QC Development
PO Box 916
Storrs, CT 06268
860-670-9068
Mark.Roberts@QCDevelopment.net

August 26, 2016

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T)
528 Wheelers Farm Road, Milford, CT 06460 – AT&T SITE # CT2083
N 41-14-50
W 73-04-40

Dear Ms. Bachman:

AT&T currently maintains twelve (12) antennas at the 97-foot level of the existing 120-foot Monopole at 528 Wheelers Farm Road, Milford, CT. The tower and property are owned by Crown Castle. AT&T now intends to remove six (6) Powerwave antennas and install three (3) Quintel antennas, leaving a total of nine (9) antennas. AT&T also intends to remove and replace three (3) existing Ericsson RRUS-11 radio heads and install three (3) additional Ericsson RRUS-32 B2 radio heads, also at the 97-foot level.

This facility was approved by the Connecticut Siting Council, Petition No. 656 on February 2, 2004. There were no conditions that could feasibly be violated by this modification, including total facility height or mounting restrictions. This modification therefore complies with the aforementioned approval.

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

owner.

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

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

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

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

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

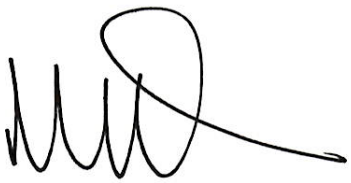
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

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

For the foregoing reasons, AT&T 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).

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,



Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: The Honorable Benjamin G. Blake - as elected official
Crown Castle - as property and tower owner (via e-mail)

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							10.93%
AT&T GSM	1	296	97	0.0129	880	0.5867	0.22%
AT&T GSM	1	427	97	0.0185	1900	1.0000	0.28%
AT&T UMTS	2	500	97	0.0434	880	0.5867	0.74%
AT&T UMTS	2	500	97	0.0434	1900	1.0000	0.43%
AT&T LTE	1	500	97	0.0217	700	0.4667	0.47%
AT&T LTE	1	500	97	0.0217	1900	1.0000	0.22%
AT&T LTE	1	500	97	0.0217	2300	1.0000	0.22%
Site Total							13.41%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							10.93%
AT&T GSM	1	296	97	0.0129	880	0.5867	0.22%
AT&T UMTS	2	500	97	0.0434	880	0.5867	0.74%
AT&T UMTS	2	500	97	0.0434	1900	1.0000	0.43%
AT&T LTE	1	500	97	0.0217	700	0.4667	0.47%
AT&T LTE	1	500	97	0.0217	1900	1.0000	0.22%
AT&T LTE	1	500	97	0.0217	2300	1.0000	0.22%
Site Total							13.13%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Note: Proposed Loading may also include corrections to certain Existing Loading values

PROJECT INFORMATION

SCOPE OF WORK:	TELECOMMUNICATIONS FACILITY UPGRADE (LTE BWE PROJECT 2017):
SITE ADDRESS:	528 WHEELERS FARM ROAD MILFORD, CT 06460
LATITUDE:	41.248408 N, 41°, 14', 54.27" N
LONGITUDE:	73.079081 W, 73°, 04', 44.69" W
USID:	61173
TYPE OF SITE:	MONOPOLE/INDOOR EQUIPMENT
TOWER HEIGHT:	120'
RAD CENTER:	97'
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CT2083

SITE NAME: MILFORD WHEELERS FARM

PROJECT: LTE BWE 2017 UPGRADE

DRAWING INDEX

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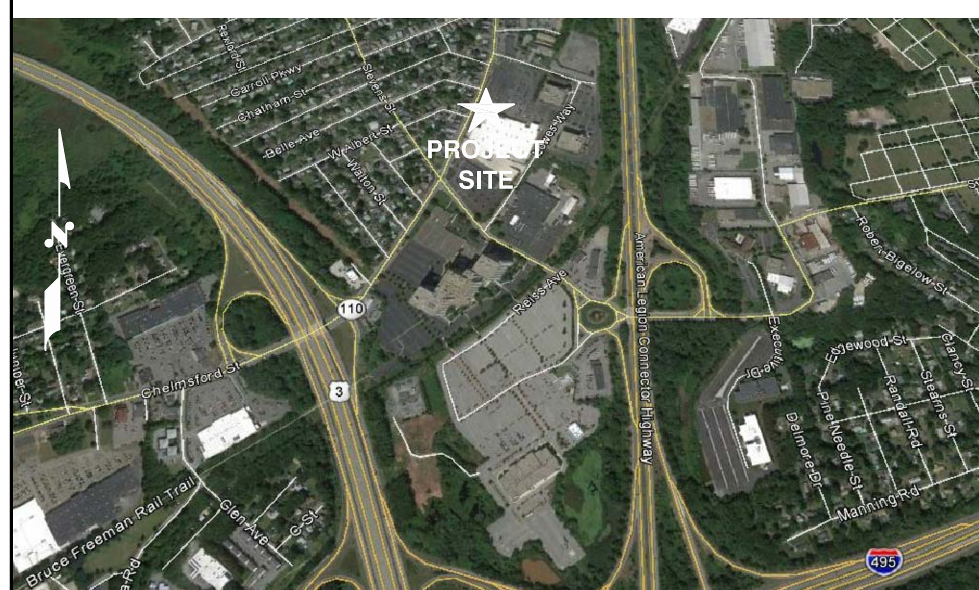
CROWN CASTLE SITE #: 876320
CROWN CASTLE SITE NAME: 528 WHEELERS FARM RD.

VICINITY MAP

DIRECTIONS TO SITE:

START OUT GOING WEST ON COCHITUATE RD/MA-30 TOWARD BURR ST. THEN 0.10 MILES MAKE A U-TURN AT BURR ST ONTO COCHITUATE RD/MA-30. THEN 0.05 MILES MERGE ONTO I-90 W/MASSACHUSETTS TPKE W TOWARD SPRINGFIELD/BOSTON (PORTIONS TOLL). THEN 106.96 MILES TAKE THE US-20 EXIT, EXIT 2, TOWARD LEE/PITTSFIELD. THEN 0.61 MILES KEEP LEFT TO TAKE THE US-20 E RAMP TOWARD MA-102/MA-7/STOCKBRIDGE/GREAT BARRINGTON. THEN 0.03 MILES TURN LEFT ONTO HOUSATONIC ST/US-20 E. THEN 0.04 MILES TAKE THE MA-102 W RAMP TOWARD STOCKBRIDGE/GREAT BARRINGTON. THEN 0.05 MILES TURN SLIGHT RIGHT ONTO PLEASANT ST/MA-102. THEN 0.07 MILES TURN LEFT ONTO TYRINGHAM RD. THEN 1.91 MILES TYRINGHAM RD BECOMES MAIN RD. THEN 3.85 MILES [195 - 217] MAIN RD,



GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

UNDERGROUND SERVICE ALERT

CALL
BEFORE YOU DIG
CALL TOLL FREE 1-800-922-4455
OR CALL 811
72 HOURS

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED
PROFESSIONAL ENGINEER

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
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TEL: (978) 557-5553
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SAI
27 NORTHWESTERN DR.
SALEM, NH 03079

SITE NUMBER: CT2083
SITE NAME: MILFORD WHEELERS FARM
CCI SITE #876320
528 WHEELERS FARM ROAD
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NEW HAVEN COUNTY

at&t
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

AT&T

TITLE SHEET
(LTE BWE)

SITE NUMBER	DRAWING NUMBER	REV
CT2083	T-1	1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – SAI
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
    BUILDING CODE: 2003 IBC WITH 2005 CT SUPPLEMENT, + 2009 & 2013 CT AMENDMENTS
    ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
    LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

    MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARDS FOR STEEL

    EQUIPMENT AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
27 NORTHWESTERN DR.
SALEM, NH 03079

SITE NUMBER: CT2083
SITE NAME: MILFORD WHEELERS FARM
CCI SITE #876320
528 WHEELERS FARM ROAD
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NEW HAVEN COUNTY

at&t
550 COCHITUATE ROAD
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

STATE OF CONNECTICUT
DEREK J. CREASER
No. 25557
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
(LTE BWE)

SITE NUMBER	DRAWING NUMBER	REV
CT2083	GN-1	1

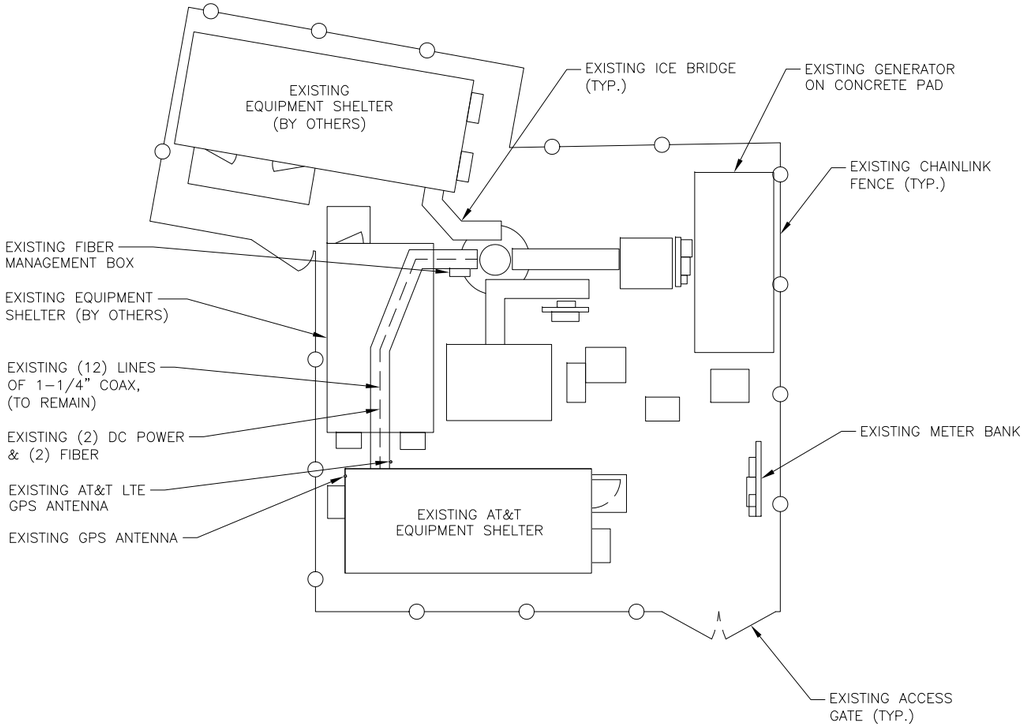
NOTE:

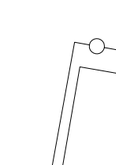
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: AUGUST 23, 2016

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

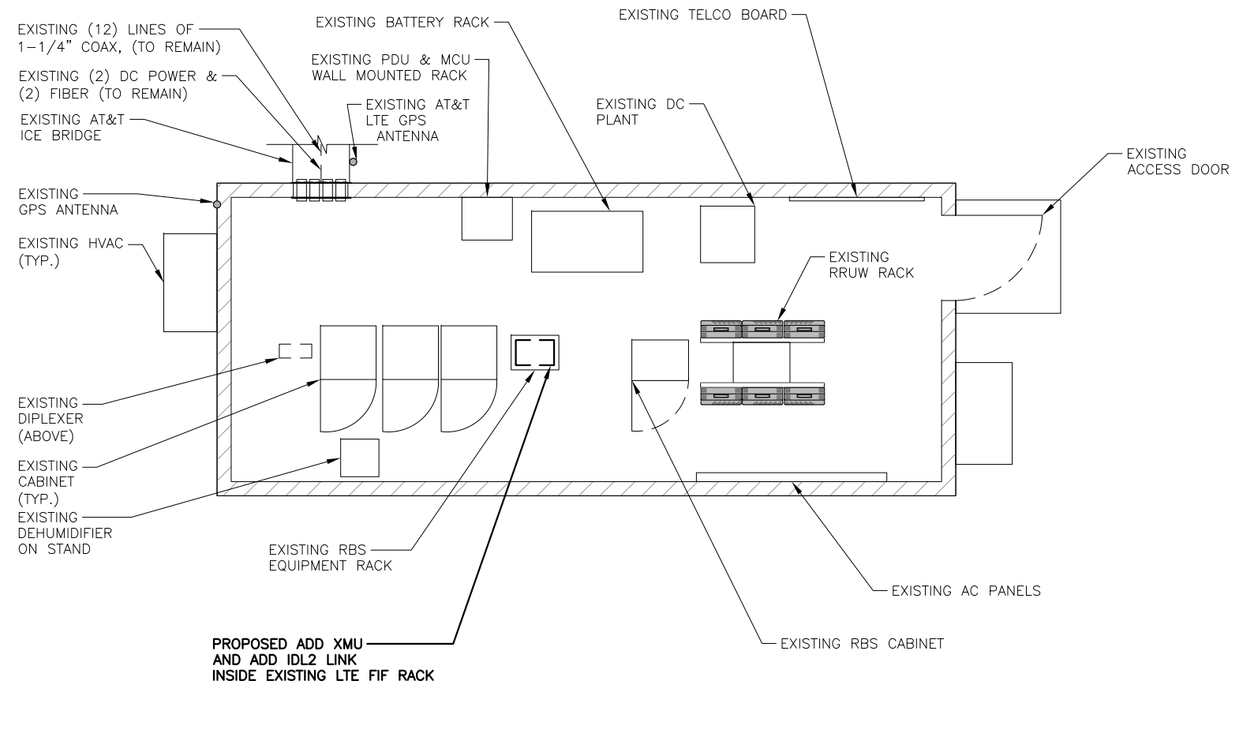
ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.

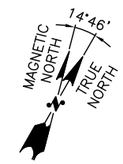




COMPOUND PLAN (1 / A-1)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"





EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"

0 1'-4" 2'-8" 5'-4" 8'-0"

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 23581
LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLANS
(LTE BWE)

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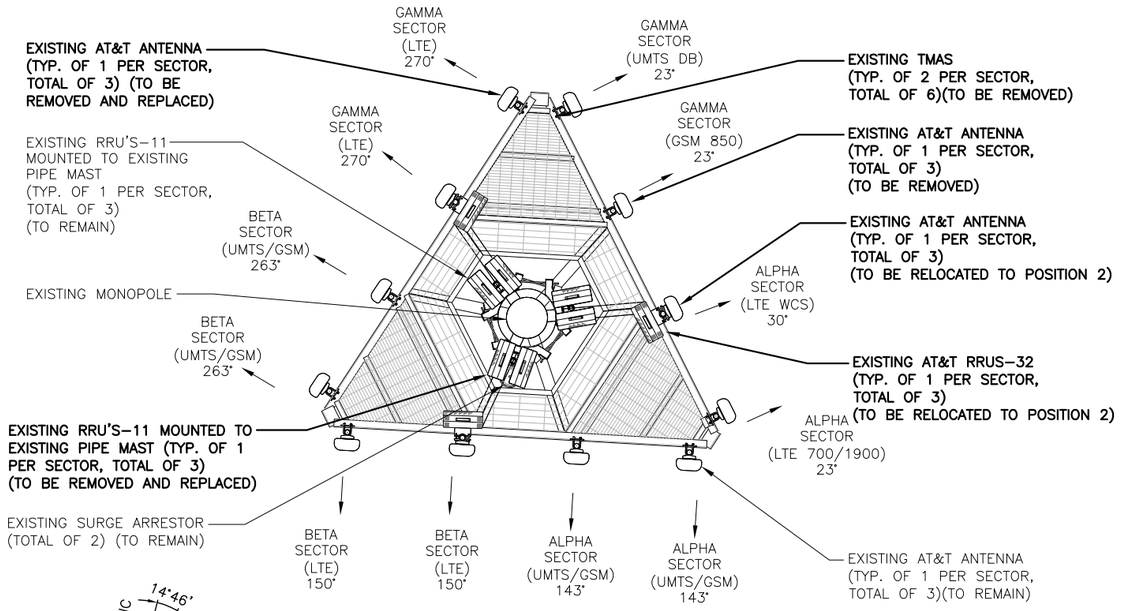
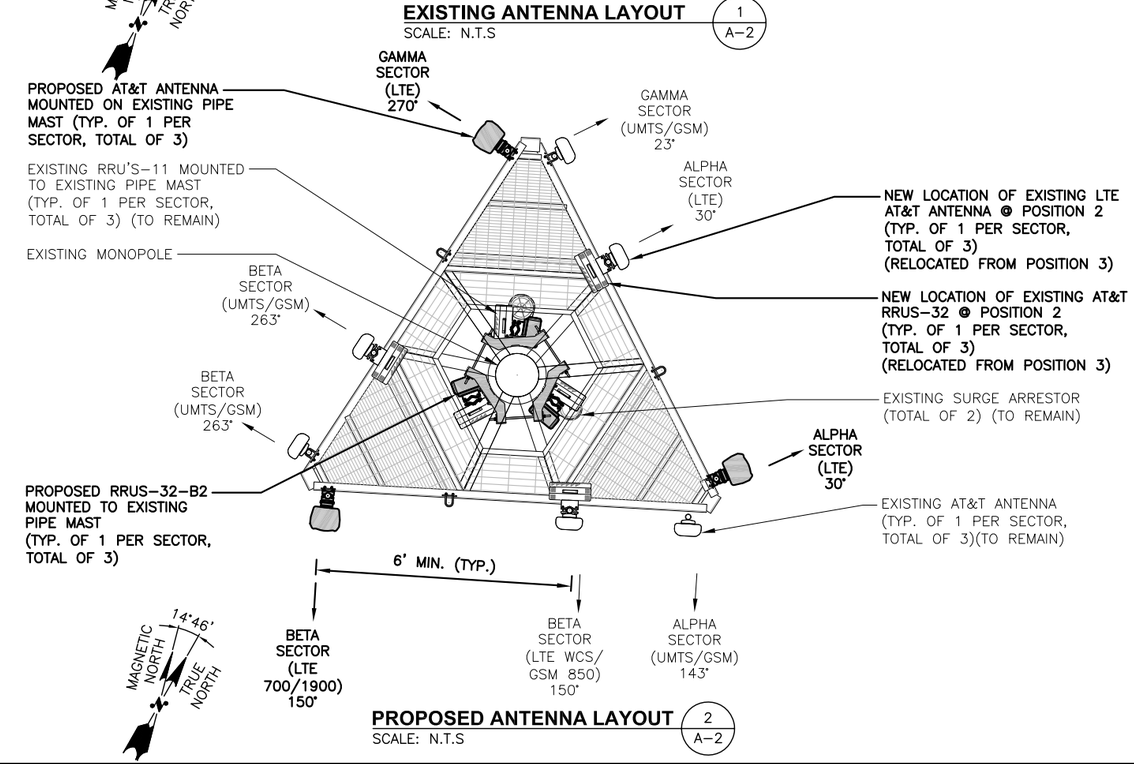


EXISTING ANTENNA LAYOUT

SCALE: N.T.S

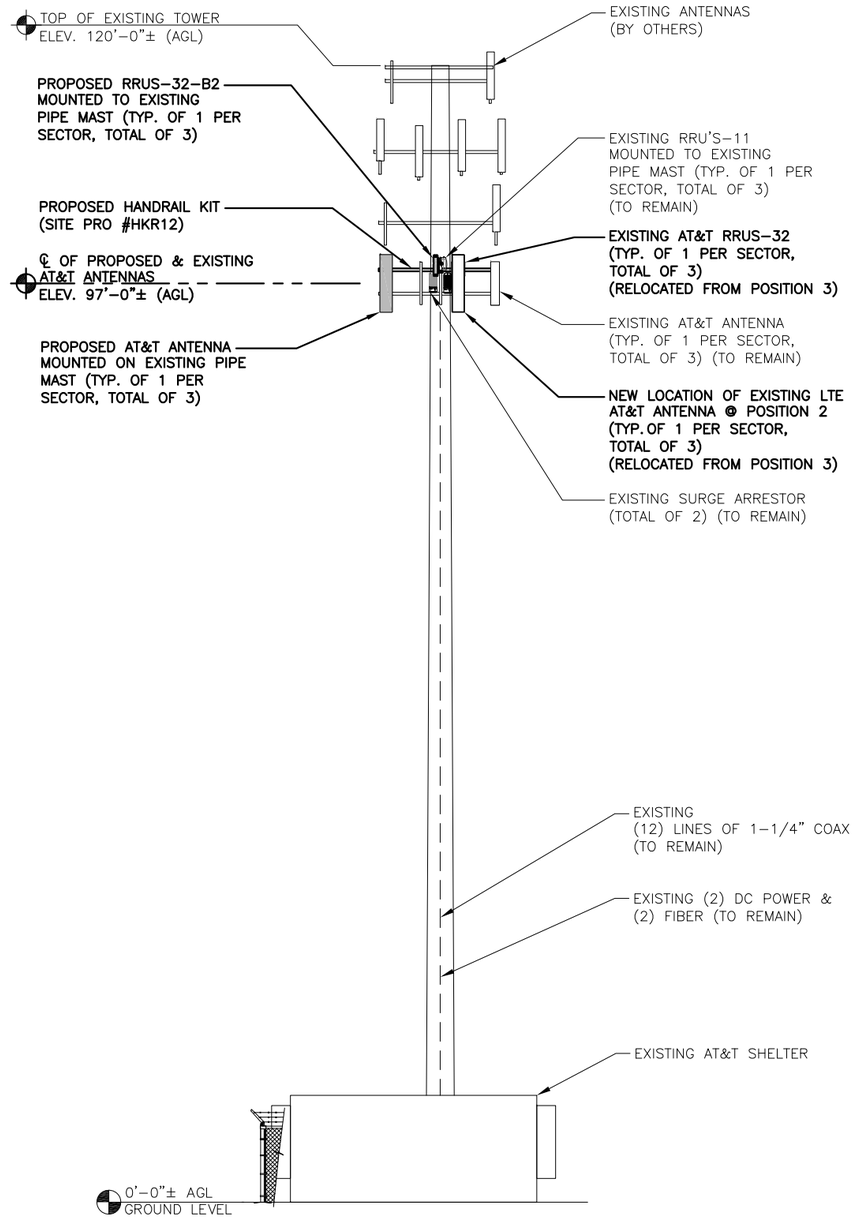
(1 / A-2)



PROPOSED ANTENNA LAYOUT

SCALE: N.T.S

(2 / A-2)



ELEVATION

22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

(3 / A-2)

0 4'-0" 8'-0" 16'-0" 24'-0"

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: AUGUST 23, 2016

STATE OF CONNECTICUT
DEREK J. CREASER
No. 23951
LICENSED PROFESSIONAL ENGINEER

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
27 NORTHWESTERN DR.
SALEM, NH 03079

SITE NUMBER: CT2083
SITE NAME: MILFORD WHEELERS FARM
CCI SITE #876320
528 WHEELERS FARM ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

AT&T

ANTENNA LAYOUTS & ELEVATION
(LTE BWE)

SITE NUMBER	DRAWING NUMBER	REV
CT2083	A-2	1

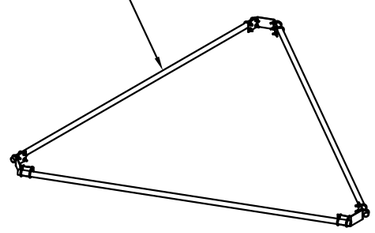
EXISTING ANTENNA SCHEDULE

SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	POWERWAVE	7770	55.0X11.0X5.0
	POWERWAVE	7770	55.0X11.0X5.0
	CCI	OPA-65R-LCUU-H6	72.0X14.8X7.4
	POWERWAVE	P65-16-XLH-RR	72.0X12.0X6.0
BETA:	POWERWAVE	7770	55.0X11.0X5.0
	POWERWAVE	7770	55.0X11.0X5.0
	CCI	OPA-65R-LCUU-H6	72.0X14.8X7.4
	POWERWAVE	P65-16-XLH-RR	72.0X12.0X6.0
GAMMA:	POWERWAVE	7770	55.0X11.0X5.0
	POWERWAVE	7770	55.0X11.0X5.0
	CCI	OPA-65R-LCUU-H6	72.0X14.8X7.4
	POWERWAVE	P65-16-XLH-RR	72.0X12.0X6.0

PROPOSED ANTENNA SCHEDULE

SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	POWERWAVE	7770	55.0X11.0X5.0
	CCI	OPA-65R-LCUU-H6	72.0X14.8X7.4
	–	–	–
	QUINTEL	QS66512-2	72.0X12.0X9.6
BETA:	POWERWAVE	7770	55.0X11.0X5.0
	CCI	OPA-65R-LCUU-H6	72.0X14.8X7.4
	–	–	–
	QUINTEL	QS66512-2	72.0X12.0X9.6
GAMMA:	POWERWAVE	7770	55.0X11.0X5.0
	CCI	OPA-65R-LCUU-H6	72.0X14.8X7.4
	–	–	–
	QUINTEL	QS66512-2	72.0X12.0X9.6

PROPOSED HANDRAIL KIT
(SITE PRO #HKR12)



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NOTE:
CONTRACTOR TO VERIFY FACE FRAME WIDTH PRIOR TO ORDERING HANDRAIL KIT

PROPOSED HANDRAIL KIT (4 / A-3)
SCALE: N.T.S

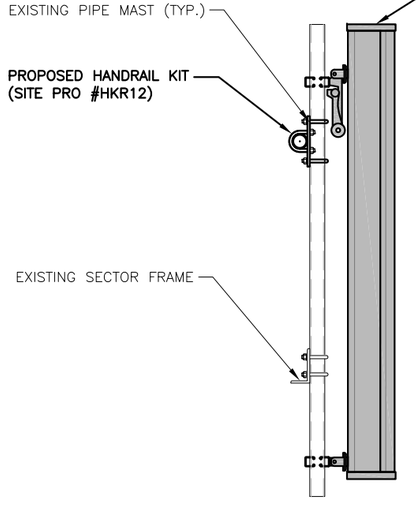
PROPOSED AT&T ANTENNA
(TYP OF 1 PER SECTOR, TOTAL OF 3)

EXISTING PIPE MAST (TYP.)

PROPOSED HANDRAIL KIT
(SITE PRO #HKR12)

EXISTING SECTOR FRAME

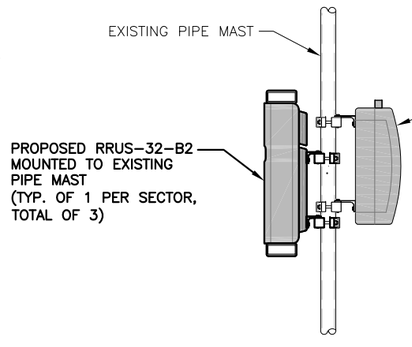
℄ OF PROPOSED & EXISTING AT&T ANTENNAS
ELEV. 97'-0"± (AGL)



EXISTING PIPE MAST

PROPOSED RRUS-32-B2
MOUNTED TO EXISTING
PIPE MAST
(TYP. OF 1 PER SECTOR,
TOTAL OF 3)

EXISTING RRU'S-11
MOUNTED TO EXISTING
PIPE MAST
(TYP. OF 1 PER SECTOR,
TOTAL OF 3)
(TO REMAIN)

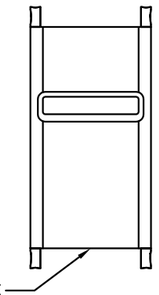


RRU CHART

QUANTITY	MODEL	L	W	D
3 (E)	RRUS-11	19.7"	17.0"	7.2"
–	RRUS-12	20.4"	18.5"	7.5"
3(E) 3(P)	RRUS-32	27.2"	12.1"	7.0"
–	RRUS-E2	20.4"	18.5"	7.5"
–	LTE-A2	16.4"	15.2"	3.4"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED ANTENNAMOUNTING DETAIL (1 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

RRH MOUNTING DETAIL (2 / A-3)
SCALE: N.T.S

RRU DETAIL (3 / A-3)
SCALE: N.T.S

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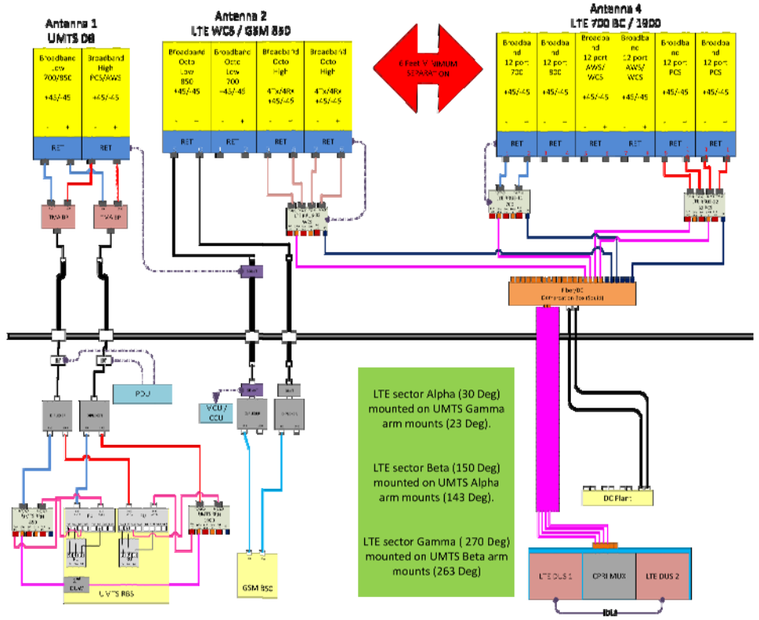
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

STATE OF CONNECTICUT
DEREK J. CREASER
No. 25547
LICENSED PROFESSIONAL ENGINEER

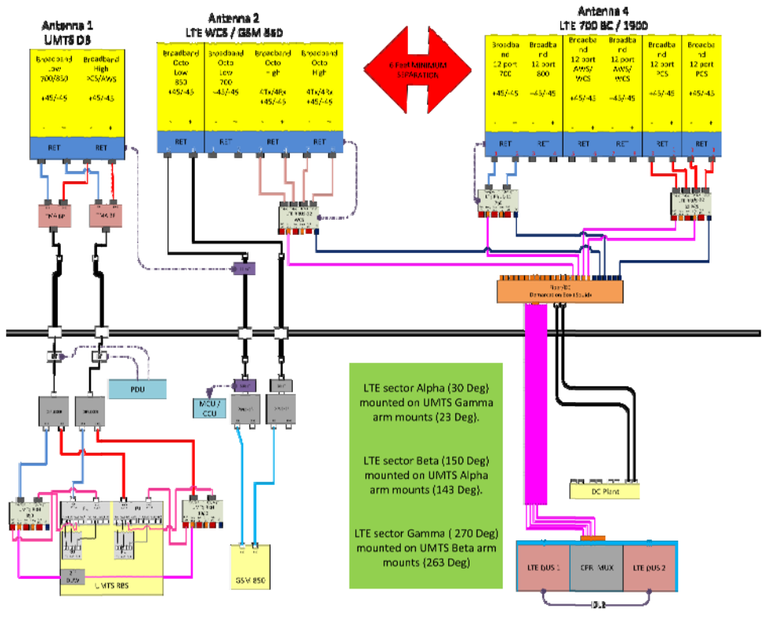
AT&T

DETAILS
(LTE BWE)

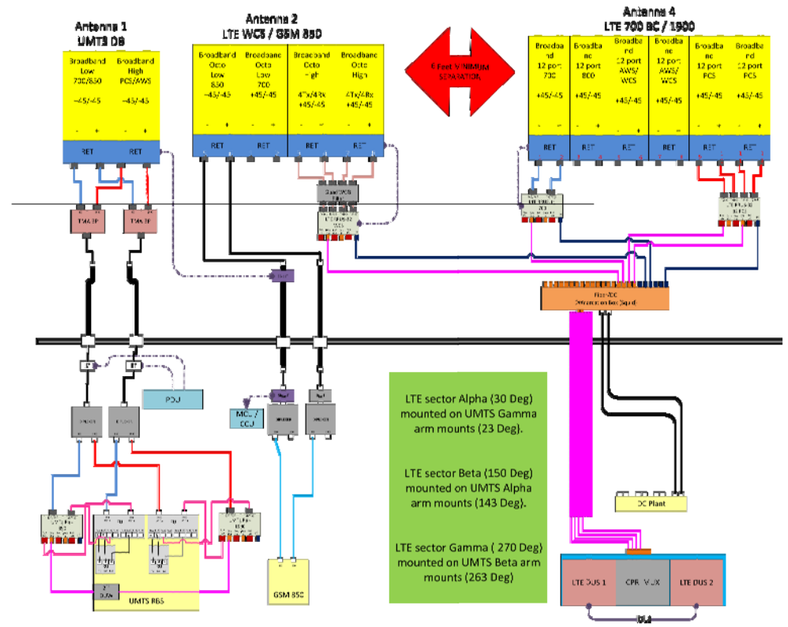
SITE NUMBER	DRAWING NUMBER	REV
CT2083	A-3	1



ALPHA



BETA



GAMMA

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

RF PLUMBING DIAGRAM (1 / RF–1)
SCALE: N.T.S

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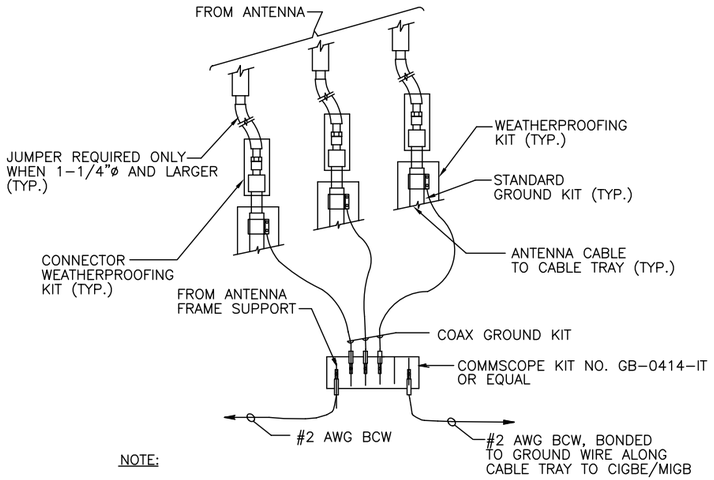
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

STATE OF CONNECTICUT · DEREK J. CREASER · No. 23055 · LICENSED PROFESSIONAL ENGINEER

AT&T

RF PLUMBING DIAGRAM
(LTE BWE)

SITE NUMBER	DRAWING NUMBER	REV
CT2083	RF–1	1

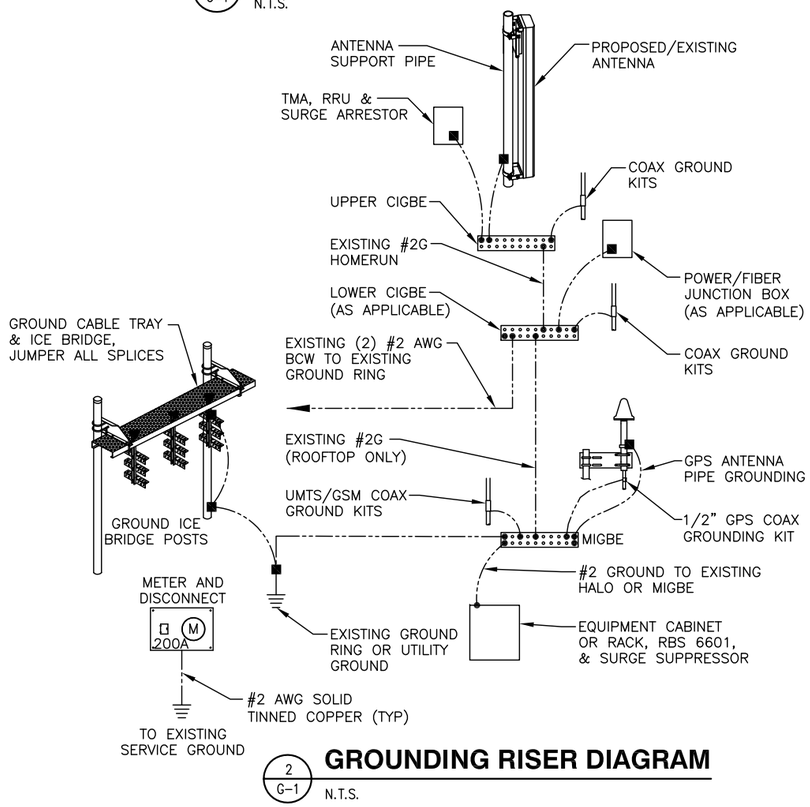


NOTE:

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

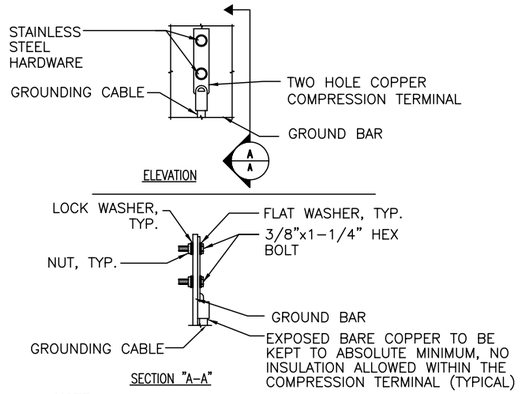
GROUND WIRE TO GROUND BAR CONNECTION DETAIL

1 / G-1 N.T.S.



GROUNDING RISER DIAGRAM

2 / G-1 N.T.S.



NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL

3 / G-1 N.T.S.

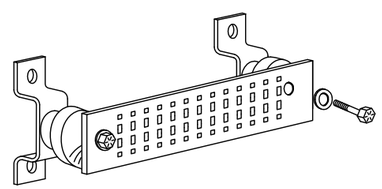
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL

4 / G-1 N.T.S.

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

STATE OF CONNECTICUT · DEREK J. CREASER · No. 25951 · LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS
(LTE BWE)

SITE NUMBER	DRAWING NUMBER	REV
CT2083	G-1	1

PJF PAUL J. FORD & COMPANY

50 Years 1965 - 2015

Date: **June 29, 2016**

Charles Trask
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
980.209.8228

Paul J Ford and Company
250 E. Broad Street, Suite 600
Columbus, OH 43215
614.221.6679
rkoors@pjfweb.com

Subject: **Structural Analysis Report**

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT2083
	Carrier Site Name:	Milford-Wheeler's Farm Road
Crown Castle Designation:	**Crown Castle BU Number:**	876320
	Crown Castle Site Name:	528 WHEELERS FARM RD
	Crown Castle JDE Job Number:	384545
	Crown Castle Work Order Number:	1259831
	Crown Castle Application Number:	352034 Rev. 2
Engineering Firm Designation:	**Paul J Ford and Company Project Number:**	37516-0701.003.7805
Site Data:	**528 Wheelers Farm Road, MILFORD, New Haven County, CT**	
	Latitude *41° 14' 54.35"*, Longitude *-73° 4' 44.67"*	
	120 Foot - Monopole Tower	

Dear Charles Trask,

Paul J Ford and Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 918942, in accordance with application 352034, revision 2.

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

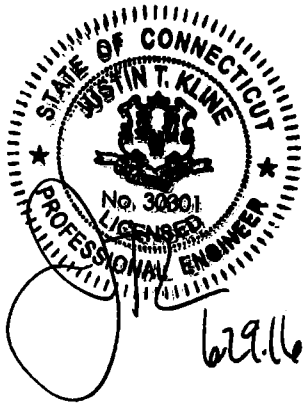
LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

The structural analysis was performed for this tower in accordance with the requirements of the 2005 Connecticut Building Code and the TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 110 mph converted to a fastest mile wind speed of 90 mph with no ice, 37.6 mph with 1.25 inch ice thickness and 50 mph under service loads.

We at *Paul J Ford and Company* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Bob Koors, E.I.
Structural Designer



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Subject: **Structural Analysis Report**

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Bob Koors, E.I.
Structural Designer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 120 ft Monopole tower designed by SUMMIT in February of 1997. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of the 2005 Connecticut Building Code and the TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 110 mph converted to a fastest mile wind speed of 90 mph with no ice, 37.6 mph with 1.25 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
97.0	97.0	3	ericsson	TME-RRUS-32 B30	-	-	-
96.0	97.0	1	commscope	WCS-IMFQ-AMT	-	-	-
		3	quintel technology	QS66512-2 w/ Mount Pipe			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
122.0	125.0	2	andrew	VHLP2-11	6 3 4	5/16 1-1/4 1/2	1
	123.0	1	andrew	PX2F-52			
		1	mti wireless edge	MT-485025			
	122.0	3	argus technologies	LLPX310R w/ Mount Pipe			
		3	samsung telecommunications	FDD_R6_RRH			
		1	tower mounts	Platform Mount [LP 713-1]			
	121.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER			
		3	alcatel lucent	800MHZ RRH			
		3	alcatel lucent	PCS 1900MHz 4x45W-65MHz			
		9	rfs celwave	ACU-A20-N			
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			
		3	alcatel lucent	TD-RRH8x20-25	1	1-1/4	2
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe			
113.0	116.0	1	trimble	ACUTIME 2000	7	1-5/8	1
	114.0	2	andrew	DB846F65ZAXY w/ Mount Pipe			
		3	antel	BXA-171063-8BF-EDIN-0 w/ Mount Pipe			
		4	antel	LPA-80063/4CF w/ Mount Pipe			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		2	rfs celwave	FD9R6004/2C-3L			
	113.0	4	rfs celwave	FD9R6004/2C-3L			
		1	tower mounts	Platform Mount [LP 305-1]			
	114.0	3	alcatel lucent	AWS-3 RRH4X45	1	1-5/8	2
		3	alcatel lucent	RRH2X60-1900			
		3	alcatel lucent	RRH2x60-700			
		4	commscope	SBNHH-1D45B w/ Mount Pipe			
		2	commscope	SBNHH-1D65B w/ Mount Pipe			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
105.0	107.0	3	commscope	LNX-6515DS-VTM w/ Mount Pipe	7	1-5/8	1
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe			
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe			
		3	ericsson	KRY 112 144/1			
		3	ericsson	RRUS 11 B12			
	105.0	1	tower mounts	Platform Mount [LP 712-1]			
97.0	97.0	3	ericsson	RRUS 11	1 2	3/8 3/4	1
		3	ericsson	WCS RRUS-32-B30			
		2	raycap	DC6-48-60-18-8F			
		1	tower mounts	Side Arm Mount [SO 102-3]			
		3	ericsson	RRUS 11	-	-	3
96.0	96.0	6	powerwave technologies	LGP2140X	-	-	3
	97.0	3	powerwave technologies	7770.00 w/ Mount Pipe			
		3	powerwave technologies	P65-16-XLH-RR w/ Mount Pipe			
		3	cci antennas	OPA-65R-LCUU-H6 w/ Mount Pipe	1 2 12	3/8 3/4 1-1/4	1
		3	powerwave technologies	7770.00 w/ Mount Pipe			
	96.0	6	powerwave technologies	LGP2140X			
		1	tower mounts	Platform Mount [LP 601-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment To Be Removed

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH, 08-10145E G1, 10/22/2008	1613534	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Summit, 2249, 02/27/1997	1614583	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Summit, 2249, 02/27/1997	1614557	CCISITES
4-POST-MODIFICATION INSPECTION	Semaan, CT03XC038, 05/17/2004	3350209	CCISITES
4-POST-MODIFICATION INSPECTION	B&T, 80214, 07/15/2009	2460628	CCISITES
4-POST-MODIFICATION INSPECTION	B&T, 80214.003, 04/04/2012	3349204	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 1210009, 04/01/2013	3753892	CCISITES
4-POST-MODIFICATION INSPECTION	SGS, 145190, 06/23/15	5760332	CCISITES
4-POST-MODIFICATION INSPECTION	FDH, 15CAZG1500, 02/23/2016	6112300	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Monopole was reinforced in conformance with the referenced modification drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J Ford and Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	120 - 96.75	Pole	TP26.6976x22x0.25	1	-8.95	1021.68	75.7	Pass
L2	96.75 - 91.58	Pole	TP27.7422x26.6976x0.3218	2	-11.55	1241.33	84.0	Pass
L3	91.58 - 90.0833	Pole	TP28.0446x27.7422x0.4817	3	-11.84	1638.43	68.9	Pass
L4	90.0833 - 78	Pole	TP30.486x28.0446x0.6179	4	-13.83	2197.17	70.1	Pass
L5	78 - 76.75	Pole	TP30.2385x28.4925x0.6778	5	-15.85	2442.76	74.0	Pass
L6	76.75 - 72	Pole	TP31.1982x30.2385x0.7684	6	-17.30	2511.59	81.0	Pass
L7	72 - 70.25	Pole	TP31.5518x31.1982x0.7862	7	-17.84	2809.52	75.2	Pass
L8	70.25 - 69.75	Pole	TP31.6528x31.5518x0.7066	8	-18.01	2427.78	87.5	Pass
L9	69.75 - 56	Pole	TP34.4308x31.6528x0.7047	9	-22.25	2924.60	92.3	Pass
L10	56 - 54	Pole	TP34.8349x34.4308x0.8307	10	-22.99	3499.04	80.0	Pass
L11	54 - 53.5	Pole	TP34.9359x34.8349x0.7439	11	-23.16	3415.23	82.1	Pass
L12	53.5 - 39.75	Pole	TP37.714x34.9359x0.621	12	-25.93	3199.04	97.8	Pass
L13	39.75 - 35	Pole	TP38.0487x35.5123x0.7536	13	-30.51	4011.97	88.8	Pass
L14	35 - 25	Pole	TP40.069x38.0487x0.7306	14	-34.29	4117.70	95.0	Pass
L15	25 - 14.5	Pole	TP42.1905x40.069x0.7714	15	-38.62	4590.76	93.1	Pass
L16	14.5 - 12.5	Pole	TP42.5945x42.1905x0.8155	16	-39.51	4901.57	88.8	Pass
L17	12.5 - 5.5	Pole	TP44.0088x42.5945x0.7987	17	-42.62	4977.25	91.9	Pass
L18	5.5 - 4.75	Pole	TP44.1603x44.0088x0.7413	18	-42.94	4752.05	96.5	Pass
L19	4.75 - 0	Pole	TP45.12x44.1603x0.7319	19	-44.97	4933.15	96.0	Pass
							Summary	
						Pole (L12)	97.8	Pass
						Rating =	97.8	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	90.9	Pass
1	Base Plate	0	53.3	Pass
1	Base Foundation Steel	0	73.9	Pass
1	Base Foundation Soil Interaction	0	89.4	Pass

Structure Rating (max from all components) =	**97.8%**

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

APPENDIX A

TNXTOWER OUTPUT

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

4) Tower is located in New Haven County, Connecticut.
5) Basic wind speed of 90 mph.
6) Nominal ice thickness of 1.2500 in.
7) Ice thickness is considered to increase with height.
8) Ice density of 56.00 pcf.
9) A wind speed of 38 mph is used in combination with ice.
10) Temperature drop of 50 °F.
11) Deflections calculated using a wind speed of 50 mph.
12) A non-linear (P-delta) analysis was used.
13) Pressures are calculated at each section.
14) Stress ratio used in pole design is 1.333.
15) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	120.0000-96.7500	23.2500	0.00	12	22.0000	26.6976	0.2500	1.0000	A607-60 (60 ksi)
L2	96.7500-91.5800	5.1700	0.00	12	26.6976	27.7422	0.3218	1.2871	Reinf 54.63 ksi (55 ksi)
L3	91.5800-90.0833	1.4967	0.00	12	27.7422	28.0446	0.4817	1.9267	Reinf 47.92 ksi (48 ksi)
L4	90.0833-78.0000	12.0833	3.75	12	28.0446	30.4860	0.6179	2.4716	Reinf 47.43 ksi (47 ksi)
L5	78.0000-76.7500	5.0000	0.00	12	28.4925	30.2385	0.6778	2.7112	Reinf 47.34 ksi (47 ksi)
L6	76.7500-72.0000	4.7500	0.00	12	30.2385	31.1982	0.7684	3.0735	Reinf 41.71 ksi (42 ksi)
L7	72.0000-70.2500	1.7500	0.00	12	31.1982	31.5518	0.7862	3.1450	Reinf 45.10 ksi (45 ksi)
L8	70.2500-69.7500	0.5000	0.00	12	31.5518	31.6528	0.7066	2.8265	Reinf 43.11 ksi (43 ksi)
L9	69.7500-56.0000	13.7500	0.00	12	31.6528	34.4308	0.7047	2.8189	Reinf 47.78 ksi (48 ksi)
L10	56.0000-54.0000	2.0000	0.00	12	34.4308	34.8349	0.8307	3.3227	Reinf 48.10 ksi (48 ksi)
L11	54.0000-53.5000	0.5000	0.00	12	34.8349	34.9359	0.7439	2.9754	Reinf 52.14 ksi (52 ksi)
L12	53.5000-39.7500	13.7500	4.75	12	34.9359	37.7140	0.6210	2.4839	Reinf 55.36 ksi (55 ksi)
L13	39.7500-35.0000	9.5000	0.00	12	35.5123	38.0487	0.7536	3.0143	Reinf 55.43 ksi (55 ksi)
L14	35.0000-25.0000	10.0000	0.00	12	38.0487	40.0690	0.7306	2.9225	Reinf 55.63 ksi (56 ksi)
L15	25.0000-14.5000	10.5000	0.00	12	40.0690	42.1904	0.7714	3.0857	Reinf 55.79 ksi (56 ksi)
L16	14.5000-12.5000	2.0000	0.00	12	42.1904	42.5945	0.8155	3.2621	Reinf 55.86 ksi (56 ksi)
L17	12.5000-5.5000	7.0000	0.00	12	42.5945	44.0088	0.7987	3.1948	Reinf 56.00 ksi (56 ksi)
L18	5.5000-4.7500	0.7500	0.00	12	44.0088	44.1603	0.7413	2.9651	Reinf 57.33 ksi (57 ksi)
L19	4.7500-0.0000	4.7500		12	44.1603	45.1200	0.7319	2.9277	Reinf 58.96 ksi (59 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	22.7761	17.5087	1057.2060	7.7865	11.3960	92.7699	2142.1860	8.6173	5.2260	20.904
	27.6394	21.2903	1900.8206	9.4682	13.8294	137.4482	3851.5778	10.4785	6.4850	25.94
L2	27.6394	27.3280	2426.6451	9.4426	13.8294	175.4705	4917.0409	13.4500	6.2926	19.556
	28.7208	28.4103	2726.5262	9.8165	14.3705	189.7314	5524.6813	13.9827	6.5726	20.426
L3	28.7208	42.2805	4010.4567	9.7593	14.3705	279.0765	8126.2725	20.8092	6.1440	12.756
	29.0339	42.7495	4145.4107	9.8675	14.5271	285.3570	8399.7260	21.0400	6.2251	12.924
L4	29.0339	54.5701	5239.4686	9.8188	14.5271	360.6685	10616.5838	26.8577	5.8600	9.484
	31.5614	59.4276	6766.8944	10.6928	15.7917	428.5083	13711.5627	29.2485	6.5142	10.542
L5	30.8533	60.7060	5994.6885	9.9577	14.7591	406.1685	12146.8641	29.8777	5.8195	8.586
	31.3052	64.5167	7195.9399	10.5827	15.6635	459.4069	14580.9252	31.7532	6.2874	9.276
L6	31.3052	72.9136	8082.7357	10.5503	15.6635	516.0222	16377.8138	35.8858	6.0447	7.867
	32.2987	75.2880	8898.3682	10.8939	16.1607	550.6190	18030.5064	37.0545	6.3019	8.202
L7	32.2987	76.9937	9089.2858	10.8875	16.1607	562.4328	18417.3573	37.8940	6.2540	7.954
	32.6648	77.8889	9410.0116	11.0141	16.3438	575.7536	19067.2347	38.3345	6.3488	8.075
L8	32.6648	70.1825	8522.9199	11.0426	16.3438	521.4767	17269.7464	34.5417	6.5621	9.287
	32.7694	70.4123	8606.9339	11.0787	16.3961	524.9364	17439.9816	34.6548	6.5892	9.325
L9	32.7694	70.2273	8585.3723	11.0794	16.3961	523.6214	17396.2918	34.5637	6.5943	9.357
	35.6454	76.5313	11111.1129	12.0740	17.8352	622.9887	22514.1272	37.6664	7.3388	10.414
L10	35.6454	89.8734	12950.8899	12.0289	17.8352	726.1431	26242.0142	44.2329	7.0012	8.428
	36.0638	90.9542	13423.7790	12.1735	18.0445	743.9268	27200.2157	44.7649	7.1095	8.559
L11	36.0638	81.6548	12112.9266	12.2046	18.0445	671.2812	24544.0733	40.1880	7.3422	9.871
	36.1683	81.8968	12220.9265	12.2408	18.0968	675.3081	24762.9104	40.3071	7.3693	9.907
L12	36.1683	68.6147	10312.6416	12.2848	18.0968	569.8594	20896.2078	33.7701	7.6986	12.398
	39.0444	74.1696	13025.5484	13.2793	19.5359	666.7510	26393.2924	36.5040	8.4431	13.596
L13	38.0780	84.3420	13006.4532	12.4436	18.3954	707.0494	26354.6005	41.5106	7.4977	9.95
	39.3909	90.4964	16066.4675	13.3516	19.7092	815.1758	32555.0191	44.5396	8.1775	10.852
L14	39.3909	87.7943	15605.9372	13.3599	19.7092	791.8095	31621.8598	43.2097	8.2390	11.277
	41.4825	92.5474	18280.3336	14.0832	20.7558	880.7353	37040.9119	45.5490	8.7804	12.018
L15	41.4825	97.6142	19241.1694	14.0685	20.7558	927.0278	38987.8257	48.0427	8.6711	11.24
	43.6788	102.8837	22528.5110	14.8280	21.8547	1030.8336	45648.8710	50.6362	9.2396	11.977
L16	43.6788	108.6508	23740.6860	14.8122	21.8547	1086.2989	48105.0663	53.4746	9.1214	11.185
	44.0971	109.7119	24443.0600	14.9569	22.0640	1107.8274	49528.2664	53.9969	9.2297	11.317
L17	44.0971	107.4898	23967.2900	14.9629	22.0640	1086.2641	48564.2274	52.9032	9.2748	11.613
	45.5613	111.1269	26483.5307	15.4692	22.7966	1161.7340	53662.8132	54.6933	9.6539	12.087
L18	45.5613	103.2762	24677.9916	15.4898	22.7966	1082.5317	50004.3016	50.8294	9.8077	13.231
	45.7181	103.6378	24938.180	15.5440	22.8750	1090.1915	50531.513	51.0074	9.8483	13.286

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L19	45.7181	102.3513	24639.2180	15.5474	22.8750	1077.1221	49925.7362	50.3742	9.8734	13.49
	46.7117	104.6130	26309.0106	15.8909	23.3722	1125.6559	53309.1883	51.4874	10.1306	13.841

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
L1 120.0000-96.7500				1	1	1			
L2 96.7500-91.5800				1	1	1			
L3 91.5800-90.0833				1	1	1			
L4 90.0833-78.0000				1	1	1			
L5 78.0000-76.7500				1	1	1			
L6 76.7500-72.0000				1	1	1			
L7 72.0000-70.2500				1	1	1			
L8 70.2500-69.7500				1	1	1			
L9 69.7500-56.0000				1	1	1			
L10 56.0000-54.0000				1	1	1			
L11 54.0000-53.5000				1	1	1			
L12 53.5000-39.7500				1	1	1			
L13 39.7500-35.0000				1	1	1			
L14 35.0000-25.0000				1	1	1			
L15 25.0000-14.5000				1	1	1			
L16 14.5000-12.5000				1	1	1			
L17 12.5000-5.5000				1	1	1			
L18 5.5000-4.7500				1	1	1			
L19 4.7500-0.0000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
**										

Feed Line/Linear Appurtenances - Entered As Area

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

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
9207(5/16")	C	No	CaAa (Out Of Face)	120.0000 - 0.0000	6	No Ice	0.0000	0.60
						1/2" Ice	0.0000	1.11
						1" Ice	0.0000	2.22
						2" Ice	0.0000	6.29
						4" Ice	0.0000	21.76
7983A(1/2")	C	No	CaAa (Out Of Face)	120.0000 - 0.0000	4	No Ice	0.0000	0.08
						1/2" Ice	0.0000	0.74
						1" Ice	0.0000	2.01
						2" Ice	0.0000	6.39
						4" Ice	0.0000	22.47
3" (Nominal) Conduit	C	No	CaAa (Out Of Face)	120.0000 - 0.0000	1	No Ice	0.0000	1.49
						1/2" Ice	0.0000	3.93
						1" Ice	0.0000	6.99
						2" Ice	0.0000	14.93
						4" Ice	0.0000	38.14
3" (Nominal) Conduit	C	No	CaAa (Out Of Face)	120.0000 - 0.0000	1	No Ice	0.3500	1.49
						1/2" Ice	0.4500	3.93
						1" Ice	0.5500	6.99
						2" Ice	0.7500	14.93
						4" Ice	1.1500	38.14
HB114-13U3M12-XXXF(1-1/4")	C	No	CaAa (Out Of Face)	120.0000 - 0.0000	1	No Ice	0.0000	0.99
						1/2" Ice	0.0000	2.24
						1" Ice	0.0000	4.10
						2" Ice	0.0000	9.64
						4" Ice	0.0000	28.07
HB114-1-0813U4-M5J(1 1/4")	C	No	CaAa (Out Of Face)	120.0000 - 0.0000	2	No Ice	0.0000	1.20
						1/2" Ice	0.0000	2.45
						1" Ice	0.0000	4.30
						2" Ice	0.0000	9.85
						4" Ice	0.0000	28.27
HB114-1-0813U4-M5J(1 1/4")	C	No	CaAa (Out Of Face)	120.0000 - 0.0000	1	No Ice	0.1540	1.20
						1/2" Ice	0.2540	2.45
						1" Ice	0.3540	4.30
						2" Ice	0.5540	9.85
						4" Ice	0.9540	28.27
***								
LDF7-50A(1-5/8")	C	No	CaAa (Out Of Face)	113.0000 - 0.0000	1	No Ice	0.0000	0.82
						1/2" Ice	0.0000	2.33
						1" Ice	0.0000	4.46
						2" Ice	0.0000	10.54
						4" Ice	0.0000	30.04
LDF7-50A(1-5/8")	C	No	CaAa (Out Of Face)	113.0000 - 0.0000	5	No Ice	0.0000	0.82
						1/2" Ice	0.0000	2.33
						1" Ice	0.0000	4.46
						2" Ice	0.0000	10.54
						4" Ice	0.0000	30.04
LDF7-50A(1-5/8")	C	No	CaAa (Out Of Face)	113.0000 - 0.0000	2	No Ice	0.1980	0.82
						1/2" Ice	0.2980	2.33
						1" Ice	0.3980	4.46
						2" Ice	0.5980	10.54
						4" Ice	0.9980	30.04
**								
LDF7-50A(1-5/8")	C	No	Inside Pole	105.0000 - 0.0000	1	No Ice	0.0000	0.82
						1/2" Ice	0.0000	0.82
						1" Ice	0.0000	0.82
						2" Ice	0.0000	0.82
						4" Ice	0.0000	0.82
LDF7-50A(1-5/8")	C	No	CaAa (Out Of Face)	105.0000 - 0.0000	6	No Ice	0.0000	0.82
						1/2" Ice	0.0000	2.33
						1" Ice	0.0000	4.46
						2" Ice	0.0000	10.54
						4" Ice	0.0000	30.04
**								
FB-L98B-034-XXX(3/8")	C	No	Inside Pole	97.0000 - 0.0000	1	No Ice	0.0000	0.06
						1/2" Ice	0.0000	0.06
						1" Ice	0.0000	0.06
						2" Ice	0.0000	0.06
						4" Ice	0.0000	0.06
WR-VG86ST-	C	No	Inside Pole	97.0000 - 0.0000	2	No Ice	0.0000	0.58

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
BRD(3/4")						1/2" Ice	0.0000	0.58
						1" Ice	0.0000	0.58
						2" Ice	0.0000	0.58
						4" Ice	0.0000	0.58
**								
FB-L98B-034-XXX(3/8")	C	No	Inside Pole	96.0000 - 0.0000	1	No Ice	0.0000	0.06
						1/2" Ice	0.0000	0.06
						1" Ice	0.0000	0.06
						2" Ice	0.0000	0.06
						4" Ice	0.0000	0.06
WR-VG86ST-BRD(3/4")	C	No	Inside Pole	96.0000 - 0.0000	2	No Ice	0.0000	0.58
						1/2" Ice	0.0000	0.58
						1" Ice	0.0000	0.58
						2" Ice	0.0000	0.58
						4" Ice	0.0000	0.58
2" (Nominal) Conduit	C	No	Inside Pole	96.0000 - 0.0000	2	No Ice	0.0000	0.72
						1/2" Ice	0.0000	0.72
						1" Ice	0.0000	0.72
						2" Ice	0.0000	0.72
						4" Ice	0.0000	0.72
LDF6-50A(1-1/4")	C	No	Inside Pole	96.0000 - 0.0000	12	No Ice	0.0000	0.66
						1/2" Ice	0.0000	0.66
						1" Ice	0.0000	0.66
						2" Ice	0.0000	0.66
						4" Ice	0.0000	0.66
**								
LDF5-50A(7/8")	C	No	Inside Pole	82.0000 - 0.0000	12	No Ice	0.0000	0.33
						1/2" Ice	0.0000	0.33
						1" Ice	0.0000	0.33
						2" Ice	0.0000	0.33
						4" Ice	0.0000	0.33
***								
LDF4-50A(1/2")	C	No	CaAa (Out Of Face)	75.0000 - 0.0000	1	No Ice	0.0000	0.15
						1/2" Ice	0.0000	0.84
						1" Ice	0.0000	2.14
						2" Ice	0.0000	6.58
						4" Ice	0.0000	22.78
***								
C6 x 10.5	C	No	CaAa (Out Of Face)	56.0000 - 0.0000	2	No Ice	0.3390	0.00
						1/2" Ice	0.4223	0.00
						1" Ice	0.5057	0.00
						2" Ice	0.6723	0.00
						4" Ice	1.0057	0.00
1" Flat Reinforcement	C	No	CaAa (Out Of Face)	92.0000 - 56.0000	2	No Ice	0.1667	0.00
						1/2" Ice	0.2778	0.00
						1" Ice	0.3889	0.00
						2" Ice	0.6111	0.00
						4" Ice	1.0556	0.00
**								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	120.0000-96.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	18.153	0.42
L2	96.7500-91.5800	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.793	0.18
L3	91.5800-90.0833	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.846	0.05
L4	90.0833-78.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	0.000	14.903	0.45
L5	78.0000-76.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.542	0.05
L6	76.7500-72.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	5.858	0.19
L7	72.0000-70.2500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.158	0.07
L8	70.2500-69.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.617	0.02
L9	69.7500-56.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	16.958	0.55
L10	56.0000-54.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	3.156	0.08
L11	54.0000-53.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.789	0.02
L12	53.5000-39.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	21.697	0.55
L13	39.7500-35.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	7.495	0.19
L14	35.0000-25.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	15.780	0.40
L15	25.0000-14.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	16.569	0.42
L16	14.5000-12.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	3.156	0.08
L17	12.5000-5.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	11.046	0.28
L18	5.5000-4.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.183	0.03
L19	4.7500-0.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	7.495	0.19

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	120.0000-96.7500	A	1.441	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	40.923	3.33
L2	96.7500-91.5800	A	1.418	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.921	1.01
L3	91.5800-90.0833	A	1.411	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	4.475	0.29
L4	90.0833-78.0000	A	1.398	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	35.928	2.35
L5	78.0000-76.7500	A	1.385	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	0.000	3.717	0.25
L6	76.7500-72.0000	A	1.378	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	14.004	0.93
L7	72.0000-70.2500	A	1.371	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	5.143	0.34
L8	70.2500-69.7500	A	1.368	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.468	0.10
L9	69.7500-56.0000	A	1.350	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	40.063	2.65
L10	56.0000-54.0000	A	1.329	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.168	0.38
L11	54.0000-53.5000	A	1.325	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.540	0.09
L12	53.5000-39.7500	A	1.303	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	41.997	2.54
L13	39.7500-35.0000	A	1.269	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	14.508	0.88
L14	35.0000-25.0000	A	1.250	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	29.947	1.76
L15	25.0000-14.5000	A	1.250	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	31.444	1.85
L16	14.5000-12.5000	A	1.250	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	5.989	0.35
L17	12.5000-5.5000	A	1.250	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	20.963	1.23
L18	5.5000-4.7500	A	1.250	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	2.246	0.13
L19	4.7500-0.0000	A	1.250	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	14.225	0.84

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	120.0000-96.7500	-0.7400	0.4272	-1.1643	0.6722
L2	96.7500-91.5800	-0.8553	0.4938	-1.3490	0.7789
L3	91.5800-90.0833	-1.0468	0.6043	-1.6268	0.9392
L4	90.0833-78.0000	-1.0640	0.6143	-1.6686	0.9634
L5	78.0000-76.7500	-1.0731	0.6196	-1.6928	0.9773
L6	76.7500-72.0000	-1.0812	0.6242	-1.7087	0.9865
L7	72.0000-70.2500	-1.0886	0.6285	-1.7264	0.9967
L8	70.2500-69.7500	-1.0911	0.6300	-1.7324	1.0002
L9	69.7500-56.0000	-1.1065	0.6388	-1.7688	1.0212
L10	56.0000-54.0000	-1.3253	0.7651	-1.8675	1.0782
L11	54.0000-53.5000	-1.3287	0.7671	-1.8737	1.0818
L12	53.5000-39.7500	-1.3475	0.7780	-1.9069	1.1009
L13	39.7500-35.0000	-1.3610	0.7858	-1.9362	1.1178
L14	35.0000-25.0000	-1.3806	0.7971	-1.9607	1.1320
L15	25.0000-14.5000	-1.4036	0.8104	-2.0109	1.1610
L16	14.5000-12.5000	-1.4170	0.8181	-2.0403	1.1780

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L17	12.5000-5.5000	-1.4262	0.8234	-2.0609	1.1899
L18	5.5000-4.7500	-1.4339	0.8279	-2.0782	1.1999
L19	4.7500-0.0000	-1.4393	0.8310	-2.0904	1.2069

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.4975 9.1490 9.7672 11.0311 13.6786	6.9458 8.1266 9.0212 10.8440 14.8507	0.08 0.15 0.23 0.41 0.91
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.4975 9.1490 9.7672 11.0311 13.6786	6.9458 8.1266 9.0212 10.8440 14.8507	0.08 0.15 0.23 0.41 0.91
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.4975 9.1490 9.7672 11.0311 13.6786	6.9458 8.1266 9.0212 10.8440 14.8507	0.08 0.15 0.23 0.41 0.91
LLPX310R w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.9623 5.3512 5.7501 6.5777 8.3714	2.8484 3.3668 3.9019 5.0799 7.8368	0.04 0.08 0.12 0.23 0.53
LLPX310R w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.9623 5.3512 5.7501 6.5777 8.3714	2.8484 3.3668 3.9019 5.0799 7.8368	0.04 0.08 0.12 0.23 0.53
LLPX310R w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.9623 5.3512 5.7501 6.5777 8.3714	2.8484 3.3668 3.9019 5.0799 7.8368	0.04 0.08 0.12 0.23 0.53
MT-485025	C	From Leg	4.0000 0.00 1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.0752 2.2689 2.4713 2.9019 3.8669	0.2358 0.3329 0.4508 0.7125 1.3395	0.01 0.01 0.03 0.06 0.15
800 EXTERNAL NOTCH FILTER	A	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.7701 0.8898 1.0181 1.3007 1.9696	0.3747 0.4647 0.5634 0.7868 1.3372	0.01 0.02 0.02 0.04 0.11
800 EXTERNAL NOTCH FILTER	B	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice	0.7701 0.8898 1.0181 1.3007	0.3747 0.4647 0.5634 0.7868	0.01 0.02 0.02 0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice 4" Ice	1.9696	1.3372	0.11
800 EXTERNAL NOTCH FILTER	C	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.7701 0.8898 1.0181 1.3007 1.9696	0.3747 0.4647 0.5634 0.7868 1.3372	0.01 0.02 0.02 0.04 0.11
(3) ACU-A20-N	A	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0778 0.1210 0.1728 0.3025 0.6654	0.1361 0.1890 0.2506 0.3997 0.8015	0.00 0.00 0.00 0.01 0.04
(3) ACU-A20-N	B	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0778 0.1210 0.1728 0.3025 0.6654	0.1361 0.1890 0.2506 0.3997 0.8015	0.00 0.00 0.00 0.01 0.04
(3) ACU-A20-N	C	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.0778 0.1210 0.1728 0.3025 0.6654	0.1361 0.1890 0.2506 0.3997 0.8015	0.00 0.00 0.00 0.01 0.04
PCS 1900MHz 4x45W-65MHz	A	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.7087 2.9477 3.1953 3.7164 4.8623	2.6111 2.8475 3.0925 3.6084 4.7439	0.06 0.08 0.11 0.17 0.35
PCS 1900MHz 4x45W-65MHz	B	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.7087 2.9477 3.1953 3.7164 4.8623	2.6111 2.8475 3.0925 3.6084 4.7439	0.06 0.08 0.11 0.17 0.35
PCS 1900MHz 4x45W-65MHz	C	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.7087 2.9477 3.1953 3.7164 4.8623	2.6111 2.8475 3.0925 3.6084 4.7439	0.06 0.08 0.11 0.17 0.35
800MHZ RRH	A	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.4899 2.7061 2.9310 3.4068 4.4620	2.0685 2.2705 2.4812 2.9284 3.9265	0.05 0.07 0.10 0.16 0.32
800MHZ RRH	B	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.4899 2.7061 2.9310 3.4068 4.4620	2.0685 2.2705 2.4812 2.9284 3.9265	0.05 0.07 0.10 0.16 0.32
800MHZ RRH	C	From Leg	4.0000 0.00 -1.00	0.00	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.4899 2.7061 2.9310 3.4068 4.4620	2.0685 2.2705 2.4812 2.9284 3.9265	0.05 0.07 0.10 0.16 0.32
FDD_R6_RRH	A	From Leg	4.0000 0.00 0.00	0.00	122.0000	No Ice 1/2" Ice	1.7889 1.9715 2.1627	0.7778 0.9182 1.0673	0.03 0.04 0.06

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		*C_AA_A Front* ft^2	*C_AA_A Side* ft^2	*Weight* K
						1" Ice	2.5710	1.3914	0.09
						2" Ice	3.4914	2.1432	0.20
						4" Ice			
FDD_R6_RRH	B	From Leg	4.0000	0.00	122.0000	No Ice	1.7889	0.7778	0.03
			0.00			1/2"	1.9715	0.9182	0.04
			0.00			Ice	2.1627	1.0673	0.06
						1" Ice	2.5710	1.3914	0.09
						2" Ice	3.4914	2.1432	0.20
						4" Ice			
FDD_R6_RRH	C	From Leg	4.0000	0.00	122.0000	No Ice	1.7889	0.7778	0.03
			0.00			1/2"	1.9715	0.9182	0.04
			0.00			Ice	2.1627	1.0673	0.06
						1" Ice	2.5710	1.3914	0.09
						2" Ice	3.4914	2.1432	0.20
						4" Ice			
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.0000	0.00	122.0000	No Ice	7.1342	4.9591	0.08
			0.00			1/2"	7.6618	5.7544	0.13
			-1.00			Ice	8.1830	6.4723	0.19
						1" Ice	9.2563	8.0099	0.34
						2" Ice	11.5262	11.4120	0.75
						4" Ice			
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.0000	0.00	122.0000	No Ice	7.1342	4.9591	0.08
			0.00			1/2"	7.6618	5.7544	0.13
			-1.00			Ice	8.1830	6.4723	0.19
						1" Ice	9.2563	8.0099	0.34
						2" Ice	11.5262	11.4120	0.75
						4" Ice			
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.0000	0.00	122.0000	No Ice	7.1342	4.9591	0.08
			0.00			1/2"	7.6618	5.7544	0.13
			-1.00			Ice	8.1830	6.4723	0.19
						1" Ice	9.2563	8.0099	0.34
						2" Ice	11.5262	11.4120	0.75
						4" Ice			
TD-RRH8x20-25	A	From Leg	4.0000	0.00	122.0000	No Ice	4.7198	1.7027	0.07
			0.00			1/2"	5.0138	1.9196	0.10
			-1.00			Ice	5.3165	2.1453	0.13
						1" Ice	5.9478	2.6224	0.20
						2" Ice	7.3141	3.6805	0.40
						4" Ice			
TD-RRH8x20-25	B	From Leg	4.0000	0.00	122.0000	No Ice	4.7198	1.7027	0.07
			0.00			1/2"	5.0138	1.9196	0.10
			-1.00			Ice	5.3165	2.1453	0.13
						1" Ice	5.9478	2.6224	0.20
						2" Ice	7.3141	3.6805	0.40
						4" Ice			
TD-RRH8x20-25	C	From Leg	4.0000	0.00	122.0000	No Ice	4.7198	1.7027	0.07
			0.00			1/2"	5.0138	1.9196	0.10
			-1.00			Ice	5.3165	2.1453	0.13
						1" Ice	5.9478	2.6224	0.20
						2" Ice	7.3141	3.6805	0.40
						4" Ice			
Platform Mount [LP 713-1]	C	None		0.00	122.0000	No Ice	31.2700	31.2700	1.51
						1/2"	39.6800	39.6800	1.93
						Ice	48.0900	48.0900	2.35
						1" Ice	64.9100	64.9100	3.19
						2" Ice	98.5500	98.5500	4.86
						4" Ice			
2.375" OD x 5' Mount Pipe	A	From Face	4.0000	0.00	122.0000	No Ice	1.1875	1.1875	0.02
			0.00			1/2"	1.4956	1.4956	0.03
			0.00			Ice	1.8071	1.8071	0.04
						1" Ice	2.4580	2.4580	0.08
						2" Ice	3.9194	3.9194	0.20
						4" Ice			
2.375" OD x 5' Mount Pipe	B	From Face	4.0000	0.00	122.0000	No Ice	1.1875	1.1875	0.02
			0.00			1/2"	1.4956	1.4956	0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			Ice	1.8071	1.8071	0.04
						1" Ice	2.4580	2.4580	0.08
						2" Ice	3.9194	3.9194	0.20
						4" Ice			
2.375" OD x 5' Mount Pipe	C	From Face	4.0000	0.00	122.0000	No Ice	1.1875	1.1875	0.02
			0.00			1/2"	1.4956	1.4956	0.03
			0.00			Ice	1.8071	1.8071	0.04
						1" Ice	2.4580	2.4580	0.08
						2" Ice	3.9194	3.9194	0.20
						4" Ice			
**									
(2) DB846F65ZAXY w/ Mount Pipe	A	From Face	4.0000	0.00	113.0000	No Ice	7.2708	7.8208	0.05
			0.00			1/2"	7.8773	9.0097	0.11
			1.00			Ice	8.4838	9.9124	0.19
						1" Ice	9.7244	11.8119	0.37
						2" Ice	12.3252	15.9785	0.87
						4" Ice			
(2) LPA-80063/4CF w/ Mount Pipe	B	From Face	4.0000	0.00	113.0000	No Ice	7.2481	7.2599	0.04
			0.00			1/2"	7.7190	7.9574	0.10
			1.00			Ice	8.2003	8.6723	0.18
						1" Ice	9.1945	10.1556	0.34
						2" Ice	11.3199	13.3910	0.80
						4" Ice			
(2) LPA-80063/4CF w/ Mount Pipe	C	From Face	4.0000	0.00	113.0000	No Ice	7.2481	7.2599	0.04
			0.00			1/2"	7.7190	7.9574	0.10
			1.00			Ice	8.2003	8.6723	0.18
						1" Ice	9.1945	10.1556	0.34
						2" Ice	11.3199	13.3910	0.80
						4" Ice			
ACUTIME 2000	A	From Face	4.0000	0.00	113.0000	No Ice	0.2975	0.2975	0.00
			0.00			1/2"	0.3739	0.3739	0.00
			3.00			Ice	0.4589	0.4589	0.01
						1" Ice	0.6549	0.6549	0.02
						2" Ice	1.1506	1.1506	0.08
						4" Ice			
BXA-171063-8BF-EDIN-0 w/ Mount Pipe	A	From Face	4.0000	0.00	113.0000	No Ice	3.1789	3.3530	0.03
			0.00			1/2"	3.5550	3.9709	0.06
			1.00			Ice	3.9637	4.5951	0.10
						1" Ice	4.8533	5.8933	0.19
						2" Ice	6.7671	8.8855	0.49
						4" Ice			
BXA-171063-8BF-EDIN-0 w/ Mount Pipe	B	From Face	4.0000	0.00	113.0000	No Ice	3.1789	3.3530	0.03
			0.00			1/2"	3.5550	3.9709	0.06
			1.00			Ice	3.9637	4.5951	0.10
						1" Ice	4.8533	5.8933	0.19
						2" Ice	6.7671	8.8855	0.49
						4" Ice			
BXA-171063-8BF-EDIN-0 w/ Mount Pipe	C	From Face	4.0000	0.00	113.0000	No Ice	3.1789	3.3530	0.03
			0.00			1/2"	3.5550	3.9709	0.06
			1.00			Ice	3.9637	4.5951	0.10
						1" Ice	4.8533	5.8933	0.19
						2" Ice	6.7671	8.8855	0.49
						4" Ice			
(2) FD9R6004/2C-3L	A	From Face	4.0000	0.00	113.0000	No Ice	0.3665	0.0846	0.00
			0.00			1/2"	0.4506	0.1362	0.01
			1.00			Ice	0.5433	0.1965	0.01
						1" Ice	0.7546	0.3430	0.02
						2" Ice	1.2808	0.7396	0.06
						4" Ice			
(2) FD9R6004/2C-3L	B	From Face	4.0000	0.00	113.0000	No Ice	0.3665	0.0846	0.00
			0.00			1/2"	0.4506	0.1362	0.01
			0.00			Ice	0.5433	0.1965	0.01
						1" Ice	0.7546	0.3430	0.02
						2" Ice	1.2808	0.7396	0.06
						4" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) FD9R6004/2C-3L	C	From Face	4.0000 0.00 0.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.3665 0.4506 0.5433 0.7546 1.2808	0.0846 0.1362 0.1965 0.3430 0.7396	0.00 0.01 0.01 0.02 0.06
DB-T1-6Z-8AB-0Z	A	From Face	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.6000 5.9154 6.2395 6.9136 8.3654	2.3333 2.5580 2.7914 3.2840 4.3728	0.04 0.08 0.12 0.21 0.45
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.6393 9.2963 9.9210 11.1952 13.8631	7.0730 8.2637 9.1753 11.0130 15.0524	0.07 0.14 0.21 0.39 0.90
(2) SBNHH-1D45B w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	12.8375 13.5292 14.1875 15.5319 18.3400	6.9458 8.1266 9.0212 10.8440 14.8507	0.09 0.17 0.26 0.48 1.05
(2) SBNHH-1D45B w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	12.8375 13.5292 14.1875 15.5319 18.3400	6.9458 8.1266 9.0212 10.8440 14.8507	0.09 0.17 0.26 0.48 1.05
RRH2x60-700	A	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.9569 4.2724 4.5965 5.2705 6.7224	1.8157 2.0752 2.3603 2.9566 4.2529	0.06 0.08 0.11 0.17 0.35
RRH2x60-700	B	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.9569 4.2724 4.5965 5.2705 6.7224	1.8157 2.0752 2.3603 2.9566 4.2529	0.06 0.08 0.11 0.17 0.35
RRH2x60-700	C	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.9569 4.2724 4.5965 5.2705 6.7224	1.8157 2.0752 2.3603 2.9566 4.2529	0.06 0.08 0.11 0.17 0.35
RRH2X60-1900	A	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.1865 2.3936 2.6093 3.0666 4.0850	1.4056 1.5867 1.7765 2.1820 3.0967	0.04 0.06 0.08 0.12 0.26
RRH2X60-1900	B	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.1865 2.3936 2.6093 3.0666 4.0850	1.4056 1.5867 1.7765 2.1820 3.0967	0.04 0.06 0.08 0.12 0.26
RRH2X60-1900	C	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.1865 2.3936 2.6093 3.0666 4.0850	1.4056 1.5867 1.7765 2.1820 3.0967	0.04 0.06 0.08 0.12 0.26

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice			
AWS-3 RRH4X45	A	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.6190 3.9022 4.1940 4.8035 6.1262	4.2282 4.5244 4.8293 5.4650 6.8401	0.08 0.11 0.15 0.24 0.47
AWS-3 RRH4X45	B	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.6190 3.9022 4.1940 4.8035 6.1262	4.2282 4.5244 4.8293 5.4650 6.8401	0.08 0.11 0.15 0.24 0.47
AWS-3 RRH4X45	C	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.6190 3.9022 4.1940 4.8035 6.1262	4.2282 4.5244 4.8293 5.4650 6.8401	0.08 0.11 0.15 0.24 0.47
DB-T1-6Z-8AB-0Z	B	From Leg	4.0000 0.00 1.00	0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.6000 5.9154 6.2395 6.9136 8.3654	2.3333 2.5580 2.7914 3.2840 4.3728	0.04 0.08 0.12 0.21 0.45
Platform Mount [LP 305-1]	C	None		0.00	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	18.0100 23.3300 28.6500 39.2900 60.5700	18.0100 23.3300 28.6500 39.2900 60.5700	1.12 1.35 1.58 2.05 2.97
**									
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.8253 7.3471 7.8631 8.9261 11.1755	5.6424 6.4800 7.2567 8.8640 12.2932	0.11 0.17 0.23 0.38 0.81
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.8253 7.3471 7.8631 8.9261 11.1755	5.6424 6.4800 7.2567 8.8640 12.2932	0.11 0.17 0.23 0.38 0.81
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.8253 7.3471 7.8631 8.9261 11.1755	5.6424 6.4800 7.2567 8.8640 12.2932	0.11 0.17 0.23 0.38 0.81
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.8155 7.3373 7.8532 8.9160 11.1650	5.6334 6.4717 7.2478 8.8537 12.2804	0.11 0.17 0.23 0.38 0.81
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.8155 7.3373 7.8532 8.9160 11.1650	5.6334 6.4717 7.2478 8.8537 12.2804	0.11 0.17 0.23 0.38 0.81
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice 1/2" Ice	6.8155 7.3373 7.8532	5.6334 6.4717 7.2478	0.11 0.17 0.23

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	8.9160	8.8537	0.38
						2" Ice	11.1650	12.2804	0.81
						4" Ice			
KRY 112 144/1	A	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice	0.4083	0.2042	0.01
						1/2" Ice	0.4969	0.2733	0.01
						1" Ice	0.5941	0.3511	0.02
						2" Ice	0.8145	0.5326	0.03
						4" Ice	1.3590	0.9992	0.08
KRY 112 144/1	B	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice	0.4083	0.2042	0.01
						1/2" Ice	0.4969	0.2733	0.01
						1" Ice	0.5941	0.3511	0.02
						2" Ice	0.8145	0.5326	0.03
						4" Ice	1.3590	0.9992	0.08
KRY 112 144/1	C	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice	0.4083	0.2042	0.01
						1/2" Ice	0.4969	0.2733	0.01
						1" Ice	0.5941	0.3511	0.02
						2" Ice	0.8145	0.5326	0.03
						4" Ice	1.3590	0.9992	0.08
LNX-6515DS-VTM w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice	11.6828	9.8418	0.08
						1/2" Ice	12.4043	11.3657	0.17
						1" Ice	13.1351	12.9138	0.27
						2" Ice	14.6007	15.2672	0.51
						4" Ice	17.8748	20.1392	1.15
LNX-6515DS-VTM w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice	11.6828	9.8418	0.08
						1/2" Ice	12.4043	11.3657	0.17
						1" Ice	13.1351	12.9138	0.27
						2" Ice	14.6007	15.2672	0.51
						4" Ice	17.8748	20.1392	1.15
LNX-6515DS-VTM w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice	11.6828	9.8418	0.08
						1/2" Ice	12.4043	11.3657	0.17
						1" Ice	13.1351	12.9138	0.27
						2" Ice	14.6007	15.2672	0.51
						4" Ice	17.8748	20.1392	1.15
RRUS 11 B12	A	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice	3.3056	1.3611	0.05
						1/2" Ice	3.5497	1.5404	0.07
						1" Ice	3.8025	1.7284	0.10
						2" Ice	4.3340	2.1302	0.15
						4" Ice	5.5006	3.0377	0.31
RRUS 11 B12	B	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice	3.3056	1.3611	0.05
						1/2" Ice	3.5497	1.5404	0.07
						1" Ice	3.8025	1.7284	0.10
						2" Ice	4.3340	2.1302	0.15
						4" Ice	5.5006	3.0377	0.31
RRUS 11 B12	C	From Leg	4.0000 0.00 2.00	0.00	105.0000	No Ice	3.3056	1.3611	0.05
						1/2" Ice	3.5497	1.5404	0.07
						1" Ice	3.8025	1.7284	0.10
						2" Ice	4.3340	2.1302	0.15
						4" Ice	5.5006	3.0377	0.31
Platform Mount [LP 712-1]	C	None		0.00	105.0000	No Ice	24.5300	24.5300	1.34
						1/2" Ice	29.9400	29.9400	1.65
						1" Ice	35.3500	35.3500	1.96
						2" Ice	46.1700	46.1700	2.58
						4" Ice	67.8100	67.8100	3.82
**									
RRUS 11	A	From Leg	2.0000	0.00	97.0000	No Ice	3.2560	1.3790	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00 0.00			1/2" Ice	3.4982 3.7490	1.5577 1.7450	0.07 0.10
						1" Ice	4.2766	2.1455	0.15
						2" Ice	5.4355	3.0504	0.31
						4" Ice			
RRUS 11	B	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.2560 3.4982 3.7490 4.2766 5.4355	1.3790 1.5577 1.7450 2.1455 3.0504	0.05 0.07 0.10 0.15 0.31
RRUS 11	C	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.2560 3.4982 3.7490 4.2766 5.4355	1.3790 1.5577 1.7450 2.1455 3.0504	0.05 0.07 0.10 0.15 0.31
DC6-48-60-18-8F	A	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.4667 1.6667 1.8778 2.3333 3.3778	1.4667 1.6667 1.8778 2.3333 3.3778	0.02 0.04 0.06 0.11 0.24
DC6-48-60-18-8F	B	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.4667 1.6667 1.8778 2.3333 3.3778	1.4667 1.6667 1.8778 2.3333 3.3778	0.02 0.04 0.06 0.11 0.24
WCS RRUS-32-B30	A	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.8662 4.1506 4.4435 5.0554 6.3828	2.7616 3.0213 3.2896 3.8522 5.0811	0.08 0.10 0.14 0.21 0.41
(2) WCS RRUS-32-B30	C	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.8662 4.1506 4.4435 5.0554 6.3828	2.7616 3.0213 3.2896 3.8522 5.0811	0.08 0.10 0.14 0.21 0.41
TME-RRUS-32 B30	A	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.8662 4.1506 4.4435 5.0554 6.3828	2.7616 3.0213 3.2896 3.8522 5.0811	0.08 0.10 0.14 0.21 0.41
TME-RRUS-32 B30	B	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.8662 4.1506 4.4435 5.0554 6.3828	2.7616 3.0213 3.2896 3.8522 5.0811	0.08 0.10 0.14 0.21 0.41
TME-RRUS-32 B30	C	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.8662 4.1506 4.4435 5.0554 6.3828	2.7616 3.0213 3.2896 3.8522 5.0811	0.08 0.10 0.14 0.21 0.41
Side Arm Mount [SO 102-3]	C	None		0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.0000 3.4800 3.9600 4.9200 6.8400	3.0000 3.4800 3.9600 4.9200 6.8400	0.08 0.11 0.14 0.20 0.32

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) 2.375" OD x 3' Mount Pipe	A	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.5826 0.7701 0.9669 1.4167 2.5361	0.5826 0.7701 0.9669 1.4167 2.5361	0.03 0.03 0.04 0.06 0.14
(2) 2.375" OD x 3' Mount Pipe	B	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.5826 0.7701 0.9669 1.4167 2.5361	0.5826 0.7701 0.9669 1.4167 2.5361	0.03 0.03 0.04 0.06 0.14
(2) 2.375" OD x 3' Mount Pipe	C	From Leg	2.0000 0.00 0.00	0.00	97.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.5826 0.7701 0.9669 1.4167 2.5361	0.5826 0.7701 0.9669 1.4167 2.5361	0.03 0.03 0.04 0.06 0.14
**									
7770.00 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.2208 6.7144 7.2182 8.2568 10.4762	4.8204 5.5082 6.2127 7.6716 11.0613	0.09 0.14 0.21 0.36 0.76
7770.00 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.2208 6.7144 7.2182 8.2568 10.4762	4.8204 5.5082 6.2127 7.6716 11.0613	0.09 0.14 0.21 0.36 0.76
7770.00 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.2208 6.7144 7.2182 8.2568 10.4762	4.8204 5.5082 6.2127 7.6716 11.0613	0.09 0.14 0.21 0.36 0.76
OPA-65R-LCUU-H6 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	10.5975 11.2684 11.9061 13.2089 15.9341	7.1792 8.3621 9.2588 11.0860 15.1514	0.10 0.18 0.26 0.46 1.00
OPA-65R-LCUU-H6 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	10.5975 11.2684 11.9061 13.2089 15.9341	7.1792 8.3621 9.2588 11.0860 15.1514	0.10 0.18 0.26 0.46 1.00
OPA-65R-LCUU-H6 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	10.5975 11.2684 11.9061 13.2089 15.9341	7.1792 8.3621 9.2588 11.0860 15.1514	0.10 0.18 0.26 0.46 1.00
(2) LGP2140X	A	From Leg	4.0000 0.00 0.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.2600 1.4160 1.5806 1.9358 2.7499	0.3780 0.4932 0.6170 0.8905 1.5412	0.01 0.02 0.03 0.05 0.13
(2) LGP2140X	B	From Leg	4.0000 0.00 0.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice	1.2600 1.4160 1.5806 1.9358	0.3780 0.4932 0.6170 0.8905	0.01 0.02 0.03 0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice 4" Ice	2.7499	1.5412	0.13
(2) LGP2140X	C	From Leg	4.0000 0.00 0.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.2600 1.4160 1.5806 1.9358 2.7499	0.3780 0.4932 0.6170 0.8905 1.5412	0.01 0.02 0.03 0.05 0.13
QS66512-2 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.6375 9.2903 9.9098 11.1763 13.8289	8.4625 9.6573 10.6203 12.6104 16.8055	0.14 0.21 0.30 0.49 1.03
QS66512-2 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.6375 9.2903 9.9098 11.1763 13.8289	8.4625 9.6573 10.6203 12.6104 16.8055	0.14 0.21 0.30 0.49 1.03
QS66512-2 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.6375 9.2903 9.9098 11.1763 13.8289	8.4625 9.6573 10.6203 12.6104 16.8055	0.14 0.21 0.30 0.49 1.03
WCS-IMFQ-AMT	C	From Leg	4.0000 0.00 1.00	0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.1542 1.2998 1.4541 1.7885 2.5611	0.7513 0.8730 1.0033 1.2897 1.9664	0.03 0.04 0.05 0.08 0.18
Platform Mount [LP 601-1]	C	None		0.00	96.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	28.4700 33.5900 38.7100 48.9500 69.4300	28.4700 33.5900 38.7100 48.9500 69.4300	1.12 1.51 1.91 2.69 4.26
**									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
PX2F-52	A	Paraboloid w/o Radome	From Leg	4.0000 0.00 1.00	25.00		122.0000	2.0917	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.4400 3.7200 3.9900 4.5500 5.6700	0.02 0.04 0.06 0.09 0.17
VHLP2-11	A	Paraboloid w/o Radome	From Leg	4.0000 0.00 3.00	37.00		122.0000	2.1750	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.7200 4.0100 4.3000 4.8800 6.0400	0.03 0.05 0.07 0.11 0.19
VHLP2-11	B	Paraboloid w/o Radome	From Leg	4.0000 0.00	10.00		122.0000	2.1750	No Ice 1/2" Ice	3.7200 4.0100	0.03 0.05

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
				3.00					1" Ice	4.3000	0.07
									2" Ice	4.8800	0.11
									4" Ice	6.0400	0.19
**											

Tower Pressures - No Ice

G_H = 1.690

Section Elevation ft	z ft	K_z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 120.0000-96.7500	108.0012	1.403	29.10	47.176	A	0.000	47.176	47.176	100.00	0.000	0.000
					B	0.000	47.176		100.00	0.000	0.000
					C	0.000	47.176		100.00	0.000	18.153
L2 96.7500-91.5800	94.1485	1.349	27.98	11.727	A	0.000	11.727	11.727	100.00	0.000	0.000
					B	0.000	11.727		100.00	0.000	0.000
					C	0.000	11.727		100.00	0.000	4.793
L3 91.5800-90.0833	90.8303	1.335	27.69	3.479	A	0.000	3.479	3.479	100.00	0.000	0.000
					B	0.000	3.479		100.00	0.000	0.000
					C	0.000	3.479		100.00	0.000	1.846
L4 90.0833-78.0000	83.9576	1.306	27.08	29.468	A	0.000	29.468	29.468	100.00	0.000	0.000
					B	0.000	29.468		100.00	0.000	0.000
					C	0.000	29.468		100.00	0.000	14.903
L5 78.0000-76.7500	77.3735	1.276	26.45	3.127	A	0.000	3.127	3.127	100.00	0.000	0.000
					B	0.000	3.127		100.00	0.000	0.000
					C	0.000	3.127		100.00	0.000	1.542
L6 76.7500-72.0000	74.3626	1.261	26.15	12.159	A	0.000	12.159	12.159	100.00	0.000	0.000
					B	0.000	12.159		100.00	0.000	0.000
					C	0.000	12.159		100.00	0.000	5.858
L7 72.0000-70.2500	71.1234	1.245	25.82	4.576	A	0.000	4.576	4.576	100.00	0.000	0.000
					B	0.000	4.576		100.00	0.000	0.000
					C	0.000	4.576		100.00	0.000	2.158
L8 70.2500-69.7500	69.9999	1.24	25.71	1.317	A	0.000	1.317	1.317	100.00	0.000	0.000
					B	0.000	1.317		100.00	0.000	0.000
					C	0.000	1.317		100.00	0.000	0.617
L9 69.7500-56.0000	62.7787	1.202	24.92	37.860	A	0.000	37.860	37.860	100.00	0.000	0.000
					B	0.000	37.860		100.00	0.000	0.000
					C	0.000	37.860		100.00	0.000	16.958
L10 56.0000-54.0000	54.9981	1.157	23.99	5.772	A	0.000	5.772	5.772	100.00	0.000	0.000
					B	0.000	5.772		100.00	0.000	0.000
					C	0.000	5.772		100.00	0.000	3.156
L11 54.0000-53.5000	53.7499	1.15	23.84	1.454	A	0.000	1.454	1.454	100.00	0.000	0.000
					B	0.000	1.454		100.00	0.000	0.000
					C	0.000	1.454		100.00	0.000	0.789
L12 53.5000-39.7500	46.5374	1.103	22.88	41.622	A	0.000	41.622	41.622	100.00	0.000	0.000
					B	0.000	41.622		100.00	0.000	0.000
					C	0.000	41.622		100.00	0.000	21.697
L13 39.7500-35.0000	37.3616	1.036	21.48	14.810	A	0.000	14.810	14.810	100.00	0.000	0.000
					B	0.000	14.810		100.00	0.000	0.000
					C	0.000	14.810		100.00	0.000	7.495
L14 35.0000-25.0000	29.9569	1	20.74	32.549	A	0.000	32.549	32.549	100.00	0.000	0.000
					B	0.000	32.549		100.00	0.000	0.000
					C	0.000	32.549		100.00	0.000	15.780
L15 25.0000-14.5000	19.7049	1	20.74	35.989	A	0.000	35.989	35.989	100.00	0.000	0.000
					B	0.000	35.989		100.00	0.000	0.000
					C	0.000	35.989		100.00	0.000	16.569
L16 14.5000-12.5000	13.4984	1	20.74	7.065	A	0.000	7.065	7.065	100.00	0.000	0.000
					B	0.000	7.065		100.00	0.000	0.000
					C	0.000	7.065		100.00	0.000	3.156
L17 12.5000-5.5000	8.9809	1	20.74	25.259	A	0.000	25.259	25.259	100.00	0.000	0.000
					B	0.000	25.259		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	25.259		100.00	0.000	11.046
L18 5.5000-4.7500	5.1248	1	20.74	2.755	A	0.000	2.755	2.755	100.00	0.000	0.000
					B	0.000	2.755		100.00	0.000	0.000
					C	0.000	2.755		100.00	0.000	1.183
L19 4.7500-0.0000	2.3665	1	20.74	17.670	A	0.000	17.670	17.670	100.00	0.000	0.000
					B	0.000	17.670		100.00	0.000	0.000
					C	0.000	17.670		100.00	0.000	7.495

Tower Pressure - With Ice

G_H = 1.690

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 120.0000-96.7500	108.0012	1.403	5.08	1.4411	52.760	A	0.000	52.760	52.760	100.00	0.000	0.000
						B	0.000	52.760		100.00	0.000	0.000
						C	0.000	52.760		100.00	0.000	40.923
L2 96.7500-91.5800	94.1485	1.349	4.88	1.4176	12.949	A	0.000	12.949	12.949	100.00	0.000	0.000
						B	0.000	12.949		100.00	0.000	0.000
						C	0.000	12.949		100.00	0.000	10.921
L3 91.5800-90.0833	90.8303	1.335	4.83	1.4115	3.831	A	0.000	3.831	3.831	100.00	0.000	0.000
						B	0.000	3.831		100.00	0.000	0.000
						C	0.000	3.831		100.00	0.000	4.475
L4 90.0833-78.0000	83.9576	1.306	4.73	1.3982	32.284	A	0.000	32.284	32.284	100.00	0.000	0.000
						B	0.000	32.284		100.00	0.000	0.000
						C	0.000	32.284		100.00	0.000	35.928
L5 78.0000-76.7500	77.3735	1.276	4.62	1.3846	3.418	A	0.000	3.418	3.418	100.00	0.000	0.000
						B	0.000	3.418		100.00	0.000	0.000
						C	0.000	3.418		100.00	0.000	3.717
L6 76.7500-72.0000	74.3626	1.261	4.56	1.3780	13.250	A	0.000	13.250	13.250	100.00	0.000	0.000
						B	0.000	13.250		100.00	0.000	0.000
						C	0.000	13.250		100.00	0.000	14.004
L7 72.0000-70.2500	71.1234	1.245	4.51	1.3707	4.975	A	0.000	4.975	4.975	100.00	0.000	0.000
						B	0.000	4.975		100.00	0.000	0.000
						C	0.000	4.975		100.00	0.000	5.143
L8 70.2500-69.7500	69.9999	1.24	4.49	1.3680	1.431	A	0.000	1.431	1.431	100.00	0.000	0.000
						B	0.000	1.431		100.00	0.000	0.000
						C	0.000	1.431		100.00	0.000	1.468
L9 69.7500-56.0000	62.7787	1.202	4.35	1.3503	40.955	A	0.000	40.955	40.955	100.00	0.000	0.000
						B	0.000	40.955		100.00	0.000	0.000
						C	0.000	40.955		100.00	0.000	40.063
L10 56.0000-54.0000	54.9981	1.157	4.19	1.3290	6.215	A	0.000	6.215	6.215	100.00	0.000	0.000
						B	0.000	6.215		100.00	0.000	0.000
						C	0.000	6.215		100.00	0.000	6.168
L11 54.0000-53.5000	53.7499	1.15	4.16	1.3254	1.564	A	0.000	1.564	1.564	100.00	0.000	0.000
						B	0.000	1.564		100.00	0.000	0.000
						C	0.000	1.564		100.00	0.000	1.540
L12 53.5000-39.7500	46.5374	1.103	3.99	1.3026	44.608	A	0.000	44.608	44.608	100.00	0.000	0.000
						B	0.000	44.608		100.00	0.000	0.000
						C	0.000	44.608		100.00	0.000	41.997
L13 39.7500-35.0000	37.3616	1.036	3.75	1.2688	15.841	A	0.000	15.841	15.841	100.00	0.000	0.000
						B	0.000	15.841		100.00	0.000	0.000
						C	0.000	15.841		100.00	0.000	14.508
L14 35.0000-25.0000	29.9569	1	3.62	1.2500	34.632	A	0.000	34.632	34.632	100.00	0.000	0.000
						B	0.000	34.632		100.00	0.000	0.000
						C	0.000	34.632		100.00	0.000	29.947
L15 25.0000-14.5000	19.7049	1	3.62	1.2500	38.176	A	0.000	38.176	38.176	100.00	0.000	0.000
						B	0.000	38.176		100.00	0.000	0.000
						C	0.000	38.176		100.00	0.000	31.444
L16 14.5000-12.5000	13.4984	1	3.62	1.2500	7.482	A	0.000	7.482	7.482	100.00	0.000	0.000
						B	0.000	7.482		100.00	0.000	0.000
						C	0.000	7.482		100.00	0.000	5.989
L17 12.5000-	8.9809	1	3.62	1.2500	26.718	A	0.000	26.718	26.718	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
5.5000						B	0.000	26.718		100.00	0.000	0.000
						C	0.000	26.718		100.00	0.000	20.963
L18 5.5000-4.7500	5.1248	1	3.62	1.2500	2.912	A	0.000	2.912	2.912	100.00	0.000	0.000
						B	0.000	2.912		100.00	0.000	0.000
						C	0.000	2.912		100.00	0.000	2.246
L19 4.7500-0.0000	2.3665	1	3.62	1.2500	18.660	A	0.000	18.660	18.660	100.00	0.000	0.000
						B	0.000	18.660		100.00	0.000	0.000
						C	0.000	18.660		100.00	0.000	14.225

Tower Pressure - Service

G_H = 1.690

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 120.0000-96.7500	108.0012	1.403	8.98	47.176	A	0.000	47.176	47.176	100.00	0.000	0.000
					B	0.000	47.176		100.00	0.000	0.000
					C	0.000	47.176		100.00	0.000	18.153
L2 96.7500-91.5800	94.1485	1.349	8.64	11.727	A	0.000	11.727	11.727	100.00	0.000	0.000
					B	0.000	11.727		100.00	0.000	0.000
					C	0.000	11.727		100.00	0.000	4.793
L3 91.5800-90.0833	90.8303	1.335	8.55	3.479	A	0.000	3.479	3.479	100.00	0.000	0.000
					B	0.000	3.479		100.00	0.000	0.000
					C	0.000	3.479		100.00	0.000	1.846
L4 90.0833-78.0000	83.9576	1.306	8.36	29.468	A	0.000	29.468	29.468	100.00	0.000	0.000
					B	0.000	29.468		100.00	0.000	0.000
					C	0.000	29.468		100.00	0.000	14.903
L5 78.0000-76.7500	77.3735	1.276	8.16	3.127	A	0.000	3.127	3.127	100.00	0.000	0.000
					B	0.000	3.127		100.00	0.000	0.000
					C	0.000	3.127		100.00	0.000	1.542
L6 76.7500-72.0000	74.3626	1.261	8.07	12.159	A	0.000	12.159	12.159	100.00	0.000	0.000
					B	0.000	12.159		100.00	0.000	0.000
					C	0.000	12.159		100.00	0.000	5.858
L7 72.0000-70.2500	71.1234	1.245	7.97	4.576	A	0.000	4.576	4.576	100.00	0.000	0.000
					B	0.000	4.576		100.00	0.000	0.000
					C	0.000	4.576		100.00	0.000	2.158
L8 70.2500-69.7500	69.9999	1.24	7.93	1.317	A	0.000	1.317	1.317	100.00	0.000	0.000
					B	0.000	1.317		100.00	0.000	0.000
					C	0.000	1.317		100.00	0.000	0.617
L9 69.7500-56.0000	62.7787	1.202	7.69	37.860	A	0.000	37.860	37.860	100.00	0.000	0.000
					B	0.000	37.860		100.00	0.000	0.000
					C	0.000	37.860		100.00	0.000	16.958
L10 56.0000-54.0000	54.9981	1.157	7.41	5.772	A	0.000	5.772	5.772	100.00	0.000	0.000
					B	0.000	5.772		100.00	0.000	0.000
					C	0.000	5.772		100.00	0.000	3.156
L11 54.0000-53.5000	53.7499	1.15	7.36	1.454	A	0.000	1.454	1.454	100.00	0.000	0.000
					B	0.000	1.454		100.00	0.000	0.000
					C	0.000	1.454		100.00	0.000	0.789
L12 53.5000-39.7500	46.5374	1.103	7.06	41.622	A	0.000	41.622	41.622	100.00	0.000	0.000
					B	0.000	41.622		100.00	0.000	0.000
					C	0.000	41.622		100.00	0.000	21.697
L13 39.7500-35.0000	37.3616	1.036	6.63	14.810	A	0.000	14.810	14.810	100.00	0.000	0.000
					B	0.000	14.810		100.00	0.000	0.000
					C	0.000	14.810		100.00	0.000	7.495
L14 35.0000-25.0000	29.9569	1	6.40	32.549	A	0.000	32.549	32.549	100.00	0.000	0.000
					B	0.000	32.549		100.00	0.000	0.000
					C	0.000	32.549		100.00	0.000	15.780
L15 25.0000-14.5000	19.7049	1	6.40	35.989	A	0.000	35.989	35.989	100.00	0.000	0.000
					B	0.000	35.989		100.00	0.000	0.000
					C	0.000	35.989		100.00	0.000	16.569
L16 14.5000-	13.4984	1	6.40	7.065	A	0.000	7.065	7.065	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
12.5000					B	0.000	7.065		100.00	0.000	0.000
					C	0.000	7.065		100.00	0.000	3.156
L17 12.5000-5.5000	8.9809	1	6.40	25.259	A	0.000	25.259	25.259	100.00	0.000	0.000
					B	0.000	25.259		100.00	0.000	0.000
					C	0.000	25.259		100.00	0.000	11.046
L18 5.5000-4.7500	5.1248	1	6.40	2.755	A	0.000	2.755	2.755	100.00	0.000	0.000
					B	0.000	2.755		100.00	0.000	0.000
					C	0.000	2.755		100.00	0.000	1.183
L19 4.7500-0.0000	2.3665	1	6.40	17.670	A	0.000	17.670	17.670	100.00	0.000	0.000
					B	0.000	17.670		100.00	0.000	0.000
					C	0.000	17.670		100.00	0.000	7.495

Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	120 - 96.75	Pole	Max Tension	30	0.00	0.00	-0.00
			Max. Compression	14	-28.08	3.91	-1.77
			Max. Mx	11	-8.95	410.21	-6.26
			Max. My	8	-9.04	7.84	-398.21
			Max. Vy	11	-25.88	410.21	-6.26

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	8	25.25	7.84	-398.21
			Max. Torque	11			-2.23
L2	96.75 - 91.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-35.36	5.22	-2.51
			Max. Mx	11	-11.55	572.00	-7.63
			Max. My	8	-11.64	9.54	-556.58
			Max. Vy	11	-31.74	572.00	-7.63
			Max. Vx	8	31.10	9.54	-556.58
			Max. Torque	8			-2.32
L3	91.58 - 90.0833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-35.95	5.52	-2.69
			Max. Mx	11	-11.84	619.73	-8.01
			Max. My	8	-11.92	10.00	-603.33
			Max. Vy	11	-32.00	619.73	-8.01
			Max. Vx	8	31.36	10.00	-603.33
			Max. Torque	8			-2.34
L4	90.0833 - 78	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-39.61	7.25	-3.68
			Max. Mx	11	-13.83	892.58	-10.12
			Max. My	8	-13.91	12.54	-870.74
			Max. Vy	11	-33.46	892.58	-10.12
			Max. Vx	8	32.81	12.54	-870.74
			Max. Torque	8			-2.47
L5	78 - 76.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-42.88	8.29	-4.28
			Max. Mx	11	-15.85	1062.42	-11.39
			Max. My	8	-15.93	14.07	-1037.31
			Max. Vy	11	-34.42	1062.42	-11.39
			Max. Vx	8	33.78	14.07	-1037.31
			Max. Torque	8			-2.54
L6	76.75 - 72	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-45.27	9.32	-4.87
			Max. Mx	11	-17.30	1227.99	-12.60
			Max. My	8	-17.37	15.54	-1199.76
			Max. Vy	11	-35.26	1227.99	-12.60
			Max. Vx	8	34.61	15.54	-1199.76
			Max. Torque	8			-2.62
L7	72 - 70.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-46.17	9.71	-5.09
			Max. Mx	11	-17.84	1289.99	-13.04
			Max. My	8	-17.92	16.07	-1260.61
			Max. Vy	11	-35.57	1289.99	-13.04
			Max. Vx	8	34.92	16.07	-1260.61
			Max. Torque	8			-2.64
L8	70.25 - 69.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-46.42	9.82	-5.16
			Max. Mx	11	-18.01	1307.81	-13.17
			Max. My	8	-18.08	16.23	-1278.10
			Max. Vy	11	-35.65	1307.81	-13.17
			Max. Vx	8	35.00	16.23	-1278.10
			Max. Torque	8			-2.65
L9	69.75 - 56	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-53.31	12.93	-6.95
			Max. Mx	11	-22.25	1814.22	-16.70
			Max. My	8	-22.31	20.47	-1775.48
			Max. Vy	11	-37.99	1814.22	-16.70
			Max. Vx	8	37.34	20.47	-1775.48
			Max. Torque	8			-2.86
L10	56 - 54	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-54.42	13.40	-7.22
			Max. Mx	11	-22.99	1890.60	-17.21
			Max. My	8	-23.05	21.09	-1850.55
			Max. Vy	11	-38.35	1890.60	-17.21
			Max. Vx	8	37.71	21.09	-1850.55
			Max. Torque	8			-2.91
L11	54 - 53.5	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	14	-54.68	13.51	-7.28
			Max. Mx	11	-23.16	1909.81	-17.34
			Max. My	8	-23.22	21.25	-1869.43
			Max. Vy	11	-38.44	1909.81	-17.34
			Max. Vx	8	37.79	21.25	-1869.43
			Max. Torque	8			-2.92
L12	53.5 - 39.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-59.06	15.62	-8.50
			Max. Mx	11	-25.93	2262.73	-19.66
			Max. My	8	-25.98	24.03	-2216.43
			Max. Vy	11	-39.95	2262.73	-19.66
			Max. Vx	8	39.31	24.03	-2216.43
			Max. Torque	8			-3.09
L13	39.75 - 35	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-65.70	17.87	-9.79
			Max. Mx	11	-30.51	2650.73	-22.11
			Max. My	8	-30.55	26.97	-2598.20
			Max. Vy	11	-41.62	2650.73	-22.11
			Max. Vx	8	40.98	26.97	-2598.20
			Max. Torque	8			-3.29
L14	35 - 25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-71.16	20.22	-11.15
			Max. Mx	11	-34.29	3074.80	-24.69
			Max. My	8	-34.32	30.07	-3015.73
			Max. Vy	11	-43.16	3074.80	-24.69
			Max. Vx	8	42.52	30.07	-3015.73
			Max. Torque	8			-3.48
L15	25 - 14.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-77.28	22.76	-12.61
			Max. Mx	11	-38.62	3536.77	-27.39
			Max. My	8	-38.64	33.31	-3470.86
			Max. Vy	11	-44.80	3536.77	-27.39
			Max. Vx	8	44.17	33.31	-3470.86
			Max. Torque	8			-3.70
L16	14.5 - 12.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-78.51	23.24	-12.89
			Max. Mx	11	-39.51	3626.72	-27.91
			Max. My	8	-39.52	33.92	-3559.52
			Max. Vy	11	-45.12	3626.72	-27.91
			Max. Vx	8	44.48	33.92	-3559.52
			Max. Torque	8			-3.74
L17	12.5 - 5.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-82.84	24.98	-13.90
			Max. Mx	11	-42.62	3946.54	-29.70
			Max. My	8	-42.63	36.07	-3874.81
			Max. Vy	11	-46.22	3946.54	-29.70
			Max. Vx	8	45.59	36.07	-3874.81
			Max. Torque	8			-3.90
L18	5.5 - 4.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-83.29	25.17	-14.01
			Max. Mx	11	-42.94	3981.27	-29.90
			Max. My	8	-42.95	36.31	-3909.05
			Max. Vy	11	-46.34	3981.27	-29.90
			Max. Vx	8	45.71	36.31	-3909.05
			Max. Torque	8			-3.92
L19	4.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-86.14	26.39	-14.71
			Max. Mx	11	-44.97	4203.23	-31.11
			Max. My	8	-44.97	37.76	-4127.95
			Max. Vy	11	-47.08	4203.23	-31.11
			Max. Vx	8	46.45	37.76	-4127.95
			Max. Torque	8			-4.02

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	14	86.14	-0.00	0.00
	Max. H_x	11	45.00	47.06	-0.23
	Max. H_z	2	45.00	0.24	46.34
	Max. M_x	2	4112.50	0.24	46.34
	Max. M_z	5	4164.04	-46.81	0.03
	Max. Torsion	2	2.72	0.24	46.34
	Min. Vert	5	45.00	-46.81	0.03
	Min. H_x	5	45.00	-46.81	0.03
	Min. H_z	8	45.00	0.27	-46.43
	Min. M_x	8	-4127.95	0.27	-46.43
	Min. M_z	11	-4203.23	47.06	-0.23
	Min. Torsion	8	-4.02	0.27	-46.43

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	45.00	0.00	-0.00	1.92	3.75	0.00
Dead+Wind 0 deg - No Ice	45.00	-0.24	-46.34	-4112.50	35.12	-2.72
Dead+Wind 30 deg - No Ice	45.00	23.32	-40.14	-3561.38	-2068.97	-2.55
Dead+Wind 60 deg - No Ice	45.00	40.59	-23.06	-2041.06	-3612.25	-1.69
Dead+Wind 90 deg - No Ice	45.00	46.81	-0.03	-1.41	-4164.04	0.04
Dead+Wind 120 deg - No Ice	45.00	40.51	23.11	2051.92	-3602.27	1.59
Dead+Wind 150 deg - No Ice	45.00	23.13	40.39	3597.53	-2045.58	3.74
Dead+Wind 180 deg - No Ice	45.00	-0.27	46.43	4127.95	37.76	4.02
Dead+Wind 210 deg - No Ice	45.00	-23.48	40.26	3580.53	2097.48	3.09
Dead+Wind 240 deg - No Ice	45.00	-40.76	23.28	2072.84	3640.55	1.88
Dead+Wind 270 deg - No Ice	45.00	-47.06	0.23	31.11	4203.23	1.11
Dead+Wind 300 deg - No Ice	45.00	-40.62	-23.15	-2052.73	3623.17	-1.12
Dead+Wind 330 deg - No Ice	45.00	-23.53	-40.11	-3557.87	2103.75	-2.52
Dead+Ice+Temp	86.14	0.00	-0.00	14.71	26.39	0.00
Dead+Wind 0 deg+Ice+Temp	86.14	-0.05	-11.26	-1022.68	32.88	-0.95
Dead+Wind 30 deg+Ice+Temp	86.14	5.66	-9.76	-883.98	-494.76	-0.80
Dead+Wind 60 deg+Ice+Temp	86.14	9.83	-5.61	-501.28	-881.55	-0.43
Dead+Wind 90 deg+Ice+Temp	86.14	11.34	-0.01	13.44	-1020.06	0.15
Dead+Wind 120 deg+Ice+Temp	86.14	9.81	5.61	531.37	-878.76	0.65
Dead+Wind 150 deg+Ice+Temp	86.14	5.61	9.80	920.13	-488.58	1.18
Dead+Wind 180 deg+Ice+Temp	86.14	-0.06	11.28	1054.76	34.59	1.23
Dead+Wind 210 deg+Ice+Temp	86.14	-5.69	9.78	916.90	552.35	0.92
Dead+Wind 240 deg+Ice+Temp	86.14	-9.87	5.66	537.02	939.09	0.47
Dead+Wind 270 deg+Ice+Temp	86.14	-11.39	0.05	21.83	1080.00	0.11
Dead+Wind 300 deg+Ice+Temp	86.14	-9.83	-5.62	-502.92	934.65	-0.54
Dead+Wind 330 deg+Ice+Temp	86.14	-5.69	-9.74	-882.65	552.77	-0.93
Dead+Wind 0 deg - Service	45.00	-0.07	-14.30	-1269.03	13.51	-0.83
Dead+Wind 30 deg - Service	45.00	7.20	-12.39	-1098.82	-636.48	-0.78
Dead+Wind 60 deg - Service	45.00	12.53	-7.12	-629.18	-1113.25	-0.53
Dead+Wind 90 deg - Service	45.00	14.45	-0.01	0.92	-1283.54	0.01
Dead+Wind 120 deg - Service	45.00	12.50	7.13	635.23	-1110.16	0.50
Dead+Wind 150 deg - Service	45.00	7.14	12.46	1112.71	-629.26	1.14
Dead+Wind 180 deg - Service	45.00	-0.08	14.33	1276.50	14.33	1.23

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 210 deg - Service	45.00	-7.25	12.42	1107.46	650.62	0.96
Dead+Wind 240 deg - Service	45.00	-12.58	7.19	641.71	1127.33	0.58
Dead+Wind 270 deg - Service	45.00	-14.52	0.07	10.97	1301.13	0.36
Dead+Wind 300 deg - Service	45.00	-12.54	-7.14	-632.78	1121.95	-0.34
Dead+Wind 330 deg - Service	45.00	-7.26	-12.38	-1097.74	652.55	-0.77

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-45.00	0.00	-0.00	45.00	0.00	0.000%
2	-0.24	-45.00	-46.34	0.24	45.00	46.34	0.001%
3	23.32	-45.00	-40.14	-23.32	45.00	40.14	0.000%
4	40.59	-45.00	-23.06	-40.59	45.00	23.06	0.000%
5	46.81	-45.00	-0.03	-46.81	45.00	0.03	0.004%
6	40.51	-45.00	23.11	-40.51	45.00	-23.11	0.000%
7	23.13	-45.00	40.39	-23.13	45.00	-40.39	0.000%
8	-0.27	-45.00	46.43	0.27	45.00	-46.43	0.000%
9	-23.48	-45.00	40.26	23.48	45.00	-40.26	0.000%
10	-40.76	-45.00	23.28	40.76	45.00	-23.28	0.000%
11	-47.06	-45.00	0.23	47.06	45.00	-0.23	0.001%
12	-40.62	-45.00	-23.15	40.62	45.00	23.15	0.000%
13	-23.53	-45.00	-40.11	23.53	45.00	40.11	0.000%
14	0.00	-86.14	0.00	-0.00	86.14	0.00	0.000%
15	-0.05	-86.14	-11.26	0.05	86.14	11.26	0.000%
16	5.66	-86.14	-9.76	-5.66	86.14	9.76	0.000%
17	9.83	-86.14	-5.61	-9.83	86.14	5.61	0.000%
18	11.34	-86.14	-0.01	-11.34	86.14	0.01	0.000%
19	9.81	-86.14	5.61	-9.81	86.14	-5.61	0.000%
20	5.61	-86.14	9.80	-5.61	86.14	-9.80	0.000%
21	-0.06	-86.14	11.28	0.06	86.14	-11.28	0.000%
22	-5.69	-86.14	9.78	5.69	86.14	-9.78	0.000%
23	-9.87	-86.14	5.66	9.87	86.14	-5.66	0.000%
24	-11.39	-86.14	0.05	11.39	86.14	-0.05	0.000%
25	-9.83	-86.14	-5.62	9.83	86.14	5.62	0.000%
26	-5.69	-86.14	-9.74	5.69	86.14	9.74	0.000%
27	-0.07	-45.00	-14.30	0.07	45.00	14.30	0.002%
28	7.20	-45.00	-12.39	-7.20	45.00	12.39	0.000%
29	12.53	-45.00	-7.12	-12.53	45.00	7.12	0.000%
30	14.45	-45.00	-0.01	-14.45	45.00	0.01	0.006%
31	12.50	-45.00	7.13	-12.50	45.00	-7.13	0.000%
32	7.14	-45.00	12.47	-7.14	45.00	-12.46	0.000%
33	-0.08	-45.00	14.33	0.08	45.00	-14.33	0.002%
34	-7.25	-45.00	12.42	7.25	45.00	-12.42	0.000%
35	-12.58	-45.00	7.19	12.58	45.00	-7.19	0.000%
36	-14.52	-45.00	0.07	14.52	45.00	-0.07	0.002%
37	-12.54	-45.00	-7.14	12.54	45.00	7.14	0.000%
38	-7.26	-45.00	-12.38	7.26	45.00	12.38	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	12	0.00000001	0.00014735
3	Yes	15	0.00000001	0.00004936
4	Yes	15	0.00000001	0.00005205
5	Yes	11	0.00004311	0.00011776
6	Yes	15	0.00000001	0.00005143
7	Yes	15	0.00000001	0.00004900

8	Yes	13	0.00000001	0.00006888
9	Yes	15	0.00000001	0.00005369
10	Yes	15	0.00000001	0.00005119
11	Yes	12	0.00000001	0.00005565
12	Yes	15	0.00000001	0.00005132
13	Yes	15	0.00000001	0.00005258
14	Yes	10	0.00000001	0.00008656
15	Yes	14	0.00000001	0.00004852
16	Yes	14	0.00000001	0.00005431
17	Yes	14	0.00000001	0.00005476
18	Yes	14	0.00000001	0.00004820
19	Yes	14	0.00000001	0.00005607
20	Yes	14	0.00000001	0.00005594
21	Yes	14	0.00000001	0.00005023
22	Yes	14	0.00000001	0.00005958
23	Yes	14	0.00000001	0.00005963
24	Yes	14	0.00000001	0.00005134
25	Yes	14	0.00000001	0.00005764
26	Yes	14	0.00000001	0.00005757
27	Yes	11	0.00000001	0.00006264
28	Yes	12	0.00000001	0.00009432
29	Yes	12	0.00000001	0.00011053
30	Yes	10	0.00014976	0.00012735
31	Yes	12	0.00000001	0.00010624
32	Yes	12	0.00000001	0.00009291
33	Yes	11	0.00000001	0.00009036
34	Yes	12	0.00000001	0.00011832
35	Yes	12	0.00000001	0.00010059
36	Yes	11	0.00000001	0.00005257
37	Yes	12	0.00000001	0.00010404
38	Yes	12	0.00000001	0.00011121

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 96.75	20.46	36	1.52	0.01
L2	96.75 - 91.58	13.43	36	1.30	0.00
L3	91.58 - 90.0833	12.06	36	1.21	0.00
L4	90.0833 - 78	11.69	36	1.19	0.00
L5	81.75 - 76.75	9.69	36	1.10	0.00
L6	76.75 - 72	8.56	36	1.06	0.00
L7	72 - 70.25	7.53	36	1.00	0.00
L8	70.25 - 69.75	7.17	36	0.98	0.00
L9	69.75 - 56	7.07	36	0.97	0.00
L10	56 - 54	4.54	36	0.78	0.00
L11	54 - 53.5	4.22	36	0.75	0.00
L12	53.5 - 39.75	4.14	36	0.75	0.00
L13	44.5 - 35	2.87	36	0.60	0.00
L14	35 - 25	1.77	36	0.49	0.00
L15	25 - 14.5	0.90	36	0.34	0.00
L16	14.5 - 12.5	0.30	36	0.20	0.00
L17	12.5 - 5.5	0.23	36	0.17	0.00
L18	5.5 - 4.75	0.04	36	0.08	0.00
L19	4.75 - 0	0.03	36	0.07	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.0000	VHLP2-11	36	20.46	1.52	0.01	14491
123.0000	PX2F-52	36	20.46	1.52	0.01	14491
122.0000	APXVSPP18-C-A20 w/ Mount Pipe	36	20.46	1.52	0.01	14491
113.0000	(2) DB846F65ZAXY w/ Mount Pipe	36	18.25	1.48	0.00	10350

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
105.0000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	36	15.79	1.41	0.00	4830
97.0000	RRUS 11	36	13.49	1.30	0.00	3313
96.0000	7770.00 w/ Mount Pipe	36	13.22	1.29	0.00	3294

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 96.75	66.00	11	4.89	0.02
L2	96.75 - 91.58	43.32	11	4.19	0.01
L3	91.58 - 90.0833	38.93	11	3.91	0.01
L4	90.0833 - 78	37.72	11	3.85	0.01
L5	81.75 - 76.75	31.26	11	3.54	0.01
L6	76.75 - 72	27.62	11	3.41	0.01
L7	72 - 70.25	24.32	11	3.23	0.01
L8	70.25 - 69.75	23.15	11	3.16	0.01
L9	69.75 - 56	22.82	11	3.14	0.01
L10	56 - 54	14.67	11	2.52	0.00
L11	54 - 53.5	13.63	11	2.44	0.00
L12	53.5 - 39.75	13.38	11	2.41	0.00
L13	44.5 - 35	9.28	11	1.94	0.00
L14	35 - 25	5.72	11	1.59	0.00
L15	25 - 14.5	2.89	11	1.11	0.00
L16	14.5 - 12.5	0.98	11	0.63	0.00
L17	12.5 - 5.5	0.73	11	0.55	0.00
L18	5.5 - 4.75	0.14	11	0.25	0.00
L19	4.75 - 0	0.11	11	0.22	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.0000	VHLP2-11	11	66.00	4.89	0.02	4552
123.0000	PX2F-52	11	66.00	4.89	0.02	4552
122.0000	APXVSPP18-C-A20 w/ Mount Pipe	11	66.00	4.89	0.02	4552
113.0000	(2) DB846F65ZAXY w/ Mount Pipe	11	58.87	4.76	0.02	3251
105.0000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	11	50.95	4.55	0.01	1516
97.0000	RRUS 11	11	43.54	4.20	0.01	1038
96.0000	7770.00 w/ Mount Pipe	11	42.66	4.15	0.01	1032

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	120 - 96.75 (1)	TP26.6976x22x0.25	23.2500	0.0000	0.0	36.00	21.2903	-8.95	766.45	0.012
L2	96.75 - 91.58 (2)	TP27.7422x26.6976x0.3218	5.1700	0.0000	0.0	32.78	28.4103	-11.55	931.23	0.012
L3	91.58 - 90.0833 (3)	TP28.0446x27.7422x0.4817	1.4967	0.0000	0.0	28.75	42.7495	-11.84	1229.13	0.010
L4	90.0833 - 78 (4)	TP30.486x28.0446x0.6179	12.0833	0.0000	0.0	28.46	57.9201	-13.83	1648.29	0.008
L5	78 - 76.75 (5)	TP30.2385x28.4925x0.6778	5.0000	0.0000	0.0	28.40	64.5167	-15.85	1832.53	0.009

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L6	76.75 - 72 (6)	TP31.1982x30.2385x0.7684	4.7500	0.0000	0.0	25.03	75.2880	-17.30	1884.16	0.009
L7	72 - 70.25 (7)	TP31.5518x31.1982x0.7862	1.7500	0.0000	0.0	27.06	77.8889	-17.84	2107.67	0.008
L8	70.25 - 69.75 (8)	TP31.6528x31.5518x0.7066	0.5000	0.0000	0.0	25.87	70.4123	-18.01	1821.29	0.010
L9	69.75 - 56 (9)	TP34.4308x31.6528x0.7047	13.7500	0.0000	0.0	28.67	76.5313	-22.25	2194.00	0.010
L10	56 - 54 (10)	TP34.8349x34.4308x0.8307	2.0000	0.0000	0.0	28.86	90.9542	-22.99	2624.94	0.009
L11	54 - 53.5 (11)	TP34.9359x34.8349x0.7439	0.5000	0.0000	0.0	31.28	81.8968	-23.16	2562.06	0.009
L12	53.5 - 39.75 (12)	TP37.714x34.9359x0.621	13.7500	0.0000	0.0	33.22	72.2506	-25.93	2399.88	0.011
L13	39.75 - 35 (13)	TP38.0487x35.5123x0.7536	9.5000	0.0000	0.0	33.26	90.4964	-30.51	3009.73	0.010
L14	35 - 25 (14)	TP40.069x38.0487x0.7306	10.0000	0.0000	0.0	33.38	92.5474	-34.29	3089.05	0.011
L15	25 - 14.5 (15)	TP42.1905x40.069x0.7714	10.5000	0.0000	0.0	33.47	102.8840	-38.62	3443.93	0.011
L16	14.5 - 12.5 (16)	TP42.5945x42.1905x0.8155	2.0000	0.0000	0.0	33.52	109.7120	-39.51	3677.10	0.011
L17	12.5 - 5.5 (17)	TP44.0088x42.5945x0.7987	7.0000	0.0000	0.0	33.60	111.1270	-42.62	3733.87	0.011
L18	5.5 - 4.75 (18)	TP44.1603x44.0088x0.7413	0.7500	0.0000	0.0	34.40	103.6380	-42.94	3564.93	0.012
L19	4.75 - 0 (19)	TP45.12x44.1603x0.7319	4.7500	0.0000	0.0	35.38	104.6130	-44.97	3700.79	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	120 - 96.75 (1)	TP26.6976x22x0.25	410.26	35.82	36.00	0.995	0.00	0.00	36.00	0.000
L2	96.75 - 91.58 (2)	TP27.7422x26.6976x0.3218	572.05	36.18	32.78	1.104	0.00	0.00	32.78	0.000
L3	91.58 - 90.0833 (3)	TP28.0446x27.7422x0.4817	619.78	26.06	28.75	0.906	0.00	0.00	28.75	0.000
L4	90.0833 - 78 (4)	TP30.486x28.0446x0.6179	892.64	26.33	28.46	0.925	0.00	0.00	28.46	0.000
L5	78 - 76.75 (5)	TP30.2385x28.4925x0.6778	1062.48	27.75	28.40	0.977	0.00	0.00	28.40	0.000
L6	76.75 - 72 (6)	TP31.1982x30.2385x0.7684	1228.05	26.76	25.03	1.069	0.00	0.00	25.03	0.000
L7	72 - 70.25 (7)	TP31.5518x31.1982x0.7862	1290.06	26.89	27.06	0.994	0.00	0.00	27.06	0.000
L8	70.25 - 69.75 (8)	TP31.6528x31.5518x0.7066	1307.88	29.90	25.87	1.156	0.00	0.00	25.87	0.000
L9	69.75 - 56 (9)	TP34.4308x31.6528x0.7047	1814.30	34.95	28.67	1.219	0.00	0.00	28.67	0.000
L10	56 - 54 (10)	TP34.8349x34.4308x0.8307	1890.68	30.50	28.86	1.057	0.00	0.00	28.86	0.000
L11	54 - 53.5 (11)	TP34.9359x34.8349x0.7439	1909.89	33.94	31.28	1.085	0.00	0.00	31.28	0.000
L12	53.5 - 39.75 (12)	TP37.714x34.9359x0.621	2262.81	42.94	33.22	1.293	0.00	0.00	33.22	0.000
L13	39.75 - 35 (13)	TP38.0487x35.5123x0.7536	2650.82	39.02	33.26	1.173	0.00	0.00	33.26	0.000
L14	35 - 25 (14)	TP40.069x38.0487x0.7306	3074.90	41.90	33.38	1.255	0.00	0.00	33.38	0.000
L15	25 - 14.5 (15)	TP42.1905x40.069x0.7714	3536.88	41.17	33.47	1.230	0.00	0.00	33.47	0.000
L16	14.5 - 12.5 (16)	TP42.5945x42.1905x0.8155	3626.83	39.29	33.52	1.172	0.00	0.00	33.52	0.000
L17	12.5 - 5.5 (17)	TP44.0088x42.5945x0.79	3946.6	40.77	33.60	1.213	0.00	0.00	33.60	0.000

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
		87	5							
L18	5.5 - 4.75 (18)	TP44.1603x44.0088x0.74 13	3981.3 8	43.82	34.40	1.274	0.00	0.00	34.40	0.000
L19	4.75 - 0 (19)	TP45.12x44.1603x0.7319	4203.3 4	44.81	35.38	1.267	0.00	0.00	35.38	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	120 - 96.75 (1)	TP26.6976x22x0.25	25.88	1.22	24.00	0.103	2.23	0.09	24.00	0.004
L2	96.75 - 91.58 (2)	TP27.7422x26.6976x0.32 18	31.74	1.12	21.85	0.104	2.11	0.06	21.85	0.003
L3	91.58 - 90.0833 (3)	TP28.0446x27.7422x0.48 17	32.00	0.75	19.17	0.079	2.10	0.04	19.17	0.002
L4	90.0833 - 78 (4)	TP30.486x28.0446x0.617 9	33.46	0.58	18.97	0.062	2.03	0.03	18.97	0.001
L5	78 - 76.75 (5)	TP30.2385x28.4925x0.67 78	34.42	0.53	18.94	0.057	1.98	0.02	18.94	0.001
L6	76.75 - 72 (6)	TP31.1982x30.2385x0.76 84	35.26	0.47	16.68	0.057	1.94	0.02	16.68	0.001
L7	72 - 70.25 (7)	TP31.5518x31.1982x0.78 62	35.57	0.46	18.04	0.051	1.93	0.02	18.04	0.001
L8	70.25 - 69.75 (8)	TP31.6528x31.5518x0.70 66	35.65	0.51	17.24	0.060	1.91	0.02	17.24	0.001
L9	69.75 - 56 (9)	TP34.4308x31.6528x0.70 47	37.99	0.50	19.11	0.053	1.79	0.02	19.11	0.001
L10	56 - 54 (10)	TP34.8349x34.4308x0.83 07	38.35	0.42	19.24	0.045	1.77	0.01	19.24	0.001
L11	54 - 53.5 (11)	TP34.9359x34.8349x0.74 39	38.44	0.47	20.86	0.046	1.76	0.01	20.86	0.001
L12	53.5 - 39.75 (12)	TP37.714x34.9359x0.621	39.95	0.55	22.14	0.051	1.66	0.01	22.14	0.001
L13	39.75 - 35 (13)	TP38.0487x35.5123x0.75 36	41.63	0.46	22.17	0.042	1.55	0.01	22.17	0.000
L14	35 - 25 (14)	TP40.069x38.0487x0.730 6	43.16	0.47	22.25	0.043	1.43	0.01	22.25	0.000
L15	25 - 14.5 (15)	TP42.1905x40.069x0.771 4	44.80	0.44	22.32	0.040	1.31	0.01	22.32	0.000
L16	14.5 - 12.5 (16)	TP42.5945x42.1905x0.81 55	45.12	0.41	22.34	0.037	1.28	0.01	22.34	0.000
L17	12.5 - 5.5 (17)	TP44.0088x42.5945x0.79 87	46.22	0.42	22.40	0.038	1.19	0.01	22.40	0.000
L18	5.5 - 4.75 (18)	TP44.1603x44.0088x0.74 13	46.34	0.45	22.93	0.040	1.18	0.01	22.93	0.000
L19	4.75 - 0 (19)	TP45.12x44.1603x0.7319	47.08	0.45	23.58	0.039	1.12	0.01	23.58	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	120 - 96.75 (1)	0.012	0.995	0.000	0.103	0.004	1.010 ✔	1.333	H1-3+VT ✔
L2	96.75 - 91.58 (2)	0.012	1.104	0.000	0.104	0.003	1.119 ✔	1.333	H1-3+VT ✔
L3	91.58 - 90.0833 (3)	0.010	0.906	0.000	0.079	0.002	0.918 ✔	1.333	H1-3+VT ✔
L4	90.0833 - 78 (4)	0.008	0.925	0.000	0.062	0.001	0.935 ✔	1.333	H1-3+VT ✔

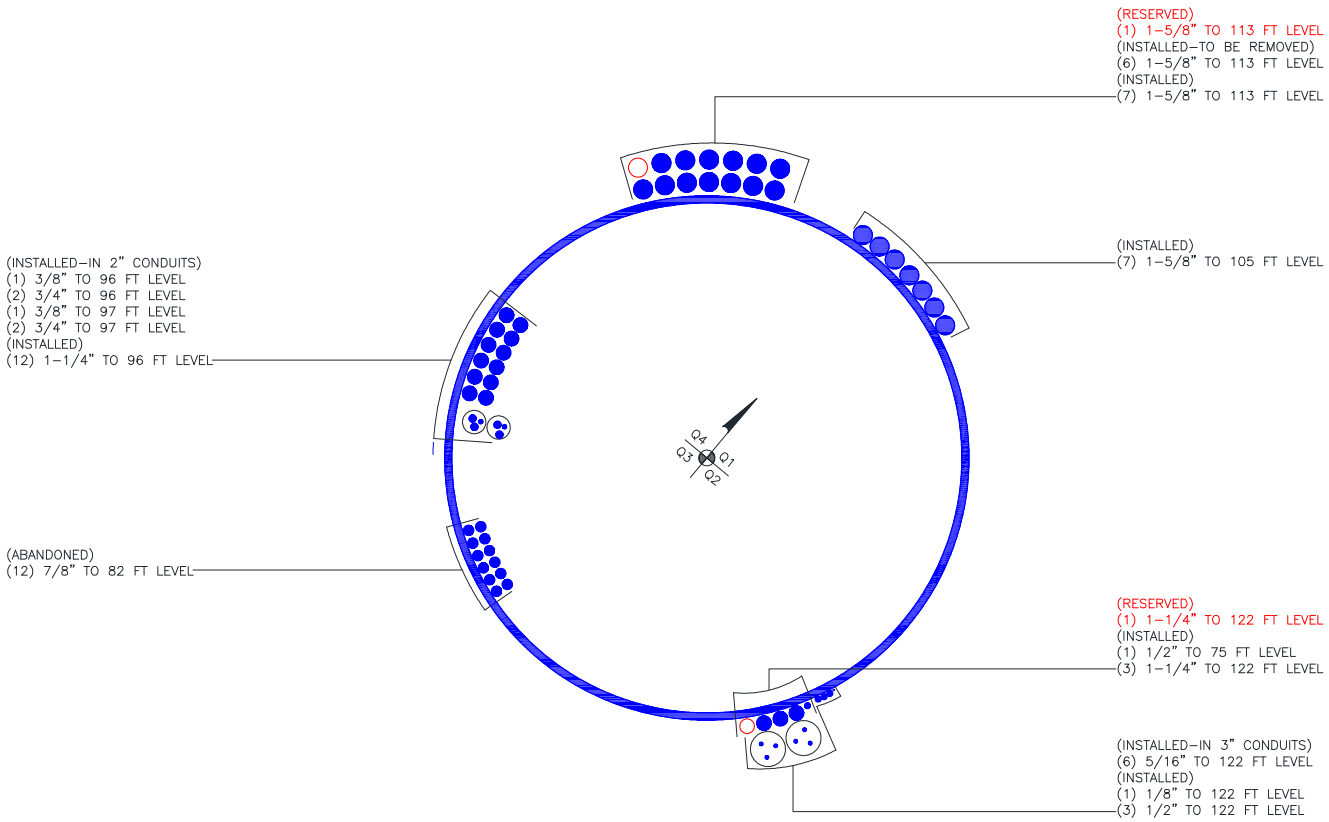
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L5	78 - 76.75 (5)	0.009	0.977	0.000	0.057	0.001	0.987 ✔	1.333	H1-3+VT ✔
L6	76.75 - 72 (6)	0.009	1.069	0.000	0.057	0.001	1.079 ✔	1.333	H1-3+VT ✔
L7	72 - 70.25 (7)	0.008	0.994	0.000	0.051	0.001	1.003 ✔	1.333	H1-3+VT ✔
L8	70.25 - 69.75 (8)	0.010	1.156	0.000	0.060	0.001	1.167 ✔	1.333	H1-3+VT ✔
L9	69.75 - 56 (9)	0.010	1.219	0.000	0.053	0.001	1.230 ✔	1.333	H1-3+VT ✔
L10	56 - 54 (10)	0.009	1.057	0.000	0.045	0.001	1.066 ✔	1.333	H1-3+VT ✔
L11	54 - 53.5 (11)	0.009	1.085	0.000	0.046	0.001	1.094 ✔	1.333	H1-3+VT ✔
L12	53.5 - 39.75 (12)	0.011	1.293	0.000	0.051	0.001	1.304 ✔	1.333	H1-3+VT ✔
L13	39.75 - 35 (13)	0.010	1.173	0.000	0.042	0.000	1.184 ✔	1.333	H1-3+VT ✔
L14	35 - 25 (14)	0.011	1.255	0.000	0.043	0.000	1.267 ✔	1.333	H1-3+VT ✔
L15	25 - 14.5 (15)	0.011	1.230	0.000	0.040	0.000	1.242 ✔	1.333	H1-3+VT ✔
L16	14.5 - 12.5 (16)	0.011	1.172	0.000	0.037	0.000	1.183 ✔	1.333	H1-3+VT ✔
L17	12.5 - 5.5 (17)	0.011	1.213	0.000	0.038	0.000	1.225 ✔	1.333	H1-3+VT ✔
L18	5.5 - 4.75 (18)	0.012	1.274	0.000	0.040	0.000	1.286 ✔	1.333	H1-3+VT ✔
L19	4.75 - 0 (19)	0.012	1.267	0.000	0.039	0.000	1.279 ✔	1.333	H1-3+VT ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	120 - 96.75	Pole	TP26.6976x22x0.25	1	-8.95	1021.68	75.7	Pass
L2	96.75 - 91.58	Pole	TP27.7422x26.6976x0.3218	2	-11.55	1241.33	84.0	Pass
L3	91.58 - 90.0833	Pole	TP28.0446x27.7422x0.4817	3	-11.84	1638.43	68.9	Pass
L4	90.0833 - 78	Pole	TP30.486x28.0446x0.6179	4	-13.83	2197.17	70.1	Pass
L5	78 - 76.75	Pole	TP30.2385x28.4925x0.6778	5	-15.85	2442.76	74.0	Pass
L6	76.75 - 72	Pole	TP31.1982x30.2385x0.7684	6	-17.30	2511.59	81.0	Pass
L7	72 - 70.25	Pole	TP31.5518x31.1982x0.7862	7	-17.84	2809.52	75.2	Pass
L8	70.25 - 69.75	Pole	TP31.6528x31.5518x0.7066	8	-18.01	2427.78	87.5	Pass
L9	69.75 - 56	Pole	TP34.4308x31.6528x0.7047	9	-22.25	2924.60	92.3	Pass
L10	56 - 54	Pole	TP34.8349x34.4308x0.8307	10	-22.99	3499.04	80.0	Pass
L11	54 - 53.5	Pole	TP34.9359x34.8349x0.7439	11	-23.16	3415.23	82.1	Pass
L12	53.5 - 39.75	Pole	TP37.714x34.9359x0.621	12	-25.93	3199.04	97.8	Pass
L13	39.75 - 35	Pole	TP38.0487x35.5123x0.7536	13	-30.51	4011.97	88.8	Pass
L14	35 - 25	Pole	TP40.069x38.0487x0.7306	14	-34.29	4117.70	95.0	Pass
L15	25 - 14.5	Pole	TP42.1905x40.069x0.7714	15	-38.62	4590.76	93.1	Pass
L16	14.5 - 12.5	Pole	TP42.5945x42.1905x0.8155	16	-39.51	4901.57	88.8	Pass
L17	12.5 - 5.5	Pole	TP44.0088x42.5945x0.7987	17	-42.62	4977.25	91.9	Pass
L18	5.5 - 4.75	Pole	TP44.1603x44.0088x0.7413	18	-42.94	4752.05	96.5	Pass
L19	4.75 - 0	Pole	TP45.12x44.1603x0.7319	19	-44.97	4933.15	96.0	Pass
						Summary		
						Pole (L12)	97.8	Pass
						RATING =	**97.8**	**Pass**

APPENDIX B

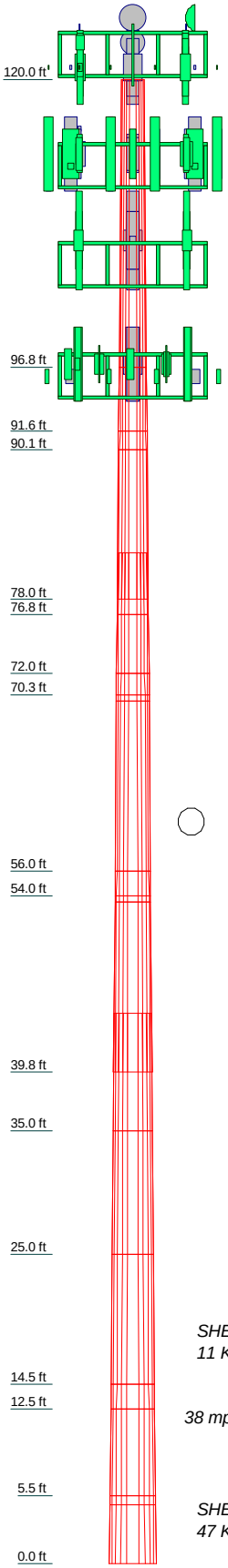
BASE LEVEL DRAWING

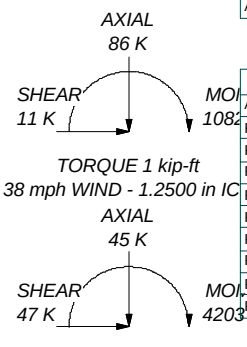

(RESERVED)
(1) 1-5/8" TO 113 FT LEVEL
(INSTALLED-TO BE REMOVED)
(6) 1-5/8" TO 113 FT LEVEL
(INSTALLED)
(7) 1-5/8" TO 113 FT LEVEL
(INSTALLED)
(7) 1-5/8" TO 105 FT LEVEL
(INSTALLED-IN 2" CONDUITS)
(1) 3/8" TO 96 FT LEVEL
(2) 3/4" TO 96 FT LEVEL
(1) 3/8" TO 97 FT LEVEL
(2) 3/4" TO 97 FT LEVEL
(INSTALLED)
(12) 1-1/4" TO 96 FT LEVEL
Q4
Q1
Q3
Q2
(ABANDONED)
(12) 7/8" TO 82 FT LEVEL
(RESERVED)
(1) 1-1/4" TO 122 FT LEVEL
(INSTALLED)
(1) 1/2" TO 75 FT LEVEL
(3) 1-1/4" TO 122 FT LEVEL
(INSTALLED-IN 3" CONDUITS)
(6) 5/16" TO 122 FT LEVEL
(INSTALLED)
(1) 1/8" TO 122 FT LEVEL
(3) 1/2" TO 122 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Section	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Length (ft)	4.7500	0.7500	7.0000	2.0000	10.5000	10.0000	9.5000	13.7500	0.5000	13.7500	13.7500	0.5000	5.0000	4.7500	0.5000	12.0833	1.4967	5.1700	23.2500
Number of Sides	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Thickness (in)	0.7319	0.7413	0.7987	0.8155	0.7714	0.7306	0.7536	0.6210	0.7307	0.7047	0.6179	0.6778	0.6778	0.6840	0.6778	0.6179	0.4817	0.3218	0.2500
Socket Length (ft)								4.7500			3.7500								
Top Dia (in)	44.1643	43.0084	42.5945	42.1904	40.0690	38.0487	35.5123	34.9359	34.4308	31.6528	28.0446	31.3519	31.3519	30.2328	28.4925	28.0446	27.7421	26.6976	22.0000
Bot Dia (in)	45.1204	44.1643	43.0084	42.5945	42.1904	40.0690	38.0487	37.7140	34.9359	34.4308	30.4860	31.9830	31.9830	31.1981	30.2328	30.4860	28.0447	27.7421	26.6976
Grade	Reinf 55.79 ksi	Reinf 55.79 ksi	Reinf 55.79 ksi	Reinf 55.79 ksi	Reinf 55.79 ksi	Reinf 55.63 ksi	Reinf 55.43 ksi	Reinf 55.36 ksi	Reinf 52.14 ksi	Reinf 47.78 ksi	Reinf 47.78 ksi	Reinf 43.11 ksi	Reinf 47.34 ksi	Reinf 47.34 ksi	Reinf 47.43 ksi	Reinf 47.43 ksi	Reinf 47.92 ksi	Reinf 54.63 ksi	A607-60
Weight (K)	29.7	1.7	0.3	2.6	0.7	3.6	3.1	2.8	3.3	0.6	3.4	0.5	0.5	1.2	1.1	2.3	0.2	0.5	1.5





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
APXVSPP18-C-A20 w/ Mount Pipe	122	AWS-3 RRH4X45	113
APXVSPP18-C-A20 w/ Mount Pipe	122	DB-T1-6Z-8AB-0Z	113
APXVSPP18-C-A20 w/ Mount Pipe	122	Platform Mount [LP 305-1]	113
LLPX310R w/ Mount Pipe	122	(2) DB846F65ZAXY w/ Mount Pipe	113
LLPX310R w/ Mount Pipe	122	(2) LPA-80063/4CF w/ Mount Pipe	113
LLPX310R w/ Mount Pipe	122	(2) LPA-80063/4CF w/ Mount Pipe	113
MT-485025	122	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	105
800 EXTERNAL NOTCH FILTER	122	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	105
800 EXTERNAL NOTCH FILTER	122	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	105
800 EXTERNAL NOTCH FILTER	122	KRY 112 144/1	105
(3) ACU-A20-N	122	KRY 112 144/1	105
(3) ACU-A20-N	122	KRY 112 144/1	105
(3) ACU-A20-N	122	LNX-6515DS-VTM w/ Mount Pipe	105
PCS 1900MHz 4x45W-65MHz	122	LNX-6515DS-VTM w/ Mount Pipe	105
PCS 1900MHz 4x45W-65MHz	122	LNX-6515DS-VTM w/ Mount Pipe	105
PCS 1900MHz 4x45W-65MHz	122	RRUS 11 B12	105
800MHZ RRH	122	RRUS 11 B12	105
800MHZ RRH	122	RRUS 11 B12	105
800MHZ RRH	122	Platform Mount [LP 712-1]	105
FDD_R6_RRH	122	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	105
FDD_R6_RRH	122	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	105
FDD_R6_RRH	122	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	105
APXVTM14-C-120 w/ Mount Pipe	122	DC6-48-60-18-8F	97
APXVTM14-C-120 w/ Mount Pipe	122	DC6-48-60-18-8F	97
APXVTM14-C-120 w/ Mount Pipe	122	WCS RRUS-32-B30	97
TD-RRH8x20-25	122	(2) WCS RRUS-32-B30	97
TD-RRH8x20-25	122	TME-RRUS-32 B30	97
TD-RRH8x20-25	122	TME-RRUS-32 B30	97
Platform Mount [LP 713-1]	122	TME-RRUS-32 B30	97
2.375" OD x 5' Mount Pipe	122	Side Arm Mount [SO 102-3]	97
2.375" OD x 5' Mount Pipe	122	(2) 2.375" OD x 3' Mount Pipe	97
2.375" OD x 5' Mount Pipe	122	(2) 2.375" OD x 3' Mount Pipe	97
PX2F-52	122	(2) 2.375" OD x 3' Mount Pipe	97
VHLP2-11	122	RRUS 11	97
VHLP2-11	122	RRUS 11	97
ACUTIME 2000	113	RRUS 11	97
BXA-171063-8BF-EDIN-0 w/ Mount Pipe	113	OPA-65R-LCUU-H6 w/ Mount Pipe	96
BXA-171063-8BF-EDIN-0 w/ Mount Pipe	113	OPA-65R-LCUU-H6 w/ Mount Pipe	96
BXA-171063-8BF-EDIN-0 w/ Mount Pipe	113	OPA-65R-LCUU-H6 w/ Mount Pipe	96
(2) FD9R6004/2C-3L	113	(2) LGP2140X	96
(2) FD9R6004/2C-3L	113	(2) LGP2140X	96
(2) FD9R6004/2C-3L	113	(2) LGP2140X	96
DB-T1-6Z-8AB-0Z	113	QS66512-2 w/ Mount Pipe	96
(2) SBNHH-1D65B w/ Mount Pipe	113	QS66512-2 w/ Mount Pipe	96
(2) SBNHH-1D45B w/ Mount Pipe	113	QS66512-2 w/ Mount Pipe	96
(2) SBNHH-1D45B w/ Mount Pipe	113	WCS-IMFQ-AMT	96
RRH2x60-700	113	Platform Mount [LP 601-1]	96
RRH2x60-700	113	7770.00 w/ Mount Pipe	96
RRH2x60-700	113	7770.00 w/ Mount Pipe	96
RRH2X60-1900	113	7770.00 w/ Mount Pipe	96
RRH2X60-1900	113		
RRH2X60-1900	113		
AWS-3 RRH4X45	113		
AWS-3 RRH4X45	113		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi	Reinf 52.14 ksi	52 ksi	66 ksi
Reinf 54.63 ksi	55 ksi	69 ksi	Reinf 55.36 ksi	55 ksi	70 ksi
Reinf 47.92 ksi	48 ksi	60 ksi	Reinf 55.43 ksi	55 ksi	70 ksi
Reinf 47.43 ksi	47 ksi	60 ksi	Reinf 55.63 ksi	56 ksi	70 ksi
Reinf 47.34 ksi	47 ksi	60 ksi	Reinf 55.79 ksi	56 ksi	70 ksi
Reinf 41.71 ksi	42 ksi	53 ksi	Reinf 55.86 ksi	56 ksi	70 ksi
Reinf 45.10 ksi	45 ksi	57 ksi	Reinf 56.00 ksi	56 ksi	70 ksi
Reinf 43.11 ksi	43 ksi	54 ksi	Reinf 57.33 ksi	57 ksi	72 ksi
Reinf 47.78 ksi	48 ksi	60 ksi	Reinf 58.96 ksi	59 ksi	74 ksi
Reinf 48.10 ksi	48 ksi	61 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 1.25 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 97.8%

Paul J Ford and Company
250 E. Broad Street Suite 600
Columbus, OH 43215
Phone: 614.221.6679
FAX: 614.448.4105

Job: 120' MP; 528 Wheelers Farm RD; Milford, CT		
Project: PJF 37515-1743 / BU 876320		
Client: Crown Castle	Drawn by: Robert Koors	App'd:
Code: TIA/EIA-222-F	Date: 06/29/16	Scale: NTS
Path:		Dwg No. E-1

PAUL J. FORD & COMPANY
250 E Broad St, Ste 600 • Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

v4.4 - Effective 7-12-13

Date: 6/29/2016
PJF Project: 37516-0701.003.7805
Client Ref. # BU 876320
Site Name: 528 Wheelers Farm RD
Description: 120 MP
Owner: CCI
Engineer: RMK

Asymmetric Anchor Rod Analysis

Moment =	4203	k-ft	TIA Ref.	F	Location =	Base Plate		
Axial =	45.0	kips	ASIF =	1.3333	η =	N/A	for BP, Rev. G Sect. 4.9.9	
Shear =	47.0	kips	Max Ratio =	100.0%	Threads =	N/A	for FP, Rev. G	
Anchor Qty =	24							

**** For Post Installed Anchors: Check anchors for embedment, epoxy/grout bond, and capacity based on proof load. ****

Item	Nominal Anchor Dia, in	Spec	Fy, ksi	Fu, ksi	Location, degrees	Anchor Circle, in	Area Override, in^2	Area, in^2	Max Net Compression, kips	Max Net Tension, kips	Load for Capacity Calc, kips	Capacity Override, kips	Capacity, kips	Capacity Ratio
1	2.250	#18J A615 Gr 75	75	100	27.3	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
2	2.250	#18J A615 Gr 75	75	100	39.1	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
3	2.250	#18J A615 Gr 75	75	100	50.9	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
4	2.250	#18J A615 Gr 75	75	100	62.7	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
5	2.250	#18J A615 Gr 75	75	100	117.3	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
6	2.250	#18J A615 Gr 75	75	100	129.1	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
7	2.250	#18J A615 Gr 75	75	100	140.9	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
8	2.250	#18J A615 Gr 75	75	100	152.7	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
9	2.250	#18J A615 Gr 75	75	100	207.3	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
10	2.250	#18J A615 Gr 75	75	100	219.1	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
11	2.250	#18J A615 Gr 75	75	100	230.9	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
12	2.250	#18J A615 Gr 75	75	100	242.7	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
13	2.250	#18J A615 Gr 75	75	100	297.3	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
14	2.250	#18J A615 Gr 75	75	100	309.1	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
15	2.250	#18J A615 Gr 75	75	100	320.9	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
16	2.250	#18J A615 Gr 75	75	100	332.7	58.00	0.00	3.98	181.87	177.22	177.22	0.00	195.00	90.9%
17	1.375	Williams R71	127.7	150	352.1	58.00	0.00	1.68	76.68	74.72	74.72	0.00	110.75	67.5%
18	1.375	Williams R71	127.7	150	7.9	58.00	0.00	1.68	76.68	74.72	74.72	0.00	110.75	67.5%
19	1.375	Williams R71	127.7	150	82.1	58.00	0.00	1.68	76.68	74.72	74.72	0.00	110.75	67.5%
20	1.375	Williams R71	127.7	150	97.9	58.00	0.00	1.68	76.68	74.72	74.72	0.00	110.75	67.5%
21	1.375	Williams R71	127.7	150	172.1	58.00	0.00	1.68	76.68	74.72	74.72	0.00	110.75	67.5%
22	1.375	Williams R71	127.7	150	187.9	58.00	0.00	1.68	76.68	74.72	74.72	0.00	110.75	67.5%
23	1.375	Williams R71	127.7	150	262.1	58.00	0.00	1.68	76.68	74.72	74.72	0.00	110.75	67.5%
24	1.375	Williams R71	127.7	150	277.9	58.00	0.00	1.68	76.68	74.72	74.72	0.00	110.75	67.5%
								77.10						

Square, Stiffened / Unstiffened Base Plate, Any Rod Material - Rev. F /G

Assumptions: 1) Rod groups at corners. Total # rods divisible by 4. Maximum total # of rods = 48 (12 per Corner).
2) Rod Spacing = Straight Center-to-Center distance between any (2) adjacent rods (same corner)
3) Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#:
Site Name:
App #:

Anchor Rod Data		
Qty:	16	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	58	in
Anchor Spacing:	6	in

Plate Data		
W=Side:	57	in
Thick:	3.25	in
Grade:	50	ksi
Clip Distance:	16	in

Stiffener Data (Welding at both sides)		
Configuration:	Stiffened	
Weld Type:	Both	**
Groove Depth:	0.5	in **
Groove Angle:	45	degrees
Fillet H. Weld:	0.5	in
Fillet V. Weld:	0.375	in
Width:	9	in
Height:	18	in
Thick:	1	in
Notch:	0.75	in
Grade:	50	ksi
Weld str.:	80	ksi

Pole Data		
Diam:	45.12	in
Thick:	0.375	in
Grade:	60	ksi
# of Sides:	12	"0" IF Round

Stress Increase Factor		
ASD ASIF:	1.333	

Base Reactions			
TIA Revision:	F		Reactions adjusted to account for additional anchor rods.
Unfactored Moment, M:	3471.2	ft-kips	
Unfactored Axial, P:	37.2	kips	
Unfactored Shear, V:	38.8	kips	

Anchor Rod Results

TIA F --> Maximum Rod Tension	177.2	Kips
Allowable Tension:	195.0	Kips

See asymmetric spreadsheet

Base Plate Results — Shear Check Only

Base Plate Stress:	4.4	ksi
Allowable PL Bending Stress:	26.7	ksi
Base Plate Stress Ratio:	16.3%	**Pass**

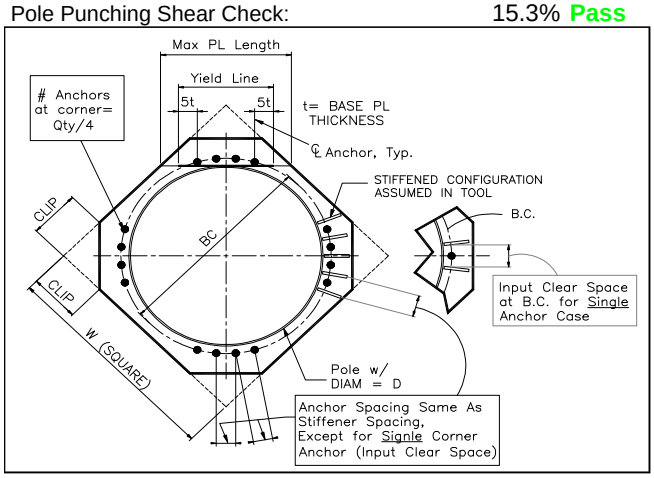
PL Ref. Data
Yield Line (in):
N/A, Roark
Max PL Length:
35.49

Stiffener Results

Horizontal Weld :	51.8%	**Pass**
Vertical Weld:	43.5%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	14.9%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	53.3%	**Pass**
Plate Comp. (AISC Bracket):	53.2%	**Pass**

Pole Results

Pole Punching Shear Check:	15.3%	**Pass**



** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PAUL J. FORD & COMPANY
250 E Broad St, Ste 600 • Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

Job Number: 37516-0701.003.7805 **Page:** 1
Site Number: 876320 **By:** RMK
Site Name: 528 Wheelers Farm Rd **Date:** 6/29/2016

DRILLED PIER SOIL AND STEEL ANALYSIS - TIA/EIA-222-F

Unfactored Base Reactions from RISA

	Comp. (+)	Tension (-)	
Moment, M =	4203.0		k-ft
Shear, V =	47.0		kips
Axial Load, P =	45.0		kips
OTM =	4226.5	0.0	k-ft @ Ground

Safety Factors / Load Factors / Φ Factors

Tower Type =	Monopole DP
ACI Code =	ACI 318-02
Seismic Design Category =	D
Reference Standard =	TIA/EIA-222-F
Use 1.3 Load Factor?	Yes
Load Factor =	1.30

Drilled Pier Parameters

Diameter =	7	ft
Height Above Grade =	0.5	ft
Depth Below Grade =	19	ft
fc' =	3	ksi
εc =	0.003	in/in
L / D Ratio =	2.79	
Mat Ftdn. Cap Width =	12	ft
Mat Ftdn. Cap Length =	12	ft
Depth Below Grade =	6	ft

	Safety Factor	Φ Factor
Soil Lateral Resistance =	2.00	0.75
Skin Friction =	2.00	0.75
End Bearing =	2.00	0.75
Concrete Wt. Resist Uplift =	1.25	

Load Combinations Checked per TIA/EIA-222-F

1. Ult. Skin Friction/2.00 + Ult. End Bearing/2.00
+ Effective Soil Wt. - Buoyant Conc. Wt. ≥ Comp.
2. Ult. Skin Friction/2.00 + Buoyant Conc. Wt./1.25 ≥ Uplift
3. Ult. Skin Friction/1.50 + Buoyant Conc. Wt./1.50 ≥ Uplift

Steel Parameters

Number of Bars =	32	
Rebar Size =	#11	
Rebar Fy =	60	ksi
Rebar MOE =	29000	ksi
Tie Size =	#5	
Side Clear Cover to Ties =	4	in

Soil Parameters

Water Table Depth =	7.00	ft
Depth to Ignore Soil =	3.33	ft
Depth to Full Cohesion =	0	ft
Full Cohesion Starts at?*	Ground	

Above Full Cohesion Lateral Resistance = 4(Cohesion)(Dia)(H)
Below Full Cohesion Lateral Resistance = 8(Cohesion)(Dia)(H)

Direct Embed Pole Shaft Parameters

Dia @ Grade =		in
Dia @ Depth Below Grade =		in
Number of Sides =		
Thickness =		in
Fy =		ksi
Backfill Condition =		

Maximum Capacity Ratios

Maximum Soil Ratio =	100.0%
Maximum Steel Ratio =	100.0%

Note: The drilled pier foundation was analyzed using the methodology in the software 'PLS-Caisson' (Version 8.10, or newer, by Power Line Systems, Inc.). Per the methods in PLS-Caisson, the soil reactions of cohesive soils are calculated using 8CD independent of the depth of the soil layer. The depth of soil to be ignored at the top of the drilled pier is based the recommendations of the site specific geotechnical report. In the absence of any recommendations, the frost depth at the site or one half of the drilled pier diameter (whichever is greater) shall be ignored.

Define Soil Layers

Note: Cohesion = Undrained Shear Strengh = Unconfined Compressive Strength / 2

Layer	Thickness ft	Unit Weight pcf	Cohesion psf	Friction Angle degrees	Soil Type	Ultimate End Bearing psf	Comp. Ult. Skin Friction psf	Tension Ult. Skin Friction psf	Depth ft
1	2	100	0	28	Sand				2
2	1.33	135	0	42	Sand				3.33
3	3.67	135	0	42	Sand				7
4	6.5	135	0	42	Sand	20000			13.5
5	8.5	140	8000		Clay	20000			22
6									
7									
8									
9									
10									
11									
12									

Soil Results: Overturning

Depth to COR =	15.12	ft, from Grade	Shear, V =	47.00	kips
Bending Moment, M =	4936.91	k-ft, from COR	Resisting Shear, Va =	52.57	kips
Resisting Moment, Ma =	5522.10	k-ft, from COR			

MOMENT RATIO = 89.4% OK **SHEAR RATIO = 89.4% OK**

Soil Results: Uplift

Uplift, T =	0.00	kips
Allowable Uplift Cap., Ta =	149.30	kips

UPLIFT RATIO = 0.0% OK

Soil Results: Compression

Compression, C =	45.00	kips
Allowable Comp. Cap., Ca =	344.56	kips

COMPRESSION RATIO = 13.1% OK

Steel Results (ACI 318-02):

Minimum Steel Area =	18.47	sq in	Axial Load, P =	107.32	kips @ 6.00 ft Below Grade
Actual Steel Area =	49.92	sq in	Moment, M =	4363.90	k-ft @ 6.00 ft Below Grade
			Allowable Moment, Ma =	5903.05	k-ft
Allowable Min Axial, Pa =	-2073.60	kips, Where Ma = 0 k-ft			
Allowable Max Axial, Pa =	6799.77	kips, Where Ma = 0 k-ft			

MOMENT RATIO = 73.9% OK

Moment Capacity of Drilled Concrete Shaft (Caisson) for TIA Rev F or G

Note: Shaft assumed to have ties, not spiral, transverse reinforcing

Site Data

BU#: *876320*
Site Name: *528 Wheelers Farm Rd*
App #:

Enter Load Factors Below:		
For M (WL)	1.3	<---- Enter Factor
For P (DL)	1.3	<---- Enter Factor

Pier Properties

Concrete:

Pier Diameter =	7.0	ft
Concrete Area =	5541.8	in^2

Reinforcement:

Clear Cover to **Tie**=	4.00	in
Horiz. **Tie** Bar Size=	5	
Vert. Cage Diameter =	6.11	ft
Vert. Cage Diameter =	73.34	in
Vertical Bar Size =	11	
Bar Diameter =	1.41	in
Bar Area =	1.56	in^2
Number of Bars =	32	
As Total=	49.92	in^2
A s/ Aconc, Rho:	0.0090	0.90%

ACI 10.5 , ACI 21.10.4, and IBC 1810.
Min As for Flexural, Tension Controlled, Shafts:
(3)*(Sqrt(f'c)/Fy: 0.0027
200 / Fy: 0.0033

Minimum Rho Check:

Actual Req'd Min. Rho:	0.33%	Flexural
Provided Rho:	0.90%	**OK**

Ref. Shaft Max Axial Capacities, ϕ Max(Pn or Tn):		
Max Pu = (φ=0.65) Pn.		
Pn per ACI 318 (10-2)	8839.70	kips
at Mu=(ϕ=0.65)Mn=	5309.39	ft-kips
Max Tu, (φ=0.9) Tn =	2695.68	kips
at Mu=ϕ=(0.90)Mn=	0.00	ft-kips

Maximum Shaft Superimposed Forces

TIA Revision:	F	
Max. Service Shaft M:	4363.9	ft-kips **(* Note)**
Max. Service Shaft P:	107.32	kips
Max Axial Force Type:	Comp.	

(*) Note: Max Shaft Superimposed Moment does not necessarily equal to the shaft top reaction moment

Load Factor	**Shaft Factored Loads**		
1.30	Mu:	5673.07	ft-kips
1.30	Pu:	139.516	kips

Material Properties

Concrete Comp. strength, f'c =	3000	psi
Reinforcement yield strength, Fy =	60	ksi
Reinforcing Modulus of Elasticity, E =	29000	ksi
Reinforcement yield strain =	0.00207	
Limiting compressive strain =	0.003	

ACI 318 Code

Select Analysis ACI Code= 2002

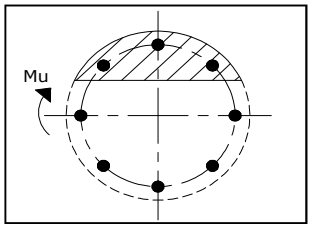
Seismic Properties

Seismic Design Category =	D
Seismic Risk =	**High**

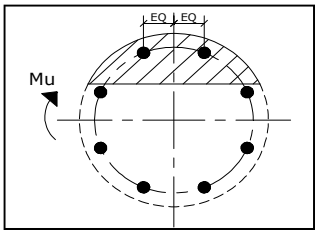
Solve (Run) <-- Press Upon Completing All Input

Results:

Governing Orientation Case: **2**



Case 1



Case 2

Dist. From Edge to Neutral Axis:	**17.35**	in
Extreme Steel Strain, ϵt:	**0.0106**	
	ϵt > 0.0050, Tension Controlled	
Reduction Factor,φ:	**0.900**	

Output Note: Negative Pu=Tension

For Axial Compression, φ Pn = Pu:	139.52	kips
Drilled Shaft Moment Capacity, φMn:	**7673.97**	ft-kips
Drilled Shaft Superimposed Mu:	**5673.07**	ft-kips

(Mu/φMn, Drilled Shaft Flexure CSR:	**73.9%**

528 WHEELERS FARMS RD

Location	528 WHEELERS FARMS RD	**Mblu**	104/ 915/ 13/A /
Acct#	023047	**Owner**	VILLAGE FOUNDATION INC THE
Assessment	$315,000	**Appraisal**	$450,000
PID	100284	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$450,000	$0	$450,000
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$315,000	$0	$315,000

Owner of Record

Owner	VILLAGE FOUNDATION INC THE	**Sale Price**	$0
Other	C/O GLOBAL SIGNAL ACQUISITIONS II LLC	**Certificate**	
Address	PMB 331 4017 WASHINGTON RD MCMURRAY, PA 15317	**Book & Page**	00259/5630
		Sale Date	05/15/1942

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
VILLAGE FOUNDATION INC THE	$0		00259/5630	05/15/1942

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Outbuildings

Building Photo

Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Description:	
Kitchen Descrip:	
Int Condition:	
Solar Panels	
House Generator	

(http://images.vgsi.com/photos/MilfordCTPhotos//default.jpg)

Building Layout

Building Layout

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	434V
Description	CELL TOWER MDL-00
Zone	
Neighborhood	GG
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0
Frontage	
Depth	
Assessed Value	$0
Appraised Value	$0

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**

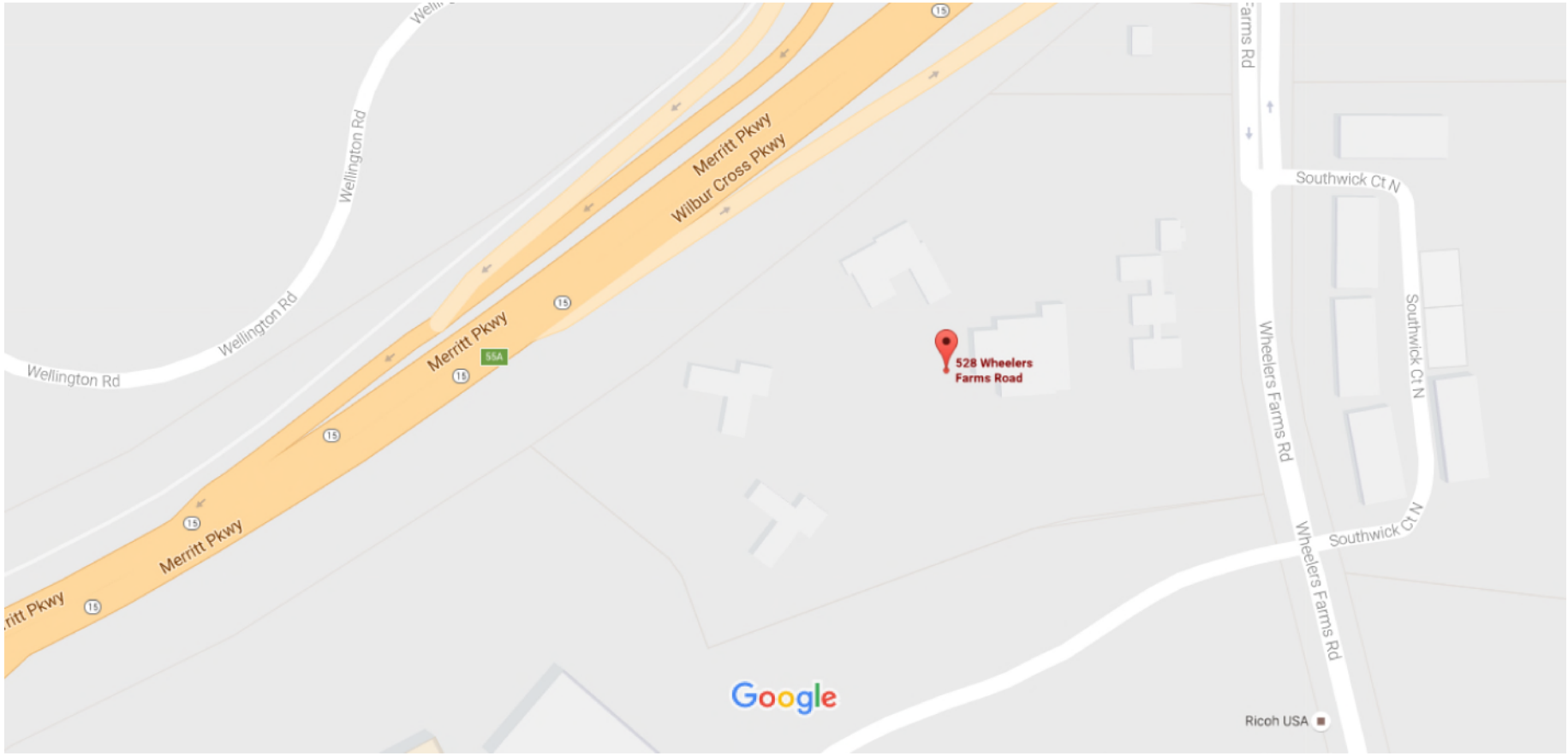
CEL1	CEL TWR SITE			1 UNITS	$450,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$450,000	$0	$450,000
2013	$450,000	$0	$450,000
2012	$450,000	$0	$450,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$315,000	$0	$315,000
2013	$315,000	$0	$315,000
2012	$315,000	$0	$315,000

Google Maps 528 Wheelers Farms Rd



Map data ©2016 Google 100 ft