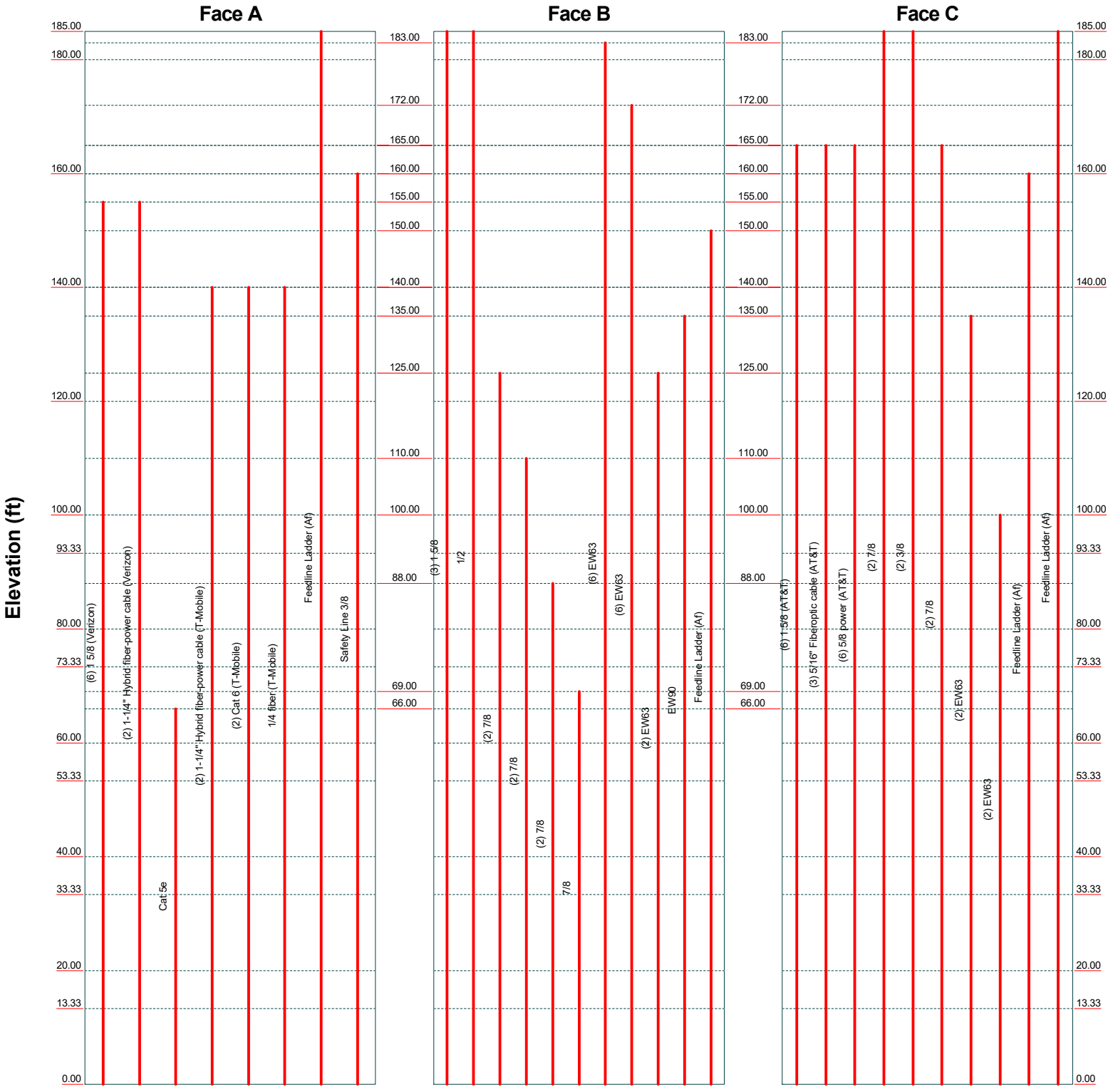
Job: ***185' Self-Supporting Tower***			
Project: ***CT1071511 Bloomfield***			
Client: T-Mobile; Site #CTHA142H	Drawn by: Rob Adair	App'd:	
Code: TIA-222-G	Date: 02/27/18	Scale: NTS	
Path: Z:\Shared\NH Office\Jobs\4 T-Mobile\CT1071510 Bloomfield CTHA142A\CT1071511 Bloomfield.en		Dwg No. E-1	

Appendix B

Calculations

Feed Line Distribution Chart
0' - 185'

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



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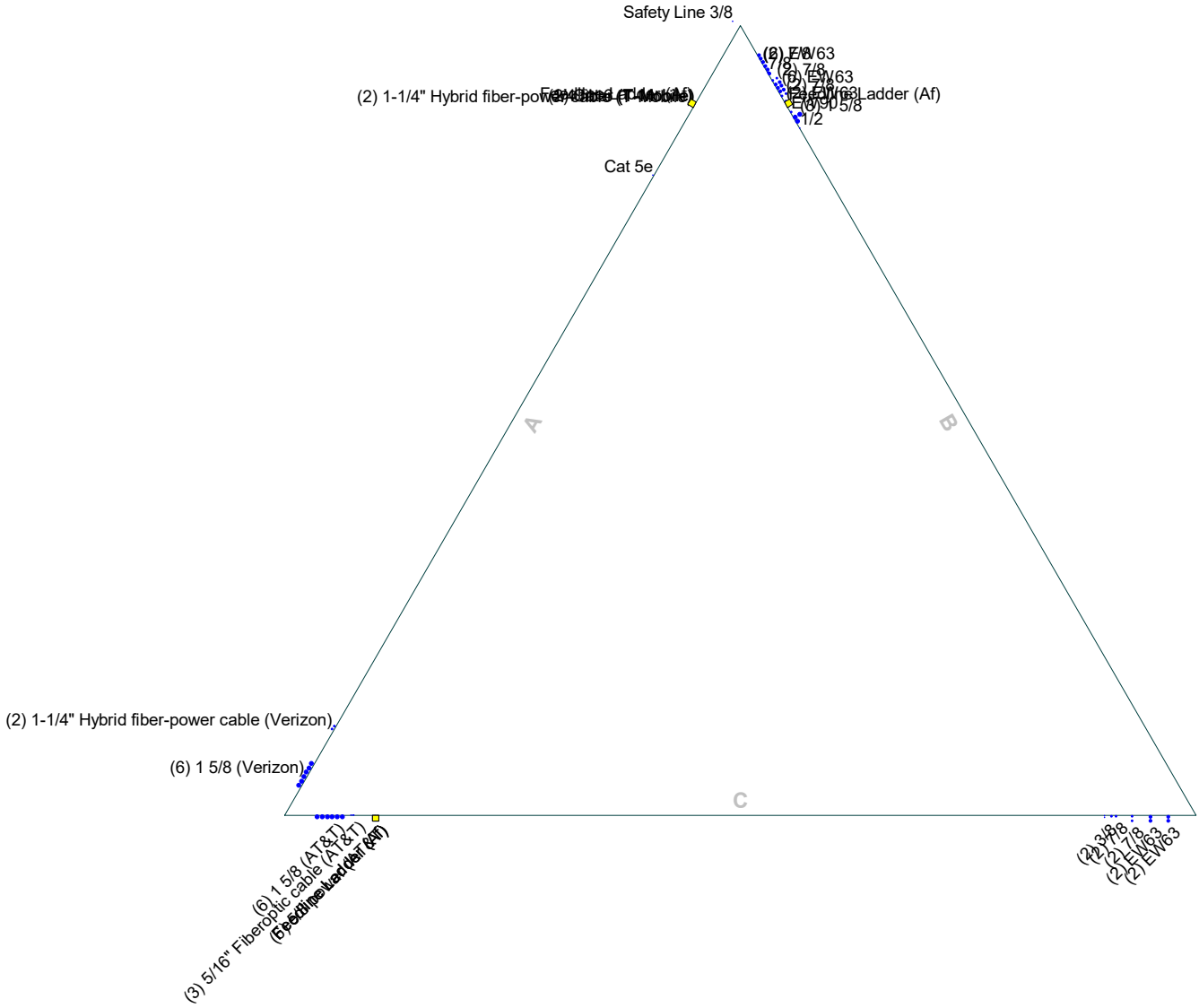
Path: Z:\Shared\NH Office\Jobs\4 T-Mobile\CT1071510 Bloomfield CTHA142A\CT1071511 Bloomfield.en		Dwg No. E-7	

Feed Line Plan

Round Flat App In Face App Out Face



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Path: Z:\Shared\NH Office\Jobs\4 T-Mobile\CT1071510 Bloomfield CTHA142A\CT1071511 Bloomfield.en		Dwg No. E-7	

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 185.00 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 18.50 ft at the top and 37.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Basic wind speed of 105 mph.
Structure Class III.
Exposure Category C.
Topographic Category 2.
Crest Height 200.00 ft.
Nominal ice thickness of 1.0000 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.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

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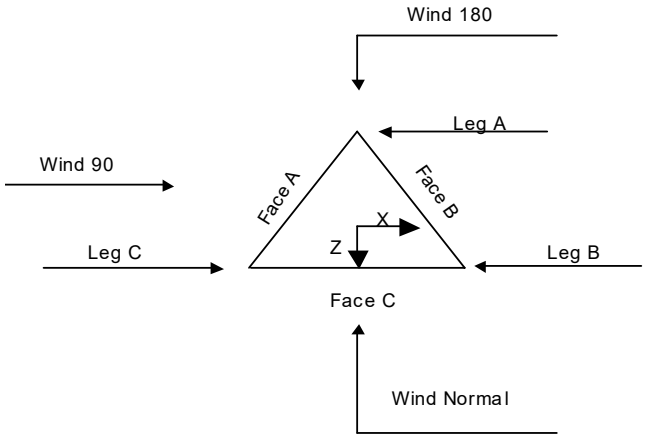

Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	185.00-180.00			18.50	1	5.00
T2	180.00-160.00			19.00	1	20.00
T3	160.00-140.00			21.00	1	20.00
T4	140.00-120.00			23.00	1	20.00
T5	120.00-100.00			25.00	1	20.00
T6	100.00-93.33			27.00	1	6.67
T7	93.33-80.00			27.67	1	13.33
T8	80.00-73.33			29.00	1	6.67
T9	73.33-60.00			29.67	1	13.33
T10	60.00-53.33			31.00	1	6.67
T11	53.33-40.00			31.67	1	13.33
T12	40.00-33.33			33.00	1	6.67
T13	33.33-20.00			33.67	1	13.33
T14	20.00-13.33			35.00	1	6.67
T15	13.33-0.00			35.67	1	13.33

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	185.00-180.00	5.00	X Brace	No	No	0.0000	0.0000
T2	180.00-160.00	10.00	X Brace	No	No	0.0000	0.0000
T3	160.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T4	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000
T5	120.00-100.00	10.00	X Brace	No	No	0.0000	0.0000
T6	100.00-93.33	6.67	Diamond	No	Yes	0.0000	0.0000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T7	93.33-80.00	13.33	K1 Down	No	Yes	0.0000	0.0000
T8	80.00-73.33	6.67	Diamond	No	Yes	0.0000	0.0000
T9	73.33-60.00	13.33	K1 Down	No	Yes	0.0000	0.0000
T10	60.00-53.33	6.67	Diamond	No	Yes	0.0000	0.0000
T11	53.33-40.00	13.33	K1 Down	No	Yes	0.0000	0.0000
T12	40.00-33.33	6.67	Diamond	No	Yes	0.0000	0.0000
T13	33.33-20.00	13.33	K1 Down	No	Yes	0.0000	0.0000
T14	20.00-13.33	6.67	Diamond	No	Yes	0.0000	0.0000
T15	13.33-0.00	13.33	K1 Down	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 185.00-180.00	Pipe	P6.625x.280	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T2 180.00-160.00	Pipe	P6.625x.280	A572-50 (50 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)
T3 160.00-140.00	Pipe	P6.625x.280	A572-50 (50 ksi)	Equal Angle	L5x5x5/16	A36 (36 ksi)
T4 140.00-120.00	Pipe	P6.625x.280	A572-50 (50 ksi)	Equal Angle	L5x5x5/16	A36 (36 ksi)
T5 120.00-100.00	Pipe	P8.625x.322	A572-50 (50 ksi)	Equal Angle	L5x5x3/8	A36 (36 ksi)
T6 100.00-93.33	Pipe	P8.625x.322	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T7 93.33-80.00	Pipe	P8.625x.322	A572-50 (50 ksi)	Single Angle	L4x6x1/2	A36 (36 ksi)
T8 80.00-73.33	Pipe	P8.625x.5	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T9 73.33-60.00	Pipe	P8.625x.5	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T10 60.00-53.33	Pipe	P10.75x.365	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T11 53.33-40.00	Pipe	P10.75x.365	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T12 40.00-33.33	Pipe	P10.75x.5	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T13 33.33-20.00	Pipe	P10.75x.5	A572-50 (50 ksi)	Equal Angle	L6x6x1/2	A36 (36 ksi)
T14 20.00-13.33	Pipe	P12.75x.5	A572-50 (50 ksi)	Equal Angle	L6x6x1/2	A36 (36 ksi)
T15 13.33-0.00	Pipe	P12.75x.5	A572-50 (50 ksi)	Equal Angle	L6x6x1/2	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 185.00-180.00	Equal Angle	L5x5x5/16	A36 (36 ksi)	Single Angle		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
T6 100.00-93.33	None	Single Angle		A36 (36 ksi)	Solid Round	None	A36 (36 ksi)
T7 93.33-80.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L4x4x5/16	A36 (36 ksi)
T8 80.00-73.33	None	Single Angle		A36 (36 ksi)	Solid Round	None	A36 (36 ksi)
T9 73.33-60.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L4x4x5/16	A36 (36 ksi)
T10 60.00-53.33	None	Single Angle		A36 (36 ksi)	Solid Round	None	A36 (36 ksi)
T11 53.33-40.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L5x5x5/16	A36 (36 ksi)
T12 40.00-33.33	None	Single Angle		A36 (36 ksi)	Solid Round	None	A36 (36 ksi)
T13 33.33-20.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L5x5x5/16	A36 (36 ksi)
T14 20.00-13.33	None	Single Angle		A36 (36 ksi)	Solid Round	None	A36 (36 ksi)
T15 13.33-0.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L5x5x5/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T7 93.33-80.00	A36 (36 ksi)	Horizontal (1)	Equal Angle	L3x3x1/4	1
		Diagonal (1)	Equal Angle	L3x3x1/4	1
		Hip (1)	Equal Angle	L3x3x1/4	1
T9 73.33-60.00	A36 (36 ksi)	Horizontal (1)	Equal Angle	L3x3x1/4	1
		Diagonal (1)	Equal Angle	L3x3x1/4	1
		Hip (1)	Equal Angle	L3x3x1/4	1
T11 53.33-40.00	A36 (36 ksi)	Horizontal (1)	Equal Angle	L3x3x5/16	1
		Diagonal (1)	Equal Angle	L3x3x5/16	1
		Hip (1)	Equal Angle	L3 1/2x3 1/2x1/4	1
T13 33.33-20.00	A36 (36 ksi)	Horizontal (1)	Equal Angle	L3x3x5/16	1
		Diagonal (1)	Equal Angle	L3x3x5/16	1
		Hip (1)	Equal Angle	L3 1/2x3 1/2x1/4	1
T15 13.33-0.00	A36 (36 ksi)	Horizontal (1)	Single Angle	L3 1/2x4x5/16	1
		Diagonal (1)	Single Angle	L3 1/2x4x5/16	1
		Hip (1)	Equal Angle	L3 1/2x3 1/2x1/4	1

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 185.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft²	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
T2 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 100.00-93.33	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 93.33-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 80.00-73.33	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 73.33-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T10 60.00-53.33	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T11 53.33-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T12 40.00-33.33	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T13 33.33-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T14 20.00-13.33	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T15 13.33-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	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 185.00-180.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 180.00-160.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 160.00-140.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 140.00-120.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 120.00-100.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 100.00-93.33	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 93.33-80.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 80.00-73.33	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 73.33-60.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 60.00-53.33	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T11 53.33-40.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T12 40.00-33.33	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T13 33.33-20.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T14 20.00-13.33	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T15 13.33-0.00	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 Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1 185.00-180.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T2 180.00-160.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T3 160.00-140.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T4 140.00-120.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T5 120.00-100.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T6 100.00-93.33	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T7 93.33-80.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T8 80.00-73.33	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T9 73.33-60.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T10 60.00-53.33	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T11 53.33-40.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T12 40.00-33.33	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T13 33.33-20.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T14 20.00-13.33	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T15 13.33-0.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1

Tower Section Geometry *(cont'd)*

Tower Elevation	Connection Offsets							
	Diagonal				K-Bracing			
	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.
ft	in	in	in	in	in	in	in	in
T1 185.00-180.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T2 180.00-160.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T3 160.00-140.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T4 140.00-120.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T5 120.00-100.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T6 100.00-93.33	0.0000	0.0000	0.0000	4.0000	0.0000	4.0000	0.0000	0.0000
T7 93.33-80.00	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000	0.0000	0.0000
T8 80.00-73.33	0.0000	0.0000	0.0000	8.0000	0.0000	8.0000	0.0000	0.0000
T9 73.33-60.00	0.0000	0.0000	0.0000	0.0000	0.0000	4.0000	0.0000	0.0000
T10 60.00-53.33	0.0000	0.0000	0.0000	9.0000	0.0000	9.0000	0.0000	0.0000
T11 53.33-40.00	0.0000	0.0000	0.0000	0.0000	0.0000	5.0000	0.0000	0.0000
T12 40.00-33.33	0.0000	0.0000	0.0000	9.0000	0.0000	9.0000	0.0000	0.0000
T13 33.33-20.00	0.0000	0.0000	0.0000	0.0000	0.0000	5.0000	0.0000	0.0000
T14 20.00-13.33	0.0000	0.0000	0.0000	9.0000	0.0000	9.0000	0.0000	0.0000
T15 13.33-0.00	0.0000	0.0000	0.0000	0.0000	0.0000	5.0000	0.0000	0.0000

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 185.00-180.00	Flange	1.2500 A325N	6	0.7500 A325X	1	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0
T2 180.00-160.00	Flange	1.2500 A325N	6	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0
T3 160.00-140.00	Flange	1.2500 A325N	6	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0
T4 140.00-120.00	Flange	1.2500 A325N	8	0.6250 A325X	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0
T5 120.00-100.00	Flange	1.5000 A325N	8	0.7500 A325X	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0
T6 100.00-93.33	Flange	0.0000 A325N	0	1.0000 A325X	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0
T7 93.33-80.00	Flange	1.5000 A325N	8	1.0000 A325X	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	1.0000 A325N	2	0.6250 A325N	0
T8 80.00-73.33	Flange	0.0000 A325N	0	0.8750 A325X	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0
T9 73.33-60.00	Flange	1.5000 A325N	8	0.8750 A325X	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.8750 A325X	2	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.
T10	Flange	0.0000	0	0.8750	2	0.6250	0	0.6250	0	0.6250	0	0.5000	0	0.6250	0
60.00-53.33		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T11	Flange	1.5000	8	0.8750	2	0.6250	0	0.6250	0	0.6250	0	0.8750	2	0.6250	0
53.33-40.00		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T12	Flange	0.0000	0	1.0000	2	0.6250	0	0.6250	0	0.6250	0	0.0000	0	0.6250	0
40.00-33.33		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T13	Flange	1.5000	8	1.0000	2	0.6250	0	0.6250	0	0.6250	0	1.0000	2	0.6250	0
33.33-20.00		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T14	Flange	0.0000	0	1.0000	2	0.6250	0	0.6250	0	0.6250	0	0.0000	0	0.6250	0
20.00-13.33		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T15 13.33-0.00	Flange	1.7500	6	1.0000	2	0.6250	0	0.6250	0	0.6250	0	1.0000	2	0.6250	0
		F1554-105		A325X		A325N		A325N		A325N		A325X		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8 (AT&T)	C	No	Ar (CaAa)	165.00 - 0.00	0.0000	0.45	6	6	0.5000	1.9800		1.04
5/16" Fiberoptic cable (AT&T)	C	No	Ar (CaAa)	165.00 - 0.00	0.0000	0.425	3	3	0.3125	0.3125		0.25
5/8 power (AT&T)	C	No	Ar (CaAa)	165.00 - 0.00	0.0000	0.4	6	3	0.6450	0.6450		0.40
1 5/8 (Verizon)	A	No	Ar (CaAa)	155.00 - 0.00	0.0000	-0.45	6	6	0.5000	1.9800		1.04
1-1/4" Hybrid fiber-power cable (Verizon)	A	No	Ar (CaAa)	155.00 - 0.00	0.0000	-0.39	2	2	0.5000	1.2500		0.66
1 5/8	B	No	Ar (CaAa)	185.00 - 0.00	0.0000	-0.38	3	2	0.5000	1.9800		1.04
7/8	C	No	Ar (CaAa)	185.00 - 0.00	0.0000	-0.41	2	2	1.1100	1.1100		0.54
3/8	C	No	Ar (CaAa)	185.00 - 0.00	0.0000	-0.4	2	1	0.4400	0.4400		0.08
1/2	B	No	Ar (CaAa)	185.00 - 0.00	0.0000	-0.37	1	1	0.5800	0.5800		0.25
7/8	C	No	Ar (CaAa)	165.00 - 0.00	0.0000	-0.43	2	1	1.1100	1.1100		0.54
7/8	B	No	Ar (CaAa)	125.00 - 0.00	0.0000	-0.45	2	2	1.1100	1.1100		0.54
7/8	B	No	Ar (CaAa)	110.00 - 0.00	0.0000	-0.41	2	1	1.1100	1.1100		0.54
7/8	B	No	Ar (CaAa)	88.00 - 0.00	0.0000	-0.43	2	1	1.1100	1.1100		0.54
7/8	B	No	Ar (CaAa)	69.00 - 0.00	0.0000	-0.44	1	1	1.1100	1.1100		0.54
Cat 5e	A	No	Ar (CaAa)	66.00 - 0.00	0.0000	0.31	1	1	0.3125	0.3125		0.02
EW63	B	No	Ar (CaAa)	183.00 - 0.00	0.0000	-0.45	6	6	0.5000	1.5742		0.51
EW63	B	No	Ar (CaAa)	172.00 - 0.00	0.0000	-0.42	6	3	0.5000	1.5742		0.51
EW63	B	No	Ar (CaAa)	125.00 - 0.00	0.0000	-0.4	2	2	0.5000	1.5742		0.51
EW90	B	No	Ar (CaAa)	135.00 - 0.00	0.0000	-0.39	1	1	0.5000	0.9869		0.32
EW63	C	No	Ar (CaAa)	135.00 - 0.00	0.0000	-0.47	2	1	0.5000	1.5742		0.51
EW63	C	No	Ar (CaAa)	100.00 - 0.00	0.0000	-0.45	2	1	0.5000	1.5742		0.51
1-1/4" Hybrid fiber-power cable (T-Mobile)	A	No	Ar (CaAa)	140.00 - 0.00	0.0000	0.4	2	2	0.5000	1.2500		0.66
Cat 6 (T-Mobile)	A	No	Ar (CaAa)	140.00 - 0.00	0.0000	0.4	2	2	0.2510	0.2510		0.03
1/4 fiber (T-Mobile)	A	No	Ar (CaAa)	140.00 - 0.00	0.0000	0.4	1	1	0.2500	0.2500		0.05
Feedline	C	No	Af (CaAa)	160.00 - 0.00	0.0000	0.4	1	1	0.0000	3.0000		8.40

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Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Ladder (Af) Feedline	B	No	Af (CaAa)	150.00 - 0.00	0.0000	-0.4	1	1	0.0000	3.0000		8.40
Ladder (Af) Feedline	A	No	Af (CaAa)	185.00 - 0.00	0.0000	0.4	1	1	0.0000	3.0000		8.40
Ladder (Af) Feedline	C	No	Af (CaAa)	185.00 - 0.00	0.0000	0.4	1	1	0.0000	3.0000		8.40
Ladder (Af) Safety Line 3/8	A	No	Ar (CaAa)	160.00 - 0.00	4.0000	0.5	1	1	0.3750	0.3750		0.22

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 lb
T1	185.00-180.00	A	0.000	0.000	2.500	0.000	42.00
		B	0.000	0.000	6.094	0.000	26.03
		C	0.000	0.000	4.050	0.000	48.20
T2	180.00-160.00	A	0.000	0.000	10.000	0.000	168.00
		B	0.000	0.000	43.265	0.000	165.32
		C	0.000	0.000	25.654	0.000	245.15
T3	160.00-140.00	A	0.000	0.000	32.320	0.000	285.80
		B	0.000	0.000	55.821	0.000	273.80
		C	0.000	0.000	64.015	0.000	570.20
T4	140.00-120.00	A	0.000	0.000	46.014	0.000	352.24
		B	0.000	0.000	64.986	0.000	373.10
		C	0.000	0.000	68.738	0.000	585.50
T5	120.00-100.00	A	0.000	0.000	46.014	0.000	352.24
		B	0.000	0.000	75.752	0.000	417.00
		C	0.000	0.000	70.312	0.000	590.60
T6	100.00-93.33	A	0.000	0.000	15.338	0.000	117.41
		B	0.000	0.000	25.991	0.000	142.60
		C	0.000	0.000	25.536	0.000	203.67
T7	93.33-80.00	A	0.000	0.000	30.676	0.000	234.83
		B	0.000	0.000	53.757	0.000	293.84
		C	0.000	0.000	51.072	0.000	407.33
T8	80.00-73.33	A	0.000	0.000	15.338	0.000	117.41
		B	0.000	0.000	27.471	0.000	149.80
		C	0.000	0.000	25.536	0.000	203.67
T9	73.33-60.00	A	0.000	0.000	30.863	0.000	234.96
		B	0.000	0.000	55.940	0.000	304.46
		C	0.000	0.000	51.072	0.000	407.33
T10	60.00-53.33	A	0.000	0.000	15.546	0.000	117.56
		B	0.000	0.000	28.211	0.000	153.40
		C	0.000	0.000	25.536	0.000	203.67
T11	53.33-40.00	A	0.000	0.000	31.093	0.000	235.12
		B	0.000	0.000	56.421	0.000	306.80
		C	0.000	0.000	51.072	0.000	407.33
T12	40.00-33.33	A	0.000	0.000	15.546	0.000	117.56
		B	0.000	0.000	28.211	0.000	153.40
		C	0.000	0.000	25.536	0.000	203.67
T13	33.33-20.00	A	0.000	0.000	31.093	0.000	235.12
		B	0.000	0.000	56.421	0.000	306.80
		C	0.000	0.000	51.072	0.000	407.33
T14	20.00-13.33	A	0.000	0.000	15.546	0.000	117.56
		B	0.000	0.000	28.211	0.000	153.40
		C	0.000	0.000	25.536	0.000	203.67
T15	13.33-0.00	A	0.000	0.000	31.093	0.000	235.12
		B	0.000	0.000	56.421	0.000	306.80

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 lb
		C	0.000	0.000	51.072	0.000	407.33

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 lb
T1	185.00-180.00	A	3.246	0.000	0.000	5.746	0.000	195.30
		B		0.000	0.000	20.763	0.000	411.80
		C		0.000	0.000	20.037	0.000	465.00
T2	180.00-160.00	A	3.245	0.000	0.000	22.981	0.000	780.97
		B		0.000	0.000	126.974	0.000	2548.90
		C		0.000	0.000	116.597	0.000	2583.11
T3	160.00-140.00	A	3.243	0.000	0.000	101.875	0.000	2357.06
		B		0.000	0.000	154.289	0.000	3267.10
		C		0.000	0.000	248.884	0.000	5531.26
T4	140.00-120.00	A	3.240	0.000	0.000	192.275	0.000	3840.51
		B		0.000	0.000	192.724	0.000	4160.13
		C		0.000	0.000	272.986	0.000	6110.77
T5	120.00-100.00	A	3.234	0.000	0.000	192.028	0.000	3830.41
		B		0.000	0.000	259.171	0.000	5341.36
		C		0.000	0.000	280.720	0.000	6289.55
T6	100.00-93.33	A	3.227	0.000	0.000	63.916	0.000	1272.99
		B		0.000	0.000	91.425	0.000	1892.87
		C		0.000	0.000	104.193	0.000	2349.32
T7	93.33-80.00	A	3.219	0.000	0.000	127.629	0.000	2537.72
		B		0.000	0.000	194.920	0.000	4054.65
		C		0.000	0.000	208.059	0.000	4682.81
T8	80.00-73.33	A	3.209	0.000	0.000	63.675	0.000	1263.20
		B		0.000	0.000	101.361	0.000	2111.38
		C		0.000	0.000	103.805	0.000	2330.55
T9	73.33-60.00	A	3.194	0.000	0.000	130.986	0.000	2593.04
		B		0.000	0.000	208.881	0.000	4352.29
		C		0.000	0.000	206.992	0.000	4631.25
T10	60.00-53.33	A	3.174	0.000	0.000	67.656	0.000	1334.89
		B		0.000	0.000	105.629	0.000	2194.14
		C		0.000	0.000	103.067	0.000	2294.97
T11	53.33-40.00	A	3.145	0.000	0.000	134.481	0.000	2636.42
		B		0.000	0.000	210.026	0.000	4333.36
		C		0.000	0.000	204.921	0.000	4531.99
T12	40.00-33.33	A	3.104	0.000	0.000	66.640	0.000	1294.24
		B		0.000	0.000	104.121	0.000	2127.22
		C		0.000	0.000	101.583	0.000	2224.36
T13	33.33-20.00	A	3.041	0.000	0.000	131.454	0.000	2516.53
		B		0.000	0.000	205.534	0.000	4135.90
		C		0.000	0.000	200.499	0.000	4323.72
T14	20.00-13.33	A	2.936	0.000	0.000	64.204	0.000	1199.41
		B		0.000	0.000	100.507	0.000	1970.95
		C		0.000	0.000	98.026	0.000	2059.65
T15	13.33-0.00	A	2.713	0.000	0.000	121.918	0.000	2157.58
		B		0.000	0.000	191.385	0.000	3543.91
		C		0.000	0.000	186.574	0.000	3700.54

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T1	185.00-180.00	-0.2713	-4.1259	-1.3057	-2.1525
T2	180.00-160.00	-1.4766	-7.8906	-1.0667	-3.7296
T3	160.00-140.00	-7.7786	-2.5097	-4.2311	-1.8241
T4	140.00-120.00	-7.7071	-3.7207	-3.2218	-3.3331
T5	120.00-100.00	-7.3032	-5.0627	-2.7935	-4.2503
T6	100.00-93.33	-6.6503	-4.9722	-1.7076	-4.2123
T7	93.33-80.00	-6.7915	-5.5064	-1.6160	-4.8330
T8	80.00-73.33	-6.9268	-5.9025	-1.6888	-5.6421
T9	73.33-60.00	-6.8033	-6.0681	-1.6520	-6.1593
T10	60.00-53.33	-7.0456	-6.4364	-1.8266	-7.1094
T11	53.33-40.00	-6.8645	-6.2702	-1.7895	-6.8788
T12	40.00-33.33	-7.4159	-6.7731	-1.9829	-7.4855
T13	33.33-20.00	-7.2069	-6.5815	-1.9627	-7.2084
T14	20.00-13.33	-7.5781	-6.9198	-2.2082	-7.7462
T15	13.33-0.00	-7.3032	-6.6682	-2.3178	-7.3688

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	6	1 5/8	180.00 - 185.00	0.6000	0.4003
T1	7	7/8	180.00 - 185.00	0.6000	0.4003
T1	8	3/8	180.00 - 185.00	0.6000	0.4003
T1	9	1/2	180.00 - 185.00	0.6000	0.4003
T1	16	EW63	180.00 - 183.00	0.6000	0.4003
T1	27	Feedline Ladder (Af)	180.00 - 185.00	0.6000	0.4003
T1	28	Feedline Ladder (Af)	180.00 - 185.00	0.6000	0.4003
T2	1	1 5/8	160.00 - 165.00	0.6000	0.6000
T2	2	5/16" Fiberoptic cable	160.00 - 165.00	0.6000	0.6000
T2	3	5/8 power	160.00 - 165.00	0.6000	0.6000
T2	6	1 5/8	160.00 - 180.00	0.6000	0.6000
T2	7	7/8	160.00 - 180.00	0.6000	0.6000
T2	8	3/8	160.00 - 180.00	0.6000	0.6000
T2	9	1/2	160.00 - 180.00	0.6000	0.6000
T2	10	7/8	160.00 - 165.00	0.6000	0.6000
T2	16	EW63	160.00 - 180.00	0.6000	0.6000
T2	17	EW63	160.00 - 172.00	0.6000	0.6000
T2	27	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	28	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.6000
T3	1	1 5/8	140.00 - 160.00	0.6000	0.6000
T3	2	5/16" Fiberoptic cable	140.00 - 160.00	0.6000	0.6000
T3	3	5/8 power	140.00 - 160.00	0.6000	0.6000
T3	4	1 5/8	140.00 - 155.00	0.6000	0.6000
T3	5	1-1/4" Hybrid fiber-power cable	140.00 - 155.00	0.6000	0.6000
T3	6	1 5/8	140.00 - 160.00	0.6000	0.6000
T3	7	7/8	140.00 - 160.00	0.6000	0.6000
T3	8	3/8	140.00 - 160.00	0.6000	0.6000
T3	9	1/2	140.00 - 160.00	0.6000	0.6000
T3	10	7/8	140.00 - 160.00	0.6000	0.6000
T3	16	EW63	140.00 - 160.00	0.6000	0.6000
T3	17	EW63	140.00 - 160.00	0.6000	0.6000
T3	25	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	26	Feedline Ladder (Af)	140.00 - 150.00	0.6000	0.6000
T3	27	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	28	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	29	Safety Line 3/8	140.00 - 160.00	1.0000	1.0000
T4	1	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	2	5/16" Fiberoptic cable	120.00 - 140.00	0.6000	0.6000
T4	3	5/8 power	120.00 - 140.00	0.6000	0.6000
T4	4	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	5	1-1/4" Hybrid fiber-power cable	120.00 - 140.00	0.6000	0.6000
T4	6	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	7	7/8	120.00 - 140.00	0.6000	0.6000
T4	8	3/8	120.00 - 140.00	0.6000	0.6000
T4	9	1/2	120.00 - 140.00	0.6000	0.6000
T4	10	7/8	120.00 - 140.00	0.6000	0.6000
T4	11	7/8	120.00 - 125.00	0.6000	0.6000
T4	16	EW63	120.00 - 140.00	0.6000	0.6000
T4	17	EW63	120.00 - 140.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T4	18	EW63	120.00 - 125.00	0.6000	0.6000
T4	19	EW90	120.00 - 135.00	0.6000	0.6000
T4	20	EW63	120.00 - 135.00	0.6000	0.6000
T4	22	1-1/4" Hybrid fiber-power cable	120.00 - 140.00	0.6000	0.6000
T4	23	Cat 6	120.00 - 140.00	0.6000	0.6000
T4	24	1/4 fiber	120.00 - 140.00	0.6000	0.6000
T4	25	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	26	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	27	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	28	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	29	Safety Line 3/8	120.00 - 140.00	1.0000	1.0000
T5	1	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	2	5/16" Fiberoptic cable	100.00 - 120.00	0.6000	0.6000
T5	3	5/8 power	100.00 - 120.00	0.6000	0.6000
T5	4	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	5	1-1/4" Hybrid fiber-power cable	100.00 - 120.00	0.6000	0.6000
T5	6	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	7	7/8	100.00 - 120.00	0.6000	0.6000
T5	8	3/8	100.00 - 120.00	0.6000	0.6000
T5	9	1/2	100.00 - 120.00	0.6000	0.6000
T5	10	7/8	100.00 - 120.00	0.6000	0.6000
T5	11	7/8	100.00 - 120.00	0.6000	0.6000
T5	12	7/8	100.00 - 110.00	0.6000	0.6000
T5	16	EW63	100.00 - 120.00	0.6000	0.6000
T5	17	EW63	100.00 - 120.00	0.6000	0.6000
T5	18	EW63	100.00 - 120.00	0.6000	0.6000
T5	19	EW90	100.00 - 120.00	0.6000	0.6000
T5	20	EW63	100.00 - 120.00	0.6000	0.6000
T5	22	1-1/4" Hybrid fiber-power cable	100.00 - 120.00	0.6000	0.6000
T5	23	Cat 6	100.00 - 120.00	0.6000	0.6000
T5	24	1/4 fiber	100.00 - 120.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	25	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	26	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	27	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	28	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	29	Safety Line 3/8	100.00 - 120.00	1.0000	1.0000
T6	1	1 5/8	93.33 - 100.00	0.6000	0.6000
T6	2	5/16" Fiberoptic cable	93.33 - 100.00	0.6000	0.6000
T6	3	5/8 power	93.33 - 100.00	0.6000	0.6000
T6	4	1 5/8	93.33 - 100.00	0.6000	0.6000
T6	5	1-1/4" Hybrid fiber-power cable	93.33 - 100.00	0.6000	0.6000
T6	6	1 5/8	93.33 - 100.00	0.6000	0.6000
T6	7	7/8	93.33 - 100.00	0.6000	0.6000
T6	8	3/8	93.33 - 100.00	0.6000	0.6000
T6	9	1/2	93.33 - 100.00	0.6000	0.6000
T6	10	7/8	93.33 - 100.00	0.6000	0.6000
T6	11	7/8	93.33 - 100.00	0.6000	0.6000
T6	12	7/8	93.33 - 100.00	0.6000	0.6000
T6	16	EW63	93.33 - 100.00	0.6000	0.6000
T6	17	EW63	93.33 - 100.00	0.6000	0.6000
T6	18	EW63	93.33 - 100.00	0.6000	0.6000
T6	19	EW90	93.33 - 100.00	0.6000	0.6000
T6	20	EW63	93.33 - 100.00	0.6000	0.6000
T6	21	EW63	93.33 - 100.00	0.6000	0.6000
T6	22	1-1/4" Hybrid fiber-power cable	93.33 - 100.00	0.6000	0.6000
T6	23	Cat 6	93.33 - 100.00	0.6000	0.6000
T6	24	1/4 fiber	93.33 - 100.00	0.6000	0.6000
T6	25	Feedline Ladder (Af)	93.33 - 100.00	0.6000	0.6000
T6	26	Feedline Ladder (Af)	93.33 - 100.00	0.6000	0.6000
T6	27	Feedline Ladder (Af)	93.33 - 100.00	0.6000	0.6000
T6	28	Feedline Ladder (Af)	93.33 - 100.00	0.6000	0.6000
T6	29	Safety Line 3/8	93.33 - 100.00	1.0000	1.0000
T7	1	1 5/8	80.00 - 93.33	0.6000	0.6000
T7	2	5/16" Fiberoptic cable	80.00 - 93.33	0.6000	0.6000
T7	3	5/8 power	80.00 - 93.33	0.6000	0.6000
T7	4	1 5/8	80.00 - 93.33	0.6000	0.6000
T7	5	1-1/4" Hybrid fiber-power cable	80.00 - 93.33	0.6000	0.6000
T7	6	1 5/8	80.00 - 93.33	0.6000	0.6000
T7	7	7/8	80.00 - 93.33	0.6000	0.6000
T7	8	3/8	80.00 - 93.33	0.6000	0.6000
T7	9	1/2	80.00 - 93.33	0.6000	0.6000
T7	10	7/8	80.00 - 93.33	0.6000	0.6000
T7	11	7/8	80.00 - 93.33	0.6000	0.6000
T7	12	7/8	80.00 - 93.33	0.6000	0.6000
T7	13	7/8	80.00 - 88.00	0.6000	0.6000
T7	16	EW63	80.00 - 93.33	0.6000	0.6000
T7	17	EW63	80.00 - 93.33	0.6000	0.6000
T7	18	EW63	80.00 - 93.33	0.6000	0.6000
T7	19	EW90	80.00 - 93.33	0.6000	0.6000
T7	20	EW63	80.00 - 93.33	0.6000	0.6000
T7	21	EW63	80.00 - 93.33	0.6000	0.6000
T7	22	1-1/4" Hybrid fiber-power cable	80.00 - 93.33	0.6000	0.6000
T7	23	Cat 6	80.00 - 93.33	0.6000	0.6000
T7	24	1/4 fiber	80.00 - 93.33	0.6000	0.6000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	25	Feedline Ladder (Af)	80.00 - 93.33	0.6000	0.6000
T7	26	Feedline Ladder (Af)	80.00 - 93.33	0.6000	0.6000
T7	27	Feedline Ladder (Af)	80.00 - 93.33	0.6000	0.6000
T7	28	Feedline Ladder (Af)	80.00 - 93.33	0.6000	0.6000
T7	29	Safety Line 3/8	80.00 - 93.33	1.0000	1.0000
T8	1	1 5/8	73.33 - 80.00	0.6000	0.6000
T8	2	5/16" Fiberoptic cable	73.33 - 80.00	0.6000	0.6000
T8	3	5/8 power	73.33 - 80.00	0.6000	0.6000
T8	4	1 5/8	73.33 - 80.00	0.6000	0.6000
T8	5	1-1/4" Hybrid fiber-power cable	73.33 - 80.00	0.6000	0.6000
T8	6	1 5/8	73.33 - 80.00	0.6000	0.6000
T8	7	7/8	73.33 - 80.00	0.6000	0.6000
T8	8	3/8	73.33 - 80.00	0.6000	0.6000
T8	9	1/2	73.33 - 80.00	0.6000	0.6000
T8	10	7/8	73.33 - 80.00	0.6000	0.6000
T8	11	7/8	73.33 - 80.00	0.6000	0.6000
T8	12	7/8	73.33 - 80.00	0.6000	0.6000
T8	13	7/8	73.33 - 80.00	0.6000	0.6000
T8	16	EW63	73.33 - 80.00	0.6000	0.6000
T8	17	EW63	73.33 - 80.00	0.6000	0.6000
T8	18	EW63	73.33 - 80.00	0.6000	0.6000
T8	19	EW90	73.33 - 80.00	0.6000	0.6000
T8	20	EW63	73.33 - 80.00	0.6000	0.6000
T8	21	EW63	73.33 - 80.00	0.6000	0.6000
T8	22	1-1/4" Hybrid fiber-power cable	73.33 - 80.00	0.6000	0.6000
T8	23	Cat 6	73.33 - 80.00	0.6000	0.6000
T8	24	1/4 fiber	73.33 - 80.00	0.6000	0.6000
T8	25	Feedline Ladder (Af)	73.33 - 80.00	0.6000	0.6000
T8	26	Feedline Ladder (Af)	73.33 - 80.00	0.6000	0.6000
T8	27	Feedline Ladder (Af)	73.33 - 80.00	0.6000	0.6000
T8	28	Feedline Ladder (Af)	73.33 - 80.00	0.6000	0.6000
T8	29	Safety Line 3/8	73.33 - 80.00	1.0000	1.0000
T9	1	1 5/8	60.00 - 73.33	0.6000	0.6000
T9	2	5/16" Fiberoptic cable	60.00 - 73.33	0.6000	0.6000
T9	3	5/8 power	60.00 - 73.33	0.6000	0.6000
T9	4	1 5/8	60.00 - 73.33	0.6000	0.6000
T9	5	1-1/4" Hybrid fiber-power cable	60.00 - 73.33	0.6000	0.6000
T9	6	1 5/8	60.00 - 73.33	0.6000	0.6000
T9	7	7/8	60.00 - 73.33	0.6000	0.6000
T9	8	3/8	60.00 - 73.33	0.6000	0.6000
T9	9	1/2	60.00 - 73.33	0.6000	0.6000
T9	10	7/8	60.00 - 73.33	0.6000	0.6000
T9	11	7/8	60.00 - 73.33	0.6000	0.6000
T9	12	7/8	60.00 - 73.33	0.6000	0.6000
T9	13	7/8	60.00 - 73.33	0.6000	0.6000
T9	14	7/8	60.00 - 69.00	0.6000	0.6000
T9	15	Cat 5e	60.00 - 66.00	0.6000	0.6000
T9	16	EW63	60.00 - 73.33	0.6000	0.6000
T9	17	EW63	60.00 - 73.33	0.6000	0.6000
T9	18	EW63	60.00 - 73.33	0.6000	0.6000
T9	19	EW90	60.00 - 73.33	0.6000	0.6000
T9	20	EW63	60.00 - 73.33	0.6000	0.6000
T9	21	EW63	60.00 - 73.33	0.6000	0.6000
T9	22	1-1/4" Hybrid fiber-power cable	60.00 - 73.33	0.6000	0.6000
T9	23	Cat 6	60.00 - 73.33	0.6000	0.6000
T9	24	1/4 fiber	60.00 - 73.33	0.6000	0.6000
T9	25	Feedline Ladder (Af)	60.00 - 73.33	0.6000	0.6000
T9	26	Feedline Ladder (Af)	60.00 - 73.33	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	27	Feedline Ladder (Af)	60.00 - 73.33	0.6000	0.6000
T9	28	Feedline Ladder (Af)	60.00 - 73.33	0.6000	0.6000
T9	29	Safety Line 3/8	60.00 - 73.33	1.0000	1.0000
T10	1	1 5/8	53.33 - 60.00	0.6000	0.6000
T10	2	5/16" Fiberoptic cable	53.33 - 60.00	0.6000	0.6000
T10	3	5/8 power	53.33 - 60.00	0.6000	0.6000
T10	4	1 5/8	53.33 - 60.00	0.6000	0.6000
T10	5	1-1/4" Hybrid fiber-power cable	53.33 - 60.00	0.6000	0.6000
T10	6	1 5/8	53.33 - 60.00	0.6000	0.6000
T10	7	7/8	53.33 - 60.00	0.6000	0.6000
T10	8	3/8	53.33 - 60.00	0.6000	0.6000
T10	9	1/2	53.33 - 60.00	0.6000	0.6000
T10	10	7/8	53.33 - 60.00	0.6000	0.6000
T10	11	7/8	53.33 - 60.00	0.6000	0.6000
T10	12	7/8	53.33 - 60.00	0.6000	0.6000
T10	13	7/8	53.33 - 60.00	0.6000	0.6000
T10	14	7/8	53.33 - 60.00	0.6000	0.6000
T10	15	Cat 5e	53.33 - 60.00	0.6000	0.6000
T10	16	EW63	53.33 - 60.00	0.6000	0.6000
T10	17	EW63	53.33 - 60.00	0.6000	0.6000
T10	18	EW63	53.33 - 60.00	0.6000	0.6000
T10	19	EW90	53.33 - 60.00	0.6000	0.6000
T10	20	EW63	53.33 - 60.00	0.6000	0.6000
T10	21	EW63	53.33 - 60.00	0.6000	0.6000
T10	22	1-1/4" Hybrid fiber-power cable	53.33 - 60.00	0.6000	0.6000
T10	23	Cat 6	53.33 - 60.00	0.6000	0.6000
T10	24	1/4 fiber	53.33 - 60.00	0.6000	0.6000
T10	25	Feedline Ladder (Af)	53.33 - 60.00	0.6000	0.6000
T10	26	Feedline Ladder (Af)	53.33 - 60.00	0.6000	0.6000
T10	27	Feedline Ladder (Af)	53.33 - 60.00	0.6000	0.6000
T10	28	Feedline Ladder (Af)	53.33 - 60.00	0.6000	0.6000
T10	29	Safety Line 3/8	53.33 - 60.00	1.0000	1.0000
T11	1	1 5/8	40.00 - 53.33	0.6000	0.6000
T11	2	5/16" Fiberoptic cable	40.00 - 53.33	0.6000	0.6000
T11	3	5/8 power	40.00 - 53.33	0.6000	0.6000
T11	4	1 5/8	40.00 - 53.33	0.6000	0.6000
T11	5	1-1/4" Hybrid fiber-power cable	40.00 - 53.33	0.6000	0.6000
T11	6	1 5/8	40.00 - 53.33	0.6000	0.6000
T11	7	7/8	40.00 - 53.33	0.6000	0.6000
T11	8	3/8	40.00 - 53.33	0.6000	0.6000
T11	9	1/2	40.00 - 53.33	0.6000	0.6000
T11	10	7/8	40.00 - 53.33	0.6000	0.6000
T11	11	7/8	40.00 - 53.33	0.6000	0.6000
T11	12	7/8	40.00 - 53.33	0.6000	0.6000
T11	13	7/8	40.00 - 53.33	0.6000	0.6000
T11	14	7/8	40.00 - 53.33	0.6000	0.6000
T11	15	Cat 5e	40.00 - 53.33	0.6000	0.6000
T11	16	EW63	40.00 - 53.33	0.6000	0.6000
T11	17	EW63	40.00 - 53.33	0.6000	0.6000
T11	18	EW63	40.00 - 53.33	0.6000	0.6000
T11	19	EW90	40.00 - 53.33	0.6000	0.6000
T11	20	EW63	40.00 - 53.33	0.6000	0.6000
T11	21	EW63	40.00 - 53.33	0.6000	0.6000
T11	22	1-1/4" Hybrid fiber-power cable	40.00 - 53.33	0.6000	0.6000
T11	23	Cat 6	40.00 - 53.33	0.6000	0.6000
T11	24	1/4 fiber	40.00 - 53.33	0.6000	0.6000
T11	25	Feedline Ladder (Af)	40.00 - 53.33	0.6000	0.6000
T11	26	Feedline Ladder (Af)	40.00 - 53.33	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T11	27	Feedline Ladder (Af)	40.00 - 53.33	0.6000	0.6000
T11	28	Feedline Ladder (Af)	40.00 - 53.33	0.6000	0.6000
T11	29	Safety Line 3/8	40.00 - 53.33	1.0000	1.0000
T12	1	1 5/8	33.33 - 40.00	0.6000	0.6000
T12	2	5/16" Fiberoptic cable	33.33 - 40.00	0.6000	0.6000
T12	3	5/8 power	33.33 - 40.00	0.6000	0.6000
T12	4	1 5/8	33.33 - 40.00	0.6000	0.6000
T12	5	1-1/4" Hybrid fiber-power cable	33.33 - 40.00	0.6000	0.6000
T12	6	1 5/8	33.33 - 40.00	0.6000	0.6000
T12	7	7/8	33.33 - 40.00	0.6000	0.6000
T12	8	3/8	33.33 - 40.00	0.6000	0.6000
T12	9	1/2	33.33 - 40.00	0.6000	0.6000
T12	10	7/8	33.33 - 40.00	0.6000	0.6000
T12	11	7/8	33.33 - 40.00	0.6000	0.6000
T12	12	7/8	33.33 - 40.00	0.6000	0.6000
T12	13	7/8	33.33 - 40.00	0.6000	0.6000
T12	14	7/8	33.33 - 40.00	0.6000	0.6000
T12	15	Cat 5e	33.33 - 40.00	0.6000	0.6000
T12	16	EW63	33.33 - 40.00	0.6000	0.6000
T12	17	EW63	33.33 - 40.00	0.6000	0.6000
T12	18	EW63	33.33 - 40.00	0.6000	0.6000
T12	19	EW90	33.33 - 40.00	0.6000	0.6000
T12	20	EW63	33.33 - 40.00	0.6000	0.6000
T12	21	EW63	33.33 - 40.00	0.6000	0.6000
T12	22	1-1/4" Hybrid fiber-power cable	33.33 - 40.00	0.6000	0.6000
T12	23	Cat 6	33.33 - 40.00	0.6000	0.6000
T12	24	1/4 fiber	33.33 - 40.00	0.6000	0.6000
T12	25	Feedline Ladder (Af)	33.33 - 40.00	0.6000	0.6000
T12	26	Feedline Ladder (Af)	33.33 - 40.00	0.6000	0.6000
T12	27	Feedline Ladder (Af)	33.33 - 40.00	0.6000	0.6000
T12	28	Feedline Ladder (Af)	33.33 - 40.00	0.6000	0.6000
T12	29	Safety Line 3/8	33.33 - 40.00	1.0000	1.0000
T13	1	1 5/8	20.00 - 33.33	0.6000	0.6000
T13	2	5/16" Fiberoptic cable	20.00 - 33.33	0.6000	0.6000
T13	3	5/8 power	20.00 - 33.33	0.6000	0.6000
T13	4	1 5/8	20.00 - 33.33	0.6000	0.6000
T13	5	1-1/4" Hybrid fiber-power cable	20.00 - 33.33	0.6000	0.6000
T13	6	1 5/8	20.00 - 33.33	0.6000	0.6000
T13	7	7/8	20.00 - 33.33	0.6000	0.6000
T13	8	3/8	20.00 - 33.33	0.6000	0.6000
T13	9	1/2	20.00 - 33.33	0.6000	0.6000
T13	10	7/8	20.00 - 33.33	0.6000	0.6000
T13	11	7/8	20.00 - 33.33	0.6000	0.6000
T13	12	7/8	20.00 - 33.33	0.6000	0.6000
T13	13	7/8	20.00 - 33.33	0.6000	0.6000
T13	14	7/8	20.00 - 33.33	0.6000	0.6000
T13	15	Cat 5e	20.00 - 33.33	0.6000	0.6000
T13	16	EW63	20.00 - 33.33	0.6000	0.6000
T13	17	EW63	20.00 - 33.33	0.6000	0.6000
T13	18	EW63	20.00 - 33.33	0.6000	0.6000
T13	19	EW90	20.00 - 33.33	0.6000	0.6000
T13	20	EW63	20.00 - 33.33	0.6000	0.6000
T13	21	EW63	20.00 - 33.33	0.6000	0.6000
T13	22	1-1/4" Hybrid fiber-power cable	20.00 - 33.33	0.6000	0.6000
T13	23	Cat 6	20.00 - 33.33	0.6000	0.6000
T13	24	1/4 fiber	20.00 - 33.33	0.6000	0.6000
T13	25	Feedline Ladder (Af)	20.00 - 33.33	0.6000	0.6000
T13	26	Feedline Ladder (Af)	20.00 - 33.33	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T13	27	Feedline Ladder (Af)	20.00 - 33.33	0.6000	0.6000
T13	28	Feedline Ladder (Af)	20.00 - 33.33	0.6000	0.6000
T13	29	Safety Line 3/8	20.00 - 33.33	1.0000	1.0000
T14	1	1 5/8	13.33 - 20.00	0.6000	0.6000
T14	2	5/16" Fiberoptic cable	13.33 - 20.00	0.6000	0.6000
T14	3	5/8 power	13.33 - 20.00	0.6000	0.6000
T14	4	1 5/8	13.33 - 20.00	0.6000	0.6000
T14	5	1-1/4" Hybrid fiber-power cable	13.33 - 20.00	0.6000	0.6000
T14	6	1 5/8	13.33 - 20.00	0.6000	0.6000
T14	7	7/8	13.33 - 20.00	0.6000	0.6000
T14	8	3/8	13.33 - 20.00	0.6000	0.6000
T14	9	1/2	13.33 - 20.00	0.6000	0.6000
T14	10	7/8	13.33 - 20.00	0.6000	0.6000
T14	11	7/8	13.33 - 20.00	0.6000	0.6000
T14	12	7/8	13.33 - 20.00	0.6000	0.6000
T14	13	7/8	13.33 - 20.00	0.6000	0.6000
T14	14	7/8	13.33 - 20.00	0.6000	0.6000
T14	15	Cat 5e	13.33 - 20.00	0.6000	0.6000
T14	16	EW63	13.33 - 20.00	0.6000	0.6000
T14	17	EW63	13.33 - 20.00	0.6000	0.6000
T14	18	EW63	13.33 - 20.00	0.6000	0.6000
T14	19	EW90	13.33 - 20.00	0.6000	0.6000
T14	20	EW63	13.33 - 20.00	0.6000	0.6000
T14	21	EW63	13.33 - 20.00	0.6000	0.6000
T14	22	1-1/4" Hybrid fiber-power cable	13.33 - 20.00	0.6000	0.6000
T14	23	Cat 6	13.33 - 20.00	0.6000	0.6000
T14	24	1/4 fiber	13.33 - 20.00	0.6000	0.6000
T14	25	Feedline Ladder (Af)	13.33 - 20.00	0.6000	0.6000
T14	26	Feedline Ladder (Af)	13.33 - 20.00	0.6000	0.6000
T14	27	Feedline Ladder (Af)	13.33 - 20.00	0.6000	0.6000
T14	28	Feedline Ladder (Af)	13.33 - 20.00	0.6000	0.6000
T14	29	Safety Line 3/8	13.33 - 20.00	1.0000	1.0000
T15	1	1 5/8	0.00 - 13.33	0.6000	0.6000
T15	2	5/16" Fiberoptic cable	0.00 - 13.33	0.6000	0.6000
T15	3	5/8 power	0.00 - 13.33	0.6000	0.6000
T15	4	1 5/8	0.00 - 13.33	0.6000	0.6000
T15	5	1-1/4" Hybrid fiber-power cable	0.00 - 13.33	0.6000	0.6000
T15	6	1 5/8	0.00 - 13.33	0.6000	0.6000
T15	7	7/8	0.00 - 13.33	0.6000	0.6000
T15	8	3/8	0.00 - 13.33	0.6000	0.6000
T15	9	1/2	0.00 - 13.33	0.6000	0.6000
T15	10	7/8	0.00 - 13.33	0.6000	0.6000
T15	11	7/8	0.00 - 13.33	0.6000	0.6000
T15	12	7/8	0.00 - 13.33	0.6000	0.6000
T15	13	7/8	0.00 - 13.33	0.6000	0.6000
T15	14	7/8	0.00 - 13.33	0.6000	0.6000
T15	15	Cat 5e	0.00 - 13.33	0.6000	0.6000
T15	16	EW63	0.00 - 13.33	0.6000	0.6000
T15	17	EW63	0.00 - 13.33	0.6000	0.6000
T15	18	EW63	0.00 - 13.33	0.6000	0.6000
T15	19	EW90	0.00 - 13.33	0.6000	0.6000
T15	20	EW63	0.00 - 13.33	0.6000	0.6000
T15	21	EW63	0.00 - 13.33	0.6000	0.6000
T15	22	1-1/4" Hybrid fiber-power cable	0.00 - 13.33	0.6000	0.6000
T15	23	Cat 6	0.00 - 13.33	0.6000	0.6000
T15	24	1/4 fiber	0.00 - 13.33	0.6000	0.6000
T15	25	Feedline Ladder (Af)	0.00 - 13.33	0.6000	0.6000
T15	26	Feedline Ladder (Af)	0.00 - 13.33	0.6000	0.6000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T15	27	Feedline Ladder (Af)	0.00 - 13.33	0.6000	0.6000
T15	28	Feedline Ladder (Af)	0.00 - 13.33	0.6000	0.6000
T15	29	Safety Line 3/8	0.00 - 13.33	1.0000	1.0000

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 lb
LED beacon (NU)	C	None		0.0000	185.00	No Ice	0.40	0.40	30.00
						1/2" Ice	0.68	0.68	43.19
						1" Ice	0.80	0.80	58.50
20' x 3" omni whip (NU)	B	From Leg	1.00 / 1.00 / 10.00	0.0000	185.00	No Ice	5.01	5.01	50.00
						1/2" Ice	8.03	8.03	93.17
						1" Ice	10.08	10.08	149.01
Tower Top Amplifier (NU)	B	From Leg	1.00 / 1.00 / 0.00	0.0000	185.00	No Ice	3.11	1.17	40.00
						1/2" Ice	3.35	1.34	58.76
						1" Ice	3.60	1.52	80.44
Telewave ANT450F10	A	From Leg	1.00 / -1.00 / 10.00	0.0000	185.00	No Ice	5.08	5.08	41.00
						1/2" Ice	7.15	7.15	78.57
						1" Ice	9.22	9.22	128.98
20' 8 Bay Dipole (Bloomfield PD)	C	From Leg	1.00 / 1.00 / 10.00	0.0000	185.00	No Ice	4.00	4.00	55.00
						1/2" Ice	6.00	6.00	100.00
						1" Ice	8.00	8.00	145.00
14' x 3" Dia Omni (NU)	C	From Leg	1.00 / -1.00 / 7.00	0.0000	185.00	No Ice	4.20	4.20	40.00
						1/2" Ice	5.63	5.63	70.34
						1" Ice	7.08	7.08	109.69
6'x4 1/2" Pipe Mount (NU)	A	From Leg	0.50 / 0.00 / 0.00	0.0000	183.00	No Ice	1.46	1.46	64.70
						1/2" Ice	2.62	2.62	83.80
						1" Ice	3.00	3.00	107.17
6'x4 1/2" Pipe Mount (NU)	B	From Leg	0.50 / 0.00 / 0.00	0.0000	183.00	No Ice	1.46	1.46	64.70
						1/2" Ice	2.62	2.62	83.80
						1" Ice	3.00	3.00	107.17
6'x4 1/2" Pipe Mount (NU)	C	From Leg	0.50 / 0.00 / 0.00	0.0000	183.00	No Ice	1.46	1.46	64.70
						1/2" Ice	2.62	2.62	83.80
						1" Ice	3.00	3.00	107.17
6'x4 1/2" Pipe Mount (NU)	A	From Leg	0.50 / 0.00 / 0.00	0.0000	172.00	No Ice	1.45	1.45	64.70
						1/2" Ice	2.62	2.62	83.80
						1" Ice	3.00	3.00	107.17
6'x4 1/2" Pipe Mount (NU)	B	From Leg	0.50 / 0.00 / 0.00	0.0000	171.00	No Ice	1.45	1.45	64.70
						1/2" Ice	2.62	2.62	83.80
						1" Ice	3.00	3.00	107.17
6'x4 1/2" Pipe Mount (NU)	C	From Leg	0.50 / 0.00 / 0.00	0.0000	171.00	No Ice	1.45	1.45	64.70
						1/2" Ice	2.62	2.62	83.80
						1" Ice	3.00	3.00	107.17
3' x 6' Paraflactor (Simsbury PD)	C	From Leg	0.50 / 0.00 / 0.00	0.0000	165.00	No Ice	6.35	6.35	38.00
						1/2" Ice	11.43	11.43	49.40
						1" Ice	16.51	16.51	60.80
6'x3" Pipe Mount (Simsbury PD)	C	From Leg	0.50 / 0.00 / 0.00	0.0000	165.00	No Ice	1.77	1.77	30.00
						1/2" Ice	2.13	2.13	47.98
						1" Ice	2.50	2.50	65.33
Telewave ANT450F10 (NU)	A	From Leg	1.00 / 0.00 / 0.00	0.0000	185.00 - 165.00	No Ice	5.08	5.08	41.00
						1/2" Ice	7.15	7.15	78.57
						1" Ice	9.22	9.22	128.98
ROHN 3-ft Side Arm (NU)	A	From Leg	1.50 / 0.00	0.0000	165.00	No Ice	3.10	3.10	70.00
						1/2" Ice	5.00	5.00	100.00

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 lb
			0.00			1" Ice	6.90	6.90	130.00
SBNH-1D8585C (AT&T)	A	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	55.00 120.87 194.41
SBNH-1D8585C (AT&T)	B	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	55.00 120.87 194.41
SBNH-1D8585C (AT&T)	C	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	55.00 120.87 194.41
(2) OPA-65R-LCUU-H8 (AT&T)	A	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	12.75 13.33 13.92	7.25 7.82 8.40	90.00 161.29 240.16
(2) OPA-65R-LCUU-H8 (AT&T)	B	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	12.75 13.33 13.92	7.25 7.82 8.40	90.00 161.29 240.16
(2) OPA-65R-LCUU-H8 (AT&T)	C	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	12.75 13.33 13.92	7.25 7.82 8.40	90.00 161.29 240.16
RRUS-11 (AT&T)	A	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	2.99 3.23 3.47	1.25 1.41 1.59	50.00 69.57 92.08
RRUS-11 (AT&T)	B	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	2.99 3.23 3.47	1.25 1.41 1.59	50.00 69.57 92.08
RRUS-11 (AT&T)	C	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	2.99 3.23 3.47	1.25 1.41 1.59	50.00 69.57 92.08
RRUS-12 (AT&T)	A	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	3.67 3.93 4.19	1.49 1.67 1.87	60.00 81.22 107.65
RRUS-12 (AT&T)	B	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	3.67 3.93 4.19	1.49 1.67 1.87	60.00 81.22 107.65
RRUS-12 (AT&T)	C	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	3.67 3.93 4.19	1.49 1.67 1.87	60.00 81.22 107.65
RRUS-32 (AT&T)	A	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	3.87 4.15 4.44	2.76 3.02 3.29	80.00 104.93 136.47
RRUS-32 (AT&T)	B	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	3.87 4.15 4.44	2.76 3.02 3.29	80.00 104.93 136.47
RRUS-32 (AT&T)	C	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	3.87 4.15 4.44	2.76 3.02 3.29	80.00 104.93 136.47
RRUS-E2 (AT&T)	A	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	3.67 3.93 4.19	1.49 1.67 1.87	60.00 81.22 107.65
RRUS-E2 (AT&T)	B	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	3.67 3.93 4.19	1.49 1.67 1.87	60.00 81.22 107.65
RRUS-E2 (AT&T)	C	From Leg	3.00 0.00 0.00	0.0000	165.00	No Ice 1/2" Ice 1" Ice	3.67 3.93 4.19	1.49 1.67 1.87	60.00 81.22 107.65
A2 (AT&T)	A	From Leg	3.00 0.00	0.0000	165.00	No Ice 1/2" Ice	2.42 2.63	0.54 0.67	20.00 34.73

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	2.85	0.82	49.92
A2	B	From Leg	3.00	0.0000	165.00	No Ice	2.42	0.54	20.00
(AT&T)			0.00			1/2" Ice	2.63	0.67	34.73
			0.00			1" Ice	2.85	0.82	49.92
A2	C	From Leg	3.00	0.0000	165.00	No Ice	2.42	0.54	20.00
(AT&T)			0.00			1/2" Ice	2.63	0.67	34.73
			0.00			1" Ice	2.85	0.82	49.92
E15Z01P13	A	From Leg	3.00	0.0000	165.00	No Ice	0.91	0.70	20.00
(AT&T)			0.00			1/2" Ice	1.05	0.82	31.50
			0.00			1" Ice	1.19	0.95	40.86
E15Z01P13	B	From Leg	3.00	0.0000	165.00	No Ice	0.91	0.70	20.00
(AT&T)			0.00			1/2" Ice	1.05	0.82	31.50
			0.00			1" Ice	1.19	0.95	40.86
E15Z01P13	C	From Leg	3.00	0.0000	165.00	No Ice	0.91	0.70	20.00
(AT&T)			0.00			1/2" Ice	1.05	0.82	31.50
			0.00			1" Ice	1.19	0.95	40.86
DC6-48-60-18-8F Surge	A	From Leg	3.00	0.0000	165.00	No Ice	2.23	2.23	20.00
Arrestor			0.00			1/2" Ice	2.45	2.45	39.36
(AT&T)			0.00			1" Ice	2.68	2.68	61.70
Rohn 6' x 12' Boom Gate (1)	A	From Leg	1.50	0.0000	165.00	No Ice	16.60	16.60	560.00
(AT&T)			0.00			1/2" Ice	19.80	19.80	700.00
			0.00			1" Ice	23.00	23.00	840.00
Rohn 6' x 12' Boom Gate (1)	B	From Leg	1.50	0.0000	165.00	No Ice	16.60	16.60	560.00
(AT&T)			0.00			1/2" Ice	19.80	19.80	700.00
			0.00			1" Ice	23.00	23.00	840.00
Rohn 6' x 12' Boom Gate (1)	C	From Leg	1.50	0.0000	165.00	No Ice	16.60	16.60	560.00
(AT&T)			0.00			1/2" Ice	19.80	19.80	700.00
			0.00			1" Ice	23.00	23.00	840.00
(2) HBXX-6517DS	A	From Leg	3.00	0.0000	155.00	No Ice	8.53	5.24	45.00
(Verizon)			0.00			1/2" Ice	9.00	5.71	95.49
			0.00			1" Ice	9.48	6.18	152.23
(2) HBXX-6517DS	B	From Leg	3.00	0.0000	155.00	No Ice	8.53	5.24	45.00
(Verizon)			0.00			1/2" Ice	9.00	5.71	95.49
			0.00			1" Ice	9.48	6.18	152.23
(2) HBXX-6517DS	C	From Leg	3.00	0.0000	155.00	No Ice	8.53	5.24	45.00
(Verizon)			0.00			1/2" Ice	9.00	5.71	95.49
			0.00			1" Ice	9.48	6.18	152.23
(2) LNX-6514DS-VTM	A	From Leg	3.00	0.0000	155.00	No Ice	8.17	4.17	30.00
(Verizon)			0.00			1/2" Ice	8.63	4.61	74.68
			0.00			1" Ice	9.10	5.07	125.36
(2) LNX-6514DS-VTM	B	From Leg	3.00	0.0000	155.00	No Ice	8.17	4.17	30.00
(Verizon)			0.00			1/2" Ice	8.63	4.61	74.68
			0.00			1" Ice	9.10	5.07	125.36
(2) LNX-6514DS-VTM	C	From Leg	3.00	0.0000	155.00	No Ice	8.17	4.17	30.00
(Verizon)			0.00			1/2" Ice	8.63	4.61	74.68
			0.00			1" Ice	9.10	5.07	125.36
RRH2x40-AWS	A	From Leg	3.00	0.0000	155.00	No Ice	2.52	1.59	40.00
(Verizon)			0.00			1/2" Ice	2.75	1.80	61.40
			0.00			1" Ice	2.99	2.01	81.69
RRH2x40-AWS	B	From Leg	3.00	0.0000	155.00	No Ice	2.52	1.59	40.00
(Verizon)			0.00			1/2" Ice	2.75	1.80	61.40
			0.00			1" Ice	2.99	2.01	81.69
RRH2x40-AWS	C	From Leg	3.00	0.0000	155.00	No Ice	2.52	1.59	40.00
(Verizon)			0.00			1/2" Ice	2.75	1.80	61.40
			0.00			1" Ice	2.99	2.01	81.69
RRH2x40-07-U	A	From Leg	3.00	0.0000	155.00	No Ice	2.25	1.23	50.00
(Verizon)			0.00			1/2" Ice	2.45	1.39	66.85

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 lb
			0.00			1" Ice	2.66	1.55	86.39
RRH2x40-07-U	B	From Leg	3.00	0.0000	155.00	No Ice	2.25	1.23	50.00
(Verizon)			0.00			1/2" Ice	2.45	1.39	66.85
			0.00			1" Ice	2.66	1.55	86.39
RRH2x40-07-U	C	From Leg	3.00	0.0000	155.00	No Ice	2.25	1.23	50.00
(Verizon)			0.00			1/2" Ice	2.45	1.39	66.85
			0.00			1" Ice	2.66	1.55	86.39
ALU B66a	A	From Leg	3.00	0.0000	155.00	No Ice	2.58	1.63	80.00
RRH4x45w/bracket			0.00			1/2" Ice	2.79	1.81	100.47
(Verizon)			0.00			1" Ice	3.01	2.00	124.06
ALU B66a	B	From Leg	3.00	0.0000	155.00	No Ice	2.58	1.63	80.00
RRH4x45w/bracket			0.00			1/2" Ice	2.79	1.81	100.47
(Verizon)			0.00			1" Ice	3.01	2.00	124.06
ALU B66a	C	From Leg	3.00	0.0000	155.00	No Ice	2.58	1.63	80.00
RRH4x45w/bracket			0.00			1/2" Ice	2.79	1.81	100.47
(Verizon)			0.00			1" Ice	3.01	2.00	124.06
DB-T1-6Z-8AB-0Z	A	From Leg	3.00	0.0000	155.00	No Ice	5.60	2.33	40.00
(Verizon)			0.00			1/2" Ice	5.92	2.56	80.13
			0.00			1" Ice	6.24	2.79	120.22
DB-T1-6Z-8AB-0Z	B	From Leg	3.00	0.0000	155.00	No Ice	5.60	2.33	40.00
(Verizon)			0.00			1/2" Ice	5.92	2.56	80.13
			0.00			1" Ice	6.24	2.79	120.22
Rohn 6' x 12' Boom Gate (1)	A	From Leg	1.50	0.0000	155.00	No Ice	16.60	16.60	560.00
(Verizon)			0.00			1/2" Ice	19.80	19.80	700.00
			0.00			1" Ice	23.00	23.00	840.00
Rohn 6' x 12' Boom Gate (1)	B	From Leg	1.50	0.0000	155.00	No Ice	16.60	16.60	560.00
(Verizon)			0.00			1/2" Ice	19.80	19.80	700.00
			0.00			1" Ice	23.00	23.00	840.00
Rohn 6' x 12' Boom Gate (1)	C	From Leg	1.50	0.0000	155.00	No Ice	16.60	16.60	560.00
(Verizon)			0.00			1/2" Ice	19.80	19.80	700.00
			0.00			1" Ice	23.00	23.00	840.00
APXV18-206516	A	From Leg	4.00	0.0000	140.00	No Ice	3.57	2.00	15.00
(T-Mobile)			0.00			1/2" Ice	3.91	2.33	34.86
			0.00			1" Ice	4.25	2.66	58.99
APXV18-206516	B	From Leg	4.00	0.0000	140.00	No Ice	3.57	2.00	15.00
(T-Mobile)			0.00			1/2" Ice	3.91	2.33	34.86
			0.00			1" Ice	4.25	2.66	58.99
APXV18-206516	C	From Leg	4.00	0.0000	140.00	No Ice	3.57	2.00	15.00
(T-Mobile)			0.00			1/2" Ice	3.91	2.33	34.86
			0.00			1" Ice	4.25	2.66	58.99
APXV18-206517	A	From Leg	4.00	0.0000	140.00	No Ice	5.17	3.04	30.00
(T-Mobile)			0.00			1/2" Ice	5.62	3.47	56.60
			0.00			1" Ice	6.08	3.91	88.70
APXV18-206517	B	From Leg	4.00	0.0000	140.00	No Ice	5.17	3.04	30.00
(T-Mobile)			0.00			1/2" Ice	5.62	3.47	56.60
			0.00			1" Ice	6.08	3.91	88.70
APXV18-206517	C	From Leg	4.00	0.0000	140.00	No Ice	5.17	3.04	30.00
(T-Mobile)			0.00			1/2" Ice	5.62	3.47	56.60
			0.00			1" Ice	6.08	3.91	88.70
LNX-6515DS-T4M	A	From Leg	4.00	0.0000	140.00	No Ice	11.39	7.66	50.00
(T-Mobile)			0.00			1/2" Ice	12.01	8.25	115.61
			0.00			1" Ice	12.63	8.84	188.87
LNX-6515DS-T4M	B	From Leg	4.00	0.0000	140.00	No Ice	11.39	7.66	50.00
(T-Mobile)			0.00			1/2" Ice	12.01	8.25	115.61
			0.00			1" Ice	12.63	8.84	188.87
LNX-6515DS-T4M	C	From Leg	4.00	0.0000	140.00	No Ice	11.39	7.66	50.00
(T-Mobile)			0.00			1/2" Ice	12.01	8.25	115.61

All-Points Technology Corporation
116 Grandview Road
Conway, NH 03818
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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 lb
			0.00			1" Ice	12.63	8.84	188.87
(2) Ericsson RRUS-11 (T-Mobile)	A	From Leg	3.50	0.0000	140.00	No Ice	2.79	1.02	55.00
			0.00			1/2" Ice	3.00	1.16	75.86
			0.00			1" Ice	3.21	1.30	99.77
(2) Ericsson RRUS-11 (T-Mobile)	B	From Leg	3.50	0.0000	140.00	No Ice	2.79	1.02	55.00
			0.00			1/2" Ice	3.00	1.16	75.86
			0.00			1" Ice	3.21	1.30	99.77
(2) Ericsson RRUS-11 (T-Mobile)	C	From Leg	3.50	0.0000	140.00	No Ice	2.79	1.02	55.00
			0.00			1/2" Ice	3.00	1.16	75.86
			0.00			1" Ice	3.21	1.30	99.77
T-Mobile Mini-Squid (T-Mobile)	C	None		0.0000	140.00	No Ice	0.13	0.13	4.00
						1/2" Ice	0.24	0.24	6.69
						1" Ice	0.31	0.31	10.38
Fastback IBR 1300 (T-Mobile)	B	From Leg	4.00	0.0000	140.00	No Ice	0.67	0.31	10.00
			0.00			1/2" Ice	0.78	0.38	15.42
			0.00			1" Ice	0.89	0.47	22.44
4'x2 7/8" Pipe Mount (T-Mobile)	B	From Leg	4.00	0.0000	140.00	No Ice	0.87	0.87	23.20
			0.00			1/2" Ice	1.22	1.22	31.83
			0.00			1" Ice	1.48	1.48	43.35
12' T-frame sector mnt	A	From Leg	2.00	0.0000	140.00	No Ice	10.20	5.10	600.00
			0.00			1/2" Ice	13.80	6.90	750.00
			0.00			1" Ice	17.40	8.70	900.00
12' T-frame sector mnt	B	From Leg	2.00	0.0000	140.00	No Ice	10.20	5.10	600.00
			0.00			1/2" Ice	13.80	6.90	750.00
			0.00			1" Ice	17.40	8.70	900.00
12' T-frame sector mnt	C	From Leg	2.00	0.0000	140.00	No Ice	10.20	5.10	600.00
			0.00			1/2" Ice	13.80	6.90	750.00
			0.00			1" Ice	17.40	8.70	900.00
4'x4 1/2" Pipe Mount (NU)	B	From Leg	0.50	0.0000	135.00	No Ice	0.95	0.95	43.10
			0.00			1/2" Ice	1.58	1.58	56.09
			0.00			1" Ice	1.84	1.84	72.13
6'x4 1/2" Pipe Mount (NU)	B	From Leg	0.50	0.0000	125.00	No Ice	1.44	1.44	64.70
			0.00			1/2" Ice	2.62	2.62	83.80
			0.00			1" Ice	3.00	3.00	107.17
20' x 3" Dia Omni (NU)	C	From Leg	6.00	0.0000	145.00 - 125.00	No Ice	6.00	6.00	50.00
			0.00			1/2" Ice	8.03	8.03	93.17
			0.00			1" Ice	10.08	10.08	149.01
Rohn 6' Side-Arm(1) (NU)	C	From Leg	3.00	0.0000	125.00	No Ice	10.60	10.60	140.00
			0.00			1/2" Ice	15.40	15.40	212.00
			0.00			1" Ice	20.20	20.20	284.00
Rohn 6' Side-Arm(1) (NU)	A	From Leg	3.00	0.0000	125.00	No Ice	10.60	10.60	140.00
			0.00			1/2" Ice	15.40	15.40	212.00
			0.00			1" Ice	20.20	20.20	284.00
12' single dipole (NU)	A	From Leg	6.00	0.0000	125.00	No Ice	2.25	2.25	30.00
			0.00			1/2" Ice	4.83	4.83	51.65
			0.00			1" Ice	7.43	7.43	89.22
12' Dipole (NU)	A	From Leg	6.00	0.0000	111.00	No Ice	6.00	6.00	70.00
			0.00			1/2" Ice	8.00	8.00	90.00
			6.00			1" Ice	10.00	10.00	110.00
Rohn 6' Side-Arm(1) (NU)	A	From Leg	3.00	0.0000	109.00	No Ice	10.60	10.60	140.00
			0.00			1/2" Ice	15.40	15.40	212.00
			0.00			1" Ice	20.20	20.20	284.00
14' x 3" Dia Omni (NU)	B	From Leg	6.00	0.0000	114.50	No Ice	4.20	4.20	40.00
			0.00			1/2" Ice	5.63	5.63	70.34
			7.00			1" Ice	7.08	7.08	109.69
Rohn 6' Side-Arm(1) (NU)	C	From Leg	3.00	0.0000	108.00	No Ice	10.60	10.60	140.00
			0.00			1/2" Ice	15.40	15.40	212.00

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 lb
			0.00				1" Ice	20.20	20.20	284.00
Obstruction light (NU)	A	From Leg	0.50	0.00	0.0000	103.00	No Ice	0.12	0.12	8.00
			0.00				1/2" Ice	0.22	0.22	10.47
			0.00				1" Ice	0.29	0.29	13.91
Obstruction light (NU)	B	From Leg	0.50	0.00	0.0000	103.00	No Ice	0.12	0.12	8.00
			0.00				1/2" Ice	0.22	0.22	10.47
			0.00				1" Ice	0.29	0.29	13.91
Obstruction light (NU)	C	From Leg	0.50	0.00	0.0000	103.00	No Ice	0.12	0.12	8.00
			0.00				1/2" Ice	0.22	0.22	10.47
			0.00				1" Ice	0.29	0.29	13.91
6'x4 1/2" Pipe Mount (NU)	B	From Leg	0.50	0.00	0.0000	100.00	No Ice	1.44	1.44	64.70
			0.00				1/2" Ice	2.62	2.62	83.80
			0.00				1" Ice	3.00	3.00	107.17
3' x 2" omni whip (NU)	B	From Face	3.00	0.00	0.0000	92.00 - 89.00	No Ice	0.52	0.52	15.00
			0.00				1/2" Ice	0.71	0.71	19.81
			0.00				1" Ice	0.90	0.90	26.81
3' sidearm (NU)	B	From Leg	1.50	0.00	0.0000	89.00	No Ice	1.43	0.72	30.00
			0.00				1/2" Ice	2.18	1.09	65.00
			0.00				1" Ice	2.93	1.47	105.00
12' Dipole (NU)	A	From Leg	6.00	0.00	0.0000	87.00	No Ice	6.00	6.00	70.00
			0.00				1/2" Ice	8.00	8.00	90.00
			6.00				1" Ice	10.00	10.00	110.00
Rohn 6' Side-Arm(1) (NU)	A	From Leg	3.00	0.00	0.0000	87.00	No Ice	10.60	10.60	140.00
			0.00				1/2" Ice	15.40	15.40	212.00
			0.00				1" Ice	20.20	20.20	284.00
10' 4-bay dipole (NU)	B	From Leg	6.00	0.00	0.0000	79.00 - 69.00	No Ice	2.46	2.46	75.00
			0.00				1/2" Ice	3.53	3.53	93.64
			0.00				1" Ice	4.58	4.58	118.79
6' sidearm (NU)	B	From Leg	3.00	0.00	0.0000	69.00	No Ice	4.17	2.09	75.00
			0.00				1/2" Ice	6.17	3.09	125.00
			0.00				1" Ice	8.17	4.09	200.00
2' square panel (NU)	B	From Leg	3.00	0.00	0.0000	66.00	No Ice	4.80	0.52	25.00
			0.00				1/2" Ice	5.07	0.67	48.43
			0.00				1" Ice	5.35	0.83	75.30
3' sidearm (NU)	B	From Leg	1.50	0.00	0.0000	66.00	No Ice	1.43	0.72	30.00
			0.00				1/2" Ice	2.18	1.09	65.00
			0.00				1" Ice	2.93	1.47	105.00

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
8' Dish (NU)	A	Paraboloid w/Radome	From Leg	2.00	0.00	Worst		183.00	8.00	No Ice	50.27	100.00
				0.00						1/2" Ice	51.32	260.00
				0.00						1" Ice	52.37	490.00
8' Dish (NU)	B	Paraboloid w/Radome	From Leg	2.00	0.00	Worst		183.00	8.00	No Ice	50.27	100.00
				0.00						1/2" Ice	51.32	260.00
				0.00						1" Ice	52.37	490.00
8' Dish (NU)	C	Paraboloid w/Radome	From Leg	2.00	0.00	Worst		183.00	8.00	No Ice	50.27	100.00
				0.00						1/2" Ice	51.32	260.00
				0.00						1" Ice	52.37	490.00
8' Dish	B	Paraboloid	From	2.00		Worst		172.00	8.00	No Ice	50.27	100.00

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
(NU)		w/Radome	Leg	0.00					1/2" Ice	51.32	260.00
				0.00					1" Ice	52.37	490.00
4' dish	B	Paraboloid	From	2.00	Worst		135.00	4.00	No Ice	12.57	150.00
(NU)		w/Radome	Leg	0.00					1/2" Ice	13.10	220.00
				0.00					1" Ice	13.62	280.00
8' Dish	B	Paraboloid	From	2.00	Worst		125.00	8.00	No Ice	50.27	100.00
(NU)		w/Radome	Leg	0.00					1/2" Ice	51.32	260.00
				0.00					1" Ice	52.37	490.00
8' Dish	B	Paraboloid	From	2.00	Worst		100.00	8.00	No Ice	50.27	100.00
(NU)		w/Radome	Leg	0.00					1/2" Ice	51.32	260.00
				0.00					1" Ice	52.37	490.00
6' dish with radome	A	Paraboloid	From	2.00	Worst		171.00	6.00	No Ice	28.27	250.00
		w/Radome	Leg	0.00					1/2" Ice	29.07	400.00
				0.00					1" Ice	29.86	550.00
6' dish with radome	C	Paraboloid	From	2.00	Worst		171.00	6.00	No Ice	28.27	250.00
		w/Radome	Leg	0.00					1/2" Ice	29.07	400.00
				0.00					1" Ice	29.86	550.00
6' dish with radome	C	Paraboloid	From	2.00	Worst		135.00	6.00	No Ice	28.27	250.00
		w/Radome	Leg	0.00					1/2" Ice	29.07	400.00
				0.00					1" Ice	29.86	550.00

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 45 deg - No Ice
7	0.9 Dead+1.6 Wind 45 deg - No Ice
8	1.2 Dead+1.6 Wind 60 deg - No Ice
9	0.9 Dead+1.6 Wind 60 deg - No Ice
10	1.2 Dead+1.6 Wind 90 deg - No Ice
11	0.9 Dead+1.6 Wind 90 deg - No Ice
12	1.2 Dead+1.6 Wind 120 deg - No Ice
13	0.9 Dead+1.6 Wind 120 deg - No Ice
14	1.2 Dead+1.6 Wind 135 deg - No Ice
15	0.9 Dead+1.6 Wind 135 deg - No Ice
16	1.2 Dead+1.6 Wind 150 deg - No Ice
17	0.9 Dead+1.6 Wind 150 deg - No Ice
18	1.2 Dead+1.6 Wind 180 deg - No Ice
19	0.9 Dead+1.6 Wind 180 deg - No Ice
20	1.2 Dead+1.6 Wind 210 deg - No Ice
21	0.9 Dead+1.6 Wind 210 deg - No Ice
22	1.2 Dead+1.6 Wind 225 deg - No Ice
23	0.9 Dead+1.6 Wind 225 deg - No Ice
24	1.2 Dead+1.6 Wind 240 deg - No Ice
25	0.9 Dead+1.6 Wind 240 deg - No Ice
26	1.2 Dead+1.6 Wind 270 deg - No Ice
27	0.9 Dead+1.6 Wind 270 deg - No Ice
28	1.2 Dead+1.6 Wind 300 deg - No Ice
29	0.9 Dead+1.6 Wind 300 deg - No Ice
30	1.2 Dead+1.6 Wind 315 deg - No Ice
31	0.9 Dead+1.6 Wind 315 deg - No Ice
32	1.2 Dead+1.6 Wind 330 deg - No Ice

Comb. No.	Description
33	0.9 Dead+1.6 Wind 330 deg - No Ice
34	1.2 Dead+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
39	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
40	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
41	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp
42	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
43	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
44	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
45	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp
46	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
47	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
48	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
49	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp
50	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
51	Dead+Wind 0 deg - Service
52	Dead+Wind 30 deg - Service
53	Dead+Wind 45 deg - Service
54	Dead+Wind 60 deg - Service
55	Dead+Wind 90 deg - Service
56	Dead+Wind 120 deg - Service
57	Dead+Wind 135 deg - Service
58	Dead+Wind 150 deg - Service
59	Dead+Wind 180 deg - Service
60	Dead+Wind 210 deg - Service
61	Dead+Wind 225 deg - Service
62	Dead+Wind 240 deg - Service
63	Dead+Wind 270 deg - Service
64	Dead+Wind 300 deg - Service
65	Dead+Wind 315 deg - Service
66	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	185 - 180	2.167	62	0.0827	0.0022
T2	180 - 160	2.078	62	0.0827	0.0022
T3	160 - 140	1.717	62	0.0816	0.0019
T4	140 - 120	1.361	62	0.0766	0.0019
T5	120 - 100	1.025	62	0.0668	0.0017
T6	100 - 93.3333	0.726	62	0.0570	0.0013
T7	93.3333 - 80	0.638	62	0.0529	0.0010
T8	80 - 73.3333	0.490	62	0.0444	0.0007
T9	73.3333 - 60	0.418	62	0.0411	0.0006
T10	60 - 53.3333	0.293	62	0.0342	0.0004
T11	53.3333 - 40	0.234	62	0.0300	0.0003
T12	40 - 33.3333	0.144	62	0.0213	0.0001
T13	33.3333 - 20	0.102	62	0.0177	0.0001
T14	20 - 13.3333	0.047	56	0.0103	0.0001
T15	13.3333 - 0	0.025	56	0.0069	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
185.00	LED beacon	62	2.167	0.0827	0.0022	313323
183.00	8' Dish	62	2.132	0.0827	0.0022	313323
180.00	Telewave ANT450F10	62	2.078	0.0827	0.0022	313323
175.00	Telewave ANT450F10	62	1.989	0.0827	0.0022	380870
172.00	8' Dish	62	1.934	0.0826	0.0022	580611
171.00	6' dish with radome	62	1.916	0.0825	0.0021	703610
170.00	Telewave ANT450F10	62	1.898	0.0825	0.0021	892722
165.00	3' x 6' Paraflactor	62	1.807	0.0821	0.0020	Inf
155.00	(2) HBXX-6517DS	62	1.627	0.0808	0.0019	411167
145.00	20' x 3" Dia Omni	62	1.449	0.0784	0.0019	338750
140.00	APXV18-206516	62	1.361	0.0766	0.0019	294124
135.00	4' dish	62	1.275	0.0744	0.0019	219741
130.00	20' x 3" Dia Omni	62	1.189	0.0720	0.0019	170142
125.00	8' Dish	62	1.106	0.0694	0.0018	138810
114.50	14' x 3" Dia Omni	62	0.938	0.0642	0.0017	112095
111.00	12' Dipole	62	0.885	0.0626	0.0016	109058
109.00	Rohn 6' Side-Arm(1)	62	0.855	0.0617	0.0015	107396
108.00	Rohn 6' Side-Arm(1)	62	0.840	0.0612	0.0015	106583
103.00	Obstruction light	62	0.768	0.0587	0.0014	101250
100.00	8' Dish	62	0.726	0.0570	0.0013	82457
92.00	3' x 2" omni whip	62	0.622	0.0520	0.0010	45002
90.50	3' x 2" omni whip	62	0.604	0.0510	0.0009	51579
89.00	3' x 2" omni whip	62	0.587	0.0500	0.0009	64621
87.00	12' Dipole	62	0.565	0.0487	0.0009	102225
79.00	10' 4-bay dipole	62	0.479	0.0439	0.0007	448963
74.00	10' 4-bay dipole	62	0.425	0.0414	0.0006	68629
69.00	10' 4-bay dipole	62	0.375	0.0390	0.0005	75894
66.00	2' square panel	62	0.347	0.0375	0.0005	131955

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	185 - 180	12.103	2	0.4604	0.0122
T2	180 - 160	11.609	2	0.4605	0.0126
T3	160 - 140	9.596	2	0.4543	0.0109
T4	140 - 120	7.615	2	0.4267	0.0109
T5	120 - 100	5.737	2	0.3726	0.0098
T6	100 - 93.3333	4.067	2	0.3182	0.0071
T7	93.3333 - 80	3.576	2	0.2952	0.0057
T8	80 - 73.3333	2.749	2	0.2483	0.0041
T9	73.3333 - 60	2.344	2	0.2295	0.0034
T10	60 - 53.3333	1.642	2	0.1914	0.0021
T11	53.3333 - 40	1.316	2	0.1675	0.0016
T12	40 - 33.3333	0.812	2	0.1191	0.0012
T13	33.3333 - 20	0.576	13	0.0988	0.0010
T14	20 - 13.3333	0.264	12	0.0575	0.0006
T15	13.3333 - 0	0.140	12	0.0384	0.0005

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
185.00	LED beacon	2	12.103	0.4604	0.0122	55727
183.00	8' Dish	2	11.906	0.4605	0.0124	55727
180.00	Telewave ANT450F10	2	11.609	0.4605	0.0126	55727
175.00	Telewave ANT450F10	2	11.110	0.4602	0.0124	68845
172.00	8' Dish	2	10.808	0.4596	0.0122	107207
171.00	6' dish with radome	2	10.707	0.4594	0.0121	131661
170.00	Telewave ANT450F10	2	10.606	0.4591	0.0119	170568
165.00	3' x 6' Paraflactor	2	10.100	0.4572	0.0113	330399
155.00	(2) HBXX-6517DS	2	9.094	0.4500	0.0107	75787
145.00	20' x 3" Dia Omni	2	8.103	0.4366	0.0108	62544
140.00	APXV18-206516	2	7.615	0.4267	0.0109	54373
135.00	4' dish	2	7.132	0.4146	0.0108	40293
130.00	20' x 3" Dia Omni	2	6.657	0.4010	0.0105	31007
125.00	8' Dish	2	6.191	0.3866	0.0101	25199
114.50	14' x 3" Dia Omni	2	5.254	0.3582	0.0094	20280
111.00	12' Dipole	2	4.955	0.3492	0.0090	19722
109.00	Rohn 6' Side-Arm(1)	2	4.788	0.3440	0.0087	19416
108.00	Rohn 6' Side-Arm(1)	2	4.705	0.3414	0.0086	19267
103.00	Obstruction light	2	4.302	0.3274	0.0077	18288
100.00	8' Dish	2	4.067	0.3182	0.0071	14846
92.00	3' x 2" omni whip	2	3.486	0.2903	0.0055	8046
90.50	3' x 2" omni whip	2	3.388	0.2848	0.0053	9226
89.00	3' x 2" omni whip	2	3.293	0.2793	0.0051	11571
87.00	12' Dipole	2	3.170	0.2720	0.0049	18361
79.00	10' 4-bay dipole	2	2.688	0.2453	0.0040	78307
74.00	10' 4-bay dipole	2	2.383	0.2313	0.0035	12186
69.00	10' 4-bay dipole	2	2.102	0.2180	0.0029	13548
66.00	2' square panel	2	1.946	0.2097	0.0027	23865

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	185	Leg	A325N	1.2500	6	283.35	82835.00	0.003 ✓	1	Bolt Tension
		Diagonal	A325X	0.7500	1	2840.28	17835.00	0.159 ✓	1	Member Bearing
		Top Girt	A325X	0.7500	1	1353.26	21868.40	0.062 ✓	1	Bolt Shear
T2	180	Leg	A325N	1.2500	6	3045.82	82835.00	0.037 ✓	1	Bolt Tension
		Diagonal	A325X	0.7500	1	11501.80	17835.00	0.645 ✓	1	Member Bearing
T3	160	Leg	A325N	1.2500	6	9881.93	82835.00	0.119 ✓	1	Bolt Tension
		Diagonal	A325X	0.7500	1	18902.70	21868.40	0.864 ✓	1	Bolt Shear
T4	140	Leg	A325N	1.2500	8	14523.00	82835.00	0.175 ✓	1	Bolt Tension
		Diagonal	A325X	0.6250	2	13267.70	15186.40	0.874 ✓	1	Bolt Shear
T5	120	Leg	A325N	1.5000	8	23058.60	119282.00	0.193 ✓	1	Bolt Tension
		Diagonal	A325X	0.7500	2	15434.30	21868.40	0.706 ✓	1	Bolt Shear
T6	100	Diagonal	A325X	1.0000	2	17727.40	33603.80	0.528 ✓	1	Member Bearing
T7	93.3333	Leg	A325N	1.5000	8	27827.70	119282.00	0.233 ✓	1	Bolt Tension
		Diagonal	A325X	1.0000	2	22698.40	38877.20	0.584 ✓	1	Bolt Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
		Horizontal	A325N	1.0000	2	2281.36	28003.10	0.081 ✔	1	Member Bearing
T8	80	Diagonal	A325X	0.8750	2	18921.70	29765.40	0.636 ✔	1	Bolt Shear
T9	73.3333	Leg	A325N	1.5000	8	37372.70	119282.00	0.313 ✔	1	Bolt Tension
		Diagonal	A325X	0.8750	2	24395.10	29765.40	0.820 ✔	1	Bolt Shear
		Horizontal	A325X	0.8750	2	3048.79	24468.80	0.125 ✔	1	Member Bearing
T10	60	Diagonal	A325X	0.8750	2	20679.40	29765.40	0.695 ✔	1	Bolt Shear
T11	53.3333	Leg	A325N	1.5000	8	46915.10	119282.00	0.393 ✔	1	Bolt Tension
		Diagonal	A325X	0.8750	2	26838.80	29765.40	0.902 ✔	1	Bolt Shear
		Horizontal	A325X	0.8750	2	3821.54	24468.80	0.156 ✔	1	Member Bearing
T12	40	Diagonal	A325X	1.0000	2	22495.00	33603.80	0.669 ✔	1	Member Bearing
T13	33.3333	Leg	A325N	1.5000	8	57187.80	119282.00	0.479 ✔	1	Bolt Tension
		Diagonal	A325X	1.0000	2	28877.40	38877.20	0.743 ✔	1	Bolt Shear
		Horizontal	A325X	1.0000	2	4656.03	28003.10	0.166 ✔	1	Member Bearing
T14	20	Diagonal	A325X	1.0000	2	24159.80	38877.20	0.621 ✔	1	Bolt Shear
T15	13.3333	Leg	F1554-105	1.7500	6	90280.80	169121.00	0.534 ✔	1	Bolt Tension
		Diagonal	A325X	1.0000	2	31127.90	38877.20	0.801 ✔	1	Bolt Shear
		Horizontal	A325X	1.0000	2	5516.32	28003.10	0.197 ✔	1	Member Bearing

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	**185 - 180**	**Leg**	**P6.625x.280**	**3**	**-5100.31**	**238344.00**	**2.1**	**Pass**
		Diagonal	L3 1/2x3 1/2x1/4	11	-2821.00	14514.00	19.4	Pass
		Top Girt	L5x5x5/16	6	-1353.26	15030.40	9.0	Pass
T2	**180 - 160**	**Leg**	**P6.625x.280**	**15**	**-24674.40**	**203686.00**	**12.1**	**Pass**
		Diagonal	L4x4x1/4	18	-11653.30	15308.00	76.1	Pass
T3	**160 - 140**	**Leg**	**P6.625x.280**	**28**	**-73891.00**	**203686.00**	**36.3**	**Pass**
		Diagonal	L5x5x5/16	33	-18869.00	31990.30	59.0 86.4 (b)	Pass
T4	**140 - 120**	**Leg**	**P6.625x.280**	**43**	**-140359.00**	**203686.00**	**68.9**	**Pass**
		Diagonal	L5x5x5/16	47	-26464.80	31330.00	84.5 87.4 (b)	Pass
T5	**120 - 100**	**Leg**	**P8.625x.322**	**58**	**-218119.00**	**334421.00**	**65.2**	**Pass**
		Diagonal	L5x5x3/8	62	-30424.10	33543.00	90.7	Pass
T6	**100 - 93.3333**	**Leg**	**P8.625x.322**	**73**	**-263101.00**	**357954.00**	**73.5**	**Pass**
		Diagonal	L6x6x3/8	77	-35645.10	54670.60	65.2	Pass
T7	**93.3333 - 80**	**Leg**	**P8.625x.322**	**87**	**-262826.00**	**357954.00**	**73.4**	**Pass**
		Diagonal	L4x6x1/2	91	-45396.80	64584.40	70.3	Pass
		Horizontal	L4x4x5/16	76	-4562.73	16552.00	27.6	Pass
		Redund Horz 1 Bracing	L3x3x1/4	98	-4557.96	18406.80	24.8	Pass
		Redund Diag 1 Bracing	L3x3x1/4	90	-3091.00	10086.00	30.6	Pass
		Redund Hip 1 Bracing	L3x3x1/4	100	-109.39	16549.70	0.8	Pass
T8	**80 - 73.3333**	**Leg**	**P8.625x.5**	**111**	**-351605.00**	**542674.00**	**64.8**	**Pass**
		Diagonal	L6x6x3/8	117	-37169.60	51708.80	71.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T9	**73.3333 - 60**	**Leg**	**P8.625x.5**	**123**	**-351151.00**	**542674.00**	**64.7**	**Pass**
		Diagonal	L6x6x3/8	130	-48790.30	62971.70	77.5 82.0 (b)	Pass
		Horizontal	L4x4x5/16	115	-6097.58	14569.50	41.9	Pass
		Redund Horz 1 Bracing	L3x3x1/4	138	-6089.71	15896.70	38.3	Pass
		Redund Diag 1 Bracing	L3x3x1/4	135	-3999.36	9282.13	43.1	Pass
		Redund Hip 1 Bracing	L3x3x1/4	143	-113.39	14393.50	0.9	Pass
T10	**60 - 53.3333**	**Leg**	**P10.75x.365**	**147**	**-440724.00**	**517553.00**	**85.2**	**Pass**
		Diagonal	L6x6x3/8	153	-41313.60	48054.80	86.0	Pass
T11	**53.3333 - 40**	**Leg**	**P10.75x.365**	**159**	**-439166.00**	**517553.00**	**84.9**	**Pass**
		Diagonal	L6x6x3/8	166	-53677.70	60823.50	88.3 90.2 (b)	Pass
		Horizontal	L5x5x5/16	154	-7643.09	24328.80	31.4	Pass
		Redund Horz 1 Bracing	L3x3x5/16	170	-7616.06	17367.30	43.9	Pass
		Redund Diag 1 Bracing	L3x3x5/16	171	-4874.97	10728.60	45.4	Pass
		Redund Hip 1 Bracing	L3 1/2x3 1/2x1/4	172	-116.73	20375.00	0.9	Pass
T12	**40 - 33.3333**	**Leg**	**P10.75x.5**	**183**	**-536962.00**	**699144.00**	**76.8**	**Pass**
		Diagonal	L6x6x3/8	189	-44529.10	44572.30	99.9	Pass
T13	**33.3333 - 20**	**Leg**	**P10.75x.5**	**195**	**-535313.00**	**699144.00**	**76.6**	**Pass**
		Diagonal	L6x6x1/2	202	-57754.70	76651.80	75.3	Pass
		Horizontal	L5x5x5/16	187	-9312.06	21936.00	42.5	Pass
		Redund Horz 1 Bracing	L3x3x5/16	206	-9283.46	15256.20	60.9	Pass
		Redund Diag 1 Bracing	L3x3x5/16	207	-5797.22	9886.45	58.6	Pass
		Redund Hip 1 Bracing	L3 1/2x3 1/2x1/4	215	-125.52	18026.10	0.9	Pass
T14	**20 - 13.3333**	**Leg**	**P12.75x.5**	**219**	**-636176.00**	**844532.00**	**75.3**	**Pass**
		Diagonal	L6x6x1/2	225	-48298.50	53853.40	89.7	Pass
T15	**13.3333 - 0**	**Leg**	**P12.75x.5**	**231**	**-635440.00**	**844532.00**	**75.2**	**Pass**
		Diagonal	L6x6x1/2	238	-62255.70	73370.50	84.9	Pass
		Horizontal	L5x5x5/16	223	-11032.60	19982.70	55.2	Pass
		Redund Horz 1 Bracing	L3 1/2x4x5/16	242	-11019.90	26752.00	41.2	Pass
		Redund Diag 1 Bracing	L3 1/2x4x5/16	243	-6724.71	18089.80	37.2	Pass
		Redund Hip 1 Bracing	L3 1/2x3 1/2x1/4	244	-122.20	16061.20	0.8	Pass

	Summary	
Leg (T10)	85.2	Pass
Diagonal (T12)	99.9	Pass
Horizontal (T15)	55.2	Pass
Top Girt (T1)	9.0	Pass
Redund Horz 1 Bracing (T13)	60.9	Pass
Redund Diag 1 Bracing (T13)	58.6	Pass
Redund Hip	0.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
						1 Bracing (T13)		
						Bolt Checks	90.2	Pass
						RATING =	**99.9**	**Pass**

All-Points Technology Corp., P.C.
116 Grandview Road
Conway, NH 03818
(603) 496-5853

Client:	**T-Mobile**	Site No.:	**CTHA142A**
Job:	**Bloomfield (Tariffville)**	Job No.:	**CT1071511**
Calculated By:	**R. Adair**	Date:	**27-Feb-18**

Mat Foundation Analysis

Program assumes:

Mat is square in plan view.
Water table is below bottom of mat.
Unit weight of concrete = 150 pcf
Unit weight of soil = 100 pcf
Self-supporting tower with 3 piers

Information to be provided:

Pier is round or square in plan dimension ("R" or "S")	Shape =	R	
OTM = Overturning Moment to be resisted	OTM =	21551	ft-kips
H = Height from ground surface to top of mat (if buried	H =	5.5	ft.
P_M = Projection of pier above mat	P_M =	6.0	ft.
y = Thickness of mat	y =	1.50	ft.
x = Width of mat	x =	45.50	ft.
d = Diameter of round pier	d =	6.0	ft.
S = Size of tension bars	S =	7	

Mass of tower and appurtenances (below)

Results:

Component	Mass	Moment Arm	Moment Resist.
Pier	25.4 kips	22.75 ft.	578.9 ft-kips
Overburden	1293.0 kips	22.75 ft.	29415.7 ft-kips
Mat	465.8 kips	22.75 ft.	10597.1 ft-kips

Overturning Moment Resistance = 40591.73 ft-kips
Factor of Safety = 1.88 SATISFACTORY
Concrete Quantity = 133.9 c.y.

Exhibit E

EBI Consulting
environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTHA142G

Eversource
7 Hoskins Road
Bloomfield, CT 06002

March 2, 2018

EBI Project Number: 6218001766

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	4.578%

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

EBI Consulting
environmental | engineering | due diligence

March 2, 2018

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

Emissions Analysis for Site: **CTHA142G – Eversource**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **7 Hoskins Road, Bloomfield, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 MHz Band is approximately 467 $\mu W/cm^2$, and the general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 5 GHz microwave bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **7 Hoskins Road, Bloomfield, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel and microwave antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

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

3) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

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

5) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel

6) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

7) 1 microwave backhaul channel (5 GHz) was considered for the microwave Link. This channel has a transmit power of 1 Watt.

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

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

10) The antennas used in this modeling are the **RFS APXV18-206516S-C-A20** for 2100 MHz (AWS) channels, the **Commscope LNX-6515DS-A1M** for 700 MHz channels and the **Fastback Networks IBR 1300** for 5 GHz microwave backhaul. There is one **RFS APXV18-206517S-A20** to be installed per sector that will be unused at this time. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APXV18-206516S-C-A20** has a maximum gain of **16.3 dBd** at its main lobe at 2100 MHz. The **Commscope LNX-6515DS-A1M** has a maximum gain of **14.6 dBd** at its main lobe at 700 MHz. the **Fastback Networks IBR 1300 antenna** has a maximum gain of **10 dBd** at 5 GHz**.** The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

11) The antenna mounting height centerline of the proposed antennas is **144.5 feet** above ground level (AGL) for all standard panel antennas and **144.5 feet** above ground level for the proposed 5 GHz microwave radio / antenna.

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

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APXV18-206516S-C-A20	Make / Model:	RFS APXV18-206516S-C-A20	Make / Model:	RFS APXV18-206516S-C-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	144.5	Height (AGL):	144.5	Height (AGL):	144.5
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	7,678.43	ERP (W):	7,678.43	ERP (W):	7,678.43
Antenna A1 MPE%	**1.439**	Antenna B1 MPE%	1.**439**	Antenna C1 MPE%	**1.439**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXV18-206516S-C-A20 (UNUSED)	Make / Model:	RFS APXV18-206516S-C-A20 (UNUSED)	Make / Model:	RFS APXV18-206516S-C-A20 (UNUSED)
Gain:	NA	Gain:	NA	Gain:	NA
Height (AGL):	144.5	Height (AGL):	144.5	Height (AGL):	144.5
Frequency Bands	NA	Frequency Bands	NA	Frequency Bands	NA
Channel Count	0	Channel Count	0	Channel Count	0
Total TX Power(W):	1	Total TX Power(W):	0	Total TX Power(W):	0
ERP (W):	0	ERP (W):	0.00	ERP (W):	0.00
Antenna A2 MPE%	**0.0**	Antenna B2 MPE%	**0.000**	Antenna C2 MPE%	**0.000**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	144.5	Height (AGL):	144.5	Height (AGL):	144.5
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	**0.347**	Antenna B3 MPE%	**0.347**	Antenna C3 MPE%	**0.347**

Antenna #:	**4 (Microwave)**
Make / Model:	Fastback Networks IBR 1300
Gain:	10.0 dBd
Height (AGL):	144.5
Frequency Bands	5.0 GHz
Channel Count	1
Total TX Power(W):	1
ERP (W):	10 W
Antenna A4 MPE%	**0.002**

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**1.788%**
AT&T	0.290%
Verizon Wireless	2.500%
Site Total MPE %:	**4.578%**

T-Mobile Sector A Total:	1.788%
T-Mobile Sector B Total:	1.786%
T-Mobile Sector C Total:	1.786%
Site Total:	4.578%

T-Mobile Per Sector Maximum Power Values

T-Mobile _Max Values per sector (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz UMTS	2	1,279.74	144.5	4.80	AWS - 2100 MHz	1000	0.480%
T-Mobile AWS - 2100 MHz LTE	2	2,559.48	144.5	9.59	AWS - 2100 MHz	1000	0.959%
T-Mobile 700 MHz LTE	1	865.21	144.5	1.62	700 MHz	467	0.347%
T-Mobile 5 GHz Microwave	1	10	144.5	0.02	5 GHz Microwave	1000	0.002%
						Total:	**1.788%**

Summary

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

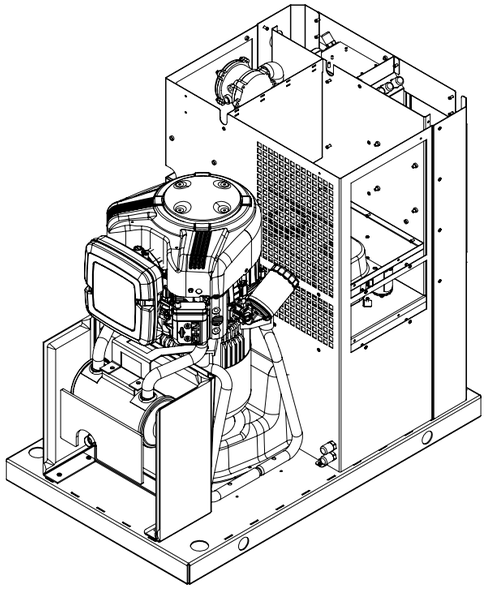
The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

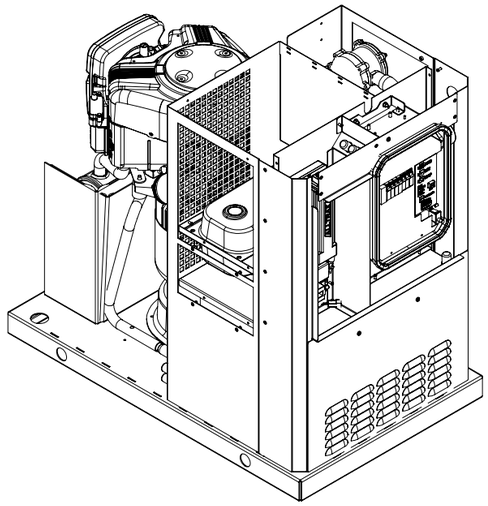
T-Mobile Sector	Power Density Value (%)
Sector A:	1.788%
Sector B:	1.786%
Sector C:	1.786%
T-Mobile Per Sector Maximum:	**1.788%**
Site Total:	4.578%
Site Compliance Status:	**COMPLIANT**

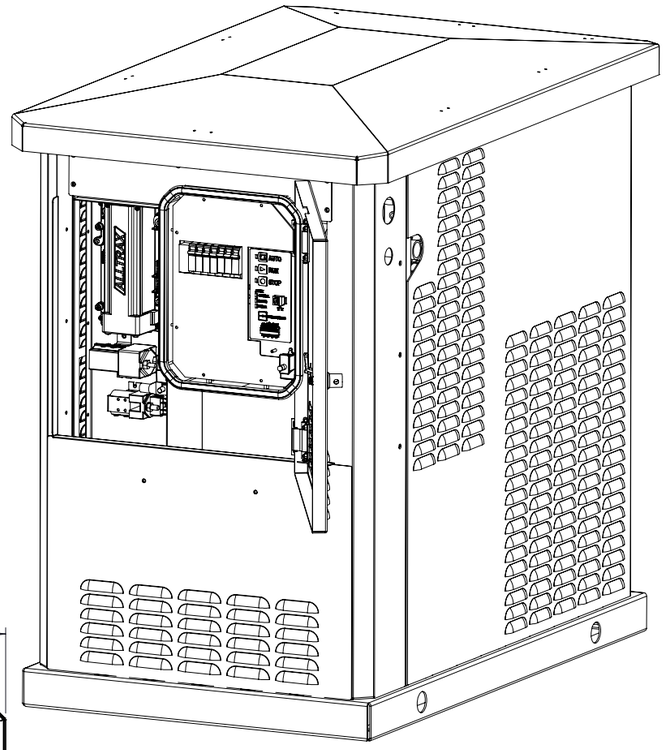
The anticipated composite MPE value for this site assuming all carriers present is **4.578%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

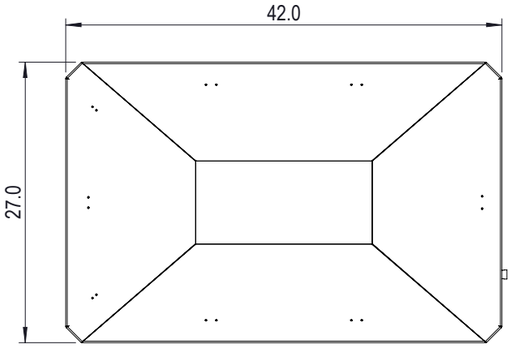
FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100%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

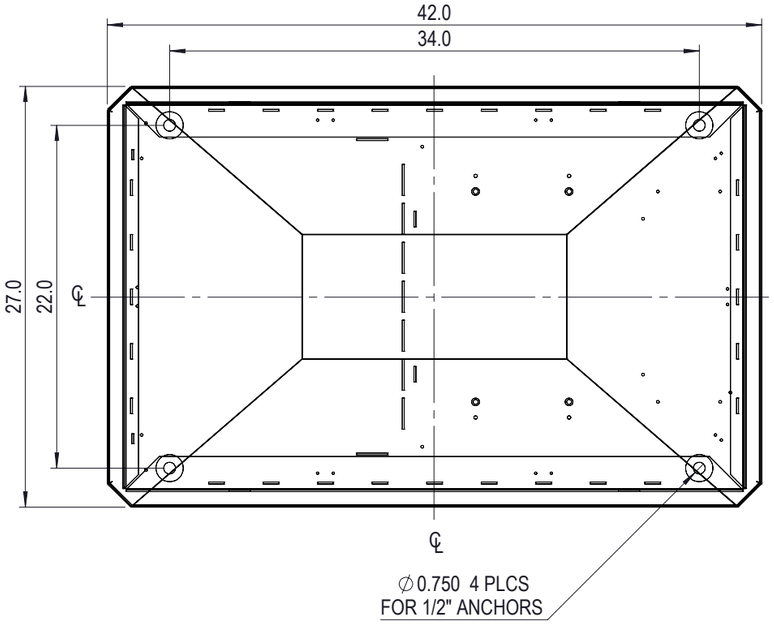
Exhibit F

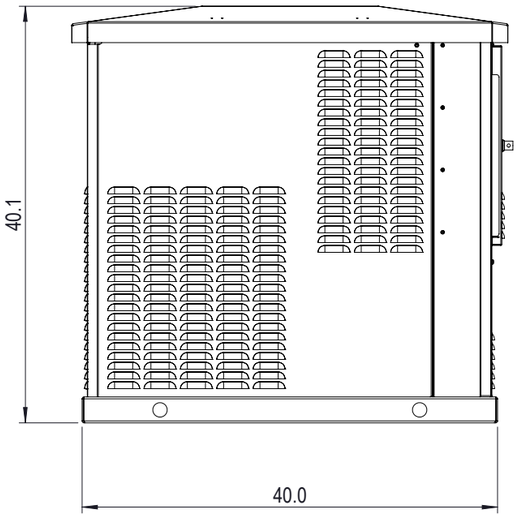


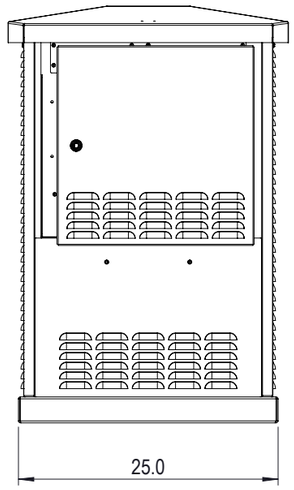












Item	Part NO.	Q'ty	Description
J	McMaster Carr 90221A418	4	RIVET NYLON RIBBED SHANK 1/2"
I	McMaster Carr 93880A245	4	SCREW #10-16x1/2" TYPE B THREAD FORMING, HEX SLOT
H	McMaster Carr 93776A401	4	NUT HEX FLANGE 10-32 STAINLESS STEEL
G	IN01265	1	INSULATOR, ROOF
F	-	-	-
E	-	-	-
D	-	-	-
C	-	-	-
B	CH01274	1	ROOF PLATE
A	CAB01269	1	CABINET ASSY

台達電子工業股份有限公司
DELTA ELECTRONICS, INC.

Drawn: 03/25/2014 Vince Byrne

Design: 03/25/2014 Vince Byrne

THIRD ANGLE PROJECTION

Description: APU ASSY

DIMENSIONAL TOLERANCES HOLES : ±0.05 ANGLES : ±0.5°

( )		( )		( )		( )	
<30	:±0.25	DECIMALS		UP~100	:±0.2	250~300	:±0.4	UP~600	:±1.5
>30~100	:±0.35	X	:±0.3	100~150	:±0.25	300~350	:±0.45	600~900	:±2.4
>100~300	:±0.5	X.X	:±0.2	150~200	:±0.3	350~400	:±0.5	900~OVER	:±3.1
ABOVE 300	:±0.6	X.XX	:±0.1	200~250	:±0.35				

SCALE 1:3 | UNIT in | USED ON -

A3 SIZE

Part No. ESOG150-PCA01

REV. 0E

SHEET 1 OF 2 ISSUE DATE: 03/25/2014

X:\0_Projects\TMO_APU\CAB01270-APU_assy (closed)
X:\0_Projects\TMO_APU\CAB01270-APU_assy

FRAME NAME:DF-MEA3H-1R01.SLDDRT

PowerGen 7500

DC Generator

Product Feature

- Reliable 52V DC backup solution
- Extremely simple installation
- Extended run times
- Automated exercising routines
- Intelligent control panel monitoring
- Minimal maintenance

Smarter. Greener. Together.

Specifications

1. General	
Construction	Aluminum enclosure with Pre-galvanized steel base
Dimensions (W x H x D)	27 x 40 x 42 in (686 x 1016 x 1067 mm)
Weight	350 lbs (159 kg) (without optional start batteries)
Mounting options	Pad-mount
Finish	Polyester Powder Paint (Gray)
Fuel options	Propane (LPG) or Natural Gas
Safety	UL2200 Listed
2. Environment	
Operating temperature	-20°C to +46°C (-4F to +115F)
Protection class	IP55 electronics enclosure
Altitude	< 4000m above mean sea level
Acoustics	76 dB(A) at 23 feet (7m)
3. Generator Specifications	
Output Power (W)	7500W
Output Voltage (V)	52V DC
Output Voltage Regulation	≤ ± 250mV
Engine	570cc Air Cooled Engine
DC Motor	Permanent Magnet Brushed DC Motor
RPM	3450 to 3750
Fuel consumption	1.2 lbs/hr @ 5kW, LPG
Gas inlet pressure	11 in-H2O (0.40 psi)
Output connections	¼"-20, 5/8" C-C threaded stud interface for 1/0 2-hole lugs
Output protection	200A Circuit Breaker
4. Batteries	
Site	Start-up from site batteries (50A@49V for <2min)
Start-up (optional)	Start-up with no energy from site batteries
5. Control and Interface	
Controls	Auto, Run, Stop
Alarms	Critical, Major, Minor alarm relays (Form-C)
Craft Interface	RJ45 Ethernet
Automated Exercise	Automated periodic exercising with weekend and holiday blackout
6. Ordering information	
ESOG150-PCA01	PowerGen 7500 with Large Oil Reservoir
5100266100	2.5 gallon jug of Special Oil for PowerGen 7500 – Required for EPA emissions
3799485900-S	Battery Heater Kit
0999142400	Battery String, 48V, 100Ah

*All specifications are subject to change without prior notice.

Delta Group Website:
www.deltaww.com

Product Website:
www.deltapowersolutions.com

United States of America & Canada
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2360 Campbell Creek Blvd. #530
Richardson (Texas) 75082

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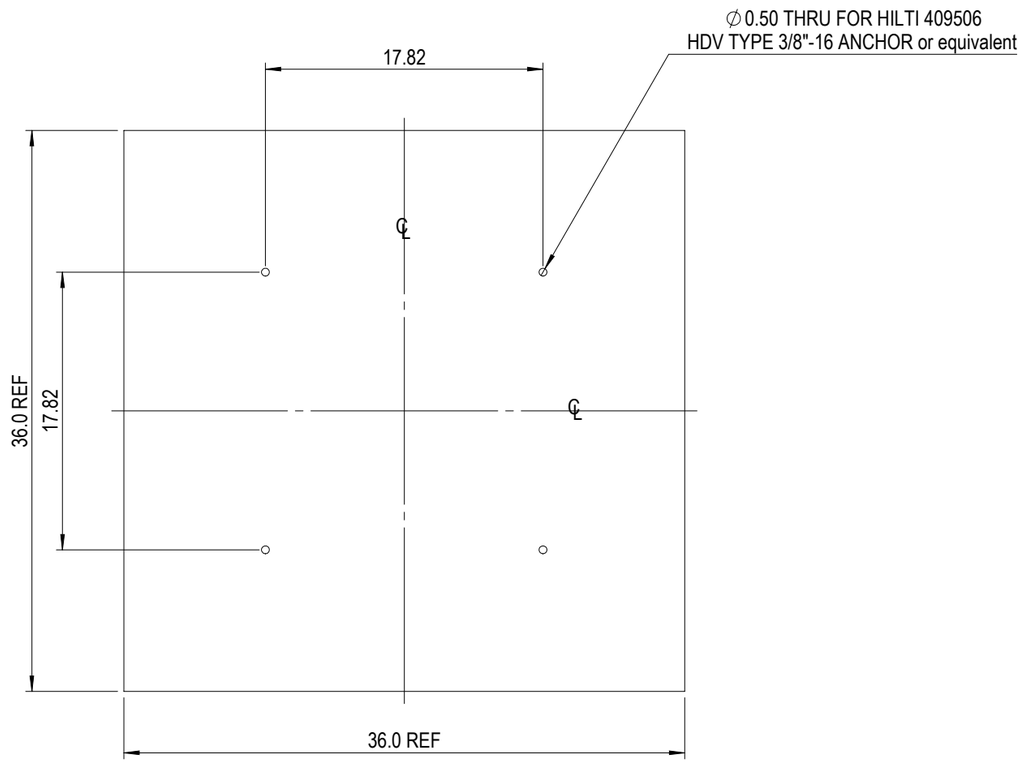
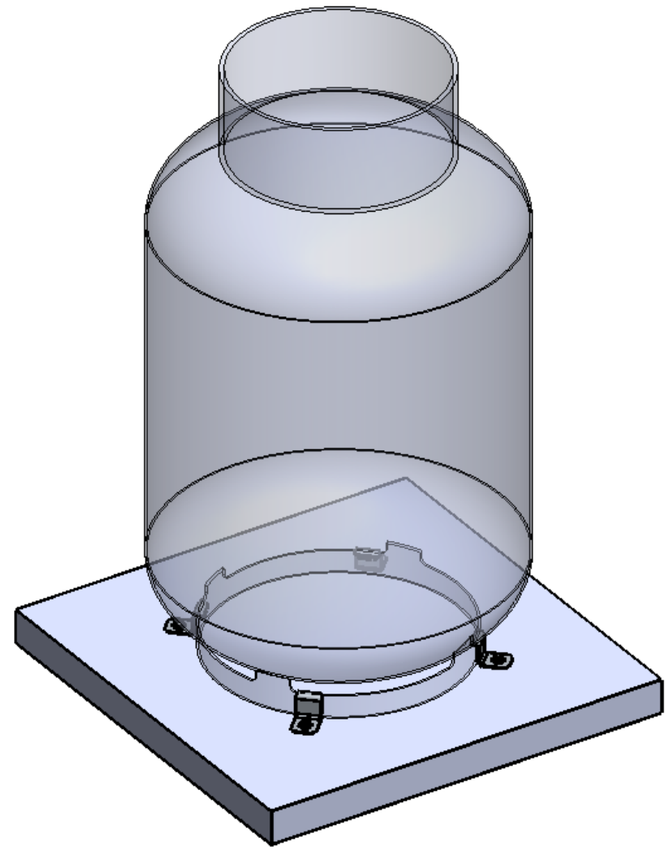
EN_V4 /JT





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BK01713	HOLD DOWN BRACKET	4
2	BA INDUSTRIAL 3748TSSSTP	BOLT 3/8"-16x3" TRUSS SPANNER HD STAINLESS #14 SPANNER BIT	4
3	BA INDUSTRIAL 3716WFSS	WASHER FLAT 3/8"x1" SUS	4
4	BA INSUSTRIAL 37WSSSS	WASHER SPLIT-LOCK 3/8" SUS	4
5	BA INDUSTRIAL #14TRSPAN	DRIVE BIT FOR TAMPER RESISTANT #14 SPANNER	1

INSTALLATION:
1) DRILL AND CLEAN HOLES PER ANCHOR VENDOR INSTRUCTIONS
2) PLACE TANK AND CENTER ON PAD
2) INSTALL BRACKETS WITH SECURITY BOLT, FLAT WASHER, AND LOCK WASHER 4 PLACES.
3) SECURITY BOLT DRIVE REQUIRES #14 SPANNER BIT

NOTES:
1) SUITABLE FOR WORTHINGTON ASME 120gV TANK L420140
2) FOR USE WITH MIN 2000psi CONCRETE PAD MIN 3" THICK WITH HILTI 409506 HDV TYPE 3/8"-16 ANCHORS OR EQUIVALENT
3) BAG AND BOX COMPONENTS. LABEL BOX WITH DELTA PART NUMBER AND DESCRIPTION "120gV TANK HOLD-DOWN KIT"

台達電子工業股份有限公司
DELTA ELECTRONICS, INC.

Drawn: 09.01.2015 Vince Byrne

Design: 09.01.2015 Vince Byrne

THIRD ANGLE PROJECTION

Description: HOLD DOWN KIT

DIMENSIONAL TOLERANCES HOLES : ±0.05 ANGLES : ±0.5°

DECIMALS		UP~100		250~300		UP~600	
X	:±0.3	100~150	:±0.25	300~350	:±0.45	600~900	:±2.4
X.X	:±0.2	150~200	:±0.3	350~400	:±0.5	900~OVER	:±3.1
X.XX	:±0.1	200~250	:±0.35				

SCALE	1:10	UNIT	mm	USED ON	-

A3 SIZE

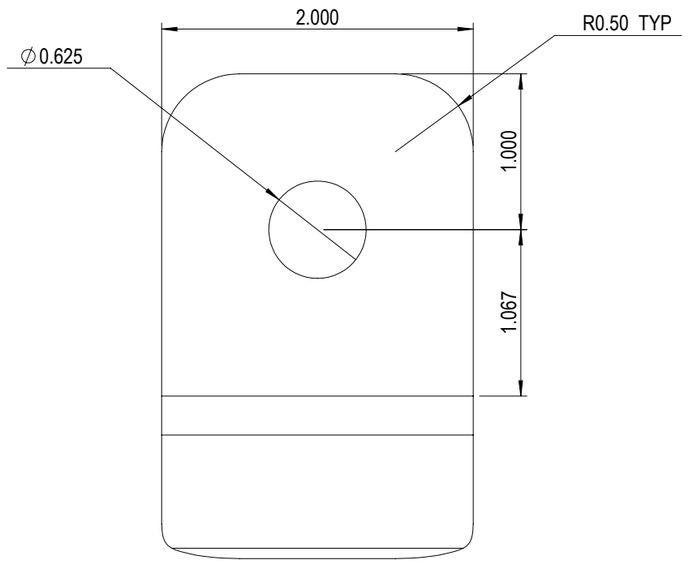
Part No. -

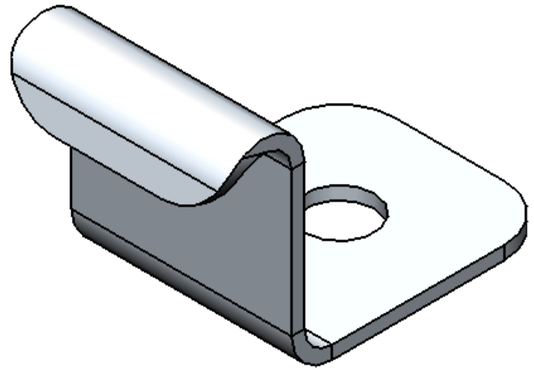
REV. 0A

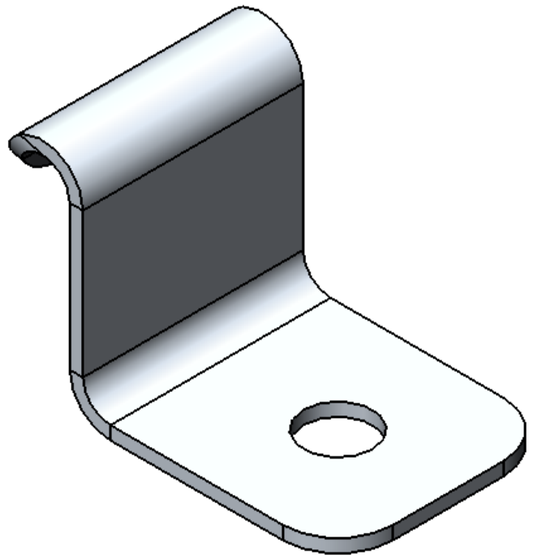
SHEET 1 OF 2 ISSUE DATE: 09.01.2015

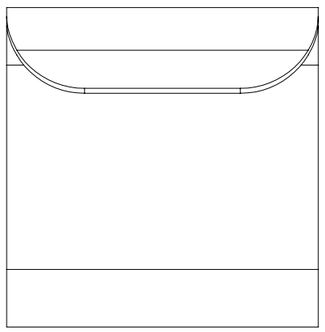
X:\0_Projects\TMO_APU\pad_tank_Worthington_ASME_120gV_L420140 (#)
X:\0_Projects\TMO_APU\Holddown Kit for_ASME_120gV_L420140

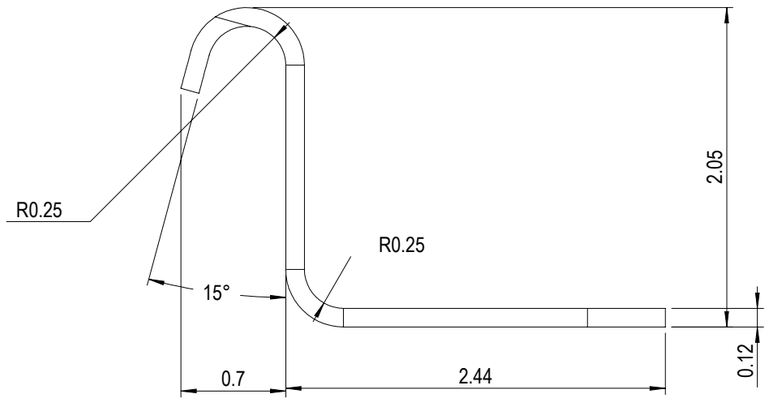
FRAME NAME:DF-MEA3H-1R01SLDDRT











NOTES:

1. MATERIAL: SUS 304 , 11GAGE or 0.12inch.
2. FINISH: Remove all burrs and sharp edges for safe.
3. MUST MEET DELTA'S SPEC.: 10000-0002.,10000-0162., 10000-0094., 10000-0063.
4. THE MARK "*" ARE CRITICAL DIMENSIONS IN THE PARTS, PLEASE INSPECT IT BY EACH INCOMING LOT.
5. ABOVE PARTS ARE MADE BY ☒NCT, ☐TOOLING
6. Material Property(Ref.): Density= 0.2890g/mm³,Mass=0.3294g
7. Unless otherwise specified, all original insert nuts, studs, bolts and standoffs are made of ☐steel with Zn-plated ☐steel without electroplated ☒stainless steel ☐aluminum

台達電子工業股份有限公司
DELTA ELECTRONICS, INC.

DIMENSIONAL TOLERANCES — HOLES : ±0.05 ANGLES : ±0.5°

( )		( )		( )		( )	
<30	:±0.25	DECIMALS		UP~100	:±0.2	250~300	:±0.4	UP~600	:±1.5
>30~100	:±0.35	X	:±0.3	100~150	:±0.25	300~350	:±0.45	600~900	:±2.4
>100~300	:±0.5	X.X	:±0.2	150~200	:±0.3	350~400	:±0.5	900~OVER	:±3.1
ABOVE 300	:±0.6	X.XX	:±0.1	200~250	:±0.35				

SCALE	1:1	UNIT	mm	USED ON	-

THIRD ANGLE PROJECTION

A3 SIZE

Drawn:	09.01.2015	Design:	09.01.2015
Vince Byrne		Vince Byrne	

Description: BRKT, HOLD DOWN

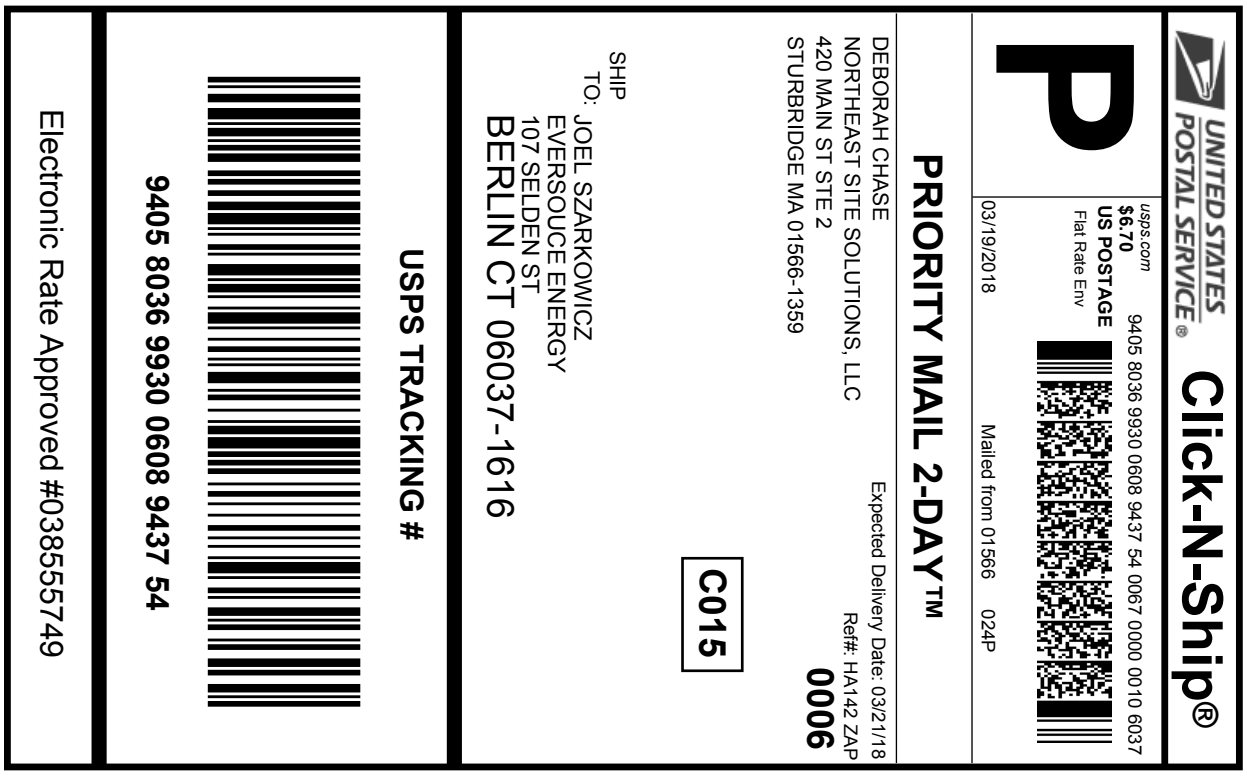
Part No. BK01713

REV. 0A

SHEET 2 OF 2 ISSUE DATE: 09.01.2015

X:\0_Projects\TMO_APU\BK01713-bkt_propane_tank_holddown (Default)
X:\0_Projects\TMO_APU\Holddown Kit for_ASME_120gV_L420140

FRAME NAME:DF-MEA3H-1R01SLDDRT



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0608 9437 54

Trans. #:	430260858
Print Date:	03/19/2018
Ship Date:	03/19/2018
Expected Delivery Date:	03/21/2018
Insured Value:	$1.00

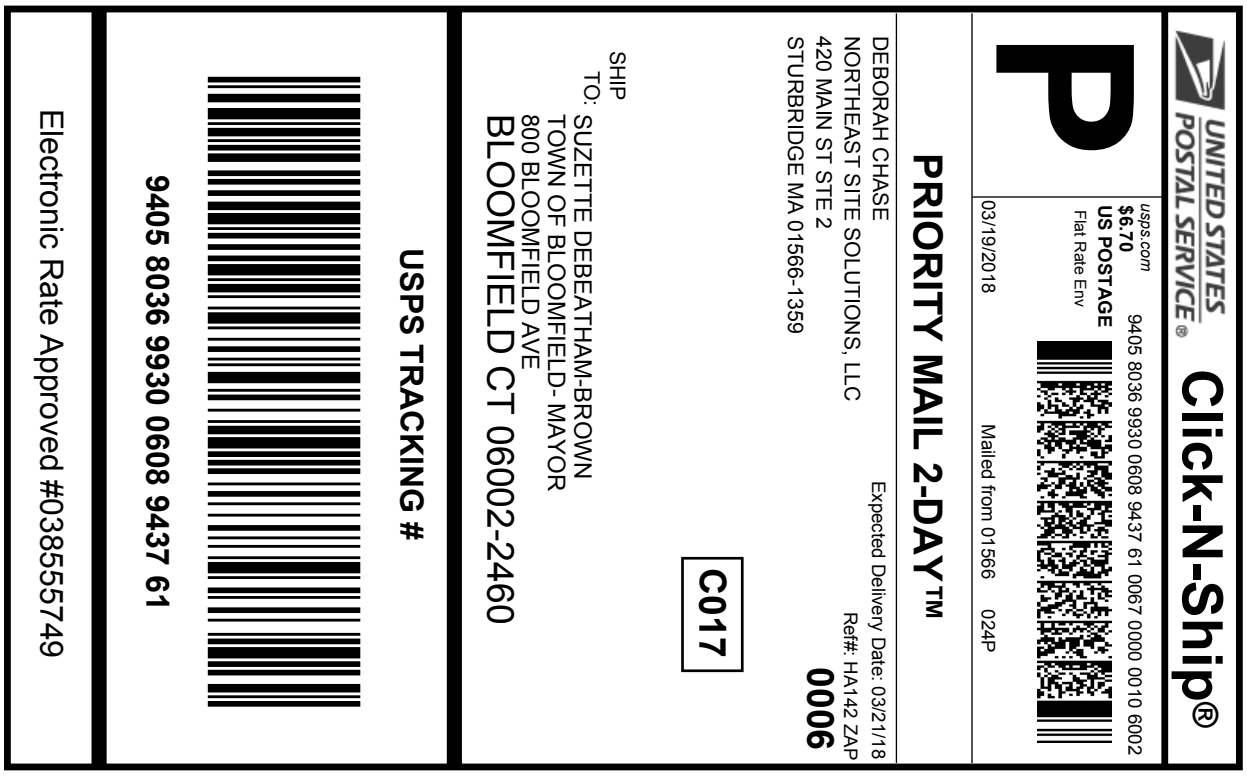
Priority Mail® Postage:	**$6.70**
Insurance Fee	**$0.00**
Total	**$6.70**

From: DEBORAH CHASE Ref#: HA142 ZAP
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: JOEL SZARKOWICZ
EVERSOUCE ENERGY
107 SELDEN ST
BERLIN CT 06037-1616

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



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Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0608 9437 61

Trans. #:	430260858
Print Date:	03/19/2018
Ship Date:	03/19/2018
Expected Delivery Date:	03/21/2018
Insured Value:	$1.00

Priority Mail® Postage:	**$6.70**
Insurance Fee	**$0.00**
Total	**$6.70**

From: DEBORAH CHASE Ref#: HA142 ZAP
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: SUZETTE DEBEATHAM-BROWN
TOWN OF BLOOMFIELD- MAYOR
800 BLOOMFIELD AVE
BLOOMFIELD CT 06002-2460

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
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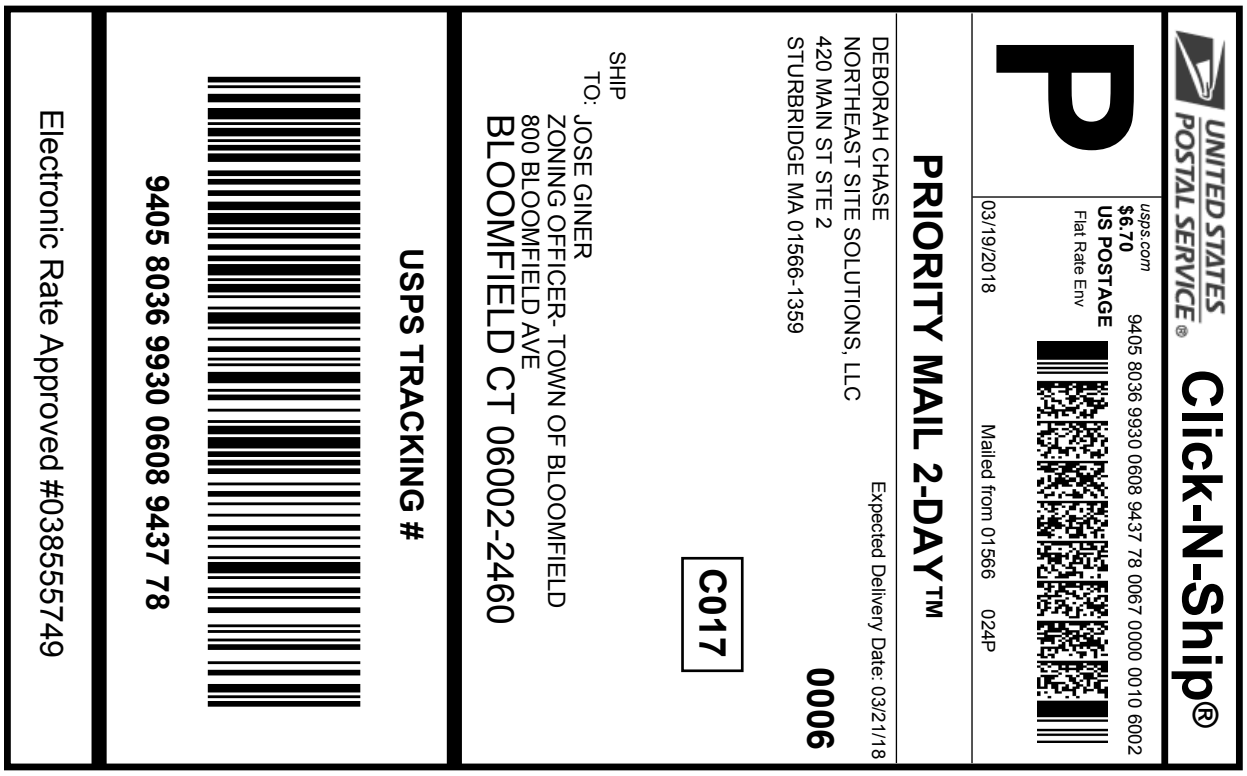

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Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0608 9437 78

Trans. #:	430260858
Print Date:	03/19/2018
Ship Date:	03/19/2018
Expected Delivery Date:	03/21/2018
Insured Value:	$1.00

Priority Mail® Postage:	**$6.70**
Insurance Fee	**$0.00**
Total	**$6.70**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: JOSE GINER
ZONING OFFICER- TOWN OF BLOOMFIELD
800 BLOOMFIELD AVE
BLOOMFIELD CT 06002-2460

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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