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

December 12, 2018

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

RE: **Notice of Exempt Modification for Sprint Crown Site BU: 876322**
Verizon Site ID: Brandford SW CT - 32247
850 West Main Street, Branford, New Haven County, CT 06405
Latitude: 41° 16′ 40.188″/ **Longitude:** -72° 50′ 12.696″

Dear Ms. Bachman:

Verizon currently maintains (6) antennas at the 110-foot level of the existing 130-foot monopole at 850 West Main Street, Branford, Connecticut 06405. The tower is owned by Global Signal Acquisitions (Crown Castle) and the property is owned by Branford LIR, LLC. Verizon intends to replace (6) antennas, install (6) RRHs, add (1) line, install (1) OVP box, and add (3) diplexers at the 110-foot level.

This facility was approved by the Planning and Zoning Commission in application # 98-5.3 on May 27, 1998. This approval included conditions that prior to issuance of the building permit, determine location of sanitary sewer lateral and show on revised plans. PCS tower and equipment shed are not to be located on top of lateral. This modification complies with the aforementioned conditions.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to The Honorable James B. Cosgrove, First Selectman for the Town of Branford and Branford LIR, LLC as the property owner.

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

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

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

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

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

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

For the foregoing reasons, Verizon respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Anne Marie Zsamba.

Sincerely,

Anne Marie Zsamba, Esq.
Real Estate Specialist
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
(201) 236-9224
annemarie.zsamba@crowncastle.com

Attachments:

Tab A: Exhibit-1: Compound Plan and Elevation Depicting the Planned Changes
Tab B: Exhibit-2: Structural Modification Report
Tab C: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: The Honorable James B. Cosgrove, First Selectman
Town of Branford
Branford Town Hall
1019 Main Street
Branford, CT 06405

Branford LIR, LLC
Tartaglia Commercial Properties
447 Main Street, Suite 212
Monroe, CT 06468

PLANNING AND ZONING COMMISSION
TOWN OF BRANFORD TOWN HALL DRIVE P.O. BOX 150
Branford, Connecticut 06405 488-1255

NOTICE OF DECISION

CB-1-6

May 27, 1998

Attorney John Knuff
Harris & Sagarin, P.C.
147 North Broad Street
Milford, Connecticut 06460

SUBJECT: Special Exception LOCATION: 850 West Main Street

APPLICATION # 98-5.3 OWNERS OF RECORD: Remo, Lorraine and Isabel Tartaglia

APPLICANT: Sprint Spectrum L.P. d/b/a Sprint PCS

Dear Sir:

At a meeting of the Branford Planning & Zoning Commission held on Thursday, May 21,1998, the Commission voted to:

X Approve your above subject application with the conditions noted below.

Very truly yours,

Shirley Rasmussen

Shirley Rasmussen
Town Planner

NOTE: This Special Exception shall become effective only after it is filed on the Land Records in the office of the Town Clerk.

1. Prior to issuance of building permit, determine location of sanitary sewer lateral and show on revised plan. PCS tower and equipment shed are not to be located on top of lateral.

NOTE: Special Exception shall become null and void in the event the applicant fails to obtain a building permit within one (1) year of date of approval.
(Per Section 31.7 of the Branford Zoning Regulations)

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verizon

CROWN CASTLE

VERIZON SITE NAME:	BRANFORD SW CT
CROWN CASTLE SITE NAME:	TARTAGLIA PROPERTY
CROWN CASTLE BU NUMBER:	876322
SITE ADDRESS:	850 WEST MAIN STREET BRANFORD, CT 06405
SITE TYPE:	MONOPOLE TOWER

SITE INFORMATION

APPLICANT:
VERIZON
180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

TOWER OWNER:
CROWN CASTLE

CROWN CASTLE PM:
WILLIAM GATES
(518) 375-3517

LATITUDE (NAD83):
41° 16' 40.19" N
41.277831

LONGITUDE (NAD83):
-72° 50' 12.70" W
-72.836861

COUNTY:
NEW HAVEN

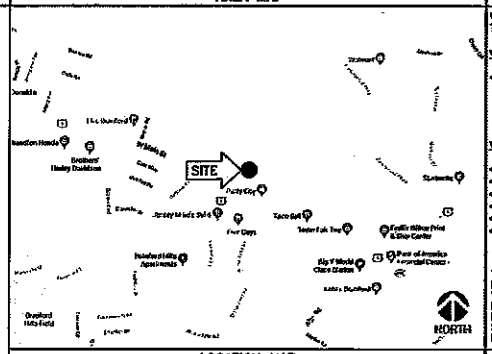
ZONING JURISDICTION:
NEW HAVEN COUNTY

POWER COMPANY:
NATIONAL GRID
(800) 322-3223

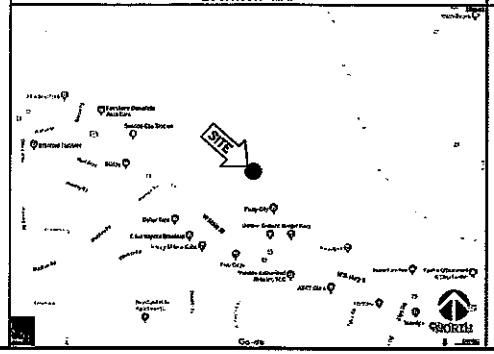
TELCO PROVIDER:
FIBER APP

VERIZON WIRELESS CM:
TBD

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

VERIZON PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATION FACILITY:

VERIZON EQUIPMENT TO BE REMOVED:

- REMOVE (6) EXISTING PANEL ANTENNAS

VERIZON EQUIPMENT TO BE INSTALLED:

- INSTALL (6) COMMSCOPE PANEL ANTENNAS P/N:JAH-65B-R3B
- INSTALL (3) SAMSUNG RRH'S P/N: B5/B13 RRH-BR04C
- INSTALL (3) SAMSUNG RRH'S P/N: B2/B66A RRH-BR049
- INSTALL (1) HYBRID CABLE P/N: HBTBB-1-08UB-SBJ18
- INSTALL (1) COVP RAYCAP P/N: DBT1-6Z-8AB-0Z
- INSTALL (3) RFS DIPLEXERS P/N: CBC1923TDS-43

THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY VERIZON IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY VERIZON. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.

DRAWING INDEX

SHEET NO:	SHEET TITLE	REV
T-1	TITLE SHEET & PROJECT DATA	A
SP-1	VERIZON SPECIFICATIONS	A
A-1	OVERALL SITE PLAN	A
A-2	TOWER ELEVATION	A
A-3	ANTENNA LAYOUT & LOADING CHART	A
A-4	EQUIPMENT DETAILS	A
A-5	MOUNTING DETAILS	A
G-1	GROUNDING PLAN & DETAILS	A

APPLICABLE CODES

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

1. INTERNATIONAL BUILDING CODE (2015 IBC)
2. TIA-EIA-222-G OR LATEST EDITION
3. NFPA 780 – LIGHTNING PROTECTION CODE
4. 2017 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
6. RI BUILDING CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

811 Know what's below. Call before you dig. www.call811.com

DRIVING DIRECTIONS

FROM: PROVIDENCE, RI
1.DEPART DORRANCE ST TOWARD FULTON ST / KENNEDY PLAZA
2.TURN LEFT ONTO WASHINGTON ST
3.TURN RIGHT ONTO UNION ST
4.TURN RIGHT ONTO US-1 N / FOUNTAIN ST
5.TURN LEFT TO STAY ON US-1 N / FOUNTAIN ST
6.TAKE RAMP LEFT FOR I-95 SOUTH TOWARD NEW YORK
7.ENTERING CONNECTICUT
8.TAKE RAMP RIGHT AND FOLLOW SIGNS FOR US-1
9.TURN RIGHT ONTO US-1 / E MAIN ST
10.PASS CUMBERLAND FARMS IN 0.9 MI
11.ARRIVE AT 850 WEST MAIN STREET
BRANFORD, CT 06405

PLANS PREPARED FOR:
verizon
180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

PLANS PREPARED BY:
INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1460 W. 121st. Ave., Suite 101
Westminster, CO 80234
Office # (303) 219-1178
Fax # (303) 242-8838
JOB NUMBER: TBD

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
NOV 8 2018

DRAWING NOTICE:
THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF VERIZON AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF VERIZON.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/28/18	ROD	A

VERIZON SITE NAME:
BRANFORD SW CT

CROWN CASTLE SITE NAME:
TARTAGLIA PROPERTY

CROWN CASTLE BU #:
876322

SITE ADDRESS:
850 WEST MAIN STREET
BRANFORD, CT 06405

SHEET DESCRIPTION:
TITLE SHEET & PROJECT DATA

SHEET NUMBER:
T-1

ELECTRICAL NOTES:

WORK INCLUDED

1. INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PLANT SERVICES AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE THE ELECTRICAL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   A. PREPARE AND SUBMIT SHOP DRAWINGS, DIAGRAMS AND ILLUSTRATIONS.
   B. PROCURE ALL NECESSARY PERMITS AND APPROVALS AND PAY ALL REQUIRED FEES AND CHARGES IN CONNECTION WITH THE WORK OF THIS CONTRACT.
   C. SUBMIT AS-BUILT DRAWINGS, OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUALS.
   D. EXECUTE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING OF EXISTING OR NEWLY INSTALLED CONSTRUCTION REQUIRED FOR THE WORK OF THIS CONTRACT. FOR SLAB PENETRATIONS THROUGH POST TENSION SLABS, X-RAY EXACT AREA OF PENETRATION PRIOR TO PERFORMING WORK. COORDINATE ALL X-RAY WORK WITH BUILDING ENGINEER.
   E. PROVIDE HANGERS, SUPPORTS, FOUNDATIONS, STRUCTURAL FRAMING SUPPORTS, AND BASES FOR CONDUIT AND EQUIPMENT PROVIDED OR INSTALLED UNDER THE WORK OF HIS CONTRACT. PROVIDE COUNTER FLASHING, SLEEVES AND SEALS FOR FLOOR AND WALL PENETRATIONS.
   F. MAINTAIN ALL EXISTING ELECTRICAL SERVICES IN THE BUILDING AREAS NOT AFFECTED BY THE ALTERATION DURING THE PROGRESS OF THE WORK INCLUDING PROVIDING ALL TEMPORARY JUMPERS, CONDUITS, CAPS, PROTECTIVE DEVICES, CONNECTIONS AND EQUIPMENT REQUIRED. PROVIDE TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES.
2. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL ON THE DRAWINGS AND IN THE SPECIFICATIONS. IF AN ITEM OF WORK IS INDICATED IN THE DRAWINGS, IT IS CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS.

GENERAL REQUIREMENTS

1. PROVIDE ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL AND STATE ELECTRICAL CODES.
2. THE ELECTRICAL PLANS ARE DIAGRAMATIC ONLY. REFER TO THE ARCHITECTURAL PLANS FOR THE EXACT DIMENSIONS OF THE BUILDING.
3. LOAD CALCULATIONS ARE BASED ON EXISTING BUILDING INFORMATION/DRAWINGS PROVIDED TO ENGINEERING. CONTRACTOR IS TO VERIFY ALL EXISTING RATINGS AND LOADS PRIOR TO PURCHASING OF SPECIFIED EQUIPMENT FOR COMPLIANCE TO NEC. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES AND REQUEST FURTHER DIRECTION BY ENGINEER.
4. EXISTING BUILDING EQUIPMENT IS NOTED ON THE DRAWINGS. NEW OR RELOCATED EQUIPMENT IS SHOWN WITH SOLID LINES. FUTURE EQUIPMENT (NOT IN THIS CONTRACT) IS DEPICTED WITH SHADED LINES. REQUEST CLARIFICATION OF DRAWINGS OR OF SPECIFICATIONS PRIOR TO PRICING OR INSTALLATION.
5. GENERAL
   A. AFTER CAREFULLY STUDYING THE DRAWINGS AND SPECIFICATIONS, AND BEFORE SUBMITTING THE PROPOSAL, MAKE A MANDATORY SITE VISIT TO ASCERTAIN CONDITIONS OF THE SITE, AND THE NATURE AND EXACT QUANTITY OF WORK TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO NOTIFY THE OWNER, IN WRITING, OF ANY DISCREPANCIES THAT MAY HAVE BEEN NOTED BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS AND SPECIFICATIONS.
   B. VERIFY ALL MEASUREMENTS AT THE SITE AND BE RESPONSIBLE FOR CORRECTNESS OF SAME.
6. QUALITY, WORKMANSHIP, MATERIALS AND SAFETY
   A. PROVIDE NEW MATERIALS AND EQUIPMENT OF A DOMESTIC MANUFACTURER BY THOSE REGULARLY ENGAGED IN THE PRODUCTION AND MANUFACTURE OF SPECIFIED MATERIALS AND EQUIPMENT. WHERE UL, OR OTHER AGENCY, HAS ESTABLISHED STANDARDS FOR MATERIALS, PROVIDE MATERIALS WHICH ARE LISTED AND LABELED ACCORDINGLY. THE COMMERCIALLY STANDARD ITEMS OF EQUIPMENT AND THE SPECIFIC NAMES MENTIONED HEREIN ARE INTENDED FOR THE PROPER FUNCTIONING OF THE WORK.
   B. WORK SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE REQUIRED FOR THE WORK. INSTALL MATERIALS AND EQUIPMENT TO PRESENT A NEAT APPEARANCE WHEN COMPLETED AND IN ACCORDANCE WITH THE APPROVED RECOMMENDATIONS OF THE MANUFACTURER AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.
   C. PROVIDE LABOR, MATERIALS, APPARATUS AND APPLIANCES ESSENTIAL TO THE FUNCTIONING OF THE SYSTEMS DESCRIBED OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL WHENEVER MENTIONED IN THE CONTRACT DOCUMENT OR NOT.
   D. MAKE WRITTEN REQUESTS FOR SUPPLEMENTARY INSTRUCTIONS TO ARCHITECT/ENGINEER IN CASE OF DOUBT AS TO WORK INTENDED OR IN EVENT OF NEED FOR EXPLANATION THEREOF.
   E. PERFORMANCE AND MATERIAL REQUIREMENTS SCHEDULED OR SPECIFIED ARE MINIMUM STANDARD ACCEPTABLE. THE RIGHT TO JUDGE THE QUALITY OF EQUIPMENT THAT DEVIATES FROM THE CONTRACT DOCUMENT REMAINS SOLELY WITH ARCHITECT/ENGINEER. CONTRACT DOCUMENT OR NOT.

GUARANTEE

1. GUARANTEE MATERIALS, PARTS AND LABOR FOR WORK FOR ONE YEAR FROM THE DATE OF ISSUANCE OF OCCUPANCY PERMIT, DURING THAT PERIOD, MAKE GOOD FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP WITH NO ADDITIONAL COMPENSATION AND AS DIRECTED BY ARCHITECT.

CLEANING

1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.
2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE COMPLETION OF THE PROJECT TO THE SATISFACTION OF THE ENGINEER.

COORDINATION AND SUPERVISION

1. CAREFULLY LAY OUT ALL WORK IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES. WHERE SUCH WORK IS NECESSARY, HOWEVER, PATCH AND REPAIR THE WORK IN AN APPROVED MANNER BY SKILLED MECHANICS AT NO ADDITIONAL COST TO THE OWNER. RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES. ASSIST IN WORKING OUT SPACE CONDITIONS. IF WORK IS INSTALLED BEFORE COORDINATION WITH OTHER TRADES, OR CAUSES INTERFERENCE, MAKE CHANGES NECESSARY TO CORRECT CONDITIONS WITHOUT EXTRA CHARGE.

SUBMITTALS

1. AS-BUILT DRAWINGS:
   A. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER "AS-BUILT" DRAWINGS.
2. SERVICE MANUALS:
   A. UPON COMPLETION OF THE WORK, FULLY INSTRUCT VERIZON AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL, EQUIPMENT AND SYSTEMS.
   B. PROVIDE 3 COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT.

CUTTING AND PATCHING

1. PROVIDE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED TO COMPLETE THE WORK.
2. OBTAIN OWNER APPROVAL PRIOR TO CUTTING THROUGH FLOORS OR WALLS FOR PIPING OR CONDUIT.

TESTS, INSPECTION AND APPROVAL

1. BEFORE ENERGIZING ANY ELECTRICAL INSTALLATION, INSPECT EACH UNIT IN DETAIL. TIGHTEN ALL BOLTS AND CONNECTIONS (TORQUE-TIGHTEN WHERE REQUIRED) AND DETERMINE THAT ALL COMPONENTS ARE ALIGNED, AND THE EQUIPMENT IS IN SAFE, OPERATIONAL CONDITION.
2. PROVIDE THE COMPLETE ELECTRICAL SYSTEM FREE OF GROUND FAULTS AND SHORT CIRCUITS SUCH THAT THE SYSTEM WILL OPERATE SATISFACTORILY UNDER FULL LOAD CONDITIONS, WITHOUT EXCESSIVE HEATING AT ANY POINT IN THE SYSTEM.

SPECIAL REQUIREMENTS

1. DO NOT LEAVE ANY WORK INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. DO NOT INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS, INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON. SHUTDOWN NOTE: SCHEDULE AND NOTIFY OWNER 48 HOURS PRIOR TO SHUTDOWN. ALL SHUTDOWN WORK TO BE SCHEDULED AT A TIME CONVENIENT TO OWNER.

GROUNDING

1. ROUTE ALL GROUNDING CONDUCTORS AS SHOWN ON CONDUIT/GROUNDING RISER.
2. ROUTE 500 KCMIL CU. THHN CONDUCTOR FROM THE MGB LOCATION TO BUILDING STEEL. VERIFY BUILDING STEEL IS EFFECTIVELY GROUNDED PER NEC TO THE MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR (GEC).
3. MAKE ALL GROUND CONNECTIONS FROM MGB TO ELECTRICAL EQUIPMENT WITH 2 HOLE, CRIMP TYPE, BUSHNDY COMPRESSION TERMINATIONS, SIZED AS REQUIRED.
4. USE 1 HOLE, CRIMP TYPE, BUSHNDY COMPRESSIONS TERMINATIONS, SIZED AS REQUIRED, AT EQUIPMENT GROUND CONNECTIONS.
5. HIRE AN INDEPENDENT LAB TO PERFORM THE SPECIFIED CHMS TESTING. PROVIDE 4 SETS OF THE CERTIFIED DOCUMENTS TO THE OWNER FOR VERIFICATION PRIOR TO THE PROJECT COMPLETION.

RACEWAYS

1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
   A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.
   B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).
   C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.

   ON THIS PROJECT.
   E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "VERIZON", OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.
   F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTINGS.
   G. MINIMUM SIZE CONDUIT TO BE ¾" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
   H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.

   AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.
   J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
   K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.

RACEWAYS CONT'D

   L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILINGS OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CEILING.
   M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS.
   N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 8'-0", OR AS REQUIRED BY NEC, IN HORIZONTAL AND VERTICAL DIRECTIONS.
   O. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH STANDARD STEEL COVER PLATES.
   P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

WIRES AND CABLES

1. CONTRACTOR TO COORDINATE WITH EQUIPMENT SUPPLIER AND VENDOR FOR EXACT EQUIPMENT OVER-CURRENT PROTECTION VOLTAGE, WIRE SIZE AND PLUG CONFIGURATION, IF APPLICABLE, PRIOR TO BID.
2. ALL EQUIPMENT/DEVICES TO BE PROVIDED WITH INSULATED GROUND CONDUCTOR.
3. ALL WIRE AND CABLE TO BE SOLIDOLT, COPPER, WITH THHN/THWN INSULATION, EXCEPT AS NOTED.
4. WIRE FOR POWER AND LIGHTING WILL NOT BE LESS THAN NO. 12AWG, ALL WIRE NO. 8 AND LARGER TO BE STRANDED.
5. CONTROL WIRING IS NOT TO BE LESS THAN NO. 14AWG, FLEXIBLE IN SINGLE CONDUCTORS OR MULTI-CONDUCTOR CABLES. CONTROL WIRING WILL CONSIST OF MULTI-CONDUCTOR CABLES WHEREVER POSSIBLE. CABLES TO BE PROVIDED WITH AN OVERALL FLAME-RETARDANT, EXTRUDED JACKET AND RATED FOR PLENUM USE. ALL CONTROL WIRE TO BE SOLIDOLT RATED.
6. WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONSIDERED USED AND IS NOT TO BE RE-PULLED.
7. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 20A, 120V CIRCUITS:

LENGTH (FT.)	HOME RUN WIRE SIZE
0 TO 50	NO. 12
51 TO 100	NO. 10
101 TO 150	NO. 8

8. VOLTAGE DROP IS NOT TO EXCEED 3%.
9. MAKE ALL CONNECTIONS WITH UL APPROVED, SOLDERLESS, PRESSURE TYPE INSULATED CONNECTORS: SCOTCHLOK OR AMP APPROVED EQUAL.

WIRING DEVICES

1. ALL RECEPTACLES INSTALLED IN THIS PROJECT TO BE GROUNDING TYPE, WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION.

DISCONNECT SWITCHES AND FUSES

1. DISCONNECT SWITCHES TO BE VOLTAGE-RATED TO SUIT THE CHARACTERISTICS OF THE SYSTEM FROM WHICH THEY ARE SUPPLIED.
2. PROVIDE HEAVY-DUTY, METAL-ENCLOSED, EXTERNALLY-OPERATED DISCONNECT SWITCHES, FUSED OR UNFUSED, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED.
3. PROVIDE NEMA 1 DISCONNECT SWITCHES FOR INTERIOR INSTALLATIONS, NEMA 3R FOR EXTERIOR INSTALLATION.
4. DISCONNECT SWITCHES TO BE MANUFACTURED BY:
   A. GENERAL ELECTRIC COMPANY
   B. SQUARE-D
5. PROVIDE RK-1 TYPE FUSES, UNLESS NOTED OTHERWISE.

INSTALLATION

1. INSTALL DISCONNECT SWITCHES WHERE INDICATED ON DRAWINGS.
2. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES. FUSES MUST MATCH IN TYPE AND RATING.
3. FUSES TO BE MOUNTED SO THAT THE LABELS SHOWING THEIR RATINGS CAN BE READ WITHOUT REQUIRING FUSE REMOVAL.
4. FURNISH AND DEPOSIT SPARE FUSES AT THE JOB SITE AS FOLLOWS:
   A. THREE SPARES FOR EACH TYPE AND SIZE, IN EXCESS OF 60A, USED FOR BRANCH FUSING.
   B. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, UP TO AND INCLUDING 60A, USED FOR BRANCH FUSING. IN NO CASE WILL LESS THAN THREE FUSES OF ONE PARTICULAR TYPE AND SIZE BE FURNISHED.

CONFLICTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATIONS OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER OR THING CONCERNING SUCH BIDDER MIGHT HAVE FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING.
3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS GOVERNING THE WORK.

CONTRACTS AND WARRANTIES

1. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.
2. SEE MASTER CONTRACTOR SERVICES AGREEMENT FOR ADDITIONAL DETAILS.

STORAGE

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

CLEANUP

1. THE CONTRACTORS SHALL, AT ALL TIMES, KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK, THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY TO USE.
2. EXTERIOR
   A. VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. IF NECESSARY, TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.
3. INTERIOR
   A. VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS, FLOOR AND CEILING.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. REMOVE PAINT DROPPINGS, SPOTS, STAINS, AND DIRT FROM FINISHED SURFACES.

CHANGE ORDER PROCEDURE:

1. REFER TO SECTION 17 OF SIGNED MCSA: SEE PROFESSIONAL SERVICE AGREEMENT FOR MCSA.

RELATED DOCUMENTS AND COORDINATION

1. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.
2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

PRODUCTS AND SUBSTITUTIONS

1. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST, IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION. INCLUDE RELATED SPECIFICATION SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS.
2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER, SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

QUALITY ASSURANCE

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO THE APPLICABLE CODES SET FORTH BY THE LOCAL GOVERNING BODY. SEE "CODE COMPLIANCE" T-1.

ADMINISTRATION

1. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. SUBMIT A BAR TYPE PROGRESS CHART, NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK OR THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT THE SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.
3. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON-SITE MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE, BUT NOT LIMITED TO, THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).
4. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.
5. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL OSHA SAFETY REQUIREMENTS IN THEIR AGREEMENT.
6. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.
7. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
8. NOTIFY THE OWNER/PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

INSURANCE AND BONDS

1. CONTRACTOR, AT THEIR OWN EXPENSE, SHALL CARRY AND MAINTAIN, FOR THE DURATION OF THE PROJECT, ALL INSURANCE, AS REQUIRED AND LISTED, AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

GENERAL NOTES:

INTENT

1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH
3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

ABBREVIATIONS

ADJ	ADJUSTABLE
AGL	ABOVE GROUND LINE
&	AND
APPROX	APPROXIMATE
@	AT
BTS	BASE TRANSMISSION STATION
CAB	CABINET
CLG	CEILING
CONC	CONCRETE
CONT	CONTINUOUS
DIA OR ø	DIAMETER
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
EGB	EQUIPMENT GROUND BAR
(E)	EXISTING
EXT	EXTERIOR
FF	FINISHED FLOOR
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GRND	GROUND
LG	LONG
MAX	MAXIMUM
MECH	MECHANICAL
MW	MICROWAVE DISH
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MTL	METAL
(N)	NEW
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OPP	OPPOSITE
(P)	PROPOSED
PCS	PERSONAL COMMUNICATION SYSTEM
PPC	POWER PROTECTION CABINET
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SS	STAINLESS STEEL
STL	STEEL
TOC	TOP OF CONCRETE
TOM	TOP OF MASONRY
TYP	TYPICAL
VIF	VERIFY IN FIELD
UON	UNLESS OTHERWISE NOTED
WWF	WELDED WIRE FABRIC
W/	WITH

PLANS PREPARED FOR:

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180 WASHINGTON VALLEY ROAD
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JOB NUMBER: TBD

A&A PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
OCT 03 2018
PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/29/18	RCS	A

VERIZON SITE NAME:

BRANFORD SW CT

CROWN CASTLE SITE NAME:

TARTAGLIA PROPERTY

CROWN CASTLE BU #:

876322

SITE ADDRESS:

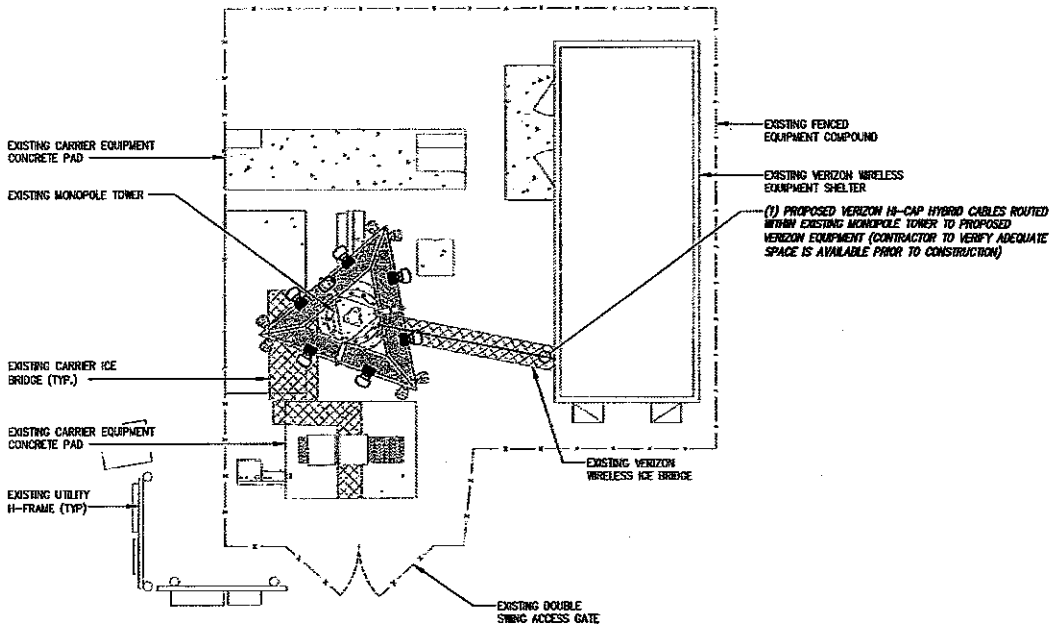
850 WEST MAIN STREET
BRANFORD, CT 06405

SHEET DESCRIPTION:

VERIZON SPECIFICATIONS

SHEET NUMBER:

SP-1



GRAPHIC SCALE

10' 5' 0 5' 10'

NORTH

SCALE: 22"x34" SHEET 1"= 5'
SCALE: 11"x17" SHEET 1"= 10'

INFORMATION CONTAINED WITHIN DRAWINGS IS BASED ON PROVIDED INFORMATION AND IS NOT THE RESULT OF A FIELD SURVEY. CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS PRIOR TO ANY CONSTRUCTION

OVERALL SITE PLAN | SCALE: AS NOTED | 1

PLANS PREPARED FOR:

verizon

180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

PLANS PREPARED BY:

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MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

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JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
MAY 10 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/29/16	BGD	A

VERIZON SITE NAME:
BRANFORD SW CT

CROWN CASTLE SITE NAME:
TARTAGLIA PROPERTY

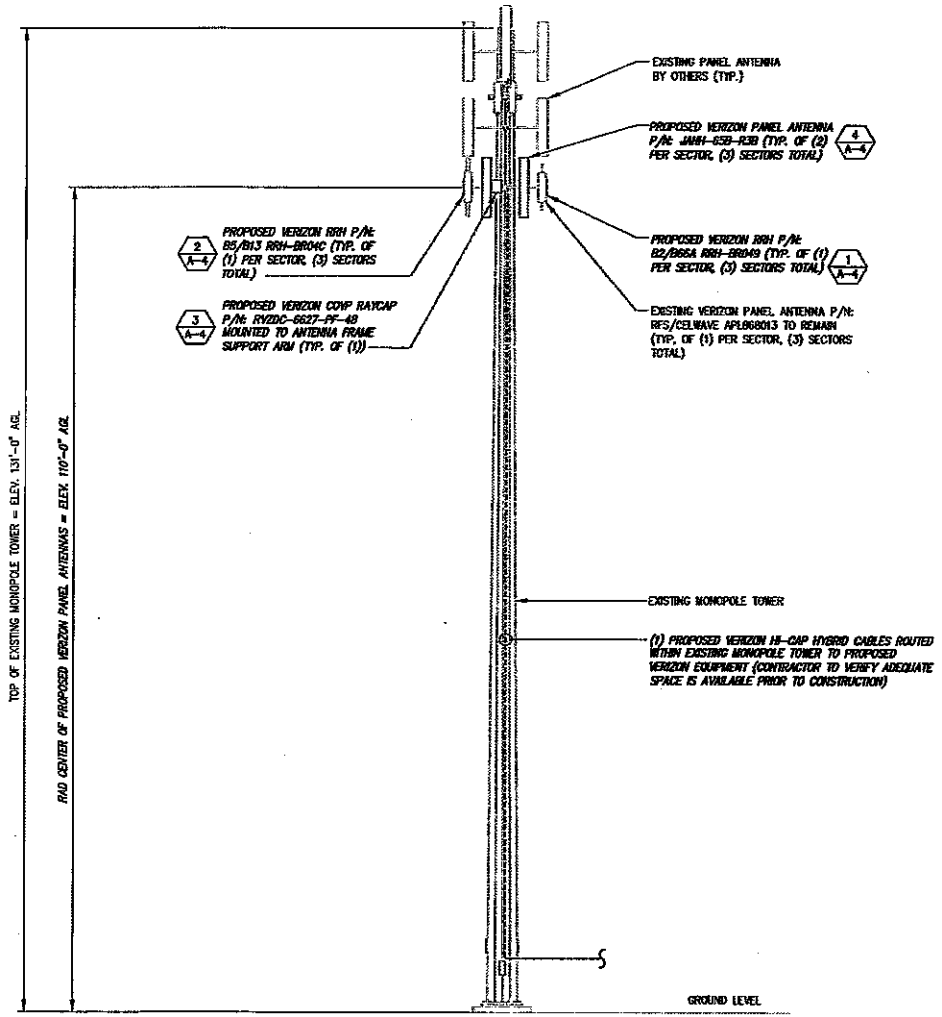
CROWN CASTLE BU #:
876322

SITE ADDRESS:
850 WEST MAIN STREET
BRANFORD, CT 06405

SHEET DESCRIPTION:
OVERALL SITE PLAN

SHEET NUMBER:
A-1

INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR MOUNT FOR THIS SITE AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.



PROPOSED TOWER ELEVATION | NO SCALE | 1

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BEDMINSTER, NJ 07921

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LICENSED
PROFESSIONAL ENGINEER
NOV 30 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/29/18	SCD	A

VERIZON SITE NAME: BRANFORD SW CT

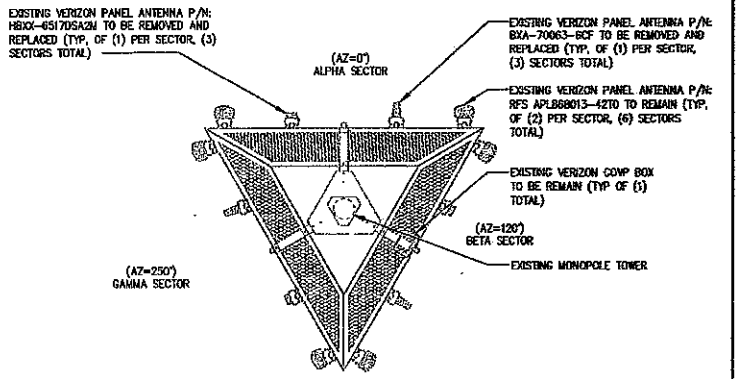
CROWN CASTLE SITE NAME: TARTAGLIA PROPERTY

CROWN CASTLE BU #: 876322

SITE ADDRESS: 850 WEST MAIN STREET
BRANFORD, CT 06405

SHEET DESCRIPTION: TOWER ELEVATION

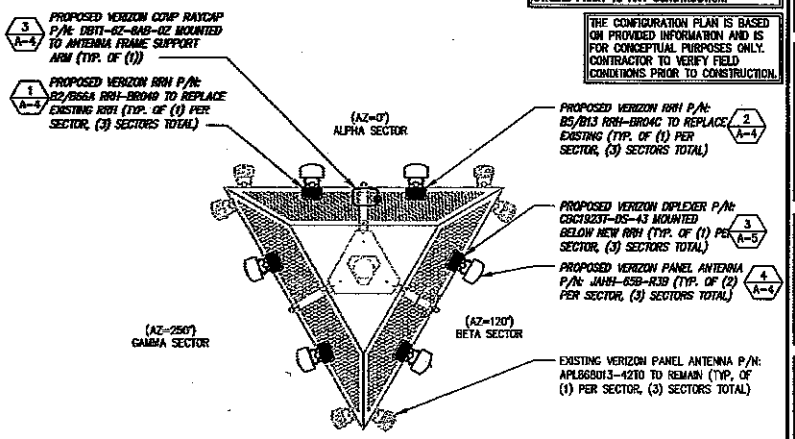
SHEET NUMBER: A-2



EXISTING ANTENNA LAYOUT | NO SCALE | 2

INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR MOUNT FOR THIS SITE AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.

THE CONFIGURATION PLAN IS BASED ON PROVIDED INFORMATION AND IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.



PROPOSED ANTENNA LAYOUT | NO SCALE | 2

SITE LOADING CHART

SECTOR	POSITION	SECTOR COLOR	TECHNOLOGY	ANTENNA MODEL #	VENDOR	QTY. (REMOVED)	QTY. (NEW)	RRH (QTY/MODEL)	AZIMUTH	DOWNTILT MECHANICAL	DOWNTILT ELECTRICAL	RAD CENTER	FEED LINE TYPE/LENGTH (FEET + 20%)
ALPHA	A1	RED	CDMA	APL868013-42T0	RFS	---	---	---	0°	0°	0°	±110' AGL	EXISTING COAX
ALPHA	A2	RED	LTE 1900/LTE 2100	JAHH-65B-R3B	COMMSCOPE	1	1	(1) B2/B66A RRHBR049	0°	0°	2°	±110' AGL	(1) PROPOSED HB-CAP HYBRID CABLE LENGTH = ±161' (TYP.)
ALPHA	A3	RED	LTE 700/LTE 850	JAHH-65B-R3B	COMMSCOPE	1	1	(1) B5/B13 RRHBR04C W/ DIPLEXER	0°	0°	4°	±110' AGL	(1) EXISTING HYBRID CABLE
ALPHA	A4	RED	CDMA	APL868013-42T0	RFS	---	---	---	0°	0°	0°	±110' AGL	EXISTING COAX
BETA	B1	BLUE	CDMA	APL868013-42T0	RFS	---	---	---	120°	0°	0°	±110' AGL	EXISTING COAX
BETA	B2	BLUE	LTE 1900/LTE 2100	JAHH-65B-R3B	COMMSCOPE	1	1	(1) B2/B66A RRHBR049	120°	0°	2°	±110' AGL	SHARED HYBRID
BETA	B3	BLUE	LTE 700/LTE 850	JAHH-65B-R3B	COMMSCOPE	1	1	(1) B5/B13 RRHBR04C W/ DIPLEXER	120°	0°	6°	±110' AGL	EXISTING SHARED HYBRID
BETA	B4	BLUE	CDMA	APL868013-42T0	RFS	---	---	---	120°	0°	0°	±110' AGL	EXISTING COAX
GAMMA	G1	WHITE	CDMA	APL868013-42T0	RFS	---	---	---	250°	0°	0°	±110' AGL	EXISTING COAX
GAMMA	G2	WHITE	LTE 1900/LTE 2100	JAHH-65B-R3B	COMMSCOPE	1	1	(1) B2/B66A RRHBR049	250°	0°	2°	±110' AGL	SHARED HYBRID
GAMMA	G3	WHITE	LTE 700/LTE 850	JAHH-65B-R3B	COMMSCOPE	1	1	(1) B5/B13 RRHBR04C W/ DIPLEXER	250°	0°	6°	±110' AGL	EXISTING SHARED HYBRID
GAMMA	G4	WHITE	CDMA	APL868013-42T0	RFS	---	---	---	250°	0°	0°	±110' AGL	EXISTING COAX

NOTE: CABLE LENGTHS ARE BASED ON PROVIDED INFORMATION. CONTRACTOR TO VERIFY REQUIRED CABLE LENGTHS PRIOR TO CONSTRUCTION.

SITE LOADING CHART | NO SCALE | 3

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MLA PARTNER:
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ENGINEERING LICENSE:
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No. 24705
NOV 8, 2018
PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/29/18	BCD	A

VERIZON SITE NAME: BRANFORD SW CT

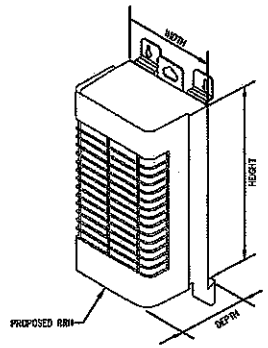
CROWN CASTLE SITE NAME: TARTAGLIA PROPERTY

CROWN CASTLE BU #: 876322

SITE ADDRESS: 850 WEST MAIN STREET BRANFORD, CT 06405

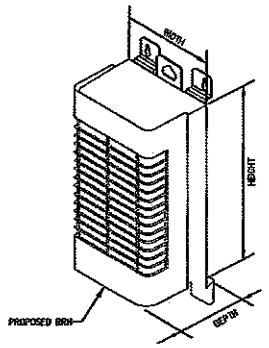
SHEET DESCRIPTION: ANTENNA LAYOUT & LOADING CHART

SHEET NUMBER: A-3



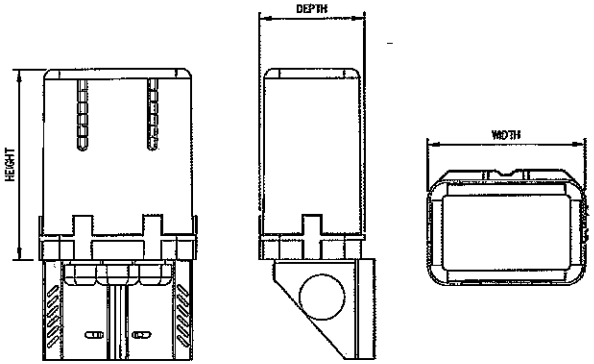
SIZE AND WEIGHT TABLE				
RRH	WIDTH	DEPTH	HEIGHT	WEIGHT W/O BRACKET
B66A-RRH4X45	11.9"	7.2"	25.6"	52.9 LBS

REMOTE RADIO HEAD SPECIFICATIONS | NO SCALE | 1



SIZE AND WEIGHT TABLE				
RRH	WIDTH	DEPTH	HEIGHT	WEIGHT W/O BRACKET
B13-RRH4X30-R4	12.0"	9.0"	21.6"	57.2 LBS

REMOTE RADIO HEAD SPECIFICATIONS | NO SCALE | 2

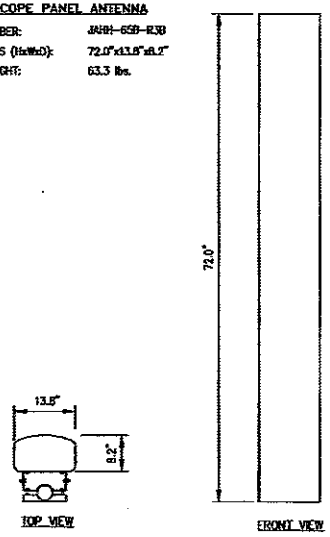


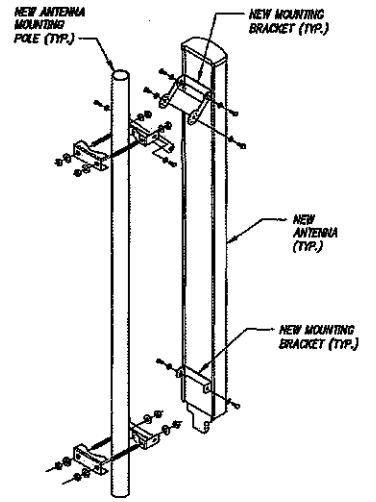
SIZE AND WEIGHT TABLE				
COVP	WIDTH	DEPTH	HEIGHT	WEIGHT W/O BRACKET
DBTI-6Z-8AB-0Z	24.0"	10.0"	24.0"	44.0 LBS

COVP DETAIL | NO SCALE | 3

COMMSCOPE PANEL ANTENNA

PART NUMBER: JAHH-65B-R3B
DIMENSIONS (HxWxD): 72.0"x13.8"x8.7"
TOTAL WEIGHT: 63.3 lbs.





PANEL ANTENNA & MOUNTING DETAILS | NO SCALE | 4

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MLA PARTNER:
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ENGINEERING LICENSE:
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LICENSED
PROFESSIONAL ENGINEER
NOV 30 2018

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REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/29/18	RCD	A

VERIZON SITE NAME:
BRANFORD SW CT

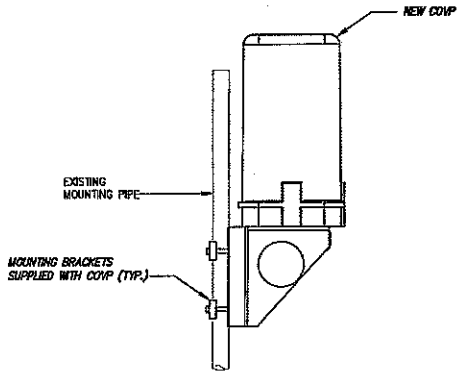
CROWN CASTLE SITE NAME:
TARTAGLIA PROPERTY

CROWN CASTLE BU #:
876322

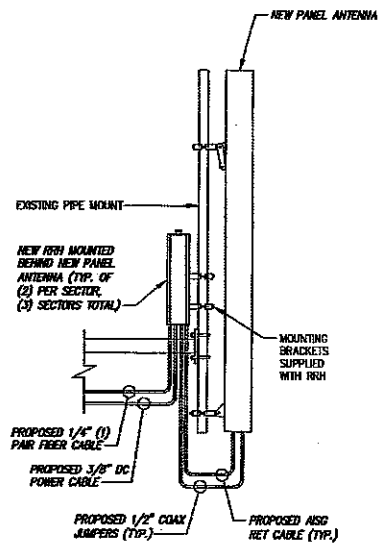
SITE ADDRESS:
850 WEST MAIN STREET
BRANFORD, CT 06405

SHEET DESCRIPTION:
EQUIPMENT & DETAILS

SHEET NUMBER:
A-4



COVP MOUNTING DETAIL | NO SCALE | 1



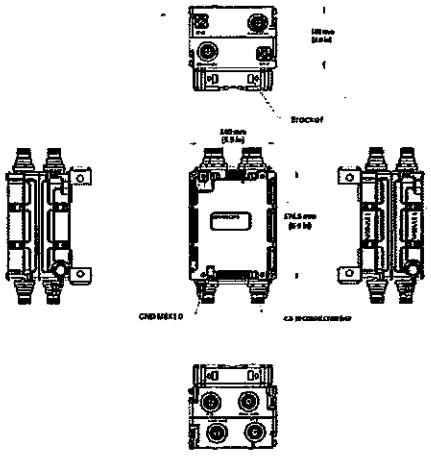
RRH MOUNTING DETAIL | NO SCALE | 2

RFS DIPLEXER

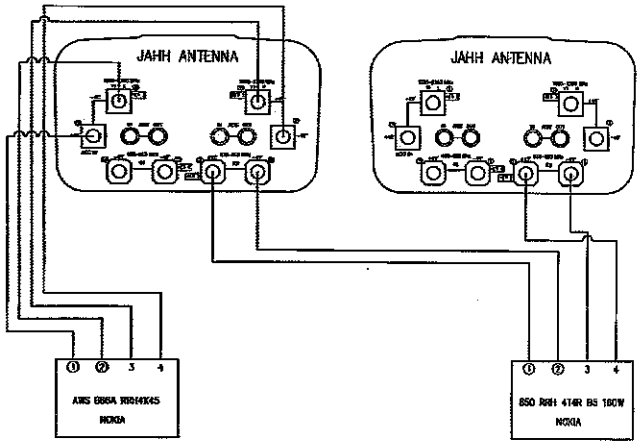
PART NUMBER: CBC1923T-DS-43

DIMENSIONS (HxWxD): 6.90"x5.50"x4.0"

Outline Drawing



DIPLEXER DETAIL | NO SCALE | 3



WIRING DIAGRAM | NO SCALE | 4

PLANS PREPARED FOR:

verizon

180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

PLANS PREPARED BY:

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1480 W. 121st Ave., Suite 101
Westminster, CO 80234
Office # (303) 216-1176
Fax # (303) 242-8838
JOB NUMBER: 180

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
PROFESSIONAL ENGINEER
NOV 2 0 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/29/18	BCD	A

VERIZON SITE NAME:

BRANFORD SW CT

CROWN CASTLE SITE NAME:

TARTAGLIA PROPERTY

CROWN CASTLE BU #:

876322

SITE ADDRESS:

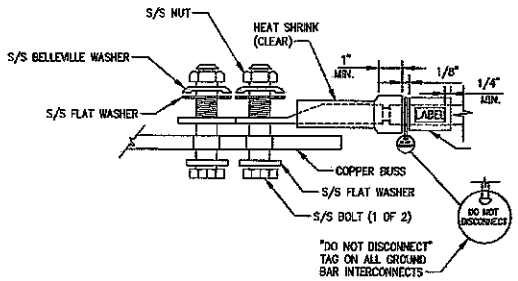
850 WEST MAIN STREET
BRANFORD, CT 06405

SHEET DESCRIPTION:

MOUNTING DETAILS

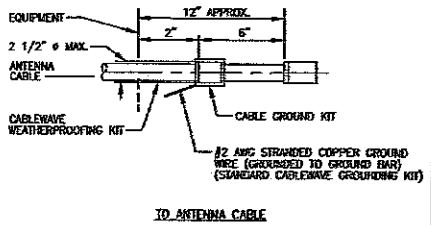
SHEET NUMBER:

A-5



NOTE:
ALL MECHANICAL EXTERNAL TERMINATION SURFACES SHALL BE TREATED WITH T&B KOPR-SHIELD CP® ANTI-OXIDATION COMPOUND.

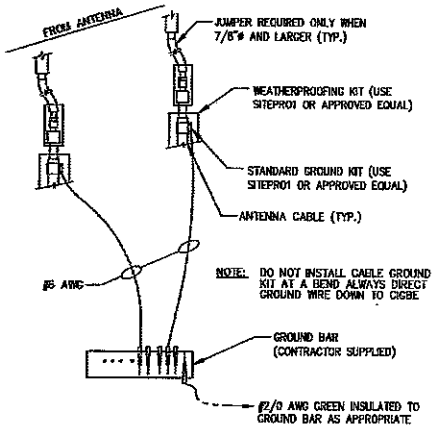
TYPICAL EQUIPMENT GROUND CONNECTION | NO SCALE | 1



TO ANTENNA CABLE

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

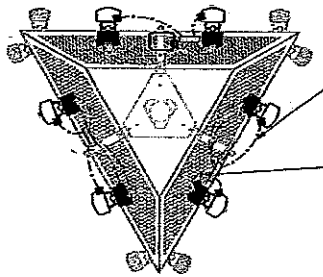
TYPICAL CABLE GROUND KIT CONNECTION | NO SCALE | 2



TYPICAL CONNECTION OF GROUND WIRES TO GROUNDING BARS @ ANTENNAS | NO SCALE | 3

GENERAL GROUNDING NOTES:

1. TO ENSURE PROPER BONDING, ALL CONNECTIONS SHALL BE AS FOLLOWS:
   – #2 BARE TINNED SOLID COPPER CONDUCTOR: EXOTHERMIC WELD TO RODS OR GROUND RING
   – LUGS AND BUS BAR (UNLESS NOTED OTHERWISE): SANDED CLEAN, COATED WITH OXIDE INHIBITOR AND BOLTED FOR MAXIMUM SURFACE CONTACT. ALL LUGS SHALL BE COPPER (NO ALUMINUM SHALL BE PERMITTED). PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS FOR GROUND CONDUCTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT.
2. ALL GROUNDING CABLE IN CONCRETE OR THROUGH WALLS SHALL BE IN 3/4" PVC CONDUIT. SEAL AROUND CONDUIT THROUGH WALLS. NO METALLIC CONDUIT SHALL BE USED FOR GROUNDING CONDUCTORS.
3. OWNER'S REPRESENTATIVE WILL INSPECT EXOTHERMIC WELD AND CONDUCT MEGGER TEST PRIOR TO BURIAL. MAXIMUM 5 OHMS RESISTANCE IS REQUIRED.
4. CONTRACTOR TO INSTALL GROUNDING IN CLOSE PROXIMITY TO EQUIPMENT PLATFORM OR PAD.
5. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. ALL BENDS SHALL BE A MINIMUM 8" RADIUS AND NO GREATER THAN 90 DEGREES.
6. ALL CADWELDS TO BURIED GROUND RING SHALL BE THE PARALLEL TYPE, EXCEPT FOR THE GROUND RODS WHICH SHALL BE THE TEE TYPE.
7. BOND SERVICE CONDUITS TO GROUND RING AS THEY CROSS. DO NOT EXOTHERMICALLY WELD TO CONDUITS.
8. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER WHEN THE GROUNDING SYSTEM IS COMPLETE. THE CONSTRUCTION MANAGER SHALL INSPECT THE GROUNDING SYSTEM PRIOR TO BACKFILLING.
9. THE MINIMUM SPACING BETWEEN GROUND RODS SHALL BE 10'-0" (MAX. 15'-0").
10. BOND CIGBE TO EXTERNAL GROUND RING WITH 2 RUNS OF #2 BARE, TINNED, SOLID COPPER CONDUCTOR IN PVC. CONNECT BAR END WITH 2 HOLE LUG, AND "CADWELD" THE OTHER END TO THE EXTERNAL GROUND ROD.
11. THE PREFERRED LOCATION FOR COAX GROUNDING IS AT THE BASE OF THE TOWER PRIOR TO THE COAX BEND.
12. BONDING OF THE GROUNDED CONDUCTOR (NEUTRAL) AND THE GROUNDING CONDUCTOR SHALL BE AT THE SERVICE DISCONNECTING MEANS. BONDING JUMPER SHALL BE INSTALLED PER N.E.C. ARTICLE 250-30.



NORTH = 0°

TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 1

GROUNDING SYMBOLS:

- GROUND ROD
- ACCESS WELL
- GROUND ROD WITH ACCESS
- COMPRESSION TYPE CONNECTION
- EXOTHERMIC WELD TYPE CONNECTION
- —G— #2/0 BTS COPPER CONDUCTOR BURIED GROUND CABLE
- (1) INDICATES CODED NOTE

PLANS PREPARED FOR:
verizon
180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

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JOB MANAGER: TBD

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
MAY 13 2016

DRAWING NOTICE:

REVISIONS: DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/25/15	RDD	A

VERIZON SITE NAME:
BRANFORD SW CT

CROWN CASTLE SITE NAME:
TARTAGLIA PROPERTY

CROWN CASTLE BU #:
876322

SITE ADDRESS:
850 WEST MAIN STREET
BRANFORD, CT 06405

SHEET DESCRIPTION:
GROUNDING PLANS

SHEET NUMBER:
G-1

Date: **October 03, 2018**

MORRISON HERSHFIELD

Ms. Holly Haas
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

Morrison Hershfield
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
(770) 379-8500

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Carrier Site Number:	32247
	Carrier Site Name:	Branford SW CT
Crown Castle Designation:	**Crown Castle BU Number:**	876322
	Crown Castle Site Name:	Tartaglia Property
	Crown Castle JDE Job Number:	534511
	Crown Castle Work Order Number:	1639342
	Crown Castle Order Number:	461165 Rev. 0
Engineering Firm Designation:	**Morrison Hershfield Project Number:**	CN5-698 / 1800030
Site Data:	**850 West Main Street, Branford, New Haven County, CT 06405** **Latitude *41° 16' 40.188"*, Longitude *-72° 50' 12.696"*** **130 Foot – Summit Monopole Tower**	

Dear Ms. Haas,

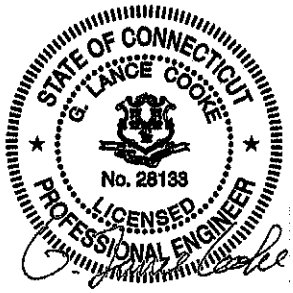
Morrison Hershfield is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower.

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

LC5: Proposed Equipment Configuration **Sufficient Capacity**

The analysis has been performed in accordance with the TIA-222-H Standard. This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2016 Connecticut State Building Code (2012 IBC). Exposure Category C with a maximum topographic factor, K_{zt}, of 1.0 and Risk Category II were used in this analysis.

Respectfully submitted by:



G. Lance Cooke, P.E. (CT License No. PEN.0028133)
Senior Engineer

Digitally signed by Lance Cooke
Date: 2018.10.03 07:40:38-07'00'

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 130 ft Monopole tower designed by Summit Manufacturing, Inc.

The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

Building Code:	2016 Connecticut State Building Code (2012 IBC)
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	130 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
110.0	111.0	6	Commscope	JAHH-65B-R3B w/ Mount Pipe	2	1-5/8
		6	RFS	APL868013-42T0 w/ Mount Pipe		
		3	Commscope	CBC1923T-DS-43		
		2	RFS	DB-T1-6Z-8AB-0Z		
		3	Samsung	RFV01U-D1A		
		3	Samsung	RFV01U-D2A		
	110.0	1	-	Platform Mount [LP 1201-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
128.0	130.0	3	Andrew	LNX-6515DS-VTM,w/ Mount Pipe	13	1-5/8
		3	Ericsson	AIR 21 B2A B4P w/ Mount Pipe		
		3	Ericsson	AIR 21 B4A B2P w/ Mount Pipe		
		3	Ericsson	RRUS 11 B12		
	128.0	3	Ericsson	KRY 112 144/1		
		1	-	Platform Mount [LP 305-1]		
122.0	122.0	3	Lucent	TME-1900MHz RRH (65MHz)	-	-
		3	Lucent	TME-800MHZ RRH		
		1	-	Side Arm Mount [SO 102-3]		
118.0	124.0	1	Andrew	VHLP2-11	3 2 1	1-1/4 Elliptical 5/8
		1	Andrew	VHLP2-18		
	120.0	3	RFS	APXVSPP18-C-A20 w/ Mount Pipe		
		3	RFS	APXVTM14-C-120 w/ Mount Pipe		
		3	Lucent	800 EXTERNAL NOTCH FILTER		
		3	Lucent	TD-RRH8X20-25		
		9	RFS	ACU-A20-N		
	118.0	1	-	Platform Mount [LP 1201-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
50.0	52.0	1	Kathrein	OG-860/1920/GPS-A	1	5/16
	50.0	1	-	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Goodkind and O'Dea, Inc.	1614542	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Summit Manufacturing, Inc.	1613605	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Summit Manufacturing, Inc.	1529811	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Tower Engineering Professionals, Inc.	2483868	CCISITES
4-POST-MODIFICATION INSPECTION	Tower Engineering Professionals, Inc.	5946300	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Crown Castle	5359294	CCISITES
4-POST-MODIFICATION INSPECTION	Tower Engineering Professionals, Inc.	5606019	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Paul J. Ford and Company	5949763	CCISITES
4-POST-MODIFICATION INSPECTION	Sinnott Gering and Schmitt Towers, Inc.	6089118	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	Paul J. Ford and Company	5949790	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.4.0), was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

1) Tower and structures were built and maintained in accordance with the manufacturer's specifications.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Morrison Hershfield 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	% Capacity	Pass / Fail
L1	130 - 125	Pole	TP18x18x0.375	Pole	7.8	Pass
L2	125 - 120.5	Pole	TP18x18x0.375	Pole	17.0	Pass
L3	120.5 - 120	Pole	TP22x22x0.375	Pole	12.1	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L4	120 - 115	Pole	TP22.9x22x0.25	Pole	18.4	Pass
L5	115 - 110	Pole	TP23.8x22.9x0.25	Pole	26.6	Pass
L6	110 - 105	Pole	TP24.701x23.8x0.25	Pole	39.1	Pass
L7	105 - 100	Pole	TP25.601x24.701x0.25	Pole	49.8	Pass
L8	100 - 95	Pole	TP26.501x25.601x0.25	Pole	59.6	Pass
L9	95 - 91.5	Pole	TP27.131x26.501x0.25	Pole	66.1	Pass
L10	91.5 - 91.25	Pole + Reinf.	TP27.176x27.131x0.4875	Reinf. 6 Tension Rupture	49.2	Pass
L11	91.25 - 86.25	Pole + Reinf.	TP28.077x27.176x0.475	Reinf. 6 Tension Rupture	55.8	Pass
L12	86.25 - 81.25	Pole + Reinf.	TP28.977x28.077x0.475	Reinf. 6 Tension Rupture	62.0	Pass
L13	81.25 - 80.75	Pole + Reinf.	TP29.742x28.977x0.4688	Reinf. 6 Tension Rupture	62.6	Pass
L14	80.75 - 75.75	Pole + Reinf.	TP29.467x28.567x0.5375	Reinf. 6 Tension Rupture	62.0	Pass
L15	75.75 - 70.75	Pole + Reinf.	TP30.367x29.467x0.525	Reinf. 6 Tension Rupture	66.8	Pass
L16	70.75 - 65.75	Pole + Reinf.	TP31.267x30.367x0.5125	Reinf. 6 Tension Rupture	71.3	Pass
L17	65.75 - 63	Pole + Reinf.	TP31.762x31.267x0.5125	Reinf. 6 Tension Rupture	73.8	Pass
L18	63 - 62.73	Pole + Reinf.	TP31.81x31.762x0.725	Reinf. 3 Tension Rupture	53.7	Pass
L19	62.73 - 62.58	Pole + Reinf.	TP31.837x31.81x0.725	Reinf. 3 Tension Rupture	53.8	Pass
L20	62.58 - 61.5	Pole + Reinf.	TP32.032x31.837x0.7125	Reinf. 3 Tension Rupture	54.6	Pass
L21	61.5 - 61.25	Pole + Reinf.	TP32.077x32.032x0.5125	Reinf. 3 Tension Rupture	75.3	Pass
L22	61.25 - 56.25	Pole + Reinf.	TP32.977x32.077x0.5	Reinf. 3 Tension Rupture	79.6	Pass
L23	56.25 - 51.25	Pole + Reinf.	TP33.878x32.977x0.5	Reinf. 3 Tension Rupture	83.6	Pass
L24	51.25 - 46.25	Pole + Reinf.	TP34.778x33.878x0.4938	Reinf. 3 Tension Rupture	87.3	Pass
L25	46.25 - 42.25	Pole + Reinf.	TP36.308x34.778x0.4875	Reinf. 3 Tension Rupture	90.2	Pass
L26	42.25 - 36.75	Pole + Reinf.	TP35.863x34.873x0.8	Reinf. 3 Tension Rupture	60.3	Pass
L27	36.75 - 35	Pole + Reinf.	TP36.178x35.863x0.8	Reinf. 3 Tension Rupture	61.1	Pass
L28	35 - 34.75	Pole + Reinf.	TP36.223x36.178x0.8	Reinf. 3 Tension Rupture	61.1	Pass
L29	34.75 - 32.25	Pole + Reinf.	TP36.673x36.223x0.8	Reinf. 3 Tension Rupture	62.3	Pass
L30	32.25 - 32	Pole + Reinf.	TP36.718x36.673x0.925	Reinf. 2 Tension Rupture	54.8	Pass
L31	32 - 31.83	Pole + Reinf.	TP36.748x36.718x0.925	Reinf. 2 Tension Rupture	54.9	Pass
L32	31.83 - 31.48	Pole + Reinf.	TP36.811x36.748x0.55	Reinf. 1 Tension Rupture	81.3	Pass
L33	31.48 - 31.25	Pole + Reinf.	TP36.853x36.811x0.5438	Reinf. 1 Tension Rupture	81.4	Pass
L34	31.25 - 26.25	Pole + Reinf.	TP37.754x36.853x0.5375	Reinf. 1 Tension Rupture	83.9	Pass
L35	26.25 - 21.25	Pole + Reinf.	TP38.654x37.754x0.5375	Reinf. 1 Tension Rupture	86.3	Pass
L36	21.25 - 16.25	Pole + Reinf.	TP39.554x38.654x0.5313	Reinf. 1 Tension Rupture	88.6	Pass
L37	16.25 - 11.25	Pole + Reinf.	TP40.454x39.554x0.525	Reinf. 1 Tension Rupture	90.6	Pass
L38	11.25 - 6.25	Pole + Reinf.	TP41.355x40.454x0.525	Reinf. 1 Tension Rupture	92.6	Pass
L39	6.25 - 1.25	Pole + Reinf.	TP42.255x41.355x0.5188	Reinf. 1 Tension Rupture	94.4	Pass
L40	1.25 - 0	Pole + Reinf.	TP42.48x42.255x0.5188	Reinf. 1 Tension Rupture	94.8	Pass
					Summary	
				Pole	78.9	Pass
				Reinforcement	94.8	Pass
				Overall	94.8	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Connection	120	28.7	Pass
1	Anchor Rods	0	63.5	Pass
1	Base Plate		67.3	Pass
1	Base Foundation	0	39.7	Pass
1	Base Foundation Soil Interaction		38.6	Pass

Structure Rating (max from all components) =	94.8%*

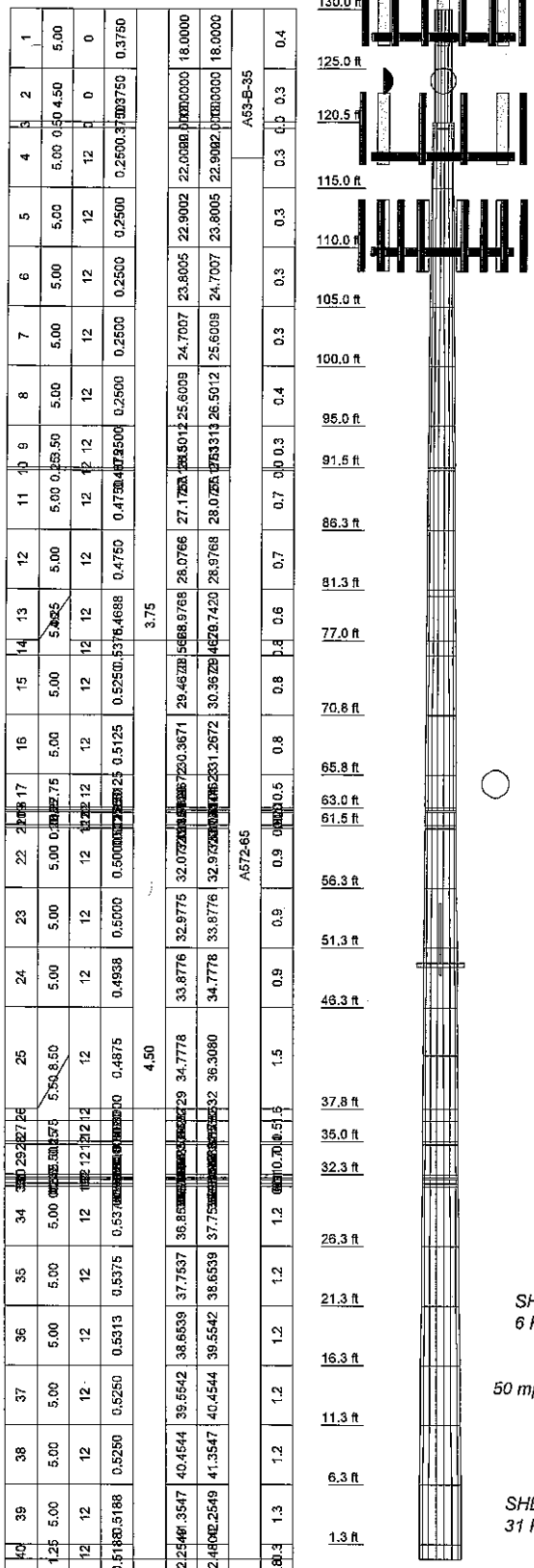
Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) *Rating Per TIA-222-H, Section 15.5.

4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT



Section		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Length (ft)		5.00	4.50	5.00	5.00	5.00	5.00	5.00	5.00	3.50	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	8.50	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	1.25
Number of Sides		0	0	0	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Thickness (in)		0.3750	0.3750	0.3750	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.4750	0.4750	0.4688	0.5376	0.5250	0.5125	0.5000	0.5000	0.4938	0.4938	0.4875	0.5000	0.5000	0.4938	0.4875	0.4813	0.4750	0.4688	0.4625	0.4563	0.4500	0.4438	0.4375	0.5313	0.5375	0.5313	0.5250	0.5250	0.5188	0.5188
Socket Length (ft)																										4.50																3.75
Top Dia (in)		18.0000	18.0000	18.0000	22.0000	22.9002	23.8005	24.7007	25.6009	26.5012	27.4015	28.0766	28.9768	29.7420	30.3629	31.2672	32.0724	32.9775	33.8776	34.7778	35.6829	36.3080	37.2132	38.1183	39.0185	39.6436	40.5488	41.4539	42.1790	43.0842	43.8093	44.7145	45.4396	46.3448	47.0699	47.9751	48.7002	49.6054	50.3305	51.2357	51.9608
Bot Dia (in)		18.0000	18.0000	18.0000	22.0000	22.9002	23.8005	24.7007	25.6009	26.5012	27.4015	28.0766	28.9768	29.7420	30.3629	31.2672	32.0724	32.9775	33.8776	34.7778	35.6829	36.3080	37.2132	38.1183	39.0185	39.6436	40.5488	41.4539	42.1790	43.0842	43.8093	44.7145	45.4396	46.3448	47.0699	47.9751	48.7002	49.6054	50.3305	51.2357	51.9608
Grade		A53-B-35																					A572-65																			
Weight (K)		0.4	0.3	0.0	0.3	0.3	0.3	0.3	0.4	0.3	0.0	0.7	0.7	0.6	0.8	0.8	0.8	0.5	0.9	0.9	1.5	0.6	0.9	0.9	0.9	1.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.3	0.3

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
LNX-6515DS-VTM w/ Mount Pipe	128	TD-RRH8X20-25	118
LNX-6515DS-VTM w/ Mount Pipe	128	800 EXTERNAL NOTCH FILTER	118
LNX-6515DS-VTM w/ Mount Pipe	128	800 EXTERNAL NOTCH FILTER	118
AIR 21 B2A B4P w/ Mount Pipe	128	800 EXTERNAL NOTCH FILTER	118
AIR 21 B2A B4P w/ Mount Pipe	128	(3) ACU-A20-N	118
AIR 21 B2A B4P w/ Mount Pipe	128	(3) ACU-A20-N	118
AIR 21 B4A B2P w/ Mount Pipe	128	(3) ACU-A20-N	118
AIR 21 B4A B2P w/ Mount Pipe	128	5' x 2" Pipe Mount	118
AIR 21 B4A B2P w/ Mount Pipe	128	5' x 2" Pipe Mount	118
KRY 112 144/1	128	5' x 2" Pipe Mount	118
KRY 112 144/1	128	4' x 3" Pipe Mount	118
KRY 112 144/1	128	4' x 3" Pipe Mount	118
RRUS 11 B12	128	4' x 3" Pipe Mount	118
RRUS 11 B12	128	Platform Mount [LP 1201-1]	118
RRUS 11 B12	128	VHLP2-11	118
Platform Mount [LP 305-1]	128	VHLP2-18	118
TME-800MHZ RRH	122	(2) APL868013-42T0 w/ Mount Pipe	110
TME-800MHZ RRH	122	DB-T1-6Z-8AB-0Z	110
TME-800MHZ RRH	122	Platform Mount [LP 1201-1]	110
TME-1900MHz RRH (65MHz)	122	(2) JAHH-65B-R3B w/ Mount Pipe	110
TME-1900MHz RRH (65MHz)	122	(2) JAHH-65B-R3B w/ Mount Pipe	110
TME-1900MHz RRH (65MHz)	122	(2) JAHH-65B-R3B w/ Mount Pipe	110
(2) 6' x 2" Mount Pipe	122	CBC1923T-DS-43	110
(2) 6' x 2" Mount Pipe	122	CBC1923T-DS-43	110
(2) 6' x 2" Mount Pipe	122	CBC1923T-DS-43	110
Side Arm Mount [SO 102-3]	122	(2) RFV01U-D1A	110
APXVTM14-C-120 w/ Mount Pipe	118	RFV01U-D1A	110
APXVTM14-C-120 w/ Mount Pipe	118	RFV01U-D2A	110
APXVTM14-C-120 w/ Mount Pipe	118	(2) RFV01U-D2A	110
APXVSPP18-C-A20 w/ Mount Pipe	118	DB-T1-6Z-8AB-0Z	110
APXVSPP18-C-A20 w/ Mount Pipe	118	(2) APL868013-42T0 w/ Mount Pipe	110
APXVSPP18-C-A20 w/ Mount Pipe	118	(2) APL868013-42T0 w/ Mount Pipe	110
TD-RRH8X20-25	118	OG-860/1920/GPS-A	50
TD-RRH8X20-25	118	Side Arm Mount [SO 701-1]	50

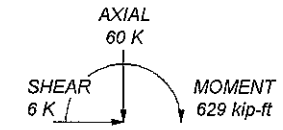
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi	A572-65	65 ksi	80 ksi

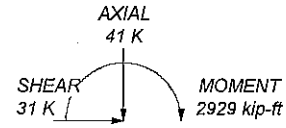
TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 130 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.27 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TIA-222-H Annex S

ALL REACTIONS ARE FACTORED



TORQUE 0 kip-ft
50 mph WIND - 1.2750 in ICE



TORQUE 2 kip-ft
REACTIONS - 130 mph WIND

Morrison Hershfield
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
Phone: (770) 379-8500
FAX: (770) 379-8501
Consulting Engineers

Job: *CN5-698 / 1800030*		
Project: *876322 / Tartaglia Property*		
Client: Crown Castle USA	Drawn by: BP	App'd:
Code: TIA-222-H	Date: 10/03/18	Scale: NT
Path:		Dwg No. E-

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower base elevation above sea level: 49.82 ft.
Basic wind speed of 130 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height 0.00 ft.
Nominal ice thickness of 1.2750 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
TIA-222-H Annex S.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

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	130.00-125.00	5.00	0.00	Round	18.0000	18.0000	0.3750		A53-B-35 (35 ksi)
L2	125.00-120.50	4.50	0.00	Round	18.0000	18.0000	0.3750		A53-B-35 (35 ksi)
L3	120.50-120.00	0.50	0.00	Round	22.0000	22.0000	0.3750		A53-B-35

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
									(35 ksi)
L4	120.00-115.00	5.00	0.00	12	22.0000	22.9002	0.2500	1.0000	A572-65 (65 ksi)
L5	115.00-110.00	5.00	0.00	12	22.9002	23.8005	0.2500	1.0000	A572-65 (65 ksi)
L6	110.00-105.00	5.00	0.00	12	23.8005	24.7007	0.2500	1.0000	A572-65 (65 ksi)
L7	105.00-100.00	5.00	0.00	12	24.7007	25.6009	0.2500	1.0000	A572-65 (65 ksi)
L8	100.00-95.00	5.00	0.00	12	25.6009	26.5012	0.2500	1.0000	A572-65 (65 ksi)
L9	95.00-91.50	3.50	0.00	12	26.5012	27.1313	0.2500	1.0000	A572-65 (65 ksi)
L10	91.50-91.25	0.25	0.00	12	27.1313	27.1763	0.4875	1.9500	A572-65 (65 ksi)
L11	91.25-86.25	5.00	0.00	12	27.1763	28.0766	0.4750	1.9000	A572-65 (65 ksi)
L12	86.25-81.25	5.00	0.00	12	28.0766	28.9768	0.4750	1.9000	A572-65 (65 ksi)
L13	81.25-77.00	4.25	3.75	12	28.9768	29.7420	0.4688	1.8750	A572-65 (65 ksi)
L14	77.00-75.75	5.00	0.00	12	28.5668	29.4670	0.5375	2.1500	A572-65 (65 ksi)
L15	75.75-70.75	5.00	0.00	12	29.4670	30.3671	0.5250	2.1000	A572-65 (65 ksi)
L16	70.75-65.75	5.00	0.00	12	30.3671	31.2672	0.5125	2.0500	A572-65 (65 ksi)
L17	65.75-63.00	2.75	0.00	12	31.2672	31.7623	0.5125	2.0500	A572-65 (65 ksi)
L18	63.00-62.73	0.27	0.00	12	31.7623	31.8104	0.7250	2.9000	A572-65 (65 ksi)
L19	62.73-62.58	0.15	0.00	12	31.8104	31.8374	0.7250	2.9000	A572-65 (65 ksi)
L20	62.58-61.50	1.08	0.00	12	31.8374	32.0324	0.7125	2.8500	A572-65 (65 ksi)
L21	61.50-61.25	0.25	0.00	12	32.0324	32.0774	0.5125	2.0500	A572-65 (65 ksi)
L22	61.25-56.25	5.00	0.00	12	32.0774	32.9775	0.5000	2.0000	A572-65 (65 ksi)
L23	56.25-51.25	5.00	0.00	12	32.9775	33.8776	0.5000	2.0000	A572-65 (65 ksi)
L24	51.25-46.25	5.00	0.00	12	33.8776	34.7778	0.4938	1.9750	A572-65 (65 ksi)
L25	46.25-37.75	8.50	4.50	12	34.7778	36.3080	0.4875	1.9500	A572-65 (65 ksi)
L26	37.75-36.75	5.50	0.00	12	34.8729	35.8632	0.8000	3.2000	A572-65 (65 ksi)
L27	36.75-35.00	1.75	0.00	12	35.8632	36.1782	0.8000	3.2000	A572-65 (65 ksi)
L28	35.00-34.75	0.25	0.00	12	36.1782	36.2233	0.8000	3.2000	A572-65 (65 ksi)
L29	34.75-32.25	2.50	0.00	12	36.2233	36.6734	0.8000	3.2000	A572-65 (65 ksi)
L30	32.25-32.00	0.25	0.00	12	36.6734	36.7184	0.9250	3.7000	A572-65 (65 ksi)
L31	32.00-31.83	0.17	0.00	12	36.7184	36.7485	0.9250	3.7000	A572-65 (65 ksi)
L32	31.83-31.48	0.35	0.00	12	36.7485	36.8115	0.5500	2.2000	A572-65 (65 ksi)
L33	31.48-31.25	0.23	0.00	12	36.8115	36.8534	0.5437	2.1750	A572-65 (65 ksi)
L34	31.25-26.25	5.00	0.00	12	36.8534	37.7537	0.5375	2.1500	A572-65 (65 ksi)
L35	26.25-21.25	5.00	0.00	12	37.7537	38.6539	0.5375	2.1500	A572-65 (65 ksi)
L36	21.25-16.25	5.00	0.00	12	38.6539	39.5542	0.5313	2.1250	A572-65 (65 ksi)
L37	16.25-11.25	5.00	0.00	12	39.5542	40.4544	0.5250	2.1000	A572-65 (65 ksi)

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
L38	11.25-6.25	5.00	0.00	12	40.4544	41.3547	0.5250	2.1000	A572-65 (65 ksi)
L39	6.25-1.25	5.00	0.00	12	41.3547	42.2549	0.5188	2.0750	A572-65 (65 ksi)
L40	1.25-0.00	1.25		12	42.2549	42.4800	0.5188	2.0750	A572-65 (65 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	18.0000	20.7640	806.6313	6.2328	9.0000	89.6257	1613.2627	10.3758	0.0000	0
	18.0000	20.7640	806.6313	6.2328	9.0000	89.6257	1613.2627	10.3758	0.0000	0
L2	18.0000	20.7640	806.6313	6.2328	9.0000	89.6257	1613.2627	10.3758	0.0000	0
	18.0000	20.7640	806.6313	6.2328	9.0000	89.6257	1613.2627	10.3758	0.0000	0
L3	22.0000	25.4764	1489.6700	7.6467	11.0000	135.4245	2979.3401	12.7306	0.0000	0
	22.0000	25.4764	1489.6700	7.6467	11.0000	135.4245	2979.3401	12.7306	0.0000	0
L4	22.6879	17.5087	1057.2060	7.7865	11.3960	92.7699	2142.1860	8.6173	5.2260	20.904
	23.6199	18.2334	1193.9877	8.1088	11.8623	100.6538	2419.3428	8.9739	5.4673	21.869
L5	23.6199	18.2334	1193.9877	8.1088	11.8623	100.6538	2419.3428	8.9739	5.4673	21.869
	24.5519	18.9581	1342.0858	8.4311	12.3286	108.8592	2719.4297	9.3306	5.7085	22.834
L6	24.5519	18.9581	1342.0858	8.4311	12.3286	108.8592	2719.4297	9.3306	5.7085	22.834
	25.4839	19.6828	1501.9505	8.7533	12.7950	117.3861	3043.3589	9.6873	5.9498	23.799
L7	25.4839	19.6828	1501.9505	8.7533	12.7950	117.3861	3043.3589	9.6873	5.9498	23.799
	26.4158	20.4075	1674.0311	9.0756	13.2613	126.2345	3392.0408	10.0440	6.1910	24.764
L8	26.4158	20.4075	1674.0311	9.0756	13.2613	126.2345	3392.0408	10.0440	6.1910	24.764
	27.3478	21.1322	1858.7778	9.3979	13.7276	135.4044	3766.3878	10.4006	6.4323	25.729
L9	27.3478	21.1322	1858.7778	9.3979	13.7276	135.4044	3766.3878	10.4006	6.4323	25.729
	28.0002	21.6395	1995.8776	9.6235	14.0540	142.0146	4044.1890	10.6503	6.6012	26.405
L10	27.9164	41.8241	3789.7120	9.5385	14.0540	269.6531	7678.9840	20.5846	5.9647	12.235
	27.9630	41.8948	3808.9510	9.5546	14.0773	270.5732	7717.9675	20.6193	5.9768	12.26
L11	27.9675	40.8397	3716.5027	9.5591	14.0773	264.0060	7530.6421	20.1001	6.0103	12.653
	28.8994	42.2166	4105.2233	9.8814	14.5437	282.2689	8318.2955	20.7777	6.2515	13.161
L12	28.8994	42.2166	4105.2233	9.8814	14.5437	282.2689	8318.2955	20.7777	6.2515	13.161
	29.8314	43.5935	4520.1452	10.2036	15.0100	301.1426	9159.0397	21.4554	6.4928	13.669
L13	29.8336	43.0293	4463.6047	10.2059	15.0100	297.3757	9044.4733	21.1777	6.5095	13.887
	30.6258	44.1843	4832.7678	10.4798	15.4064	313.6866	9792.4978	21.7462	6.7146	14.324
L14	30.0839	48.5118	4864.7245	10.0345	14.7976	328.7506	9857.2508	23.8760	6.2154	11.564
	30.3168	50.0697	5348.6153	10.3567	15.2639	350.4098	10837.744 7	24.6428	6.4566	12.012
L15	30.3212	48.9264	5231.0038	10.3612	15.2639	342.7046	10599.431 8	24.0801	6.4901	12.362
	31.2531	50.4481	5734.4164	10.6835	15.7302	364.5492	11619.482 3	24.8290	6.7314	12.822
L16	31.2575	49.2676	5604.9200	10.6879	15.7302	356.3168	11357.087 5	24.2480	6.7649	13.2
	32.1894	50.7530	6127.3355	11.0102	16.1964	378.3140	12415.642 9	24.9791	7.0061	13.67
L17	32.1894	50.7530	6127.3355	11.0102	16.1964	378.3140	12415.642 9	24.9791	7.0061	13.67
	32.7020	51.5700	6428.0291	11.1874	16.4529	390.6933	13024.929 7	25.3812	7.1388	13.929
L18	32.6270	72.4566	8909.0634	11.1114	16.4529	541.4897	18052.177 8	35.6609	6.5693	9.061
	32.6768	72.5688	8950.5204	11.1286	16.4778	543.1874	18136.180 9	35.7162	6.5822	9.079
L19	32.6768	72.5688	8950.5204	11.1286	16.4778	543.1874	18136.180 9	35.7162	6.5822	9.079
	32.7047	72.6319	8973.8667	11.1382	16.4918	544.1423	18183.486 9	35.7472	6.5894	9.089
L20	32.7091	71.4083	8829.7790	11.1427	16.4918	535.4054	17891.526 0	35.1450	6.6229	9.295
	32.9110	71.8556	8996.7521	11.2125	16.5928	542.2096	18229.858 8	35.3651	6.6752	9.369
L21	32.9815	52.0156	6596.1141	11.2841	16.5928	397.5297	13365.515 5	25.6005	7.2112	14.071

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
	33.0281	52.0899	6624.4101	11.3002	16.6161	398.6749	13422.8509	25.6371	7.2232	14.094
L22	33.0325	50.8395	6470.5202	11.3047	16.6161	389.4134	13111.0282	25.0217	7.2567	14.513
	33.9644	52.2888	7039.7851	11.6269	17.0823	412.1089	14264.5131	25.7349	7.4980	14.996
L23	33.9644	52.2888	7039.7851	11.6269	17.0823	412.1089	14264.5131	25.7349	7.4980	14.996
	34.8963	53.7380	7641.4954	11.9492	17.5486	435.4473	15483.7413	26.4482	7.7392	15.478
L24	34.8985	53.0762	7550.2164	11.9514	17.5486	430.2458	15298.7855	26.1225	7.7560	15.708
	35.8304	54.5073	8177.5663	12.2737	18.0149	453.9339	16569.9664	26.8268	7.9972	16.197
L25	35.8326	53.8271	8078.4693	12.2759	18.0149	448.4331	16369.1690	26.4921	8.0139	16.439
	37.4168	56.2292	9208.9767	12.8237	18.8075	489.6427	18659.8834	27.6743	8.4240	17.28
L26	36.6597	87.7717	13006.4335	12.1981	18.0642	720.0136	26354.5605	43.1986	7.2019	9.002
	36.8461	90.3227	14173.7481	12.5526	18.5771	762.9683	28719.8563	44.4541	7.4673	9.334
L27	36.8461	90.3227	14173.7481	12.5526	18.5771	762.9683	28719.8563	44.4541	7.4673	9.334
	37.1723	91.1343	14559.3007	12.6654	18.7403	776.8968	29501.0905	44.8536	7.5518	9.44
L28	37.1723	91.1343	14559.3007	12.6654	18.7403	776.8968	29501.0905	44.8536	7.5518	9.44
	37.2189	91.2503	14614.9444	12.6815	18.7636	778.8969	29613.8397	44.9106	7.5638	9.455
L29	37.2189	91.2503	14614.9444	12.6815	18.7636	778.8969	29613.8397	44.9106	7.5638	9.455
	37.6849	92.4098	15179.1937	12.8427	18.9968	799.0391	30757.1617	45.4813	7.6845	9.606
L30	37.6408	106.4765	17368.1136	12.7979	18.9968	914.2647	35192.5070	52.4045	7.3495	7.945
	37.6874	106.6106	17433.8026	12.8140	19.0201	916.5976	35325.6107	52.4705	7.3615	7.958
L31	37.6874	106.6106	17433.8026	12.8140	19.0201	916.5976	35325.6107	52.4705	7.3615	7.958
	37.7185	106.7002	17477.7765	12.8248	19.0357	918.1577	35414.7136	52.5146	7.3696	7.967
L32	37.8508	64.1075	10721.9760	12.9590	19.0357	563.2561	21725.6303	31.5517	8.3746	15.227
	37.9160	64.2191	10778.0704	12.9816	19.0683	565.2336	21839.2927	31.6067	8.3915	15.257
L33	37.9182	63.5003	10661.1031	12.9838	19.0683	559.0995	21602.2852	31.2529	8.4082	15.463
	37.9617	63.5737	10698.1420	12.9989	19.0901	560.4033	21677.3360	31.2890	8.4195	15.484
L34	37.9639	62.8538	10580.6367	13.0011	19.0901	554.2480	21439.2384	30.9347	8.4362	15.695
	38.8959	64.4119	11387.1674	13.3234	19.5564	582.2730	23073.4884	31.7016	8.6775	16.144
L35	38.8959	64.4119	11387.1674	13.3234	19.5564	582.2730	23073.4884	31.7016	8.6775	16.144
	39.8279	65.9700	12233.6771	13.6457	20.0227	610.9893	24788.7464	32.4684	8.9188	16.593
L36	39.8301	65.2136	12097.3739	13.6479	20.0227	604.1818	24512.5593	32.0962	8.9355	16.82
	40.7621	66.7536	12974.7955	13.9702	20.4891	633.2546	26290.4534	32.8541	9.1768	17.274
L37	40.7643	65.9788	12828.3128	13.9724	20.4891	626.1053	25993.6396	32.4728	9.1935	17.511
	41.6963	67.5007	13736.6433	14.2947	20.9554	655.5181	27834.1635	33.2218	9.4348	17.971
L38	41.6963	67.5007	13736.6433	14.2947	20.9554	655.5181	27834.1635	33.2218	9.4348	17.971
	42.6283	69.0226	14686.8698	14.6170	21.4217	685.6062	29759.5801	33.9708	9.6761	18.431

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
L39	42.6305	68.2113	14518.6914	14.6193	21.4217	677.7554	29418.8050	33.5715	9.6928	18.685
	43.5625	69.7151	15500.2335	14.9416	21.8881	708.1594	31407.6754	34.3116	9.9341	19.15
L40	43.5625	69.7151	15500.2335	14.9416	21.8881	708.1594	31407.6754	34.3116	9.9341	19.15
	43.7955	70.0910	15752.3438	15.0221	22.0046	715.8646	31918.5193	34.4967	9.9944	19.266

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 130.00-125.00				1	1	1			
L2 125.00-120.50				1	1	1			
L3 120.50-120.00				1	1	1			
L4 120.00-115.00				1	1	1			
L5 115.00-110.00				1	1	1			
L6 110.00-105.00				1	1	1			
L7 105.00-100.00				1	1	1			
L8 100.00-95.00				1	1	1			
L9 95.00-91.50				1	1	1			
L10 91.50-91.25				1	1	0.947648			
L11 91.25-86.25				1	1	0.95759			
L12 86.25-81.25				1	1	0.943968			
L13 81.25-77.00				1	1	0.955013			
L14 77.00-75.75				1	1	0.945932			
L15 75.75-70.75				1	1	0.956791			
L16 70.75-65.75				1	1	0.968889			
L17 65.75-63.00				1	1	0.963199			
L18 63.00-62.73				1	1	0.933546			
L19 62.73-62.58				1	1	0.93311			
L20 62.58-61.50				1	1	0.945921			
L21 61.50-61.25				1	1	0.959671			
L22 61.25-56.25				1	1	0.973344			
L23 56.25-51.25				1	1	0.96395			
L24 51.25-46.25				1	1	0.966962			
L25 46.25-37.75				1	1	0.972225			
L26 37.75-36.75				1	1	0.944256			
L27 36.75-35.00				1	1	0.940021			
L28 35.00-				1	1	0.962743			

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
34.75									
L29 34.75-32.25				1	1	0.956544			
L30 32.25-32.00				1	1	0.982282			
L31 32.00-31.83				1	1	0.981798			
L32 31.83-31.48				1	1	1.06521			
L33 31.48-31.25				1	1	1.07682			
L34 31.25-26.25				1	1	1.07969			
L35 26.25-21.25				1	1	1.07067			
L36 21.25-16.25				1	1	1.07438			
L37 16.25-11.25				1	1	1.07859			
L38 11.25-6.25				1	1	1.07056			
L39 6.25-1.25				1	1	1.07552			
L40 1.25-0.00				1	1	1.07363			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
***										
Safety Line 3/8"	B	No	Surface Ar (CaAa)	130.00 - 12.00	1	1	0.000 0.000	0.3750		0.22
Step Pegs	B	No	Surface Ar (CaAa)	130.00 - 12.00	1	1	-0.050 0.050	0.7050		1.80
******										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft²/ft	Weight plf
******									
LDF7-50A(1-5/8)	A	No	No	Inside Pole	128.00 - 2.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
MLE Hybrid 9Power/18Fiber RL 2(1-5/8)	A	No	No	Inside Pole	128.00 - 2.00	1	No Ice	0.00	1.07
							1/2" Ice	0.00	1.07
							1" Ice	0.00	1.07
							2" Ice	0.00	1.07
******									
7983A(ELLIPTICAL)	C	No	No	Inside Pole	118.00 - 2.00	2	No Ice	0.00	0.08
							1/2" Ice	0.00	0.08
							1" Ice	0.00	0.08
							2" Ice	0.00	0.08
HB058-M12-XXXF(5/8)	C	No	No	Inside Pole	118.00 - 2.00	1	No Ice	0.00	0.24
							1/2" Ice	0.00	0.24
							1" Ice	0.00	0.24
							2" Ice	0.00	0.24
HB114-1-0813U4-	C	No	No	Inside Pole	118.00 - 2.00	3	No Ice	0.00	1.20

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
M5J(1-1/4)							1/2" Ice	0.00	1.20
							1" Ice	0.00	1.20
							2" Ice	0.00	1.20
******									
HB158-1-08U8-S8J18(1-5/8)	B	No	No	Inside Pole	110.00 - 8.00	1	No Ice	0.00	1.30
							1/2" Ice	0.00	1.30
							1" Ice	0.00	1.30
							2" Ice	0.00	1.30
***									
HB158-1-08U8-S8J18(1-5/8)	B	No	No	Inside Pole	110.00 - 8.00	1	No Ice	0.00	1.30
							1/2" Ice	0.00	1.30
							1" Ice	0.00	1.30
							2" Ice	0.00	1.30
******									
860 10000(5/16)	B	No	No	Inside Pole	50.00 - 8.00	1	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	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	130.00-125.00	A	0.000	0.000	0.000	0.000	0.03
		B	0.000	0.000	0.540	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L2	125.00-120.50	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.486	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L3	120.50-120.00	A	0.000	0.000	0.000	0.000	0.01
		B	0.000	0.000	0.054	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L4	120.00-115.00	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L5	115.00-110.00	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.02
L6	110.00-105.00	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L7	105.00-100.00	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L8	100.00-95.00	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L9	95.00-91.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.378	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.01
L10	91.50-91.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.027	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L11	91.25-86.25	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L12	86.25-81.25	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L13	81.25-77.00	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.459	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L14	77.00-75.75	A	0.000	0.000	0.000	0.000	0.01
		B	0.000	0.000	0.135	0.000	0.01

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	0.000	0.01
L15	75.75-70.75	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L16	70.75-65.75	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L17	65.75-63.00	A	0.000	0.000	0.000	0.000	0.03
		B	0.000	0.000	0.297	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L18	63.00-62.73	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.029	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L19	62.73-62.58	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.016	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L20	62.58-61.50	A	0.000	0.000	0.000	0.000	0.01
		B	0.000	0.000	0.117	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L21	61.50-61.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.027	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L22	61.25-56.25	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L23	56.25-51.25	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L24	51.25-46.25	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L25	46.25-37.75	A	0.000	0.000	0.000	0.000	0.09
		B	0.000	0.000	0.918	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.03
L26	37.75-36.75	A	0.000	0.000	0.000	0.000	0.01
		B	0.000	0.000	0.108	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L27	36.75-35.00	A	0.000	0.000	0.000	0.000	0.02
		B	0.000	0.000	0.189	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L28	35.00-34.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.027	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L29	34.75-32.25	A	0.000	0.000	0.000	0.000	0.03
		B	0.000	0.000	0.270	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L30	32.25-32.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.027	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L31	32.00-31.83	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.018	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L32	31.83-31.48	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.038	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L33	31.48-31.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.025	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L34	31.25-26.25	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L35	26.25-21.25	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L36	21.25-16.25	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.540	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.02
L37	16.25-11.25	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.459	0.000	0.02

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	0.000	0.02
L38	11.25-6.25	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.02
L39	6.25-1.25	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L40	1.25-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	130.00-125.00	A	1.460	0.000	0.000	0.000	0.000	0.03
		B		0.000	0.000	3.459	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.00
L2	125.00-120.50	A	1.454	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.103	0.000	0.04
		C		0.000	0.000	0.000	0.000	0.00
L3	120.50-120.00	A	1.451	0.000	0.000	0.000	0.000	0.01
		B		0.000	0.000	0.344	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L4	120.00-115.00	A	1.448	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.435	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.01
L5	115.00-110.00	A	1.441	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.423	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.02
L6	110.00-105.00	A	1.435	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.410	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.02
L7	105.00-100.00	A	1.428	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.396	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.02
L8	100.00-95.00	A	1.421	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.382	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.02
L9	95.00-91.50	A	1.415	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	2.358	0.000	0.04
		C		0.000	0.000	0.000	0.000	0.01
L10	91.50-91.25	A	1.412	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.168	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L11	91.25-86.25	A	1.408	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.355	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.02
L12	86.25-81.25	A	1.399	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.339	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.02
L13	81.25-77.00	A	1.392	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	2.825	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.02
L14	77.00-75.75	A	1.387	0.000	0.000	0.000	0.000	0.01
		B		0.000	0.000	0.831	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.01
L15	75.75-70.75	A	1.381	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.302	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.02
L16	70.75-65.75	A	1.371	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.282	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.02
L17	65.75-63.00	A	1.363	0.000	0.000	0.000	0.000	0.03
		B		0.000	0.000	1.796	0.000	0.03

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	0.000	0.01
L18	63.00-62.73	A	1.360	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.174	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L19	62.73-62.58	A	1.359	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.098	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L20	62.58-61.50	A	1.358	0.000	0.000	0.000	0.000	0.01
		B		0.000	0.000	0.705	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L21	61.50-61.25	A	1.357	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.163	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L22	61.25-56.25	A	1.351	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.241	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.02
L23	56.25-51.25	A	1.339	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.217	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.02
L24	51.25-46.25	A	1.326	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.191	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.02
L25	46.25-37.75	A	1.306	0.000	0.000	0.000	0.000	0.09
		B		0.000	0.000	5.358	0.000	0.09
		C		0.000	0.000	0.000	0.000	0.03
L26	37.75-36.75	A	1.291	0.000	0.000	0.000	0.000	0.01
		B		0.000	0.000	0.630	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L27	36.75-35.00	A	1.286	0.000	0.000	0.000	0.000	0.02
		B		0.000	0.000	1.089	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.01
L28	35.00-34.75	A	1.282	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.155	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L29	34.75-32.25	A	1.277	0.000	0.000	0.000	0.000	0.03
		B		0.000	0.000	1.547	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.01
L30	32.25-32.00	A	1.272	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.154	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L31	32.00-31.83	A	1.271	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.103	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L32	31.83-31.48	A	1.270	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.216	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L33	31.48-31.25	A	1.269	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.143	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L34	31.25-26.25	A	1.257	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.055	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.02
L35	26.25-21.25	A	1.234	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	3.007	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.02
L36	21.25-16.25	A	1.205	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	2.950	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.02
L37	16.25-11.25	A	1.168	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	2.445	0.000	0.04
		C		0.000	0.000	0.000	0.000	0.02
L38	11.25-6.25	A	1.116	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	0.000	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.02
L39	6.25-1.25	A	1.026	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L40	1.25-0.00	A	0.857	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	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	130.00-125.00	0.8625	-0.4980	1.9960	-1.1524
L2	125.00-120.50	0.8625	-0.4980	1.9920	-1.1501
L3	120.50-120.00	0.8745	-0.5049	2.1145	-1.2208
L4	120.00-115.00	0.5551	-0.3205	2.0784	-1.2000
L5	115.00-110.00	0.5557	-0.3208	2.0949	-1.2095
L6	110.00-105.00	0.5562	-0.3211	2.1098	-1.2181
L7	105.00-100.00	0.5567	-0.3214	2.1232	-1.2258
L8	100.00-95.00	0.5572	-0.3217	2.1350	-1.2326
L9	95.00-91.50	0.5575	-0.3219	2.1439	-1.2378
L10	91.50-91.25	0.5593	-0.3229	2.1523	-1.2426
L11	91.25-86.25	0.5594	-0.3230	2.1567	-1.2452
L12	86.25-81.25	0.5597	-0.3232	2.1644	-1.2496
L13	81.25-77.00	0.5600	-0.3233	2.1702	-1.2530
L14	77.00-75.75	0.5604	-0.3236	2.1715	-1.2537
L15	75.75-70.75	0.5605	-0.3236	2.1695	-1.2525
L16	70.75-65.75	0.5607	-0.3237	2.1729	-1.2545
L17	65.75-63.00	0.5609	-0.3239	2.1747	-1.2556
L18	63.00-62.73	0.5623	-0.3246	2.1790	-1.2581
L19	62.73-62.58	0.5623	-0.3246	2.1791	-1.2581
L20	62.58-61.50	0.5622	-0.3246	2.1790	-1.2580
L21	61.50-61.25	0.5611	-0.3239	2.1754	-1.2560
L22	61.25-56.25	0.5612	-0.3240	2.1753	-1.2559
L23	56.25-51.25	0.5614	-0.3241	2.1742	-1.2553
L24	51.25-46.25	0.5616	-0.3242	2.1711	-1.2535
L25	46.25-37.75	0.5619	-0.3244	2.1634	-1.2490
L26	37.75-36.75	0.5635	-0.3254	2.1710	-1.2535
L27	36.75-35.00	0.5636	-0.3254	2.1513	-1.2421
L28	35.00-34.75	0.5636	-0.3254	2.1492	-1.2408
L29	34.75-32.25	0.5637	-0.3254	2.1459	-1.2389
L30	32.25-32.00	0.5644	-0.3258	2.1445	-1.2381
L31	32.00-31.83	0.5644	-0.3258	2.1439	-1.2378
L32	31.83-31.48	0.5625	-0.3247	2.1371	-1.2339
L33	31.48-31.25	0.5624	-0.3247	2.1362	-1.2334
L34	31.25-26.25	0.5625	-0.3248	2.1283	-1.2288
L35	26.25-21.25	0.5627	-0.3249	2.1096	-1.2180
L36	21.25-16.25	0.5628	-0.3250	2.0840	-1.2032
L37	16.25-11.25	0.4800	-0.2772	1.7689	-1.0213
L38	11.25-6.25	0.0000	0.0000	0.0000	0.0000
L39	6.25-1.25	0.0000	0.0000	0.0000	0.0000
L40	1.25-0.00	0.0000	0.0000	0.0000	0.0000

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	2	Safety Line 3/8"	125.00 - 130.00	1.0000	1.0000
L1	3	Step Pegs	125.00 - 130.00	1.0000	1.0000
L2	2	Safety Line 3/8"	120.50 - 125.00	1.0000	1.0000
L2	3	Step Pegs	120.50 - 125.00	1.0000	1.0000
L3	2	Safety Line 3/8"	120.00 - 120.50	1.0000	1.0000
L3	3	Step Pegs	120.00 - 120.50	1.0000	1.0000
L4	2	Safety Line 3/8"	115.00 - 120.00	1.0000	1.0000
L4	3	Step Pegs	115.00 - 120.00	1.0000	1.0000
L5	2	Safety Line 3/8"	110.00 - 115.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L5	3	Step Pegs	110.00 - 115.00	1.0000	1.0000
L6	2	Safety Line 3/8"	105.00 - 110.00	1.0000	1.0000
L6	3	Step Pegs	105.00 - 110.00	1.0000	1.0000
L7	2	Safety Line 3/8"	100.00 - 105.00	1.0000	1.0000
L7	3	Step Pegs	100.00 - 105.00	1.0000	1.0000
L8	2	Safety Line 3/8"	95.00 - 100.00	1.0000	1.0000
L8	3	Step Pegs	95.00 - 100.00	1.0000	1.0000
L9	2	Safety Line 3/8"	91.50 - 95.00	1.0000	1.0000
L9	3	Step Pegs	91.50 - 95.00	1.0000	1.0000
L10	2	Safety Line 3/8"	91.25 - 91.50	1.0000	1.0000
L10	3	Step Pegs	91.25 - 91.50	1.0000	1.0000
L11	2	Safety Line 3/8"	86.25 - 91.25	1.0000	1.0000
L11	3	Step Pegs	86.25 - 91.25	1.0000	1.0000
L12	2	Safety Line 3/8"	81.25 - 86.25	1.0000	1.0000
L12	3	Step Pegs	81.25 - 86.25	1.0000	1.0000
L13	2	Safety Line 3/8"	77.00 - 81.25	1.0000	1.0000
L13	3	Step Pegs	77.00 - 81.25	1.0000	1.0000
L15	2	Safety Line 3/8"	70.75 - 75.75	1.0000	1.0000
L15	3	Step Pegs	70.75 - 75.75	1.0000	1.0000
L16	2	Safety Line 3/8"	65.75 - 70.75	1.0000	1.0000
L16	3	Step Pegs	65.75 - 70.75	1.0000	1.0000
L17	2	Safety Line 3/8"	63.00 - 65.75	1.0000	1.0000
L17	3	Step Pegs	63.00 - 65.75	1.0000	1.0000
L18	2	Safety Line 3/8"	62.73 - 63.00	1.0000	1.0000
L18	3	Step Pegs	62.73 - 63.00	1.0000	1.0000
L19	2	Safety Line 3/8"	62.58 - 62.73	1.0000	1.0000
L19	3	Step Pegs	62.58 - 62.73	1.0000	1.0000
L20	2	Safety Line 3/8"	61.50 - 62.58	1.0000	1.0000
L20	3	Step Pegs	61.50 - 62.58	1.0000	1.0000
L21	2	Safety Line 3/8"	61.25 - 61.50	1.0000	1.0000
L21	3	Step Pegs	61.25 - 61.50	1.0000	1.0000
L22	2	Safety Line 3/8"	56.25 - 61.25	1.0000	1.0000
L22	3	Step Pegs	56.25 - 61.25	1.0000	1.0000
L23	2	Safety Line 3/8"	51.25 - 56.25	1.0000	1.0000
L23	3	Step Pegs	51.25 - 56.25	1.0000	1.0000
L24	2	Safety Line 3/8"	46.25 - 51.25	1.0000	1.0000
L24	3	Step Pegs	46.25 - 51.25	1.0000	1.0000
L25	2	Safety Line 3/8"	37.75 - 46.25	1.0000	1.0000
L25	3	Step Pegs	37.75 - 46.25	1.0000	1.0000
L27	2	Safety Line 3/8"	35.00 - 36.75	1.0000	1.0000
L27	3	Step Pegs	35.00 - 36.75	1.0000	1.0000
L28	2	Safety Line 3/8"	34.75 - 35.00	1.0000	1.0000
L28	3	Step Pegs	34.75 - 35.00	1.0000	1.0000
L29	2	Safety Line 3/8"	32.25 - 34.75	1.0000	1.0000
L29	3	Step Pegs	32.25 - 34.75	1.0000	1.0000
L30	2	Safety Line 3/8"	32.00 - 32.25	1.0000	1.0000
L30	3	Step Pegs	32.00 - 32.25	1.0000	1.0000
L31	2	Safety Line 3/8"	31.83 - 32.00	1.0000	1.0000
L31	3	Step Pegs	31.83 - 32.00	1.0000	1.0000
L32	2	Safety Line 3/8"	31.48 - 31.83	1.0000	1.0000
L32	3	Step Pegs	31.48 - 31.83	1.0000	1.0000
L33	2	Safety Line 3/8"	31.25 - 31.48	1.0000	1.0000
L33	3	Step Pegs	31.25 - 31.48	1.0000	1.0000
L34	2	Safety Line 3/8"	26.25 - 31.25	1.0000	1.0000
L34	3	Step Pegs	26.25 - 31.25	1.0000	1.0000
L35	2	Safety Line 3/8"	21.25 - 26.25	1.0000	1.0000
L35	3	Step Pegs	21.25 - 26.25	1.0000	1.0000
L36	2	Safety Line 3/8"	16.25 - 21.25	1.0000	1.0000
L36	3	Step Pegs	16.25 - 21.25	1.0000	1.0000
L37	2	Safety Line 3/8"	12.00 - 16.25	1.0000	1.0000
L37	3	Step Pegs	12.00 - 16.25	1.0000	1.0000

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
***									
LNX-6515DS-VTM w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.68 12.40 13.14 14.51	9.84 11.37 12.91 15.27	0.08 0.17 0.27 0.51
LNX-6515DS-VTM w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.68 12.40 13.14 14.51	9.84 11.37 12.91 15.27	0.08 0.17 0.27 0.51
LNX-6515DS-VTM w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.68 12.40 13.14 14.51	9.84 11.37 12.91 15.27	0.08 0.17 0.27 0.51
AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.33 6.78 7.21 8.12	5.64 6.43 7.13 8.59	0.11 0.17 0.23 0.38
AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.33 6.78 7.21 8.12	5.64 6.43 7.13 8.59	0.11 0.17 0.23 0.38
AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.33 6.78 7.21 8.12	5.64 6.43 7.13 8.59	0.11 0.17 0.23 0.38
AIR 21 B4A B2P w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.32 6.76 7.20 8.10	5.63 6.41 7.12 8.57	0.11 0.17 0.23 0.38
AIR 21 B4A B2P w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.32 6.76 7.20 8.10	5.63 6.41 7.12 8.57	0.11 0.17 0.23 0.38
AIR 21 B4A B2P w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.32 6.76 7.20 8.10	5.63 6.41 7.12 8.57	0.11 0.17 0.23 0.38
KRY 112 144/1	A	From Leg	4.00 0.00 0.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	B	From Leg	4.00 0.00 0.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	C	From Leg	4.00 0.00 0.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
RRUS 11 B12	A	From Leg	4.00	0.0000	128.00	No Ice	2.83	1.18	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2"	3.04	1.33	0.08
			2.00			Ice	3.26	1.48	0.10
						1" Ice	3.71	1.83	0.16
						2" Ice			
RRUS 11 B12	B	From Leg	4.00	0.0000	128.00	No Ice	2.83	1.18	0.06
			0.00			1/2"	3.04	1.33	0.08
			2.00			Ice	3.26	1.48	0.10
						1" Ice	3.71	1.83	0.16
						2" Ice			
RRUS 11 B12	C	From Leg	4.00	0.0000	128.00	No Ice	2.83	1.18	0.06
			0.00			1/2"	3.04	1.33	0.08
			2.00			Ice	3.26	1.48	0.10
						1" Ice	3.71	1.83	0.16
						2" Ice			
Platform Mount [LP 305-1]	C	None		0.0000	128.00	No Ice	18.01	18.01	1.12
						1/2"	23.33	23.33	1.35
						Ice	28.65	28.65	1.58
						1" Ice	39.29	39.29	2.05
						2" Ice			
***									
TME-800MHZ RRH	A	From Leg	1.00	0.0000	122.00	No Ice	2.13	1.77	0.05
			0.00			1/2"	2.32	1.95	0.07
			0.00			Ice	2.51	2.13	0.10
						1" Ice	2.92	2.51	0.16
						2" Ice			
TME-800MHZ RRH	B	From Leg	1.00	0.0000	122.00	No Ice	2.13	1.77	0.05
			0.00			1/2"	2.32	1.95	0.07
			0.00			Ice	2.51	2.13	0.10
						1" Ice	2.92	2.51	0.16
						2" Ice			
TME-800MHZ RRH	C	From Leg	1.00	0.0000	122.00	No Ice	2.13	1.77	0.05
			0.00			1/2"	2.32	1.95	0.07
			0.00			Ice	2.51	2.13	0.10
						1" Ice	2.92	2.51	0.16
						2" Ice			
TME-1900MHz RRH (65MHz)	A	From Leg	1.00	0.0000	122.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			0.00			Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
						2" Ice			
TME-1900MHz RRH (65MHz)	B	From Leg	1.00	0.0000	122.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			0.00			Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
						2" Ice			
TME-1900MHz RRH (65MHz)	C	From Leg	1.00	0.0000	122.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			0.00			Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
						2" Ice			
(2) 6' x 2" Mount Pipe	A	From Leg	0.50	0.0000	122.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice			
(2) 6' x 2" Mount Pipe	B	From Leg	0.50	0.0000	122.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice			
(2) 6' x 2" Mount Pipe	C	From Leg	0.50	0.0000	122.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice			

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
Side Arm Mount [SO 102-3]	C	None		0.0000	122.00	No Ice	3.00	3.00	0.08
						1/2" Ice	3.48	3.48	0.11
						1" Ice	3.96	3.96	0.14
						2" Ice	4.92	4.92	0.20
******									
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	6.58	4.96	0.08
						1/2" Ice	7.03	5.75	0.13
						1" Ice	7.47	6.47	0.19
						2" Ice	8.38	7.94	0.34
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	6.58	4.96	0.08
						1/2" Ice	7.03	5.75	0.13
						1" Ice	7.47	6.47	0.19
						2" Ice	8.38	7.94	0.34
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	6.58	4.96	0.08
						1/2" Ice	7.03	5.75	0.13
						1" Ice	7.47	6.47	0.19
						2" Ice	8.38	7.94	0.34
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	8.26	6.95	0.08
						1/2" Ice	8.82	8.13	0.15
						1" Ice	9.35	9.02	0.23
						2" Ice	10.42	10.84	0.41
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	8.26	6.95	0.08
						1/2" Ice	8.82	8.13	0.15
						1" Ice	9.35	9.02	0.23
						2" Ice	10.42	10.84	0.41
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	8.26	6.95	0.08
						1/2" Ice	8.82	8.13	0.15
						1" Ice	9.35	9.02	0.23
						2" Ice	10.42	10.84	0.41
TD-RRH8X20-25	A	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	4.05	1.53	0.07
						1/2" Ice	4.30	1.71	0.10
						1" Ice	4.56	1.90	0.13
						2" Ice	5.10	2.30	0.20
TD-RRH8X20-25	B	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	4.05	1.53	0.07
						1/2" Ice	4.30	1.71	0.10
						1" Ice	4.56	1.90	0.13
						2" Ice	5.10	2.30	0.20
TD-RRH8X20-25	C	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	4.05	1.53	0.07
						1/2" Ice	4.30	1.71	0.10
						1" Ice	4.56	1.90	0.13
						2" Ice	5.10	2.30	0.20
800 EXTERNAL NOTCH FILTER	A	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	0.66	0.32	0.01
						1/2" Ice	0.76	0.40	0.02
						1" Ice	0.87	0.48	0.02
						2" Ice	1.11	0.67	0.04
800 EXTERNAL NOTCH FILTER	B	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	0.66	0.32	0.01
						1/2" Ice	0.76	0.40	0.02
						1" Ice	0.87	0.48	0.02
						2" Ice	1.11	0.67	0.04
800 EXTERNAL NOTCH FILTER	C	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice	0.66	0.32	0.01
						1/2" Ice	0.76	0.40	0.02
						1" Ice	0.87	0.48	0.02
						2" Ice	1.11	0.67	0.04

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			
(3) ACU-A20-N	A	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.07 0.10 0.15 0.26	0.12 0.16 0.21 0.34	0.00 0.00 0.00 0.01
(3) ACU-A20-N	B	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.07 0.10 0.15 0.26	0.12 0.16 0.21 0.34	0.00 0.00 0.00 0.01
(3) ACU-A20-N	C	From Leg	4.00 0.00 2.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.07 0.10 0.15 0.26	0.12 0.16 0.21 0.34	0.00 0.00 0.00 0.01
5' x 2" Pipe Mount	A	From Leg	4.00 0.00 0.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.00 1.39 1.70 2.35	1.00 1.39 1.70 2.35	0.03 0.04 0.05 0.08
5' x 2" Pipe Mount	B	From Leg	4.00 0.00 0.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.00 1.39 1.70 2.35	1.00 1.39 1.70 2.35	0.03 0.04 0.05 0.08
5' x 2" Pipe Mount	C	From Leg	4.00 0.00 0.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.00 1.39 1.70 2.35	1.00 1.39 1.70 2.35	0.03 0.04 0.05 0.08
4' x 3" Pipe Mount	A	From Leg	4.00 0.00 0.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.00 1.25 1.50 2.05	1.00 1.25 1.50 2.05	0.03 0.04 0.05 0.08
4' x 3" Pipe Mount	B	From Leg	4.00 0.00 0.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.00 1.25 1.50 2.05	1.00 1.25 1.50 2.05	0.03 0.04 0.05 0.08
4' x 3" Pipe Mount	C	From Leg	4.00 0.00 0.00	0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.00 1.25 1.50 2.05	1.00 1.25 1.50 2.05	0.03 0.04 0.05 0.08
Platform Mount [LP 1201-1]	C	None		0.0000	118.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.10 26.80 30.50 37.90	23.10 26.80 30.50 37.90	2.10 2.50 2.90 3.70
******									
(2) APL868013-42T0 w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	110.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.10 3.48 3.85 4.60	4.80 5.42 6.04 7.34	0.02 0.06 0.11 0.22
(2) APL868013-42T0 w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.0000	110.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.10 3.48 3.85 4.60	4.80 5.42 6.04 7.34	0.02 0.06 0.11 0.22
(2) APL868013-42T0 w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.0000	110.00	No Ice 1/2" Ice	3.10 3.48 3.85	4.80 5.42 6.04	0.02 0.06 0.11

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	4.60	7.34	0.22
						2" Ice			
DB-T1-6Z-8AB-0Z	B	From Leg	4.00	0.0000	110.00	No Ice	4.80	2.00	0.04
			0.00			1/2"	5.07	2.19	0.08
			1.00			Ice	5.35	2.39	0.12
						1" Ice	5.93	2.81	0.21
						2" Ice			
Platform Mount [LP 1201-1]	C	None		0.0000	110.00	No Ice	23.10	23.10	2.10
						1/2"	26.80	26.80	2.50
						Ice	30.50	30.50	2.90
						1" Ice	37.90	37.90	3.70
						2" Ice			
***									
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00	0.0000	110.00	No Ice	9.35	7.65	0.09
			0.00			1/2"	9.92	8.83	0.16
			1.00			Ice	10.46	9.73	0.25
						1" Ice	11.55	11.56	0.45
						2" Ice			
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00	0.0000	110.00	No Ice	9.35	7.65	0.09
			0.00			1/2"	9.92	8.83	0.16
			1.00			Ice	10.46	9.73	0.25
						1" Ice	11.55	11.56	0.45
						2" Ice			
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00	0.0000	110.00	No Ice	9.35	7.65	0.09
			0.00			1/2"	9.92	8.83	0.16
			1.00			Ice	10.46	9.73	0.25
						1" Ice	11.55	11.56	0.45
						2" Ice			
CBC1923T-DS-43	A	From Leg	4.00	0.0000	110.00	No Ice	0.32	0.23	0.01
			0.00			1/2"	0.39	0.29	0.01
			1.00			Ice	0.47	0.37	0.02
						1" Ice	0.65	0.53	0.03
						2" Ice			
CBC1923T-DS-43	B	From Leg	4.00	0.0000	110.00	No Ice	0.32	0.23	0.01
			0.00			1/2"	0.39	0.29	0.01
			1.00			Ice	0.47	0.37	0.02
						1" Ice	0.65	0.53	0.03
						2" Ice			
CBC1923T-DS-43	C	From Leg	4.00	0.0000	110.00	No Ice	0.32	0.23	0.01
			0.00			1/2"	0.39	0.29	0.01
			1.00			Ice	0.47	0.37	0.02
						1" Ice	0.65	0.53	0.03
						2" Ice			
(2) RFV01U-D1A	A	From Leg	4.00	0.0000	110.00	No Ice	1.88	1.25	0.08
			0.00			1/2"	2.05	1.39	0.10
			1.00			Ice	2.22	1.54	0.12
						1" Ice	2.60	1.86	0.18
						2" Ice			
RFV01U-D1A	B	From Leg	4.00	0.0000	110.00	No Ice	1.88	1.25	0.08
			0.00			1/2"	2.05	1.39	0.10
			1.00			Ice	2.22	1.54	0.12
						1" Ice	2.60	1.86	0.18
						2" Ice			
RFV01U-D2A	B	From Leg	4.00	0.0000	110.00	No Ice	1.88	1.01	0.07
			0.00			1/2"	2.05	1.14	0.09
			1.00			Ice	2.22	1.28	0.11
						1" Ice	2.60	1.59	0.15
						2" Ice			
(2) RFV01U-D2A	C	From Leg	4.00	0.0000	110.00	No Ice	1.88	1.01	0.07
			0.00			1/2"	2.05	1.14	0.09
			1.00			Ice	2.22	1.28	0.11
						1" Ice	2.60	1.59	0.15
						2" Ice			
DB-T1-6Z-8AB-0Z	A	From Leg	4.00	0.0000	110.00	No Ice	4.80	2.00	0.04
			0.00			1/2"	5.07	2.19	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			1.00			Ice	5.35	2.39	0.12
						1" Ice	5.93	2.81	0.21
						2" Ice			
******									
OG-860/1920/GPS-A	A	From Leg	3.00	0.0000	50.00	No Ice	0.31	0.37	0.00
			0.00			1/2" Ice	0.40	0.46	0.01
			2.00			1" Ice	0.49	0.55	0.01
						2" Ice	0.70	0.77	0.02
Side Arm Mount [SO 701-1]	A	From Leg	1.50	0.0000	50.00	No Ice	0.85	1.67	0.07
			0.00			1/2" Ice	1.14	2.34	0.08
			0.00			1" Ice	1.43	3.01	0.09
						2" Ice	2.01	4.35	0.12

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
***											
VHLP2-11	A	Paraboloid w/o Radome	From Leg	4.00	30.0000		118.00	2.17	No Ice	3.72	0.03
				0.00					1/2" Ice	4.01	0.05
				6.00					1" Ice	4.30	0.07
									2" Ice	4.88	0.11
VHLP2-18	C	Paraboloid w/o Radome	From Leg	4.00	77.0000		118.00	2.17	No Ice	3.72	0.03
				0.00					1/2" Ice	4.01	0.05
				6.00					1" Ice	4.30	0.07
									2" Ice	4.88	0.11

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice

Comb. No.	Description
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	130 - 125	Pole	Max Tension	39	0.00	-0.00	-0.00
			Max. Compression	26	-6.34	-0.03	0.02
			Max. Mx	8	-2.62	-23.86	-0.01
			Max. My	2	-2.62	-0.00	23.85
			Max. Vy	8	5.45	-23.86	-0.01
			Max. Vx	14	5.45	-0.00	-23.85
			Max. Torque	16			-0.01
L2	125 - 120.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-8.63	0.32	0.27
			Max. Mx	20	-3.61	52.17	-0.92
			Max. My	14	-3.58	-0.30	-52.57
			Max. Vy	8	7.29	-51.97	-0.58
			Max. Vx	14	7.45	-0.30	-52.57
			Max. Torque	14			-2.38
L3	120.5 - 120	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-8.72	0.32	0.27
			Max. Mx	20	-3.66	55.81	-1.06
			Max. My	14	-3.64	-0.33	-56.30
			Max. Vy	8	7.33	-55.62	-0.69
			Max. Vx	14	7.49	-0.33	-56.30
			Max. Torque	14			-2.38
L4	120 - 115	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.02	0.27	0.30
			Max. Mx	20	-7.30	110.89	-2.41
			Max. My	14	-7.27	-0.63	-112.28
			Max. Vy	8	12.07	-110.81	-1.77
			Max. Vx	14	12.24	-0.63	-112.28
			Max. Torque	14			-2.39
L5	115 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.76	0.22	0.34
			Max. Mx	8	-7.75	-172.55	-2.87
			Max. My	14	-7.73	-0.93	-174.82
			Max. Vy	8	12.63	-172.55	-2.87
			Max. Vx	14	12.79	-0.93	-174.82

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	14			-2.39
L6	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.59	-0.66	0.96
			Max. Mx	8	-11.73	-269.65	-4.10
			Max. My	14	-11.70	-1.76	-272.54
			Max. Vy	8	18.84	-269.65	-4.10
			Max. Vx	14	19.05	-1.76	-272.54
			Max. Torque	14			-2.38
L7	105 - 100	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.39	-0.71	1.00
			Max. Mx	8	-12.30	-365.19	-5.47
			Max. My	14	-12.27	-2.32	-369.13
			Max. Vy	8	19.39	-365.19	-5.47
			Max. Vx	14	19.60	-2.32	-369.13
			Max. Torque	15			-1.93
L8	100 - 95	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.21	-0.77	1.04
			Max. Mx	8	-12.91	-463.46	-6.83
			Max. My	14	-12.87	-2.88	-468.43
			Max. Vy	8	19.93	-463.46	-6.83
			Max. Vx	14	20.14	-2.88	-468.43
			Max. Torque	15			-1.93
L9	95 - 91.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.80	-0.80	1.07
			Max. Mx	8	-13.35	-533.86	-7.77
			Max. My	14	-13.32	-3.28	-539.56
			Max. Vy	8	20.31	-533.86	-7.77
			Max. Vx	14	20.53	-3.28	-539.56
			Max. Torque	15			-1.93
L10	91.5 - 91.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.86	-0.81	1.07
			Max. Mx	8	-13.41	-538.94	-7.84
			Max. My	14	-13.38	-3.30	-544.70
			Max. Vy	8	20.34	-538.94	-7.84
			Max. Vx	14	20.55	-3.30	-544.70
			Max. Torque	15			-1.93
L11	91.25 - 86.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-29.08	-0.85	1.10
			Max. Mx	8	-14.36	-642.14	-9.20
			Max. My	14	-14.33	-3.87	-648.94
			Max. Vy	8	20.95	-642.14	-9.20
			Max. Vx	14	21.16	-3.87	-648.94
			Max. Torque	15			-1.93
L12	86.25 - 81.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.32	-0.90	1.13
			Max. Mx	8	-15.35	-748.41	-10.55
			Max. My	14	-15.32	-4.44	-756.24
			Max. Vy	8	21.56	-748.41	-10.55
			Max. Vx	14	21.78	-4.44	-756.24
			Max. Torque	15			-1.93
L13	81.25 - 77	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.44	-0.91	1.13
			Max. Mx	8	-15.45	-759.20	-10.69
			Max. My	14	-15.42	-4.49	-767.14
			Max. Vy	8	21.62	-759.20	-10.69
			Max. Vx	14	21.83	-4.49	-767.14
			Max. Torque	15			-1.93
L14	77 - 75.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.65	-0.96	1.16
			Max. Mx	8	-17.16	-869.07	-12.04
			Max. My	14	-17.14	-5.06	-878.05
			Max. Vy	8	22.31	-869.07	-12.04
			Max. Vx	14	22.53	-5.06	-878.05
			Max. Torque	15			-1.93
L15	75.75 - 70.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.04	-1.00	1.18

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-18.31	-982.14	-13.40
			Max. My	14	-18.28	-5.63	-992.16
			Max. Vy	8	22.93	-982.14	-13.40
			Max. Vx	14	23.14	-5.63	-992.16
			Max. Torque	15			-1.93
L16	70.75 - 65.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.46	-1.05	1.21
			Max. Mx	8	-19.47	-1098.27	-14.75
			Max. My	14	-19.45	-6.20	-1109.33
			Max. Vy	8	23.54	-1098.27	-14.75
			Max. Vx	14	23.75	-6.20	-1109.33
			Max. Torque	15			-1.93
L17	65.75 - 63	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.25	-1.08	1.23
			Max. Mx	8	-20.13	-1163.44	-15.50
			Max. My	14	-20.10	-6.52	-1175.07
			Max. Vy	8	23.87	-1163.44	-15.50
			Max. Vx	14	24.09	-6.52	-1175.07
			Max. Torque	15			-1.93
L18	63 - 62.733	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.34	-1.09	1.23
			Max. Mx	8	-20.22	-1169.82	-15.57
			Max. My	14	-20.20	-6.55	-1181.50
			Max. Vy	8	23.90	-1169.82	-15.57
			Max. Vx	14	24.11	-6.55	-1181.50
			Max. Torque	15			-1.93
L19	62.733 - 62.583	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.40	-1.09	1.23
			Max. Mx	8	-20.27	-1173.40	-15.61
			Max. My	14	-20.25	-6.57	-1185.12
			Max. Vy	8	23.92	-1173.40	-15.61
			Max. Vx	14	24.13	-6.57	-1185.12
			Max. Torque	15			-1.93
L20	62.583 - 61.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.79	-1.10	1.24
			Max. Mx	8	-20.60	-1199.38	-15.90
			Max. My	14	-20.57	-6.69	-1211.33
			Max. Vy	8	24.06	-1199.38	-15.90
			Max. Vx	14	24.28	-6.69	-1211.33
			Max. Torque	15			-1.93
L21	61.5 - 61.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.86	-1.10	1.24
			Max. Mx	8	-20.66	-1205.40	-15.97
			Max. My	14	-20.64	-6.72	-1217.40
			Max. Vy	8	24.09	-1205.40	-15.97
			Max. Vx	14	24.30	-6.72	-1217.40
			Max. Torque	15			-1.93
L22	61.25 - 56.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.32	-1.15	1.27
			Max. Mx	8	-21.87	-1327.36	-17.32
			Max. My	14	-21.85	-7.29	-1340.39
			Max. Vy	8	24.70	-1327.36	-17.32
			Max. Vx	14	24.91	-7.29	-1340.39
			Max. Torque	15			-1.93
L23	56.25 - 51.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.81	-1.21	1.30
			Max. Mx	8	-23.12	-1452.30	-18.67
			Max. My	14	-23.10	-7.86	-1466.37
			Max. Vy	8	25.30	-1452.30	-18.67
			Max. Vx	14	25.51	-7.86	-1466.37
			Max. Torque	15			-1.93
L24	51.25 - 46.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.44	-1.26	1.73

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-24.47	-1580.61	-19.78
			Max. My	14	-24.46	-8.44	-1595.31
			Max. Vy	8	25.98	-1580.61	-19.78
			Max. Vx	14	26.15	-8.44	-1595.31
			Max. Torque	17			-1.97
L25	46.25 - 37.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.66	-1.30	1.76
			Max. Mx	8	-25.51	-1685.41	-20.85
			Max. My	14	-25.50	-8.89	-1700.77
			Max. Vy	8	26.44	-1685.41	-20.85
			Max. Vx	14	26.61	-8.89	-1700.77
			Max. Torque	17			-1.97
L26	37.75 - 36.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.31	-1.36	1.79
			Max. Mx	8	-28.56	-1832.91	-22.33
			Max. My	14	-28.55	-9.52	-1849.17
			Max. Vy	8	27.20	-1832.91	-22.33
			Max. Vx	14	27.37	-9.52	-1849.17
			Max. Torque	17			-1.97
L27	36.75 - 35	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.07	-1.38	1.80
			Max. Mx	8	-29.23	-1880.68	-22.79
			Max. My	14	-29.22	-9.72	-1897.23
			Max. Vy	8	27.42	-1880.68	-22.79
			Max. Vx	14	27.59	-9.72	-1897.23
			Max. Torque	17			-1.97
L28	35 - 34.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.19	-1.38	1.81
			Max. Mx	8	-29.34	-1887.54	-22.86
			Max. My	14	-29.33	-9.75	-1904.12
			Max. Vy	8	27.43	-1887.54	-22.86
			Max. Vx	14	27.60	-9.75	-1904.12
			Max. Torque	17			-1.97
L29	34.75 - 32.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.31	-1.41	1.82
			Max. Mx	8	-30.32	-1956.49	-23.53
			Max. My	14	-30.31	-10.03	-1973.49
			Max. Vy	8	27.74	-1956.49	-23.53
			Max. Vx	14	27.91	-10.03	-1973.49
			Max. Torque	17			-1.97
L30	32.25 - 32	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.44	-1.41	1.82
			Max. Mx	8	-30.45	-1963.43	-23.59
			Max. My	14	-30.43	-10.06	-1980.47
			Max. Vy	8	27.76	-1963.43	-23.59
			Max. Vx	14	27.93	-10.06	-1980.47
			Max. Torque	17			-1.97
L31	32 - 31.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.52	-1.41	1.82
			Max. Mx	8	-30.52	-1968.07	-23.64
			Max. My	14	-30.51	-10.08	-1985.13
			Max. Vy	8	27.79	-1968.07	-23.64
			Max. Vx	14	27.95	-10.08	-1985.13
			Max. Torque	17			-1.97
L32	31.833 - 31.483	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.65	-1.42	1.83
			Max. Mx	8	-30.63	-1977.80	-23.73
			Max. My	14	-30.62	-10.12	-1994.92
			Max. Vy	8	27.83	-1977.80	-23.73
			Max. Vx	14	27.99	-10.12	-1994.92
			Max. Torque	17			-1.97
L33	31.483 - 31.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.74	-1.42	1.83
			Max. Mx	8	-30.71	-1984.29	-23.79

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	-30.70	-10.15	-2001.45
			Max. Vy	8	27.85	-1984.29	-23.79
			Max. Vx	14	28.02	-10.15	-2001.45
			Max. Torque	17			-1.97
L34	31.25 - 26.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.59	-1.48	1.86
			Max. Mx	8	-32.33	-2124.85	-25.13
			Max. My	14	-32.32	-10.72	-2142.83
			Max. Vy	8	28.39	-2124.85	-25.13
			Max. Vx	14	28.56	-10.72	-2142.83
			Max. Torque	17			-1.97
L35	26.25 - 21.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.46	-1.53	1.89
			Max. Mx	8	-33.99	-2268.00	-26.45
			Max. My	14	-33.99	-11.29	-2286.79
			Max. Vy	8	28.89	-2268.00	-26.45
			Max. Vx	14	29.06	-11.29	-2286.79
			Max. Torque	17			-1.97
L36	21.25 - 16.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.36	-1.58	1.92
			Max. Mx	8	-35.68	-2413.60	-27.76
			Max. My	14	-35.68	-11.86	-2433.19
			Max. Vy	8	29.37	-2413.60	-27.76
			Max. Vx	14	29.54	-11.86	-2433.19
			Max. Torque	17			-1.97
L37	16.25 - 11.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.26	-1.63	1.95
			Max. Mx	8	-37.40	-2561.49	-29.07
			Max. My	14	-37.39	-12.42	-2581.88
			Max. Vy	8	29.81	-2561.49	-29.07
			Max. Vx	14	29.98	-12.42	-2581.88
			Max. Torque	17			-1.97
L38	11.25 - 6.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.15	-1.63	1.95
			Max. Mx	8	-39.12	-2711.59	-30.38
			Max. My	14	-39.12	-12.96	-2732.80
			Max. Vy	8	30.26	-2711.59	-30.38
			Max. Vx	14	30.42	-12.96	-2732.80
			Max. Torque	17			-1.97
L39	6.25 - 1.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.01	-1.63	1.95
			Max. Mx	8	-40.85	-2863.91	-31.68
			Max. My	14	-40.85	-13.50	-2885.93
			Max. Vy	8	30.70	-2863.91	-31.68
			Max. Vx	14	30.87	-13.50	-2885.93
			Max. Torque	17			-1.96
L40	1.25 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.46	-1.63	1.95
			Max. Mx	8	-41.27	-2902.33	-32.00
			Max. My	14	-41.27	-13.63	-2924.56
			Max. Vy	8	30.82	-2902.33	-32.00
			Max. Vx	14	30.98	-13.63	-2924.56
			Max. Torque	17			-1.96

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	32	60.46	-3.17	-5.54
	Max. H_x	20	41.28	30.78	-0.22

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. H_z	2	41.28	0.05	30.75
	Max. M_x	2	2899.81	0.05	30.75
	Max. M_z	8	2902.33	-30.80	-0.26
	Max. Torsion	5	1.03	-15.28	26.64
	Min. Vert	19	30.96	26.60	-15.45
	Min. H_x	8	41.28	-30.80	-0.26
	Min. H_z	14	41.28	-0.11	-30.96
	Min. M_x	14	-2924.56	-0.11	-30.96
	Min. M_z	20	-2899.26	30.78	-0.22
	Min. Torsion	17	-1.96	15.23	-26.85

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	34.40	0.00	0.00	-0.60	-0.36	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	41.28	-0.05	-30.75	-2899.81	4.98	-0.24
0.9 Dead+1.0 Wind 0 deg - No Ice	30.96	-0.05	-30.75	-2870.17	5.04	-0.25
1.2 Dead+1.0 Wind 30 deg - No Ice	41.28	15.28	-26.64	-2512.78	-1436.22	-1.03
0.9 Dead+1.0 Wind 30 deg - No Ice	30.96	15.28	-26.64	-2487.06	-1421.54	-1.03
1.2 Dead+1.0 Wind 60 deg - No Ice	41.28	26.67	-15.18	-1425.51	-2513.76	-0.31
0.9 Dead+1.0 Wind 60 deg - No Ice	30.96	26.67	-15.18	-1410.87	-2488.12	-0.31
1.2 Dead+1.0 Wind 90 deg - No Ice	41.28	30.80	0.26	32.00	-2902.33	0.28
0.9 Dead+1.0 Wind 90 deg - No Ice	30.96	30.80	0.26	31.83	-2872.75	0.29
1.2 Dead+1.0 Wind 120 deg - No Ice	41.28	26.65	15.53	1468.45	-2510.05	0.39
0.9 Dead+1.0 Wind 120 deg - No Ice	30.96	26.65	15.53	1453.70	-2484.45	0.40
1.2 Dead+1.0 Wind 150 deg - No Ice	41.28	15.35	26.93	2547.75	-1444.68	1.40
0.9 Dead+1.0 Wind 150 deg - No Ice	30.96	15.35	26.93	2522.02	-1429.91	1.41
1.2 Dead+1.0 Wind 180 deg - No Ice	41.28	0.11	30.96	2924.56	-13.63	1.92
0.9 Dead+1.0 Wind 180 deg - No Ice	30.96	0.11	30.96	2895.02	-13.37	1.92
1.2 Dead+1.0 Wind 210 deg - No Ice	41.28	-15.23	26.85	2538.36	1428.77	1.96
0.9 Dead+1.0 Wind 210 deg - No Ice	30.96	-15.23	26.85	2512.73	1414.41	1.96
1.2 Dead+1.0 Wind 240 deg - No Ice	41.28	-26.60	15.45	1458.55	2503.55	0.79
0.9 Dead+1.0 Wind 240 deg - No Ice	30.96	-26.60	15.45	1443.90	2478.25	0.79
1.2 Dead+1.0 Wind 270 deg - No Ice	41.28	-30.78	0.22	27.91	2899.26	1.31
0.9 Dead+1.0 Wind 270 deg - No Ice	30.96	-30.78	0.22	27.77	2869.93	1.31
1.2 Dead+1.0 Wind 300 deg - No Ice	41.28	-26.60	-15.39	-1451.90	2502.63	0.34
0.9 Dead+1.0 Wind 300 deg - No Ice	30.96	-26.60	-15.39	-1436.97	2477.34	0.33
1.2 Dead+1.0 Wind 330 deg - No Ice	41.28	-15.39	-26.67	-2516.09	1448.88	-0.04
0.9 Dead+1.0 Wind 330 deg - No Ice	30.96	-15.39	-26.67	-2490.34	1434.29	-0.04

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Ice+1.0 Temp	60.46	0.00	-0.00	-1.95	-1.63	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	60.46	-0.01	-6.34	-626.21	-0.84	-0.03
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	60.46	3.16	-5.49	-542.91	-311.53	-0.20
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	60.46	5.50	-3.14	-309.58	-543.18	-0.09
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	60.46	6.35	0.05	3.97	-626.82	0.01
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	60.46	5.50	3.20	313.59	-542.35	0.03
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	60.46	3.17	5.54	545.52	-312.90	0.23
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	60.46	0.02	6.38	627.03	-4.08	0.34
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	60.46	-3.15	5.53	543.88	306.84	0.37
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	60.46	-5.49	3.18	311.95	537.96	0.18
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	60.46	-6.35	0.04	3.46	622.95	0.28
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	60.46	-5.49	-3.17	-314.33	537.65	0.11
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	60.46	-3.17	-5.50	-543.40	310.39	0.03
Dead+Wind 0 deg - Service	34.40	-0.01	-5.86	-550.19	0.66	-0.05
Dead+Wind 30 deg - Service	34.40	2.91	-5.08	-476.82	-272.55	-0.20
Dead+Wind 60 deg - Service	34.40	5.08	-2.89	-270.71	-476.81	-0.06
Dead+Wind 90 deg - Service	34.40	5.87	0.05	5.58	-550.48	0.06
Dead+Wind 120 deg - Service	34.40	5.08	2.96	277.89	-476.12	0.08
Dead+Wind 150 deg - Service	34.40	2.93	5.13	482.50	-274.16	0.27
Dead+Wind 180 deg - Service	34.40	0.02	5.90	553.94	-2.87	0.37
Dead+Wind 210 deg - Service	34.40	-2.90	5.12	480.71	270.57	0.38
Dead+Wind 240 deg - Service	34.40	-5.07	2.94	276.01	474.31	0.15
Dead+Wind 270 deg - Service	34.40	-5.87	0.04	4.80	549.32	0.25
Dead+Wind 300 deg - Service	34.40	-5.07	-2.93	-275.71	474.13	0.06
Dead+Wind 330 deg - Service	34.40	-2.93	-5.08	-477.45	274.38	-0.01

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	-34.40	0.00	0.00	34.40	0.00	0.000%
2	-0.05	-41.28	-30.75	0.05	41.28	30.75	0.000%
3	-0.05	-30.96	-30.75	0.05	30.96	30.75	0.000%
4	15.28	-41.28	-26.64	-15.28	41.28	26.64	0.000%
5	15.28	-30.96	-26.64	-15.28	30.96	26.64	0.000%
6	26.67	-41.28	-15.18	-26.67	41.28	15.18	0.000%
7	26.67	-30.96	-15.18	-26.67	30.96	15.18	0.000%
8	30.80	-41.28	0.26	-30.80	41.28	-0.26	0.000%
9	30.80	-30.96	0.26	-30.80	30.96	-0.26	0.000%
10	26.65	-41.28	15.53	-26.65	41.28	-15.53	0.000%
11	26.65	-30.96	15.53	-26.65	30.96	-15.53	0.000%
12	15.35	-41.28	26.93	-15.35	41.28	-26.93	0.000%
13	15.35	-30.96	26.93	-15.35	30.96	-26.93	0.000%
14	0.11	-41.28	30.96	-0.11	41.28	-30.96	0.000%
15	0.11	-30.96	30.96	-0.11	30.96	-30.96	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
16	-15.23	-41.28	26.85	15.23	41.28	-26.85	0.000%
17	-15.23	-30.96	26.85	15.23	30.96	-26.85	0.000%
18	-26.60	-41.28	15.45	26.60	41.28	-15.45	0.000%
19	-26.60	-30.96	15.45	26.60	30.96	-15.45	0.000%
20	-30.78	-41.28	0.22	30.78	41.28	-0.22	0.000%
21	-30.78	-30.96	0.22	30.78	30.96	-0.22	0.000%
22	-26.60	-41.28	-15.39	26.60	41.28	15.39	0.000%
23	-26.60	-30.96	-15.39	26.60	30.96	15.39	0.000%
24	-15.39	-41.28	-26.67	15.39	41.28	26.67	0.000%
25	-15.39	-30.96	-26.67	15.39	30.96	26.67	0.000%
26	0.00	-60.46	0.00	-0.00	60.46	0.00	0.000%
27	-0.01	-60.46	-6.34	0.01	60.46	6.34	0.000%
28	3.16	-60.46	-5.49	-3.16	60.46	5.49	0.000%
29	5.50	-60.46	-3.14	-5.50	60.46	3.14	0.000%
30	6.35	-60.46	0.05	-6.35	60.46	-0.05	0.000%
31	5.50	-60.46	3.20	-5.50	60.46	-3.20	0.000%
32	3.17	-60.46	5.54	-3.17	60.46	-5.54	0.000%
33	0.02	-60.46	6.38	-0.02	60.46	-6.38	0.000%
34	-3.15	-60.46	5.53	3.15	60.46	-5.53	0.000%
35	-5.49	-60.46	3.18	5.49	60.46	-3.18	0.000%
36	-6.35	-60.46	0.04	6.35	60.46	-0.04	0.000%
37	-5.49	-60.46	-3.17	5.49	60.46	3.17	0.000%
38	-3.17	-60.46	-5.50	3.17	60.46	5.50	0.000%
39	-0.01	-34.40	-5.86	0.01	34.40	5.86	0.000%
40	2.91	-34.40	-5.08	-2.91	34.40	5.08	0.000%
41	5.08	-34.40	-2.89	-5.08	34.40	2.89	0.000%
42	5.87	-34.40	0.05	-5.87	34.40	-0.05	0.000%
43	5.08	-34.40	2.96	-5.08	34.40	-2.96	0.000%
44	2.93	-34.40	5.13	-2.93	34.40	-5.13	0.000%
45	0.02	-34.40	5.90	-0.02	34.40	-5.90	0.000%
46	-2.90	-34.40	5.12	2.90	34.40	-5.12	0.000%
47	-5.07	-34.40	2.94	5.07	34.40	-2.94	0.000%
48	-5.87	-34.40	0.04	5.87	34.40	-0.04	0.000%
49	-5.07	-34.40	-2.93	5.07	34.40	2.93	0.000%
50	-2.93	-34.40	-5.08	2.93	34.40	5.08	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00030046
3	Yes	5	0.00000001	0.00012506
4	Yes	6	0.00000001	0.00080673
5	Yes	6	0.00000001	0.00025098
6	Yes	6	0.00000001	0.00081995
7	Yes	6	0.00000001	0.00025612
8	Yes	5	0.00000001	0.00079563
9	Yes	5	0.00000001	0.00035590
10	Yes	6	0.00000001	0.00084320
11	Yes	6	0.00000001	0.00026240
12	Yes	6	0.00000001	0.00081449
13	Yes	6	0.00000001	0.00025178
14	Yes	5	0.00000001	0.00094497
15	Yes	5	0.00000001	0.00043253
16	Yes	6	0.00000001	0.00085843
17	Yes	6	0.00000001	0.00026844
18	Yes	6	0.00000001	0.00081817
19	Yes	6	0.00000001	0.00025436
20	Yes	5	0.00000001	0.00033678
21	Yes	5	0.00000001	0.00014356
22	Yes	6	0.00000001	0.00082899
23	Yes	6	0.00000001	0.00025849
24	Yes	6	0.00000001	0.00083006
25	Yes	6	0.00000001	0.00025850
26	Yes	4	0.00000001	0.00034333

27	Yes	6	0.00000001	0.00070426
28	Yes	6	0.00000001	0.00078395
29	Yes	6	0.00000001	0.00078278
30	Yes	6	0.00000001	0.00070426
31	Yes	6	0.00000001	0.00078430
32	Yes	6	0.00000001	0.00078646
33	Yes	6	0.00000001	0.00070361
34	Yes	6	0.00000001	0.00077958
35	Yes	6	0.00000001	0.00077498
36	Yes	6	0.00000001	0.00069823
37	Yes	6	0.00000001	0.00077936
38	Yes	6	0.00000001	0.00078267
39	Yes	4	0.00000001	0.00087280
40	Yes	5	0.00000001	0.00017130
41	Yes	5	0.00000001	0.00018093
42	Yes	4	0.00000001	0.00092061
43	Yes	5	0.00000001	0.00018922
44	Yes	5	0.00000001	0.00017220
45	Yes	5	0.00000001	0.00005875
46	Yes	5	0.00000001	0.00020609
47	Yes	5	0.00000001	0.00017475
48	Yes	5	0.00000001	0.00004465
49	Yes	5	0.00000001	0.00018337
50	Yes	5	0.00000001	0.00018291

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 125	16.512	44	1.1086	0.0052
L2	125 - 120.5	15.352	44	1.1054	0.0052
L3	120.5 - 120	14.314	44	1.0943	0.0045
L4	120 - 115	14.200	44	1.0933	0.0044
L5	115 - 110	13.064	44	1.0739	0.0037
L6	110 - 105	11.955	44	1.0436	0.0030
L7	105 - 100	10.883	44	1.0011	0.0026
L8	100 - 95	9.862	44	0.9468	0.0021
L9	95 - 91.5	8.904	44	0.8831	0.0018
L10	91.5 - 91.25	8.274	44	0.8338	0.0015
L11	91.25 - 86.25	8.230	44	0.8319	0.0015
L12	86.25 - 81.25	7.381	44	0.7908	0.0013
L13	81.25 - 77	6.575	44	0.7469	0.0012
L14	80.75 - 75.75	6.497	44	0.7423	0.0012
L15	75.75 - 70.75	5.732	44	0.7145	0.0011
L16	70.75 - 65.75	5.008	44	0.6686	0.0010
L17	65.75 - 63	4.333	44	0.6203	0.0008
L18	63 - 62.733	3.984	44	0.5933	0.0008
L19	62.733 - 62.583	3.950	44	0.5914	0.0008
L20	62.583 - 61.5	3.932	44	0.5904	0.0008
L21	61.5 - 61.25	3.799	44	0.5826	0.0008
L22	61.25 - 56.25	3.768	44	0.5801	0.0008
L23	56.25 - 51.25	3.188	44	0.5291	0.0007
L24	51.25 - 46.25	2.661	44	0.4776	0.0006
L25	46.25 - 37.75	2.188	44	0.4251	0.0005
L26	42.25 - 36.75	1.850	44	0.3825	0.0004
L27	36.75 - 35	1.423	44	0.3564	0.0004
L28	35 - 34.75	1.294	44	0.3443	0.0004
L29	34.75 - 32.25	1.276	44	0.3425	0.0004
L30	32.25 - 32	1.101	44	0.3250	0.0003
L31	32 - 31.833	1.084	44	0.3234	0.0003
L32	31.833 - 31.483	1.073	44	0.3224	0.0003
L33	31.483 - 31.25	1.050	44	0.3189	0.0003
L34	31.25 - 26.25	1.034	44	0.3166	0.0003
L35	26.25 - 21.25	0.729	44	0.2657	0.0003
L36	21.25 - 16.25	0.478	44	0.2151	0.0002
L37	16.25 - 11.25	0.279	44	0.1644	0.0002
L38	11.25 - 6.25	0.133	44	0.1134	0.0001
L39	6.25 - 1.25	0.041	44	0.0630	0.0001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L40	1.25 - 0	0.002	44	0.0124	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
128.00	LNX-6515DS-VTM w/ Mount Pipe	44	16.047	1.1084	0.0053	35768
124.00	VHLP2-11	44	15.120	1.1032	0.0051	29649
122.00	TME-800MHZ RRH	44	14.659	1.0979	0.0047	22561
118.00	APXVTM14-C-120 w/ Mount Pipe	44	13.743	1.0875	0.0042	15340
110.00	(2) APL868013-42T0 w/ Mount Pipe	44	11.955	1.0436	0.0030	7934
50.00	OG-860/1920/GPS-A	44	2.537	0.4649	0.0006	5414

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 125	87.116	12	5.8615	0.0273
L2	125 - 120.5	81.001	12	5.8448	0.0273
L3	120.5 - 120	75.533	12	5.7856	0.0235
L4	120 - 115	74.929	12	5.7805	0.0232
L5	115 - 110	68.942	12	5.6774	0.0194
L6	110 - 105	63.092	12	5.5170	0.0160
L7	105 - 100	57.441	12	5.2918	0.0135
L8	100 - 95	52.057	12	5.0046	0.0112
L9	95 - 91.5	47.000	12	4.6672	0.0092
L10	91.5 - 91.25	43.679	12	4.4066	0.0079
L11	91.25 - 86.25	43.449	12	4.3964	0.0079
L12	86.25 - 81.25	38.965	12	4.1791	0.0070
L13	81.25 - 77	34.715	12	3.9471	0.0062
L14	80.75 - 75.75	34.303	12	3.9229	0.0061
L15	75.75 - 70.75	30.266	12	3.7758	0.0057
L16	70.75 - 65.75	26.443	12	3.5329	0.0050
L17	65.75 - 63	22.880	12	3.2777	0.0044
L18	63 - 62.733	21.035	12	3.1351	0.0041
L19	62.733 - 62.583	20.860	12	3.1251	0.0041
L20	62.583 - 61.5	20.762	12	3.1195	0.0041
L21	61.5 - 61.25	20.059	12	3.0784	0.0040
L22	61.25 - 56.25	19.899	12	3.0653	0.0040
L23	56.25 - 51.25	16.832	12	2.7956	0.0035
L24	51.25 - 46.25	14.048	12	2.5232	0.0030
L25	46.25 - 37.75	11.552	12	2.2459	0.0026
L26	42.25 - 36.75	9.766	12	2.0206	0.0022
L27	36.75 - 35	7.511	12	1.8825	0.0020
L28	35 - 34.75	6.833	12	1.8184	0.0019
L29	34.75 - 32.25	6.738	12	1.8091	0.0019
L30	32.25 - 32	5.815	12	1.7164	0.0018
L31	32 - 31.833	5.726	12	1.7083	0.0018
L32	31.833 - 31.483	5.666	12	1.7029	0.0018
L33	31.483 - 31.25	5.542	12	1.6845	0.0018
L34	31.25 - 26.25	5.460	12	1.6721	0.0017
L35	26.25 - 21.25	3.850	12	1.4033	0.0014
L36	21.25 - 16.25	2.521	12	1.1361	0.0011
L37	16.25 - 11.25	1.472	12	0.8678	0.0008
L38	11.25 - 6.25	0.704	12	0.5988	0.0005
L39	6.25 - 1.25	0.217	12	0.3324	0.0003
L40	1.25 - 0	0.009	12	0.0657	0.0001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
128.00	LNX-6515DS-VTM w/ Mount Pipe	12	84.668	5.8603	0.0278	6970
124.00	VHLP2-11	12	79.781	5.8331	0.0266	5774
122.00	TME-800MHZ RRH	12	77.349	5.8047	0.0247	4382
118.00	APXVTM14-C-120 w/ Mount Pipe	12	72.522	5.7494	0.0218	2955
110.00	(2) APL868013-42T0 w/ Mount Pipe	12	63.092	5.5170	0.0160	1525
50.00	OG-860/1920/GPS-A	12	13.397	2.4564	0.0029	1028

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	130 - 129	TP18x18x0.375	5.00	0.00	0.0	20.764 0	-0.14	654.07	0.000 [1]
	129 - 128					20.764 0	-0.18	654.07	0.000
	128 - 127					20.764 0	-2.44	654.07	0.004
	127 - 126					20.764 0	-2.53	654.07	0.004
	126 - 125					20.764 0	-2.62	654.07	0.004
L2	125 - 123.875	TP18x18x0.375	4.50	0.00	0.0	20.764 0	-2.76	654.07	0.004
	123.875 - 122.75					20.764 0	-2.84	654.07	0.004
	122.75 - 121.625					20.764 0	-3.47	654.07	0.005
	121.625 - 120.5					20.764 0	-3.58	654.07	0.005
L3	120.5 - 120 (3)	TP22x22x0.375	0.50	0.00	0.0	25.476 4	-3.64	802.51	0.005
L4	120 - 119	TP22.9002x22x0.25	5.00	0.00	0.0	17.653 7	-3.72	1274.94	0.003
	119 - 118					17.798 6	-3.80	1282.04	0.003
	118 - 117					17.943 6	-7.09	1289.08	0.006
	117 - 116					18.088 5	-7.18	1296.06	0.006
	116 - 115					18.233 4	-7.27	1302.99	0.006
L5	115 - 114	TP23.8005x22.9002x0.25	5.00	0.00	0.0	18.378 4	-7.36	1309.87	0.006
	114 - 113					18.523 3	-7.45	1316.69	0.006
	113 - 112					18.668 2	-7.54	1323.45	0.006
	112 - 111					18.813	-7.63	1330.16	0.006

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	111 - 110					18.9582	-7.73	1336.82	0.006
L6	110 - 109	TP24.7007x23.8005x0.25	5.00	0.00	0.0	19.1031	-11.27	1343.42	0.008
	109 - 108					19.2481	-11.37	1349.97	0.008
	108 - 107					19.3920	-11.48	1356.46	0.008
	107 - 106					19.5379	-11.59	1362.89	0.009
	106 - 105					19.6828	-11.69	1369.28	0.009
L7	105 - 104	TP25.6009x24.7007x0.25	5.00	0.00	0.0	19.8277	-11.81	1375.60	0.009
	104 - 103					19.9727	-11.92	1381.87	0.009
	103 - 102					20.1176	-12.03	1388.09	0.009
	102 - 101					20.2626	-12.15	1394.25	0.009
	101 - 100					20.4075	-12.26	1400.36	0.009
L8	100 - 99	TP26.5012x25.6009x0.25	5.00	0.00	0.0	20.5524	-12.38	1406.41	0.009
	99 - 98					20.6974	-12.50	1412.41	0.009
	98 - 97					20.8423	-12.62	1418.35	0.009
	97 - 96					20.9872	-12.75	1424.24	0.009
	96 - 95					21.1322	-12.87	1430.07	0.009
L9	95 - 93.8333	TP27.1313x26.5012x0.25	3.50	0.00	0.0	21.3013	-13.01	1436.80	0.009
	93.8333 - 92.6667					21.4704	-13.16	1443.46	0.009
	92.6667 - 91.5					21.6395	-13.31	1450.05	0.009
L10	91.5 - 91.25 (10)	TP27.1763x27.1313x0.4875	0.25	0.00	0.0	41.8948	-13.37	3088.07	0.004
L11	91.25 - 90.25	TP28.0766x27.1763x0.475	5.00	0.00	0.0	41.1151	-13.56	3030.59	0.004
	90.25 - 89.25					41.3905	-13.75	3050.89	0.005
	89.25 - 88.25					41.6658	-13.94	3071.19	0.005
	88.25 - 87.25					41.9412	-14.13	3091.49	0.005
	87.25 - 86.25					42.2166	-14.33	3111.79	0.005
L12	86.25 - 85.25	TP28.9768x28.0766x0.475	5.00	0.00	0.0	42.4920	-14.52	3132.08	0.005
	85.25 - 84.25					42.7674	-14.72	3152.38	0.005
	84.25 - 83.25					43.0427	-14.92	3172.68	0.005
	83.25 - 82.25					43.3181	-15.11	3192.98	0.005
	82.25 - 81.25					43.5935	-15.31	3213.28	0.005
L13	81.25 - 80.75	TP29.742x28.9768x0.4688	4.25	0.00	0.0	43.1652	-15.42	3181.71	0.005
	80.75 - 77					44.1843	-7.95	3256.83	0.002
L14	80.75 - 77	TP29.467x28.5668x0.5375	5.00	0.00	0.0	49.6802	-8.90	3661.93	0.002
	77 - 75.75					50.0697	-17.13	3690.64	0.005

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L15	75.75 - 74.75	TP30.3671x29.467x0.525	5.00	0.00	0.0	49.2307	-17.36	3628.80	0.005
	74.75 - 73.75					49.5351	-17.59	3651.23	0.005
	73.75 - 72.75					49.8394	-17.82	3673.66	0.005
	72.75 - 71.75					50.1437	-18.05	3696.09	0.005
	71.75 - 70.75					50.4481	-18.28	3718.53	0.005
L16	70.75 - 69.75	TP31.2672x30.3671x0.5125	5.00	0.00	0.0	49.5646	-18.51	3653.41	0.005
	69.75 - 68.75					49.8617	-18.74	3675.31	0.005
	68.75 - 67.75					50.1588	-18.97	3697.21	0.005
	67.75 - 66.75					50.4559	-19.21	3719.11	0.005
	66.75 - 65.75					50.7530	-19.45	3741.00	0.005
L17	65.75 - 64.375	TP31.7623x31.2672x0.5125	2.75	0.00	0.0	51.1615	-19.77	3771.11	0.005
	64.375 - 63					51.5700	-20.10	3801.22	0.005
L18	63 - 62.733 (18)	TP31.8104x31.7623x0.725	0.27	0.00	0.0	72.5688	-20.20	5349.05	0.004
L19	62.733 - 62.583 (19)	TP31.8374x31.8104x0.725	0.15	0.00	0.0	72.6319	-20.24	5353.69	0.004
L20	62.583 - 61.5 (20)	TP32.0324x31.8374x0.7125	1.08	0.00	0.0	71.8556	-20.57	5296.47	0.004
L21	61.5 - 61.25 (21)	TP32.0774x32.0324x0.5125	0.25	0.00	0.0	52.0899	-20.64	3839.55	0.005
L22	61.25 - 60.25	TP32.9775x32.0774x0.5	5.00	0.00	0.0	51.1294	-20.87	3768.75	0.006
	60.25 - 59.25					51.4192	-21.11	3790.11	0.006
	59.25 - 58.25					51.7091	-21.36	3811.48	0.006
	58.25 - 57.25					51.9989	-21.60	3832.84	0.006
	57.25 - 56.25					52.2888	-21.85	3854.21	0.006
L23	56.25 - 55.25	TP33.8776x32.9775x0.5	5.00	0.00	0.0	52.5786	-22.10	3875.57	0.006
	55.25 - 54.25					52.8685	-22.35	3896.93	0.006
	54.25 - 53.25					53.1583	-22.60	3918.30	0.006
	53.25 - 52.25					53.4481	-22.85	3939.66	0.006
	52.25 - 51.25					53.7380	-23.10	3961.03	0.006
L24	51.25 - 50.25	TP34.7778x33.8776x0.4938	5.00	0.00	0.0	53.3624	-23.35	3933.34	0.006
	50.25 - 49.25					53.6486	-23.68	3954.44	0.006
	49.25 - 48.25					53.9349	-23.94	3975.54	0.006
	48.25 - 47.25					54.2211	-24.19	3996.64	0.006
	47.25 - 46.25					54.5073	-24.45	4017.73	0.006
L25	46.25 - 45.25	TP36.308x34.7778x0.4875	8.50	0.00	0.0	54.1097	-24.71	3988.43	0.006
	45.25 - 44.25					54.3923	-24.97	4009.26	0.006
	44.25 - 43.25					54.6749	-25.23	4030.09	0.006
	43.25 - 42.25					54.957	-25.49	4050.92	0.006

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	42.25 - 37.75					56.2295	-10.87	4144.66	0.003
L26	42.25 - 37.75	TP35.8632x34.8729x0.8	5.50	0.00	0.0	89.8589	-17.28	6623.50	0.003
	37.75 - 36.75					90.3227	-28.55	6657.69	0.004
L27	36.75 - 35 (27)	TP36.1782x35.8632x0.8	1.75	0.00	0.0	91.1343	-29.21	6717.51	0.004
L28	35 - 34.75 (28)	TP36.2233x36.1782x0.8	0.25	0.00	0.0	91.2503	-29.33	6726.06	0.004
L29	34.75 - 33.5	TP36.6734x36.2233x0.8	2.50	0.00	0.0	91.8301	-29.81	6768.79	0.004
	33.5 - 32.25					92.4098	-30.31	6811.53	0.004
L30	32.25 - 32 (30)	TP36.7184x36.6734x0.925	0.25	0.00	0.0	106.6110	-30.43	7858.27	0.004
L31	32 - 31.833 (31)	TP36.7485x36.7184x0.925	0.17	0.00	0.0	106.7000	-30.51	7864.87	0.004
L32	31.833 - 31.483 (32)	TP36.8115x36.7485x0.55	0.35	0.00	0.0	64.2191	-30.62	4733.59	0.006
L33	31.483 - 31.25 (33)	TP36.8534x36.8115x0.5438	0.23	0.00	0.0	63.5737	-30.70	4686.02	0.007
L34	31.25 - 30.25	TP37.7537x36.8534x0.5375	5.00	0.00	0.0	63.1654	-31.01	4655.92	0.007
	30.25 - 29.25					63.4770	-31.34	4678.89	0.007
	29.25 - 28.25					63.7887	-31.66	4701.86	0.007
	28.25 - 27.25					64.1003	-31.99	4724.83	0.007
	27.25 - 26.25					64.4119	-32.32	4747.80	0.007
L35	26.25 - 25.25	TP38.6539x37.7537x0.5375	5.00	0.00	0.0	64.7235	-32.65	4770.77	0.007
	25.25 - 24.25					65.0351	-32.98	4793.74	0.007
	24.25 - 23.25					65.3468	-33.32	4816.71	0.007
	23.25 - 22.25					65.6584	-33.65	4839.68	0.007
	22.25 - 21.25					65.9700	-33.98	4862.65	0.007
L36	21.25 - 20.25	TP39.5542x38.6539x0.5313	5.00	0.00	0.0	65.5216	-34.32	4829.60	0.007
	20.25 - 19.25					65.8296	-34.66	4852.30	0.007
	19.25 - 18.25					66.1376	-34.99	4875.00	0.007
	18.25 - 17.25					66.4456	-35.33	4897.71	0.007
	17.25 - 16.25					66.7536	-35.68	4920.41	0.007
L37	16.25 - 15.25	TP40.4544x39.5542x0.525	5.00	0.00	0.0	66.2832	-36.02	4885.74	0.007
	15.25 - 14.25					66.5876	-36.36	4908.17	0.007
	14.25 - 13.25					66.8920	-36.70	4930.61	0.007
	13.25 - 12.25					67.1963	-37.05	4953.04	0.007
	12.25 - 11.25					67.5007	-37.39	4975.48	0.008
L38	11.25 - 10.25	TP41.3547x40.4544x0.525	5.00	0.00	0.0	67.8051	-37.74	4997.91	0.008
	10.25 - 9.25					68.1095	-38.08	5020.35	0.008
	9.25 - 8.25					68.4138	-38.42	5042.78	0.008

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	8.25 - 7.25					68.7182	-38.77	5065.22	0.008
	7.25 - 6.25					69.0226	-39.12	5087.65	0.008
L39	6.25 - 5.25	TP42.2549x41.3547x0.5188	5.00	0.00	0.0	68.5121	-39.46	5050.03	0.008
	5.25 - 4.25					68.8128	-39.81	5072.19	0.008
	4.25 - 3.25					69.1136	-40.15	5094.36	0.008
	3.25 - 2.25					69.4143	-40.50	5116.53	0.008
	2.25 - 1.25					69.7151	-40.85	5138.70	0.008
L40	1.25 - 0 (40)	TP42.48x42.2549x0.5188	1.25	0.00	0.0	70.0910	-41.27	5166.41	0.008

[1] $P_u / \phi P_n$ controls

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	130 - 129	TP18x18x0.375	0.02	305.83	0.000	0.00	305.83	0.000
	129 - 128		0.13	305.83	0.000	0.00	305.83	0.000
	128 - 127		13.08	305.83	0.043	0.00	305.83	0.000
	127 - 126		18.44	305.83	0.060	0.00	305.83	0.000
	126 - 125		23.86	305.83	0.078	0.00	305.83	0.000
L2	125 - 123.875	TP18x18x0.375	30.20	305.83	0.099	0.00	305.83	0.000
	123.875 - 122.75		36.85	305.83	0.120	0.00	305.83	0.000
	122.75 - 121.625		44.23	305.83	0.145	0.00	305.83	0.000
	121.625 - 120.5		52.57	305.83	0.172	0.00	305.83	0.000
L3	120.5 - 120 (3)	TP22x22x0.375	56.30	460.38	0.122	0.00	460.38	0.000
L4	120 - 119	TP22.9002x22x0.25	63.84	567.65	0.112	0.00	567.65	0.000
	119 - 118		71.49	575.55	0.124	0.00	575.55	0.000
	118 - 117		88.03	583.48	0.151	0.00	583.48	0.000
	117 - 116		100.10	591.43	0.169	0.00	591.43	0.000
	116 - 115		112.28	599.41	0.187	0.00	599.41	0.000
L5	115 - 114	TP23.8005x22.9002x0.25	124.57	607.41	0.205	0.00	607.41	0.000
	114 - 113		136.96	615.44	0.223	0.00	615.44	0.000
	113 - 112		149.47	623.50	0.240	0.00	623.50	0.000
	112 - 111		162.09	631.58	0.257	0.00	631.58	0.000
	111 - 110		174.82	639.68	0.273	0.00	639.68	0.000
L6	110 - 109	TP24.7007x23.8005x0.25	197.42	647.80	0.305	0.00	647.80	0.000
	109 - 108		216.12	655.95	0.329	0.00	655.95	0.000
	108 - 107		234.92	664.12	0.354	0.00	664.12	0.000
	107 - 106		253.83	672.31	0.378	0.00	672.31	0.000
	106 - 105		272.86	680.52	0.401	0.00	680.52	0.000
L7	105 - 104	TP25.6009x24.7007x0.25	291.99	688.75	0.424	0.00	688.75	0.000
	104 - 103		311.23	697.00	0.447	0.00	697.00	0.000
	103 - 102		330.58	705.26	0.469	0.00	705.26	0.000
	102 - 101		350.04	713.55	0.491	0.00	713.55	0.000
	101 - 100		369.61	721.85	0.512	0.00	721.85	0.000
L8	100 - 99	TP26.5012x25.6009x0.25	389.28	730.17	0.533	0.00	730.17	0.000
	99 - 98		409.07	738.50	0.554	0.00	738.50	0.000
	98 - 97		428.96	746.85	0.574	0.00	746.85	0.000
	97 - 96		448.96	755.22	0.594	0.00	755.22	0.000
	96 - 95		469.08	763.60	0.614	0.00	763.60	0.000
L9	95 - 93.8333	TP27.1313x26.5012x0.25	492.68	773.39	0.637	0.00	773.39	0.000
	93.8333 -		516.43	783.20	0.659	0.00	783.20	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	92.6667							
	92.6667 - 91.5		540.32	793.03	0.681	0.00	793.03	0.000
L10	91.5 - 91.25 (10)	TP27.1763x27.1313x0.4875	545.46	1661.99	0.328	0.00	1661.99	0.000
L11	91.25 - 90.25	TP28.0766x27.1763x0.475	566.10	1643.79	0.344	0.00	1643.79	0.000
	90.25 - 89.25		586.86	1666.08	0.352	0.00	1666.08	0.000
	89.25 - 88.25		607.74	1688.52	0.360	0.00	1688.52	0.000
	88.25 - 87.25		628.74	1711.10	0.367	0.00	1711.10	0.000
	87.25 - 86.25		649.87	1733.83	0.375	0.00	1733.83	0.000
L12	86.25 - 85.25	TP28.9768x28.0766x0.475	671.12	1756.72	0.382	0.00	1756.72	0.000
	85.25 - 84.25		692.49	1779.76	0.389	0.00	1779.76	0.000
	84.25 - 83.25		713.98	1802.94	0.396	0.00	1802.94	0.000
	83.25 - 82.25		735.60	1826.28	0.403	0.00	1826.28	0.000
	82.25 - 81.25		757.34	1849.77	0.409	0.00	1849.77	0.000
L13	81.25 - 80.75	TP29.742x28.9768x0.4688	768.25	1838.28	0.418	0.00	1838.28	0.000
	80.75 - 77		409.25	1926.82	0.212	0.00	1926.82	0.000
L14	80.75 - 77	TP29.467x28.5668x0.5375	441.99	2118.73	0.209	0.00	2118.73	0.000
	77 - 75.75		879.33	2152.39	0.409	0.00	2152.39	0.000
L15	75.75 - 74.75	TP30.3671x29.467x0.525	901.94	2131.57	0.423	0.00	2131.57	0.000
	74.75 - 73.75		924.67	2158.24	0.428	0.00	2158.24	0.000
	73.75 - 72.75		947.52	2185.07	0.434	0.00	2185.07	0.000
	72.75 - 71.75		970.51	2212.07	0.439	0.00	2212.07	0.000
	71.75 - 70.75		993.61	2239.24	0.444	0.00	2239.24	0.000
L16	70.75 - 69.75	TP31.2672x30.3671x0.5125	1016.83	2215.38	0.459	0.00	2215.38	0.000
	69.75 - 68.75		1040.18	2242.24	0.464	0.00	2242.24	0.000
	68.75 - 67.75		1063.64	2269.26	0.469	0.00	2269.26	0.000
	67.75 - 66.75		1087.22	2296.45	0.473	0.00	2296.45	0.000
	66.75 - 65.75		1110.94	2323.79	0.478	0.00	2323.79	0.000
L17	65.75 - 64.375	TP31.7623x31.2672x0.5125	1143.74	2361.66	0.484	0.00	2361.66	0.000
	64.375 - 63		1176.77	2399.83	0.490	0.00	2399.83	0.000
L18	63 - 62.733 (18)	TP31.8104x31.7623x0.725	1183.21	3336.53	0.355	0.00	3336.53	0.000
L19	62.733 - 62.583 (19)	TP31.8374x31.8104x0.725	1186.83	3342.39	0.355	0.00	3342.39	0.000
L20	62.583 - 61.5 (20)	TP32.0324x31.8374x0.7125	1213.08	3330.53	0.364	0.00	3330.53	0.000
L21	61.5 - 61.25 (21)	TP32.0774x32.0324x0.5125	1219.15	2448.86	0.498	0.00	2448.86	0.000
L22	61.25 - 60.25	TP32.9775x32.0774x0.5	1243.54	2419.53	0.514	0.00	2419.53	0.000
	60.25 - 59.25		1268.06	2447.26	0.518	0.00	2447.26	0.000
	59.25 - 58.25		1292.68	2475.14	0.522	0.00	2475.14	0.000
	58.25 - 57.25		1317.43	2503.18	0.526	0.00	2503.18	0.000
	57.25 - 56.25		1342.31	2531.38	0.530	0.00	2531.38	0.000
L23	56.25 - 55.25	TP33.8776x32.9775x0.5	1367.30	2559.73	0.534	0.00	2559.73	0.000
	55.25 - 54.25		1392.41	2588.25	0.538	0.00	2588.25	0.000
	54.25 - 53.25		1417.64	2616.92	0.542	0.00	2616.92	0.000
	53.25 - 52.25		1442.98	2645.75	0.545	0.00	2645.75	0.000
	52.25 - 51.25		1468.45	2674.73	0.549	0.00	2674.73	0.000
L24	51.25 - 50.25	TP34.7778x33.8776x0.4938	1494.04	2671.57	0.559	0.00	2671.57	0.000
	50.25 - 49.25		1519.62	2700.52	0.563	0.00	2700.52	0.000
	49.25 - 48.25		1545.51	2729.62	0.566	0.00	2729.62	0.000
	48.25 - 47.25		1571.51	2758.88	0.570	0.00	2758.88	0.000
	47.25 - 46.25		1597.63	2788.29	0.573	0.00	2788.29	0.000
L25	46.25 - 45.25	TP36.308x34.7778x0.4875	1623.87	2783.70	0.583	0.00	2783.70	0.000
	45.25 - 44.25		1650.22	2813.06	0.587	0.00	2813.06	0.000
	44.25 - 43.25		1676.68	2842.57	0.590	0.00	2842.57	0.000
	43.25 - 42.25		1703.27	2872.23	0.593	0.00	2872.23	0.000
	42.25 - 37.75		725.85	3007.63	0.241	0.00	3007.63	0.000
L26	42.25 - 37.75	TP35.8632x34.8729x0.8	1098.72	4637.99	0.237	0.00	4637.99	0.000
	37.75 - 36.75		1851.90	4686.53	0.395	0.00	4686.53	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L27	36.75 - 35 (27)	TP36.1782x35.8632x0.8	1900.03	4772.09	0.398	0.00	4772.09	0.000
L28	35 - 34.75 (28)	TP36.2233x36.1782x0.8	1906.94	4784.38	0.399	0.00	4784.38	0.000
L29	34.75 - 33.5	TP36.6734x36.2233x0.8	1941.58	4846.04	0.401	0.00	4846.04	0.000
	33.5 - 32.25		1976.42	4908.10	0.403	0.00	4908.10	0.000
L30	32.25 - 32 (30)	TP36.7184x36.6734x0.925	1983.41	5630.20	0.352	0.00	5630.20	0.000
L31	32 - 31.833 (31)	TP36.7485x36.7184x0.925	1988.08	5639.78	0.353	0.00	5639.78	0.000
L32	31.833 - 31.483 (32)	TP36.8115x36.7485x0.55	1997.88	3471.95	0.575	0.00	3471.95	0.000
L33	31.483 - 31.25 (33)	TP36.8534x36.8115x0.5438	2004.42	3442.28	0.582	0.00	3442.28	0.000
L34	31.25 - 30.25	TP37.7537x36.8534x0.5375	2032.53	3438.56	0.591	0.00	3438.56	0.000
	30.25 - 29.25		2060.74	3472.82	0.593	0.00	3472.82	0.000
	29.25 - 28.25		2089.06	3507.24	0.596	0.00	3507.24	0.000
	28.25 - 27.25		2117.48	3541.84	0.598	0.00	3541.84	0.000
	27.25 - 26.25		2146.02	3576.61	0.600	0.00	3576.61	0.000
L35	26.25 - 25.25	TP38.6539x37.7537x0.5375	2174.65	3611.55	0.602	0.00	3611.55	0.000
	25.25 - 24.25		2203.38	3646.66	0.604	0.00	3646.66	0.000
	24.25 - 23.25		2232.22	3681.93	0.606	0.00	3681.93	0.000
	23.25 - 22.25		2261.15	3717.38	0.608	0.00	3717.38	0.000
	22.25 - 21.25		2290.18	3753.00	0.610	0.00	3753.00	0.000
L36	21.25 - 20.25	TP39.5542x38.6539x0.5313	2319.32	3746.57	0.619	0.00	3746.57	0.000
	20.25 - 19.25		2348.55	3782.12	0.621	0.00	3782.12	0.000
	19.25 - 18.25		2377.88	3817.83	0.623	0.00	3817.83	0.000
	18.25 - 17.25		2407.29	3853.72	0.625	0.00	3853.72	0.000
	17.25 - 16.25		2436.80	3889.77	0.626	0.00	3889.77	0.000
L37	16.25 - 15.25	TP40.4544x39.5542x0.525	2466.41	3881.65	0.635	0.00	3881.65	0.000
	15.25 - 14.25		2496.10	3917.63	0.637	0.00	3917.63	0.000
	14.25 - 13.25		2525.88	3953.76	0.639	0.00	3953.76	0.000
	13.25 - 12.25		2555.75	3990.06	0.641	0.00	3990.06	0.000
	12.25 - 11.25		2585.71	4026.52	0.642	0.00	4026.52	0.000
L38	11.25 - 10.25	TP41.3547x40.4544x0.525	2615.76	4063.15	0.644	0.00	4063.15	0.000
	10.25 - 9.25		2645.89	4099.95	0.645	0.00	4099.95	0.000
	9.25 - 8.25		2676.12	4136.91	0.647	0.00	4136.91	0.000
	8.25 - 7.25		2706.43	4174.04	0.648	0.00	4174.04	0.000
	7.25 - 6.25		2736.83	4211.33	0.650	0.00	4211.33	0.000
L39	6.25 - 5.25	TP42.2549x41.3547x0.5188	2767.32	4200.13	0.659	0.00	4200.13	0.000
	5.25 - 4.25		2797.90	4237.32	0.660	0.00	4237.32	0.000
	4.25 - 3.25		2828.57	4274.68	0.662	0.00	4274.68	0.000
	3.25 - 2.25		2859.32	4312.19	0.663	0.00	4312.19	0.000
	2.25 - 1.25		2890.16	4349.87	0.664	0.00	4349.87	0.000
L40	1.25 - 0 (40)	TP42.48x42.2549x0.5188	2928.84	4397.20	0.666	0.00	4397.20	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	130 - 129	TP18x18x0.375	0.02	196.22	0.000	0.00	304.05	0.000
	129 - 128		0.12	196.22	0.001	0.00	304.05	0.000
	128 - 127		5.33	196.22	0.027	0.01	304.05	0.000
	127 - 126		5.39	196.22	0.027	0.01	304.05	0.000
	126 - 125		5.45	196.22	0.028	0.01	304.05	0.000
L2	125 - 123.875	TP18x18x0.375	5.85	196.22	0.030	0.74	304.05	0.002
	123.875 - 122.75		6.13	196.22	0.031	2.38	304.05	0.008

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	122.75 - 121.625		7.38	196.22	0.038	2.38	304.05	0.008
	121.625 - 120.5		7.45	196.22	0.038	2.38	304.05	0.008
L3	120.5 - 120 (3)	TP22x22x0.375	7.49	240.75	0.031	2.38	457.73	0.005
L4	120 - 119	TP22.9002x22x0.25	7.60	309.82	0.025	2.38	584.11	0.004
	119 - 118		7.71	312.37	0.025	2.38	593.85	0.004
	118 - 117		12.02	314.91	0.038	2.39	603.67	0.004
	117 - 116		12.13	317.45	0.038	2.39	613.58	0.004
	116 - 115		12.24	320.00	0.038	2.39	623.56	0.004
L5	115 - 114	TP23.8005x22.9002x0.25	12.35	322.54	0.038	2.39	633.62	0.004
	114 - 113		12.46	325.08	0.038	2.39	643.77	0.004
	113 - 112		12.57	327.63	0.038	2.39	653.99	0.004
	112 - 111		12.68	330.17	0.038	2.39	664.30	0.004
	111 - 110		12.79	332.71	0.038	2.39	674.69	0.004
L6	110 - 109	TP24.7007x23.8005x0.25	18.64	335.26	0.056	2.12	685.15	0.003
	109 - 108		18.75	337.80	0.056	1.56	695.70	0.002
	108 - 107		18.86	340.35	0.055	1.56	706.33	0.002
	107 - 106		18.97	342.89	0.055	1.56	717.04	0.002
	106 - 105		19.08	345.43	0.055	1.56	727.83	0.002
L7	105 - 104	TP25.6009x24.7007x0.25	19.19	347.98	0.055	1.56	738.70	0.002
	104 - 103		19.30	350.52	0.055	1.56	749.65	0.002
	103 - 102		19.41	353.06	0.055	1.56	760.68	0.002
	102 - 101		19.52	355.61	0.055	1.56	771.79	0.002
	101 - 100		19.63	358.15	0.055	1.56	782.98	0.002
L8	100 - 99	TP26.5012x25.6009x0.25	19.74	360.69	0.055	1.56	794.26	0.002
	99 - 98		19.85	363.24	0.055	1.56	805.61	0.002
	98 - 97		19.96	365.78	0.055	1.56	817.04	0.002
	97 - 96		20.07	368.33	0.054	1.56	828.56	0.002
	96 - 95		20.17	370.87	0.054	1.56	840.15	0.002
L9	95 - 93.8333	TP27.1313x26.5012x0.25	20.30	373.84	0.054	1.56	853.78	0.002
	93.8333 - 92.6667		20.43	376.81	0.054	1.56	867.52	0.002
	92.6667 - 91.5		20.56	379.77	0.054	1.56	881.37	0.002
L10	91.5 - 91.25 (10)	TP27.1763x27.1313x0.4875	20.58	735.25	0.028	1.56	1663.63	0.001
L11	91.25 - 90.25	TP28.0766x27.1763x0.475	20.70	721.57	0.029	1.56	1646.43	0.001
	90.25 - 89.25		20.83	726.40	0.029	1.56	1668.96	0.001
	89.25 - 88.25		20.95	731.24	0.029	1.56	1691.64	0.001
	88.25 - 87.25		21.07	736.07	0.029	1.56	1714.47	0.001
	87.25 - 86.25		21.19	740.90	0.029	1.56	1737.47	0.001
L12	86.25 - 85.25	TP28.9768x28.0766x0.475	21.32	745.73	0.029	1.56	1760.61	0.001
	85.25 - 84.25		21.44	750.57	0.029	1.56	1783.90	0.001
	84.25 - 83.25		21.56	755.40	0.029	1.56	1807.35	0.001
	83.25 - 82.25		21.68	760.23	0.029	1.56	1830.95	0.001
	82.25 - 81.25		21.81	765.07	0.029	1.56	1854.70	0.001
L13	81.25 - 80.75	TP29.742x28.9768x0.4688	21.87	757.55	0.029	1.56	1843.71	0.001
	80.75 - 77		10.89	775.43	0.014	0.75	1933.28	0.000
L14	80.75 - 77	TP29.467x28.5668x0.5375	11.52	871.89	0.013	0.81	2119.78	0.000
	77 - 75.75		22.56	878.72	0.026	1.56	2153.78	0.001
L15	75.75 - 74.75	TP30.3671x29.467x0.525	22.68	864.00	0.026	1.56	2134.19	0.001
	74.75 - 73.75		22.80	869.34	0.026	1.56	2161.14	0.001
	73.75 - 72.75		22.92	874.68	0.026	1.56	2188.27	0.001
	72.75 - 71.75		23.05	880.02	0.026	1.56	2215.56	0.001
	71.75 - 70.75		23.17	885.36	0.026	1.56	2243.03	0.001
L16	70.75 - 69.75	TP31.2672x30.3671x0.5125	23.29	869.86	0.027	1.56	2220.35	0.001
	69.75 - 68.75		23.41	875.07	0.027	1.56	2247.52	0.001
	68.75 - 67.75		23.54	880.29	0.027	1.56	2274.84	0.001
	67.75 - 66.75		23.66	885.50	0.027	1.56	2302.33	0.001
	66.75 - 65.75		23.78	890.72	0.027	1.56	2329.99	0.001
L17	65.75 - 64.375	TP31.7623x31.2672x0.5125	23.95	897.88	0.027	1.56	2368.29	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	64.375 - 63		24.12	905.05	0.027	1.56	2406.90	0.001
L18	63 - 62.733 (18)	TP31.8104x31.7623x0.725	24.15	1273.58	0.019	1.56	3321.89	0.000
L19	62.733 - 62.583 (19)	TP31.8374x31.8104x0.725	24.17	1274.69	0.019	1.56	3327.80	0.000
L20	62.583 - 61.5 (20)	TP32.0324x31.8374x0.7125	24.31	1261.07	0.019	1.56	3317.94	0.000
L21	61.5 - 61.25 (21)	TP32.0774x32.0324x0.5125	24.34	914.18	0.027	1.56	2456.49	0.001
L22	61.25 - 60.25	TP32.9775x32.0774x0.5	24.46	897.32	0.027	1.56	2428.33	0.001
	60.25 - 59.25		24.58	902.41	0.027	1.56	2456.38	0.001
	59.25 - 58.25		24.70	907.49	0.027	1.56	2484.60	0.001
	58.25 - 57.25		24.82	912.58	0.027	1.56	2512.97	0.001
	57.25 - 56.25		24.94	917.67	0.027	1.56	2541.51	0.001
L23	56.25 - 55.25	TP33.8776x32.9775x0.5	25.06	922.76	0.027	1.56	2570.21	0.001
	55.25 - 54.25		25.18	927.84	0.027	1.56	2599.07	0.001
	54.25 - 53.25		25.30	932.93	0.027	1.56	2628.08	0.001
	53.25 - 52.25		25.42	938.01	0.027	1.56	2657.27	0.001
	52.25 - 51.25		25.54	943.10	0.027	1.56	2686.61	0.001
L24	51.25 - 50.25	TP34.7778x33.8776x0.4938	25.66	936.51	0.027	1.56	2684.18	0.001
	50.25 - 49.25		25.84	941.53	0.027	1.56	2713.49	0.001
	49.25 - 48.25		25.96	946.56	0.027	1.40	2742.95	0.001
	48.25 - 47.25		26.08	951.58	0.027	1.40	2772.57	0.001
	47.25 - 46.25		26.19	956.60	0.027	1.40	2802.36	0.001
L25	46.25 - 45.25	TP36.308x34.7778x0.4875	26.31	949.63	0.028	1.40	2798.50	0.001
	45.25 - 44.25		26.42	954.59	0.028	1.40	2828.23	0.000
	44.25 - 43.25		26.53	959.54	0.028	1.40	2858.12	0.000
	43.25 - 42.25		26.65	964.51	0.028	1.40	2888.16	0.000
	42.25 - 37.75		11.04	986.82	0.011	0.56	3025.30	0.000
L26	42.25 - 37.75	TP35.8632x34.8729x0.8	16.26	1577.02	0.010	0.85	4619.57	0.000
	37.75 - 36.75		27.41	1585.16	0.017	1.40	4668.50	0.000
L27	36.75 - 35 (27)	TP36.1782x35.8632x0.8	27.63	1599.41	0.017	1.40	4754.76	0.000
L28	35 - 34.75 (28)	TP36.2233x36.1782x0.8	27.64	1601.44	0.017	1.40	4767.15	0.000
L29	34.75 - 33.5	TP36.6734x36.2233x0.8	27.80	1611.62	0.017	1.40	4829.32	0.000
	33.5 - 32.25		27.95	1621.79	0.017	1.40	4891.91	0.000
L30	32.25 - 32 (30)	TP36.7184x36.6734x0.925	27.97	1871.02	0.015	1.40	5590.34	0.000
L31	32 - 31.833 (31)	TP36.7485x36.7184x0.925	28.00	1872.59	0.015	1.40	5599.99	0.000
L32	31.833 - 31.483 (32)	TP36.8115x36.7485x0.55	28.04	1127.04	0.025	1.40	3486.68	0.000
L33	31.483 - 31.25 (33)	TP36.8534x36.8115x0.5438	28.06	1115.72	0.025	1.40	3457.57	0.000
L34	31.25 - 30.25	TP37.7537x36.8534x0.5375	28.18	1108.55	0.025	1.40	3454.72	0.000
	30.25 - 29.25		28.28	1114.02	0.025	1.40	3489.41	0.000
	29.25 - 28.25		28.39	1119.49	0.025	1.40	3524.27	0.000
	28.25 - 27.25		28.49	1124.96	0.025	1.40	3559.30	0.000
	27.25 - 26.25		28.60	1130.43	0.025	1.40	3594.50	0.000
L35	26.25 - 25.25	TP38.6539x37.7537x0.5375	28.70	1135.90	0.025	1.40	3629.88	0.000
	25.25 - 24.25		28.80	1141.37	0.025	1.40	3665.43	0.000
	24.25 - 23.25		28.90	1146.84	0.025	1.40	3701.15	0.000
	23.25 - 22.25		29.00	1152.30	0.025	1.40	3737.05	0.000
	22.25 - 21.25		29.10	1157.77	0.025	1.40	3773.12	0.000
L36	21.25 - 20.25	TP39.5542x38.6539x0.5313	29.20	1149.90	0.025	1.40	3767.56	0.000
	20.25 - 19.25		29.29	1155.31	0.025	1.40	3803.56	0.000
	19.25 - 18.25		29.39	1160.72	0.025	1.40	3839.73	0.000
	18.25 - 17.25		29.48	1166.12	0.025	1.40	3876.08	0.000
	17.25 - 16.25		29.58	1171.53	0.025	1.40	3912.60	0.000
L37	16.25 - 15.25	TP40.4544x39.5542x0.525	29.67	1163.27	0.026	1.40	3905.35	0.000
	15.25 - 14.25		29.75	1168.61	0.025	1.40	3941.79	0.000
	14.25 - 13.25		29.84	1173.95	0.025	1.40	3978.40	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	13.25 - 12.25		29.93	1179.30	0.025	1.40	4015.18	0.000
	12.25 - 11.25		30.02	1184.64	0.025	1.40	4052.12	0.000
L38	11.25 - 10.25	TP41.3547x40.4544x0.525	30.11	1189.98	0.025	1.40	4089.23	0.000
	10.25 - 9.25		30.20	1195.32	0.025	1.40	4126.52	0.000
	9.25 - 8.25		30.29	1200.66	0.025	1.40	4163.98	0.000
	8.25 - 7.25		30.38	1206.00	0.025	1.40	4201.60	0.000
	7.25 - 6.25		30.46	1211.35	0.025	1.40	4239.39	0.000
L39	6.25 - 5.25	TP42.2549x41.3547x0.5188	30.55	1202.39	0.025	1.40	4229.04	0.000
	5.25 - 4.25		30.64	1207.67	0.025	1.40	4266.73	0.000
	4.25 - 3.25		30.73	1212.94	0.025	1.40	4304.58	0.000
	3.25 - 2.25		30.82	1218.22	0.025	1.40	4342.61	0.000
	2.25 - 1.25		30.91	1223.50	0.025	1.40	4380.79	0.000
L40	1.25 - 0 (40)	TP42.48x42.2549x0.5188	31.02	1230.10	0.025	1.40	4428.77	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	130 - 129	0.000	0.000	0.000	0.000	0.000	0.000 [1]	1.050	4.8.2
	129 - 128	0.000	0.000	0.000	0.001	0.000	0.001	1.050	4.8.2
	128 - 127	0.004	0.043	0.000	0.027	0.000	0.047	1.050	4.8.2
	127 - 126	0.004	0.060	0.000	0.027	0.000	0.065	1.050	4.8.2
	126 - 125	0.004	0.078	0.000	0.028	0.000	0.083	1.050	4.8.2
L2	125 - 123.875	0.004	0.099	0.000	0.030	0.002	0.104	1.050	4.8.2
	123.875 - 122.75	0.004	0.120	0.000	0.031	0.008	0.126	1.050	4.8.2
	122.75 - 121.625	0.005	0.145	0.000	0.038	0.008	0.152	1.050	4.8.2
	121.625 - 120.5	0.005	0.172	0.000	0.038	0.008	0.179	1.050	4.8.2
L3	120.5 - 120 (3)	0.005	0.122	0.000	0.031	0.005	0.128	1.050	4.8.2
L4	120 - 119	0.003	0.112	0.000	0.025	0.004	0.116	1.050	4.8.2
	119 - 118	0.003	0.124	0.000	0.025	0.004	0.128	1.050	4.8.2
	118 - 117	0.006	0.151	0.000	0.038	0.004	0.158	1.050	4.8.2
	117 - 116	0.006	0.169	0.000	0.038	0.004	0.177	1.050	4.8.2
	116 - 115	0.006	0.187	0.000	0.038	0.004	0.195	1.050	4.8.2
L5	115 - 114	0.006	0.205	0.000	0.038	0.004	0.212	1.050	4.8.2
	114 - 113	0.006	0.223	0.000	0.038	0.004	0.230	1.050	4.8.2
	113 - 112	0.006	0.240	0.000	0.038	0.004	0.247	1.050	4.8.2
	112 - 111	0.006	0.257	0.000	0.038	0.004	0.264	1.050	4.8.2
	111 - 110	0.006	0.273	0.000	0.038	0.004	0.281	1.050	4.8.2
L6	110 - 109	0.008	0.305	0.000	0.056	0.003	0.317	1.050	4.8.2
	109 - 108	0.008	0.329	0.000	0.056	0.002	0.341	1.050	4.8.2
	108 - 107	0.008	0.354	0.000	0.055	0.002	0.366	1.050	4.8.2
	107 - 106	0.009	0.378	0.000	0.055	0.002	0.389	1.050	4.8.2
	106 - 105	0.009	0.401	0.000	0.055	0.002	0.413	1.050	4.8.2
L7	105 - 104	0.009	0.424	0.000	0.055	0.002	0.436	1.050	4.8.2
	104 - 103	0.009	0.447	0.000	0.055	0.002	0.458	1.050	4.8.2
	103 - 102	0.009	0.469	0.000	0.055	0.002	0.481	1.050	4.8.2
	102 - 101	0.009	0.491	0.000	0.055	0.002	0.503	1.050	4.8.2
	101 - 100	0.009	0.512	0.000	0.055	0.002	0.524	1.050	4.8.2
L8	100 - 99	0.009	0.533	0.000	0.055	0.002	0.545	1.050	4.8.2
	99 - 98	0.009	0.554	0.000	0.055	0.002	0.566	1.050	4.8.2
	98 - 97	0.009	0.574	0.000	0.055	0.002	0.586	1.050	4.8.2
	97 - 96	0.009	0.594	0.000	0.054	0.002	0.607	1.050	4.8.2
	96 - 95	0.009	0.614	0.000	0.054	0.002	0.626	1.050	4.8.2
L9	95 - 93.8333	0.009	0.637	0.000	0.054	0.002	0.649	1.050	4.8.2
	93.8333 - 92.6667	0.009	0.659	0.000	0.054	0.002	0.672	1.050	4.8.2
	92.6667 - 91.5	0.009	0.681	0.000	0.054	0.002	0.694	1.050	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L10	91.5 - 91.25 (10)	0.004	0.328	0.000	0.028	0.001	0.333	1.050	4.8.2
L11	91.25 - 90.25	0.004	0.344	0.000	0.029	0.001	0.350	1.050	4.8.2
	90.25 - 89.25	0.005	0.352	0.000	0.029	0.001	0.358	1.050	4.8.2
	89.25 - 88.25	0.005	0.360	0.000	0.029	0.001	0.365	1.050	4.8.2
	88.25 - 87.25	0.005	0.367	0.000	0.029	0.001	0.373	1.050	4.8.2
	87.25 - 86.25	0.005	0.375	0.000	0.029	0.001	0.380	1.050	4.8.2
L12	86.25 - 85.25	0.005	0.382	0.000	0.029	0.001	0.388	1.050	4.8.2
	85.25 - 84.25	0.005	0.389	0.000	0.029	0.001	0.395	1.050	4.8.2
	84.25 - 83.25	0.005	0.396	0.000	0.029	0.001	0.402	1.050	4.8.2
	83.25 - 82.25	0.005	0.403	0.000	0.029	0.001	0.408	1.050	4.8.2
	82.25 - 81.25	0.005	0.409	0.000	0.029	0.001	0.415	1.050	4.8.2
L13	81.25 - 80.75	0.005	0.418	0.000	0.029	0.001	0.424	1.050	4.8.2
	80.75 - 77	0.002	0.212	0.000	0.014	0.000	0.215	1.050	4.8.2
L14	80.75 - 77	0.002	0.209	0.000	0.013	0.000	0.211	1.050	4.8.2
	77 - 75.75	0.005	0.409	0.000	0.026	0.001	0.414	1.050	4.8.2
L15	75.75 - 74.75	0.005	0.423	0.000	0.026	0.001	0.429	1.050	4.8.2
	74.75 - 73.75	0.005	0.428	0.000	0.026	0.001	0.434	1.050	4.8.2
	73.75 - 72.75	0.005	0.434	0.000	0.026	0.001	0.439	1.050	4.8.2
	72.75 - 71.75	0.005	0.439	0.000	0.026	0.001	0.444	1.050	4.8.2
	71.75 - 70.75	0.005	0.444	0.000	0.026	0.001	0.449	1.050	4.8.2
L16	70.75 - 69.75	0.005	0.459	0.000	0.027	0.001	0.465	1.050	4.8.2
	69.75 - 68.75	0.005	0.464	0.000	0.027	0.001	0.470	1.050	4.8.2
	68.75 - 67.75	0.005	0.469	0.000	0.027	0.001	0.475	1.050	4.8.2
	67.75 - 66.75	0.005	0.473	0.000	0.027	0.001	0.479	1.050	4.8.2
	66.75 - 65.75	0.005	0.478	0.000	0.027	0.001	0.484	1.050	4.8.2
L17	65.75 - 64.375	0.005	0.484	0.000	0.027	0.001	0.490	1.050	4.8.2
	64.375 - 63	0.005	0.490	0.000	0.027	0.001	0.496	1.050	4.8.2
L18	63 - 62.733 (18)	0.004	0.355	0.000	0.019	0.000	0.359	1.050	4.8.2
L19	62.733 - 62.583 (19)	0.004	0.355	0.000	0.019	0.000	0.359	1.050	4.8.2
L20	62.583 - 61.5 (20)	0.004	0.364	0.000	0.019	0.000	0.369	1.050	4.8.2
L21	61.5 - 61.25 (21)	0.005	0.498	0.000	0.027	0.001	0.504	1.050	4.8.2
L22	61.25 - 60.25	0.006	0.514	0.000	0.027	0.001	0.520	1.050	4.8.2
	60.25 - 59.25	0.006	0.518	0.000	0.027	0.001	0.525	1.050	4.8.2
	59.25 - 58.25	0.006	0.522	0.000	0.027	0.001	0.529	1.050	4.8.2
	58.25 - 57.25	0.006	0.526	0.000	0.027	0.001	0.533	1.050	4.8.2
	57.25 - 56.25	0.006	0.530	0.000	0.027	0.001	0.537	1.050	4.8.2
L23	56.25 - 55.25	0.006	0.534	0.000	0.027	0.001	0.541	1.050	4.8.2
	55.25 - 54.25	0.006	0.538	0.000	0.027	0.001	0.544	1.050	4.8.2
	54.25 - 53.25	0.006	0.542	0.000	0.027	0.001	0.548	1.050	4.8.2
	53.25 - 52.25	0.006	0.545	0.000	0.027	0.001	0.552	1.050	4.8.2
	52.25 - 51.25	0.006	0.549	0.000	0.027	0.001	0.556	1.050	4.8.2
L24	51.25 - 50.25	0.006	0.559	0.000	0.027	0.001	0.566	1.050	4.8.2
	50.25 - 49.25	0.006	0.563	0.000	0.027	0.001	0.569	1.050	4.8.2
	49.25 - 48.25	0.006	0.566	0.000	0.027	0.001	0.573	1.050	4.8.2
	48.25 - 47.25	0.006	0.570	0.000	0.027	0.001	0.576	1.050	4.8.2
	47.25 - 46.25	0.006	0.573	0.000	0.027	0.001	0.580	1.050	4.8.2
L25	46.25 - 45.25	0.006	0.583	0.000	0.028	0.001	0.590	1.050	4.8.2
	45.25 - 44.25	0.006	0.587	0.000	0.028	0.000	0.594	1.050	4.8.2
	44.25 - 43.25	0.006	0.590	0.000	0.028	0.000	0.597	1.050	4.8.2
	43.25 - 42.25	0.006	0.593	0.000	0.028	0.000	0.600	1.050	4.8.2
	42.25 - 37.75	0.003	0.241	0.000	0.011	0.000	0.244	1.050	4.8.2
L26	42.25 - 37.75	0.003	0.237	0.000	0.010	0.000	0.240	1.050	4.8.2
	37.75 - 36.75	0.004	0.395	0.000	0.017	0.000	0.400	1.050	4.8.2
L27	36.75 - 35 (27)	0.004	0.398	0.000	0.017	0.000	0.403	1.050	4.8.2
L28	35 - 34.75 (28)	0.004	0.399	0.000	0.017	0.000	0.403	1.050	4.8.2
L29	34.75 - 33.5	0.004	0.401	0.000	0.017	0.000	0.405	1.050	4.8.2
	33.5 - 32.25	0.004	0.403	0.000	0.017	0.000	0.407	1.050	4.8.2
L30	32.25 - 32 (30)	0.004	0.352	0.000	0.015	0.000	0.356	1.050	4.8.2
L31	32 - 31.833 (31)	0.004	0.353	0.000	0.015	0.000	0.357	1.050	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L32	31.833 - 31.483 (32)	0.006	0.575	0.000	0.025	0.000	0.583	1.050	4.8.2
L33	31.483 - 31.25 (33)	0.007	0.582	0.000	0.025	0.000	0.589	1.050	4.8.2
L34	31.25 - 30.25	0.007	0.591	0.000	0.025	0.000	0.598	1.050	4.8.2
	30.25 - 29.25	0.007	0.593	0.000	0.025	0.000	0.601	1.050	4.8.2
	29.25 - 28.25	0.007	0.596	0.000	0.025	0.000	0.603	1.050	4.8.2
	28.25 - 27.25	0.007	0.598	0.000	0.025	0.000	0.605	1.050	4.8.2
	27.25 - 26.25	0.007	0.600	0.000	0.025	0.000	0.607	1.050	4.8.2
L35	26.25 - 25.25	0.007	0.602	0.000	0.025	0.000	0.610	1.050	4.8.2
	25.25 - 24.25	0.007	0.604	0.000	0.025	0.000	0.612	1.050	4.8.2
	24.25 - 23.25	0.007	0.606	0.000	0.025	0.000	0.614	1.050	4.8.2
	23.25 - 22.25	0.007	0.608	0.000	0.025	0.000	0.616	1.050	4.8.2
	22.25 - 21.25	0.007	0.610	0.000	0.025	0.000	0.618	1.050	4.8.2
L36	21.25 - 20.25	0.007	0.619	0.000	0.025	0.000	0.627	1.050	4.8.2
	20.25 - 19.25	0.007	0.621	0.000	0.025	0.000	0.629	1.050	4.8.2
	19.25 - 18.25	0.007	0.623	0.000	0.025	0.000	0.631	1.050	4.8.2
	18.25 - 17.25	0.007	0.625	0.000	0.025	0.000	0.633	1.050	4.8.2
	17.25 - 16.25	0.007	0.626	0.000	0.025	0.000	0.634	1.050	4.8.2
L37	16.25 - 15.25	0.007	0.635	0.000	0.026	0.000	0.643	1.050	4.8.2
	15.25 - 14.25	0.007	0.637	0.000	0.025	0.000	0.645	1.050	4.8.2
	14.25 - 13.25	0.007	0.639	0.000	0.025	0.000	0.647	1.050	4.8.2
	13.25 - 12.25	0.007	0.641	0.000	0.025	0.000	0.649	1.050	4.8.2
	12.25 - 11.25	0.008	0.642	0.000	0.025	0.000	0.650	1.050	4.8.2
L38	11.25 - 10.25	0.008	0.644	0.000	0.025	0.000	0.652	1.050	4.8.2
	10.25 - 9.25	0.008	0.645	0.000	0.025	0.000	0.654	1.050	4.8.2
	9.25 - 8.25	0.008	0.647	0.000	0.025	0.000	0.655	1.050	4.8.2
	8.25 - 7.25	0.008	0.648	0.000	0.025	0.000	0.657	1.050	4.8.2
	7.25 - 6.25	0.008	0.650	0.000	0.025	0.000	0.658	1.050	4.8.2
L39	6.25 - 5.25	0.008	0.659	0.000	0.025	0.000	0.667	1.050	4.8.2
	5.25 - 4.25	0.008	0.660	0.000	0.025	0.000	0.669	1.050	4.8.2
	4.25 - 3.25	0.008	0.662	0.000	0.025	0.000	0.670	1.050	4.8.2
	3.25 - 2.25	0.008	0.663	0.000	0.025	0.000	0.672	1.050	4.8.2
	2.25 - 1.25	0.008	0.664	0.000	0.025	0.000	0.673	1.050	4.8.2
L40	1.25 - 0 (40)	0.008	0.666	0.000	0.025	0.000	0.675	1.050	4.8.2

[1] P_u / ϕP_n controls

Section Capacity Table

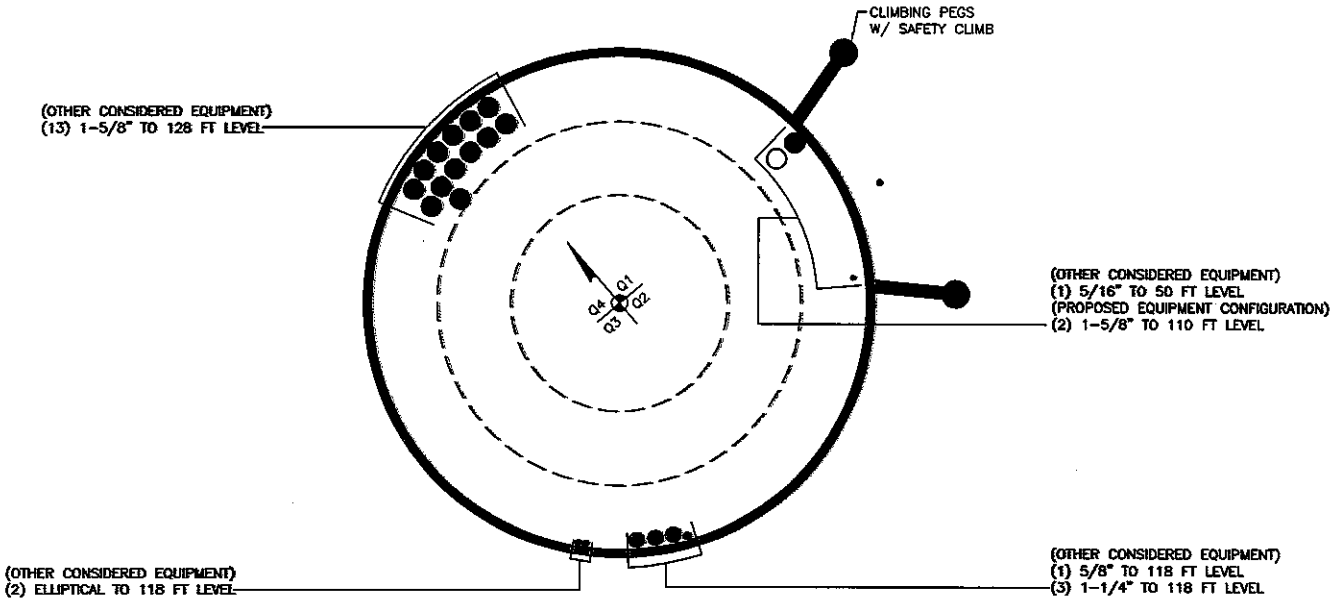
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	130 - 125	Pole	TP18x18x0.375	1	-2.62	686.77	7.9	Pass
L2	125 - 120.5	Pole	TP18x18x0.375	2	-3.58	686.77	17.1	Pass
L3	120.5 - 120	Pole	TP22x22x0.375	3	-3.64	842.63	12.2	Pass
L4	120 - 115	Pole	TP22.9002x22x0.25	4	-7.27	1368.14	18.5	Pass
L5	115 - 110	Pole	TP23.8005x22.9002x0.25	5	-7.73	1403.66	26.7	Pass
L6	110 - 105	Pole	TP24.7007x23.8005x0.25	6	-11.69	1437.74	39.3	Pass
L7	105 - 100	Pole	TP25.6009x24.7007x0.25	7	-12.26	1470.38	49.9	Pass
L8	100 - 95	Pole	TP26.5012x25.6009x0.25	8	-12.87	1501.57	59.7	Pass
L9	95 - 91.5	Pole	TP27.1313x26.5012x0.25	9	-13.31	1522.55	66.1	Pass
L10	91.5 - 91.25	Pole	TP27.1763x27.1313x0.4875	10	-13.37	3242.47	31.7	Pass
L11	91.25 - 86.25	Pole	TP28.0766x27.1763x0.475	11	-14.33	3267.38	36.2	Pass
L12	86.25 - 81.25	Pole	TP28.9768x28.0766x0.475	12	-15.31	3373.94	39.5	Pass
L13	81.25 - 77	Pole	TP29.742x28.9768x0.4688	13	-15.42	3340.80	40.3	Pass
L14	77 - 75.75	Pole	TP29.467x28.5668x0.5375	14	-17.13	3875.17	39.4	Pass
L15	75.75 - 70.75	Pole	TP30.3671x29.467x0.525	15	-18.28	3904.46	42.8	Pass
L16	70.75 - 65.75	Pole	TP31.2672x30.3671x0.5125	16	-19.45	3928.05	46.1	Pass
L17	65.75 - 63	Pole	TP31.7623x31.2672x0.5125	17	-20.10	3991.28	47.3	Pass
L18	63 - 62.733	Pole	TP31.8104x31.7623x0.725	18	-20.20	5616.50	34.2	Pass
L19	62.733 - 62.583	Pole	TP31.8374x31.8104x0.725	19	-20.24	5621.37	34.2	Pass
L20	62.583 - 61.5	Pole	TP32.0324x31.8374x0.7125	20	-20.57	5561.29	35.1	Pass
L21	61.5 - 61.25	Pole	TP32.0774x32.0324x0.5125	21	-20.64	4031.53	48.0	Pass
L22	61.25 - 56.25	Pole	TP32.9775x32.0774x0.5	22	-21.85	4046.92	51.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L23	56.25 - 51.25	Pole	TP33.8776x32.9775x0.5	23	-23.10	4159.08	52.9	Pass
L24	51.25 - 46.25	Pole	TP34.7778x33.8776x0.4938	24	-24.45	4218.62	55.2	Pass
L25	46.25 - 37.75	Pole	TP36.308x34.7778x0.4875	25	-25.49	4253.47	57.2	Pass
L26	37.75 - 36.75	Pole	TP35.8632x34.8729x0.8	26	-28.55	6990.57	38.1	Pass
L27	36.75 - 35	Pole	TP36.1782x35.8632x0.8	27	-29.21	7053.39	38.4	Pass
L28	35 - 34.75	Pole	TP36.2233x36.1782x0.8	28	-29.33	7062.36	38.4	Pass
L29	34.75 - 32.25	Pole	TP36.6734x36.2233x0.8	29	-30.31	7152.11	38.8	Pass
L30	32.25 - 32	Pole	TP36.7184x36.6734x0.925	30	-30.43	8251.18	33.9	Pass
L31	32 - 31.833	Pole	TP36.7485x36.7184x0.925	31	-30.51	8258.11	34.0	Pass
L32	31.833 - 31.483	Pole	TP36.8115x36.7485x0.55	32	-30.62	4970.27	55.5	Pass
L33	31.483 - 31.25	Pole	TP36.8534x36.8115x0.5438	33	-30.70	4920.32	56.1	Pass
L34	31.25 - 26.25	Pole	TP37.7537x36.8534x0.5375	34	-32.32	4985.19	57.9	Pass
L35	26.25 - 21.25	Pole	TP38.6539x37.7537x0.5375	35	-33.98	5105.78	58.8	Pass
L36	21.25 - 16.25	Pole	TP39.5542x38.6539x0.5313	36	-35.68	5166.43	60.4	Pass
L37	16.25 - 11.25	Pole	TP40.4544x39.5542x0.525	37	-37.39	5224.25	61.9	Pass
L38	11.25 - 6.25	Pole	TP41.3547x40.4544x0.525	38	-39.12	5342.03	62.7	Pass
L39	6.25 - 1.25	Pole	TP42.2549x41.3547x0.5188	39	-40.85	5395.63	64.1	Pass
L40	1.25 - 0	Pole	TP42.48x42.2549x0.5188	40	-41.27	5424.73	64.3	Pass
							Summary	
						Pole (L9)	66.1	Pass
						RATING =	**66.1**	**Pass**

***NOTE: Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876322 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876322

Work Order: 1639342

CROWN CASTLE

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	130	9.5	0	0	18	18	0.375		A53-B-35
2	120.5	0.5	0	0	22.00	22	0.375		A53-B-35
3	120	43	3.75	12	22.00	29.742	0.25	Auto	A572-65
4	80.75	43	4.5	12	28.57	36.308	0.3125	Auto	A572-65
5	42.25	42.25	0	12	34.87	42.48	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	0	32.25	plate	CCI-WSFP-065125	2												
2	0	35	plate	CCI-WSFP-065125	1												
3	31.833	62.833	plate	CCI-SFP-060100	2												
4	35	63	plate	CCI-SFP-060100	1												
5	31.5	39.5	plate	CCI-AFP-065125	3												
6	61.5	91.5	plate	CCI-AFP-060100	3												
7																	
8																	
9																	
10																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	6.5	1.25	8.125	0.625	n/a	33.000	19.000	6.563	1.1875	A572-65
2	6.5	1.25	8.125	0.625	n/a	33.000	19.000	6.563	1.1875	A572-65
3	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
4	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
5	6.5	1.25	8.125	0.625	42.000	42.000	19.000	6.563	1.1875	A572-65
6	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	130 - 125	5		0	18.000	18.000	0.375	A53-B-35	1.000
2	125 - 120.5	4.5	0	0	18.000	18.000	0.375	A53-B-35	1.000
3	120.5 - 120	0.5	0	0	22.000	22.000	0.375	A53-B-35	1.000
4	120 - 115	5		12	22.000	22.900	0.25	A572-65	1.000
5	115 - 110	5		12	22.900	23.800	0.25	A572-65	1.000
6	110 - 105	5		12	23.800	24.701	0.25	A572-65	1.000
7	105 - 100	5		12	24.701	25.601	0.25	A572-65	1.000
8	100 - 95	5		12	25.601	26.501	0.25	A572-65	1.000
9	95 - 91.5	3.5		12	26.501	27.131	0.25	A572-65	1.000
10	91.5 - 91.25	0.25		12	27.131	27.176	0.4875	A572-65	0.948
11	91.25 - 86.25	5		12	27.176	28.077	0.475	A572-65	0.958
12	86.25 - 81.25	5		12	28.077	28.977	0.475	A572-65	0.944
13	81.25 - 80.75	4.25	3.75	12	28.977	29.742	0.46875	A572-65	0.955
14	80.75 - 75.75	5		12	28.567	29.467	0.5375	A572-65	0.946
15	75.75 - 70.75	5		12	29.467	30.367	0.525	A572-65	0.957
16	70.75 - 65.75	5		12	30.367	31.267	0.5125	A572-65	0.969
17	65.75 - 63	2.75		12	31.267	31.762	0.5125	A572-65	0.963
18	63 - 62.733	0.267		12	31.762	31.810	0.725	A572-65	0.934
19	62.733 - 62.583	0.15		12	31.810	31.837	0.725	A572-65	0.933
20	62.583 - 61.5	1.083		12	31.837	32.032	0.7125	A572-65	0.946
21	61.5 - 61.25	0.25		12	32.032	32.077	0.5125	A572-65	0.960
22	61.25 - 56.25	5		12	32.077	32.977	0.5	A572-65	0.973
23	56.25 - 51.25	5		12	32.977	33.878	0.5	A572-65	0.964
24	51.25 - 46.25	5		12	33.878	34.778	0.49375	A572-65	0.967
25	46.25 - 42.25	8.5	4.5	12	34.778	36.308	0.4875	A572-65	0.972
26	42.25 - 36.75	5.5		12	34.873	35.863	0.8	A572-65	0.944
27	36.75 - 35	1.75		12	35.863	36.178	0.8	A572-65	0.940
28	35 - 34.75	0.25		12	36.178	36.223	0.8	A572-65	0.963
29	34.75 - 32.25	2.5		12	36.223	36.673	0.8	A572-65	0.957
30	32.25 - 32	0.25		12	36.673	36.718	0.925	A572-65	0.982
31	32 - 31.833	0.167		12	36.718	36.748	0.925	A572-65	0.982
32	31.833 - 31.483	0.35		12	36.748	36.811	0.55	A572-65	1.065
33	31.483 - 31.25	0.233		12	36.811	36.853	0.54375	A572-65	1.077
34	31.25 - 26.25	5		12	36.853	37.754	0.5375	A572-65	1.080
35	26.25 - 21.25	5		12	37.754	38.654	0.5375	A572-65	1.071
36	21.25 - 16.25	5		12	38.654	39.554	0.53125	A572-65	1.074
37	16.25 - 11.25	5		12	39.554	40.454	0.525	A572-65	1.079
38	11.25 - 6.25	5		12	40.454	41.355	0.525	A572-65	1.071
39	6.25 - 1.25	5		12	41.355	42.255	0.51875	A572-65	1.076
40	1.25 - 0	1.25		12	42.255	42.480	0.51875	A572-65	1.074

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	130 - 125	2.60	23.88	5.46
2	125 - 120.5	3.57	52.61	7.46
3	120.5 - 120	3.62	56.35	7.49
4	120 - 115	7.24	112.38	12.25
5	115 - 110	7.70	175.00	12.81
6	110 - 105	11.65	273.99	19.25
7	105 - 100	12.22	371.57	19.80
8	100 - 95	12.82	471.88	20.34
9	95 - 91.5	13.27	543.72	20.73
10	91.5 - 91.25	13.33	548.90	20.76
11	91.25 - 86.25	14.27	654.59	21.53
12	86.25 - 81.25	15.25	764.14	22.31
13	81.25 - 80.75	15.35	775.30	22.36
14	80.75 - 75.75	17.07	888.88	23.06
15	75.75 - 70.75	18.21	1005.66	23.67
16	70.75 - 65.75	19.33	1126.66	24.99
17	65.75 - 63	19.98	1196.02	25.46
18	63 - 62.733	20.07	1202.82	25.51
19	62.733 - 62.583	20.12	1206.65	25.54
20	62.583 - 61.5	20.44	1234.40	25.73
21	61.5 - 61.25	20.51	1240.84	25.77
22	61.25 - 56.25	21.72	1371.69	26.58
23	56.25 - 51.25	22.98	1506.05	27.18
24	51.25 - 46.25	24.34	1643.61	27.85
25	46.25 - 42.25	25.38	1756.24	28.48
26	42.25 - 36.75	28.43	1915.66	29.49
27	36.75 - 35	29.10	1967.52	29.80
28	35 - 34.75	29.21	1974.97	29.83
29	34.75 - 32.25	30.19	2050.10	30.29
30	32.25 - 32	30.32	2057.68	30.32
31	32 - 31.833	30.40	2062.74	30.35
32	31.833 - 31.483	30.51	2073.38	30.41
33	31.483 - 31.25	30.59	2080.47	30.45
34	31.25 - 26.25	32.22	2234.57	31.21
35	26.25 - 21.25	33.90	2391.80	31.71
36	21.25 - 16.25	35.61	2551.44	32.18
37	16.25 - 11.25	37.35	2713.34	32.62
38	11.25 - 6.25	39.09	2877.41	33.05
39	6.25 - 1.25	40.84	3043.65	33.48
40	1.25 - 0	41.26	3085.55	33.60

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
130 - 125	Pole	TP18x18x0.375	Pole	7.8%	Pass
125 - 120.5	Pole	TP18x18x0.375	Pole	17.0%	Pass
120.5 - 120	Pole	TP22x22x0.375	Pole	12.1%	Pass
120 - 115	Pole	TP22.9x22x0.25	Pole	18.4%	Pass
115 - 110	Pole	TP23.8x22.9x0.25	Pole	26.6%	Pass
110 - 105	Pole	TP24.701x23.8x0.25	Pole	39.1%	Pass
105 - 100	Pole	TP25.601x24.701x0.25	Pole	49.8%	Pass
100 - 95	Pole	TP26.501x25.601x0.25	Pole	59.6%	Pass
95 - 91.5	Pole	TP27.131x26.501x0.25	Pole	66.1%	Pass
91.5 - 91.25	Pole + Reinf.	TP27.176x27.131x0.4875	Reinf. 6 Tension Rupture	49.2%	Pass
91.25 - 86.25	Pole + Reinf.	TP28.077x27.176x0.475	Reinf. 6 Tension Rupture	55.8%	Pass
86.25 - 81.25	Pole + Reinf.	TP28.977x28.077x0.475	Reinf. 6 Tension Rupture	62.0%	Pass
81.25 - 80.75	Pole + Reinf.	TP29.742x28.977x0.4688	Reinf. 6 Tension Rupture	62.6%	Pass
80.75 - 75.75	Pole + Reinf.	TP29.467x28.567x0.5375	Reinf. 6 Tension Rupture	62.0%	Pass
75.75 - 70.75	Pole + Reinf.	TP30.367x29.467x0.525	Reinf. 6 Tension Rupture	66.8%	Pass
70.75 - 65.75	Pole + Reinf.	TP31.267x30.367x0.5125	Reinf. 6 Tension Rupture	71.3%	Pass
65.75 - 63	Pole + Reinf.	TP31.762x31.267x0.5125	Reinf. 6 Tension Rupture	73.8%	Pass
63 - 62.73	Pole + Reinf.	TP31.81x31.762x0.725	Reinf. 3 Tension Rupture	53.7%	Pass
62.73 - 62.58	Pole + Reinf.	TP31.837x31.81x0.725	Reinf. 3 Tension Rupture	53.8%	Pass
62.58 - 61.5	Pole + Reinf.	TP32.032x31.837x0.7125	Reinf. 3 Tension Rupture	54.6%	Pass
61.5 - 61.25	Pole + Reinf.	TP32.077x32.032x0.5125	Reinf. 3 Tension Rupture	75.3%	Pass
61.25 - 56.25	Pole + Reinf.	TP32.977x32.077x0.5	Reinf. 3 Tension Rupture	79.6%	Pass
56.25 - 51.25	Pole + Reinf.	TP33.878x32.977x0.5	Reinf. 3 Tension Rupture	83.6%	Pass
51.25 - 46.25	Pole + Reinf.	TP34.778x33.878x0.4938	Reinf. 3 Tension Rupture	87.3%	Pass
46.25 - 42.25	Pole + Reinf.	TP36.308x34.778x0.4875	Reinf. 3 Tension Rupture	90.2%	Pass
42.25 - 36.75	Pole + Reinf.	TP35.863x34.873x0.8	Reinf. 3 Tension Rupture	60.3%	Pass
36.75 - 35	Pole + Reinf.	TP36.178x35.863x0.8	Reinf. 3 Tension Rupture	61.1%	Pass
35 - 34.75	Pole + Reinf.	TP36.223x36.178x0.8	Reinf. 3 Tension Rupture	61.1%	Pass
34.75 - 32.25	Pole + Reinf.	TP36.673x36.223x0.8	Reinf. 3 Tension Rupture	62.3%	Pass
32.25 - 32	Pole + Reinf.	TP36.718x36.673x0.925	Reinf. 2 Tension Rupture	54.8%	Pass
32 - 31.83	Pole + Reinf.	TP36.748x36.718x0.925	Reinf. 2 Tension Rupture	54.9%	Pass
31.83 - 31.48	Pole + Reinf.	TP36.811x36.748x0.55	Reinf. 1 Tension Rupture	81.3%	Pass
31.48 - 31.25	Pole + Reinf.	TP36.853x36.811x0.5438	Reinf. 1 Tension Rupture	81.4%	Pass
31.25 - 26.25	Pole + Reinf.	TP37.754x36.853x0.5375	Reinf. 1 Tension Rupture	83.9%	Pass
26.25 - 21.25	Pole + Reinf.	TP38.654x37.754x0.5375	Reinf. 1 Tension Rupture	86.3%	Pass
21.25 - 16.25	Pole + Reinf.	TP39.554x38.654x0.5313	Reinf. 1 Tension Rupture	88.6%	Pass
16.25 - 11.25	Pole + Reinf.	TP40.454x39.554x0.525	Reinf. 1 Tension Rupture	90.6%	Pass
11.25 - 6.25	Pole + Reinf.	TP41.355x40.454x0.525	Reinf. 1 Tension Rupture	92.6%	Pass
6.25 - 1.25	Pole + Reinf.	TP42.255x41.355x0.5188	Reinf. 1 Tension Rupture	94.4%	Pass
1.25 - 0	Pole + Reinf.	TP42.48x42.255x0.5188	Reinf. 1 Tension Rupture	94.8%	Pass
				Summary	
			Pole	78.9%	Pass
			Reinforcement	94.8%	Pass
			Overall	94.8%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*						
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6
130 - 125	807	n/a	807	20.76	n/a	20.76	7.8%						
125 - 120.5	807	n/a	807	20.76	n/a	20.76	17.0%						
120.5 - 120	1490	n/a	1490	25.48	n/a	25.48	12.1%						
120 - 115	1196	n/a	1196	18.21	n/a	18.21	18.4%						
115 - 110	1344	n/a	1344	18.93	n/a	18.93	26.6%						
110 - 105	1504	n/a	1504	19.65	n/a	19.65	39.1%						
105 - 100	1676	n/a	1676	20.38	n/a	20.38	49.8%						
100 - 95	1861	n/a	1861	21.10	n/a	21.10	59.6%						
95 - 91.5	1999	n/a	1999	21.61	n/a	21.61	66.1%						
91.5 - 91.25	2009	1814	3823	21.64	18.00	39.64	33.9%						49.2%
91.25 - 86.25	2217	1930	4147	22.37	18.00	40.37	39.0%						55.8%
86.25 - 81.25	2439	2050	4489	23.09	18.00	41.09	44.0%						62.0%
81.25 - 80.75	2462	2062	4524	23.16	18.00	41.16	44.5%						62.6%
80.75 - 75.75	3187	2116	5303	29.29	18.00	47.29	40.5%						62.0%
75.75 - 70.75	3492	2242	5733	30.20	18.00	48.20	44.1%						66.8%
70.75 - 65.75	3815	2370	6185	31.10	18.00	49.10	47.6%						71.3%
65.75 - 63	4001	2443	6444	31.60	18.00	49.60	49.6%						73.8%
63 - 62.73	4019	4900	8919	31.65	36.00	67.65	36.1%			53.7%	53.7%		53.7%
62.73 - 62.58	4029	4908	8937	31.68	36.00	67.68	36.2%			53.8%	53.8%		53.8%
62.58 - 61.5	4105	4966	9070	31.87	36.00	67.87	36.8%			54.6%	54.6%		54.6%
61.5 - 61.25	4122	2490	6612	31.92	18.00	49.92	50.8%			75.3%	75.3%		
61.25 - 56.25	4483	2625	7108	32.82	18.00	50.82	54.3%			79.6%	79.6%		
56.25 - 51.25	4863	2765	7628	33.73	18.00	51.73	57.7%			83.6%	83.6%		
51.25 - 46.25	5265	2908	8173	34.63	18.00	52.63	61.0%			87.3%	87.3%		
46.25 - 42.25	5602	3025	8627	35.35	18.00	53.35	63.7%			90.2%	90.2%		
42.25 - 36.75	6898	7326	14224	42.79	42.38	85.17	39.7%			60.3%	60.3%	59.5%	
36.75 - 35	7083	7451	14534	43.17	42.38	85.55	40.4%			61.1%	61.1%	60.3%	
35 - 34.75	7112	7663	14775	43.22	44.50	87.72	40.5%		56.0%	61.1%		60.4%	
34.75 - 32.25	7383	7847	15230	43.77	44.50	88.27	41.5%		57.1%	62.3%		61.5%	
32.25 - 32	7452	10136	17588	43.82	60.75	104.57	38.7%	48.0%	54.8%	51.2%		52.6%	
32 - 31.83	7471	10151	17622	43.86	60.75	104.61	38.7%	48.1%	54.9%	51.3%		52.6%	
31.83 - 31.48	7515	3215	10731	43.93	24.38	68.31	64.1%	81.3%	76.1%				
31.48 - 31.25	7541	3222	10764	43.98	24.38	68.36	64.3%	81.4%	76.2%				
31.25 - 26.25	8112	3375	11487	45.07	24.38	69.45	66.8%	83.9%	78.6%				
26.25 - 21.25	8710	3532	12242	46.16	24.38	70.53	69.3%	86.3%	81.0%				
21.25 - 16.25	9337	3693	13030	47.24	24.38	71.62	71.7%	88.6%	83.1%				
16.25 - 11.25	9994	3857	13851	48.33	24.38	72.70	73.9%	90.6%	85.2%				
11.25 - 6.25	10681	4024	14705	49.41	24.38	73.79	76.2%	92.6%	87.1%				
6.25 - 1.25	11398	4196	15594	50.50	24.38	74.87	78.3%	94.4%	88.8%				
1.25 - 0	11583	4239	15822	50.77	24.38	75.14	78.9%	94.8%	89.3%				

Note: Section capacity checked in 5 degree increments.
Rating per TIA-222-H Section 15.5.

Monopole Flange Plate Connection

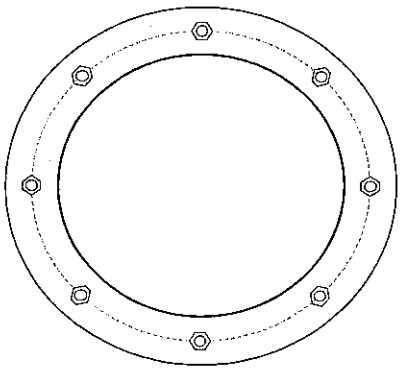
Elevation = 120 ft.

BU #	876322
Site Name	Tartaglia Property
Order #	461165 Rev. 0

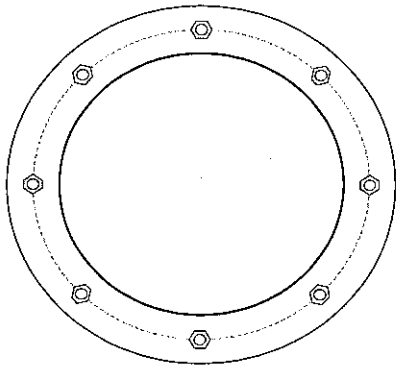
TIA-222 Revision	H

Applied Loads	
Moment (kip-ft)	56.30
Axial Force (kips)	3.64
Shear Force (kips)	7.49

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(8) 7/8" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 26" BC

Top Plate Data

30" OD x 1" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Plate Data

30" OD x 1" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

22" x 0.375" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Bottom Pole Data

22" x 0.25" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	12.53	
Allowable (kips)	41.56	
Stress Rating:	**28.7%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	7.76	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**16.4%**	**Pass**
Tension Side Stress Rating:	**7.8%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	7.76	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**16.4%**	**Pass**
Tension Side Stress Rating:	**7.8%**	**Pass**

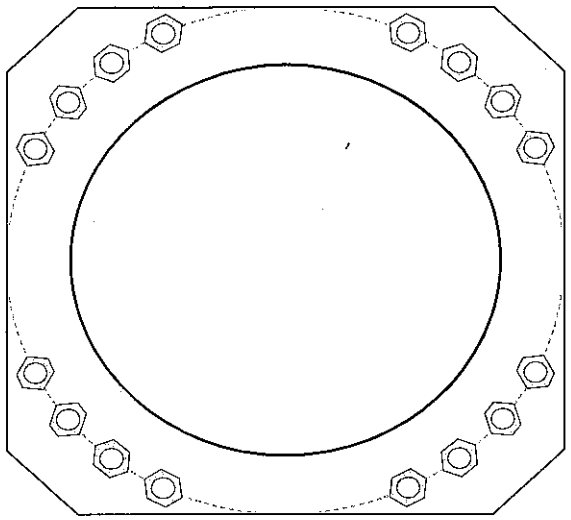
Monopole Base Plate Connection

CROWN CASTLE

Site Info	
BU #	876322
Site Name	Tartaglia Property
Order #	461165 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.25

Applied Loads	
Moment (kip-ft)	2928.84
Axial Force (kips)	41.27
Shear Force (kips)	31.02



Connection Properties

Anchor Rod Data

(16) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 55" BC

Base Plate Data

55" OD x 3.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

N/A

Pole Data

42.48" x 0.375" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu = 162.22	ϕPn = 243.75	**Stress Rating**
Vu = 1.94	ϕVn = 73.13	**63.5%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	31.82	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**67.3%**	**Pass**

Drilled Pier Foundation

BU # :	876322
Site Name:	Tartaglia Property
Order Number:	461165 Rev. 0

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	**Comp.**	**Uplift**
Moment (kip-ft)	2928.84	
Axial Force (kips)	41.27	
Shear Force (kips)	31.02	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	24	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 24' below grade		
Pier Diameter	7	ft
Rebar Quantity	32	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	5	

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	7.37	-
Soil Safety Factor	3.28	-
Max Moment (kip-ft)	3133.92	-
Rating*	*38.6%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	435.78	-
End Bearing (kips)	923.63	-
Weight of Concrete (kips)	129.37	-
Total Capacity (kips)	1359.40	-
Axial (kips)	170.64	-
Rating*	*12.0%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	7.24	-
Critical Moment (kip-ft)	3133.76	-
Critical Moment Capacity	7516.22	-
Rating*	*39.7%*	-

Soil Interaction Rating*	**38.6%**
Structural Foundation Rating*	**39.7%**

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☑

Soil Profile				
Groundwater Depth	10	ft	# of Layers	4

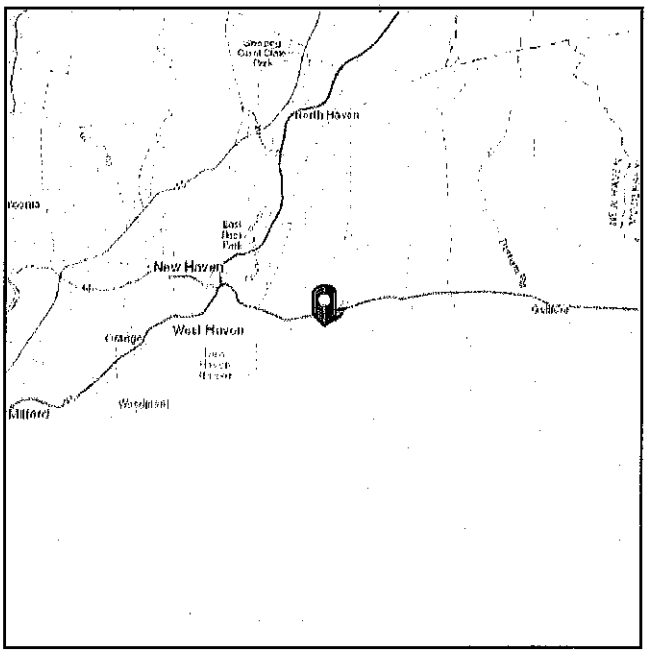
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	5	5	120	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	5	10	5	120	150	0	35	1.017	1.017				23	Cohesionless
3	10	20	10	60	87.6	0	40	1.466	1.466				80	Cohesionless
4	20	24	4	63	87.6	0	43	1.669	1.669			32	46	Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 49.82 ft (NAVD 88)
Latitude: 41.27783
Longitude: -72.83686



Wind

Results:

Wind Speed:	127 Vmph	As per WSEL R-268 & Appendix N Municipality - Specific Structural Design Parameters, the city requires an Ultimate 3-second gust of 130 mph
10-year MRI	78 Vmph	
25-year MRI	88 Vmph	
50-year MRI	95 Vmph	
100-year MRI	103 Vmph	

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014

Date Accessed: Wed Oct 03 2018

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

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

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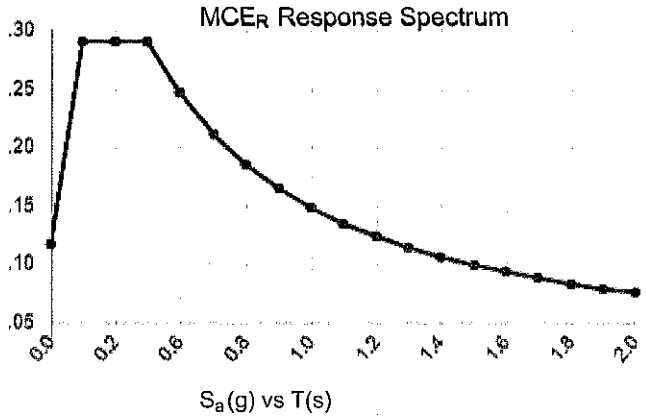
Seismic

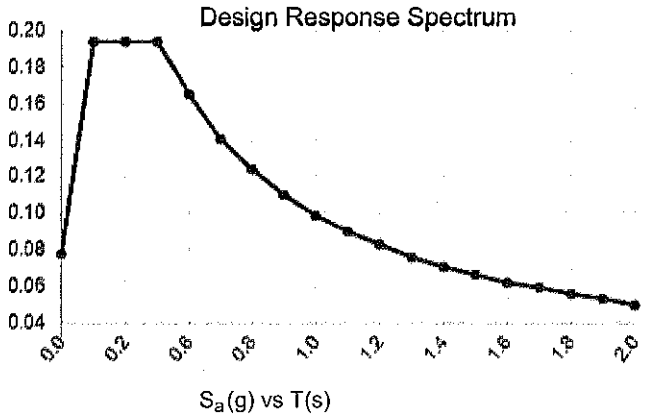
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.181	S_{DS} :	0.193
S_1 :	0.061	S_{D1} :	0.098
F_a :	1.600	T_L :	6.000
F_v :	2.400	PGA :	0.094
S_{MS} :	0.289	PGA_M :	0.150
S_{M1} :	0.147	F_{PGA} :	1.600
		I_e :	1

Seismic Design Category B





Data Accessed: Wed Oct 03 2018

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

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Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Oct 03 2018

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Site Name: *BRANFORD SW CT*
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW 700	746	1	1271	1271	110	0.0378	0.4973	7.60%
VZW Cellular	876	3	279	836	110	0.0249	0.5840	4.26%
VZW 850 LTE	869	1	1451	1451	110	0.0431	0.5793	7.44%
VZW PCS	1970	1	3004	3004	110	0.0893	1.0000	8.93%
VZW AWS	2145	1	3070	3070	110	0.0912	1.0000	9.12%
Total Percentage of Maximum Permissible Exposure								37.35%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case maximum values used.