CROWN CASTLE
Crown Castle
3530 Toringdon Way Suite 300
Charlotte NC 28277
Tel (704) 405-6600

August 11, 2015

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

RE: **T-Mobile-Exempt Modification - Crown Site BU: 842873**
T-Mobile Site ID: CTFF531A
Located at: 30 Oliver Terrace, Shelton, CT 06484

Dear Ms. Bachman:

This letter and exhibits are submitted on behalf of T-Mobile. T-Mobile is making modifications to certain existing sites in its Connecticut system in order to implement their 700MHz technology. Please accept this letter and exhibits as notification, pursuant to § 16-50j-73 of the Regulations of Connecticut State Agencies ("R.C.S.A."), of construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In compliance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to The Honorable Mark A. Lauretti, Mayor for the City of Shelton and Brennan Realty LLC, Property Owner.

T-Mobile plans to modify the existing wireless communications facility owned by Crown Castle and located at **30 Oliver Terrace, Shelton, CT 06484.** Attached are a compound plan and elevation depicting the planned changes (Exhibit-1), and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration (Exhibit-2). Also included is a power density table report reflecting the modification to T-Mobile's operations at the site (Exhibit-3).

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") § 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in the R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. T-Mobile's replacement antennas will be located at the same elevation on the existing tower.

2. There will be no proposed modifications to the ground and no extension of boundaries.

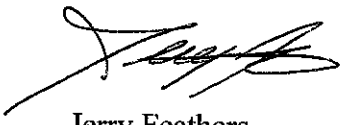
3. The proposed modifications will not increase noise levels at the facility by six decibels or more.

4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. A cumulative General Power Density table report for T-Mobile's modified facility is included as Exhibit-3.

5. A Structural Modification Report confirming that the tower and foundation can support T-Mobile's proposed modifications is included as Exhibit-2.

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

Sincerely,



Jerry Feathers
Real Estate Specialist

Enclosure

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

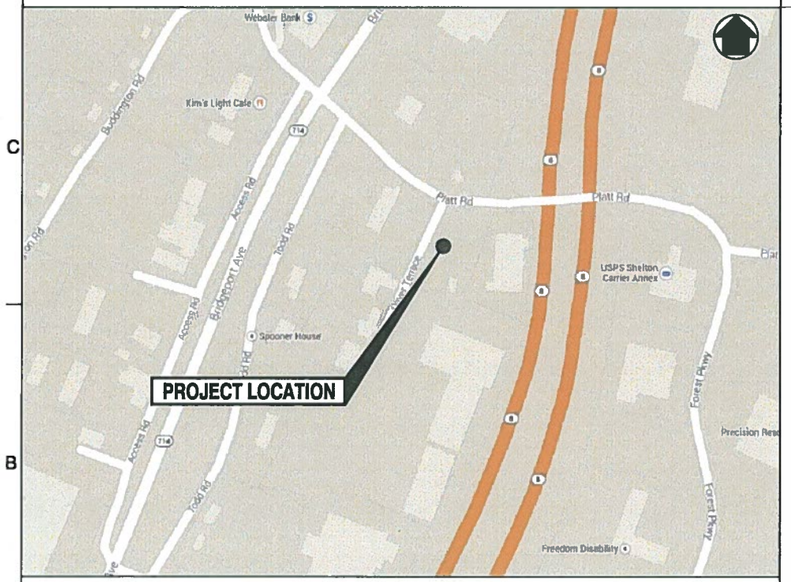
cc: The Honorable Mark A. Lauretti, Mayor
City Hall, Room 202
54 Hill Street
Shelton CT, 06484

cc: Brennan Realty LLC
70 Platt Rd
P.O. Box 788
Shelton, CT 06484

T-MOBILE NORTHEAST LLC

T-MOBILE SITE #: CTFF531A
CROWN CASTLE BU #: 842873
SITE NAME: SHELTON NE
30 OLIVER TERRACE
SHELTON, CT 06484
FAIRFIELD COUNTY

SITE INFORMATION



KEY MAP
N.T.S.

DIRECTIONS: (FROM PARSIPPANY):

HEAD NORTHWEST ON SYLVAN WAY. TURN RIGHT ONTO US-202 N. CONTINUE STRAIGHT ONTO LITTLETON RD. TAKE THE RAMP ONTO I-287 N. TAKE THE I-87 S/I-287/NEW YORK THRUWAY EXIT TOWARD TAPPAN ZEE BR/NEW YORK CITY. MERGE ONTO I-287 E/I-87 S. KEEP LEFT AT THE FORK TO CONTINUE ON I-287 E, FOLLOW SIGNS FOR WHITE PLAINS/RYE. TAKE EXIT 9N-9S FOR HUTCHINSON PKWY TOWARD WHITESTONE BRIDGE/MERRITT PKWY. MERGE ONTO WESTCHESTER AVE E. TAKE THE HUTCHINSON PKWY N RAMP TO MERRITT PKWY. MERGE ONTO HUTCHINSON RIVER PKWY N. KEEP RIGHT AT THE FORK TO STAY ON HUTCHINSON RIVER PKWY N. CONTINUE ONTO CT-15 N. TAKE EXIT 52 FOR STATE ROUTE 8 N TOWARD WATERBURY. MERGE ONTO CT-8 N. TAKE EXIT 12 FOR OLD STRATFORD RD. TURN LEFT ONTO OLD STRATFORD RD. TURN RIGHT ONTO BRIDGEPORT AVE. TURN RIGHT ONTO PLATT RD. TAKE THE 2ND RIGHT ONTO OLIVER TERRACE.

PROJECT INFORMATION

T-MOBILE SITE #:	CTFF531A
CROWN CASTLE BU #:	842873
SITE ADDRESS:	30 OLIVER TERRACE SHELTON, CT 06484 FAIRFIELD COUNTY
LATITUDE:	41°-17'-38.21" N
LONGITUDE:	73°-06'-25.83" W
TOWER OWNER:	CROWN CASTLE 3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065
CONTACT:	TRICIA PELON (518) 373-3507
APPLICANT:	T-MOBILE NORTHEAST, LLC 4 SYLVAN WAY PARSIPPANY, NJ 07054
CONTACT:	PHONE #: (973) 397-4800 FAX #: (973) 292-8893
ENGINEER:	DEWBERRY ENGINEERS INC 600 PARSIPPANY ROAD, SUITE 301 PARSIPPANY, NJ 07054
CONTACT:	BRYAN HUFF (973) 576-0147
SCOPE OF WORK:	INSTALL (3) NEW ANTENNAS, INSTALL (3) NEW BIAS TEES, INSTALL (3) NEW RRU'S ON A UNISTRUT RACK AT GRADE

CONFIGURATION
704Bu

SHEET INDEX

SHEET NO.	SHEET DESCRIPTION
T-1	TITLE SHEET
G-1	GENERAL NOTES
C-1	COMPOUND PLAN & EQUIPMENT PLANS
C-2	ANTENNA LAYOUTS & ELEVATIONS
C-3	CONSTRUCTION DETAILS
E-1	GROUNDING NOTES & DETAILS

APPROVALS

T-MOBILE — DATE

OWNER/ LANDLORD — DATE

RF ENGINEER — DATE

ZONING — DATE

CONSTRUCTION — DATE

Dewberry
Dewberry Engineers Inc.
600 PARSIPPANY ROAD
SUITE 301
PARSIPPANY, NJ 07054
PHONE: 973.739.9400
FAX: 973.739.9710

T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054
PHONE: (973) 397-4800
FAX: (973) 292-8893

SHELTON NE

CTFF531A

30 OLIVER TERRACE
SHELTON, CT 06484
FAIRFIELD COUNTY

SEAL

SCALE
AS SHOWN

REV.	DATE	BY	DESCRIPTION
3	07/23/15	RA	ISSUED AS FINAL
2	06/04/15	RA	ISSUED AS FINAL
1	06/01/15	RA	ISSUED AS FINAL
0	05/01/15	RA	ISSUED AS FINAL
C	04/24/15	RA	REVISED PER COMMENTS
B	04/13/15	RA	ISSUED FOR REVIEW
A	11/13/14	FG	ISSUED FOR REVIEW

REVISIONS

DRAWN BY FG
CHECKED BY BSH
APPROVED BY GHN
DATE 11/03/14

TITLE

TITLE SHEET

PROJECT NO. 50066258/50070376

T - 1

SHEET NO.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   PROJECT MANAGEMENT – CROWN CASTLE
   CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – T–MOBILE
   OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT MANAGEMENT.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
5. DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PROJECT MANAGEMENT.
9. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH PROJECT MANAGEMENT.
10. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
14. CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
15. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY PROJECT MANAGEMENT OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
16. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
17. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO:
   A) FALL PROTECTION
   B) CONFINED SPACE
   C) ELECTRICAL SAFETY
   D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
6. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T–MOBILE SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE SOIL COMPACTION NOTES.
11. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
12. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
2. CONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. CONTRACTOR SHALL SUBMIT MODIFICATIONS TO PROJECT MANAGEMENT FOR APPROVAL.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
5. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
6. CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.
7. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.
8. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
9. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
10. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
11. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
12. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL.) PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.
13. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
14. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
15. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
16. ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
17. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
18. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
19. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
20. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
21. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
22. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
23. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
24. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
25. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
26. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
27. WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
28. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
29. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
30. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
31. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM PROJECT MANAGEMENT BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
32. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE (UNO). SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF.....1 1/2 IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.

5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
   FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
8. AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"Ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
   CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T–MOBILE ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.
2. COORDINATION OF WORK:
   CONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH PROJECT MANAGEMENT.
3. CABLE LADDER RACK:
   CONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.
4. GROUNDING OF ALL EQUIPMENT AND ANTENNAS IS NOT CONSIDERED PART OF THE SCOPE OF THIS PROJECT AND IS THE RESPONSIBILITY OF THE OWNER AND CONTRACTOR AT THE TIME OF CONSTRUCTION. ALL EQUIPMENT AND ANTENNAS TO BE INSTALLED AND GROUNDED IN ACCORDANCE WITH GOVERNING BUILDING CODE, MANUFACTURER RECOMMENDATIONS AND OWNER SPECIFICATIONS.

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SEAL

SCALE

AS SHOWN

REV.	DATE	BY	DESCRIPTION
3	07/23/15	RA	ISSUED AS FINAL
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C	04/24/15	RA	REVISED PER COMMENTS
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A	11/13/14	FG	ISSUED FOR REVIEW

REVISIONS

DRAWN BY FG
CHECKED BY BSH
APPROVED BY GHN
DATE 11/03/14

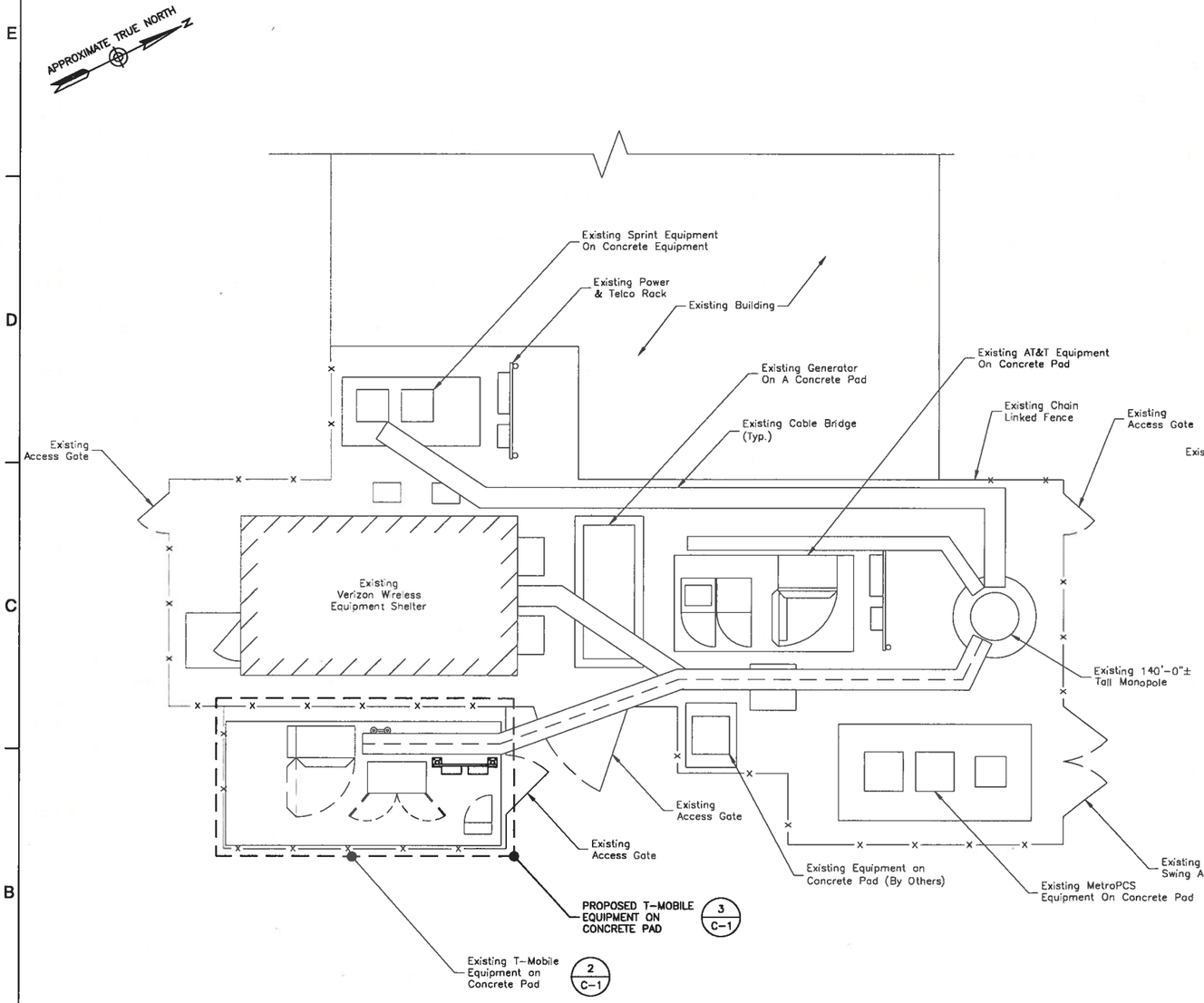
TITLE

GENERAL NOTES

PROJECT NO. 50066258/50070376

G - 1

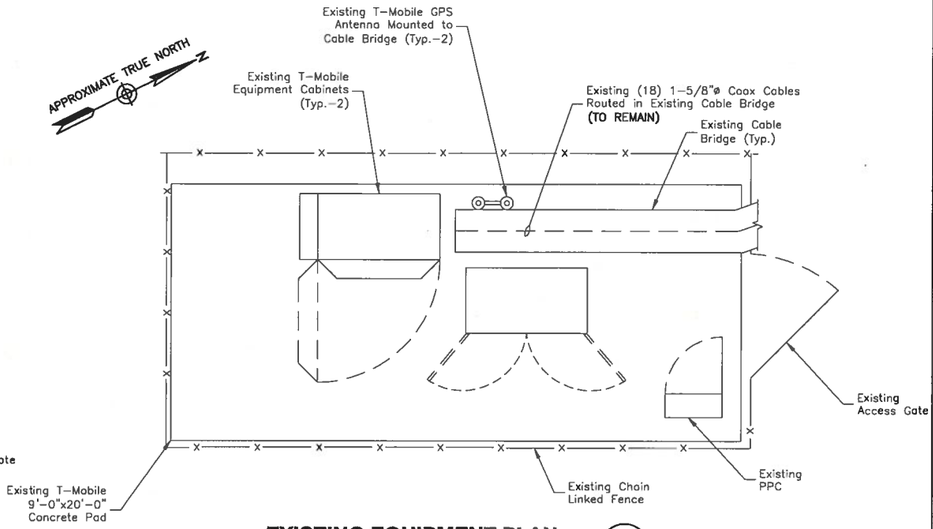
SHEET NO.



COMPOUND PLAN 1

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

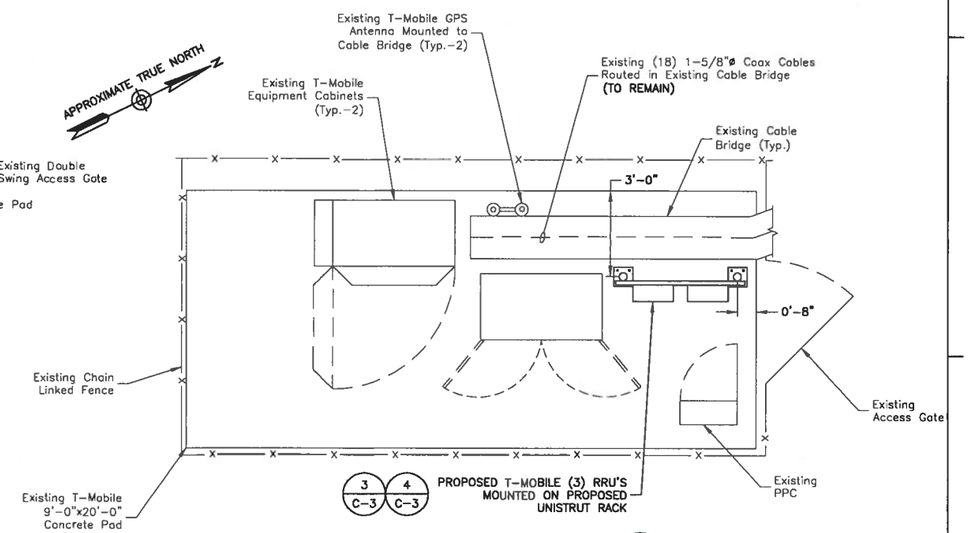
0' 5' 10'



EXISTING EQUIPMENT PLAN 2

SCALE: 3/16"=1' FOR 11"x17"
3/8"=1' FOR 22"x34"

0' 2' 4' 6'



PROPOSED EQUIPMENT PLAN 3

SCALE: 3/16"=1' FOR 11"x17"
3/8"=1' FOR 22"x34"

0' 2' 4' 6'

NOTES:

1. NORTH SHOWN AS APPROXIMATE.
2. NOT ALL INFORMATION IS SHOWN FOR CLARITY.
3. ALL PROPOSED EQUIPMENT, INCLUDING ANTENNAS, BIAS TEES, COAX, ETC., SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS AND MODIFICATION DRAWINGS BY FDH VELOCITEL DATED JULY 15, 2015.

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REVISIONS

DRAWN BY FG
CHECKED BY BSH
APPROVED BY GHN
DATE 11/03/14

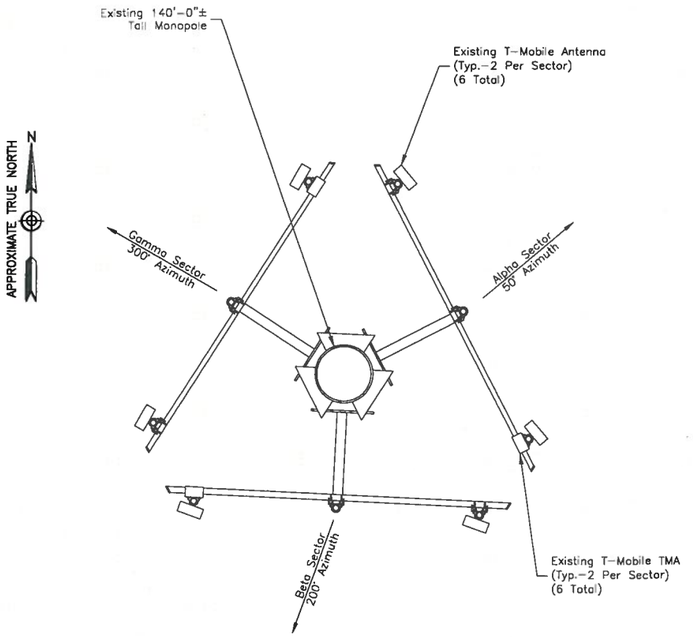
TITLE

COMPOUND PLAN & EQUIPMENT PLANS

PROJECT NO. 50066258/50070376

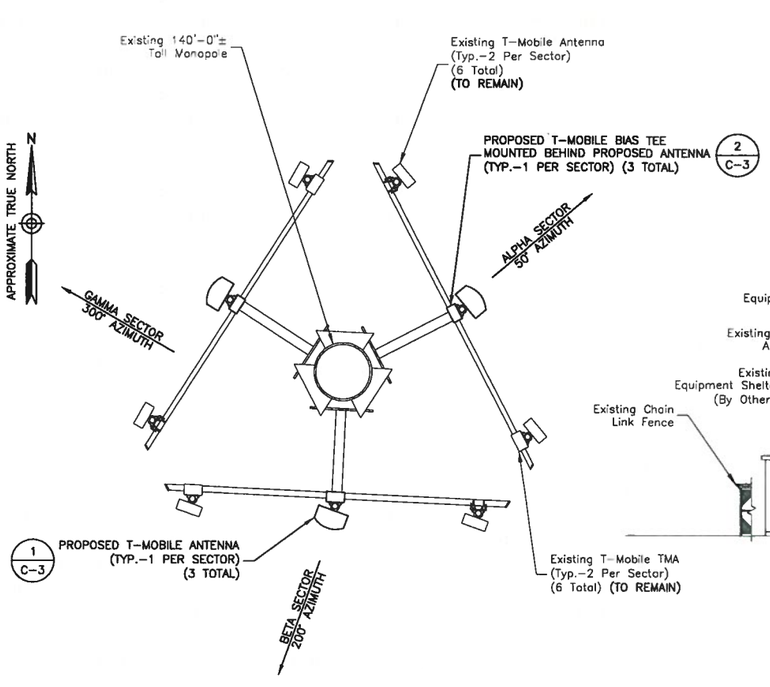
C - 1

SHEET NO.



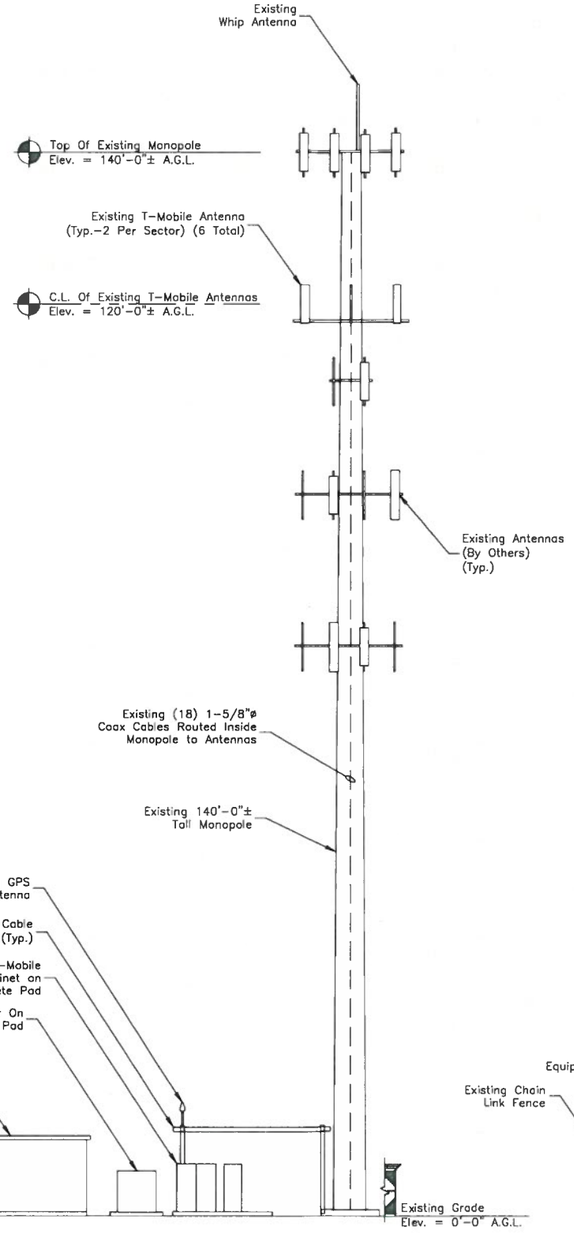
EXISTING ANTENNA LAYOUT (1)

SCALE: N.T.S.



PROPOSED ANTENNA LAYOUT (2)

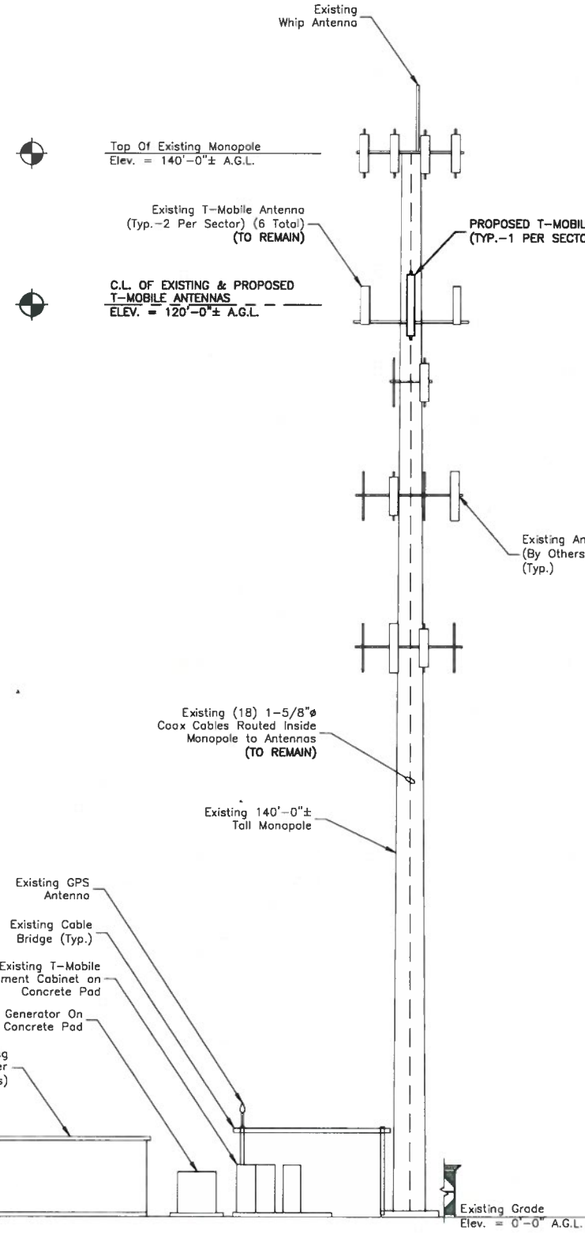
SCALE: N.T.S.



EXISTING ELEVATION (3)

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

0' 10' 20'



PROPOSED ELEVATION (4)

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

0' 10' 20'

NOTES:

1. ALL PROPOSED EQUIPMENT, INCLUDING ANTENNAS, BIAS TEES, COAX, ETC., SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS AND MODIFICATION DRAWINGS BY FDH ENGINEERING, INC DATED MARCH 24, 2015.
2. ALL PROPOSED EQUIPMENT, INCLUDING ANTENNAS, BIAS TEES, COAX, ETC., SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS AND MODIFICATION DRAWINGS BY FDH VELOCITEL DATED JULY 15, 2015.

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APPROVED BY GHN
DATE 11/03/14

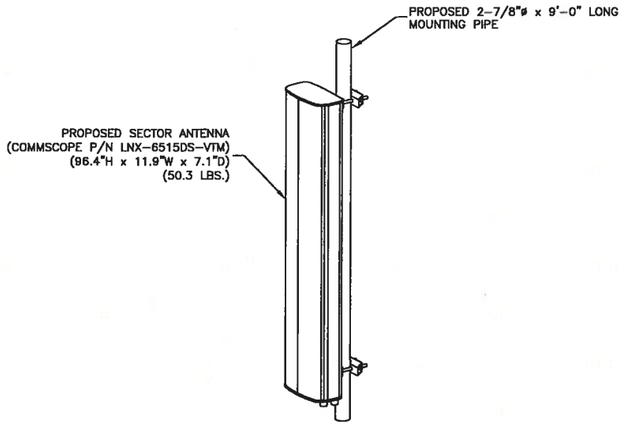
TITLE

ANTENNA LAYOUTS & ELEVATIONS

PROJECT NO. 50066258/50070376

C - 2

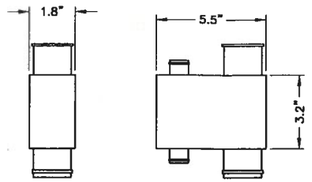
SHEET NO.



NOTES:

1. MOUNT ANTENNAS PER MANUFACTURER'S RECOMMENDATIONS.
2. GROUND ANTENNAS AND MOUNTS PER MANUFACTURER'S RECOMMENDATIONS AND T–MOBILE STANDARDS.
3. CONFIRM REQUIRED ANTENNAS WITH THE LATEST RFDS.

ISOMETRIC ANTENNA DETAIL (1)
SCALE: N.T.S.

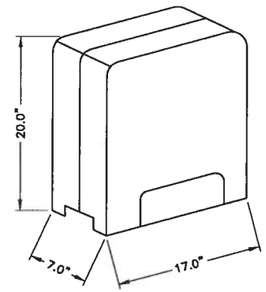


KATHREIN 78211066

NOTES:

1. MOUNT EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
2. GROUND EQUIPMENT AND MOUNTS PER MANUFACTURER'S RECOMMENDATIONS AND T–MOBILE STANDARDS.
3. CONFIRM REQUIRED EQUIPMENT WITH THE LATEST RFDS.

BIAS TEE DETAIL (2)
SCALE: N.T.S.



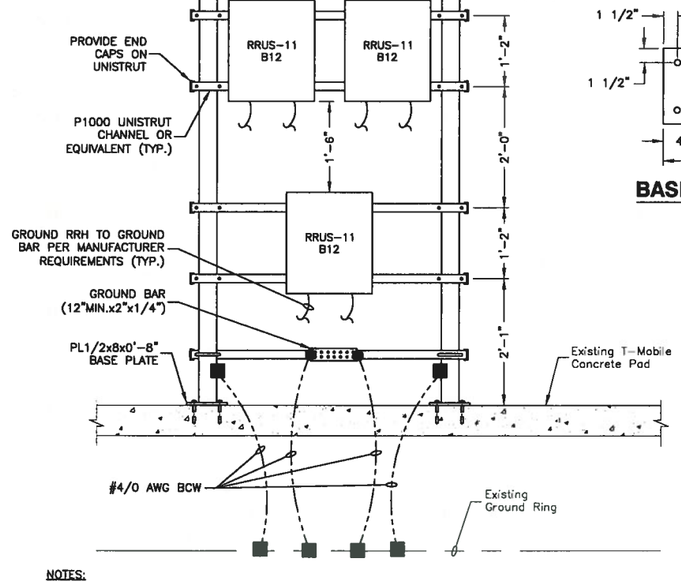
SPECIFICATIONS:	
HEIGHT:	20.0"
WIDTH:	17.0"
DEPTH:	7.0"
WEIGHT:	50.7 LBS

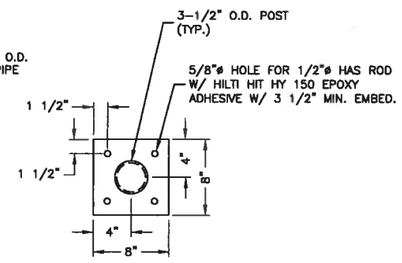
ERICSSON RRUS–11 B12

RRU NOTES:

1. MOUNT EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
2. GROUND EQUIPMENT AND MOUNTS PER MANUFACTURER'S RECOMMENDATIONS AND T–MOBILE STANDARDS.
3. CONFIRM REQUIRED EQUIPMENT WITH THE LATEST RFDS.

RRUS-11 - REMOTE RADIO UNIT (3)
SCALE: N.T.S.





BASE PLATE

NOTES:

1. CONTRACTOR SHALL SUPPLY AND INSTALL UNISTRUT (OR EQUIVALENT) MOUNTING CHANNELS.
2. CONTRACTOR SHALL SUPPLY (BUT NOT INSTALL) 3/8"ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS. TYPICAL FOUR PER RRU. CONTRACTOR SHALL BAG THE BOLTING HARDWARE AND HANG FROM INSTALLED UNISTRUT FRAME.
3. SPACING MAY VARY BASED ON SELECTED EQUIPMENT. ADJUSTMENTS TO SPACING WILL BE MADE BY RRU INSTALLER.
4. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

RRU RACK DETAIL (4)
SCALE: N.T.S

DESIGN CONFIGURATION

	ANTENNAS		COAX		COAX LENGTH
	EXISTING	PROPOSED	EXISTING	PROPOSED	
ALPHA	RFS APX16PV–16PVL–E	EXISTING TO REMAIN	(6) 1–5/8"ø	—	170'–0
	—	COMMSCOPE LNX–6515DS–VTM			
	RFS APX16PV–16PVL–E	EXISTING TO REMAIN			
BETA	RFS APX16PV–16PVL–E	EXISTING TO REMAIN	(6) 1–5/8"ø	—	170'–0
	—	COMMSCOPE LNX–6515DS–VTM			
	RFS APX16PV–16PVL–E	EXISTING TO REMAIN			
GAMMA	RFS APX16PV–16PVL–E	EXISTING TO REMAIN	(6) 1–5/8"ø	—	170'–0
	—	COMMSCOPE LNX–6515DS–VTM			
	RFS APX16PV–16PVL–E	EXISTING TO REMAIN			

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REVISIONS

DRAWN BY FG
CHECKED BY BSH
APPROVED BY GHN
DATE 11/03/14

TITLE

CONSTRUCTION DETAILS

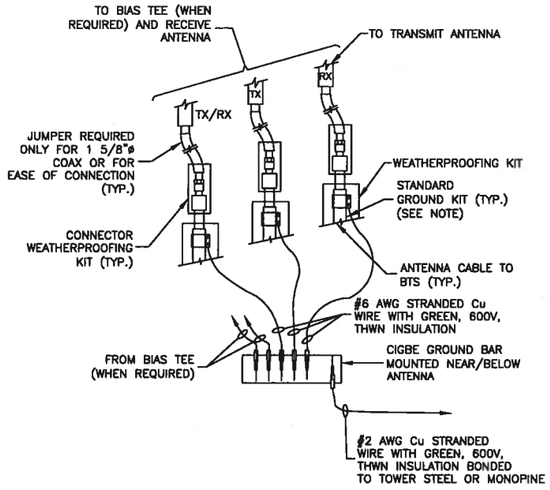
PROJECT NO. 50066258/50070376

C - 3

SHEET NO.

GROUNDING NOTES:

1. THE CONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE CONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE ENGINEER FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS. ALL AVAILABLE GROUNDING ELECTRODES SHALL BE CONNECTED TOGETHER IN ACCORDANCE WITH THE NEC.
3. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. USE OF OTHER METHODS MUST BE PRE-APPROVED BY THE ENGINEER IN WRITING.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES AND 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE AND ANY OTHER EXISTING ELECTRODE EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
6. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE AND UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
7. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO TRANSMISSION EQUIPMENT.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
11. EACH INTERIOR TRANSMISSION CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH 6 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
12. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
13. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM T-MOBILE MARKET REPRESENTATIVE.
14. EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTORS STRUCTURAL ENGINEER.
15. ALL WIRE TO WIRE GROUND CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE FORMED USING HIGH PRESS CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
16. ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTORS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT AND STRUCTURAL STEEL.
17. COAX BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS AND STAINLESS STEEL HARDWARE.
18. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
19. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
20. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
21. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER GROUND CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.
22. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT WITH LISTED BONDING FITTINGS.

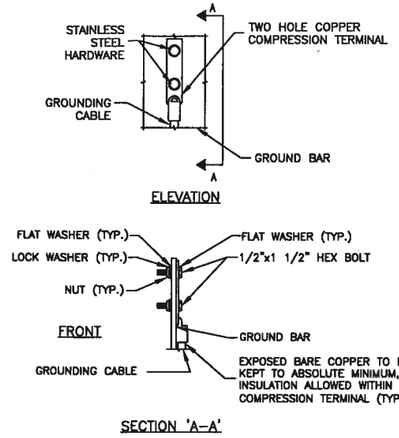


NOTE:

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

CONNECTION OF GROUND WIRES TO GROUNDING BAR (CIGBE)

SCALE: N.T.S. — 1



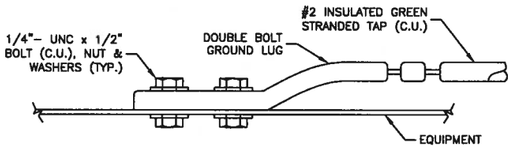
SECTION 'A-A'

NOTES:

1. DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

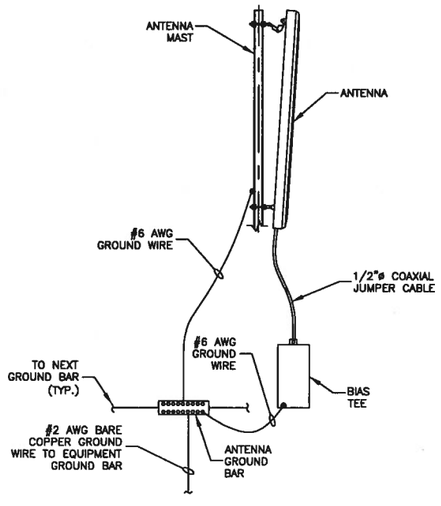
TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL

SCALE: N.T.S. — 2



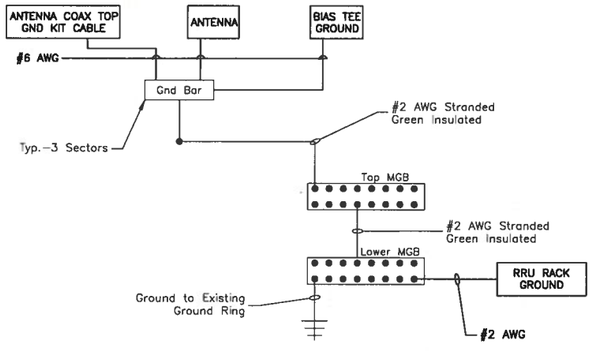
CONNECTION TO EQUIPMENT DETAIL

SCALE: N.T.S. — 3



TYPICAL ANTENNA GROUNDING DETAIL

SCALE: N.T.S — 4



NOTES:

1. BOND ANTENNA GROUNDING KIT CABLE TO TOP CIGBE
2. BOND ANTENNA GROUNDING KIT CABLE TO BOTTOM CIGBE.
3. SCHEMATIC GROUNDING DIAGRAM IS TYPICAL FOR EACH SECTOR.
4. VERIFY EXISTING GROUND SYSTEM IS INSTALLED PER T-MOBILE STANDARDS.

SCHEMATIC GROUNDING DIAGRAM

SCALE: N.T.S. — 5

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FAX: (973) 292-8893

SHELTON NE

CTFF531A

30 OLIVER TERRACE
SHELTON, CT 06484
FAIRFIELD COUNTY

SEAL

SCALE

AS SHOWN

REV.	DATE	BY	DESCRIPTION
3	07/23/15	RA	ISSUED AS FINAL
2	06/04/15	RA	ISSUED AS FINAL
1	06/01/15	RA	ISSUED AS FINAL
0	05/01/15	RA	ISSUED AS FINAL
C	04/24/15	RA	REVISED PER COMMENTS
B	04/13/15	RA	ISSUED FOR REVIEW
A	11/13/14	FG	ISSUED FOR REVIEW

REVISIONS

DRAWN BY FG
CHECKED BY BSH
APPROVED BY GHN
DATE 11/03/14

TITLE

GROUNDING NOTES & DETAILS

PROJECT NO. 50066258/50070376

E - 1

SHEET NO.

Date: **July 15, 2015**

Adam Winters
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Velocitel, Inc., d.b.a. FDH Velocitel
6521 Meridien Drive, Suite 107
Raleigh, North Carolina 27616
(919) 755-1012

Subject: Structural Modification Report

Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CTFF531A
	Carrier Site Name:	Shelton_Rt8 - AT&T
Crown Castle Designation:	**Crown Castle BU Number:**	842873
	Crown Castle Site Name:	SHELTON NE
	Crown Castle JDE Job Number:	314190
	Crown Castle Work Order Number:	1082003
	Crown Castle Application Number:	271495 Rev. 7
Engineering Firm Designation:	**FDH Velocitel Project Number:**	15BTZC1400
Site Data:	**30 Oliver Terrace, SHELTON, Fairfield County, CT** **Latitude *41° 17' 38.21"*, Longitude *-73° 6' 25.83"*** **140 Foot - Monopole Tower**	

Dear Adam Winters,

FDH Velocitel is pleased to submit this **"Structural Modification Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 800700, in accordance with application 271495, revision 7.

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:

LC4.5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code based upon a wind speed of 85 mph fastest mile.

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

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

Respectfully submitted by:

Drew Alexander, EI
Project Engineer

Reviewed by:

Dennis D. Abel, PE
Director of Structural Engineering
CT PE License No. 23247

07-15-2015

STATE OF CONNECTICUT
DENNIS D. ABEL
No. 23247
LICENSED
PROFESSIONAL ENGINEER

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 140 ft Monopole tower designed by FWT INC. in January of 2003. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F. The tower modifications outlined in the FDH Velocitel (Project No. 15BTZC1400) Modification Drawings for a 140' Monopole dated July 15, 2015 were considered in this analysis.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 85 mph with no ice, 38 mph with 0.75 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
120.0	120.0	3	commscope	ATBT-BOTTOM-24V	-	-	-
		3	commscope	LNX-6515DS-VTM w/ Mount Pipe			

Table 2 - Existing Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
138.0	145.0	1	andrew	DB636-C	13 1	1-5/8 7/8	1
	140.0	3	alcatel lucent	RRH2X40-AWS			
		3	amphenol	BXA-80063-6BF-EDIN-4 w/ Mount Pipe			
		6	antel	BXA-171063-8BF-2			
		3	antel	BXA-70063-6CF-2 w/ Mount Pipe			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		6	rfs celwave	FD9R6004/2C-3L			
	138.0	1	crown mounts	Platform Mount [LP 403-1]			
120.0	120.0	6	cci	DTMA-1819-DD-12 TMA	18	1-5/8	1
		1	crown mounts	T-Arm Mount [TA 602-3]			
		3	rfs celwave	APX16DWV-16DWVS-E-A20 w/ Mount Pipe			
		3	rfs celwave	APX16PV-16PVL w/ Mount Pipe			
110.0	110.0	1	crown mounts	T-Arm Mount [TA 702-3]	6	1-5/8	1
		3	kathrein	800 10504 w/ Mount Pipe			
		3	kathrein	860 10025 RET			
		3	pipe mount	Empty Mount Pipe			
99.0	99.0	1	crown mounts	Side Arm Mount [SO 102-3]	2 1	7/8 3/4	1
		6	ericsson	RRUS-11			
		1	raycap	DC6-48-60-18-8F			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
95.0	95.0	1	crown mounts	Platform Mount [LP 713-1]	6	7/8	1
		6	pipe mount	Empty Mount Pipe			
		3	powerwave	7770.00 w/Mount Pipe			
		6	powerwave	LGP21401 TMA			
		3	powerwave	P65-16-XLH-RR w/Mount Pipe			
73.0	75.0	3	alcatel lucent	1900MHz 4X40W RRH	6 3	5/16 1-1/4	1
		3	alcatel lucent	800 MHz External Notch Filter			
		3	alcatel lucent	800MHz 2x50W RRH			
		3	argus	LLPX310R w/Mount Pipe			
		2	dragonwave	A-ANT-23G-2-C Dish			
		2	dragonwave	Horizon Duo ODU			
		3	rfs	APXVSPP18-C-A20 w/Mount Pipe			
		3	samsung telecommunications	FDD_R6_RRH			
	73.0	1	crown mounts	Platform Mount [LP 712-1]			
		1	crown mounts	Side Arm Mount [SO 102-3]			
		3	pipe mount	Empty Mount Pipe			
50.0	50.0	1	maxrad	GPS-TMG-HR-26NCM GPS	-	-	1

Notes:
1) Existing Equipment

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
100	100	6	allgon	7920.XX	-	-
		2	generic	4' Dish		
90	90	9	generic	4'x1'x3" Panel	-	-
80	80	9	generic	4'x1'x3" Panel	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, P.E., P.C.	4529442	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	AT&T	4598376	CCISITES
4-TOWER MANUFACTURER DRAWINGS	FWT	4598387	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	B&T Group	4858944	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Associates	5461043	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Associates	5461041	CCISITES
4-POST MODIFICATION INSPECTION	B&T Group	5095590	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	FDH Velocitel	5729974	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	FDH Velocitel	Project No. 15BTZC1400	APPENDIX D

3.1) Analysis Method

tnxTower (version 6.1.4.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts, and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Modifications outlined in FDH Velocitel (Project No. 15BTZC1400) Modification Drawings for a 140' Monopole dated July 15, 2015 must be installed as specified for this analysis to be valid.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	Capacity	Pass / Fail
140 - 135	Pole	TP14.296x13.161x0.1875	Pole	18.3%	Pass
135 - 130	Pole	TP15.431x14.296x0.1875	Pole	32.9%	Pass
130 - 125	Pole	TP16.566x15.431x0.1875	Pole	44.0%	Pass
125 - 120	Pole	TP17.701x16.566x0.1875	Pole	52.6%	Pass
120 - 115	Pole	TP18.836x17.701x0.1875	Pole	68.2%	Pass
115 - 110	Pole	TP19.971x18.836x0.1875	Pole	80.5%	Pass

Elevation (ft)	Component Type	Size	Critical Element	Capacity	Pass / Fail
110 - 105	Pole	TP21.106x19.971x0.1875	Pole	92.3%	Pass
105 - 101.58	Pole	TP21.882x21.106x0.1875	Pole	98.9%	Pass
101.58 - 96.58	Pole	TP23.017x21.882x0.3125	Pole	65.8%	Pass
96.58 - 91.58	Pole	TP24.152x23.017x0.3125	Pole	72.9%	Pass
91.58 - 86.58	Pole	TP25.287x24.152x0.3125	Pole	79.5%	Pass
86.58 - 81.58	Pole	TP26.422x25.287x0.3125	Pole	85.0%	Pass
81.58 - 76.58	Pole	TP27.557x26.422x0.3125	Pole	89.5%	Pass
76.58 - 71.58	Pole	TP28.692x27.557x0.3125	Pole	94.7%	Pass
71.58 - 70.08	Pole	TP29.032x28.692x0.3125	Pole	96.4%	Pass
70.08 - 69.83	Pole + Reinf.	TP29.089x29.032x0.4875	Reinf. 4 Tension Rupture	77.0%	Pass
69.83 - 64.83	Pole + Reinf.	TP30.224x29.089x0.4875	Reinf. 4 Tension Rupture	82.0%	Pass
64.83 - 59.83	Pole + Reinf.	TP31.359x30.224x0.475	Reinf. 4 Tension Rupture	86.5%	Pass
59.83 - 59.08	Pole + Reinf.	TP31.529x31.359x0.475	Reinf. 4 Tension Rupture	87.1%	Pass
59.08 - 58.82	Pole + Reinf.	TP31.589x31.529x0.4563	Reinf. 1 Tension Rupture	89.1%	Pass
58.82 - 58.67	Pole + Reinf.	TP31.623x31.589x0.4563	Reinf. 1 Tension Rupture	89.2%	Pass
58.67 - 53.67	Pole + Reinf.	TP32.758x31.623x0.45	Reinf. 1 Tension Rupture	92.9%	Pass
53.67 - 53	Pole + Reinf.	TP33.913x32.758x0.45	Reinf. 1 Tension Rupture	93.4%	Pass
53 - 47.58	Pole + Reinf.	TP33.515x32.285x0.6375	Reinf. 3 Tension Rupture	76.2%	Pass
47.58 - 42.58	Pole + Reinf.	TP34.65x33.515x0.625	Reinf. 3 Tension Rupture	79.0%	Pass
42.58 - 40	Pole + Reinf.	TP35.236x34.65x0.6125	Reinf. 3 Tension Rupture	80.3%	Pass
40 - 39.75	Pole + Reinf.	TP35.293x35.236x0.8125	Reinf. 3 Tension Rupture	62.4%	Pass
39.75 - 34.75	Pole + Reinf.	TP36.428x35.293x0.7875	Reinf. 3 Tension Rupture	64.5%	Pass
34.75 - 32.5	Pole + Reinf.	TP36.939x36.428x0.7875	Reinf. 3 Tension Rupture	65.4%	Pass
32.5 - 32.25	Pole + Reinf.	TP36.995x36.939x0.6125	Reinf. 5 Compression	81.3%	Pass
32.25 - 31.42	Pole + Reinf.	TP37.185x36.995x0.6	Reinf. 5 Compression	81.7%	Pass
31.42 - 31.17	Pole + Reinf.	TP37.241x37.185x0.775	Reinf. 2 Tension Rupture	66.0%	Pass
31.17 - 29	Pole + Reinf.	TP37.733x37.241x0.7625	Reinf. 2 Tension Rupture	66.8%	Pass
29 - 28.75	Pole + Reinf.	TP37.79x37.733x0.5875	Reinf. 2 Tension Rupture	85.6%	Pass
28.75 - 23.75	Pole + Reinf.	TP38.925x37.79x0.5875	Reinf. 2 Tension Rupture	87.6%	Pass
23.75 - 18.75	Pole + Reinf.	TP40.06x38.925x0.575	Reinf. 2 Tension Rupture	89.5%	Pass
18.75 - 13.75	Pole + Reinf.	TP41.195x40.06x0.5625	Reinf. 2 Tension Rupture	91.2%	Pass
13.75 - 8.75	Pole + Reinf.	TP42.331x41.195x0.5625	Reinf. 2 Tension Rupture	92.8%	Pass
8.75 - 3.75	Pole + Reinf.	TP43.466x42.331x0.55	Reinf. 2 Tension Rupture	94.3%	Pass
3.75 - 0	Pole + Reinf.	TP44.317x43.466x0.55	Reinf. 2 Tension Rupture	95.3%	Pass
				Summary	
			Pole	98.9%	Pass
			Reinforcement	95.3%	Pass
			Overall	98.9%	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC4.5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	101.58	72.9	Pass
1	Flange Plate	101.58	52.5	Pass
1	Anchor Rods	-	78.1	Pass
1	Base Plate	-	72.5	Pass
1	Base Foundation	-	68.5	Pass
1	Base Foundation Soil Interaction	-	60.6	Pass

Structure Rating (max from all components) =	98.9%

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

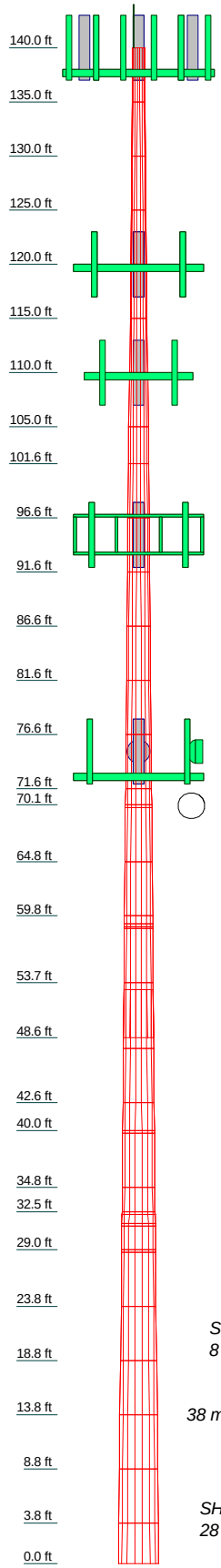
4.1) Recommendations

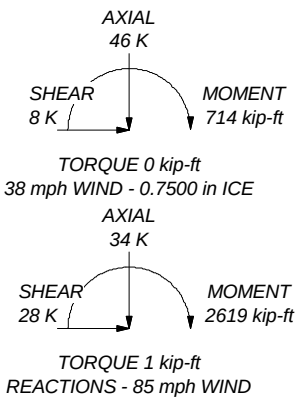
The tower and its foundation have sufficient capacity to carry the existing and proposed loads once the proposed modifications are installed.

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	18	0.1875		13.1610	14.2960		0.1
2	5.00	18	0.1875		14.2960	15.4309		0.1
3	5.00	18	0.1875		15.4309	16.5659		0.2
4	5.00	18	0.1875		16.5659	17.7008		0.2
5	5.00	18	0.1875		17.7008	18.8358		0.2
6	5.00	18	0.1875		18.8358	19.9707		0.2
7	5.00	18	0.1875		19.9707	21.1057		0.2
8	3.42	18	0.1875		21.1057	21.8820		0.1
9	5.00	18	0.3125		21.8820	23.0170		0.4
10	5.00	18	0.3125		23.0170	24.1520		0.4
11	5.00	18	0.3125		24.1520	25.2870		0.4
12	5.00	18	0.3125		25.2870	26.4220		0.4
13	5.00	18	0.3125		26.4220	27.5570		0.5
14	5.00	18	0.3125		27.5570	29.0920		0.5
15	1.50	18	0.3125		29.0920	29.4795		0.1
16	1.50	18	0.3125		29.4795	29.8670		0.1
17	5.00	18	0.4750		29.8670	30.2235		0.8
18	5.00	18	0.4750		30.2235	30.5800		0.8
19	1.50	18	0.4750		30.5800	30.7585		0.3
20	1.50	18	0.4750		30.7585	30.9370		0.3
21	1.50	18	0.4750		30.9370	31.1155		0.3
22	5.00	18	0.4500		31.1155	32.7583		0.7
23	5.39	18	0.4500	4.42	32.7583	34.5130		0.8
24		18	0.6375		34.5130	35.1512		1.1
25	5.00	18	0.6250		35.1512	36.7660		1.1
26		18	0.6250		36.7660	37.0558		0.6
27	2.58	18	0.6250		37.0558	37.4432		0.6
28	5.00	18	0.7500		37.4432	39.0795		1.4
29	2.25	18	0.7500		39.0795	39.4170		0.6
30	2.25	18	0.7500		39.4170	39.7545		0.6
31	2.25	18	0.7500		39.7545	40.0920		0.6
32	2.25	18	0.7500		40.0920	40.4295		0.6
33	2.25	18	0.7500		40.4295	40.7670		0.6
34	2.25	18	0.7500		40.7670	41.1045		0.6
35	5.00	18	0.5875		41.1045	42.7583		1.1
36	5.00	18	0.5750		42.7583	44.4120		1.2
37	5.00	18	0.5625		44.4120	46.0658		1.2
38	5.00	18	0.5625		46.0658	47.7195		1.2
39	5.00	18	0.5500		47.7195	49.3733		1.2
40	3.75	18	0.5500		49.3733	50.5000		0.9
							A572-65	20.0





MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.

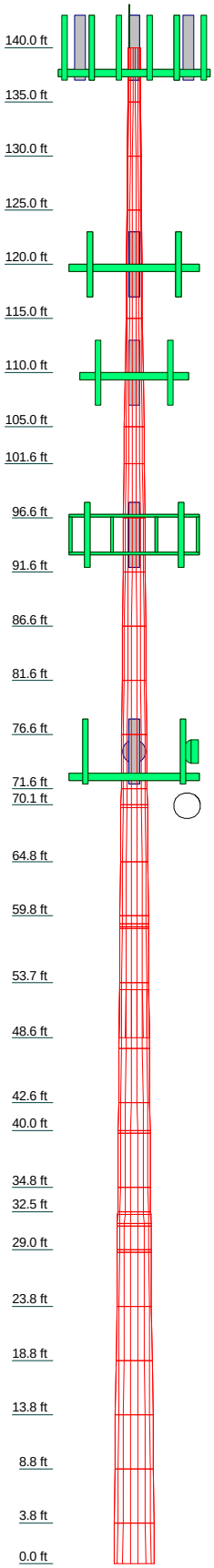
FDH VELOCITEL ENGINEERING INNOVATION

Tower Analysis

Velocitel, Inc., d.b.a. FDH Velocitel
6521 Meridien Drive
Raleigh, North Carolina 27616
Phone: 9197551012
FAX: 9197551031

Job: **842873, Shelton NE**			
Project: **15BTZC1400**			
Client: Crown Castle USA, Inc.	Drawn by: DAlexander	App'd:	
Code: TIA/EIA-222-F	Date: 07/14/15	Scale: NTS	
Path:		Dwg No. E-1	

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	18	0.1875		13.1610	14.2960		0.1
2	5.00	18	0.1875		14.2960	15.4309		0.1
3	5.00	18	0.1875		15.4309	16.5659		0.2
4	5.00	18	0.1875		16.5659	17.7008		0.2
5	5.00	18	0.1875		17.7008	18.8358		0.2
6	5.00	18	0.1875		18.8358	19.9707		0.2
7	5.00	18	0.1875		19.9707	21.1057		0.2
8	3.42	18	0.1875		21.1057	21.8820		0.1
9	5.00	18	0.3125		21.8820	23.0170		0.4
10	5.00	18	0.3125		23.0170	24.1520		0.4
11	5.00	18	0.3125		24.1520	25.2870		0.4
12	5.00	18	0.3125		25.2870	26.4220		0.4
13	5.00	18	0.3125		26.4220	27.5570		0.5
14	5.00	18	0.3125		27.5570	28.6920		0.5
15	1.50	18	0.3125		28.6920	29.0820		0.1
17	5.00	18	0.4375		29.0820	30.2235		0.8
18	5.00	18	0.4750		30.2235	31.6235		0.8
21	1.25	18	0.4750		31.6235	32.0135		0.2
22	5.00	18	0.4500		32.0135	33.1530		0.7
23	5.39	18	0.4500	4.42	33.1530	34.5130		0.8
24	1.00	18	0.6375		34.5130	34.8630		1.1
25	5.00	18	0.6250		34.8630	36.2630		1.1
26	2.58	18	0.6250		36.2630	37.0660		0.6
27	0.25	18	0.6250		37.0660	37.1535		0.0
28	5.00	18	0.7500		37.1535	38.9252		1.4
29	0.25	18	0.7500		38.9252	39.0127		0.0
33	2.58	18	0.5625		39.0127	40.0603		0.6
34	0.25	18	0.5625		40.0603	40.1478		0.0
35	5.00	18	0.5625		40.1478	41.1954		1.1
36	5.00	18	0.5750		41.1954	42.3305		1.2
37	5.00	18	0.5625		42.3305	43.4657		1.2
38	5.00	18	0.5625		43.4657	44.6008		1.2
39	5.00	18	0.5500		44.6008	45.7360		1.2
40	3.75	18	0.5500		45.7360	46.3170		0.9
							A572-65	20.0



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	140	Empty Mount Pipe	110
DB636-C	138	T-Arm Mount [TA 702-3]	110
BXA-70063-6CF-2 w/ Mount Pipe	138	(2) RRUS-11	99
BXA-70063-6CF-2 w/ Mount Pipe	138	(2) RRUS-11	99
BXA-70063-6CF-2 w/ Mount Pipe	138	(2) RRUS-11	99
(2) BXA-171063-8BF-2 w/ Mount Pipe	138	DC6-48-60-18-8F	99
(2) BXA-171063-8BF-2 w/ Mount Pipe	138	Side Arm Mount [SO 102-3]	99
(2) BXA-171063-8BF-2 w/ Mount Pipe	138	7770.00 w/Mount Pipe	95
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	138	7770.00 w/Mount Pipe	95
		7770.00 w/Mount Pipe	95
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	138	P65-16-XLH-RR w/Mount Pipe	95
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	138	P65-16-XLH-RR w/Mount Pipe	95
		P65-16-XLH-RR w/Mount Pipe	95
(2) FD9R6004/2C-3L	138	(2) LGP21401 TMA	95
(2) FD9R6004/2C-3L	138	(2) LGP21401 TMA	95
(2) FD9R6004/2C-3L	138	(2) LGP21401 TMA	95
RRH2X40-AWS	138	(2) Empty Mount Pipe	95
RRH2X40-AWS	138	(2) Empty Mount Pipe	95
RRH2X40-AWS	138	(2) Empty Mount Pipe	95
DB-T1-6Z-8AB-0Z	138	Platform Mount [LP 713-1]	95
Platform Mount [LP 403-1]	138	APXVSPP18-C-A20 w/Mount Pipe	73
APX16PV-16PVL w/ Mount Pipe	120	APXVSPP18-C-A20 w/Mount Pipe	73
APX16PV-16PVL w/ Mount Pipe	120	APXVSPP18-C-A20 w/Mount Pipe	73
APX16PV-16PVL w/ Mount Pipe	120	800MHz 2x50W RRH	73
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	120	800MHz 2x50W RRH	73
		800MHz 2x50W RRH	73
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	120	800 MHz External Notch Filter	73
		800 MHz External Notch Filter	73
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	120	800 MHz External Notch Filter	73
		1900MHz 4X40W RRH	73
LNX-6515DS-VTM w/ Mount Pipe	120	1900MHz 4X40W RRH	73
LNX-6515DS-VTM w/ Mount Pipe	120	1900MHz 4X40W RRH	73
LNX-6515DS-VTM w/ Mount Pipe	120	LLPX310R w/Mount Pipe	73
(2) DTMA-1819-DD-12 TMA	120	LLPX310R w/Mount Pipe	73
(2) DTMA-1819-DD-12 TMA	120	LLPX310R w/Mount Pipe	73
(2) DTMA-1819-DD-12 TMA	120	FDD_R6_RRH	73
ATBT-BOTTOM-24V	120	FDD_R6_RRH	73
ATBT-BOTTOM-24V	120	FDD_R6_RRH	73
ATBT-BOTTOM-24V	120	Horizon Duo ODU	73
T-Arm Mount [TA 602-3]	120	Horizon Duo ODU	73
800 10504 w/ Mount Pipe	110	Empty Mount Pipe	73
800 10504 w/ Mount Pipe	110	Empty Mount Pipe	73
800 10504 w/ Mount Pipe	110	Empty Mount Pipe	73
860 10025 RET	110	Platform Mount [LP 712-1]	73
860 10025 RET	110	Side Arm Mount [SO 102-3]	73
860 10025 RET	110	A-ANT-23G-2-C Dish	73
Empty Mount Pipe	110	A-ANT-23G-2-C Dish	73
Empty Mount Pipe	110	GPS-TMG-HR-26NCM GPS	50

FDH VELOCITEL ENGINEERING INNOVATION
Tower Analysis

Velocitel, Inc., d.b.a. FDH Velocitel
6521 Meridien Drive
Raleigh, North Carolina 27616
Phone: 9197551012
FAX: 9197551031

Job:	***842873, Shelton NE***		
Project:	***15BTZC1400***		
Client: Crown Castle USA, Inc.	Drawn by: DAlexander		App'd:
Code: TIA/EIA-222-F	Date: 07/14/15		Scale: NTS
Path:			Dwg No. E-1

Tower Input Data

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

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
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		Treat Feedline Bundles As Cylinder
	Consider Moments - Horizontals		Assume Legs Pinned		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Calculate Redundant Bracing Forces
	Use Moment Magnification	√	Use Clear Spans For Wind Area		Ignore Redundant Members in FEA
√	Use Code Stress Ratios		Use Clear Spans For KL/r		SR Leg Bolts Resist Compression
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		All Leg Panels Have Same Allowable
√	Escalate Ice	√	Bypass Mast Stability Checks		Offset Girt At Foundation
	Always Use Max Kz	√	Use Azimuth Dish Coefficients	√	Consider Feedline Torque
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Include Angle Block Shear Check
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Poles
	Leg Bolts Are At Top Of Section		SR Members Have Cut Ends	√	Include Shear-Torsion Interaction
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component		Always Use Sub-Critical Flow
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Use Top Mounted Sockets
	Add IBC .6D+W Combination		Use TIA-222-G Tension Splice Capacity Exemption		

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	140.00-135.00	5.00	0.00	18	13.1610	14.2960	0.1875	0.7500	A572-65 (65 ksi)
L2	135.00-130.00	5.00	0.00	18	14.2960	15.4309	0.1875	0.7500	A572-65 (65 ksi)
L3	130.00-125.00	5.00	0.00	18	15.4309	16.5659	0.1875	0.7500	A572-65 (65 ksi)
L4	125.00-120.00	5.00	0.00	18	16.5659	17.7008	0.1875	0.7500	A572-65 (65 ksi)
L5	120.00-115.00	5.00	0.00	18	17.7008	18.8358	0.1875	0.7500	A572-65

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
L6	115.00-110.00	5.00	0.00	18	18.8358	19.9707	0.1875	0.7500	(65 ksi) A572-65 (65 ksi)
L7	110.00-105.00	5.00	0.00	18	19.9707	21.1057	0.1875	0.7500	A572-65 (65 ksi)
L8	105.00-101.58	3.42	0.00	18	21.1057	21.8820	0.1875	0.7500	A572-65 (65 ksi)
L9	101.58-96.58	5.00	0.00	18	21.8820	23.0170	0.3125	1.2500	A572-65 (65 ksi)
L10	96.58-91.58	5.00	0.00	18	23.0170	24.1520	0.3125	1.2500	A572-65 (65 ksi)
L11	91.58-86.58	5.00	0.00	18	24.1520	25.2870	0.3125	1.2500	A572-65 (65 ksi)
L12	86.58-81.58	5.00	0.00	18	25.2870	26.4220	0.3125	1.2500	A572-65 (65 ksi)
L13	81.58-76.58	5.00	0.00	18	26.4220	27.5570	0.3125	1.2500	A572-65 (65 ksi)
L14	76.58-71.58	5.00	0.00	18	27.5570	28.6920	0.3125	1.2500	A572-65 (65 ksi)
L15	71.58-70.08	1.50	0.00	18	28.6920	29.0318	0.3125	1.2500	A572-65 (65 ksi)
L16	70.08-69.83	0.25	0.00	18	29.0318	29.0885	0.4875	1.9500	A572-65 (65 ksi)
L17	69.83-64.83	5.00	0.00	18	29.0885	30.2235	0.4875	1.9500	A572-65 (65 ksi)
L18	64.83-59.83	5.00	0.00	18	30.2235	31.3585	0.4750	1.9000	A572-65 (65 ksi)
L19	59.83-59.08	0.75	0.00	18	31.3585	31.5288	0.4750	1.9000	A572-65 (65 ksi)
L20	59.08-58.82	0.27	0.00	18	31.5288	31.5893	0.4562	1.8250	A572-65 (65 ksi)
L21	58.82-58.67	0.15	0.00	18	31.5893	31.6233	0.4562	1.8250	A572-65 (65 ksi)
L22	58.67-53.67	5.00	0.00	18	31.6233	32.7583	0.4500	1.8000	A572-65 (65 ksi)
L23	53.67-48.58	5.09	4.42	18	32.7583	33.9130	0.4500	1.8000	A572-65 (65 ksi)
L24	48.58-47.58	5.42	0.00	18	32.2847	33.5151	0.6375	2.5500	A572-65 (65 ksi)
L25	47.58-42.58	5.00	0.00	18	33.5151	34.6503	0.6250	2.5000	A572-65 (65 ksi)
L26	42.58-40.00	2.58	0.00	18	34.6503	35.2360	0.6125	2.4500	A572-65 (65 ksi)
L27	40.00-39.75	0.25	0.00	18	35.2360	35.2927	0.8125	3.2500	A572-65 (65 ksi)
L28	39.75-34.75	5.00	0.00	18	35.2927	36.4279	0.7875	3.1500	A572-65 (65 ksi)
L29	34.75-32.50	2.25	0.00	18	36.4279	36.9387	0.7875	3.1500	A572-65 (65 ksi)
L30	32.50-32.25	0.25	0.00	18	36.9387	36.9954	0.6125	2.4500	A572-65 (65 ksi)
L31	32.25-31.42	0.83	0.00	18	36.9954	37.1846	0.6000	2.4000	A572-65 (65 ksi)
L32	31.42-31.17	0.25	0.00	18	37.1846	37.2414	0.7750	3.1000	A572-65 (65 ksi)
L33	31.17-29.00	2.17	0.00	18	37.2414	37.7333	0.7625	3.0500	A572-65 (65 ksi)
L34	29.00-28.75	0.25	0.00	18	37.7333	37.7900	0.5875	2.3500	A572-65 (65 ksi)
L35	28.75-23.75	5.00	0.00	18	37.7900	38.9251	0.5875	2.3500	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
L36	23.75-18.75	5.00	0.00	18	38.9251	40.0603	0.5750	2.3000	A572-65 (65 ksi)
L37	18.75-13.75	5.00	0.00	18	40.0603	41.1954	0.5625	2.2500	A572-65 (65 ksi)
L38	13.75-8.75	5.00	0.00	18	41.1954	42.3305	0.5625	2.2500	A572-65 (65 ksi)
L39	8.75-3.75	5.00	0.00	18	42.3305	43.4657	0.5500	2.2000	A572-65 (65 ksi)
L40	3.75-0.00	3.75		18	43.4657	44.3170	0.5500	2.2000	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	13.3640	7.7209	164.1788	4.6056	6.6858	24.5564	328.5737	3.8612	1.9863	10.594
	14.5165	8.3963	211.1466	5.0085	7.2623	29.0742	422.5710	4.1989	2.1861	11.659
L2	14.5165	8.3963	211.1466	5.0085	7.2623	29.0742	422.5710	4.1989	2.1861	11.659
	15.6690	9.0717	266.3129	5.4114	7.8389	33.9732	532.9762	4.5367	2.3858	12.724
L3	15.6690	9.0717	266.3129	5.4114	7.8389	33.9732	532.9762	4.5367	2.3858	12.724
	16.8214	9.7472	330.3372	5.8143	8.4155	39.2536	661.1090	4.8745	2.5856	13.79
L4	16.8214	9.7472	330.3372	5.8143	8.4155	39.2536	661.1090	4.8745	2.5856	13.79
	17.9739	10.4226	403.8790	6.2172	8.9920	44.9153	808.2895	5.2123	2.7853	14.855
L5	17.9739	10.4226	403.8790	6.2172	8.9920	44.9153	808.2895	5.2123	2.7853	14.855
	19.1264	11.0981	487.5980	6.6201	9.5686	50.9583	975.8376	5.5501	2.9851	15.921
L6	19.1264	11.0981	487.5980	6.6201	9.5686	50.9583	975.8376	5.5501	2.9851	15.921
	20.2788	11.7735	582.1535	7.0230	10.1451	57.3825	1165.0731	5.8879	3.1848	16.986
L7	20.2788	11.7735	582.1535	7.0230	10.1451	57.3825	1165.0731	5.8879	3.1848	16.986
	21.4313	12.4489	688.2052	7.4260	10.7217	64.1881	1377.3160	6.2257	3.3846	18.051
L8	21.4313	12.4489	688.2052	7.4260	10.7217	64.1881	1377.3160	6.2257	3.3846	18.051
	22.2196	12.9109	767.7054	7.7015	11.1161	69.0627	1536.4209	6.4567	3.5212	18.78
L9	22.2196	21.3942	1257.5192	7.6572	11.1161	113.1264	2516.6931	10.6992	3.3012	10.564
	23.3721	22.5200	1466.6626	8.0601	11.6926	125.4347	2935.2551	11.2622	3.5010	11.203
L10	23.3721	22.5200	1466.6626	8.0601	11.6926	125.4347	2935.2551	11.2622	3.5010	11.203
	24.5246	23.6458	1697.7972	8.4630	12.2692	138.3786	3397.8285	11.8251	3.7008	11.842
L11	24.5246	23.6458	1697.7972	8.4630	12.2692	138.3786	3397.8285	11.8251	3.7008	11.842
	25.6771	24.7716	1952.0224	8.8659	12.8458	151.9581	3906.6134	12.3881	3.9005	12.482
L12	25.6771	24.7716	1952.0224	8.8659	12.8458	151.9581	3906.6134	12.3881	3.9005	12.482
	26.8296	25.8974	2230.4375	9.2689	13.4224	166.1731	4463.8099	12.9511	4.1003	13.121
L13	26.8296	25.8974	2230.4375	9.2689	13.4224	166.1731	4463.8099	12.9511	4.1003	13.121
	27.9821	27.0231	2534.1418	9.6718	13.9990	181.0236	5071.6182	13.5141	4.3000	13.76
L14	27.9821	27.0231	2534.1418	9.6718	13.9990	181.0236	5071.6182	13.5141	4.3000	13.76
	29.1346	28.1489	2864.2348	10.0747	14.5755	196.5097	5732.2384	14.0771	4.4998	14.399
L15	29.1346	28.1489	2864.2348	10.0747	14.5755	196.5097	5732.2384	14.0771	4.4998	14.399
	29.4796	28.4859	2968.3405	10.1953	14.7481	201.2689	5940.5868	14.2457	4.5596	14.591
L16	29.4796	44.1672	4546.4764	10.1332	14.7481	308.2748	9098.9352	22.0878	4.2516	8.721
	29.5372	44.2550	4573.6475	10.1534	14.7770	309.5121	9153.3131	22.1317	4.2616	8.742
L17	29.5372	44.2550	4573.6475	10.1534	14.7770	309.5121	9153.3131	22.1317	4.2616	8.742
	30.6897	46.0113	5140.0421	10.5563	15.3535	334.7790	10286.8476	23.0100	4.4613	9.151
L18	30.6897	44.8503	5014.5647	10.5607	15.3535	326.6065	10035.7277	22.4294	4.4833	9.439
	31.8423	46.5615	5610.7066	10.9636	15.9301	352.2075	11228.7959	23.2852	4.6831	9.859
L19	31.8423	46.5615	5610.7066	10.9636	15.9301	352.2075	11228.7959	23.2852	4.6831	9.859
	32.0151	46.8182	5704.0087	11.0241	16.0166	356.1309	11415.5228	23.4135	4.7131	9.922
L20	32.0151	44.9973	5488.7807	11.0307	16.0166	342.6931	10984.7836	22.5029	4.7461	10.402
	32.0766	45.0849	5520.9138	11.0522	16.0473	344.0390	11049.0921	22.5467	4.7567	10.426
L21	32.0766	45.0849	5520.9138	11.0522	16.0473	344.0390	11049.0921	22.5467	4.7567	10.426

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
	32.1112	45.1342	5539.0482	11.0643	16.0646	344.7974	11085.3848	22.5714	4.7627	10.439
L22	32.1112	44.5249	5466.4581	11.0665	16.0646	340.2788	10940.1091	22.2667	4.7737	10.608
	33.2637	46.1460	6085.5520	11.4695	16.6412	365.6913	12179.1115	23.0774	4.9735	11.052
L23	33.2637	46.1460	6085.5520	11.4695	16.6412	365.6913	12179.1115	23.0774	4.9735	11.052
	34.4362	47.7952	6761.6316	11.8794	17.2278	392.4837	13532.1604	23.9021	5.1767	11.504
L24	33.8016	64.0357	8102.6819	11.2347	16.4006	494.0477	16216.0255	32.0239	4.5601	7.153
	34.0322	66.5254	9085.0297	11.6716	17.0257	533.6071	18182.0137	33.2690	4.7767	7.493
L25	34.0322	65.2458	8917.0549	11.6760	17.0257	523.7412	17845.8430	32.6291	4.7987	7.678
	35.1848	67.4976	9872.5395	12.0790	17.6023	560.8654	19758.0695	33.7552	4.9984	7.998
L26	35.1848	66.1720	9685.7557	12.0834	17.6023	550.2541	19384.2563	33.0923	5.0204	8.197
	35.7796	67.3107	10194.4299	12.2913	17.8999	569.5250	20402.2738	33.6617	5.1235	8.365
L27	35.7796	88.7739	13290.2267	12.2203	17.8999	742.4756	26597.9410	44.3954	4.7715	5.873
	35.8372	88.9202	13356.0726	12.2405	17.9287	744.9543	26729.7195	44.4686	4.7815	5.885
L28	35.8372	86.2467	12973.2946	12.2494	17.9287	723.6043	25963.6599	43.1316	4.8255	6.128
	36.9898	89.0840	14296.2324	12.6523	18.5054	772.5455	28611.2761	44.5505	5.0253	6.381
L29	36.9898	89.0840	14296.2324	12.6523	18.5054	772.5455	28611.2761	44.5505	5.0253	6.381
	37.5085	90.3608	14919.7761	12.8337	18.7648	795.0917	29859.1841	45.1890	5.1152	6.496
L30	37.5085	70.6208	11773.6087	12.8958	18.7648	627.4289	23562.7093	35.3171	5.4232	8.854
	37.5661	70.7312	11828.8805	12.9159	18.7937	629.4073	23673.3257	35.3723	5.4332	8.871
L31	37.5661	69.3115	11599.4221	12.9204	18.7937	617.1980	23214.1070	34.6623	5.4552	9.092
	37.7582	69.6717	11781.2422	12.9875	18.8898	623.6833	23577.9864	34.8425	5.4885	9.147
L32	37.7582	89.5622	15000.1060	12.9254	18.8898	794.0856	30019.9495	44.7896	5.1805	6.685
	37.8159	89.7018	15070.3631	12.9456	18.9186	796.5891	30160.5563	44.8594	5.1905	6.697
L33	37.8159	88.2853	14842.5456	12.9500	18.9186	784.5471	29704.6213	44.1510	5.2125	6.836
	38.3154	89.4757	15451.1068	13.1246	19.1685	806.0676	30922.5446	44.7464	5.2991	6.95
L34	38.3154	69.2666	12074.8078	13.1867	19.1685	629.9297	24165.5040	34.6399	5.6071	9.544
	38.3730	69.3725	12130.2410	13.2069	19.1973	631.8712	24276.4433	34.6928	5.6170	9.561
L35	38.3730	69.3725	12130.2410	13.2069	19.1973	631.8712	24276.4433	34.6928	5.6170	9.561
	39.5256	71.4892	13274.8216	13.6099	19.7740	671.3279	26567.1105	35.7514	5.8168	9.901
L36	39.5256	69.9909	13005.0912	13.6143	19.7740	657.6872	26027.2948	35.0021	5.8388	10.154
	40.6783	72.0626	14194.4232	14.0173	20.3506	697.4934	28407.5238	36.0381	6.0386	10.502
L37	40.6783	70.5183	13899.0406	14.0217	20.3506	682.9787	27816.3700	35.2659	6.0606	10.774
	41.8309	72.5450	15132.1429	14.4247	20.9273	723.0827	30284.1970	36.2794	6.2604	11.13
L38	41.8309	72.5450	15132.1429	14.4247	20.9273	723.0827	30284.1970	36.2794	6.2604	11.13
	42.9835	74.5716	16436.1024	14.8277	21.5039	764.3309	32893.8318	37.2929	6.4602	11.485
L39	42.9835	72.9363	16085.2886	14.8321	21.5039	748.0170	32191.7427	36.4751	6.4822	11.786
	44.1362	74.9179	17432.2844	15.2351	22.0806	789.4859	34887.5067	37.4660	6.6820	12.149
L40	44.1362	74.9179	17432.2844	15.2351	22.0806	789.4859	34887.5067	37.4660	6.6820	12.149
	45.0007	76.4041	18490.4465	15.5373	22.5130	821.3218	37005.2233	38.2093	6.8318	12.421

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
L1 140.00-135.00				1	1	1		
L2 135.00-130.00				1	1	1		
L3 130.00-125.00				1	1	1		
L4 125.00-120.00				1	1	1		
L5 120.00-115.00				1	1	1		
L6 115.00-110.00				1	1	1		
L7 110.00-105.00				1	1	1		
L8 105.00-101.58				1	1	1		

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
L9 101.58-96.58				1	1	1		
L10 96.58-91.58				1	1	1		
L11 91.58-86.58				1	1	1		
L12 86.58-81.58				1	1	1		
L13 81.58-76.58				1	1	1		
L14 76.58-71.58				1	1	1		
L15 71.58-70.08				1	1	1		
L16 70.08-69.83				1	1	1.03475		
L17 69.83-64.83				1	1	1.01972		
L18 64.83-59.83				1	1	1.03185		
L19 59.83-59.08				1	1	1.0298		
L20 59.08-58.82				1	1	0.962919		
L21 58.82-58.67				1	1	0.962615		
L22 58.67-53.67				1	1	0.965905		
L23 53.67-48.58				1	1	0.96464		
L24 48.58-47.58				1	1	0.940602		
L25 47.58-42.58				1	1	0.943735		
L26 42.58-40.00				1	1	0.954987		
L27 40.00-39.75				1	1	0.925973		
L28 39.75-34.75				1	1	0.93691		
L29 34.75-32.50				1	1	0.929278		
L30 32.50-32.25				1	1	0.944082		
L31 32.25-31.42				1	1	0.96113		
L32 31.42-31.17				1	1	0.939452		
L33 31.17-29.00				1	1	0.947279		
L34 29.00-28.75				1	1	0.963121		
L35 28.75-23.75				1	1	0.950354		
L36 23.75-18.75				1	1	0.958415		
L37 18.75-13.75				1	1	0.967563		
L38 13.75-8.75				1	1	0.956366		

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
L39 8.75-3.75				1	1	0.966974		
L40 3.75-0.00				1	1	0.959217		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
Safety Line 3/8	A	No	CaAa (Out Of Face)	140.00 - 0.00	1	No Ice	0.04	0.22
						1/2" Ice	0.14	0.75
						1" Ice	0.24	1.28
						2" Ice	0.44	2.34
						4" Ice	0.84	4.46
***								
LDF5-50A(7/8")	C	No	Inside Pole	138.00 - 0.00	1	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
						2" Ice	0.00	0.33
						4" Ice	0.00	0.33
LDF7-50A(1-5/8")	C	No	Inside Pole	138.00 - 0.00	13	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
						4" Ice	0.00	0.82
***								
LDF7-50A(1-5/8")	B	No	CaAa (Out Of Face)	72.00 - 0.00	2	No Ice	0.00	0.82
						1/2" Ice	0.00	2.33
						1" Ice	0.00	4.46
						2" Ice	0.00	10.54
						4" Ice	0.00	30.04
LDF7-50A(1-5/8")	B	No	CaAa (Out Of Face)	120.00 - 72.00	2	No Ice	0.20	0.82
						1/2" Ice	0.30	2.33
						1" Ice	0.40	4.46
						2" Ice	0.60	10.54
						4" Ice	1.00	30.04
LDF7-50A(1-5/8")	B	No	Inside Pole	120.00 - 0.00	16	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
						4" Ice	0.00	0.82
***								
LDF7-50A(1-5/8")	B	No	CaAa (Out Of Face)	72.00 - 0.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	4.46
						2" Ice	0.00	10.54
						4" Ice	0.00	30.04
LDF7-50A(1-5/8")	B	No	CaAa (Out Of Face)	110.00 - 72.00	1	No Ice	0.20	0.82
						1/2" Ice	0.30	2.33
						1" Ice	0.40	4.46
						2" Ice	0.60	10.54
						4" Ice	1.00	30.04
LDF7-50A(1-5/8")	B	No	Inside Pole	110.00 - 0.00	5	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

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
						4" Ice	0.00	0.82
***								
LDF5-50A(7/8")	A	No	Inside Pole	99.00 - 0.00	2	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
						2" Ice	0.00	0.33
						4" Ice	0.00	0.33
9776(3/4")	A	No	Inside Pole	99.00 - 0.00	1	No Ice	0.00	0.31
						1/2" Ice	0.00	0.31
						1" Ice	0.00	0.31
						2" Ice	0.00	0.31
						4" Ice	0.00	0.31
***								
LDF5-50A(7/8")	A	No	Inside Pole	95.00 - 0.00	6	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
						2" Ice	0.00	0.33
						4" Ice	0.00	0.33
***								
LDF6-50A(1-1/4")	A	No	Inside Pole	73.00 - 0.00	3	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
						2" Ice	0.00	0.66
						4" Ice	0.00	0.66
9207(5/16")	A	No	Inside Pole	73.00 - 0.00	6	No Ice	0.00	0.60
						1/2" Ice	0.00	0.60
						1" Ice	0.00	0.60
						2" Ice	0.00	0.60
						4" Ice	0.00	0.60
***								
5.75" x 1" Flat Plate (F)	A	No	CaAa (Out Of Face)	72.00 - 57.00	1	No Ice	0.17	0.00
						1/2" Ice	0.28	0.00
						1" Ice	0.39	0.00
						2" Ice	0.61	0.00
						4" Ice	1.06	0.00
5.75" x 1" Flat Plate (F)	B	No	CaAa (Out Of Face)	72.00 - 57.00	1	No Ice	0.17	0.00
						1/2" Ice	0.28	0.00
						1" Ice	0.39	0.00
						2" Ice	0.61	0.00
						4" Ice	1.06	0.00
5.75" x 1" Flat Plate (F)	C	No	Inside Pole	72.00 - 57.00	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
						4" Ice	0.00	0.00
***								
5.75" x 1" Flat Plate (F)	A	No	CaAa (Out Of Face)	50.60 - 30.60	1	No Ice	0.17	0.00
						1/2" Ice	0.28	0.00
						1" Ice	0.39	0.00
						2" Ice	0.61	0.00
						4" Ice	1.06	0.00
5.75" x 1" Flat Plate (F)	B	No	CaAa (Out Of Face)	50.60 - 30.60	1	No Ice	0.17	0.00
						1/2" Ice	0.28	0.00
						1" Ice	0.39	0.00
						2" Ice	0.61	0.00
						4" Ice	1.06	0.00
5.75" x 1" Flat Plate (F)	C	No	Inside Pole	50.60 - 30.60	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
						4" Ice	0.00	0.00

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
5.75" x 1" Flat Plate (F)	A	No	CaAa (Out Of Face)	33.33 - 0.50	1	No Ice	0.17	0.00
						1/2" Ice	0.28	0.00
						1" Ice	0.39	0.00
						2" Ice	0.61	0.00
						4" Ice	1.06	0.00
5.75" x 1" Flat Plate (F)	B	No	CaAa (Out Of Face)	33.33 - 0.50	1	No Ice	0.17	0.00
						1/2" Ice	0.28	0.00
						1" Ice	0.39	0.00
						2" Ice	0.61	0.00
						4" Ice	1.06	0.00
5.75" x 1" Flat Plate (F)	C	No	Inside Pole	33.33 - 0.50	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
						4" Ice	0.00	0.00
***								
Aero MP304 Channel	A	No	CaAa (Out Of Face)	60.50 - 0.50	1	No Ice	0.27	0.00
						1/2" Ice	0.38	0.00
						1" Ice	0.49	0.00
						2" Ice	0.71	0.00
						4" Ice	1.16	0.00
Aero MP304 Channel	B	No	CaAa (Out Of Face)	60.50 - 0.50	1	No Ice	0.27	0.00
						1/2" Ice	0.38	0.00
						1" Ice	0.49	0.00
						2" Ice	0.71	0.00
						4" Ice	1.16	0.00
Aero MP304 Channel	C	No	Inside Pole	60.50 - 0.50	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
						4" Ice	0.00	0.00
***								
6" x 1" Flat Plate (F)	A	No	CaAa (Out Of Face)	42.00 - 27.00	1	No Ice	0.17	0.00
						1/2" Ice	0.28	0.00
						1" Ice	0.39	0.00
						2" Ice	0.61	0.00
						4" Ice	1.06	0.00
6" x 1" Flat Plate (F)	B	No	CaAa (Out Of Face)	42.00 - 27.00	1	No Ice	0.17	0.00
						1/2" Ice	0.28	0.00
						1" Ice	0.39	0.00
						2" Ice	0.61	0.00
						4" Ice	1.06	0.00
6" x 1" Flat Plate (F)	C	No	Inside Pole	42.00 - 27.00	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
						4" 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	140.00-135.00	A	0.000	0.000	0.000	0.188	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.03
L2	135.00-130.00	A	0.000	0.000	0.000	0.188	0.00
		B	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	0.000	0.000	0.05
L3	130.00-125.00	A	0.000	0.000	0.000	0.188	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L4	125.00-120.00	A	0.000	0.000	0.000	0.188	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L5	120.00-115.00	A	0.000	0.000	0.000	0.188	0.00
		B	0.000	0.000	0.000	1.980	0.07
		C	0.000	0.000	0.000	0.000	0.05
L6	115.00-110.00	A	0.000	0.000	0.000	0.188	0.00
		B	0.000	0.000	0.000	1.980	0.07
		C	0.000	0.000	0.000	0.000	0.05
L7	110.00-105.00	A	0.000	0.000	0.000	0.188	0.00
		B	0.000	0.000	0.000	2.970	0.10
		C	0.000	0.000	0.000	0.000	0.05
L8	105.00-101.58	A	0.000	0.000	0.000	0.128	0.00
		B	0.000	0.000	0.000	2.031	0.07
		C	0.000	0.000	0.000	0.000	0.04
L9	101.58-96.58	A	0.000	0.000	0.000	0.188	0.00
		B	0.000	0.000	0.000	2.970	0.10
		C	0.000	0.000	0.000	0.000	0.05
L10	96.58-91.58	A	0.000	0.000	0.000	0.188	0.01
		B	0.000	0.000	0.000	2.970	0.10
		C	0.000	0.000	0.000	0.000	0.05
L11	91.58-86.58	A	0.000	0.000	0.000	0.188	0.02
		B	0.000	0.000	0.000	2.970	0.10
		C	0.000	0.000	0.000	0.000	0.05
L12	86.58-81.58	A	0.000	0.000	0.000	0.188	0.02
		B	0.000	0.000	0.000	2.970	0.10
		C	0.000	0.000	0.000	0.000	0.05
L13	81.58-76.58	A	0.000	0.000	0.000	0.188	0.02
		B	0.000	0.000	0.000	2.970	0.10
		C	0.000	0.000	0.000	0.000	0.05
L14	76.58-71.58	A	0.000	0.000	0.000	0.258	0.02
		B	0.000	0.000	0.000	2.791	0.10
		C	0.000	0.000	0.000	0.000	0.05
L15	71.58-70.08	A	0.000	0.000	0.000	0.306	0.01
		B	0.000	0.000	0.000	0.249	0.03
		C	0.000	0.000	0.000	0.000	0.02
L16	70.08-69.83	A	0.000	0.000	0.000	0.051	0.00
		B	0.000	0.000	0.000	0.042	0.00
		C	0.000	0.000	0.000	0.000	0.00
L17	69.83-64.83	A	0.000	0.000	0.000	1.021	0.04
		B	0.000	0.000	0.000	0.833	0.09
		C	0.000	0.000	0.000	0.000	0.05
L18	64.83-59.83	A	0.000	0.000	0.000	1.200	0.04
		B	0.000	0.000	0.000	1.012	0.09
		C	0.000	0.000	0.000	0.000	0.05
L19	59.83-59.08	A	0.000	0.000	0.000	0.354	0.01
		B	0.000	0.000	0.000	0.326	0.01
		C	0.000	0.000	0.000	0.000	0.01
L20	59.08-58.82	A	0.000	0.000	0.000	0.126	0.00
		B	0.000	0.000	0.000	0.116	0.01
		C	0.000	0.000	0.000	0.000	0.00
L21	58.82-58.67	A	0.000	0.000	0.000	0.071	0.00
		B	0.000	0.000	0.000	0.065	0.00
		C	0.000	0.000	0.000	0.000	0.00
L22	58.67-53.67	A	0.000	0.000	0.000	1.807	0.04
		B	0.000	0.000	0.000	1.619	0.09
		C	0.000	0.000	0.000	0.000	0.05

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
L23	53.67-48.58	A	0.000	0.000	0.000	1.892	0.04
		B	0.000	0.000	0.000	1.702	0.10
		C	0.000	0.000	0.000	0.000	0.06
L24	48.58-47.58	A	0.000	0.000	0.000	0.472	0.01
		B	0.000	0.000	0.000	0.435	0.02
		C	0.000	0.000	0.000	0.000	0.01
L25	47.58-42.58	A	0.000	0.000	0.000	2.362	0.04
		B	0.000	0.000	0.000	2.175	0.09
		C	0.000	0.000	0.000	0.000	0.05
L26	42.58-40.00	A	0.000	0.000	0.000	1.552	0.02
		B	0.000	0.000	0.000	1.456	0.05
		C	0.000	0.000	0.000	0.000	0.03
L27	40.00-39.75	A	0.000	0.000	0.000	0.160	0.00
		B	0.000	0.000	0.000	0.150	0.00
		C	0.000	0.000	0.000	0.000	0.00
L28	39.75-34.75	A	0.000	0.000	0.000	3.196	0.04
		B	0.000	0.000	0.000	3.008	0.09
		C	0.000	0.000	0.000	0.000	0.05
L29	34.75-32.50	A	0.000	0.000	0.000	1.576	0.02
		B	0.000	0.000	0.000	1.492	0.04
		C	0.000	0.000	0.000	0.000	0.02
L30	32.50-32.25	A	0.000	0.000	0.000	0.201	0.00
		B	0.000	0.000	0.000	0.192	0.00
		C	0.000	0.000	0.000	0.000	0.00
L31	32.25-31.42	A	0.000	0.000	0.000	0.672	0.01
		B	0.000	0.000	0.000	0.640	0.02
		C	0.000	0.000	0.000	0.000	0.01
L32	31.42-31.17	A	0.000	0.000	0.000	0.201	0.00
		B	0.000	0.000	0.000	0.192	0.00
		C	0.000	0.000	0.000	0.000	0.00
L33	31.17-29.00	A	0.000	0.000	0.000	1.479	0.02
		B	0.000	0.000	0.000	1.398	0.04
		C	0.000	0.000	0.000	0.000	0.02
L34	29.00-28.75	A	0.000	0.000	0.000	0.160	0.00
		B	0.000	0.000	0.000	0.150	0.00
		C	0.000	0.000	0.000	0.000	0.00
L35	28.75-23.75	A	0.000	0.000	0.000	2.654	0.04
		B	0.000	0.000	0.000	2.467	0.09
		C	0.000	0.000	0.000	0.000	0.05
L36	23.75-18.75	A	0.000	0.000	0.000	2.362	0.04
		B	0.000	0.000	0.000	2.175	0.09
		C	0.000	0.000	0.000	0.000	0.05
L37	18.75-13.75	A	0.000	0.000	0.000	2.362	0.04
		B	0.000	0.000	0.000	2.175	0.09
		C	0.000	0.000	0.000	0.000	0.05
L38	13.75-8.75	A	0.000	0.000	0.000	2.362	0.04
		B	0.000	0.000	0.000	2.175	0.09
		C	0.000	0.000	0.000	0.000	0.05
L39	8.75-3.75	A	0.000	0.000	0.000	2.362	0.04
		B	0.000	0.000	0.000	2.175	0.09
		C	0.000	0.000	0.000	0.000	0.05
L40	3.75-0.00	A	0.000	0.000	0.000	1.554	0.03
		B	0.000	0.000	0.000	1.414	0.07
		C	0.000	0.000	0.000	0.000	0.04

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	140.00-135.00	A	0.890	0.000	0.000	0.000	1.078	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.03
L2	135.00-130.00	A	0.886	0.000	0.000	0.000	1.074	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L3	130.00-125.00	A	0.882	0.000	0.000	0.000	1.070	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L4	125.00-120.00	A	0.878	0.000	0.000	0.000	1.065	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L5	120.00-115.00	A	0.873	0.000	0.000	0.000	1.061	0.01
		B		0.000	0.000	0.000	3.727	0.10
		C		0.000	0.000	0.000	0.000	0.05
L6	115.00-110.00	A	0.869	0.000	0.000	0.000	1.056	0.01
		B		0.000	0.000	0.000	3.718	0.10
		C		0.000	0.000	0.000	0.000	0.05
L7	110.00-105.00	A	0.864	0.000	0.000	0.000	1.052	0.01
		B		0.000	0.000	0.000	5.563	0.14
		C		0.000	0.000	0.000	0.000	0.05
L8	105.00-101.58	A	0.860	0.000	0.000	0.000	0.717	0.00
		B		0.000	0.000	0.000	3.796	0.10
		C		0.000	0.000	0.000	0.000	0.04
L9	101.58-96.58	A	0.856	0.000	0.000	0.000	1.043	0.01
		B		0.000	0.000	0.000	5.537	0.14
		C		0.000	0.000	0.000	0.000	0.05
L10	96.58-91.58	A	0.850	0.000	0.000	0.000	1.038	0.02
		B		0.000	0.000	0.000	5.521	0.14
		C		0.000	0.000	0.000	0.000	0.05
L11	91.58-86.58	A	0.845	0.000	0.000	0.000	1.032	0.02
		B		0.000	0.000	0.000	5.505	0.14
		C		0.000	0.000	0.000	0.000	0.05
L12	86.58-81.58	A	0.839	0.000	0.000	0.000	1.027	0.02
		B		0.000	0.000	0.000	5.487	0.14
		C		0.000	0.000	0.000	0.000	0.05
L13	81.58-76.58	A	0.833	0.000	0.000	0.000	1.020	0.02
		B		0.000	0.000	0.000	5.469	0.14
		C		0.000	0.000	0.000	0.000	0.05
L14	76.58-71.58	A	0.826	0.000	0.000	0.000	1.161	0.03
		B		0.000	0.000	0.000	5.139	0.14
		C		0.000	0.000	0.000	0.000	0.05
L15	71.58-70.08	A	0.822	0.000	0.000	0.000	0.825	0.01
		B		0.000	0.000	0.000	0.523	0.04
		C		0.000	0.000	0.000	0.000	0.02
L16	70.08-69.83	A	0.821	0.000	0.000	0.000	0.138	0.00
		B		0.000	0.000	0.000	0.087	0.01
		C		0.000	0.000	0.000	0.000	0.00
L17	69.83-64.83	A	0.817	0.000	0.000	0.000	2.746	0.05
		B		0.000	0.000	0.000	1.741	0.14
		C		0.000	0.000	0.000	0.000	0.05
L18	64.83-59.83	A	0.809	0.000	0.000	0.000	3.028	0.05
		B		0.000	0.000	0.000	2.032	0.14
		C		0.000	0.000	0.000	0.000	0.05
L19	59.83-59.08	A	0.805	0.000	0.000	0.000	0.743	0.01
		B		0.000	0.000	0.000	0.595	0.02
		C		0.000	0.000	0.000	0.000	0.01
L20	59.08-58.82	A	0.804	0.000	0.000	0.000	0.264	0.00
		B		0.000	0.000	0.000	0.211	0.01
		C		0.000	0.000	0.000	0.000	0.00
L21	58.82-58.67	A	0.804	0.000	0.000	0.000	0.149	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
		B		0.000	0.000	0.000	0.119	0.00
		C		0.000	0.000	0.000	0.000	0.00
L22	58.67-53.67	A	0.799	0.000	0.000	0.000	3.791	0.05
		B		0.000	0.000	0.000	2.804	0.14
		C		0.000	0.000	0.000	0.000	0.05
L23	53.67-48.58	A	0.790	0.000	0.000	0.000	3.945	0.05
		B		0.000	0.000	0.000	2.950	0.14
		C		0.000	0.000	0.000	0.000	0.06
L24	48.58-47.58	A	0.785	0.000	0.000	0.000	0.982	0.01
		B		0.000	0.000	0.000	0.786	0.03
		C		0.000	0.000	0.000	0.000	0.01
L25	47.58-42.58	A	0.779	0.000	0.000	0.000	4.871	0.05
		B		0.000	0.000	0.000	3.905	0.13
		C		0.000	0.000	0.000	0.000	0.05
L26	42.58-40.00	A	0.770	0.000	0.000	0.000	3.176	0.02
		B		0.000	0.000	0.000	2.681	0.07
		C		0.000	0.000	0.000	0.000	0.03
L27	40.00-39.75	A	0.767	0.000	0.000	0.000	0.326	0.00
		B		0.000	0.000	0.000	0.278	0.01
		C		0.000	0.000	0.000	0.000	0.00
L28	39.75-34.75	A	0.761	0.000	0.000	0.000	6.493	0.05
		B		0.000	0.000	0.000	5.545	0.13
		C		0.000	0.000	0.000	0.000	0.05
L29	34.75-32.50	A	0.752	0.000	0.000	0.000	3.181	0.02
		B		0.000	0.000	0.000	2.758	0.06
		C		0.000	0.000	0.000	0.000	0.02
L30	32.50-32.25	A	0.750	0.000	0.000	0.000	0.406	0.00
		B		0.000	0.000	0.000	0.359	0.01
		C		0.000	0.000	0.000	0.000	0.00
L31	32.25-31.42	A	0.750	0.000	0.000	0.000	1.352	0.01
		B		0.000	0.000	0.000	1.196	0.02
		C		0.000	0.000	0.000	0.000	0.01
L32	31.42-31.17	A	0.750	0.000	0.000	0.000	0.406	0.00
		B		0.000	0.000	0.000	0.359	0.01
		C		0.000	0.000	0.000	0.000	0.00
L33	31.17-29.00	A	0.750	0.000	0.000	0.000	2.982	0.02
		B		0.000	0.000	0.000	2.576	0.06
		C		0.000	0.000	0.000	0.000	0.02
L34	29.00-28.75	A	0.750	0.000	0.000	0.000	0.322	0.00
		B		0.000	0.000	0.000	0.275	0.01
		C		0.000	0.000	0.000	0.000	0.00
L35	28.75-23.75	A	0.750	0.000	0.000	0.000	5.362	0.05
		B		0.000	0.000	0.000	4.425	0.13
		C		0.000	0.000	0.000	0.000	0.05
L36	23.75-18.75	A	0.750	0.000	0.000	0.000	4.779	0.05
		B		0.000	0.000	0.000	3.842	0.13
		C		0.000	0.000	0.000	0.000	0.05
L37	18.75-13.75	A	0.750	0.000	0.000	0.000	4.779	0.05
		B		0.000	0.000	0.000	3.842	0.13
		C		0.000	0.000	0.000	0.000	0.05
L38	13.75-8.75	A	0.750	0.000	0.000	0.000	4.779	0.05
		B		0.000	0.000	0.000	3.842	0.13
		C		0.000	0.000	0.000	0.000	0.05
L39	8.75-3.75	A	0.750	0.000	0.000	0.000	4.779	0.05
		B		0.000	0.000	0.000	3.842	0.13
		C		0.000	0.000	0.000	0.000	0.05
L40	3.75-0.00	A	0.750	0.000	0.000	0.000	3.200	0.04
		B		0.000	0.000	0.000	2.497	0.10
		C		0.000	0.000	0.000	0.000	0.04

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	140.00-135.00	0.0000	-0.0545	0.0000	-0.2453
L2	135.00-130.00	0.0000	-0.0546	0.0000	-0.2492
L3	130.00-125.00	0.0000	-0.0547	0.0000	-0.2525
L4	125.00-120.00	0.0000	-0.0548	0.0000	-0.2553
L5	120.00-115.00	0.4004	0.1874	0.5614	0.1396
L6	115.00-110.00	0.4057	0.1899	0.5749	0.1433
L7	110.00-105.00	0.5637	0.2843	0.7782	0.2794
L8	105.00-101.58	0.5705	0.2878	0.7937	0.2853
L9	101.58-96.58	0.5769	0.2910	0.8083	0.2908
L10	96.58-91.58	0.5840	0.2946	0.8246	0.2971
L11	91.58-86.58	0.5906	0.2979	0.8398	0.3030
L12	86.58-81.58	0.5967	0.3010	0.8539	0.3085
L13	81.58-76.58	0.6025	0.3039	0.8670	0.3138
L14	76.58-71.58	0.5747	0.2702	0.8354	0.2636
L15	71.58-70.08	0.1876	-0.1570	0.3170	-0.3946
L16	70.08-69.83	0.1878	-0.1572	0.3175	-0.3951
L17	69.83-64.83	0.1883	-0.1576	0.3190	-0.3966
L18	64.83-59.83	0.2249	-0.1779	0.3656	-0.4178
L19	59.83-59.08	0.4197	-0.2841	0.5946	-0.5152
L20	59.08-58.82	0.4201	-0.2844	0.5953	-0.5158
L21	58.82-58.67	0.4203	-0.2845	0.5957	-0.5160
L22	58.67-53.67	0.3345	-0.2379	0.4715	-0.4643
L23	53.67-48.58	0.3472	-0.2453	0.4919	-0.4751
L24	48.58-47.58	0.4261	-0.2885	0.6071	-0.5249
L25	47.58-42.58	0.4282	-0.2899	0.6098	-0.5263
L26	42.58-40.00	0.5236	-0.3425	0.7407	-0.5852
L27	40.00-39.75	0.5495	-0.3568	0.7749	-0.6009
L28	39.75-34.75	0.5523	-0.3586	0.7795	-0.6040
L29	34.75-32.50	0.5959	-0.3830	0.8365	-0.6309
L30	32.50-32.25	0.6606	-0.4186	0.9169	-0.6677
L31	32.25-31.42	0.6613	-0.4191	0.9184	-0.6688
L32	31.42-31.17	0.6620	-0.4195	0.9200	-0.6700
L33	31.17-29.00	0.5880	-0.3789	0.8295	-0.6300
L34	29.00-28.75	0.5606	-0.3640	0.7953	-0.6155
L35	28.75-23.75	0.4848	-0.3225	0.6952	-0.5717
L36	23.75-18.75	0.4429	-0.2998	0.6390	-0.5490
L37	18.75-13.75	0.4456	-0.3016	0.6455	-0.5546
L38	13.75-8.75	0.4482	-0.3034	0.6518	-0.5600
L39	8.75-3.75	0.4507	-0.3051	0.6578	-0.5652
L40	3.75-0.00	0.4021	-0.2784	0.5960	-0.5381

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod	C	From Leg	0.00	0.0000	140.00	No Ice		0.25	0.25	0.03

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" Ice	0.66	0.66	0.03
			2.00			1" Ice	0.97	0.97	0.04
						2" Ice	1.49	1.49	0.06
						4" Ice	2.68	2.68	0.14
***									
DB636-C	A	From Leg	4.00	0.0000	138.00	No Ice	2.38	2.38	0.03
			0.00			1/2" Ice	3.35	3.35	0.05
			7.00			1" Ice	4.35	4.35	0.07
						2" Ice	5.58	5.58	0.14
						4" Ice	8.03	8.03	0.35
***									
BXA-70063-6CF-2 w/ Mount Pipe	A	From Leg	4.00	0.0000	138.00	No Ice	7.97	5.80	0.04
			0.00			1/2" Ice	8.61	6.95	0.10
			2.00			1" Ice	9.22	7.82	0.17
						2" Ice	10.46	9.60	0.34
						4" Ice	13.07	13.37	0.80
BXA-70063-6CF-2 w/ Mount Pipe	B	From Leg	4.00	0.0000	138.00	No Ice	7.97	5.80	0.04
			0.00			1/2" Ice	8.61	6.95	0.10
			2.00			1" Ice	9.22	7.82	0.17
						2" Ice	10.46	9.60	0.34
						4" Ice	13.07	13.37	0.80
BXA-70063-6CF-2 w/ Mount Pipe	C	From Leg	4.00	0.0000	138.00	No Ice	7.97	5.80	0.04
			0.00			1/2" Ice	8.61	6.95	0.10
			2.00			1" Ice	9.22	7.82	0.17
						2" Ice	10.46	9.60	0.34
						4" Ice	13.07	13.37	0.80
(2) BXA-171063-8BF-2 w/ Mount Pipe	A	From Leg	4.00	0.0000	138.00	No Ice	3.18	3.35	0.03
			0.00			1/2" Ice	3.56	3.97	0.06
			2.00			1" Ice	3.96	4.60	0.10
						2" Ice	4.85	5.89	0.19
						4" Ice	6.77	8.89	0.49
(2) BXA-171063-8BF-2 w/ Mount Pipe	B	From Leg	4.00	0.0000	138.00	No Ice	3.18	3.35	0.03
			0.00			1/2" Ice	3.56	3.97	0.06
			2.00			1" Ice	3.96	4.60	0.10
						2" Ice	4.85	5.89	0.19
						4" Ice	6.77	8.89	0.49
(2) BXA-171063-8BF-2 w/ Mount Pipe	C	From Leg	4.00	0.0000	138.00	No Ice	3.18	3.35	0.03
			0.00			1/2" Ice	3.56	3.97	0.06
			2.00			1" Ice	3.96	4.60	0.10
						2" Ice	4.85	5.89	0.19
						4" Ice	6.77	8.89	0.49
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	A	From Leg	4.00	0.0000	138.00	No Ice	7.71	5.63	0.04
			0.00			1/2" Ice	8.33	6.72	0.10
			2.00			1" Ice	8.92	7.56	0.17
						2" Ice	10.13	9.29	0.33
						4" Ice	12.68	12.97	0.79
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	B	From Leg	4.00	0.0000	138.00	No Ice	7.71	5.63	0.04
			0.00			1/2" Ice	8.33	6.72	0.10
			2.00			1" Ice	8.92	7.56	0.17
						2" Ice	10.13	9.29	0.33
						4" Ice	12.68	12.97	0.79
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	C	From Leg	4.00	0.0000	138.00	No Ice	7.71	5.63	0.04
			0.00			1/2" Ice	8.33	6.72	0.10
			2.00			1" Ice	8.92	7.56	0.17
						2" Ice	10.13	9.29	0.33
						4" Ice	12.68	12.97	0.79
(2) FD9R6004/2C-3L	A	From Leg	4.00	0.0000	138.00	No Ice	0.37	0.08	0.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	0.45	0.14	0.01
			2.00			1" Ice	0.54	0.20	0.01
						2" Ice	0.75	0.34	0.02
						4" Ice	1.28	0.74	0.06
(2) FD9R6004/2C-3L	B	From Leg	4.00	0.0000	138.00	No Ice	0.37	0.08	0.00
			0.00			1/2" Ice	0.45	0.14	0.01
			2.00			1" Ice	0.54	0.20	0.01
						2" Ice	0.75	0.34	0.02
						4" Ice	1.28	0.74	0.06
(2) FD9R6004/2C-3L	C	From Leg	4.00	0.0000	138.00	No Ice	0.37	0.08	0.00
			0.00			1/2" Ice	0.45	0.14	0.01
			2.00			1" Ice	0.54	0.20	0.01
						2" Ice	0.75	0.34	0.02
						4" Ice	1.28	0.74	0.06
RRH2X40-AWS	A	From Leg	4.00	0.0000	138.00	No Ice	2.52	1.59	0.04
			0.00			1/2" Ice	2.75	1.80	0.06
			2.00			1" Ice	2.99	2.01	0.08
						2" Ice	3.50	2.46	0.13
						4" Ice	4.61	3.48	0.28
RRH2X40-AWS	B	From Leg	4.00	0.0000	138.00	No Ice	2.52	1.59	0.04
			0.00			1/2" Ice	2.75	1.80	0.06
			2.00			1" Ice	2.99	2.01	0.08
						2" Ice	3.50	2.46	0.13
						4" Ice	4.61	3.48	0.28
RRH2X40-AWS	C	From Leg	4.00	0.0000	138.00	No Ice	2.52	1.59	0.04
			0.00			1/2" Ice	2.75	1.80	0.06
			2.00			1" Ice	2.99	2.01	0.08
						2" Ice	3.50	2.46	0.13
						4" Ice	4.61	3.48	0.28
DB-T1-6Z-8AB-0Z	C	From Leg	4.00	0.0000	138.00	No Ice	5.60	2.33	0.04
			0.00			1/2" Ice	5.92	2.56	0.08
			2.00			1" Ice	6.24	2.79	0.12
						2" Ice	6.91	3.28	0.21
						4" Ice	8.37	4.37	0.45
Platform Mount [LP 403-1]	C	None		0.0000	138.00	No Ice	18.85	18.85	1.50
						1/2" Ice	24.30	24.30	1.80
						1" Ice	29.75	29.75	2.09
						2" Ice	40.65	40.65	2.69
						4" Ice	62.45	62.45	3.87
***									
APX16PV-16PVL w/ Mount Pipe	A	From Leg	4.00	0.0000	120.00	No Ice	6.88	3.27	0.06
			0.00			1/2" Ice	7.39	3.97	0.10
			0.00			1" Ice	7.89	4.64	0.16
						2" Ice	8.92	6.02	0.28
						4" Ice	11.12	8.99	0.65
APX16PV-16PVL w/ Mount Pipe	B	From Leg	4.00	0.0000	120.00	No Ice	6.88	3.27	0.06
			0.00			1/2" Ice	7.39	3.97	0.10
			0.00			1" Ice	7.89	4.64	0.16
						2" Ice	8.92	6.02	0.28
						4" Ice	11.12	8.99	0.65
APX16PV-16PVL w/ Mount Pipe	C	From Leg	4.00	0.0000	120.00	No Ice	6.88	3.27	0.06
			0.00			1/2" Ice	7.39	3.97	0.10
			0.00			1" Ice	7.89	4.64	0.16
						2" Ice	8.92	6.02	0.28
						4" Ice	11.12	8.99	0.65
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	A	From Leg	4.00	0.0000	120.00	No Ice	7.81	3.78	0.06
			0.00			1/2" Ice	8.37	4.64	0.11

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" Ice	8.92	5.38	0.17
						2" Ice	10.04	6.91	0.31
						4" Ice	12.41	10.16	0.72
APX16DWV-16DWVS-E-A	B	From Leg	4.00	0.0000	120.00	No Ice	7.81	3.78	0.06
20 w/ Mount Pipe			0.00			1/2" Ice	8.37	4.64	0.11
			0.00			1" Ice	8.92	5.38	0.17
						2" Ice	10.04	6.91	0.31
						4" Ice	12.41	10.16	0.72
APX16DWV-16DWVS-E-A	C	From Leg	4.00	0.0000	120.00	No Ice	7.81	3.78	0.06
20 w/ Mount Pipe			0.00			1/2" Ice	8.37	4.64	0.11
			0.00			1" Ice	8.92	5.38	0.17
						2" Ice	10.04	6.91	0.31
						4" Ice	12.41	10.16	0.72
LNX-6515DS-VTM w/	A	From Leg	4.00	0.0000	120.00	No Ice	11.68	9.84	0.08
Mount Pipe			0.00			1/2" Ice	12.40	11.37	0.17
			0.00			1" Ice	13.14	12.91	0.27
						2" Ice	14.60	15.27	0.51
						4" Ice	17.87	20.14	1.15
LNX-6515DS-VTM w/	B	From Leg	4.00	0.0000	120.00	No Ice	11.68	9.84	0.08
Mount Pipe			0.00			1/2" Ice	12.40	11.37	0.17
			0.00			1" Ice	13.14	12.91	0.27
						2" Ice	14.60	15.27	0.51
						4" Ice	17.87	20.14	1.15
LNX-6515DS-VTM w/	C	From Leg	4.00	0.0000	120.00	No Ice	11.68	9.84	0.08
Mount Pipe			0.00			1/2" Ice	12.40	11.37	0.17
			0.00			1" Ice	13.14	12.91	0.27
						2" Ice	14.60	15.27	0.51
						4" Ice	17.87	20.14	1.15
(2) DTMA-1819-DD-12	A	From Leg	4.00	0.0000	120.00	No Ice	0.65	0.38	0.01
TMA			0.00			1/2" Ice	0.77	0.48	0.02
			0.00			1" Ice	0.90	0.60	0.03
						2" Ice	1.18	0.85	0.04
						4" Ice	1.85	1.45	0.11
(2) DTMA-1819-DD-12	B	From Leg	4.00	0.0000	120.00	No Ice	0.65	0.38	0.01
TMA			0.00			1/2" Ice	0.77	0.48	0.02
			0.00			1" Ice	0.90	0.60	0.03
						2" Ice	1.18	0.85	0.04
						4" Ice	1.85	1.45	0.11
(2) DTMA-1819-DD-12	C	From Leg	4.00	0.0000	120.00	No Ice	0.65	0.38	0.01
TMA			0.00			1/2" Ice	0.77	0.48	0.02
			0.00			1" Ice	0.90	0.60	0.03
						2" Ice	1.18	0.85	0.04
						4" Ice	1.85	1.45	0.11
ATBT-BOTTOM-24V	C	From Leg	4.00	0.0000	120.00	No Ice	0.12	0.08	0.00
			0.00			1/2" Ice	0.17	0.12	0.00
			0.00			1" Ice	0.23	0.17	0.01
						2" Ice	0.38	0.30	0.01
						4" Ice	0.77	0.67	0.04
ATBT-BOTTOM-24V	C	From Leg	4.00	0.0000	120.00	No Ice	0.12	0.08	0.00
			0.00			1/2" Ice	0.17	0.12	0.00
			0.00			1" Ice	0.23	0.17	0.01
						2" Ice	0.38	0.30	0.01
						4" Ice	0.77	0.67	0.04
ATBT-BOTTOM-24V	C	From Leg	4.00	0.0000	120.00	No Ice	0.12	0.08	0.00
			0.00			1/2" Ice	0.17	0.12	0.00
			0.00			1" Ice	0.23	0.17	0.01
						2" Ice	0.38	0.30	0.01

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice	0.77	0.67	0.04
T-Arm Mount [TA 602-3]	C	None		0.0000	120.00	No Ice	11.59	11.59	0.77
						1/2" Ice	15.44	15.44	0.99
						1" Ice	19.29	19.29	1.21
						2" Ice	26.99	26.99	1.64
						4" Ice	42.39	42.39	2.50
***									
800 10504 w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	110.00	No Ice	3.59	3.18	0.04
						1/2" Ice	4.01	3.91	0.07
						1" Ice	4.42	4.58	0.11
						2" Ice	5.34	5.98	0.21
						4" Ice	7.38	8.98	0.51
800 10504 w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	110.00	No Ice	3.59	3.18	0.04
						1/2" Ice	4.01	3.91	0.07
						1" Ice	4.42	4.58	0.11
						2" Ice	5.34	5.98	0.21
						4" Ice	7.38	8.98	0.51
800 10504 w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	110.00	No Ice	3.59	3.18	0.04
						1/2" Ice	4.01	3.91	0.07
						1" Ice	4.42	4.58	0.11
						2" Ice	5.34	5.98	0.21
						4" Ice	7.38	8.98	0.51
860 10025 RET	A	From Leg	3.00 0.00 0.00	0.0000	110.00	No Ice	0.16	0.14	0.00
						1/2" Ice	0.23	0.20	0.00
						1" Ice	0.30	0.27	0.01
						2" Ice	0.48	0.44	0.01
						4" Ice	0.93	0.88	0.05
860 10025 RET	B	From Leg	3.00 0.00 0.00	0.0000	110.00	No Ice	0.16	0.14	0.00
						1/2" Ice	0.23	0.20	0.00
						1" Ice	0.30	0.27	0.01
						2" Ice	0.48	0.44	0.01
						4" Ice	0.93	0.88	0.05
860 10025 RET	C	From Leg	3.00 0.00 0.00	0.0000	110.00	No Ice	0.16	0.14	0.00
						1/2" Ice	0.23	0.20	0.00
						1" Ice	0.30	0.27	0.01
						2" Ice	0.48	0.44	0.01
						4" Ice	0.93	0.88	0.05
Empty Mount Pipe	A	From Leg	0.00 0.00 0.00	0.0000	110.00	No Ice	1.40	1.40	0.03
						1/2" Ice	2.13	2.13	0.04
						1" Ice	2.68	2.68	0.06
						2" Ice	3.56	3.56	0.10
						4" Ice	5.42	5.42	0.26
Empty Mount Pipe	B	From Leg	0.00 0.00 0.00	0.0000	110.00	No Ice	1.40	1.40	0.03
						1/2" Ice	2.13	2.13	0.04
						1" Ice	2.68	2.68	0.06
						2" Ice	3.56	3.56	0.10
						4" Ice	5.42	5.42	0.26
Empty Mount Pipe	C	From Leg	0.00 0.00 0.00	0.0000	110.00	No Ice	1.40	1.40	0.03
						1/2" Ice	2.13	2.13	0.04
						1" Ice	2.68	2.68	0.06
						2" Ice	3.56	3.56	0.10
						4" Ice	5.42	5.42	0.26
T-Arm Mount [TA 702-3]	C	None		0.0000	110.00	No Ice	5.64	5.64	0.34
						1/2" Ice	6.55	6.55	0.43
						1" Ice	7.46	7.46	0.52
						2" Ice	9.28	9.28	0.70
						4" Ice	12.92	12.92	1.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
***									
(2) RRUS-11	A	From Leg	1.00 0.00 0.00	0.0000	99.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.94 3.17 3.41 3.91 5.02	1.25 1.41 1.59 1.96 2.82	0.06 0.07 0.10 0.15 0.30
(2) RRUS-11	B	From Leg	1.00 0.00 0.00	0.0000	99.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.94 3.17 3.41 3.91 5.02	1.25 1.41 1.59 1.96 2.82	0.06 0.07 0.10 0.15 0.30
(2) RRUS-11	C	From Leg	1.00 0.00 0.00	0.0000	99.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.94 3.17 3.41 3.91 5.02	1.25 1.41 1.59 1.96 2.82	0.06 0.07 0.10 0.15 0.30
DC6-48-60-18-8F	A	From Leg	1.00 0.00 0.00	0.0000	99.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.57 2.80 3.04 3.54 4.66	4.32 4.60 4.88 5.49 6.80	0.03 0.06 0.10 0.18 0.40
Side Arm Mount [SO 102-3]	C	None		0.0000	99.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.00 3.48 3.96 4.92 6.84	3.00 3.48 3.96 4.92 6.84	0.08 0.11 0.14 0.20 0.32
***									
7770.00 w/Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.46 7.14 7.73 8.94 11.51	4.59 5.66 6.45 8.06 11.64	0.05 0.10 0.16 0.30 0.71
7770.00 w/Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.46 7.14 7.73 8.94 11.51	4.59 5.66 6.45 8.06 11.64	0.05 0.10 0.16 0.30 0.71
7770.00 w/Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.46 7.14 7.73 8.94 11.51	4.59 5.66 6.45 8.06 11.64	0.05 0.10 0.16 0.30 0.71
P65-16-XLH-RR w/Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.64 9.29 9.91 11.18 13.83	6.36 7.54 8.43 10.24 14.10	0.08 0.14 0.22 0.39 0.89
P65-16-XLH-RR w/Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.64 9.29 9.91 11.18 13.83	6.36 7.54 8.43 10.24 14.10	0.08 0.14 0.22 0.39 0.89
P65-16-XLH-RR w/Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.64 9.29 9.91 11.18 13.83	6.36 7.54 8.43 10.24 14.10	0.08 0.14 0.22 0.39 0.89

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) LGP21401 TMA	A	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.95 1.09 1.24 1.57 2.32	0.37 0.48 0.60 0.87 1.51	0.02 0.02 0.03 0.05 0.12
(2) LGP21401 TMA	B	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.95 1.09 1.24 1.57 2.32	0.37 0.48 0.60 0.87 1.51	0.02 0.02 0.03 0.05 0.12
(2) LGP21401 TMA	C	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.95 1.09 1.24 1.57 2.32	0.37 0.48 0.60 0.87 1.51	0.02 0.02 0.03 0.05 0.12
(2) Empty Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.40 2.13 2.68 3.56 5.42	1.40 2.13 2.68 3.56 5.42	0.03 0.04 0.06 0.10 0.26
(2) Empty Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.40 2.13 2.68 3.56 5.42	1.40 2.13 2.68 3.56 5.42	0.03 0.04 0.06 0.10 0.26
(2) Empty Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.40 2.13 2.68 3.56 5.42	1.40 2.13 2.68 3.56 5.42	0.03 0.04 0.06 0.10 0.26
Platform Mount [LP 713-1]	C	None		0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	31.27 39.68 48.09 64.91 98.55	31.27 39.68 48.09 64.91 98.55	1.51 1.93 2.35 3.19 4.86
***									
APXVSPP18-C-A20 w/Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	73.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.95 8.13 9.02 10.84 14.85	0.08 0.15 0.23 0.41 0.91
APXVSPP18-C-A20 w/Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	73.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.95 8.13 9.02 10.84 14.85	0.08 0.15 0.23 0.41 0.91
APXVSPP18-C-A20 w/Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	73.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.95 8.13 9.02 10.84 14.85	0.08 0.15 0.23 0.41 0.91
800MHz 2x50W RRH	A	From Leg	4.00 0.00 2.00	0.0000	73.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	0.05 0.07 0.10 0.16 0.32
800MHz 2x50W RRH	B	From Leg	4.00	0.0000	73.00	No Ice	2.49	2.07	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	2.71	2.27	0.07
			2.00			1" Ice	2.93	2.48	0.10
						2" Ice	3.41	2.93	0.16
						4" Ice	4.46	3.93	0.32
800MHz 2x50W RRH	C	From Leg	4.00	0.0000	73.00	No Ice	2.49	2.07	0.05
			0.00			1/2" Ice	2.71	2.27	0.07
			2.00			1" Ice	2.93	2.48	0.10
						2" Ice	3.41	2.93	0.16
						4" Ice	4.46	3.93	0.32
800 MHz External Notch Filter	A	From Leg	4.00	0.0000	73.00	No Ice	0.78	0.29	0.01
			0.00			1/2" Ice	0.90	0.38	0.01
			2.00			1" Ice	1.03	0.48	0.02
						2" Ice	1.31	0.70	0.04
						4" Ice	1.99	1.24	0.10
800 MHz External Notch Filter	B	From Leg	4.00	0.0000	73.00	No Ice	0.78	0.29	0.01
			0.00			1/2" Ice	0.90	0.38	0.01
			2.00			1" Ice	1.03	0.48	0.02
						2" Ice	1.31	0.70	0.04
						4" Ice	1.99	1.24	0.10
800 MHz External Notch Filter	C	From Leg	4.00	0.0000	73.00	No Ice	0.78	0.29	0.01
			0.00			1/2" Ice	0.90	0.38	0.01
			2.00			1" Ice	1.03	0.48	0.02
						2" Ice	1.31	0.70	0.04
						4" Ice	1.99	1.24	0.10
1900MHz 4X40W RRH	A	From Leg	4.00	0.0000	73.00	No Ice	2.71	2.61	0.06
			0.00			1/2" Ice	2.95	2.84	0.08
			2.00			1" Ice	3.20	3.09	0.11
						2" Ice	3.72	3.61	0.17
						4" Ice	4.86	4.74	0.35
1900MHz 4X40W RRH	B	From Leg	4.00	0.0000	73.00	No Ice	2.71	2.61	0.06
			0.00			1/2" Ice	2.95	2.84	0.08
			2.00			1" Ice	3.20	3.09	0.11
						2" Ice	3.72	3.61	0.17
						4" Ice	4.86	4.74	0.35
1900MHz 4X40W RRH	C	From Leg	4.00	0.0000	73.00	No Ice	2.71	2.61	0.06
			0.00			1/2" Ice	2.95	2.84	0.08
			2.00			1" Ice	3.20	3.09	0.11
						2" Ice	3.72	3.61	0.17
						4" Ice	4.86	4.74	0.35
*									
LLPX310R w/Mount Pipe	A	From Leg	4.00	0.0000	73.00	No Ice	5.69	3.63	0.05
			0.00			1/2" Ice	6.41	4.63	0.10
			2.00			1" Ice	6.99	5.35	0.15
						2" Ice	8.18	6.86	0.27
						4" Ice	10.72	10.16	0.63
LLPX310R w/Mount Pipe	B	From Leg	4.00	0.0000	73.00	No Ice	5.69	3.63	0.05
			0.00			1/2" Ice	6.41	4.63	0.10
			2.00			1" Ice	6.99	5.35	0.15
						2" Ice	8.18	6.86	0.27
						4" Ice	10.72	10.16	0.63
LLPX310R w/Mount Pipe	C	From Leg	4.00	0.0000	73.00	No Ice	5.69	3.63	0.05
			0.00			1/2" Ice	6.41	4.63	0.10
			2.00			1" Ice	6.99	5.35	0.15
						2" Ice	8.18	6.86	0.27
						4" Ice	10.72	10.16	0.63
FDD_R6_RRH	A	From Leg	4.00	0.0000	73.00	No Ice	1.79	0.78	0.03
			0.00			1/2" Ice	1.97	0.92	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
			2.00			1" Ice	2.16	1.07	0.06
						2" Ice	2.57	1.39	0.09
						4" Ice	3.49	2.14	0.20
FDD_R6_RRH	B	From Leg	4.00	0.0000	73.00	No Ice	1.79	0.78	0.03
			0.00			1/2" Ice	1.97	0.92	0.04
			2.00			1" Ice	2.16	1.07	0.06
						2" Ice	2.57	1.39	0.09
						4" Ice	3.49	2.14	0.20
FDD_R6_RRH	C	From Leg	4.00	0.0000	73.00	No Ice	1.79	0.78	0.03
			0.00			1/2" Ice	1.97	0.92	0.04
			2.00			1" Ice	2.16	1.07	0.06
						2" Ice	2.57	1.39	0.09
						4" Ice	3.49	2.14	0.20
Horizon Duo ODU	A	From Leg	4.00	0.0000	73.00	No Ice	0.55	0.34	0.01
			0.00			1/2" Ice	0.65	0.43	0.01
			2.00			1" Ice	0.76	0.52	0.02
						2" Ice	1.00	0.73	0.04
						4" Ice	1.60	1.25	0.10
Horizon Duo ODU	B	From Leg	4.00	0.0000	73.00	No Ice	0.55	0.34	0.01
			0.00			1/2" Ice	0.65	0.43	0.01
			2.00			1" Ice	0.76	0.52	0.02
						2" Ice	1.00	0.73	0.04
						4" Ice	1.60	1.25	0.10
*									
Empty Mount Pipe	A	From Leg	4.00	0.0000	73.00	No Ice	1.40	1.40	0.03
			0.00			1/2" Ice	2.13	2.13	0.04
			0.00			1" Ice	2.68	2.68	0.06
						2" Ice	3.56	3.56	0.10
						4" Ice	5.42	5.42	0.26
Empty Mount Pipe	B	From Leg	4.00	0.0000	73.00	No Ice	1.40	1.40	0.03
			0.00			1/2" Ice	2.13	2.13	0.04
			0.00			1" Ice	2.68	2.68	0.06
						2" Ice	3.56	3.56	0.10
						4" Ice	5.42	5.42	0.26
Empty Mount Pipe	C	From Leg	4.00	0.0000	73.00	No Ice	1.40	1.40	0.03
			0.00			1/2" Ice	2.13	2.13	0.04
			0.00			1" Ice	2.68	2.68	0.06
						2" Ice	3.56	3.56	0.10
						4" Ice	5.42	5.42	0.26
Platform Mount [LP 712-1]	C	None		0.0000	73.00	No Ice	24.53	24.53	1.34
						1/2" Ice	29.94	29.94	1.65
						1" Ice	35.35	35.35	1.96
						2" Ice	46.17	46.17	2.58
						4" Ice	67.81	67.81	3.82
Side Arm Mount [SO 102-3]	B	None		0.0000	73.00	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
						4" Ice	6.84	6.84	0.32
***									
GPS-TMG-HR-26NCM GPS	C	From Leg	2.00	0.0000	50.00	No Ice	0.09	0.09	0.00
			0.00			1/2" Ice	0.14	0.14	0.00
			0.00			1" Ice	0.20	0.20	0.00
						2" Ice	0.36	0.36	0.01
						4" Ice	0.81	0.81	0.04

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
A-ANT-23G-2-C Dish	A	Paraboloid w/Shroud (HP)	From Leg	4.00 0.00 2.00	-40.0000		73.00	2.17	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.72 4.01 4.30 4.88 6.04	0.03 0.04 0.05 0.07 0.11
A-ANT-23G-2-C Dish	B	Paraboloid w/Shroud (HP)	From Leg	4.00 0.00 2.00	-10.0000		73.00	2.17	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.72 4.01 4.30 4.88 6.04	0.03 0.04 0.05 0.07 0.11

Tower Pressures - No Ice

G_H = 1.690

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg % %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 140.00-135.00	137.47	1.503	28	5.720	A B C	0.000 0.000 0.000	5.720 5.720 5.720	5.720	100.00 100.00 100.00	0.000 0.000 0.000	0.188 0.000 0.000
L2 135.00-130.00	132.47	1.487	28	6.193	A B C	0.000 0.000 0.000	6.193 6.193 6.193	6.193	100.00 100.00 100.00	0.000 0.000 0.000	0.188 0.000 0.000
L3 130.00-125.00	127.47	1.471	27	6.666	A B C	0.000 0.000 0.000	6.666 6.666 6.666	6.666	100.00 100.00 100.00	0.000 0.000 0.000	0.188 0.000 0.000
L4 125.00-120.00	122.47	1.455	27	7.139	A B C	0.000 0.000 0.000	7.139 7.139 7.139	7.139	100.00 100.00 100.00	0.000 0.000 0.000	0.188 0.000 0.000
L5 120.00-115.00	117.47	1.437	27	7.612	A B C	0.000 0.000 0.000	7.612 7.612 7.612	7.612	100.00 100.00 100.00	0.000 0.000 0.000	0.188 1.980 0.000
L6 115.00-110.00	112.48	1.42	26	8.085	A B C	0.000 0.000 0.000	8.085 8.085 8.085	8.085	100.00 100.00 100.00	0.000 0.000 0.000	0.188 1.980 0.000
L7 110.00-105.00	107.48	1.401	26	8.558	A B C	0.000 0.000 0.000	8.558 8.558 8.558	8.558	100.00 100.00 100.00	0.000 0.000 0.000	0.188 2.970 0.000
L8 105.00-101.58	103.28	1.385	26	6.126	A B C	0.000 0.000 0.000	6.126 6.126 6.126	6.126	100.00 100.00 100.00	0.000 0.000 0.000	0.128 2.031 0.000
L9 101.58-96.58	99.06	1.369	25	9.354	A B C	0.000 0.000 0.000	9.354 9.354 9.354	9.354	100.00 100.00 100.00	0.000 0.000 0.000	0.188 2.970 0.000
L10 96.58-91.58	94.06	1.349	25	9.827	A B	0.000 0.000	9.827 9.827	9.827	100.00 100.00	0.000 0.000	0.188 2.970

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	9.827		100.00	0.000	0.000
L11	89.06	1.328	25	10.300	A	0.000	10.300	10.300	100.00	0.000	0.188
91.58-86.58					B	0.000	10.300		100.00	0.000	2.970
					C	0.000	10.300		100.00	0.000	0.000
L12	84.06	1.306	24	10.773	A	0.000	10.773	10.773	100.00	0.000	0.188
86.58-81.58					B	0.000	10.773		100.00	0.000	2.970
					C	0.000	10.773		100.00	0.000	0.000
L13	79.06	1.284	24	11.246	A	0.000	11.246	11.246	100.00	0.000	0.188
81.58-76.58					B	0.000	11.246		100.00	0.000	2.970
					C	0.000	11.246		100.00	0.000	0.000
L14	74.06	1.26	23	11.719	A	0.000	11.719	11.719	100.00	0.000	0.258
76.58-71.58					B	0.000	11.719		100.00	0.000	2.791
					C	0.000	11.719		100.00	0.000	0.000
L15	70.83	1.244	23	3.600	A	0.000	3.600	3.600	100.00	0.000	0.306
71.58-70.08					B	0.000	3.600		100.00	0.000	0.249
					C	0.000	3.600		100.00	0.000	0.000
L16	69.96	1.239	23	0.605	A	0.000	0.605	0.605	100.00	0.000	0.051
70.08-69.83					B	0.000	0.605		100.00	0.000	0.042
					C	0.000	0.605		100.00	0.000	0.000
L17	67.32	1.226	23	12.357	A	0.000	12.357	12.357	100.00	0.000	1.021
69.83-64.83					B	0.000	12.357		100.00	0.000	0.833
					C	0.000	12.357		100.00	0.000	0.000
L18	62.32	1.199	22	12.830	A	0.000	12.830	12.830	100.00	0.000	1.200
64.83-59.83					B	0.000	12.830		100.00	0.000	1.012
					C	0.000	12.830		100.00	0.000	0.000
L19	59.46	1.183	22	1.965	A	0.000	1.965	1.965	100.00	0.000	0.354
59.83-59.08					B	0.000	1.965		100.00	0.000	0.326
					C	0.000	1.965		100.00	0.000	0.000
L20	58.95	1.18	22	0.701	A	0.000	0.701	0.701	100.00	0.000	0.126
59.08-58.82					B	0.000	0.701		100.00	0.000	0.116
					C	0.000	0.701		100.00	0.000	0.000
L21	58.74	1.179	22	0.395	A	0.000	0.395	0.395	100.00	0.000	0.071
58.82-58.67					B	0.000	0.395		100.00	0.000	0.065
					C	0.000	0.395		100.00	0.000	0.000
L22	56.15	1.164	22	13.413	A	0.000	13.413	13.413	100.00	0.000	1.807
58.67-53.67					B	0.000	13.413		100.00	0.000	1.619
					C	0.000	13.413		100.00	0.000	0.000
L23	51.11	1.133	21	14.131	A	0.000	14.131	14.131	100.00	0.000	1.892
53.67-48.58					B	0.000	14.131		100.00	0.000	1.702
					C	0.000	14.131		100.00	0.000	0.000
L24	48.08	1.114	21	2.783	A	0.000	2.783	2.783	100.00	0.000	0.472
48.58-47.58					B	0.000	2.783		100.00	0.000	0.435
					C	0.000	2.783		100.00	0.000	0.000
L25	45.07	1.093	20	14.201	A	0.000	14.201	14.201	100.00	0.000	2.362
47.58-42.58					B	0.000	14.201		100.00	0.000	2.175
					C	0.000	14.201		100.00	0.000	0.000
L26	41.29	1.066	20	7.513	A	0.000	7.513	7.513	100.00	0.000	1.552
42.58-40.00					B	0.000	7.513		100.00	0.000	1.456
					C	0.000	7.513		100.00	0.000	0.000
L27	39.87	1.056	20	0.735	A	0.000	0.735	0.735	100.00	0.000	0.160
40.00-39.75					B	0.000	0.735		100.00	0.000	0.150
					C	0.000	0.735		100.00	0.000	0.000
L28	37.24	1.035	19	14.942	A	0.000	14.942	14.942	100.00	0.000	3.196
39.75-34.75					B	0.000	14.942		100.00	0.000	3.008
					C	0.000	14.942		100.00	0.000	0.000
L29	33.62	1.005	19	6.878	A	0.000	6.878	6.878	100.00	0.000	1.576
34.75-32.50					B	0.000	6.878		100.00	0.000	1.492
					C	0.000	6.878		100.00	0.000	0.000
L30	32.37	1	18	0.770	A	0.000	0.770	0.770	100.00	0.000	0.201
32.50-32.25					B	0.000	0.770		100.00	0.000	0.192

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	0.770		100.00	0.000	0.000
L31	31.83	1	18	2.576	A	0.000	2.576	2.576	100.00	0.000	0.672
32.25-31.42					B	0.000	2.576		100.00	0.000	0.640
					C	0.000	2.576		100.00	0.000	0.000
L32	31.29	1	18	0.775	A	0.000	0.775	0.775	100.00	0.000	0.201
31.42-31.17					B	0.000	0.775		100.00	0.000	0.192
					C	0.000	0.775		100.00	0.000	0.000
L33	30.08	1	18	6.769	A	0.000	6.769	6.769	100.00	0.000	1.479
31.17-29.00					B	0.000	6.769		100.00	0.000	1.398
					C	0.000	6.769		100.00	0.000	0.000
L34	28.87	1	18	0.787	A	0.000	0.787	0.787	100.00	0.000	0.160
29.00-28.75					B	0.000	0.787		100.00	0.000	0.150
					C	0.000	0.787		100.00	0.000	0.000
L35	26.24	1	18	15.982	A	0.000	15.982	15.982	100.00	0.000	2.654
28.75-23.75					B	0.000	15.982		100.00	0.000	2.467
					C	0.000	15.982		100.00	0.000	0.000
L36	21.24	1	18	16.455	A	0.000	16.455	16.455	100.00	0.000	2.362
23.75-18.75					B	0.000	16.455		100.00	0.000	2.175
					C	0.000	16.455		100.00	0.000	0.000
L37	16.24	1	18	16.928	A	0.000	16.928	16.928	100.00	0.000	2.362
18.75-13.75					B	0.000	16.928		100.00	0.000	2.175
					C	0.000	16.928		100.00	0.000	0.000
L38 13.75-8.75	11.24	1	18	17.401	A	0.000	17.401	17.401	100.00	0.000	2.362
					B	0.000	17.401		100.00	0.000	2.175
					C	0.000	17.401		100.00	0.000	0.000
L39 8.75-3.75	6.24	1	18	17.874	A	0.000	17.874	17.874	100.00	0.000	2.362
					B	0.000	17.874		100.00	0.000	2.175
					C	0.000	17.874		100.00	0.000	0.000
L40 3.75-0.00	1.87	1	18	13.716	A	0.000	13.716	13.716	100.00	0.000	1.554
					B	0.000	13.716		100.00	0.000	1.414
					C	0.000	13.716		100.00	0.000	0.000

Tower Pressure - With Ice

G_H = 1.690

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	137.47	1.503	6	0.8901	6.462	A	0.000	6.462	6.462	100.00	0.000	1.078
140.00-135.00						B	0.000	6.462		100.00	0.000	0.000
						C	0.000	6.462		100.00	0.000	0.000
L2	132.47	1.487	5	0.8861	6.932	A	0.000	6.932	6.932	100.00	0.000	1.074
135.00-130.00						B	0.000	6.932		100.00	0.000	0.000
						C	0.000	6.932		100.00	0.000	0.000
L3	127.47	1.471	5	0.8820	7.401	A	0.000	7.401	7.401	100.00	0.000	1.070
130.00-125.00						B	0.000	7.401		100.00	0.000	0.000
						C	0.000	7.401		100.00	0.000	0.000
L4	122.47	1.455	5	0.8778	7.870	A	0.000	7.870	7.870	100.00	0.000	1.065
125.00-120.00						B	0.000	7.870		100.00	0.000	0.000
						C	0.000	7.870		100.00	0.000	0.000
L5	117.47	1.437	5	0.8734	8.340	A	0.000	8.340	8.340	100.00	0.000	1.061
120.00-115.00						B	0.000	8.340		100.00	0.000	3.727
						C	0.000	8.340		100.00	0.000	0.000
L6	112.48	1.42	5	0.8689	8.809	A	0.000	8.809	8.809	100.00	0.000	1.056

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
115.00-110.00						B	0.000	8.809		100.00	0.000	3.718
						C	0.000	8.809		100.00	0.000	0.000
L7	107.48	1.401	5	0.8642	9.278	A	0.000	9.278	9.278	100.00	0.000	1.052
110.00-105.00						B	0.000	9.278		100.00	0.000	5.563
						C	0.000	9.278		100.00	0.000	0.000
L8	103.28	1.385	5	0.8600	6.616	A	0.000	6.616	6.616	100.00	0.000	0.717
105.00-101.58						B	0.000	6.616		100.00	0.000	3.796
						C	0.000	6.616		100.00	0.000	0.000
L9 101.58-96.58	99.06	1.369	5	0.8557	10.067	A	0.000	10.067	10.067	100.00	0.000	1.043
						B	0.000	10.067		100.00	0.000	5.537
						C	0.000	10.067		100.00	0.000	0.000
L10 96.58-91.58	94.06	1.349	5	0.8504	10.536	A	0.000	10.536	10.536	100.00	0.000	1.038
						B	0.000	10.536		100.00	0.000	5.521
						C	0.000	10.536		100.00	0.000	0.000
L11 91.58-86.58	89.06	1.328	5	0.8449	11.004	A	0.000	11.004	11.004	100.00	0.000	1.032
						B	0.000	11.004		100.00	0.000	5.505
						C	0.000	11.004		100.00	0.000	0.000
L12 86.58-81.58	84.06	1.306	5	0.8391	11.472	A	0.000	11.472	11.472	100.00	0.000	1.027
						B	0.000	11.472		100.00	0.000	5.487
						C	0.000	11.472		100.00	0.000	0.000
L13 81.58-76.58	79.06	1.284	5	0.8329	11.940	A	0.000	11.940	11.940	100.00	0.000	1.020
						B	0.000	11.940		100.00	0.000	5.469
						C	0.000	11.940		100.00	0.000	0.000
L14 76.58-71.58	74.06	1.26	5	0.8264	12.407	A	0.000	12.407	12.407	100.00	0.000	1.161
						B	0.000	12.407		100.00	0.000	5.139
						C	0.000	12.407		100.00	0.000	0.000
L15 71.58-70.08	70.83	1.244	5	0.8220	3.805	A	0.000	3.805	3.805	100.00	0.000	0.825
						B	0.000	3.805		100.00	0.000	0.523
						C	0.000	3.805		100.00	0.000	0.000
L16 70.08-69.83	69.96	1.239	5	0.8208	0.640	A	0.000	0.640	0.640	100.00	0.000	0.138
						B	0.000	0.640		100.00	0.000	0.087
						C	0.000	0.640		100.00	0.000	0.000
L17 69.83-64.83	67.32	1.226	5	0.8170	13.037	A	0.000	13.037	13.037	100.00	0.000	2.746
						B	0.000	13.037		100.00	0.000	1.741
						C	0.000	13.037		100.00	0.000	0.000
L18 64.83-59.83	62.32	1.199	4	0.8095	13.504	A	0.000	13.504	13.504	100.00	0.000	3.028
						B	0.000	13.504		100.00	0.000	2.032
						C	0.000	13.504		100.00	0.000	0.000
L19 59.83-59.08	59.46	1.183	4	0.8049	2.066	A	0.000	2.066	2.066	100.00	0.000	0.743
						B	0.000	2.066		100.00	0.000	0.595
						C	0.000	2.066		100.00	0.000	0.000
L20 59.08-58.82	58.95	1.18	4	0.8041	0.737	A	0.000	0.737	0.737	100.00	0.000	0.264
						B	0.000	0.737		100.00	0.000	0.211
						C	0.000	0.737		100.00	0.000	0.000
L21 58.82-58.67	58.74	1.179	4	0.8037	0.415	A	0.000	0.415	0.415	100.00	0.000	0.149
						B	0.000	0.415		100.00	0.000	0.119
						C	0.000	0.415		100.00	0.000	0.000
L22 58.67-53.67	56.15	1.164	4	0.7994	14.079	A	0.000	14.079	14.079	100.00	0.000	3.791
						B	0.000	14.079		100.00	0.000	2.804
						C	0.000	14.079		100.00	0.000	0.000
L23 53.67-48.58	51.11	1.133	4	0.7904	14.801	A	0.000	14.801	14.801	100.00	0.000	3.945
						B	0.000	14.801		100.00	0.000	2.950
						C	0.000	14.801		100.00	0.000	0.000
L24 48.58-47.58	48.08	1.114	4	0.7846	2.915	A	0.000	2.915	2.915	100.00	0.000	0.982
						B	0.000	2.915		100.00	0.000	0.786
						C	0.000	2.915		100.00	0.000	0.000
L25 47.58-42.58	45.07	1.093	4	0.7786	14.850	A	0.000	14.850	14.850	100.00	0.000	4.871
						B	0.000	14.850		100.00	0.000	3.905
						C	0.000	14.850		100.00	0.000	0.000
L26 42.58-40.00	41.29	1.066	4	0.7704	7.844	A	0.000	7.844	7.844	100.00	0.000	3.176

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						B	0.000	7.844		100.00	0.000	2.681
						C	0.000	7.844		100.00	0.000	0.000
L27 40.00-39.75	39.87	1.056	4	0.7672	0.767	A	0.000	0.767	0.767	100.00	0.000	0.326
						B	0.000	0.767		100.00	0.000	0.278
						C	0.000	0.767		100.00	0.000	0.000
L28 39.75-34.75	37.24	1.035	4	0.7610	15.576	A	0.000	15.576	15.576	100.00	0.000	6.493
						B	0.000	15.576		100.00	0.000	5.545
						C	0.000	15.576		100.00	0.000	0.000
L29 34.75-32.50	33.62	1.005	4	0.7517	7.160	A	0.000	7.160	7.160	100.00	0.000	3.181
						B	0.000	7.160		100.00	0.000	2.758
						C	0.000	7.160		100.00	0.000	0.000
L30 32.50-32.25	32.37	1	4	0.7500	0.801	A	0.000	0.801	0.801	100.00	0.000	0.406
						B	0.000	0.801		100.00	0.000	0.359
						C	0.000	0.801		100.00	0.000	0.000
L31 32.25-31.42	31.83	1	4	0.7500	2.680	A	0.000	2.680	2.680	100.00	0.000	1.352
						B	0.000	2.680		100.00	0.000	1.196
						C	0.000	2.680		100.00	0.000	0.000
L32 31.42-31.17	31.29	1	4	0.7500	0.807	A	0.000	0.807	0.807	100.00	0.000	0.406
						B	0.000	0.807		100.00	0.000	0.359
						C	0.000	0.807		100.00	0.000	0.000
L33 31.17-29.00	30.08	1	4	0.7500	7.039	A	0.000	7.039	7.039	100.00	0.000	2.982
						B	0.000	7.039		100.00	0.000	2.576
						C	0.000	7.039		100.00	0.000	0.000
L34 29.00-28.75	28.87	1	4	0.7500	0.818	A	0.000	0.818	0.818	100.00	0.000	0.322
						B	0.000	0.818		100.00	0.000	0.275
						C	0.000	0.818		100.00	0.000	0.000
L35 28.75-23.75	26.24	1	4	0.7500	16.607	A	0.000	16.607	16.607	100.00	0.000	5.362
						B	0.000	16.607		100.00	0.000	4.425
						C	0.000	16.607		100.00	0.000	0.000
L36 23.75-18.75	21.24	1	4	0.7500	17.080	A	0.000	17.080	17.080	100.00	0.000	4.779
						B	0.000	17.080		100.00	0.000	3.842
						C	0.000	17.080		100.00	0.000	0.000
L37 18.75-13.75	16.24	1	4	0.7500	17.553	A	0.000	17.553	17.553	100.00	0.000	4.779
						B	0.000	17.553		100.00	0.000	3.842
						C	0.000	17.553		100.00	0.000	0.000
L38 13.75-8.75	11.24	1	4	0.7500	18.026	A	0.000	18.026	18.026	100.00	0.000	4.779
						B	0.000	18.026		100.00	0.000	3.842
						C	0.000	18.026		100.00	0.000	0.000
L39 8.75-3.75	6.24	1	4	0.7500	18.499	A	0.000	18.499	18.499	100.00	0.000	4.779
						B	0.000	18.499		100.00	0.000	3.842
						C	0.000	18.499		100.00	0.000	0.000
L40 3.75-0.00	1.87	1	4	0.7500	14.185	A	0.000	14.185	14.185	100.00	0.000	3.200
						B	0.000	14.185		100.00	0.000	2.497
						C	0.000	14.185		100.00	0.000	0.000

Tower Pressure - Service

$G_H = 1.690$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	137.47	1.503	10	5.720	A	0.000	5.720	5.720	100.00	0.000	0.188
140.00-135.00					B	0.000	5.720		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	5.720		100.00	0.000	0.000
L2	132.47	1.487	10	6.193	A	0.000	6.193	6.193	100.00	0.000	0.188
135.00-130.00					B	0.000	6.193		100.00	0.000	0.000
					C	0.000	6.193		100.00	0.000	0.000
L3	127.47	1.471	9	6.666	A	0.000	6.666	6.666	100.00	0.000	0.188
130.00-125.00					B	0.000	6.666		100.00	0.000	0.000
					C	0.000	6.666		100.00	0.000	0.000
L4	122.47	1.455	9	7.139	A	0.000	7.139	7.139	100.00	0.000	0.188
125.00-120.00					B	0.000	7.139		100.00	0.000	0.000
					C	0.000	7.139		100.00	0.000	0.000
L5	117.47	1.437	9	7.612	A	0.000	7.612	7.612	100.00	0.000	0.188
120.00-115.00					B	0.000	7.612		100.00	0.000	1.980
					C	0.000	7.612		100.00	0.000	0.000
L6	112.48	1.42	9	8.085	A	0.000	8.085	8.085	100.00	0.000	0.188
115.00-110.00					B	0.000	8.085		100.00	0.000	1.980
					C	0.000	8.085		100.00	0.000	0.000
L7	107.48	1.401	9	8.558	A	0.000	8.558	8.558	100.00	0.000	0.188
110.00-105.00					B	0.000	8.558		100.00	0.000	2.970
					C	0.000	8.558		100.00	0.000	0.000
L8	103.28	1.385	9	6.126	A	0.000	6.126	6.126	100.00	0.000	0.128
105.00-101.58					B	0.000	6.126		100.00	0.000	2.031
					C	0.000	6.126		100.00	0.000	0.000
L9	99.06	1.369	9	9.354	A	0.000	9.354	9.354	100.00	0.000	0.188
101.58-96.58					B	0.000	9.354		100.00	0.000	2.970
					C	0.000	9.354		100.00	0.000	0.000
L10	94.06	1.349	9	9.827	A	0.000	9.827	9.827	100.00	0.000	0.188
96.58-91.58					B	0.000	9.827		100.00	0.000	2.970
					C	0.000	9.827		100.00	0.000	0.000
L11	89.06	1.328	8	10.300	A	0.000	10.300	10.300	100.00	0.000	0.188
91.58-86.58					B	0.000	10.300		100.00	0.000	2.970
					C	0.000	10.300		100.00	0.000	0.000
L12	84.06	1.306	8	10.773	A	0.000	10.773	10.773	100.00	0.000	0.188
86.58-81.58					B	0.000	10.773		100.00	0.000	2.970
					C	0.000	10.773		100.00	0.000	0.000
L13	79.06	1.284	8	11.246	A	0.000	11.246	11.246	100.00	0.000	0.188
81.58-76.58					B	0.000	11.246		100.00	0.000	2.970
					C	0.000	11.246		100.00	0.000	0.000
L14	74.06	1.26	8	11.719	A	0.000	11.719	11.719	100.00	0.000	0.258
76.58-71.58					B	0.000	11.719		100.00	0.000	2.791
					C	0.000	11.719		100.00	0.000	0.000
L15	70.83	1.244	8	3.600	A	0.000	3.600	3.600	100.00	0.000	0.306
71.58-70.08					B	0.000	3.600		100.00	0.000	0.249
					C	0.000	3.600		100.00	0.000	0.000
L16	69.96	1.239	8	0.605	A	0.000	0.605	0.605	100.00	0.000	0.051
70.08-69.83					B	0.000	0.605		100.00	0.000	0.042
					C	0.000	0.605		100.00	0.000	0.000
L17	67.32	1.226	8	12.357	A	0.000	12.357	12.357	100.00	0.000	1.021
69.83-64.83					B	0.000	12.357		100.00	0.000	0.833
					C	0.000	12.357		100.00	0.000	0.000
L18	62.32	1.199	8	12.830	A	0.000	12.830	12.830	100.00	0.000	1.200
64.83-59.83					B	0.000	12.830		100.00	0.000	1.012
					C	0.000	12.830		100.00	0.000	0.000
L19	59.46	1.183	8	1.965	A	0.000	1.965	1.965	100.00	0.000	0.354
59.83-59.08					B	0.000	1.965		100.00	0.000	0.326
					C	0.000	1.965		100.00	0.000	0.000
L20	58.95	1.18	8	0.701	A	0.000	0.701	0.701	100.00	0.000	0.126
59.08-58.82					B	0.000	0.701		100.00	0.000	0.116
					C	0.000	0.701		100.00	0.000	0.000
L21	58.74	1.179	8	0.395	A	0.000	0.395	0.395	100.00	0.000	0.071
58.82-58.67					B	0.000	0.395		100.00	0.000	0.065

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	0.395		100.00	0.000	0.000
L22	56.15	1.164	7	13.413	A	0.000	13.413	13.413	100.00	0.000	1.807
58.67-53.67					B	0.000	13.413		100.00	0.000	1.619
					C	0.000	13.413		100.00	0.000	0.000
L23	51.11	1.133	7	14.131	A	0.000	14.131	14.131	100.00	0.000	1.892
53.67-48.58					B	0.000	14.131		100.00	0.000	1.702
					C	0.000	14.131		100.00	0.000	0.000
L24	48.08	1.114	7	2.783	A	0.000	2.783	2.783	100.00	0.000	0.472
48.58-47.58					B	0.000	2.783		100.00	0.000	0.435
					C	0.000	2.783		100.00	0.000	0.000
L25	45.07	1.093	7	14.201	A	0.000	14.201	14.201	100.00	0.000	2.362
47.58-42.58					B	0.000	14.201		100.00	0.000	2.175
					C	0.000	14.201		100.00	0.000	0.000
L26	41.29	1.066	7	7.513	A	0.000	7.513	7.513	100.00	0.000	1.552
42.58-40.00					B	0.000	7.513		100.00	0.000	1.456
					C	0.000	7.513		100.00	0.000	0.000
L27	39.87	1.056	7	0.735	A	0.000	0.735	0.735	100.00	0.000	0.160
40.00-39.75					B	0.000	0.735		100.00	0.000	0.150
					C	0.000	0.735		100.00	0.000	0.000
L28	37.24	1.035	7	14.942	A	0.000	14.942	14.942	100.00	0.000	3.196
39.75-34.75					B	0.000	14.942		100.00	0.000	3.008
					C	0.000	14.942		100.00	0.000	0.000
L29	33.62	1.005	6	6.878	A	0.000	6.878	6.878	100.00	0.000	1.576
34.75-32.50					B	0.000	6.878		100.00	0.000	1.492
					C	0.000	6.878		100.00	0.000	0.000
L30	32.37	1	6	0.770	A	0.000	0.770	0.770	100.00	0.000	0.201
32.50-32.25					B	0.000	0.770		100.00	0.000	0.192
					C	0.000	0.770		100.00	0.000	0.000
L31	31.83	1	6	2.576	A	0.000	2.576	2.576	100.00	0.000	0.672
32.25-31.42					B	0.000	2.576		100.00	0.000	0.640
					C	0.000	2.576		100.00	0.000	0.000
L32	31.29	1	6	0.775	A	0.000	0.775	0.775	100.00	0.000	0.201
31.42-31.17					B	0.000	0.775		100.00	0.000	0.192
					C	0.000	0.775		100.00	0.000	0.000
L33	30.08	1	6	6.769	A	0.000	6.769	6.769	100.00	0.000	1.479
31.17-29.00					B	0.000	6.769		100.00	0.000	1.398
					C	0.000	6.769		100.00	0.000	0.000
L34	28.87	1	6	0.787	A	0.000	0.787	0.787	100.00	0.000	0.160
29.00-28.75					B	0.000	0.787		100.00	0.000	0.150
					C	0.000	0.787		100.00	0.000	0.000
L35	26.24	1	6	15.982	A	0.000	15.982	15.982	100.00	0.000	2.654
28.75-23.75					B	0.000	15.982		100.00	0.000	2.467
					C	0.000	15.982		100.00	0.000	0.000
L36	21.24	1	6	16.455	A	0.000	16.455	16.455	100.00	0.000	2.362
23.75-18.75					B	0.000	16.455		100.00	0.000	2.175
					C	0.000	16.455		100.00	0.000	0.000
L37	16.24	1	6	16.928	A	0.000	16.928	16.928	100.00	0.000	2.362
18.75-13.75					B	0.000	16.928		100.00	0.000	2.175
					C	0.000	16.928		100.00	0.000	0.000
L38 13.75-8.75	11.24	1	6	17.401	A	0.000	17.401	17.401	100.00	0.000	2.362
					B	0.000	17.401		100.00	0.000	2.175
					C	0.000	17.401		100.00	0.000	0.000
L39 8.75-3.75	6.24	1	6	17.874	A	0.000	17.874	17.874	100.00	0.000	2.362
					B	0.000	17.874		100.00	0.000	2.175
					C	0.000	17.874		100.00	0.000	0.000
L40 3.75-0.00	1.87	1	6	13.716	A	0.000	13.716	13.716	100.00	0.000	1.554
					B	0.000	13.716		100.00	0.000	1.414
					C	0.000	13.716		100.00	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.03	0.14	A	1	0.65	1	1	1	5.720	0.18	36.71	C
140.00-135.00			B	1	0.65	1	1	1	5.720			
			C	1	0.65	1	1	1	5.720			
L2	0.06	0.15	A	1	0.65	1	1	1	6.193	0.20	39.18	C
135.00-130.00			B	1	0.65	1	1	1	6.193			
			C	1	0.65	1	1	1	6.193			
L3	0.06	0.16	A	1	0.65	1	1	1	6.666	0.21	41.58	C
130.00-125.00			B	1	0.65	1	1	1	6.666			
			C	1	0.65	1	1	1	6.666			
L4	0.06	0.17	A	1	0.65	1	1	1	7.139	0.22	43.90	C
125.00-120.00			B	1	0.65	1	1	1	7.139			
			C	1	0.65	1	1	1	7.139			
L5	0.13	0.18	A	1	0.65	1	1	1	7.612	0.32	63.93	C
120.00-115.00			B	1	0.65	1	1	1	7.612			
			C	1	0.65	1	1	1	7.612			
L6	0.13	0.19	A	1	0.65	1	1	1	8.085	0.33	65.87	C
115.00-110.00			B	1	0.65	1	1	1	8.085			
			C	1	0.65	1	1	1	8.085			
L7	0.15	0.21	A	1	0.65	1	1	1	8.558	0.38	76.39	C
110.00-105.00			B	1	0.65	1	1	1	8.558			
			C	1	0.65	1	1	1	8.558			
L8	0.11	0.15	A	1	0.65	1	1	1	6.126	0.27	77.76	C
105.00-101.58			B	1	0.65	1	1	1	6.126			
			C	1	0.65	1	1	1	6.126			
L9	0.16	0.37	A	1	0.65	1	1	1	9.354	0.40	79.06	C
101.58-96.58			B	1	0.65	1	1	1	9.354			
			C	1	0.65	1	1	1	9.354			
L10	0.17	0.39	A	1	0.65	1	1	1	9.827	0.40	80.49	C
96.58-91.58			B	1	0.65	1	1	1	9.827			
			C	1	0.65	1	1	1	9.827			
L11	0.17	0.41	A	1	0.65	1	1	1	10.300	0.41	81.80	C
91.58-86.58			B	1	0.65	1	1	1	10.300			
			C	1	0.65	1	1	1	10.300			
L12	0.17	0.43	A	1	0.65	1	1	1	10.773	0.41	82.97	C
86.58-81.58			B	1	0.65	1	1	1	10.773			
			C	1	0.65	1	1	1	10.773			
L13	0.17	0.45	A	1	0.65	1	1	1	11.246	0.42	83.99	C
81.58-76.58			B	1	0.65	1	1	1	11.246			
			C	1	0.65	1	1	1	11.246			
L14	0.18	0.47	A	1	0.65	1	1	1	11.719	0.42	84.00	C
76.58-71.58			B	1	0.65	1	1	1	11.719			
			C	1	0.65	1	1	1	11.719			
L15	0.06	0.14	A	1	0.65	1	1	1	3.600	0.11	75.20	C
71.58-70.08			B	1	0.65	1	1	1	3.600			
			C	1	0.65	1	1	1	3.600			
L16	0.01	0.04	A	1	0.65	1	1	1	0.605	0.02	75.35	C
70.08-69.83			B	1	0.65	1	1	1	0.605			
			C	1	0.65	1	1	1	0.605			
L17	0.19	0.78	A	1	0.65	1	1	1	12.357	0.38	75.77	C
69.83-64.83			B	1	0.65	1	1	1	12.357			
			C	1	0.65	1	1	1	12.357			
L18	0.19	0.80	A	1	0.65	1	1	1	12.830	0.40	79.10	C
64.83-59.83			B	1	0.65	1	1	1	12.830			
			C	1	0.65	1	1	1	12.830			
L19	0.03	0.12	A	1	0.65	1	1	1	1.965	0.07	96.56	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
59.83-59.08			B	1	0.65	1	1	1	1.965			
			C	1	0.65	1	1	1	1.965			
L20	0.01	0.04	A	1	0.65	1	1	1	0.701	0.03	96.55	C
59.08-58.82			B	1	0.65	1	1	1	0.701			
			C	1	0.65	1	1	1	0.701			
L21	0.01	0.02	A	1	0.65	1	1	1	0.395	0.01	96.55	C
58.82-58.67			B	1	0.65	1	1	1	0.395			
			C	1	0.65	1	1	1	0.395			
L22	0.19	0.75	A	1	0.65	1	1	1	13.413	0.44	88.38	C
58.67-53.67			B	1	0.65	1	1	1	13.413			
			C	1	0.65	1	1	1	13.413			
L23	0.20	0.78	A	1	0.65	1	1	1	14.131	0.45	88.98	C
53.67-48.58			B	1	0.65	1	1	1	14.131			
			C	1	0.65	1	1	1	14.131			
L24	0.04	1.13	A	1	0.65	1	1	1	2.783	0.09	94.56	C
48.58-47.58			B	1	0.65	1	1	1	2.783			
			C	1	0.65	1	1	1	2.783			
L25	0.19	1.07	A	1	0.65	1	1	1	14.201	0.47	94.09	C
47.58-42.58			B	1	0.65	1	1	1	14.201			
			C	1	0.65	1	1	1	14.201			
L26	0.10	0.56	A	1	0.65	1	1	1	7.513	0.26	101.93	C
42.58-40.00			B	1	0.65	1	1	1	7.513			
			C	1	0.65	1	1	1	7.513			
L27	0.01	0.07	A	1	0.65	1	1	1	0.735	0.03	103.97	C
40.00-39.75			B	1	0.65	1	1	1	0.735			
			C	1	0.65	1	1	1	0.735			
L28	0.19	1.40	A	1	0.65	1	1	1	14.942	0.51	103.00	C
39.75-34.75			B	1	0.65	1	1	1	14.942			
			C	1	0.65	1	1	1	14.942			
L29	0.09	0.64	A	1	0.65	1	1	1	6.878	0.24	105.30	C
34.75-32.50			B	1	0.65	1	1	1	6.878			
			C	1	0.65	1	1	1	6.878			
L30	0.01	0.06	A	1	0.65	1	1	1	0.770	0.03	111.80	C
32.50-32.25			B	1	0.65	1	1	1	0.770			
			C	1	0.65	1	1	1	0.770			
L31	0.03	0.19	A	1	0.65	1	1	1	2.576	0.09	112.00	C
32.25-31.42			B	1	0.65	1	1	1	2.576			
			C	1	0.65	1	1	1	2.576			
L32	0.01	0.07	A	1	0.65	1	1	1	0.775	0.03	112.21	C
31.42-31.17			B	1	0.65	1	1	1	0.775			
			C	1	0.65	1	1	1	0.775			
L33	0.08	0.62	A	1	0.65	1	1	1	6.769	0.23	104.98	C
31.17-29.00			B	1	0.65	1	1	1	6.769			
			C	1	0.65	1	1	1	6.769			
L34	0.01	0.06	A	1	0.65	1	1	1	0.787	0.03	102.72	C
29.00-28.75			B	1	0.65	1	1	1	0.787			
			C	1	0.65	1	1	1	0.787			
L35	0.19	1.14	A	1	0.65	1	1	1	15.982	0.48	96.96	C
28.75-23.75			B	1	0.65	1	1	1	15.982			
			C	1	0.65	1	1	1	15.982			
L36	0.19	1.16	A	1	0.65	1	1	1	16.455	0.48	95.23	C
23.75-18.75			B	1	0.65	1	1	1	16.455			
			C	1	0.65	1	1	1	16.455			
L37	0.19	1.18	A	1	0.65	1	1	1	16.928	0.49	97.16	C
18.75-13.75			B	1	0.65	1	1	1	16.928			
			C	1	0.65	1	1	1	16.928			
L38	0.19	1.20	A	1	0.65	1	1	1	17.401	0.50	99.08	C
13.75-8.75			B	1	0.65	1	1	1	17.401			
			C	1	0.65	1	1	1	17.401			
L39 8.75-3.75	0.19	1.22	A	1	0.65	1	1	1	17.874	0.51	101.00	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			B	1	0.65	1	1	1	17.874			
			C	1	0.65	1	1	1	17.874			
L40 3.75-0.00	0.14	0.93	A	1	0.65	1	1	1	13.716	0.37	99.06	C
			B	1	0.65	1	1	1	13.716			
			C	1	0.65	1	1	1	13.716			
Sum Weight:	4.49	20.03						OTM	691.60 kip-ft	11.31		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.03	0.14	A	1	0.65	1	1	1	5.720	0.18	36.71	C
140.00-135.00			B	1	0.65	1	1	1	5.720			
			C	1	0.65	1	1	1	5.720			
L2	0.06	0.15	A	1	0.65	1	1	1	6.193	0.20	39.18	C
135.00-130.00			B	1	0.65	1	1	1	6.193			
			C	1	0.65	1	1	1	6.193			
L3	0.06	0.16	A	1	0.65	1	1	1	6.666	0.21	41.58	C
130.00-125.00			B	1	0.65	1	1	1	6.666			
			C	1	0.65	1	1	1	6.666			
L4	0.06	0.17	A	1	0.65	1	1	1	7.139	0.22	43.90	C
125.00-120.00			B	1	0.65	1	1	1	7.139			
			C	1	0.65	1	1	1	7.139			
L5	0.13	0.18	A	1	0.65	1	1	1	7.612	0.32	63.93	C
120.00-115.00			B	1	0.65	1	1	1	7.612			
			C	1	0.65	1	1	1	7.612			
L6	0.13	0.19	A	1	0.65	1	1	1	8.085	0.33	65.87	C
115.00-110.00			B	1	0.65	1	1	1	8.085			
			C	1	0.65	1	1	1	8.085			
L7	0.15	0.21	A	1	0.65	1	1	1	8.558	0.38	76.39	C
110.00-105.00			B	1	0.65	1	1	1	8.558			
			C	1	0.65	1	1	1	8.558			
L8	0.11	0.15	A	1	0.65	1	1	1	6.126	0.27	77.76	C
105.00-101.58			B	1	0.65	1	1	1	6.126			
			C	1	0.65	1	1	1	6.126			
L9	0.16	0.37	A	1	0.65	1	1	1	9.354	0.40	79.06	C
101.58-96.58			B	1	0.65	1	1	1	9.354			
			C	1	0.65	1	1	1	9.354			
L10	0.17	0.39	A	1	0.65	1	1	1	9.827	0.40	80.49	C
96.58-91.58			B	1	0.65	1	1	1	9.827			
			C	1	0.65	1	1	1	9.827			
L11	0.17	0.41	A	1	0.65	1	1	1	10.300	0.41	81.80	C
91.58-86.58			B	1	0.65	1	1	1	10.300			
			C	1	0.65	1	1	1	10.300			
L12	0.17	0.43	A	1	0.65	1	1	1	10.773	0.41	82.97	C
86.58-81.58			B	1	0.65	1	1	1	10.773			
			C	1	0.65	1	1	1	10.773			
L13	0.17	0.45	A	1	0.65	1	1	1	11.246	0.42	83.99	C
81.58-76.58			B	1	0.65	1	1	1	11.246			
			C	1	0.65	1	1	1	11.246			
L14	0.18	0.47	A	1	0.65	1	1	1	11.719	0.42	84.00	C
76.58-71.58			B	1	0.65	1	1	1	11.719			
			C	1	0.65	1	1	1	11.719			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L15	0.06	0.14	A	1	0.65	1	1	1	3.600	0.11	75.20	C
71.58-70.08			B	1	0.65	1	1	1	3.600			
			C	1	0.65	1	1	1	3.600			
L16	0.01	0.04	A	1	0.65	1	1	1	0.605	0.02	75.35	C
70.08-69.83			B	1	0.65	1	1	1	0.605			
			C	1	0.65	1	1	1	0.605			
L17	0.19	0.78	A	1	0.65	1	1	1	12.357	0.38	75.77	C
69.83-64.83			B	1	0.65	1	1	1	12.357			
			C	1	0.65	1	1	1	12.357			
L18	0.19	0.80	A	1	0.65	1	1	1	12.830	0.40	79.10	C
64.83-59.83			B	1	0.65	1	1	1	12.830			
			C	1	0.65	1	1	1	12.830			
L19	0.03	0.12	A	1	0.65	1	1	1	1.965	0.07	96.56	C
59.83-59.08			B	1	0.65	1	1	1	1.965			
			C	1	0.65	1	1	1	1.965			
L20	0.01	0.04	A	1	0.65	1	1	1	0.701	0.03	96.55	C
59.08-58.82			B	1	0.65	1	1	1	0.701			
			C	1	0.65	1	1	1	0.701			
L21	0.01	0.02	A	1	0.65	1	1	1	0.395	0.01	96.55	C
58.82-58.67			B	1	0.65	1	1	1	0.395			
			C	1	0.65	1	1	1	0.395			
L22	0.19	0.75	A	1	0.65	1	1	1	13.413	0.44	88.38	C
58.67-53.67			B	1	0.65	1	1	1	13.413			
			C	1	0.65	1	1	1	13.413			
L23	0.20	0.78	A	1	0.65	1	1	1	14.131	0.45	88.98	C
53.67-48.58			B	1	0.65	1	1	1	14.131			
			C	1	0.65	1	1	1	14.131			
L24	0.04	1.13	A	1	0.65	1	1	1	2.783	0.09	94.56	C
48.58-47.58			B	1	0.65	1	1	1	2.783			
			C	1	0.65	1	1	1	2.783			
L25	0.19	1.07	A	1	0.65	1	1	1	14.201	0.47	94.09	C
47.58-42.58			B	1	0.65	1	1	1	14.201			
			C	1	0.65	1	1	1	14.201			
L26	0.10	0.56	A	1	0.65	1	1	1	7.513	0.26	101.93	C
42.58-40.00			B	1	0.65	1	1	1	7.513			
			C	1	0.65	1	1	1	7.513			
L27	0.01	0.07	A	1	0.65	1	1	1	0.735	0.03	103.97	C
40.00-39.75			B	1	0.65	1	1	1	0.735			
			C	1	0.65	1	1	1	0.735			
L28	0.19	1.40	A	1	0.65	1	1	1	14.942	0.51	103.00	C
39.75-34.75			B	1	0.65	1	1	1	14.942			
			C	1	0.65	1	1	1	14.942			
L29	0.09	0.64	A	1	0.65	1	1	1	6.878	0.24	105.30	C
34.75-32.50			B	1	0.65	1	1	1	6.878			
			C	1	0.65	1	1	1	6.878			
L30	0.01	0.06	A	1	0.65	1	1	1	0.770	0.03	111.80	C
32.50-32.25			B	1	0.65	1	1	1	0.770			
			C	1	0.65	1	1	1	0.770			
L31	0.03	0.19	A	1	0.65	1	1	1	2.576	0.09	112.00	C
32.25-31.42			B	1	0.65	1	1	1	2.576			
			C	1	0.65	1	1	1	2.576			
L32	0.01	0.07	A	1	0.65	1	1	1	0.775	0.03	112.21	C
31.42-31.17			B	1	0.65	1	1	1	0.775			
			C	1	0.65	1	1	1	0.775			
L33	0.08	0.62	A	1	0.65	1	1	1	6.769	0.23	104.98	C
31.17-29.00			B	1	0.65	1	1	1	6.769			
			C	1	0.65	1	1	1	6.769			
L34	0.01	0.06	A	1	0.65	1	1	1	0.787	0.03	102.72	C
29.00-28.75			B	1	0.65	1	1	1	0.787			
			C	1	0.65	1	1	1	0.787			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L35	0.19	1.14	A	1	0.65	1	1	1	15.982	0.48	96.96	C
28.75-23.75			B	1	0.65	1	1	1	15.982			
			C	1	0.65	1	1	1	15.982			
L36	0.19	1.16	A	1	0.65	1	1	1	16.455	0.48	95.23	C
23.75-18.75			B	1	0.65	1	1	1	16.455			
			C	1	0.65	1	1	1	16.455			
L37	0.19	1.18	A	1	0.65	1	1	1	16.928	0.49	97.16	C
18.75-13.75			B	1	0.65	1	1	1	16.928			
			C	1	0.65	1	1	1	16.928			
L38	0.19	1.20	A	1	0.65	1	1	1	17.401	0.50	99.08	C
13.75-8.75			B	1	0.65	1	1	1	17.401			
			C	1	0.65	1	1	1	17.401			
L39 8.75-3.75	0.19	1.22	A	1	0.65	1	1	1	17.874	0.51	101.00	C
			B	1	0.65	1	1	1	17.874			
			C	1	0.65	1	1	1	17.874			
L40 3.75-0.00	0.14	0.93	A	1	0.65	1	1	1	13.716	0.37	99.06	C
			B	1	0.65	1	1	1	13.716			
			C	1	0.65	1	1	1	13.716			
Sum Weight:	4.49	20.03						OTM	691.60 kip-ft	11.31		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.03	0.14	A	1	0.65	1	1	1	5.720	0.18	36.71	C
140.00-135.00			B	1	0.65	1	1	1	5.720			
			C	1	0.65	1	1	1	5.720			
L2	0.06	0.15	A	1	0.65	1	1	1	6.193	0.20	39.18	C
135.00-130.00			B	1	0.65	1	1	1	6.193			
			C	1	0.65	1	1	1	6.193			
L3	0.06	0.16	A	1	0.65	1	1	1	6.666	0.21	41.58	C
130.00-125.00			B	1	0.65	1	1	1	6.666			
			C	1	0.65	1	1	1	6.666			
L4	0.06	0.17	A	1	0.65	1	1	1	7.139	0.22	43.90	C
125.00-120.00			B	1	0.65	1	1	1	7.139			
			C	1	0.65	1	1	1	7.139			
L5	0.13	0.18	A	1	0.65	1	1	1	7.612	0.32	63.93	C
120.00-115.00			B	1	0.65	1	1	1	7.612			
			C	1	0.65	1	1	1	7.612			
L6	0.13	0.19	A	1	0.65	1	1	1	8.085	0.33	65.87	C
115.00-110.00			B	1	0.65	1	1	1	8.085			
			C	1	0.65	1	1	1	8.085			
L7	0.15	0.21	A	1	0.65	1	1	1	8.558	0.38	76.39	C
110.00-105.00			B	1	0.65	1	1	1	8.558			
			C	1	0.65	1	1	1	8.558			
L8	0.11	0.15	A	1	0.65	1	1	1	6.126	0.27	77.76	C
105.00-101.58			B	1	0.65	1	1	1	6.126			
			C	1	0.65	1	1	1	6.126			
L9	0.16	0.37	A	1	0.65	1	1	1	9.354	0.40	79.06	C
101.58-96.58			B	1	0.65	1	1	1	9.354			
			C	1	0.65	1	1	1	9.354			
L10	0.17	0.39	A	1	0.65	1	1	1	9.827	0.40	80.49	C
96.58-91.58			B	1	0.65	1	1	1	9.827			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	1	0.65	1	1	1	9.827			
L11	0.17	0.41	A	1	0.65	1	1	1	10.300	0.41	81.80	C
91.58-86.58			B	1	0.65	1	1	1	10.300			
			C	1	0.65	1	1	1	10.300			
L12	0.17	0.43	A	1	0.65	1	1	1	10.773	0.41	82.97	C
86.58-81.58			B	1	0.65	1	1	1	10.773			
			C	1	0.65	1	1	1	10.773			
L13	0.17	0.45	A	1	0.65	1	1	1	11.246	0.42	83.99	C
81.58-76.58			B	1	0.65	1	1	1	11.246			
			C	1	0.65	1	1	1	11.246			
L14	0.18	0.47	A	1	0.65	1	1	1	11.719	0.42	84.00	C
76.58-71.58			B	1	0.65	1	1	1	11.719			
			C	1	0.65	1	1	1	11.719			
L15	0.06	0.14	A	1	0.65	1	1	1	3.600	0.11	75.20	C
71.58-70.08			B	1	0.65	1	1	1	3.600			
			C	1	0.65	1	1	1	3.600			
L16	0.01	0.04	A	1	0.65	1	1	1	0.605	0.02	75.35	C
70.08-69.83			B	1	0.65	1	1	1	0.605			
			C	1	0.65	1	1	1	0.605			
L17	0.19	0.78	A	1	0.65	1	1	1	12.357	0.38	75.77	C
69.83-64.83			B	1	0.65	1	1	1	12.357			
			C	1	0.65	1	1	1	12.357			
L18	0.19	0.80	A	1	0.65	1	1	1	12.830	0.40	79.10	C
64.83-59.83			B	1	0.65	1	1	1	12.830			
			C	1	0.65	1	1	1	12.830			
L19	0.03	0.12	A	1	0.65	1	1	1	1.965	0.07	96.56	C
59.83-59.08			B	1	0.65	1	1	1	1.965			
			C	1	0.65	1	1	1	1.965			
L20	0.01	0.04	A	1	0.65	1	1	1	0.701	0.03	96.55	C
59.08-58.82			B	1	0.65	1	1	1	0.701			
			C	1	0.65	1	1	1	0.701			
L21	0.01	0.02	A	1	0.65	1	1	1	0.395	0.01	96.55	C
58.82-58.67			B	1	0.65	1	1	1	0.395			
			C	1	0.65	1	1	1	0.395			
L22	0.19	0.75	A	1	0.65	1	1	1	13.413	0.44	88.38	C
58.67-53.67			B	1	0.65	1	1	1	13.413			
			C	1	0.65	1	1	1	13.413			
L23	0.20	0.78	A	1	0.65	1	1	1	14.131	0.45	88.98	C
53.67-48.58			B	1	0.65	1	1	1	14.131			
			C	1	0.65	1	1	1	14.131			
L24	0.04	1.13	A	1	0.65	1	1	1	2.783	0.09	94.56	C
48.58-47.58			B	1	0.65	1	1	1	2.783			
			C	1	0.65	1	1	1	2.783			
L25	0.19	1.07	A	1	0.65	1	1	1	14.201	0.47	94.09	C
47.58-42.58			B	1	0.65	1	1	1	14.201			
			C	1	0.65	1	1	1	14.201			
L26	0.10	0.56	A	1	0.65	1	1	1	7.513	0.26	101.93	C
42.58-40.00			B	1	0.65	1	1	1	7.513			
			C	1	0.65	1	1	1	7.513			
L27	0.01	0.07	A	1	0.65	1	1	1	0.735	0.03	103.97	C
40.00-39.75			B	1	0.65	1	1	1	0.735			
			C	1	0.65	1	1	1	0.735			
L28	0.19	1.40	A	1	0.65	1	1	1	14.942	0.51	103.00	C
39.75-34.75			B	1	0.65	1	1	1	14.942			
			C	1	0.65	1	1	1	14.942			
L29	0.09	0.64	A	1	0.65	1	1	1	6.878	0.24	105.30	C
34.75-32.50			B	1	0.65	1	1	1	6.878			
			C	1	0.65	1	1	1	6.878			
L30	0.01	0.06	A	1	0.65	1	1	1	0.770	0.03	111.80	C
32.50-32.25			B	1	0.65	1	1	1	0.770			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	1	0.65	1	1	1	0.770			
L31	0.03	0.19	A	1	0.65	1	1	1	2.576	0.09	112.00	C
32.25-31.42			B	1	0.65	1	1	1	2.576			
			C	1	0.65	1	1	1	2.576			
L32	0.01	0.07	A	1	0.65	1	1	1	0.775	0.03	112.21	C
31.42-31.17			B	1	0.65	1	1	1	0.775			
			C	1	0.65	1	1	1	0.775			
L33	0.08	0.62	A	1	0.65	1	1	1	6.769	0.23	104.98	C
31.17-29.00			B	1	0.65	1	1	1	6.769			
			C	1	0.65	1	1	1	6.769			
L34	0.01	0.06	A	1	0.65	1	1	1	0.787	0.03	102.72	C
29.00-28.75			B	1	0.65	1	1	1	0.787			
			C	1	0.65	1	1	1	0.787			
L35	0.19	1.14	A	1	0.65	1	1	1	15.982	0.48	96.96	C
28.75-23.75			B	1	0.65	1	1	1	15.982			
			C	1	0.65	1	1	1	15.982			
L36	0.19	1.16	A	1	0.65	1	1	1	16.455	0.48	95.23	C
23.75-18.75			B	1	0.65	1	1	1	16.455			
			C	1	0.65	1	1	1	16.455			
L37	0.19	1.18	A	1	0.65	1	1	1	16.928	0.49	97.16	C
18.75-13.75			B	1	0.65	1	1	1	16.928			
			C	1	0.65	1	1	1	16.928			
L38	0.19	1.20	A	1	0.65	1	1	1	17.401	0.50	99.08	C
13.75-8.75			B	1	0.65	1	1	1	17.401			
			C	1	0.65	1	1	1	17.401			
L39 8.75-3.75	0.19	1.22	A	1	0.65	1	1	1	17.874	0.51	101.00	C
			B	1	0.65	1	1	1	17.874			
			C	1	0.65	1	1	1	17.874			
L40 3.75-0.00	0.14	0.93	A	1	0.65	1	1	1	13.716	0.37	99.06	C
			B	1	0.65	1	1	1	13.716			
			C	1	0.65	1	1	1	13.716			
Sum Weight:	4.49	20.03						OTM	691.60 kip-ft	11.31		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.04	0.22	A	1	1.036	1	1	1	6.462	0.07	14.60	C
140.00-135.00			B	1	1.036	1	1	1	6.462			
			C	1	1.036	1	1	1	6.462			
L2	0.06	0.23	A	1	0.981	1	1	1	6.932	0.07	14.63	C
135.00-130.00			B	1	0.981	1	1	1	6.932			
			C	1	0.981	1	1	1	6.932			
L3	0.06	0.25	A	1	0.928	1	1	1	7.401	0.07	14.59	C
130.00-125.00			B	1	0.928	1	1	1	7.401			
			C	1	0.928	1	1	1	7.401			
L4	0.06	0.27	A	1	0.65	1	1	1	7.870	0.06	11.23	C
125.00-120.00			B	1	0.65	1	1	1	7.870			
			C	1	0.65	1	1	1	7.870			
L5	0.17	0.29	A	1	0.65	1	1	1	8.340	0.09	18.33	C
120.00-115.00			B	1	0.65	1	1	1	8.340			
			C	1	0.65	1	1	1	8.340			
L6	0.17	0.30	A	1	0.65	1	1	1	8.809	0.09	18.62	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
115.00-110.00			B	1	0.65	1	1	1	8.809			
			C	1	0.65	1	1	1	8.809			
L7	0.20	0.32	A	1	0.65	1	1	1	9.278	0.11	22.14	C
110.00-105.00			B	1	0.65	1	1	1	9.278			
			C	1	0.65	1	1	1	9.278			
L8	0.14	0.23	A	1	0.65	1	1	1	6.616	0.08	22.30	C
105.00-101.58			B	1	0.65	1	1	1	6.616			
			C	1	0.65	1	1	1	6.616			
L9	0.21	0.50	A	1	0.65	1	1	1	10.067	0.11	22.45	C
101.58-96.58			B	1	0.65	1	1	1	10.067			
			C	1	0.65	1	1	1	10.067			
L10	0.22	0.52	A	1	0.65	1	1	1	10.536	0.11	22.60	C
96.58-91.58			B	1	0.65	1	1	1	10.536			
			C	1	0.65	1	1	1	10.536			
L11	0.22	0.55	A	1	0.65	1	1	1	11.004	0.11	22.71	C
91.58-86.58			B	1	0.65	1	1	1	11.004			
			C	1	0.65	1	1	1	11.004			
L12	0.22	0.57	A	1	0.65	1	1	1	11.472	0.11	22.80	C
86.58-81.58			B	1	0.65	1	1	1	11.472			
			C	1	0.65	1	1	1	11.472			
L13	0.22	0.59	A	1	0.65	1	1	1	11.940	0.11	22.85	C
81.58-76.58			B	1	0.65	1	1	1	11.940			
			C	1	0.65	1	1	1	11.940			
L14	0.22	0.62	A	1	0.65	1	1	1	12.407	0.11	22.61	C
76.58-71.58			B	1	0.65	1	1	1	12.407			
			C	1	0.65	1	1	1	12.407			
L15	0.07	0.19	A	1	0.65	1	1	1	3.805	0.03	19.84	C
71.58-70.08			B	1	0.65	1	1	1	3.805			
			C	1	0.65	1	1	1	3.805			
L16	0.01	0.05	A	1	0.65	1	1	1	0.640	0.00	19.84	C
70.08-69.83			B	1	0.65	1	1	1	0.640			
			C	1	0.65	1	1	1	0.640			
L17	0.24	0.94	A	1	0.65	1	1	1	13.037	0.10	19.85	C
69.83-64.83			B	1	0.65	1	1	1	13.037			
			C	1	0.65	1	1	1	13.037			
L18	0.24	0.96	A	1	0.65	1	1	1	13.504	0.10	20.73	C
64.83-59.83			B	1	0.65	1	1	1	13.504			
			C	1	0.65	1	1	1	13.504			
L19	0.04	0.15	A	1	0.65	1	1	1	2.066	0.02	26.42	C
59.83-59.08			B	1	0.65	1	1	1	2.066			
			C	1	0.65	1	1	1	2.066			
L20	0.01	0.05	A	1	0.65	1	1	1	0.737	0.01	26.39	C
59.08-58.82			B	1	0.65	1	1	1	0.737			
			C	1	0.65	1	1	1	0.737			
L21	0.01	0.03	A	1	0.65	1	1	1	0.415	0.00	26.38	C
58.82-58.67			B	1	0.65	1	1	1	0.415			
			C	1	0.65	1	1	1	0.415			
L22	0.24	0.91	A	1	0.65	1	1	1	14.079	0.11	22.90	C
58.67-53.67			B	1	0.65	1	1	1	14.079			
			C	1	0.65	1	1	1	14.079			
L23	0.24	0.95	A	1	0.65	1	1	1	14.801	0.12	22.98	C
53.67-48.58			B	1	0.65	1	1	1	14.801			
			C	1	0.65	1	1	1	14.801			
L24	0.05	1.17	A	1	0.65	1	1	1	2.915	0.03	25.48	C
48.58-47.58			B	1	0.65	1	1	1	2.915			
			C	1	0.65	1	1	1	2.915			
L25	0.24	1.23	A	1	0.65	1	1	1	14.850	0.13	25.17	C
47.58-42.58			B	1	0.65	1	1	1	14.850			
			C	1	0.65	1	1	1	14.850			
L26	0.12	0.65	A	1	0.65	1	1	1	7.844	0.07	28.28	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
42.58-40.00			B	1	0.65	1	1	1	7.844			
			C	1	0.65	1	1	1	7.844			
L27	0.01	0.08	A	1	0.65	1	1	1	0.767	0.01	29.08	C
40.00-39.75			B	1	0.65	1	1	1	0.767			
			C	1	0.65	1	1	1	0.767			
L28	0.23	1.57	A	1	0.65	1	1	1	15.576	0.14	28.66	C
39.75-34.75			B	1	0.65	1	1	1	15.576			
			C	1	0.65	1	1	1	15.576			
L29	0.11	0.72	A	1	0.65	1	1	1	7.160	0.07	29.57	C
34.75-32.50			B	1	0.65	1	1	1	7.160			
			C	1	0.65	1	1	1	7.160			
L30	0.01	0.07	A	1	0.65	1	1	1	0.801	0.01	32.12	C
32.50-32.25			B	1	0.65	1	1	1	0.801			
			C	1	0.65	1	1	1	0.801			
L31	0.04	0.22	A	1	0.65	1	1	1	2.680	0.03	32.16	C
32.25-31.42			B	1	0.65	1	1	1	2.680			
			C	1	0.65	1	1	1	2.680			
L32	0.01	0.08	A	1	0.65	1	1	1	0.807	0.01	32.20	C
31.42-31.17			B	1	0.65	1	1	1	0.807			
			C	1	0.65	1	1	1	0.807			
L33	0.10	0.70	A	1	0.65	1	1	1	7.039	0.06	29.22	C
31.17-29.00			B	1	0.65	1	1	1	7.039			
			C	1	0.65	1	1	1	7.039			
L34	0.01	0.07	A	1	0.65	1	1	1	0.818	0.01	28.22	C
29.00-28.75			B	1	0.65	1	1	1	0.818			
			C	1	0.65	1	1	1	0.818			
L35	0.23	1.32	A	1	0.65	1	1	1	16.607	0.13	25.72	C
28.75-23.75			B	1	0.65	1	1	1	16.607			
			C	1	0.65	1	1	1	16.607			
L36	0.23	1.34	A	1	0.65	1	1	1	17.080	0.12	24.64	C
23.75-18.75			B	1	0.65	1	1	1	17.080			
			C	1	0.65	1	1	1	17.080			
L37	0.23	1.37	A	1	0.65	1	1	1	17.553	0.13	25.03	C
18.75-13.75			B	1	0.65	1	1	1	17.553			
			C	1	0.65	1	1	1	17.553			
L38	0.23	1.39	A	1	0.65	1	1	1	18.026	0.13	25.41	C
13.75-8.75			B	1	0.65	1	1	1	18.026			
			C	1	0.65	1	1	1	18.026			
L39 8.75-3.75	0.23	1.42	A	1	0.65	1	1	1	18.499	0.13	25.80	C
			B	1	0.65	1	1	1	18.499			
			C	1	0.65	1	1	1	18.499			
L40 3.75-0.00	0.18	1.08	A	1	0.65	1	1	1	14.185	0.09	24.85	C
			B	1	0.65	1	1	1	14.185			
			C	1	0.65	1	1	1	14.185			
Sum Weight:	5.58	24.13						OTM	197.27 kip-ft	3.11		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.04	0.22	A	1	1.036	1	1	1	6.462	0.07	14.60	C
140.00-135.00			B	1	1.036	1	1	1	6.462			
			C	1	1.036	1	1	1	6.462			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L2	0.06	0.23	A	1	0.981	1	1	1	6.932	0.07	14.63	C
135.00-130.00			B	1	0.981	1	1	1	6.932			
			C	1	0.981	1	1	1	6.932			
L3	0.06	0.25	A	1	0.928	1	1	1	7.401	0.07	14.59	C
130.00-125.00			B	1	0.928	1	1	1	7.401			
			C	1	0.928	1	1	1	7.401			
L4	0.06	0.27	A	1	0.65	1	1	1	7.870	0.06	11.23	C
125.00-120.00			B	1	0.65	1	1	1	7.870			
			C	1	0.65	1	1	1	7.870			
L5	0.17	0.29	A	1	0.65	1	1	1	8.340	0.09	18.33	C
120.00-115.00			B	1	0.65	1	1	1	8.340			
			C	1	0.65	1	1	1	8.340			
L6	0.17	0.30	A	1	0.65	1	1	1	8.809	0.09	18.62	C
115.00-110.00			B	1	0.65	1	1	1	8.809			
			C	1	0.65	1	1	1	8.809			
L7	0.20	0.32	A	1	0.65	1	1	1	9.278	0.11	22.14	C
110.00-105.00			B	1	0.65	1	1	1	9.278			
			C	1	0.65	1	1	1	9.278			
L8	0.14	0.23	A	1	0.65	1	1	1	6.616	0.08	22.30	C
105.00-101.58			B	1	0.65	1	1	1	6.616			
			C	1	0.65	1	1	1	6.616			
L9	0.21	0.50	A	1	0.65	1	1	1	10.067	0.11	22.45	C
101.58-96.58			B	1	0.65	1	1	1	10.067			
			C	1	0.65	1	1	1	10.067			
L10	0.22	0.52	A	1	0.65	1	1	1	10.536	0.11	22.60	C
96.58-91.58			B	1	0.65	1	1	1	10.536			
			C	1	0.65	1	1	1	10.536			
L11	0.22	0.55	A	1	0.65	1	1	1	11.004	0.11	22.71	C
91.58-86.58			B	1	0.65	1	1	1	11.004			
			C	1	0.65	1	1	1	11.004			
L12	0.22	0.57	A	1	0.65	1	1	1	11.472	0.11	22.80	C
86.58-81.58			B	1	0.65	1	1	1	11.472			
			C	1	0.65	1	1	1	11.472			
L13	0.22	0.59	A	1	0.65	1	1	1	11.940	0.11	22.85	C
81.58-76.58			B	1	0.65	1	1	1	11.940			
			C	1	0.65	1	1	1	11.940			
L14	0.22	0.62	A	1	0.65	1	1	1	12.407	0.11	22.61	C
76.58-71.58			B	1	0.65	1	1	1	12.407			
			C	1	0.65	1	1	1	12.407			
L15	0.07	0.19	A	1	0.65	1	1	1	3.805	0.03	19.84	C
71.58-70.08			B	1	0.65	1	1	1	3.805			
			C	1	0.65	1	1	1	3.805			
L16	0.01	0.05	A	1	0.65	1	1	1	0.640	0.00	19.84	C
70.08-69.83			B	1	0.65	1	1	1	0.640			
			C	1	0.65	1	1	1	0.640			
L17	0.24	0.94	A	1	0.65	1	1	1	13.037	0.10	19.85	C
69.83-64.83			B	1	0.65	1	1	1	13.037			
			C	1	0.65	1	1	1	13.037			
L18	0.24	0.96	A	1	0.65	1	1	1	13.504	0.10	20.73	C
64.83-59.83			B	1	0.65	1	1	1	13.504			
			C	1	0.65	1	1	1	13.504			
L19	0.04	0.15	A	1	0.65	1	1	1	2.066	0.02	26.42	C
59.83-59.08			B	1	0.65	1	1	1	2.066			
			C	1	0.65	1	1	1	2.066			
L20	0.01	0.05	A	1	0.65	1	1	1	0.737	0.01	26.39	C
59.08-58.82			B	1	0.65	1	1	1	0.737			
			C	1	0.65	1	1	1	0.737			
L21	0.01	0.03	A	1	0.65	1	1	1	0.415	0.00	26.38	C
58.82-58.67			B	1	0.65	1	1	1	0.415			
			C	1	0.65	1	1	1	0.415			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L22	0.24	0.91	A	1	0.65	1	1	1	14.079	0.11	22.90	C
58.67-53.67			B	1	0.65	1	1	1	14.079			
			C	1	0.65	1	1	1	14.079			
L23	0.24	0.95	A	1	0.65	1	1	1	14.801	0.12	22.98	C
53.67-48.58			B	1	0.65	1	1	1	14.801			
			C	1	0.65	1	1	1	14.801			
L24	0.05	1.17	A	1	0.65	1	1	1	2.915	0.03	25.48	C
48.58-47.58			B	1	0.65	1	1	1	2.915			
			C	1	0.65	1	1	1	2.915			
L25	0.24	1.23	A	1	0.65	1	1	1	14.850	0.13	25.17	C
47.58-42.58			B	1	0.65	1	1	1	14.850			
			C	1	0.65	1	1	1	14.850			
L26	0.12	0.65	A	1	0.65	1	1	1	7.844	0.07	28.28	C
42.58-40.00			B	1	0.65	1	1	1	7.844			
			C	1	0.65	1	1	1	7.844			
L27	0.01	0.08	A	1	0.65	1	1	1	0.767	0.01	29.08	C
40.00-39.75			B	1	0.65	1	1	1	0.767			
			C	1	0.65	1	1	1	0.767			
L28	0.23	1.57	A	1	0.65	1	1	1	15.576	0.14	28.66	C
39.75-34.75			B	1	0.65	1	1	1	15.576			
			C	1	0.65	1	1	1	15.576			
L29	0.11	0.72	A	1	0.65	1	1	1	7.160	0.07	29.57	C
34.75-32.50			B	1	0.65	1	1	1	7.160			
			C	1	0.65	1	1	1	7.160			
L30	0.01	0.07	A	1	0.65	1	1	1	0.801	0.01	32.12	C
32.50-32.25			B	1	0.65	1	1	1	0.801			
			C	1	0.65	1	1	1	0.801			
L31	0.04	0.22	A	1	0.65	1	1	1	2.680	0.03	32.16	C
32.25-31.42			B	1	0.65	1	1	1	2.680			
			C	1	0.65	1	1	1	2.680			
L32	0.01	0.08	A	1	0.65	1	1	1	0.807	0.01	32.20	C
31.42-31.17			B	1	0.65	1	1	1	0.807			
			C	1	0.65	1	1	1	0.807			
L33	0.10	0.70	A	1	0.65	1	1	1	7.039	0.06	29.22	C
31.17-29.00			B	1	0.65	1	1	1	7.039			
			C	1	0.65	1	1	1	7.039			
L34	0.01	0.07	A	1	0.65	1	1	1	0.818	0.01	28.22	C
29.00-28.75			B	1	0.65	1	1	1	0.818			
			C	1	0.65	1	1	1	0.818			
L35	0.23	1.32	A	1	0.65	1	1	1	16.607	0.13	25.72	C
28.75-23.75			B	1	0.65	1	1	1	16.607			
			C	1	0.65	1	1	1	16.607			
L36	0.23	1.34	A	1	0.65	1	1	1	17.080	0.12	24.64	C
23.75-18.75			B	1	0.65	1	1	1	17.080			
			C	1	0.65	1	1	1	17.080			
L37	0.23	1.37	A	1	0.65	1	1	1	17.553	0.13	25.03	C
18.75-13.75			B	1	0.65	1	1	1	17.553			
			C	1	0.65	1	1	1	17.553			
L38	0.23	1.39	A	1	0.65	1	1	1	18.026	0.13	25.41	C
13.75-8.75			B	1	0.65	1	1	1	18.026			
			C	1	0.65	1	1	1	18.026			
L39 8.75-3.75	0.23	1.42	A	1	0.65	1	1	1	18.499	0.13	25.80	C
			B	1	0.65	1	1	1	18.499			
			C	1	0.65	1	1	1	18.499			
L40 3.75-0.00	0.18	1.08	A	1	0.65	1	1	1	14.185	0.09	24.85	C
			B	1	0.65	1	1	1	14.185			
			C	1	0.65	1	1	1	14.185			
Sum Weight:	5.58	24.13						OTM	197.27 kip-ft	3.11		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.04	0.22	A	1	1.036	1	1	1	6.462	0.07	14.60	C
140.00-135.00			B	1	1.036	1	1	1	6.462			
			C	1	1.036	1	1	1	6.462			
L2	0.06	0.23	A	1	0.981	1	1	1	6.932	0.07	14.63	C
135.00-130.00			B	1	0.981	1	1	1	6.932			
			C	1	0.981	1	1	1	6.932			
L3	0.06	0.25	A	1	0.928	1	1	1	7.401	0.07	14.59	C
130.00-125.00			B	1	0.928	1	1	1	7.401			
			C	1	0.928	1	1	1	7.401			
L4	0.06	0.27	A	1	0.65	1	1	1	7.870	0.06	11.23	C
125.00-120.00			B	1	0.65	1	1	1	7.870			
			C	1	0.65	1	1	1	7.870			
L5	0.17	0.29	A	1	0.65	1	1	1	8.340	0.09	18.33	C
120.00-115.00			B	1	0.65	1	1	1	8.340			
			C	1	0.65	1	1	1	8.340			
L6	0.17	0.30	A	1	0.65	1	1	1	8.809	0.09	18.62	C
115.00-110.00			B	1	0.65	1	1	1	8.809			
			C	1	0.65	1	1	1	8.809			
L7	0.20	0.32	A	1	0.65	1	1	1	9.278	0.11	22.14	C
110.00-105.00			B	1	0.65	1	1	1	9.278			
			C	1	0.65	1	1	1	9.278			
L8	0.14	0.23	A	1	0.65	1	1	1	6.616	0.08	22.30	C
105.00-101.58			B	1	0.65	1	1	1	6.616			
			C	1	0.65	1	1	1	6.616			
L9	0.21	0.50	A	1	0.65	1	1	1	10.067	0.11	22.45	C
101.58-96.58			B	1	0.65	1	1	1	10.067			
			C	1	0.65	1	1	1	10.067			
L10	0.22	0.52	A	1	0.65	1	1	1	10.536	0.11	22.60	C
96.58-91.58			B	1	0.65	1	1	1	10.536			
			C	1	0.65	1	1	1	10.536			
L11	0.22	0.55	A	1	0.65	1	1	1	11.004	0.11	22.71	C
91.58-86.58			B	1	0.65	1	1	1	11.004			
			C	1	0.65	1	1	1	11.004			
L12	0.22	0.57	A	1	0.65	1	1	1	11.472	0.11	22.80	C
86.58-81.58			B	1	0.65	1	1	1	11.472			
			C	1	0.65	1	1	1	11.472			
L13	0.22	0.59	A	1	0.65	1	1	1	11.940	0.11	22.85	C
81.58-76.58			B	1	0.65	1	1	1	11.940			
			C	1	0.65	1	1	1	11.940			
L14	0.22	0.62	A	1	0.65	1	1	1	12.407	0.11	22.61	C
76.58-71.58			B	1	0.65	1	1	1	12.407			
			C	1	0.65	1	1	1	12.407			
L15	0.07	0.19	A	1	0.65	1	1	1	3.805	0.03	19.84	C
71.58-70.08			B	1	0.65	1	1	1	3.805			
			C	1	0.65	1	1	1	3.805			
L16	0.01	0.05	A	1	0.65	1	1	1	0.640	0.00	19.84	C
70.08-69.83			B	1	0.65	1	1	1	0.640			
			C	1	0.65	1	1	1	0.640			
L17	0.24	0.94	A	1	0.65	1	1	1	13.037	0.10	19.85	C
69.83-64.83			B	1	0.65	1	1	1	13.037			
			C	1	0.65	1	1	1	13.037			
L18	0.24	0.96	A	1	0.65	1	1	1	13.504	0.10	20.73	C
64.83-59.83			B	1	0.65	1	1	1	13.504			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	1	0.65	1	1	1	13.504			
L19	0.04	0.15	A	1	0.65	1	1	1	2.066	0.02	26.42	C
59.83-59.08			B	1	0.65	1	1	1	2.066			
			C	1	0.65	1	1	1	2.066			
L20	0.01	0.05	A	1	0.65	1	1	1	0.737	0.01	26.39	C
59.08-58.82			B	1	0.65	1	1	1	0.737			
			C	1	0.65	1	1	1	0.737			
L21	0.01	0.03	A	1	0.65	1	1	1	0.415	0.00	26.38	C
58.82-58.67			B	1	0.65	1	1	1	0.415			
			C	1	0.65	1	1	1	0.415			
L22	0.24	0.91	A	1	0.65	1	1	1	14.079	0.11	22.90	C
58.67-53.67			B	1	0.65	1	1	1	14.079			
			C	1	0.65	1	1	1	14.079			
L23	0.24	0.95	A	1	0.65	1	1	1	14.801	0.12	22.98	C
53.67-48.58			B	1	0.65	1	1	1	14.801			
			C	1	0.65	1	1	1	14.801			
L24	0.05	1.17	A	1	0.65	1	1	1	2.915	0.03	25.48	C
48.58-47.58			B	1	0.65	1	1	1	2.915			
			C	1	0.65	1	1	1	2.915			
L25	0.24	1.23	A	1	0.65	1	1	1	14.850	0.13	25.17	C
47.58-42.58			B	1	0.65	1	1	1	14.850			
			C	1	0.65	1	1	1	14.850			
L26	0.12	0.65	A	1	0.65	1	1	1	7.844	0.07	28.28	C
42.58-40.00			B	1	0.65	1	1	1	7.844			
			C	1	0.65	1	1	1	7.844			
L27	0.01	0.08	A	1	0.65	1	1	1	0.767	0.01	29.08	C
40.00-39.75			B	1	0.65	1	1	1	0.767			
			C	1	0.65	1	1	1	0.767			
L28	0.23	1.57	A	1	0.65	1	1	1	15.576	0.14	28.66	C
39.75-34.75			B	1	0.65	1	1	1	15.576			
			C	1	0.65	1	1	1	15.576			
L29	0.11	0.72	A	1	0.65	1	1	1	7.160	0.07	29.57	C
34.75-32.50			B	1	0.65	1	1	1	7.160			
			C	1	0.65	1	1	1	7.160			
L30	0.01	0.07	A	1	0.65	1	1	1	0.801	0.01	32.12	C
32.50-32.25			B	1	0.65	1	1	1	0.801			
			C	1	0.65	1	1	1	0.801			
L31	0.04	0.22	A	1	0.65	1	1	1	2.680	0.03	32.16	C
32.25-31.42			B	1	0.65	1	1	1	2.680			
			C	1	0.65	1	1	1	2.680			
L32	0.01	0.08	A	1	0.65	1	1	1	0.807	0.01	32.20	C
31.42-31.17			B	1	0.65	1	1	1	0.807			
			C	1	0.65	1	1	1	0.807			
L33	0.10	0.70	A	1	0.65	1	1	1	7.039	0.06	29.22	C
31.17-29.00			B	1	0.65	1	1	1	7.039			
			C	1	0.65	1	1	1	7.039			
L34	0.01	0.07	A	1	0.65	1	1	1	0.818	0.01	28.22	C
29.00-28.75			B	1	0.65	1	1	1	0.818			
			C	1	0.65	1	1	1	0.818			
L35	0.23	1.32	A	1	0.65	1	1	1	16.607	0.13	25.72	C
28.75-23.75			B	1	0.65	1	1	1	16.607			
			C	1	0.65	1	1	1	16.607			
L36	0.23	1.34	A	1	0.65	1	1	1	17.080	0.12	24.64	C
23.75-18.75			B	1	0.65	1	1	1	17.080			
			C	1	0.65	1	1	1	17.080			
L37	0.23	1.37	A	1	0.65	1	1	1	17.553	0.13	25.03	C
18.75-13.75			B	1	0.65	1	1	1	17.553			
			C	1	0.65	1	1	1	17.553			
L38	0.23	1.39	A	1	0.65	1	1	1	18.026	0.13	25.41	C
13.75-8.75			B	1	0.65	1	1	1	18.026			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	1	0.65	1	1	1	18.026			
L39 8.75-3.75	0.23	1.42	A	1	0.65	1	1	1	18.499	0.13	25.80	C
			B	1	0.65	1	1	1	18.499			
			C	1	0.65	1	1	1	18.499			
L40 3.75-0.00	0.18	1.08	A	1	0.65	1	1	1	14.185	0.09	24.85	C
			B	1	0.65	1	1	1	14.185			
			C	1	0.65	1	1	1	14.185			
Sum Weight:	5.58	24.13						OTM	197.27 kip-ft	3.11		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.03	0.14	A	1	0.65	1	1	1	5.720	0.06	12.70	C
140.00-135.00			B	1	0.65	1	1	1	5.720			
			C	1	0.65	1	1	1	5.720			
L2	0.06	0.15	A	1	0.65	1	1	1	6.193	0.07	13.56	C
135.00-130.00			B	1	0.65	1	1	1	6.193			
			C	1	0.65	1	1	1	6.193			
L3	0.06	0.16	A	1	0.65	1	1	1	6.666	0.07	14.39	C
130.00-125.00			B	1	0.65	1	1	1	6.666			
			C	1	0.65	1	1	1	6.666			
L4	0.06	0.17	A	1	0.65	1	1	1	7.139	0.08	15.19	C
125.00-120.00			B	1	0.65	1	1	1	7.139			
			C	1	0.65	1	1	1	7.139			
L5	0.13	0.18	A	1	0.65	1	1	1	7.612	0.11	22.12	C
120.00-115.00			B	1	0.65	1	1	1	7.612			
			C	1	0.65	1	1	1	7.612			
L6	0.13	0.19	A	1	0.65	1	1	1	8.085	0.11	22.79	C
115.00-110.00			B	1	0.65	1	1	1	8.085			
			C	1	0.65	1	1	1	8.085			
L7	0.15	0.21	A	1	0.65	1	1	1	8.558	0.13	26.43	C
110.00-105.00			B	1	0.65	1	1	1	8.558			
			C	1	0.65	1	1	1	8.558			
L8	0.11	0.15	A	1	0.65	1	1	1	6.126	0.09	26.91	C
105.00-101.58			B	1	0.65	1	1	1	6.126			
			C	1	0.65	1	1	1	6.126			
L9	0.16	0.37	A	1	0.65	1	1	1	9.354	0.14	27.36	C
101.58-96.58			B	1	0.65	1	1	1	9.354			
			C	1	0.65	1	1	1	9.354			
L10	0.17	0.39	A	1	0.65	1	1	1	9.827	0.14	27.85	C
96.58-91.58			B	1	0.65	1	1	1	9.827			
			C	1	0.65	1	1	1	9.827			
L11	0.17	0.41	A	1	0.65	1	1	1	10.300	0.14	28.30	C
91.58-86.58			B	1	0.65	1	1	1	10.300			
			C	1	0.65	1	1	1	10.300			
L12	0.17	0.43	A	1	0.65	1	1	1	10.773	0.14	28.71	C
86.58-81.58			B	1	0.65	1	1	1	10.773			
			C	1	0.65	1	1	1	10.773			
L13	0.17	0.45	A	1	0.65	1	1	1	11.246	0.15	29.06	C
81.58-76.58			B	1	0.65	1	1	1	11.246			
			C	1	0.65	1	1	1	11.246			
L14	0.18	0.47	A	1	0.65	1	1	1	11.719	0.15	29.07	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
76.58-71.58			B	1	0.65	1	1	1	11.719			
			C	1	0.65	1	1	1	11.719			
L15	0.06	0.14	A	1	0.65	1	1	1	3.600	0.04	26.02	C
71.58-70.08			B	1	0.65	1	1	1	3.600			
			C	1	0.65	1	1	1	3.600			
L16	0.01	0.04	A	1	0.65	1	1	1	0.605	0.01	26.07	C
70.08-69.83			B	1	0.65	1	1	1	0.605			
			C	1	0.65	1	1	1	0.605			
L17	0.19	0.78	A	1	0.65	1	1	1	12.357	0.13	26.22	C
69.83-64.83			B	1	0.65	1	1	1	12.357			
			C	1	0.65	1	1	1	12.357			
L18	0.19	0.80	A	1	0.65	1	1	1	12.830	0.14	27.37	C
64.83-59.83			B	1	0.65	1	1	1	12.830			
			C	1	0.65	1	1	1	12.830			
L19	0.03	0.12	A	1	0.65	1	1	1	1.965	0.03	33.41	C
59.83-59.08			B	1	0.65	1	1	1	1.965			
			C	1	0.65	1	1	1	1.965			
L20	0.01	0.04	A	1	0.65	1	1	1	0.701	0.01	33.41	C
59.08-58.82			B	1	0.65	1	1	1	0.701			
			C	1	0.65	1	1	1	0.701			
L21	0.01	0.02	A	1	0.65	1	1	1	0.395	0.01	33.41	C
58.82-58.67			B	1	0.65	1	1	1	0.395			
			C	1	0.65	1	1	1	0.395			
L22	0.19	0.75	A	1	0.65	1	1	1	13.413	0.15	30.58	C
58.67-53.67			B	1	0.65	1	1	1	13.413			
			C	1	0.65	1	1	1	13.413			
L23	0.20	0.78	A	1	0.65	1	1	1	14.131	0.16	30.79	C
53.67-48.58			B	1	0.65	1	1	1	14.131			
			C	1	0.65	1	1	1	14.131			
L24	0.04	1.13	A	1	0.65	1	1	1	2.783	0.03	32.72	C
48.58-47.58			B	1	0.65	1	1	1	2.783			
			C	1	0.65	1	1	1	2.783			
L25	0.19	1.07	A	1	0.65	1	1	1	14.201	0.16	32.56	C
47.58-42.58			B	1	0.65	1	1	1	14.201			
			C	1	0.65	1	1	1	14.201			
L26	0.10	0.56	A	1	0.65	1	1	1	7.513	0.09	35.27	C
42.58-40.00			B	1	0.65	1	1	1	7.513			
			C	1	0.65	1	1	1	7.513			
L27	0.01	0.07	A	1	0.65	1	1	1	0.735	0.01	35.97	C
40.00-39.75			B	1	0.65	1	1	1	0.735			
			C	1	0.65	1	1	1	0.735			
L28	0.19	1.40	A	1	0.65	1	1	1	14.942	0.18	35.64	C
39.75-34.75			B	1	0.65	1	1	1	14.942			
			C	1	0.65	1	1	1	14.942			
L29	0.09	0.64	A	1	0.65	1	1	1	6.878	0.08	36.44	C
34.75-32.50			B	1	0.65	1	1	1	6.878			
			C	1	0.65	1	1	1	6.878			
L30	0.01	0.06	A	1	0.65	1	1	1	0.770	0.01	38.68	C
32.50-32.25			B	1	0.65	1	1	1	0.770			
			C	1	0.65	1	1	1	0.770			
L31	0.03	0.19	A	1	0.65	1	1	1	2.576	0.03	38.76	C
32.25-31.42			B	1	0.65	1	1	1	2.576			
			C	1	0.65	1	1	1	2.576			
L32	0.01	0.07	A	1	0.65	1	1	1	0.775	0.01	38.83	C
31.42-31.17			B	1	0.65	1	1	1	0.775			
			C	1	0.65	1	1	1	0.775			
L33	0.08	0.62	A	1	0.65	1	1	1	6.769	0.08	36.33	C
31.17-29.00			B	1	0.65	1	1	1	6.769			
			C	1	0.65	1	1	1	6.769			
L34	0.01	0.06	A	1	0.65	1	1	1	0.787	0.01	35.54	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
29.00-28.75			B	1	0.65	1	1	1	0.787			
			C	1	0.65	1	1	1	0.787			
L35	0.19	1.14	A	1	0.65	1	1	1	15.982	0.17	33.55	C
28.75-23.75			B	1	0.65	1	1	1	15.982			
			C	1	0.65	1	1	1	15.982			
L36	0.19	1.16	A	1	0.65	1	1	1	16.455	0.16	32.95	C
23.75-18.75			B	1	0.65	1	1	1	16.455			
			C	1	0.65	1	1	1	16.455			
L37	0.19	1.18	A	1	0.65	1	1	1	16.928	0.17	33.62	C
18.75-13.75			B	1	0.65	1	1	1	16.928			
			C	1	0.65	1	1	1	16.928			
L38	0.19	1.20	A	1	0.65	1	1	1	17.401	0.17	34.28	C
13.75-8.75			B	1	0.65	1	1	1	17.401			
			C	1	0.65	1	1	1	17.401			
L39 8.75-3.75	0.19	1.22	A	1	0.65	1	1	1	17.874	0.17	34.95	C
			B	1	0.65	1	1	1	17.874			
			C	1	0.65	1	1	1	17.874			
L40 3.75-0.00	0.14	0.93	A	1	0.65	1	1	1	13.716	0.13	34.28	C
			B	1	0.65	1	1	1	13.716			
			C	1	0.65	1	1	1	13.716			
Sum Weight:	4.49	20.03						OTM	239.31 kip-ft	3.91		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.03	0.14	A	1	0.65	1	1	1	5.720	0.06	12.70	C
140.00-135.00			B	1	0.65	1	1	1	5.720			
			C	1	0.65	1	1	1	5.720			
L2	0.06	0.15	A	1	0.65	1	1	1	6.193	0.07	13.56	C
135.00-130.00			B	1	0.65	1	1	1	6.193			
			C	1	0.65	1	1	1	6.193			
L3	0.06	0.16	A	1	0.65	1	1	1	6.666	0.07	14.39	C
130.00-125.00			B	1	0.65	1	1	1	6.666			
			C	1	0.65	1	1	1	6.666			
L4	0.06	0.17	A	1	0.65	1	1	1	7.139	0.08	15.19	C
125.00-120.00			B	1	0.65	1	1	1	7.139			
			C	1	0.65	1	1	1	7.139			
L5	0.13	0.18	A	1	0.65	1	1	1	7.612	0.11	22.12	C
120.00-115.00			B	1	0.65	1	1	1	7.612			
			C	1	0.65	1	1	1	7.612			
L6	0.13	0.19	A	1	0.65	1	1	1	8.085	0.11	22.79	C
115.00-110.00			B	1	0.65	1	1	1	8.085			
			C	1	0.65	1	1	1	8.085			
L7	0.15	0.21	A	1	0.65	1	1	1	8.558	0.13	26.43	C
110.00-105.00			B	1	0.65	1	1	1	8.558			
			C	1	0.65	1	1	1	8.558			
L8	0.11	0.15	A	1	0.65	1	1	1	6.126	0.09	26.91	C
105.00-101.58			B	1	0.65	1	1	1	6.126			
			C	1	0.65	1	1	1	6.126			
L9	0.16	0.37	A	1	0.65	1	1	1	9.354	0.14	27.36	C
101.58-96.58			B	1	0.65	1	1	1	9.354			
			C	1	0.65	1	1	1	9.354			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L10	0.17	0.39	A	1	0.65	1	1	1	9.827	0.14	27.85	C
96.58-91.58			B	1	0.65	1	1	1	9.827			
			C	1	0.65	1	1	1	9.827			
L11	0.17	0.41	A	1	0.65	1	1	1	10.300	0.14	28.30	C
91.58-86.58			B	1	0.65	1	1	1	10.300			
			C	1	0.65	1	1	1	10.300			
L12	0.17	0.43	A	1	0.65	1	1	1	10.773	0.14	28.71	C
86.58-81.58			B	1	0.65	1	1	1	10.773			
			C	1	0.65	1	1	1	10.773			
L13	0.17	0.45	A	1	0.65	1	1	1	11.246	0.15	29.06	C
81.58-76.58			B	1	0.65	1	1	1	11.246			
			C	1	0.65	1	1	1	11.246			
L14	0.18	0.47	A	1	0.65	1	1	1	11.719	0.15	29.07	C
76.58-71.58			B	1	0.65	1	1	1	11.719			
			C	1	0.65	1	1	1	11.719			
L15	0.06	0.14	A	1	0.65	1	1	1	3.600	0.04	26.02	C
71.58-70.08			B	1	0.65	1	1	1	3.600			
			C	1	0.65	1	1	1	3.600			
L16	0.01	0.04	A	1	0.65	1	1	1	0.605	0.01	26.07	C
70.08-69.83			B	1	0.65	1	1	1	0.605			
			C	1	0.65	1	1	1	0.605			
L17	0.19	0.78	A	1	0.65	1	1	1	12.357	0.13	26.22	C
69.83-64.83			B	1	0.65	1	1	1	12.357			
			C	1	0.65	1	1	1	12.357			
L18	0.19	0.80	A	1	0.65	1	1	1	12.830	0.14	27.37	C
64.83-59.83			B	1	0.65	1	1	1	12.830			
			C	1	0.65	1	1	1	12.830			
L19	0.03	0.12	A	1	0.65	1	1	1	1.965	0.03	33.41	C
59.83-59.08			B	1	0.65	1	1	1	1.965			
			C	1	0.65	1	1	1	1.965			
L20	0.01	0.04	A	1	0.65	1	1	1	0.701	0.01	33.41	C
59.08-58.82			B	1	0.65	1	1	1	0.701			
			C	1	0.65	1	1	1	0.701			
L21	0.01	0.02	A	1	0.65	1	1	1	0.395	0.01	33.41	C
58.82-58.67			B	1	0.65	1	1	1	0.395			
			C	1	0.65	1	1	1	0.395			
L22	0.19	0.75	A	1	0.65	1	1	1	13.413	0.15	30.58	C
58.67-53.67			B	1	0.65	1	1	1	13.413			
			C	1	0.65	1	1	1	13.413			
L23	0.20	0.78	A	1	0.65	1	1	1	14.131	0.16	30.79	C
53.67-48.58			B	1	0.65	1	1	1	14.131			
			C	1	0.65	1	1	1	14.131			
L24	0.04	1.13	A	1	0.65	1	1	1	2.783	0.03	32.72	C
48.58-47.58			B	1	0.65	1	1	1	2.783			
			C	1	0.65	1	1	1	2.783			
L25	0.19	1.07	A	1	0.65	1	1	1	14.201	0.16	32.56	C
47.58-42.58			B	1	0.65	1	1	1	14.201			
			C	1	0.65	1	1	1	14.201			
L26	0.10	0.56	A	1	0.65	1	1	1	7.513	0.09	35.27	C
42.58-40.00			B	1	0.65	1	1	1	7.513			
			C	1	0.65	1	1	1	7.513			
L27	0.01	0.07	A	1	0.65	1	1	1	0.735	0.01	35.97	C
40.00-39.75			B	1	0.65	1	1	1	0.735			
			C	1	0.65	1	1	1	0.735			
L28	0.19	1.40	A	1	0.65	1	1	1	14.942	0.18	35.64	C
39.75-34.75			B	1	0.65	1	1	1	14.942			
			C	1	0.65	1	1	1	14.942			
L29	0.09	0.64	A	1	0.65	1	1	1	6.878	0.08	36.44	C
34.75-32.50			B	1	0.65	1	1	1	6.878			
			C	1	0.65	1	1	1	6.878			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L30	0.01	0.06	A	1	0.65	1	1	1	0.770	0.01	38.68	C
32.50-32.25			B	1	0.65	1	1	1	0.770			
			C	1	0.65	1	1	1	0.770			
L31	0.03	0.19	A	1	0.65	1	1	1	2.576	0.03	38.76	C
32.25-31.42			B	1	0.65	1	1	1	2.576			
			C	1	0.65	1	1	1	2.576			
L32	0.01	0.07	A	1	0.65	1	1	1	0.775	0.01	38.83	C
31.42-31.17			B	1	0.65	1	1	1	0.775			
			C	1	0.65	1	1	1	0.775			
L33	0.08	0.62	A	1	0.65	1	1	1	6.769	0.08	36.33	C
31.17-29.00			B	1	0.65	1	1	1	6.769			
			C	1	0.65	1	1	1	6.769			
L34	0.01	0.06	A	1	0.65	1	1	1	0.787	0.01	35.54	C
29.00-28.75			B	1	0.65	1	1	1	0.787			
			C	1	0.65	1	1	1	0.787			
L35	0.19	1.14	A	1	0.65	1	1	1	15.982	0.17	33.55	C
28.75-23.75			B	1	0.65	1	1	1	15.982			
			C	1	0.65	1	1	1	15.982			
L36	0.19	1.16	A	1	0.65	1	1	1	16.455	0.16	32.95	C
23.75-18.75			B	1	0.65	1	1	1	16.455			
			C	1	0.65	1	1	1	16.455			
L37	0.19	1.18	A	1	0.65	1	1	1	16.928	0.17	33.62	C
18.75-13.75			B	1	0.65	1	1	1	16.928			
			C	1	0.65	1	1	1	16.928			
L38	0.19	1.20	A	1	0.65	1	1	1	17.401	0.17	34.28	C
13.75-8.75			B	1	0.65	1	1	1	17.401			
			C	1	0.65	1	1	1	17.401			
L39 8.75-3.75	0.19	1.22	A	1	0.65	1	1	1	17.874	0.17	34.95	C
			B	1	0.65	1	1	1	17.874			
			C	1	0.65	1	1	1	17.874			
L40 3.75-0.00	0.14	0.93	A	1	0.65	1	1	1	13.716	0.13	34.28	C
			B	1	0.65	1	1	1	13.716			
			C	1	0.65	1	1	1	13.716			
Sum Weight:	4.49	20.03						OTM	239.31 kip-ft	3.91		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.03	0.14	A	1	0.65	1	1	1	5.720	0.06	12.70	C
140.00-135.00			B	1	0.65	1	1	1	5.720			
			C	1	0.65	1	1	1	5.720			
L2	0.06	0.15	A	1	0.65	1	1	1	6.193	0.07	13.56	C
135.00-130.00			B	1	0.65	1	1	1	6.193			
			C	1	0.65	1	1	1	6.193			
L3	0.06	0.16	A	1	0.65	1	1	1	6.666	0.07	14.39	C
130.00-125.00			B	1	0.65	1	1	1	6.666			
			C	1	0.65	1	1	1	6.666			
L4	0.06	0.17	A	1	0.65	1	1	1	7.139	0.08	15.19	C
125.00-120.00			B	1	0.65	1	1	1	7.139			
			C	1	0.65	1	1	1	7.139			
L5	0.13	0.18	A	1	0.65	1	1	1	7.612	0.11	22.12	C
120.00-115.00			B	1	0.65	1	1	1	7.612			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	1	0.65	1	1	1	7.612			
L6	0.13	0.19	A	1	0.65	1	1	1	8.085	0.11	22.79	C
115.00-110.00			B	1	0.65	1	1	1	8.085			
			C	1	0.65	1	1	1	8.085			
L7	0.15	0.21	A	1	0.65	1	1	1	8.558	0.13	26.43	C
110.00-105.00			B	1	0.65	1	1	1	8.558			
			C	1	0.65	1	1	1	8.558			
L8	0.11	0.15	A	1	0.65	1	1	1	6.126	0.09	26.91	C
105.00-101.58			B	1	0.65	1	1	1	6.126			
			C	1	0.65	1	1	1	6.126			
L9	0.16	0.37	A	1	0.65	1	1	1	9.354	0.14	27.36	C
101.58-96.58			B	1	0.65	1	1	1	9.354			
			C	1	0.65	1	1	1	9.354			
L10	0.17	0.39	A	1	0.65	1	1	1	9.827	0.14	27.85	C
96.58-91.58			B	1	0.65	1	1	1	9.827			
			C	1	0.65	1	1	1	9.827			
L11	0.17	0.41	A	1	0.65	1	1	1	10.300	0.14	28.30	C
91.58-86.58			B	1	0.65	1	1	1	10.300			
			C	1	0.65	1	1	1	10.300			
L12	0.17	0.43	A	1	0.65	1	1	1	10.773	0.14	28.71	C
86.58-81.58			B	1	0.65	1	1	1	10.773			
			C	1	0.65	1	1	1	10.773			
L13	0.17	0.45	A	1	0.65	1	1	1	11.246	0.15	29.06	C
81.58-76.58			B	1	0.65	1	1	1	11.246			
			C	1	0.65	1	1	1	11.246			
L14	0.18	0.47	A	1	0.65	1	1	1	11.719	0.15	29.07	C
76.58-71.58			B	1	0.65	1	1	1	11.719			
			C	1	0.65	1	1	1	11.719			
L15	0.06	0.14	A	1	0.65	1	1	1	3.600	0.04	26.02	C
71.58-70.08			B	1	0.65	1	1	1	3.600			
			C	1	0.65	1	1	1	3.600			
L16	0.01	0.04	A	1	0.65	1	1	1	0.605	0.01	26.07	C
70.08-69.83			B	1	0.65	1	1	1	0.605			
			C	1	0.65	1	1	1	0.605			
L17	0.19	0.78	A	1	0.65	1	1	1	12.357	0.13	26.22	C
69.83-64.83			B	1	0.65	1	1	1	12.357			
			C	1	0.65	1	1	1	12.357			
L18	0.19	0.80	A	1	0.65	1	1	1	12.830	0.14	27.37	C
64.83-59.83			B	1	0.65	1	1	1	12.830			
			C	1	0.65	1	1	1	12.830			
L19	0.03	0.12	A	1	0.65	1	1	1	1.965	0.03	33.41	C
59.83-59.08			B	1	0.65	1	1	1	1.965			
			C	1	0.65	1	1	1	1.965			
L20	0.01	0.04	A	1	0.65	1	1	1	0.701	0.01	33.41	C
59.08-58.82			B	1	0.65	1	1	1	0.701			
			C	1	0.65	1	1	1	0.701			
L21	0.01	0.02	A	1	0.65	1	1	1	0.395	0.01	33.41	C
58.82-58.67			B	1	0.65	1	1	1	0.395			
			C	1	0.65	1	1	1	0.395			
L22	0.19	0.75	A	1	0.65	1	1	1	13.413	0.15	30.58	C
58.67-53.67			B	1	0.65	1	1	1	13.413			
			C	1	0.65	1	1	1	13.413			
L23	0.20	0.78	A	1	0.65	1	1	1	14.131	0.16	30.79	C
53.67-48.58			B	1	0.65	1	1	1	14.131			
			C	1	0.65	1	1	1	14.131			
L24	0.04	1.13	A	1	0.65	1	1	1	2.783	0.03	32.72	C
48.58-47.58			B	1	0.65	1	1	1	2.783			
			C	1	0.65	1	1	1	2.783			
L25	0.19	1.07	A	1	0.65	1	1	1	14.201	0.16	32.56	C
47.58-42.58			B	1	0.65	1	1	1	14.201			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	1	0.65	1	1	1	14.201			
L26	0.10	0.56	A	1	0.65	1	1	1	7.513	0.09	35.27	C
42.58-40.00			B	1	0.65	1	1	1	7.513			
			C	1	0.65	1	1	1	7.513			
L27	0.01	0.07	A	1	0.65	1	1	1	0.735	0.01	35.97	C
40.00-39.75			B	1	0.65	1	1	1	0.735			
			C	1	0.65	1	1	1	0.735			
L28	0.19	1.40	A	1	0.65	1	1	1	14.942	0.18	35.64	C
39.75-34.75			B	1	0.65	1	1	1	14.942			
			C	1	0.65	1	1	1	14.942			
L29	0.09	0.64	A	1	0.65	1	1	1	6.878	0.08	36.44	C
34.75-32.50			B	1	0.65	1	1	1	6.878			
			C	1	0.65	1	1	1	6.878			
L30	0.01	0.06	A	1	0.65	1	1	1	0.770	0.01	38.68	C
32.50-32.25			B	1	0.65	1	1	1	0.770			
			C	1	0.65	1	1	1	0.770			
L31	0.03	0.19	A	1	0.65	1	1	1	2.576	0.03	38.76	C
32.25-31.42			B	1	0.65	1	1	1	2.576			
			C	1	0.65	1	1	1	2.576			
L32	0.01	0.07	A	1	0.65	1	1	1	0.775	0.01	38.83	C
31.42-31.17			B	1	0.65	1	1	1	0.775			
			C	1	0.65	1	1	1	0.775			
L33	0.08	0.62	A	1	0.65	1	1	1	6.769	0.08	36.33	C
31.17-29.00			B	1	0.65	1	1	1	6.769			
			C	1	0.65	1	1	1	6.769			
L34	0.01	0.06	A	1	0.65	1	1	1	0.787	0.01	35.54	C
29.00-28.75			B	1	0.65	1	1	1	0.787			
			C	1	0.65	1	1	1	0.787			
L35	0.19	1.14	A	1	0.65	1	1	1	15.982	0.17	33.55	C
28.75-23.75			B	1	0.65	1	1	1	15.982			
			C	1	0.65	1	1	1	15.982			
L36	0.19	1.16	A	1	0.65	1	1	1	16.455	0.16	32.95	C
23.75-18.75			B	1	0.65	1	1	1	16.455			
			C	1	0.65	1	1	1	16.455			
L37	0.19	1.18	A	1	0.65	1	1	1	16.928	0.17	33.62	C
18.75-13.75			B	1	0.65	1	1	1	16.928			
			C	1	0.65	1	1	1	16.928			
L38	0.19	1.20	A	1	0.65	1	1	1	17.401	0.17	34.28	C
13.75-8.75			B	1	0.65	1	1	1	17.401			
			C	1	0.65	1	1	1	17.401			
L39 8.75-3.75	0.19	1.22	A	1	0.65	1	1	1	17.874	0.17	34.95	C
			B	1	0.65	1	1	1	17.874			
			C	1	0.65	1	1	1	17.874			
L40 3.75-0.00	0.14	0.93	A	1	0.65	1	1	1	13.716	0.13	34.28	C
			B	1	0.65	1	1	1	13.716			
			C	1	0.65	1	1	1	13.716			
Sum Weight:	4.49	20.03						OTM	239.31 kip-ft	3.91		

Discrete Appurtenance Pressures - No Ice $G_H = 1.690$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Lightning Rod	240.0000	0.03	-0.47	0.27	142.00	1.517	28	0.25	0.25
DB636-C	0.0000	0.03	0.00	-4.57	145.00	1.526	28	2.38	2.38

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
BXA-70063-6CF-2 w/ Mount Pipe	0.0000	0.04	0.00	-4.57	140.00	1.511	28	7.97	5.80
BXA-70063-6CF-2 w/ Mount Pipe	120.0000	0.04	3.96	2.28	140.00	1.511	28	7.97	5.80
BXA-70063-6CF-2 w/ Mount Pipe	240.0000	0.04	-3.96	2.28	140.00	1.511	28	7.97	5.80
BXA-171063-8BF-2 w/ Mount Pipe	0.0000	0.06	0.00	-4.57	140.00	1.511	28	6.36	6.71
BXA-171063-8BF-2 w/ Mount Pipe	120.0000	0.06	3.96	2.28	140.00	1.511	28	6.36	6.71
BXA-171063-8BF-2 w/ Mount Pipe	240.0000	0.06	-3.96	2.28	140.00	1.511	28	6.36	6.71
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	0.0000	0.04	0.00	-4.57	140.00	1.511	28	7.71	5.63
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	120.0000	0.04	3.96	2.28	140.00	1.511	28	7.71	5.63
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	240.0000	0.04	-3.96	2.28	140.00	1.511	28	7.71	5.63
FD9R6004/2C-3L	0.0000	0.01	0.00	-4.57	140.00	1.511	28	0.73	0.17
FD9R6004/2C-3L	120.0000	0.01	3.96	2.28	140.00	1.511	28	0.73	0.17
FD9R6004/2C-3L	240.0000	0.01	-3.96	2.28	140.00	1.511	28	0.73	0.17
RRH2X40-AWS	0.0000	0.04	0.00	-4.57	140.00	1.511	28	2.52	1.59
RRH2X40-AWS	120.0000	0.04	3.96	2.28	140.00	1.511	28	2.52	1.59
RRH2X40-AWS	240.0000	0.04	-3.96	2.28	140.00	1.511	28	2.52	1.59
DB-T1-6Z-8AB-0Z	240.0000	0.04	-3.96	2.28	140.00	1.511	28	5.60	2.33
Platform Mount [LP 403-1]	0.0000	1.50	0.00	0.00	138.00	1.505	28	18.85	18.85
APX16PV-16PVL w/ Mount Pipe	0.0000	0.06	0.00	-4.74	120.00	1.446	27	6.88	3.27
APX16PV-16PVL w/ Mount Pipe	120.0000	0.06	4.10	2.37	120.00	1.446	27	6.88	3.27
APX16PV-16PVL w/ Mount Pipe	240.0000	0.06	-4.10	2.37	120.00	1.446	27	6.88	3.27
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	0.0000	0.06	0.00	-4.74	120.00	1.446	27	7.81	3.78
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	120.0000	0.06	4.10	2.37	120.00	1.446	27	7.81	3.78
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	240.0000	0.06	-4.10	2.37	120.00	1.446	27	7.81	3.78
LNX-6515DS-VTM w/ Mount Pipe	0.0000	0.08	0.00	-4.74	120.00	1.446	27	11.68	9.84
LNX-6515DS-VTM w/ Mount Pipe	120.0000	0.08	4.10	2.37	120.00	1.446	27	11.68	9.84
LNX-6515DS-VTM w/ Mount Pipe	240.0000	0.08	-4.10	2.37	120.00	1.446	27	11.68	9.84
DTMA-1819-DD-12 TMA	0.0000	0.02	0.00	-4.74	120.00	1.446	27	1.30	0.76
DTMA-1819-DD-12 TMA	120.0000	0.02	4.10	2.37	120.00	1.446	27	1.30	0.76
DTMA-1819-DD-12 TMA	240.0000	0.02	-4.10	2.37	120.00	1.446	27	1.30	0.76
ATBT-BOTTOM-24V	240.0000	0.00	-4.10	2.37	120.00	1.446	27	0.12	0.08
ATBT-BOTTOM-24V	240.0000	0.00	-4.10	2.37	120.00	1.446	27	0.12	0.08
ATBT-BOTTOM-24V	240.0000	0.00	-4.10	2.37	120.00	1.446	27	0.12	0.08
T-Arm Mount [TA 602-3]	0.0000	0.77	0.00	0.00	120.00	1.446	27	11.59	11.59
800 10504 w/ Mount Pipe	0.0000	0.04	0.00	-3.83	110.00	1.411	26	3.59	3.18
800 10504 w/ Mount Pipe	120.0000	0.04	3.32	1.92	110.00	1.411	26	3.59	3.18
800 10504 w/ Mount	240.0000	0.04	-3.32	1.92	110.00	1.411	26	3.59	3.18

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Pipe									
860 10025 RET	0.0000	0.00	0.00	-3.83	110.00	1.411	26	0.16	0.14
860 10025 RET	120.0000	0.00	3.32	1.92	110.00	1.411	26	0.16	0.14
860 10025 RET	240.0000	0.00	-3.32	1.92	110.00	1.411	26	0.16	0.14
Empty Mount Pipe	0.0000	0.03	0.00	-0.83	110.00	1.411	26	1.40	1.40
Empty Mount Pipe	120.0000	0.03	0.72	0.42	110.00	1.411	26	1.40	1.40
Empty Mount Pipe	240.0000	0.03	-0.72	0.42	110.00	1.411	26	1.40	1.40
T-Arm Mount [TA 702-3]	0.0000	0.34	0.00	0.00	110.00	1.411	26	5.64	5.64
RRUS-11	0.0000	0.12	0.00	-1.94	99.00	1.369	25	5.88	2.49
RRUS-11	120.0000	0.12	1.68	0.97	99.00	1.369	25	5.88	2.49
RRUS-11	240.0000	0.12	-1.68	0.97	99.00	1.369	25	5.88	2.49
DC6-48-60-18-8F	0.0000	0.03	0.00	-1.94	99.00	1.369	25	2.57	4.32
Side Arm Mount [SO 102-3]	0.0000	0.08	0.00	0.00	99.00	1.369	25	3.00	3.00
7770.00 w/Mount Pipe	0.0000	0.05	0.00	-4.97	95.00	1.353	25	6.46	4.59
7770.00 w/Mount Pipe	120.0000	0.05	4.31	2.49	95.00	1.353	25	6.46	4.59
7770.00 w/Mount Pipe	240.0000	0.05	-4.31	2.49	95.00	1.353	25	6.46	4.59
P65-16-XLH-RR w/Mount Pipe	0.0000	0.08	0.00	-4.97	95.00	1.353	25	8.64	6.36
P65-16-XLH-RR w/Mount Pipe	120.0000	0.08	4.31	2.49	95.00	1.353	25	8.64	6.36
P65-16-XLH-RR w/Mount Pipe	240.0000	0.08	-4.31	2.49	95.00	1.353	25	8.64	6.36
LGP21401 TMA	0.0000	0.04	0.00	-4.97	95.00	1.353	25	1.91	0.73
LGP21401 TMA	120.0000	0.04	4.31	2.49	95.00	1.353	25	1.91	0.73
LGP21401 TMA	240.0000	0.04	-4.31	2.49	95.00	1.353	25	1.91	0.73
Empty Mount Pipe	0.0000	0.06	0.00	-4.97	95.00	1.353	25	2.80	2.80
Empty Mount Pipe	120.0000	0.06	4.31	2.49	95.00	1.353	25	2.80	2.80
Empty Mount Pipe	240.0000	0.06	-4.31	2.49	95.00	1.353	25	2.80	2.80
Platform Mount [LP 713-1]	0.0000	1.51	0.00	0.00	95.00	1.353	25	31.27	31.27
APXVSPP18-C-A20 w/Mount Pipe	0.0000	0.08	0.00	-5.18	75.00	1.264	23	8.50	6.95
APXVSPP18-C-A20 w/Mount Pipe	120.0000	0.08	4.49	2.59	75.00	1.264	23	8.50	6.95
APXVSPP18-C-A20 w/Mount Pipe	240.0000	0.08	-4.49	2.59	75.00	1.264	23	8.50	6.95
800MHz 2x50W RRH	0.0000	0.05	0.00	-5.18	75.00	1.264	23	2.49	2.07
800MHz 2x50W RRH	120.0000	0.05	4.49	2.59	75.00	1.264	23	2.49	2.07
800MHz 2x50W RRH	240.0000	0.05	-4.49	2.59	75.00	1.264	23	2.49	2.07
800 MHz External Notch Filter	0.0000	0.01	0.00	-5.18	75.00	1.264	23	0.78	0.29
800 MHz External Notch Filter	120.0000	0.01	4.49	2.59	75.00	1.264	23	0.78	0.29
800 MHz External Notch Filter	240.0000	0.01	-4.49	2.59	75.00	1.264	23	0.78	0.29
1900MHz 4X40W RRH	0.0000	0.06	0.00	-5.18	75.00	1.264	23	2.71	2.61
1900MHz 4X40W RRH	120.0000	0.06	4.49	2.59	75.00	1.264	23	2.71	2.61
1900MHz 4X40W RRH	240.0000	0.06	-4.49	2.59	75.00	1.264	23	2.71	2.61
LLPX310R w/Mount Pipe	0.0000	0.05	0.00	-5.18	75.00	1.264	23	5.69	3.63
LLPX310R w/Mount Pipe	120.0000	0.05	4.49	2.59	75.00	1.264	23	5.69	3.63
LLPX310R w/Mount Pipe	240.0000	0.05	-4.49	2.59	75.00	1.264	23	5.69	3.63
FDD_R6_RRH	0.0000	0.03	0.00	-5.18	75.00	1.264	23	1.79	0.78
FDD_R6_RRH	120.0000	0.03	4.49	2.59	75.00	1.264	23	1.79	0.78
FDD_R6_RRH	240.0000	0.03	-4.49	2.59	75.00	1.264	23	1.79	0.78
Horizon Duo ODU	0.0000	0.01	0.00	-5.18	75.00	1.264	23	0.55	0.34
Horizon Duo ODU	120.0000	0.01	4.49	2.59	75.00	1.264	23	0.55	0.34

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Empty Mount Pipe	0.0000	0.03	0.00	-5.18	73.00	1.255	23	1.40	1.40
Empty Mount Pipe	120.0000	0.03	4.49	2.59	73.00	1.255	23	1.40	1.40
Empty Mount Pipe	240.0000	0.03	-4.49	2.59	73.00	1.255	23	1.40	1.40
Platform Mount [LP 712-1]	0.0000	1.34	0.00	0.00	73.00	1.255	23	24.53	24.53
Side Arm Mount [SO 102-3]	0.0000	0.08	0.00	0.00	73.00	1.255	23	3.00	3.00
GPS-TMG-HR-26NCM GPS	240.0000	0.00	-2.94	1.70	50.00	1.126	21	0.09	0.09
	Sum Weight:	9.18							

Discrete Appurtenance Pressures - With Ice $G_H = 1.690$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
Lightning Rod	240.0000	0.04	-0.47	0.27	142.00	1.517	6	0.91	0.91	0.8920
DB636-C	0.0000	0.07	0.00	-4.57	145.00	1.526	6	4.13	4.13	0.8905
BXA-70063-6CF-2 w/ Mount Pipe	0.0000	0.16	0.00	-4.57	140.00	1.511	6	9.08	7.63	0.8905
BXA-70063-6CF-2 w/ Mount Pipe	120.0000	0.16	3.96	2.28	140.00	1.511	6	9.08	7.63	0.8905
BXA-70063-6CF-2 w/ Mount Pipe	240.0000	0.16	-3.96	2.28	140.00	1.511	6	9.08	7.63	0.8905
BXA-171063-8BF-2 w/ Mount Pipe	0.0000	0.18	0.00	-4.57	140.00	1.511	6	7.75	8.92	0.8905
BXA-171063-8BF-2 w/ Mount Pipe	120.0000	0.18	3.96	2.28	140.00	1.511	6	7.75	8.92	0.8905
BXA-171063-8BF-2 w/ Mount Pipe	240.0000	0.18	-3.96	2.28	140.00	1.511	6	7.75	8.92	0.8905
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	0.0000	0.15	0.00	-4.57	140.00	1.511	6	8.79	7.38	0.8905
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	120.0000	0.15	3.96	2.28	140.00	1.511	6	8.79	7.38	0.8905
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	240.0000	0.15	-3.96	2.28	140.00	1.511	6	8.79	7.38	0.8905
FD9R6004/2C-3L	0.0000	0.02	0.00	-4.57	140.00	1.511	6	1.05	0.37	0.8905
FD9R6004/2C-3L	120.0000	0.02	3.96	2.28	140.00	1.511	6	1.05	0.37	0.8905
FD9R6004/2C-3L	240.0000	0.02	-3.96	2.28	140.00	1.511	6	1.05	0.37	0.8905
RRH2X40-AWS	0.0000	0.08	0.00	-4.57	140.00	1.511	6	2.94	1.96	0.8905
RRH2X40-AWS	120.0000	0.08	3.96	2.28	140.00	1.511	6	2.94	1.96	0.8905
RRH2X40-AWS	240.0000	0.08	-3.96	2.28	140.00	1.511	6	2.94	1.96	0.8905
DB-T1-6Z-8AB-0Z	240.0000	0.11	-3.96	2.28	140.00	1.511	6	6.17	2.74	0.8905
Platform Mount [LP 403-1]	0.0000	2.03	0.00	0.00	138.00	1.505	6	28.56	28.56	0.8905
APX16PV-16PVL w/ Mount Pipe	0.0000	0.14	0.00	-4.74	120.00	1.446	5	7.76	4.47	0.8757
APX16PV-16PVL w/ Mount Pipe	120.0000	0.14	4.10	2.37	120.00	1.446	5	7.76	4.47	0.8757
APX16PV-16PVL w/ Mount Pipe	240.0000	0.14	-4.10	2.37	120.00	1.446	5	7.76	4.47	0.8757
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	0.0000	0.16	0.00	-4.74	120.00	1.446	5	8.78	5.20	0.8757
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	120.0000	0.16	4.10	2.37	120.00	1.446	5	8.78	5.20	0.8757
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	240.0000	0.16	-4.10	2.37	120.00	1.446	5	8.78	5.20	0.8757

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
LNX-6515DS-VTM w/ Mount Pipe	0.0000	0.25	0.00	-4.74	120.00	1.446	5	12.95	12.53	0.8757
LNX-6515DS-VTM w/ Mount Pipe	120.0000	0.25	4.10	2.37	120.00	1.446	5	12.95	12.53	0.8757
LNX-6515DS-VTM w/ Mount Pipe	240.0000	0.25	-4.10	2.37	120.00	1.446	5	12.95	12.53	0.8757
DTMA-1819-DD-12 TMA	0.0000	0.05	0.00	-4.74	120.00	1.446	5	1.73	1.14	0.8757
DTMA-1819-DD-12 TMA	120.0000	0.05	4.10	2.37	120.00	1.446	5	1.73	1.14	0.8757
DTMA-1819-DD-12 TMA	240.0000	0.05	-4.10	2.37	120.00	1.446	5	1.73	1.14	0.8757
ATBT-BOTTOM-24V	240.0000	0.01	-4.10	2.37	120.00	1.446	5	0.22	0.16	0.8757
ATBT-BOTTOM-24V	240.0000	0.01	-4.10	2.37	120.00	1.446	5	0.22	0.16	0.8757
ATBT-BOTTOM-24V	240.0000	0.01	-4.10	2.37	120.00	1.446	5	0.22	0.16	0.8757
T-Arm Mount [TA 602-3]	0.0000	1.15	0.00	0.00	120.00	1.446	5	18.33	18.33	0.8757
800 10504 w/ Mount Pipe	0.0000	0.10	0.00	-3.83	110.00	1.411	5	4.31	4.40	0.8666
800 10504 w/ Mount Pipe	120.0000	0.10	3.32	1.92	110.00	1.411	5	4.31	4.40	0.8666
800 10504 w/ Mount Pipe	240.0000	0.10	-3.32	1.92	110.00	1.411	5	4.31	4.40	0.8666
860 10025 RET	0.0000	0.00	0.00	-3.83	110.00	1.411	5	0.28	0.25	0.8666
860 10025 RET	120.0000	0.00	3.32	1.92	110.00	1.411	5	0.28	0.25	0.8666
860 10025 RET	240.0000	0.00	-3.32	1.92	110.00	1.411	5	0.28	0.25	0.8666
Empty Mount Pipe	0.0000	0.05	0.00	-0.83	110.00	1.411	5	2.53	2.53	0.8666
Empty Mount Pipe	120.0000	0.05	0.72	0.42	110.00	1.411	5	2.53	2.53	0.8666
Empty Mount Pipe	240.0000	0.05	-0.72	0.42	110.00	1.411	5	2.53	2.53	0.8666
T-Arm Mount [TA 702-3]	0.0000	0.49	0.00	0.00	110.00	1.411	5	7.22	7.22	0.8666
RRUS-11	0.0000	0.18	0.00	-1.94	99.00	1.369	5	6.68	3.07	0.8557
RRUS-11	120.0000	0.18	1.68	0.97	99.00	1.369	5	6.68	3.07	0.8557
RRUS-11	240.0000	0.18	-1.68	0.97	99.00	1.369	5	6.68	3.07	0.8557
DC6-48-60-18-8F	0.0000	0.09	0.00	-1.94	99.00	1.369	5	2.97	4.80	0.8557
Side Arm Mount [SO 102-3]	0.0000	0.13	0.00	0.00	99.00	1.369	5	3.82	3.82	0.8557
7770.00 w/Mount Pipe	0.0000	0.14	0.00	-4.97	95.00	1.353	5	7.55	6.22	0.8515
7770.00 w/Mount Pipe	120.0000	0.14	4.31	2.49	95.00	1.353	5	7.55	6.22	0.8515
7770.00 w/Mount Pipe	240.0000	0.14	-4.31	2.49	95.00	1.353	5	7.55	6.22	0.8515
P65-16-XLH-RR w/Mount Pipe	0.0000	0.20	0.00	-4.97	95.00	1.353	5	9.73	8.16	0.8515
P65-16-XLH-RR w/Mount Pipe	120.0000	0.20	4.31	2.49	95.00	1.353	5	9.73	8.16	0.8515
P65-16-XLH-RR w/Mount Pipe	240.0000	0.20	-4.31	2.49	95.00	1.353	5	9.73	8.16	0.8515
LGP21401 TMA	0.0000	0.06	0.00	-4.97	95.00	1.353	5	2.40	1.13	0.8515
LGP21401 TMA	120.0000	0.06	4.31	2.49	95.00	1.353	5	2.40	1.13	0.8515
LGP21401 TMA	240.0000	0.06	-4.31	2.49	95.00	1.353	5	2.40	1.13	0.8515
Empty Mount Pipe	0.0000	0.10	0.00	-4.97	95.00	1.353	5	5.03	5.03	0.8515
Empty Mount Pipe	120.0000	0.10	4.31	2.49	95.00	1.353	5	5.03	5.03	0.8515
Empty Mount Pipe	240.0000	0.10	-4.31	2.49	95.00	1.353	5	5.03	5.03	0.8515
Platform Mount [LP 713-1]	0.0000	2.22	0.00	0.00	95.00	1.353	5	45.59	45.59	0.8515
APXVSPP18-C-A20 w/Mount Pipe	0.0000	0.20	0.00	-5.18	75.00	1.264	5	9.55	8.71	0.8250
APXVSPP18-C-A20 w/Mount Pipe	120.0000	0.20	4.49	2.59	75.00	1.264	5	9.55	8.71	0.8250
APXVSPP18-C-A20 w/Mount Pipe	240.0000	0.20	-4.49	2.59	75.00	1.264	5	9.55	8.71	0.8250
800MHz 2x50W RRH	0.0000	0.09	0.00	-5.18	75.00	1.264	5	2.85	2.41	0.8250

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
800MHz 2x50W RRH	120.0000	0.09	4.49	2.59	75.00	1.264	5	2.85	2.41	0.8250
800MHz 2x50W RRH	240.0000	0.09	-4.49	2.59	75.00	1.264	5	2.85	2.41	0.8250
800 MHz External Notch Filter	0.0000	0.02	0.00	-5.18	75.00	1.264	5	0.98	0.44	0.8250
800 MHz External Notch Filter	120.0000	0.02	4.49	2.59	75.00	1.264	5	0.98	0.44	0.8250
800 MHz External Notch Filter	240.0000	0.02	-4.49	2.59	75.00	1.264	5	0.98	0.44	0.8250
1900MHz 4X40W RRH	0.0000	0.10	0.00	-5.18	75.00	1.264	5	3.11	3.00	0.8250
1900MHz 4X40W RRH	120.0000	0.10	4.49	2.59	75.00	1.264	5	3.11	3.00	0.8250
1900MHz 4X40W RRH	240.0000	0.10	-4.49	2.59	75.00	1.264	5	3.11	3.00	0.8250
LLPX310R w/Mount Pipe	0.0000	0.13	0.00	-5.18	75.00	1.264	5	6.78	5.10	0.8250
LLPX310R w/Mount Pipe	120.0000	0.13	4.49	2.59	75.00	1.264	5	6.78	5.10	0.8250
LLPX310R w/Mount Pipe	240.0000	0.13	-4.49	2.59	75.00	1.264	5	6.78	5.10	0.8250
FDD_R6_RRH	0.0000	0.05	0.00	-5.18	75.00	1.264	5	2.10	1.02	0.8250
FDD_R6_RRH	120.0000	0.05	4.49	2.59	75.00	1.264	5	2.10	1.02	0.8250
FDD_R6_RRH	240.0000	0.05	-4.49	2.59	75.00	1.264	5	2.10	1.02	0.8250
Horizon Duo ODU	0.0000	0.02	0.00	-5.18	75.00	1.264	5	0.72	0.49	0.8250
Horizon Duo ODU	120.0000	0.02	4.49	2.59	75.00	1.264	5	0.72	0.49	0.8250
Empty Mount Pipe	0.0000	0.05	0.00	-5.18	73.00	1.255	5	2.49	2.49	0.8250
Empty Mount Pipe	120.0000	0.05	4.49	2.59	73.00	1.255	5	2.49	2.49	0.8250
Empty Mount Pipe	240.0000	0.05	-4.49	2.59	73.00	1.255	5	2.49	2.49	0.8250
Platform Mount [LP 712-1]	0.0000	1.85	0.00	0.00	73.00	1.255	5	33.46	33.46	0.8250
Side Arm Mount [SO 102-3]	0.0000	0.13	0.00	0.00	73.00	1.255	5	3.79	3.79	0.8250
GPS-TMG-HR-26NCM GPS	240.0000	0.00	-2.94	1.70	50.00	1.126	4	0.18	0.18	0.7883
	Sum Weight:	16.35								

Discrete Appurtenance Pressures - Service $G_H = 1.690$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Lightning Rod	240.0000	0.03	-0.47	0.27	142.00	1.517	10	0.25	0.25
DB636-C	0.0000	0.03	0.00	-4.57	145.00	1.526	10	2.38	2.38
BXA-70063-6CF-2 w/ Mount Pipe	0.0000	0.04	0.00	-4.57	140.00	1.511	10	7.97	5.80
BXA-70063-6CF-2 w/ Mount Pipe	120.0000	0.04	3.96	2.28	140.00	1.511	10	7.97	5.80
BXA-70063-6CF-2 w/ Mount Pipe	240.0000	0.04	-3.96	2.28	140.00	1.511	10	7.97	5.80
BXA-171063-8BF-2 w/ Mount Pipe	0.0000	0.06	0.00	-4.57	140.00	1.511	10	6.36	6.71
BXA-171063-8BF-2 w/ Mount Pipe	120.0000	0.06	3.96	2.28	140.00	1.511	10	6.36	6.71
BXA-171063-8BF-2 w/ Mount Pipe	240.0000	0.06	-3.96	2.28	140.00	1.511	10	6.36	6.71
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	0.0000	0.04	0.00	-4.57	140.00	1.511	10	7.71	5.63
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	120.0000	0.04	3.96	2.28	140.00	1.511	10	7.71	5.63
BXA-80063-6BF-EDIN-	240.0000	0.04	-3.96	2.28	140.00	1.511	10	7.71	5.63

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
4 w/ Mount Pipe									
FD9R6004/2C-3L	0.0000	0.01	0.00	-4.57	140.00	1.511	10	0.73	0.17
FD9R6004/2C-3L	120.0000	0.01	3.96	2.28	140.00	1.511	10	0.73	0.17
FD9R6004/2C-3L	240.0000	0.01	-3.96	2.28	140.00	1.511	10	0.73	0.17
RRH2X40-AWS	0.0000	0.04	0.00	-4.57	140.00	1.511	10	2.52	1.59
RRH2X40-AWS	120.0000	0.04	3.96	2.28	140.00	1.511	10	2.52	1.59
RRH2X40-AWS	240.0000	0.04	-3.96	2.28	140.00	1.511	10	2.52	1.59
DB-T1-6Z-8AB-0Z	240.0000	0.04	-3.96	2.28	140.00	1.511	10	5.60	2.33
Platform Mount [LP 403-1]	0.0000	1.50	0.00	0.00	138.00	1.505	10	18.85	18.85
APX16PV-16PVL w/ Mount Pipe	0.0000	0.06	0.00	-4.74	120.00	1.446	9	6.88	3.27
APX16PV-16PVL w/ Mount Pipe	120.0000	0.06	4.10	2.37	120.00	1.446	9	6.88	3.27
APX16PV-16PVL w/ Mount Pipe	240.0000	0.06	-4.10	2.37	120.00	1.446	9	6.88	3.27
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	0.0000	0.06	0.00	-4.74	120.00	1.446	9	7.81	3.78
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	120.0000	0.06	4.10	2.37	120.00	1.446	9	7.81	3.78
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	240.0000	0.06	-4.10	2.37	120.00	1.446	9	7.81	3.78
LNX-6515DS-VTM w/ Mount Pipe	0.0000	0.08	0.00	-4.74	120.00	1.446	9	11.68	9.84
LNX-6515DS-VTM w/ Mount Pipe	120.0000	0.08	4.10	2.37	120.00	1.446	9	11.68	9.84
LNX-6515DS-VTM w/ Mount Pipe	240.0000	0.08	-4.10	2.37	120.00	1.446	9	11.68	9.84
DTMA-1819-DD-12 TMA	0.0000	0.02	0.00	-4.74	120.00	1.446	9	1.30	0.76
DTMA-1819-DD-12 TMA	120.0000	0.02	4.10	2.37	120.00	1.446	9	1.30	0.76
DTMA-1819-DD-12 TMA	240.0000	0.02	-4.10	2.37	120.00	1.446	9	1.30	0.76
ATBT-BOTTOM-24V	240.0000	0.00	-4.10	2.37	120.00	1.446	9	0.12	0.08
ATBT-BOTTOM-24V	240.0000	0.00	-4.10	2.37	120.00	1.446	9	0.12	0.08
ATBT-BOTTOM-24V	240.0000	0.00	-4.10	2.37	120.00	1.446	9	0.12	0.08
T-Arm Mount [TA 602-3]	0.0000	0.77	0.00	0.00	120.00	1.446	9	11.59	11.59
800 10504 w/ Mount Pipe	0.0000	0.04	0.00	-3.83	110.00	1.411	9	3.59	3.18
800 10504 w/ Mount Pipe	120.0000	0.04	3.32	1.92	110.00	1.411	9	3.59	3.18
800 10504 w/ Mount Pipe	240.0000	0.04	-3.32	1.92	110.00	1.411	9	3.59	3.18
860 10025 RET	0.0000	0.00	0.00	-3.83	110.00	1.411	9	0.16	0.14
860 10025 RET	120.0000	0.00	3.32	1.92	110.00	1.411	9	0.16	0.14
860 10025 RET	240.0000	0.00	-3.32	1.92	110.00	1.411	9	0.16	0.14
Empty Mount Pipe	0.0000	0.03	0.00	-0.83	110.00	1.411	9	1.40	1.40
Empty Mount Pipe	120.0000	0.03	0.72	0.42	110.00	1.411	9	1.40	1.40
Empty Mount Pipe	240.0000	0.03	-0.72	0.42	110.00	1.411	9	1.40	1.40
T-Arm Mount [TA 702-3]	0.0000	0.34	0.00	0.00	110.00	1.411	9	5.64	5.64
RRUS-11	0.0000	0.12	0.00	-1.94	99.00	1.369	9	5.88	2.49
RRUS-11	120.0000	0.12	1.68	0.97	99.00	1.369	9	5.88	2.49
RRUS-11	240.0000	0.12	-1.68	0.97	99.00	1.369	9	5.88	2.49
DC6-48-60-18-8F	0.0000	0.03	0.00	-1.94	99.00	1.369	9	2.57	4.32
Side Arm Mount [SO 102-3]	0.0000	0.08	0.00	0.00	99.00	1.369	9	3.00	3.00
7770.00 w/Mount Pipe	0.0000	0.05	0.00	-4.97	95.00	1.353	9	6.46	4.59
7770.00 w/Mount Pipe	120.0000	0.05	4.31	2.49	95.00	1.353	9	6.46	4.59

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
7770.00 w/Mount Pipe	240.0000	0.05	-4.31	2.49	95.00	1.353	9	6.46	4.59
P65-16-XLH-RR w/Mount Pipe	0.0000	0.08	0.00	-4.97	95.00	1.353	9	8.64	6.36
P65-16-XLH-RR w/Mount Pipe	120.0000	0.08	4.31	2.49	95.00	1.353	9	8.64	6.36
P65-16-XLH-RR w/Mount Pipe	240.0000	0.08	-4.31	2.49	95.00	1.353	9	8.64	6.36
LGP21401 TMA	0.0000	0.04	0.00	-4.97	95.00	1.353	9	1.91	0.73
LGP21401 TMA	120.0000	0.04	4.31	2.49	95.00	1.353	9	1.91	0.73
LGP21401 TMA	240.0000	0.04	-4.31	2.49	95.00	1.353	9	1.91	0.73
Empty Mount Pipe	0.0000	0.06	0.00	-4.97	95.00	1.353	9	2.80	2.80
Empty Mount Pipe	120.0000	0.06	4.31	2.49	95.00	1.353	9	2.80	2.80
Empty Mount Pipe	240.0000	0.06	-4.31	2.49	95.00	1.353	9	2.80	2.80
Platform Mount [LP 713-1]	0.0000	1.51	0.00	0.00	95.00	1.353	9	31.27	31.27
APXVSPP18-C-A20 w/Mount Pipe	0.0000	0.08	0.00	-5.18	75.00	1.264	8	8.50	6.95
APXVSPP18-C-A20 w/Mount Pipe	120.0000	0.08	4.49	2.59	75.00	1.264	8	8.50	6.95
APXVSPP18-C-A20 w/Mount Pipe	240.0000	0.08	-4.49	2.59	75.00	1.264	8	8.50	6.95
800MHz 2x50W RRH	0.0000	0.05	0.00	-5.18	75.00	1.264	8	2.49	2.07
800MHz 2x50W RRH	120.0000	0.05	4.49	2.59	75.00	1.264	8	2.49	2.07
800MHz 2x50W RRH	240.0000	0.05	-4.49	2.59	75.00	1.264	8	2.49	2.07
800 MHz External Notch Filter	0.0000	0.01	0.00	-5.18	75.00	1.264	8	0.78	0.29
800 MHz External Notch Filter	120.0000	0.01	4.49	2.59	75.00	1.264	8	0.78	0.29
800 MHz External Notch Filter	240.0000	0.01	-4.49	2.59	75.00	1.264	8	0.78	0.29
1900MHz 4X40W RRH	0.0000	0.06	0.00	-5.18	75.00	1.264	8	2.71	2.61
1900MHz 4X40W RRH	120.0000	0.06	4.49	2.59	75.00	1.264	8	2.71	2.61
1900MHz 4X40W RRH	240.0000	0.06	-4.49	2.59	75.00	1.264	8	2.71	2.61
LLPX310R w/Mount Pipe	0.0000	0.05	0.00	-5.18	75.00	1.264	8	5.69	3.63
LLPX310R w/Mount Pipe	120.0000	0.05	4.49	2.59	75.00	1.264	8	5.69	3.63
LLPX310R w/Mount Pipe	240.0000	0.05	-4.49	2.59	75.00	1.264	8	5.69	3.63
FDD_R6_RRH	0.0000	0.03	0.00	-5.18	75.00	1.264	8	1.79	0.78
FDD_R6_RRH	120.0000	0.03	4.49	2.59	75.00	1.264	8	1.79	0.78
FDD_R6_RRH	240.0000	0.03	-4.49	2.59	75.00	1.264	8	1.79	0.78
Horizon Duo ODU	0.0000	0.01	0.00	-5.18	75.00	1.264	8	0.55	0.34
Horizon Duo ODU	120.0000	0.01	4.49	2.59	75.00	1.264	8	0.55	0.34
Empty Mount Pipe	0.0000	0.03	0.00	-5.18	73.00	1.255	8	1.40	1.40
Empty Mount Pipe	120.0000	0.03	4.49	2.59	73.00	1.255	8	1.40	1.40
Empty Mount Pipe	240.0000	0.03	-4.49	2.59	73.00	1.255	8	1.40	1.40
Platform Mount [LP 712-1]	0.0000	1.34	0.00	0.00	73.00	1.255	8	24.53	24.53
Side Arm Mount [SO 102-3]	0.0000	0.08	0.00	0.00	73.00	1.255	8	3.00	3.00
GPS-TMG-HR-26NCM GPS	240.0000	0.00	-2.94	1.70	50.00	1.126	7	0.09	0.09
	Sum Weight:	9.18							

Dish Pressures - No Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
75.00	A-ANT-23G-2-C Dish	-40.0000	0.03	0.00	-5.16	1.264	3.72	23
75.00	A-ANT-23G-2-C Dish	110.0000	0.03	4.47	2.58	1.264	3.72	23
		Sum Weight:	0.06					

Dish Pressures - With Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf	t_z in
75.00	A-ANT-23G-2-C Dish	-40.0000	0.05	0.00	-5.16	1.264	4.20	5	0.8277
75.00	A-ANT-23G-2-C Dish	110.0000	0.05	4.47	2.58	1.264	4.20	5	0.8277
		Sum Weight:	0.09						

Dish Pressures - Service

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
75.00	A-ANT-23G-2-C Dish	-40.0000	0.03	0.00	-5.16	1.264	3.72	8
75.00	A-ANT-23G-2-C Dish	110.0000	0.03	4.47	2.58	1.264	3.72	8
		Sum Weight:	0.06					

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	20.03					
Bracing Weight	0.00					
Total Member Self-Weight	20.03			-0.06	-0.20	
Total Weight	33.77			-0.06	-0.20	
Wind 0 deg - No Ice		-0.07	-28.23	-2523.42	0.21	0.55
Wind 30 deg - No Ice		14.22	-24.46	-2188.60	-1277.18	0.08
Wind 60 deg - No Ice		24.64	-14.08	-1263.21	-2208.26	-0.74
Wind 90 deg - No Ice		28.43	0.06	-0.34	-2545.76	-1.15
Wind 120 deg - No Ice		24.62	14.13	1259.05	-2202.21	-1.25
Wind 150 deg - No Ice		14.25	24.45	2183.06	-1271.30	-0.98
Wind 180 deg - No Ice		0.06	28.26	2525.60	-0.19	-0.76
Wind 210 deg - No Ice		-14.19	24.47	2189.27	1274.57	-0.17
Wind 240 deg - No Ice		-24.68	14.07	1261.70	2210.84	0.81
Wind 270 deg - No Ice		-28.45	-0.04	1.42	2546.79	1.06
Wind 300 deg - No Ice		-24.63	-14.12	-1258.03	2202.35	1.07
Wind 330 deg - No Ice		-14.25	-24.44	-2182.31	1271.12	0.80
Member Ice	4.10					
Total Weight Ice	46.16			0.25	-1.06	
Wind 0 deg - Ice		-0.02	-7.51	-673.86	-0.83	0.18
Wind 30 deg - Ice		3.78	-6.51	-584.21	-341.31	0.02
Wind 60 deg - Ice		6.55	-3.75	-337.01	-589.68	-0.22

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Wind 90 deg - Ice		7.56	0.01	0.33	-679.90	-0.36
Wind 120 deg - Ice		6.54	3.76	336.85	-588.45	-0.39
Wind 150 deg - Ice		3.79	6.51	583.63	-340.22	-0.32
Wind 180 deg - Ice		0.01	7.52	674.89	-1.20	-0.23
Wind 210 deg - Ice		-3.77	6.51	584.89	338.69	-0.04
Wind 240 deg - Ice		-6.56	3.74	337.21	588.23	0.24
Wind 270 deg - Ice		-7.56	-0.01	0.45	678.10	0.34
Wind 300 deg - Ice		-6.54	-3.76	-336.09	586.46	0.35
Wind 330 deg - Ice		-3.79	-6.50	-582.93	338.15	0.28
Total Weight	33.77			-0.06	-0.20	
Wind 0 deg - Service		-0.02	-9.77	-873.30	0.19	0.19
Wind 30 deg - Service		4.92	-8.46	-757.45	-441.82	0.03
Wind 60 deg - Service		8.53	-4.87	-437.25	-763.99	-0.26
Wind 90 deg - Service		9.84	0.02	-0.26	-880.77	-0.40
Wind 120 deg - Service		8.52	4.89	435.51	-761.89	-0.43
Wind 150 deg - Service		4.93	8.46	755.24	-439.78	-0.34
Wind 180 deg - Service		0.02	9.78	873.76	0.05	-0.26
Wind 210 deg - Service		-4.91	8.47	757.39	441.14	-0.06
Wind 240 deg - Service		-8.54	4.87	436.43	765.11	0.28
Wind 270 deg - Service		-9.85	-0.01	0.34	881.36	0.37
Wind 300 deg - Service		-8.52	-4.88	-435.45	762.17	0.37
Wind 330 deg - Service		-4.93	-8.46	-755.27	439.95	0.28

Load Combinations

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

Comb. No.	Description
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	140 - 135	Pole	Max Tension	2	0.00	-0.00	-0.00
			Max. Compression	14	-4.26	0.46	0.04
			Max. Mx	11	-1.67	22.47	-0.33
			Max. My	2	-1.69	-0.22	21.94
			Max. Vy	11	-4.90	22.47	-0.33
			Max. Vx	2	-4.82	-0.22	21.94
			Max. Torque	9			-0.54
L2	135 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-4.55	0.47	0.05
			Max. Mx	11	-1.86	47.50	-0.67
			Max. My	2	-1.88	-0.56	46.57
			Max. Vy	11	-5.12	47.50	-0.67
			Max. Vx	2	-5.04	-0.56	46.57
			Max. Torque	9			-0.54
L3	130 - 125	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-4.87	0.47	0.05
			Max. Mx	11	-2.08	73.62	-1.01
			Max. My	2	-2.09	-0.90	72.30
			Max. Vy	11	-5.34	73.62	-1.01
			Max. Vx	2	-5.26	-0.90	72.30
			Max. Torque	9			-0.54
L4	125 - 120	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-5.20	0.47	0.05
			Max. Mx	11	-2.31	100.90	-1.35
			Max. My	2	-2.32	-1.24	99.18
			Max. Vy	11	-5.57	100.90	-1.35
			Max. Vx	8	5.49	1.50	-99.10
			Max. Torque	9			-0.54
L5	120 - 115	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-8.61	0.51	0.00
			Max. Mx	11	-3.63	148.42	-1.72
			Max. My	2	-3.65	-1.57	146.23
			Max. Vy	11	-9.67	148.42	-1.72
			Max. Vx	8	9.58	1.89	-146.19
			Max. Torque	9			-0.57
L6	115 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-9.08	0.48	-0.01
			Max. Mx	11	-3.99	197.57	-2.08
			Max. My	2	-4.01	-1.93	194.95
			Max. Vy	11	-10.00	197.57	-2.08
			Max. Vx	8	9.92	2.24	-194.92
			Max. Torque	9			-0.56
L7	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-10.56	0.44	-0.03

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	11	-4.86	253.27	-2.44
			Max. My	2	-4.88	-2.29	250.23
			Max. Vy	11	-11.33	253.27	-2.44
			Max. Vx	8	11.25	2.60	-250.21
			Max. Torque	9			-0.54
L8	105 - 101.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-10.93	0.41	-0.04
			Max. Mx	11	-5.16	292.45	-2.68
			Max. My	2	-5.17	-2.54	289.12
			Max. Vy	11	-11.59	292.45	-2.68
			Max. Vx	8	11.51	2.84	-289.11
			Max. Torque	9			-0.52
L9	101.58 - 96.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-12.40	0.36	0.11
			Max. Mx	11	-6.12	353.54	-3.01
			Max. My	2	-6.14	-2.91	349.67
			Max. Vy	11	-12.89	353.54	-3.01
			Max. Vx	8	12.73	3.19	-349.55
			Max. Torque	4			0.71
L10	96.58 - 91.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-16.86	0.31	0.09
			Max. Mx	11	-8.63	431.52	-3.37
			Max. My	2	-8.65	-3.28	426.84
			Max. Vy	11	-16.96	431.52	-3.37
			Max. Vx	8	16.80	3.54	-426.73
			Max. Torque	4			0.70
L11	91.58 - 86.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-17.62	0.26	0.06
			Max. Mx	11	-9.29	517.28	-3.73
			Max. My	2	-9.31	-3.65	511.79
			Max. Vy	11	-17.36	517.28	-3.73
			Max. Vx	8	17.20	3.89	-511.70
			Max. Torque	4			0.68
L12	86.58 - 81.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-18.41	0.20	0.04
			Max. Mx	11	-9.97	605.00	-4.09
			Max. My	2	-9.99	-4.02	598.72
			Max. Vy	11	-17.75	605.00	-4.09
			Max. Vx	8	17.59	4.23	-598.63
			Max. Torque	4			0.66
L13	81.58 - 76.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-19.22	0.15	0.01
			Max. Mx	11	-10.68	694.68	-4.45
			Max. My	2	-10.70	-4.39	687.59
			Max. Vy	11	-18.14	694.68	-4.45
			Max. Vx	8	17.98	4.58	-687.52
			Max. Torque	4			0.64
L14	76.58 - 71.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-24.10	-0.19	0.15
			Max. Mx	5	-13.63	-796.98	4.53
			Max. My	2	-13.65	-4.43	789.09
			Max. Vy	11	-22.49	796.96	-4.36
			Max. Vx	8	22.30	4.36	-788.95
			Max. Torque	5			1.00
L15	71.58 - 70.0833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-24.36	-0.20	0.14
			Max. Mx	11	-13.86	830.68	-4.31
			Max. My	2	-13.89	-4.33	822.47
			Max. Vy	11	-22.59	830.68	-4.31
			Max. Vx	8	22.40	4.27	-822.38

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	5			0.99
L16	70.0833 - 69.8333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-24.42	-0.21	0.14
			Max. Mx	11	-13.94	836.33	-4.30
			Max. My	2	-13.96	-4.32	828.06
			Max. Vy	11	-22.60	836.33	-4.30
			Max. Vx	8	22.41	4.25	-827.98
			Max. Torque	5			0.99
L17	69.8333 - 64.8333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-25.59	-0.26	0.11
			Max. Mx	11	-14.99	950.21	-4.11
			Max. My	8	-15.01	3.96	-940.88
			Max. Vy	11	-22.97	950.21	-4.11
			Max. Vx	8	22.77	3.96	-940.88
			Max. Torque	5			1.00
L18	64.8333 - 59.8333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-26.79	-0.32	0.09
			Max. Mx	11	-16.07	1065.92	-3.92
			Max. My	8	-16.09	3.65	-1055.60
			Max. Vy	11	-23.33	1065.92	-3.92
			Max. Vx	8	23.14	3.65	-1055.60
			Max. Torque	5			1.00
L19	59.8333 - 59.0833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-26.97	-0.33	0.09
			Max. Mx	11	-16.24	1083.44	-3.89
			Max. My	8	-16.26	3.61	-1072.97
			Max. Vy	11	-23.40	1083.44	-3.89
			Max. Vx	8	23.20	3.61	-1072.97
			Max. Torque	5			1.01
L20	59.0833 - 58.8167	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-27.04	-0.33	0.08
			Max. Mx	11	-16.30	1089.68	-3.88
			Max. My	8	-16.32	3.59	-1079.16
			Max. Vy	11	-23.42	1089.68	-3.88
			Max. Vx	8	23.23	3.59	-1079.16
			Max. Torque	5			1.01
L21	58.8167 - 58.6667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-27.07	-0.33	0.08
			Max. Mx	11	-16.33	1093.19	-3.87
			Max. My	8	-16.35	3.58	-1082.64
			Max. Vy	11	-23.45	1093.19	-3.87
			Max. Vx	8	23.26	3.58	-1082.64
			Max. Torque	5			1.01
L22	58.6667 - 53.6667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-28.22	-0.39	0.06
			Max. Mx	11	-17.36	1211.32	-3.68
			Max. My	8	-17.37	3.28	-1199.79
			Max. Vy	11	-23.83	1211.32	-3.68
			Max. Vx	8	23.64	3.28	-1199.79
			Max. Torque	6			1.02
L23	53.6667 - 48.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-28.37	-0.40	0.05
			Max. Mx	11	-17.50	1227.22	-3.66

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	8	-17.52	3.24	-1215.56
			Max. Vy	11	-23.88	1227.22	-3.66
			Max. Vx	8	23.69	3.24	-1215.56
			Max. Torque	6			1.02
L24	48.58 - 47.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-30.77	-0.45	0.02
			Max. Mx	11	-19.57	1358.03	-3.45
			Max. My	8	-19.59	2.91	-1345.31
			Max. Vy	11	-24.40	1358.03	-3.45
			Max. Vx	8	24.20	2.91	-1345.31
			Max. Torque	6			1.03
L25	47.58 - 42.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-32.24	-0.51	-0.01
			Max. Mx	11	-20.91	1481.05	-3.26
			Max. My	8	-20.92	2.61	-1467.36
			Max. Vy	11	-24.83	1481.05	-3.26
			Max. Vx	8	24.63	2.61	-1467.36
			Max. Torque	6			1.05
L26	42.58 - 40	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-33.01	-0.54	-0.02
			Max. Mx	11	-21.61	1545.40	-3.16
			Max. My	8	-21.62	2.45	-1531.21
			Max. Vy	11	-25.08	1545.40	-3.16
			Max. Vx	8	24.88	2.45	-1531.21
			Max. Torque	6			1.06
L27	40 - 39.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-33.10	-0.55	-0.02
			Max. Mx	11	-21.70	1551.67	-3.15
			Max. My	8	-21.71	2.43	-1537.43
			Max. Vy	11	-25.10	1551.67	-3.15
			Max. Vx	8	24.90	2.43	-1537.43
			Max. Torque	6			1.06
L28	39.75 - 34.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-34.91	-0.61	-0.05
			Max. Mx	11	-23.34	1678.33	-2.96
			Max. My	8	-23.35	2.13	-1663.12
			Max. Vy	11	-25.59	1678.33	-2.96
			Max. Vx	8	25.39	2.13	-1663.12
			Max. Torque	6			1.09
L29	34.75 - 32.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-35.73	-0.64	-0.06
			Max. Mx	11	-24.10	1736.14	-2.87
			Max. My	8	-24.11	1.99	-1720.48
			Max. Vy	11	-25.81	1736.14	-2.87
			Max. Vx	8	25.61	1.99	-1720.48
			Max. Torque	6			1.10
L30	32.5 - 32.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-35.81	-0.64	-0.06
			Max. Mx	11	-24.17	1742.59	-2.86
			Max. My	8	-24.18	1.97	-1726.89
			Max. Vy	11	-25.84	1742.59	-2.86
			Max. Vx	8	25.64	1.97	-1726.89
			Max. Torque	6			1.10
L31	32.25 - 31.4167	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-36.06	-0.65	-0.07
			Max. Mx	11	-24.40	1764.15	-2.83
			Max. My	8	-24.41	1.92	-1748.28
			Max. Vy	11	-25.92	1764.15	-2.83
			Max. Vx	8	25.72	1.92	-1748.28
			Max. Torque	6			1.10

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L32	31.4167 - 31.1667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-36.16	-0.65	-0.07
			Max. Mx	11	-24.49	1770.63	-2.82
			Max. My	8	-24.50	1.91	-1754.71
			Max. Vy	11	-25.95	1770.63	-2.82
			Max. Vx	8	25.75	1.91	-1754.71
			Max. Torque	6			1.11
L33	31.1667 - 29	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-36.95	-0.68	-0.08
			Max. Mx	11	-25.22	1827.05	-2.74
			Max. My	8	-25.23	1.78	-1810.72
			Max. Vy	11	-26.16	1827.05	-2.74
			Max. Vx	8	25.96	1.78	-1810.72
			Max. Torque	6			1.12
L34	29 - 28.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-37.03	-0.68	-0.08
			Max. Mx	11	-25.30	1833.59	-2.73
			Max. My	8	-25.30	1.76	-1817.21
			Max. Vy	11	-26.18	1833.59	-2.73
			Max. Vx	8	25.99	1.76	-1817.21
			Max. Torque	6			1.12
L35	28.75 - 23.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-38.59	-0.74	-0.11
			Max. Mx	11	-26.71	1965.47	-2.54
			Max. My	8	-26.72	1.45	-1948.12
			Max. Vy	11	-26.60	1965.47	-2.54
			Max. Vx	8	26.40	1.45	-1948.12
			Max. Torque	6			1.14
L36	23.75 - 18.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-40.16	-0.81	-0.14
			Max. Mx	11	-28.15	2099.37	-2.34
			Max. My	8	-28.16	1.15	-2081.05
			Max. Vy	11	-26.99	2099.37	-2.34
			Max. Vx	8	26.80	1.15	-2081.05
			Max. Torque	6			1.16
L37	18.75 - 13.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-41.77	-0.88	-0.17
			Max. Mx	11	-29.62	2235.25	-2.15
			Max. My	8	-29.62	0.84	-2215.97
			Max. Vy	11	-27.39	2235.25	-2.15
			Max. Vx	8	27.19	0.84	-2215.97
			Max. Torque	6			1.18
L38	13.75 - 8.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-43.39	-0.95	-0.20
			Max. Mx	11	-31.10	2373.10	-1.96
			Max. My	8	-31.11	0.53	-2352.87
			Max. Vy	11	-27.78	2373.10	-1.96
			Max. Vx	8	27.59	0.53	-2352.87
			Max. Torque	6			1.20
L39	8.75 - 3.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-45.05	-1.02	-0.23
			Max. Mx	11	-32.61	2512.94	-1.77
			Max. My	8	-32.61	0.22	-2491.75
			Max. Vy	11	-28.18	2512.94	-1.77
			Max. Vx	8	27.99	0.22	-2491.75
			Max. Torque	6			1.22
L40	3.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-46.30	-1.07	-0.25
			Max. Mx	11	-33.75	2619.09	-1.62
			Max. My	8	-33.75	-0.01	-2597.19

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	11	-28.47	2619.09	-1.62
			Max. Vx	8	28.27	-0.01	-2597.19
			Max. Torque	6			1.23

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	14	46.30	-0.00	-0.00
	Max. H_x	11	33.77	28.45	0.04
	Max. H_z	2	33.77	0.07	28.23
	Max. M_x	2	2594.98	0.07	28.23
	Max. M_z	5	2618.03	-28.43	-0.06
	Max. Torsion	6	1.23	-24.62	-14.13
	Min. Vert	8	33.77	-0.06	-28.26
	Min. H_x	5	33.77	-28.43	-0.06
	Min. H_z	8	33.77	-0.06	-28.26
	Min. M_x	8	-2597.19	-0.06	-28.26
	Min. M_z	11	-2619.09	28.45	0.04
	Min. Torsion	12	-1.04	24.63	14.12

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	33.77	0.00	0.00	-0.06	-0.20	-0.00
Dead+Wind 0 deg - No Ice	33.77	-0.07	-28.23	-2594.98	0.05	0.54
Dead+Wind 30 deg - No Ice	33.77	14.22	-24.46	-2250.87	-1313.62	0.07
Dead+Wind 60 deg - No Ice	33.77	24.64	-14.08	-1299.24	-2271.10	-0.74
Dead+Wind 90 deg - No Ice	33.77	28.43	0.06	-0.52	-2618.03	-1.15
Dead+Wind 120 deg - No Ice	33.77	24.62	14.13	1294.72	-2264.80	-1.23
Dead+Wind 150 deg - No Ice	33.77	14.25	24.45	2245.10	-1307.35	-0.95
Dead+Wind 180 deg - No Ice	33.77	0.06	28.26	2597.19	-0.01	-0.72
Dead+Wind 210 deg - No Ice	33.77	-14.19	24.47	2251.55	1310.97	-0.14
Dead+Wind 240 deg - No Ice	33.77	-24.68	14.07	1297.69	2273.72	0.81
Dead+Wind 270 deg - No Ice	33.77	-28.45	-0.04	1.62	2619.09	1.03
Dead+Wind 300 deg - No Ice	33.77	-24.63	-14.12	-1293.68	2264.97	1.04
Dead+Wind 330 deg - No Ice	33.77	-14.25	-24.44	-2244.34	1307.19	0.77
Dead+Ice+Temp	46.30	0.00	0.00	0.25	-1.07	-0.00
Dead+Wind 0 deg+Ice+Temp	46.30	-0.02	-7.51	-707.53	-0.90	0.16
Dead+Wind 30 deg+Ice+Temp	46.30	3.78	-6.51	-613.43	-358.38	-0.00
Dead+Wind 60 deg+Ice+Temp	46.30	6.55	-3.75	-353.92	-619.14	-0.23
Dead+Wind 90 deg+Ice+Temp	46.30	7.56	0.01	0.26	-713.84	-0.36
Dead+Wind 120 deg+Ice+Temp	46.30	6.54	3.76	353.61	-617.80	-0.38
Dead+Wind 150 deg+Ice+Temp	46.30	3.79	6.51	612.75	-357.13	-0.30
Dead+Wind 180 deg+Ice+Temp	46.30	0.01	7.52	708.58	-1.14	-0.20
Dead+Wind 210 deg+Ice+Temp	46.30	-3.77	6.51	614.13	355.72	-0.02
Dead+Wind 240 deg+Ice+Temp	46.30	-6.56	3.74	354.11	617.70	0.25
Dead+Wind 270 deg+Ice+Temp	46.30	-7.56	-0.01	0.53	712.04	0.33
Dead+Wind 300 deg+Ice+Temp	46.30	-6.54	-3.76	-352.84	615.79	0.34
Dead+Wind 330 deg+Ice+Temp	46.30	-3.79	-6.50	-612.04	355.04	0.26

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+Wind 0 deg - Service	33.77	-0.02	-9.77	-899.12	-0.12	0.18
Dead+Wind 30 deg - Service	33.77	4.92	-8.46	-779.96	-455.30	0.02
Dead+Wind 60 deg - Service	33.77	8.53	-4.87	-450.24	-787.07	-0.26
Dead+Wind 90 deg - Service	33.77	9.84	0.02	-0.23	-907.18	-0.40
Dead+Wind 120 deg - Service	33.77	8.52	4.89	448.56	-784.86	-0.43
Dead+Wind 150 deg - Service	33.77	4.93	8.46	777.85	-453.11	-0.33
Dead+Wind 180 deg - Service	33.77	0.02	9.78	899.80	-0.13	-0.25
Dead+Wind 210 deg - Service	33.77	-4.91	8.47	780.11	454.12	-0.05
Dead+Wind 240 deg - Service	33.77	-8.54	4.87	449.61	787.72	0.29
Dead+Wind 270 deg - Service	33.77	-9.84	-0.01	0.52	907.29	0.36
Dead+Wind 300 deg - Service	33.77	-8.52	-4.88	-448.29	784.66	0.36
Dead+Wind 330 deg - Service	33.77	-4.93	-8.46	-777.68	452.78	0.27

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-33.77	0.00	-0.00	33.77	-0.00	0.000%
2	-0.07	-33.77	-28.23	0.07	33.77	28.23	0.005%
3	14.22	-33.77	-24.46	-14.22	33.77	24.46	0.000%
4	24.64	-33.77	-14.08	-24.64	33.77	14.08	0.000%
5	28.43	-33.77	0.06	-28.43	33.77	-0.06	0.002%
6	24.62	-33.77	14.13	-24.62	33.77	-14.13	0.000%
7	14.25	-33.77	24.45	-14.25	33.77	-24.45	0.000%
8	0.06	-33.77	28.26	-0.06	33.77	-28.26	0.005%
9	-14.19	-33.77	24.47	14.19	33.77	-24.47	0.000%
10	-24.68	-33.77	14.07	24.68	33.77	-14.07	0.000%
11	-28.45	-33.77	-0.04	28.45	33.77	0.04	0.002%
12	-24.63	-33.77	-14.12	24.63	33.77	14.12	0.000%
13	-14.25	-33.77	-24.44	14.25	33.77	24.44	0.000%
14	0.00	-46.30	0.00	-0.00	46.30	-0.00	0.000%
15	-0.02	-46.30	-7.51	0.02	46.30	7.51	0.000%
16	3.78	-46.30	-6.51	-3.78	46.30	6.51	0.000%
17	6.55	-46.30	-3.75	-6.55	46.30	3.75	0.000%
18	7.56	-46.30	0.01	-7.56	46.30	-0.01	0.000%
19	6.54	-46.30	3.76	-6.54	46.30	-3.76	0.000%
20	3.79	-46.30	6.51	-3.79	46.30	-6.51	0.000%
21	0.01	-46.30	7.52	-0.01	46.30	-7.52	0.000%
22	-3.77	-46.30	6.51	3.77	46.30	-6.51	0.000%
23	-6.56	-46.30	3.74	6.56	46.30	-3.74	0.000%
24	-7.56	-46.30	-0.01	7.56	46.30	0.01	0.000%
25	-6.54	-46.30	-3.76	6.54	46.30	3.76	0.000%
26	-3.79	-46.30	-6.50	3.79	46.30	6.50	0.000%
27	-0.02	-33.77	-9.77	0.02	33.77	9.77	0.004%
28	4.92	-33.77	-8.46	-4.92	33.77	8.46	0.001%
29	8.53	-33.77	-4.87	-8.53	33.77	4.87	0.001%
30	9.84	-33.77	0.02	-9.84	33.77	-0.02	0.004%
31	8.52	-33.77	4.89	-8.52	33.77	-4.89	0.001%
32	4.93	-33.77	8.46	-4.93	33.77	-8.46	0.001%
33	0.02	-33.77	9.78	-0.02	33.77	-9.78	0.004%
34	-4.91	-33.77	8.47	4.91	33.77	-8.47	0.001%
35	-8.54	-33.77	4.87	8.54	33.77	-4.87	0.001%
36	-9.85	-33.77	-0.01	9.84	33.77	0.01	0.004%
37	-8.52	-33.77	-4.88	8.52	33.77	4.88	0.001%
38	-4.93	-33.77	-8.46	4.93	33.77	8.46	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	18	0.00004474	0.00012013
3	Yes	24	0.00000001	0.00012647
4	Yes	24	0.00000001	0.00012876
5	Yes	19	0.00002430	0.00013435
6	Yes	24	0.00000001	0.00012181
7	Yes	24	0.00000001	0.00012671
8	Yes	18	0.00004473	0.00013788
9	Yes	24	0.00000001	0.00012628
10	Yes	24	0.00000001	0.00012434
11	Yes	19	0.00002430	0.00010845
12	Yes	24	0.00000001	0.00012729
13	Yes	24	0.00000001	0.00012299
14	Yes	6	0.00000001	0.00006065
15	Yes	22	0.00000001	0.00014170
16	Yes	23	0.00000001	0.00008842
17	Yes	23	0.00000001	0.00008875
18	Yes	22	0.00000001	0.00014272
19	Yes	23	0.00000001	0.00008787
20	Yes	23	0.00000001	0.00008785
21	Yes	22	0.00000001	0.00014173
22	Yes	23	0.00000001	0.00008842
23	Yes	23	0.00000001	0.00008863
24	Yes	22	0.00000001	0.00014291
25	Yes	23	0.00000001	0.00008817
26	Yes	23	0.00000001	0.00008769
27	Yes	17	0.00008740	0.00007775
28	Yes	20	0.00000001	0.00010114
29	Yes	20	0.00000001	0.00010569
30	Yes	17	0.00008738	0.00009943
31	Yes	20	0.00000001	0.00009469
32	Yes	20	0.00000001	0.00010344
33	Yes	17	0.00008739	0.00008167
34	Yes	20	0.00000001	0.00010098
35	Yes	20	0.00000001	0.00009760
36	Yes	17	0.00008741	0.00009379
37	Yes	20	0.00000001	0.00010470
38	Yes	20	0.00000001	0.00009664

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	36.499	35	2.7798	0.0080
L2	135 - 130	33.597	35	2.7564	0.0071
L3	130 - 125	30.747	35	2.6834	0.0059
L4	125 - 120	27.990	35	2.5819	0.0049
L5	120 - 115	25.349	35	2.4630	0.0041
L6	115 - 110	22.842	35	2.3233	0.0034
L7	110 - 105	20.493	35	2.1619	0.0029
L8	105 - 101.58	18.321	35	1.9849	0.0024

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L9	101.58 - 96.58	16.945	35	1.8571	0.0022
L10	96.58 - 91.58	15.062	35	1.7392	0.0019
L11	91.58 - 86.58	13.305	35	1.6164	0.0016
L12	86.58 - 81.58	11.680	35	1.4873	0.0014
L13	81.58 - 76.58	10.192	35	1.3540	0.0013
L14	76.58 - 71.58	8.845	35	1.2187	0.0011
L15	71.58 - 70.0833	7.640	35	1.0823	0.0009
L16	70.0833 - 69.8333	7.307	35	1.0416	0.0009
L17	69.8333 - 64.8333	7.253	35	1.0371	0.0009
L18	64.8333 - 59.8333	6.215	36	0.9461	0.0007
L19	59.8333 - 59.0833	5.273	36	0.8522	0.0006
L20	59.0833 - 58.8167	5.141	36	0.8382	0.0006
L21	58.8167 - 58.6667	5.094	36	0.8330	0.0006
L22	58.6667 - 53.6667	5.068	36	0.8301	0.0006
L23	53.6667 - 48.58	4.250	36	0.7315	0.0005
L24	53 - 47.58	4.149	36	0.7184	0.0005
L25	47.58 - 42.58	3.360	36	0.6663	0.0004
L26	42.58 - 40	2.702	36	0.5917	0.0004
L27	40 - 39.75	2.392	36	0.5529	0.0003
L28	39.75 - 34.75	2.364	36	0.5500	0.0003
L29	34.75 - 32.5	1.818	36	0.4916	0.0003
L30	32.5 - 32.25	1.593	36	0.4657	0.0003
L31	32.25 - 31.4167	1.568	36	0.4620	0.0003
L32	31.4167 - 31.1667	1.489	36	0.4498	0.0003
L33	31.1667 - 29	1.465	36	0.4469	0.0003
L34	29 - 28.75	1.268	36	0.4215	0.0003
L35	28.75 - 23.75	1.246	36	0.4178	0.0002
L36	23.75 - 18.75	0.848	36	0.3440	0.0002
L37	18.75 - 13.75	0.526	36	0.2703	0.0002
L38	13.75 - 8.75	0.282	36	0.1967	0.0001
L39	8.75 - 3.75	0.114	36	0.1247	0.0001
L40	3.75 - 0	0.021	36	0.0528	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.00	Lightning Rod	35	36.499	2.7798	0.0080	5679
138.00	DB636-C	35	35.335	2.7743	0.0077	5679
120.00	APX16PV-16PVL w/ Mount Pipe	35	25.349	2.4630	0.0041	2245
110.00	800 10504 w/ Mount Pipe	35	20.493	2.1619	0.0029	1696
99.00	(2) RRUS-11	35	15.957	1.7901	0.0020	2204
95.00	7770.00 w/Mount Pipe	35	14.494	1.7030	0.0018	2402
75.00	A-ANT-23G-2-C Dish	35	8.449	1.1773	0.0011	2106
73.00	APXVSPP18-C-A20 w/Mount Pipe	35	7.968	1.1235	0.0011	2164
50.00	GPS-TMG-HR-26NCM GPS	36	3.704	0.6845	0.0005	4978

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	104.839	10	7.9900	0.0235
L2	135 - 130	96.536	10	7.9240	0.0209
L3	130 - 125	88.383	10	7.7159	0.0174
L4	125 - 120	80.489	10	7.4258	0.0145
L5	120 - 115	72.923	10	7.0854	0.0122
L6	115 - 110	65.735	10	6.6857	0.0103
L7	110 - 105	58.997	10	6.2230	0.0086
L8	105 - 101.58	52.762	10	5.7155	0.0073
L9	101.58 - 96.58	48.809	10	5.3488	0.0065
L10	96.58 - 91.58	43.397	10	5.0103	0.0058
L11	91.58 - 86.58	38.343	10	4.6576	0.0050
L12	86.58 - 81.58	33.667	10	4.2863	0.0044
L13	81.58 - 76.58	29.384	10	3.9031	0.0038
L14	76.58 - 71.58	25.507	11	3.5136	0.0033
L15	71.58 - 70.0833	22.037	11	3.1209	0.0027
L16	70.0833 - 69.8333	21.077	11	3.0039	0.0025
L17	69.8333 - 64.8333	20.921	11	2.9909	0.0025
L18	64.8333 - 59.8333	17.928	11	2.7286	0.0022
L19	59.8333 - 59.0833	15.214	11	2.4581	0.0018
L20	59.0833 - 58.8167	14.831	11	2.4179	0.0018
L21	58.8167 - 58.6667	14.697	11	2.4029	0.0018
L22	58.6667 - 53.6667	14.621	11	2.3945	0.0018
L23	53.6667 - 48.58	12.264	11	2.1102	0.0015
L24	53 - 47.58	11.972	11	2.0725	0.0014
L25	47.58 - 42.58	9.696	11	1.9222	0.0013
L26	42.58 - 40	7.796	11	1.7071	0.0011
L27	40 - 39.75	6.904	11	1.5954	0.0010
L28	39.75 - 34.75	6.821	11	1.5871	0.0010
L29	34.75 - 32.5	5.247	11	1.4185	0.0009
L30	32.5 - 32.25	4.596	11	1.3437	0.0008
L31	32.25 - 31.4167	4.526	11	1.3333	0.0008
L32	31.4167 - 31.1667	4.297	11	1.2980	0.0008
L33	31.1667 - 29	4.229	11	1.2896	0.0008
L34	29 - 28.75	3.660	11	1.2164	0.0007
L35	28.75 - 23.75	3.597	11	1.2057	0.0007
L36	23.75 - 18.75	2.446	11	0.9929	0.0006
L37	18.75 - 13.75	1.518	11	0.7802	0.0004
L38	13.75 - 8.75	0.813	11	0.5677	0.0003
L39	8.75 - 3.75	0.328	11	0.3599	0.0002
L40	3.75 - 0	0.060	11	0.1525	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.00	Lightning Rod	10	104.839	7.9900	0.0239	2076
138.00	DB636-C	10	101.509	7.9747	0.0228	2076
120.00	APX16PV-16PVL w/ Mount Pipe	10	72.923	7.0854	0.0122	809
110.00	800 10504 w/ Mount Pipe	10	58.997	6.2230	0.0086	606
99.00	(2) RRUS-11	10	45.968	5.1565	0.0061	781
95.00	7770.00 w/Mount Pipe	10	41.761	4.9062	0.0055	849
75.00	A-ANT-23G-2-C Dish	11	24.366	3.3943	0.0032	737
73.00	APXVSPP18-C-A20 w/Mount Pipe	11	22.980	3.2394	0.0031	757
50.00	GPS-TMG-HR-26NCM GPS	11	10.689	1.9747	0.0015	1731

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	140 - 135 (1)	TP14.296x13.161x0.1875	5.00	0.00	0.0	39.000	8.3963	-1.66	327.46	0.005
L2	135 - 130 (2)	TP15.4309x14.296x0.1875	5.00	0.00	0.0	39.000	9.0717	-1.86	353.80	0.005
L3	130 - 125 (3)	TP16.5659x15.4309x0.1875	5.00	0.00	0.0	39.000	9.7472	-2.07	380.14	0.005
L4	125 - 120 (4)	TP17.7008x16.5659x0.1875	5.00	0.00	0.0	39.000	10.4226	-2.30	406.48	0.006
L5	120 - 115 (5)	TP18.8358x17.7008x0.1875	5.00	0.00	0.0	39.000	11.0981	-3.62	432.82	0.008
L6	115 - 110 (6)	TP19.9707x18.8358x0.1875	5.00	0.00	0.0	39.000	11.7735	-3.99	459.17	0.009
L7	110 - 105 (7)	TP21.1057x19.9707x0.1875	5.00	0.00	0.0	39.000	12.4489	-4.85	485.51	0.010
L8	105 - 101.58 (8)	TP21.882x21.1057x0.1875	3.42	0.00	0.0	39.000	12.9109	-5.15	503.53	0.010
L9	101.58 - 96.58 (9)	TP23.017x21.882x0.3125	5.00	0.00	0.0	39.000	22.5200	-6.11	878.28	0.007
L10	96.58 - 91.58 (10)	TP24.152x23.017x0.3125	5.00	0.00	0.0	39.000	23.6458	-8.62	922.19	0.009
L11	91.58 - 86.58 (11)	TP25.287x24.152x0.3125	5.00	0.00	0.0	39.000	24.7716	-9.28	966.09	0.010
L12	86.58 - 81.58 (12)	TP26.422x25.287x0.3125	5.00	0.00	0.0	39.000	25.8974	-9.97	1010.00	0.010
L13	81.58 - 76.58 (13)	TP27.557x26.422x0.3125	5.00	0.00	0.0	39.000	27.0231	-10.68	1053.90	0.010
L14	76.58 - 71.58 (14)	TP28.692x27.557x0.3125	5.00	0.00	0.0	39.000	28.1489	-13.63	1097.81	0.012
L15	71.58 - 70.0833 (15)	TP29.0318x28.692x0.3125	1.50	0.00	0.0	39.000	28.4859	-13.87	1110.95	0.012
L16	70.0833 - 69.8333 (16)	TP29.0885x29.0318x0.4875	0.25	0.00	0.0	39.000	44.2550	-13.94	1725.95	0.008
L17	69.8333 - 64.8333 (17)	TP30.2235x29.0885x0.4875	5.00	0.00	0.0	39.000	46.0113	-14.99	1794.44	0.008
L18	64.8333 - 59.8333 (18)	TP31.3585x30.2235x0.475	5.00	0.00	0.0	39.000	46.5615	-16.08	1815.90	0.009
L19	59.8333 - 59.0833 (19)	TP31.5288x31.3585x0.475	0.75	0.00	0.0	39.000	46.8182	-16.24	1825.91	0.009
L20	59.0833 - 58.8167 (20)	TP31.5893x31.5288x0.4563	0.27	0.00	0.0	39.000	45.0849	-16.30	1758.31	0.009
L21	58.8167 - 58.6667 (21)	TP31.6233x31.5893x0.4563	0.15	0.00	0.0	39.000	45.1342	-16.33	1760.23	0.009
L22	58.6667 - 53.6667 (22)	TP32.7583x31.6233x0.45	5.00	0.00	0.0	39.000	46.1460	-17.36	1799.69	0.010
L23	53.6667 - 48.58 (23)	TP33.913x32.7583x0.45	5.09	0.00	0.0	39.000	46.3621	-17.51	1808.12	0.010
L24	48.58 - 47.58 (24)	TP33.5151x32.2847x0.6375	5.42	0.00	0.0	39.000	66.5254	-19.57	2594.49	0.008
L25	47.58 - 42.58 (25)	TP34.6503x33.5151x0.625	5.00	0.00	0.0	39.000	67.4976	-20.91	2632.41	0.008
L26	42.58 - 40 (26)	TP35.236x34.6503x0.6125	2.58	0.00	0.0	39.000	67.3107	-21.61	2625.12	0.008
L27	40 - 39.75 (27)	TP35.2927x35.236x0.8125	0.25	0.00	0.0	39.000	88.9202	-21.70	3467.89	0.006
L28	39.75 - 34.75 (28)	TP36.4279x35.2927x0.7875	5.00	0.00	0.0	39.000	89.0840	-23.35	3474.28	0.007
L29	34.75 - 32.5 (29)	TP36.9387x36.4279x0.7875	2.25	0.00	0.0	39.000	90.3608	-24.10	3524.07	0.007
L30	32.5 - 32.25 (30)	TP36.9954x36.9387x0.6125	0.25	0.00	0.0	39.000	70.7312	-24.17	2758.52	0.009
L31	32.25 - 31.4167 (31)	TP37.1846x36.9954x0.6	0.83	0.00	0.0	39.000	69.6717	-24.40	2717.20	0.009
L32	31.4167 -	TP37.2414x37.1846x0.775	0.25	0.00	0.0	39.000	89.7018	-24.49	3498.37	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L33	31.1667 (32) 31.1667 - 29 (33)	TP37.7333x37.2414x0.7625	2.17	0.00	0.0	39.000	89.4757	-25.22	3489.55	0.007
L34	29 - 28.75 (34)	TP37.79x37.7333x0.5875	0.25	0.00	0.0	39.000	69.3725	-25.30	2705.53	0.009
L35	28.75 - 23.75 (35)	TP38.9251x37.79x0.5875	5.00	0.00	0.0	39.000	71.4892	-26.71	2788.08	0.010
L36	23.75 - 18.75 (36)	TP40.0603x38.9251x0.575	5.00	0.00	0.0	39.000	72.0626	-28.15	2810.44	0.010
L37	18.75 - 13.75 (37)	TP41.1954x40.0603x0.5625	5.00	0.00	0.0	39.000	72.5450	-29.62	2829.25	0.010
L38	13.75 - 8.75 (38)	TP42.3305x41.1954x0.5625	5.00	0.00	0.0	39.000	74.5716	-31.10	2908.29	0.011
L39	8.75 - 3.75 (39)	TP43.4657x42.3305x0.55	5.00	0.00	0.0	39.000	74.9179	-32.61	2921.80	0.011
L40	3.75 - 0 (40)	TP44.317x43.4657x0.55	3.75	0.00	0.0	39.000	76.4041	-33.75	2979.76	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	140 - 135 (1)	TP14.296x13.161x0.1875	22.62	9.336	39.000	0.239	0.00	0.000	39.000	0.000
L2	135 - 130 (2)	TP15.4309x14.296x0.1875	47.84	16.900	39.000	0.433	0.00	0.000	39.000	0.000
L3	130 - 125 (3)	TP16.5659x15.4309x0.1875	74.17	22.674	39.000	0.581	0.00	0.000	39.000	0.000
L4	125 - 120 (4)	TP17.7008x16.5659x0.1875	101.64	27.155	39.000	0.696	0.00	0.000	39.000	0.000
L5	120 - 115 (5)	TP18.8358x17.7008x0.1875	149.38	35.177	39.000	0.902	0.00	0.000	39.000	0.000
L6	115 - 110 (6)	TP19.9707x18.8358x0.1875	198.74	41.560	39.000	1.066	0.00	0.000	39.000	0.000
L7	110 - 105 (7)	TP21.1057x19.9707x0.1875	254.64	47.606	39.000	1.221	0.00	0.000	39.000	0.000
L8	105 - 101.58 (8)	TP21.882x21.1057x0.1875	293.97	51.079	39.000	1.310	0.00	0.000	39.000	0.000
L9	101.58 - 96.58 (9)	TP23.017x21.882x0.3125	355.20	33.981	39.000	0.871	0.00	0.000	39.000	0.000
L10	96.58 - 91.58 (10)	TP24.152x23.017x0.3125	433.30	37.575	39.000	0.963	0.00	0.000	39.000	0.000
L11	91.58 - 86.58 (11)	TP25.287x24.152x0.3125	519.18	40.999	39.000	1.051	0.00	0.000	39.000	0.000
L12	86.58 - 81.58 (12)	TP26.422x25.287x0.3125	607.02	43.836	39.000	1.124	0.00	0.000	39.000	0.000
L13	81.58 - 76.58 (13)	TP27.557x26.422x0.3125	696.82	46.192	39.000	1.184	0.00	0.000	39.000	0.000
L14	76.58 - 71.58 (14)	TP28.692x27.557x0.3125	799.08	48.796	39.000	1.251	0.00	0.000	39.000	0.000
L15	71.58 - 70.0833 (15)	TP29.0318x28.692x0.3125	832.70	49.647	39.000	1.273	0.00	0.000	39.000	0.000
L16	70.0833 - 69.8333 (16)	TP29.0885x29.0318x0.4875	838.33	32.503	39.000	0.833	0.00	0.000	39.000	0.000
L17	69.8333 - 64.8333 (17)	TP30.2235x29.0885x0.4875	951.92	34.121	39.000	0.875	0.00	0.000	39.000	0.000
L18	64.8333 - 59.8333 (18)	TP31.3585x30.2235x0.475	1067.41	36.368	39.000	0.933	0.00	0.000	39.000	0.000
L19	59.8333 - 59.0833 (19)	TP31.5288x31.3585x0.475	1084.90	36.556	39.000	0.937	0.00	0.000	39.000	0.000
L20	59.0833 - 58.8167 (20)	TP31.5893x31.5288x0.4563	1091.13	38.058	39.000	0.976	0.00	0.000	39.000	0.000
L21	58.8167 - 58.6667 (21)	TP31.6233x31.5893x0.4563	1094.63	38.097	39.000	0.977	0.00	0.000	39.000	0.000
L22	58.6667 - 53.6667 (22)	TP32.7583x31.6233x0.45	1212.54	39.789	39.000	1.020	0.00	0.000	39.000	0.000

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L23	53.6667 - 48.58 (23)	TP33.913x32.7583x0.45	1228.42	39.932	39.000	1.024	0.00	0.000	39.000	0.000
L24	48.58 - 47.58 (24)	TP33.5151x32.2847x0.6375	1358.99	30.561	39.000	0.784	0.00	0.000	39.000	0.000
L25	47.58 - 42.58 (25)	TP34.6503x33.5151x0.625	1481.79	31.704	39.000	0.813	0.00	0.000	39.000	0.000
L26	42.58 - 40 (26)	TP35.236x34.6503x0.6125	1546.03	32.575	39.000	0.835	0.00	0.000	39.000	0.000
L27	40 - 39.75 (27)	TP35.2927x35.236x0.8125	1552.29	25.005	39.000	0.641	0.00	0.000	39.000	0.000
L28	39.75 - 34.75 (28)	TP36.4279x35.2927x0.7875	1678.73	26.076	39.000	0.669	0.00	0.000	39.000	0.000
L29	34.75 - 32.5 (29)	TP36.9387x36.4279x0.7875	1736.44	26.207	39.000	0.672	0.00	0.000	39.000	0.000
L30	32.5 - 32.25 (30)	TP36.9954x36.9387x0.6125	1742.88	33.229	39.000	0.852	0.00	0.000	39.000	0.000
L31	32.25 - 31.4167 (31)	TP37.1846x36.9954x0.6	1764.40	33.948	39.000	0.870	0.00	0.000	39.000	0.000
L32	31.4167 - 31.1667 (32)	TP37.2414x37.1846x0.775	1770.88	26.677	39.000	0.684	0.00	0.000	39.000	0.000
L33	31.1667 - 29 (33)	TP37.7333x37.2414x0.7625	1827.20	27.202	39.000	0.697	0.00	0.000	39.000	0.000
L34	29 - 28.75 (34)	TP37.79x37.7333x0.5875	1833.73	34.825	39.000	0.893	0.00	0.000	39.000	0.000
L35	28.75 - 23.75 (35)	TP38.9251x37.79x0.5875	1965.47	35.133	39.000	0.901	0.00	0.000	39.000	0.000
L36	23.75 - 18.75 (36)	TP40.0603x38.9251x0.575	2099.38	36.119	39.000	0.926	0.00	0.000	39.000	0.000
L37	18.75 - 13.75 (37)	TP41.1954x40.0603x0.5625	2235.25	37.095	39.000	0.951	0.00	0.000	39.000	0.000
L38	13.75 - 8.75 (38)	TP42.3305x41.1954x0.5625	2373.10	37.258	39.000	0.955	0.00	0.000	39.000	0.000
L39	8.75 - 3.75 (39)	TP43.4657x42.3305x0.55	2512.93	38.196	39.000	0.979	0.00	0.000	39.000	0.000
L40	3.75 - 0 (40)	TP44.317x43.4657x0.55	2619.09	38.266	39.000	0.981	0.00	0.000	39.000	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	140 - 135 (1)	TP14.296x13.161x0.1875	4.94	0.588	26.000	0.045	0.46	0.092	26.000	0.004
L2	135 - 130 (2)	TP15.4309x14.296x0.1875	5.16	0.568	26.000	0.044	0.46	0.079	26.000	0.003
L3	130 - 125 (3)	TP16.5659x15.4309x0.1875	5.38	0.552	26.000	0.042	0.46	0.068	26.000	0.003
L4	125 - 120 (4)	TP17.7008x16.5659x0.1875	5.61	0.539	26.000	0.041	0.46	0.060	26.000	0.002
L5	120 - 115 (5)	TP18.8358x17.7008x0.1875	9.71	0.875	26.000	0.067	0.45	0.052	26.000	0.002
L6	115 - 110 (6)	TP19.9707x18.8358x0.1875	10.04	0.853	26.000	0.066	0.44	0.045	26.000	0.002
L7	110 - 105 (7)	TP21.1057x19.9707x0.1875	11.38	0.914	26.000	0.070	0.43	0.039	26.000	0.001
L8	105 - 101.58 (8)	TP21.882x21.1057x0.1875	11.64	0.901	26.000	0.069	0.41	0.035	26.000	0.001
L9	101.58 - 96.58 (9)	TP23.017x21.882x0.3125	12.91	0.573	26.000	0.044	0.70	0.033	26.000	0.001
L10	96.58 - 91.58 (10)	TP24.152x23.017x0.3125	16.99	0.718	26.000	0.055	0.68	0.029	26.000	0.001
L11	91.58 - 86.58 (11)	TP25.287x24.152x0.3125	17.38	0.702	26.000	0.054	0.66	0.025	26.000	0.001
L12	86.58 - 81.58 (12)	TP26.422x25.287x0.3125	17.78	0.686	26.000	0.053	0.64	0.023	26.000	0.001
L13	81.58 - 76.58 (13)	TP27.557x26.422x0.3125	18.16	0.672	26.000	0.052	0.62	0.020	26.000	0.001

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L14	76.58 - 71.58 (14)	TP28.692x27.557x0.3125	22.43	0.797	26.000	0.061	0.73	0.022	26.000	0.001
L15	71.58 - 70.0833 (15)	TP29.0318x28.692x0.3125	22.53	0.791	26.000	0.061	0.72	0.021	26.000	0.001
L16	70.0833 - 69.8333 (16)	TP29.0885x29.0318x0.4875	22.55	0.510	26.000	0.039	0.72	0.014	26.000	0.001
L17	69.8333 - 64.8333 (17)	TP30.2235x29.0885x0.4875	22.92	0.498	26.000	0.038	0.80	0.014	26.000	0.001
L18	64.8333 - 59.8333 (18)	TP31.3585x30.2235x0.475	23.29	0.500	26.000	0.038	0.80	0.013	26.000	0.001
L19	59.8333 - 59.0833 (19)	TP31.5288x31.3585x0.475	23.36	0.499	26.000	0.038	0.80	0.013	26.000	0.001
L20	59.0833 - 58.8167 (20)	TP31.5893x31.5288x0.4563	23.39	0.519	26.000	0.040	0.80	0.013	26.000	0.001
L21	58.8167 - 58.6667 (21)	TP31.6233x31.5893x0.4563	23.42	0.519	26.000	0.040	0.80	0.013	26.000	0.001
L22	58.6667 - 53.6667 (22)	TP32.7583x31.6233x0.45	23.79	0.516	26.000	0.040	0.80	0.013	26.000	0.000
L23	53.6667 - 48.58 (23)	TP33.913x32.7583x0.45	23.84	0.514	26.000	0.040	0.80	0.013	26.000	0.000
L24	48.58 - 47.58 (24)	TP33.5151x32.2847x0.6375	24.35	0.366	26.000	0.028	0.80	0.009	26.000	0.000
L25	47.58 - 42.58 (25)	TP34.6503x33.5151x0.625	24.79	0.367	26.000	0.028	0.80	0.008	26.000	0.000
L26	42.58 - 40 (26)	TP35.236x34.6503x0.6125	25.03	0.372	26.000	0.029	0.80	0.008	26.000	0.000
L27	40 - 39.75 (27)	TP35.2927x35.236x0.8125	25.05	0.282	26.000	0.022	0.80	0.006	26.000	0.000
L28	39.75 - 34.75 (28)	TP36.4279x35.2927x0.7875	25.54	0.287	26.000	0.022	0.80	0.006	26.000	0.000
L29	34.75 - 32.5 (29)	TP36.9387x36.4279x0.7875	25.77	0.285	26.000	0.022	0.80	0.006	26.000	0.000
L30	32.5 - 32.25 (30)	TP36.9954x36.9387x0.6125	25.79	0.365	26.000	0.028	0.80	0.007	26.000	0.000
L31	32.25 - 31.4167 (31)	TP37.1846x36.9954x0.6	25.88	0.371	26.000	0.029	0.80	0.007	26.000	0.000
L32	31.4167 - 31.1667 (32)	TP37.2414x37.1846x0.775	25.90	0.289	26.000	0.022	0.80	0.006	26.000	0.000
L33	31.1667 - 29 (33)	TP37.7333x37.2414x0.7625	26.11	0.292	26.000	0.022	0.80	0.006	26.000	0.000
L34	29 - 28.75 (34)	TP37.79x37.7333x0.5875	26.13	0.377	26.000	0.029	0.80	0.007	26.000	0.000
L35	28.75 - 23.75 (35)	TP38.9251x37.79x0.5875	26.60	0.372	26.000	0.029	0.97	0.008	26.000	0.000
L36	23.75 - 18.75 (36)	TP40.0603x38.9251x0.575	26.99	0.375	26.000	0.029	0.98	0.008	26.000	0.000
L37	18.75 - 13.75 (37)	TP41.1954x40.0603x0.5625	27.39	0.378	26.000	0.029	0.99	0.008	26.000	0.000
L38	13.75 - 8.75 (38)	TP42.3305x41.1954x0.5625	27.78	0.373	26.000	0.029	1.01	0.008	26.000	0.000
L39	8.75 - 3.75 (39)	TP43.4657x42.3305x0.55	28.18	0.376	26.000	0.029	1.02	0.008	26.000	0.000
L40	3.75 - 0 (40)	TP44.317x43.4657x0.55	28.47	0.373	26.000	0.029	1.03	0.007	26.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	140 - 135 (1)	0.005	0.239	0.000	0.045	0.004	0.245 ✔	1.333	H1-3+VT ✔
L2	135 - 130 (2)	0.005	0.433	0.000	0.044	0.003	0.439 ✔	1.333	H1-3+VT ✔
L3	130 - 125 (3)	0.005	0.581	0.000	0.042	0.003	0.587 ✔	1.333	H1-3+VT ✔
L4	125 - 120 (4)	0.006	0.696	0.000	0.041	0.002	0.702 ✔	1.333	H1-3+VT ✔
L5	120 - 115 (5)	0.008	0.902	0.000	0.067	0.002	0.912 ✔	1.333	H1-3+VT ✔
L6	115 - 110 (6)	0.009	1.066	0.000	0.066	0.002	1.076 ✔	1.333	H1-3+VT ✔
L7	110 - 105 (7)	0.010	1.221	0.000	0.070	0.001	1.232 ✔	1.333	H1-3+VT ✔
L8	105 - 101.58 (8)	0.010	1.310	0.000	0.069	0.001	1.321 ✔	1.333	H1-3+VT ✔
L9	101.58 - 96.58 (9)	0.007	0.871	0.000	0.044	0.001	0.879 ✔	1.333	H1-3+VT ✔
L10	96.58 - 91.58 (10)	0.009	0.963	0.000	0.055	0.001	0.974 ✔	1.333	H1-3+VT ✔
L11	91.58 - 86.58 (11)	0.010	1.051	0.000	0.054	0.001	1.062 ✔	1.333	H1-3+VT ✔
L12	86.58 - 81.58 (12)	0.010	1.124	0.000	0.053	0.001	1.135 ✔	1.333	H1-3+VT ✔
L13	81.58 - 76.58 (13)	0.010	1.184	0.000	0.052	0.001	1.195 ✔	1.333	H1-3+VT ✔
L14	76.58 - 71.58 (14)	0.012	1.251	0.000	0.061	0.001	1.265 ✔	1.333	H1-3+VT ✔
L15	71.58 - 70.0833 (15)	0.012	1.273	0.000	0.061	0.001	1.286 ✔	1.333	H1-3+VT ✔
L16	70.0833 - 69.8333 (16)	0.008	0.833	0.000	0.039	0.001	0.842 ✔	1.333	H1-3+VT ✔
L17	69.8333 - 64.8333 (17)	0.008	0.875	0.000	0.038	0.001	0.884 ✔	1.333	H1-3+VT ✔
L18	64.8333 - 59.8333 (18)	0.009	0.933	0.000	0.038	0.001	0.942 ✔	1.333	H1-3+VT ✔
L19	59.8333 - 59.0833 (19)	0.009	0.937	0.000	0.038	0.001	0.947 ✔	1.333	H1-3+VT ✔
L20	59.0833 - 58.8167 (20)	0.009	0.976	0.000	0.040	0.001	0.986 ✔	1.333	H1-3+VT ✔
L21	58.8167 - 58.6667 (21)	0.009	0.977	0.000	0.040	0.001	0.987 ✔	1.333	H1-3+VT ✔
L22	58.6667 - 53.6667 (22)	0.010	1.020	0.000	0.040	0.000	1.030 ✔	1.333	H1-3+VT ✔
L23	53.6667 - 48.58 (23)	0.010	1.024	0.000	0.040	0.000	1.034 ✔	1.333	H1-3+VT ✔
L24	48.58 - 47.58 (24)	0.008	0.784	0.000	0.028	0.000	0.791 ✔	1.333	H1-3+VT ✔
L25	47.58 - 42.58 (25)	0.008	0.813	0.000	0.028	0.000	0.821 ✔	1.333	H1-3+VT ✔
L26	42.58 - 40 (26)	0.008	0.835	0.000	0.029	0.000	0.844 ✔	1.333	H1-3+VT ✔

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L27	40 - 39.75 (27)	0.006	0.641	0.000	0.022	0.000	0.648 ✔	1.333	H1-3+VT ✔
L28	39.75 - 34.75 (28)	0.007	0.669	0.000	0.022	0.000	0.675 ✔	1.333	H1-3+VT ✔
L29	34.75 - 32.5 (29)	0.007	0.672	0.000	0.022	0.000	0.679 ✔	1.333	H1-3+VT ✔
L30	32.5 - 32.25 (30)	0.009	0.852	0.000	0.028	0.000	0.861 ✔	1.333	H1-3+VT ✔
L31	32.25 - 31.4167 (31)	0.009	0.870	0.000	0.029	0.000	0.880 ✔	1.333	H1-3+VT ✔
L32	31.4167 - 31.1667 (32)	0.007	0.684	0.000	0.022	0.000	0.691 ✔	1.333	H1-3+VT ✔
L33	31.1667 - 29 (33)	0.007	0.697	0.000	0.022	0.000	0.705 ✔	1.333	H1-3+VT ✔
L34	29 - 28.75 (34)	0.009	0.893	0.000	0.029	0.000	0.903 ✔	1.333	H1-3+VT ✔
L35	28.75 - 23.75 (35)	0.010	0.901	0.000	0.029	0.000	0.911 ✔	1.333	H1-3+VT ✔
L36	23.75 - 18.75 (36)	0.010	0.926	0.000	0.029	0.000	0.936 ✔	1.333	H1-3+VT ✔
L37	18.75 - 13.75 (37)	0.010	0.951	0.000	0.029	0.000	0.962 ✔	1.333	H1-3+VT ✔
L38	13.75 - 8.75 (38)	0.011	0.955	0.000	0.029	0.000	0.966 ✔	1.333	H1-3+VT ✔
L39	8.75 - 3.75 (39)	0.011	0.979	0.000	0.029	0.000	0.991 ✔	1.333	H1-3+VT ✔
L40	3.75 - 0 (40)	0.011	0.981	0.000	0.029	0.000	0.993 ✔	1.333	H1-3+VT ✔

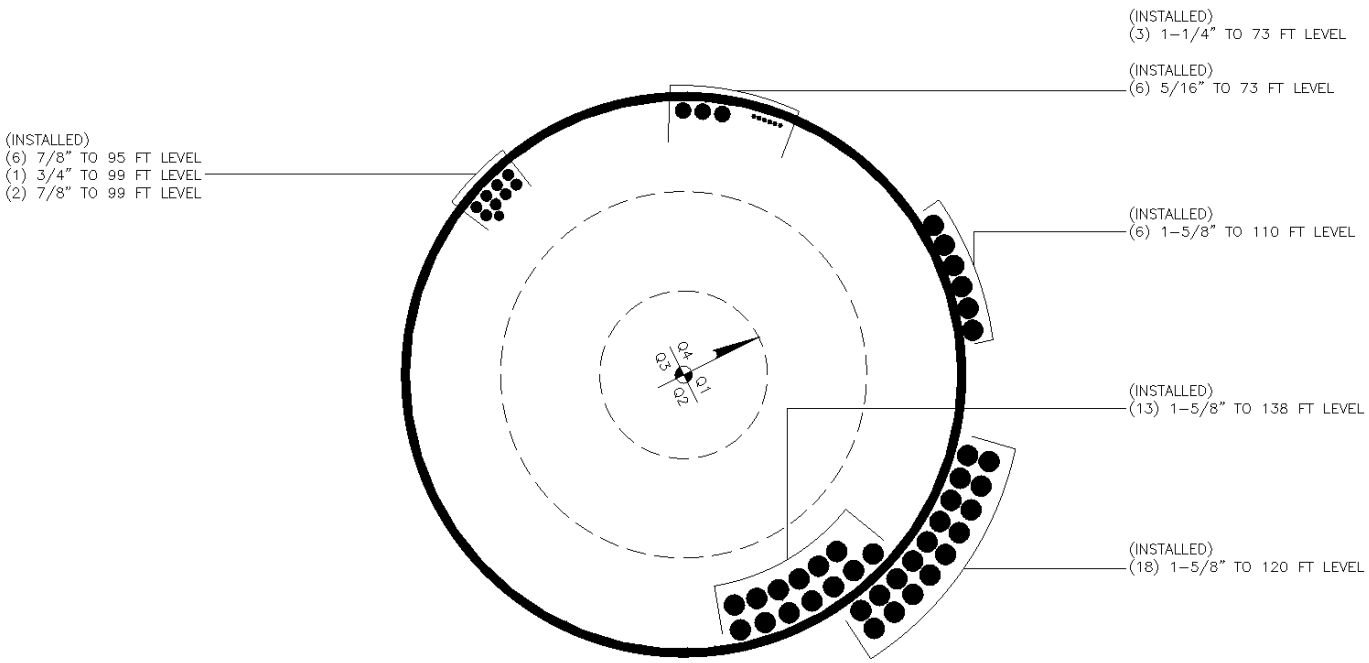
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	140 - 135	Pole	TP14.296x13.161x0.1875	1	-1.66	436.50	18.4	Pass
L2	135 - 130	Pole	TP15.4309x14.296x0.1875	2	-1.86	471.61	32.9	Pass
L3	130 - 125	Pole	TP16.5659x15.4309x0.1875	3	-2.07	506.73	44.1	Pass
L4	125 - 120	Pole	TP17.7008x16.5659x0.1875	4	-2.30	541.84	52.7	Pass
L5	120 - 115	Pole	TP18.8358x17.7008x0.1875	5	-3.62	576.95	68.4	Pass
L6	115 - 110	Pole	TP19.9707x18.8358x0.1875	6	-3.99	612.07	80.7	Pass
L7	110 - 105	Pole	TP21.1057x19.9707x0.1875	7	-4.85	647.18	92.4	Pass
L8	105 - 101.58	Pole	TP21.882x21.1057x0.1875	8	-5.15	671.20	99.1	Pass
L9	101.58 - 96.58	Pole	TP23.017x21.882x0.3125	9	-6.11	1170.75	65.9	Pass
L10	96.58 - 91.58	Pole	TP24.152x23.017x0.3125	10	-8.62	1229.27	73.0	Pass
L11	91.58 - 86.58	Pole	TP25.287x24.152x0.3125	11	-9.28	1287.80	79.6	Pass
L12	86.58 - 81.58	Pole	TP26.422x25.287x0.3125	12	-9.97	1346.33	85.1	Pass
L13	81.58 - 76.58	Pole	TP27.557x26.422x0.3125	13	-10.68	1404.85	89.7	Pass
L14	76.58 - 71.58	Pole	TP28.692x27.557x0.3125	14	-13.63	1463.38	94.9	Pass
L15	71.58 - 70.0833	Pole	TP29.0318x28.692x0.3125	15	-13.87	1480.90	96.5	Pass
L16	70.0833 - 69.8333	Pole	TP29.0885x29.0318x0.4875	16	-13.94	2300.69	63.2	Pass
L17	69.8333 -	Pole	TP30.2235x29.0885x0.4875	17	-14.99	2391.99	66.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P_{allow} K	% Capacity	Pass Fail
	64.8333							
L18	64.8333 - 59.8333	Pole	TP31.3585x30.2235x0.475	18	-16.08	2420.59	70.6	Pass
L19	59.8333 - 59.0833	Pole	TP31.5288x31.3585x0.475	19	-16.24	2433.94	71.0	Pass
L20	59.0833 - 58.8167	Pole	TP31.5893x31.5288x0.4563	20	-16.30	2343.83	73.9	Pass
L21	58.8167 - 58.6667	Pole	TP31.6233x31.5893x0.4563	21	-16.33	2346.39	74.0	Pass
L22	58.6667 - 53.6667	Pole	TP32.7583x31.6233x0.45	22	-17.36	2398.99	77.3	Pass
L23	53.6667 - 48.58	Pole	TP33.913x32.7583x0.45	23	-17.51	2410.22	77.6	Pass
L24	48.58 - 47.58	Pole	TP33.5151x32.2847x0.6375	24	-19.57	3458.46	59.4	Pass
L25	47.58 - 42.58	Pole	TP34.6503x33.5151x0.625	25	-20.91	3509.00	61.6	Pass
L26	42.58 - 40	Pole	TP35.236x34.6503x0.6125	26	-21.61	3499.28	63.3	Pass
L27	40 - 39.75	Pole	TP35.2927x35.236x0.8125	27	-21.70	4622.70	48.6	Pass
L28	39.75 - 34.75	Pole	TP36.4279x35.2927x0.7875	28	-23.35	4631.22	50.7	Pass
L29	34.75 - 32.5	Pole	TP36.9387x36.4279x0.7875	29	-24.10	4697.59	50.9	Pass
L30	32.5 - 32.25	Pole	TP36.9954x36.9387x0.6125	30	-24.17	3677.11	64.6	Pass
L31	32.25 - 31.4167	Pole	TP37.1846x36.9954x0.6	31	-24.40	3622.03	66.0	Pass
L32	31.4167 - 31.1667	Pole	TP37.2414x37.1846x0.775	32	-24.49	4663.33	51.8	Pass
L33	31.1667 - 29	Pole	TP37.7333x37.2414x0.7625	33	-25.22	4651.57	52.9	Pass
L34	29 - 28.75	Pole	TP37.79x37.7333x0.5875	34	-25.30	3606.47	67.7	Pass
L35	28.75 - 23.75	Pole	TP38.9251x37.79x0.5875	35	-26.71	3716.51	68.3	Pass
L36	23.75 - 18.75	Pole	TP40.0603x38.9251x0.575	36	-28.15	3746.32	70.2	Pass
L37	18.75 - 13.75	Pole	TP41.1954x40.0603x0.5625	37	-29.62	3771.39	72.2	Pass
L38	13.75 - 8.75	Pole	TP42.3305x41.1954x0.5625	38	-31.10	3876.75	72.5	Pass
L39	8.75 - 3.75	Pole	TP43.4657x42.3305x0.55	39	-32.61	3894.76	74.3	Pass
L40	3.75 - 0	Pole	TP44.317x43.4657x0.55	40	-33.75	3972.02	74.5	Pass
							Summary	
						Pole (L8)	99.1	Pass
						RATING =	**99.1**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(INSTALLED)
(3) 1-1/4" TO 73 FT LEVEL
(INSTALLED)
(6) 5/16" TO 73 FT LEVEL
(INSTALLED)
(6) 7/8" TO 95 FT LEVEL
(1) 3/4" TO 99 FT LEVEL
(2) 7/8" TO 99 FT LEVEL
(INSTALLED)
(6) 1-5/8" TO 110 FT LEVEL
Q4
Q3
Q1
Q2
(INSTALLED)
(13) 1-5/8" TO 138 FT LEVEL
(INSTALLED)
(18) 1-5/8" TO 120 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Additional Calculations

CCIpole

per TIA-222- F

Site BU: 842873

Work Order: 1082003

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	140	38.42	0	18	13.161	21.882	0.1875	0.75	A572-65
2	101.58	53	4.42	18	21.88	33.913	0.3125	1.25	A572-65
3	53	53	0	18	32.28	44.317	0.3125	1.25	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Pole Flat Width (in)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	59.0833	channel	MP3-04 (1.25")	5.56				GPD						GPD						GPD		
2	0	31.4167	plate	PL 5.75"x1"	6.56	B&T						B&T						B&T					
3	32.5	48.6667	plate	PL 5.75"x1"	5.98						B&T						B&T						B&T
4	58.9167	70.0833	plate	PL 5.75"x1"	5.12							B&T					B&T						B&T
5	29	40	plate	CCI-SFP-060100	6.21			FDH						FDH						FDH			
6																							
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	4.78	1.61	4.13	0.61	17.000	17.000	18.000	3.566	1.2500	A572-65
2	5.75	1	5.75	0.5	23.000	23.000	16.000	4.438	1.2500	A572-65
3	5.75	1	5.75	0.5	23.000	23.000	16.000	4.438	1.2500	A572-65
4	5.75	1	5.75	0.5	23.000	23.000	16.000	4.438	1.2500	A572-65
5	6	1	6	0.5	24.000	24.000	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	140 - 135	5		18	13.161	14.296	0.1875	A572-65	1.000
2	135 - 130	5		18	14.296	15.431	0.1875	A572-65	1.000
3	130 - 125	5		18	15.431	16.566	0.1875	A572-65	1.000
4	125 - 120	5		18	16.566	17.701	0.1875	A572-65	1.000
5	120 - 115	5		18	17.701	18.836	0.1875	A572-65	1.000
6	115 - 110	5		18	18.836	19.971	0.1875	A572-65	1.000
7	110 - 105	5		18	19.971	21.106	0.1875	A572-65	1.000
8	105 - 101.58	3.42	0	18	21.106	21.882	0.1875	A572-65	1.000
9	101.58 - 96.58	5		18	21.882	23.017	0.3125	A572-65	1.000
10	96.58 - 91.58	5		18	23.017	24.152	0.3125	A572-65	1.000
11	91.58 - 86.58	5		18	24.152	25.287	0.3125	A572-65	1.000
12	86.58 - 81.58	5		18	25.287	26.422	0.3125	A572-65	1.000
13	81.58 - 76.58	5		18	26.422	27.557	0.3125	A572-65	1.000
14	76.58 - 71.58	5		18	27.557	28.692	0.3125	A572-65	1.000
15	71.58 - 70.0833	1.4967		18	28.692	29.032	0.3125	A572-65	1.000
16	70.0833 - 69.8333	0.25		18	29.032	29.089	0.4875	A572-65	1.035
17	69.8333 - 64.8333	5		18	29.089	30.224	0.4875	A572-65	1.020
18	64.8333 - 59.8333	5		18	30.224	31.359	0.475	A572-65	1.032
19	59.8333 - 59.0833	0.75		18	31.359	31.529	0.475	A572-65	1.030
20	59.0833 - 58.8167	0.2666		18	31.529	31.589	0.45625	A572-65	0.963
21	58.8167 - 58.6667	0.15		18	31.589	31.623	0.45625	A572-65	0.963
22	58.6667 - 53.6667	5		18	31.623	32.758	0.45	A572-65	0.966
23	53.6667 - 53	5.0867	4.42	18	32.758	33.913	0.45	A572-65	0.965
24	53 - 47.58	5.42		18	32.285	33.515	0.6375	A572-65	0.941
25	47.58 - 42.58	5		18	33.515	34.650	0.625	A572-65	0.944
26	42.58 - 40	2.58		18	34.650	35.236	0.6125	A572-65	0.955
27	40 - 39.75	0.25		18	35.236	35.293	0.8125	A572-65	0.926
28	39.75 - 34.75	5		18	35.293	36.428	0.7875	A572-65	0.937
29	34.75 - 32.5	2.25		18	36.428	36.939	0.7875	A572-65	0.929
30	32.5 - 32.25	0.25		18	36.939	36.995	0.6125	A572-65	0.944
31	32.25 - 31.4167	0.8333		18	36.995	37.185	0.6	A572-65	0.961
32	31.4167 - 31.1667	0.25		18	37.185	37.241	0.775	A572-65	0.939
33	31.1667 - 29	2.1667		18	37.241	37.733	0.7625	A572-65	0.947
34	29 - 28.75	0.25		18	37.733	37.790	0.5875	A572-65	0.963
35	28.75 - 23.75	5		18	37.790	38.925	0.5875	A572-65	0.950
36	23.75 - 18.75	5		18	38.925	40.060	0.575	A572-65	0.958
37	18.75 - 13.75	5		18	40.060	41.195	0.5625	A572-65	0.968
38	13.75 - 8.75	5		18	41.195	42.331	0.5625	A572-65	0.956
39	8.75 - 3.75	5		18	42.331	43.466	0.55	A572-65	0.967
40	3.75 - 0	3.75		18	43.466	44.317	0.55	A572-65	0.959

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	140 - 135	1.6637	22.62	4.9395
2	135 - 130	1.8571	47.845	5.1556
3	130 - 125	2.0699	74.169	5.3807
4	125 - 120	2.3001	101.64	5.6146
5	120 - 115	3.6213	149.38	9.7109
6	115 - 110	3.9852	198.74	10.044
7	110 - 105	4.8527	254.64	11.377
8	105 - 101.58	5.1505	293.97	11.635
9	101.58 - 96.58	6.1143	355.2	12.913
10	96.58 - 91.58	8.6237	433.3	16.988
11	91.58 - 86.58	9.2817	519.18	17.383
12	86.58 - 81.58	9.9678	607.02	17.776
13	81.58 - 76.58	10.68	696.82	18.165
14	76.58 - 71.58	13.633	799.08	22.426
15	71.58 - 70.0833	13.867	832.7	22.526
16	70.0833 - 69.8333	13.94	838.34	22.548
17	69.8333 - 64.8333	14.99	951.93	22.923
18	64.8333 - 59.8333	16.075	1067.4	23.291
19	59.8333 - 59.0833	16.243	1084.9	23.357
20	59.0833 - 58.8167	16.303	1091.1	23.385
21	58.8167 - 58.6667	16.335	1094.6	23.418
22	58.6667 - 53.6667	17.362	1212.5	23.791
23	53.6667 - 53	17.506	1228.4	23.84
24	53 - 47.58	19.575	1359	24.354
25	47.58 - 42.58	20.91	1481.8	24.789
26	42.58 - 40	21.607	1546	25.032
27	40 - 39.75	21.7	1552.3	25.055
28	39.75 - 34.75	23.345	1678.7	25.543
29	34.75 - 32.5	24.097	1736.4	25.768
30	32.5 - 32.25	24.173	1742.9	25.791
31	32.25 - 31.4167	24.403	1764.4	25.876
32	31.4167 - 31.1667	24.494	1770.9	25.901
33	31.1667 - 29	25.22	1827.2	26.114
34	29 - 28.75	25.296	1833.7	26.133
35	28.75 - 23.75	26.708	1965.5	26.596
36	23.75 - 18.75	28.151	2099.4	26.991
37	18.75 - 13.75	29.616	2235.2	27.387
38	13.75 - 8.75	31.102	2373.1	27.783
39	8.75 - 3.75	32.6	2512.9	28.2
40	3.75 - 0	33.8	2619.1	28.5

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
140 - 135	Pole	TP14.296x13.161x0.1875	Pole	18.3%	Pass
135 - 130	Pole	TP15.431x14.296x0.1875	Pole	32.9%	Pass
130 - 125	Pole	TP16.566x15.431x0.1875	Pole	44.0%	Pass
125 - 120	Pole	TP17.701x16.566x0.1875	Pole	52.6%	Pass
120 - 115	Pole	TP18.836x17.701x0.1875	Pole	68.2%	Pass
115 - 110	Pole	TP19.971x18.836x0.1875	Pole	80.5%	Pass
110 - 105	Pole	TP21.106x19.971x0.1875	Pole	92.3%	Pass
105 - 101.58	Pole	TP21.882x21.106x0.1875	Pole	98.9%	Pass
101.58 - 96.58	Pole	TP23.017x21.882x0.3125	Pole	65.8%	Pass
96.58 - 91.58	Pole	TP24.152x23.017x0.3125	Pole	72.9%	Pass
91.58 - 86.58	Pole	TP25.287x24.152x0.3125	Pole	79.5%	Pass
86.58 - 81.58	Pole	TP26.422x25.287x0.3125	Pole	85.0%	Pass
81.58 - 76.58	Pole	TP27.557x26.422x0.3125	Pole	89.5%	Pass
76.58 - 71.58	Pole	TP28.692x27.557x0.3125	Pole	94.7%	Pass
71.58 - 70.08	Pole	TP29.032x28.692x0.3125	Pole	96.4%	Pass
70.08 - 69.83	Pole + Reinf.	TP29.089x29.032x0.4875	Reinf. 4 Tension Rupture	77.0%	Pass
69.83 - 64.83	Pole + Reinf.	TP30.224x29.089x0.4875	Reinf. 4 Tension Rupture	82.0%	Pass
64.83 - 59.83	Pole + Reinf.	TP31.359x30.224x0.475	Reinf. 4 Tension Rupture	86.5%	Pass
59.83 - 59.08	Pole + Reinf.	TP31.529x31.359x0.475	Reinf. 4 Tension Rupture	87.1%	Pass
59.08 - 58.82	Pole + Reinf.	TP31.589x31.529x0.4563	Reinf. 1 Tension Rupture	89.1%	Pass
58.82 - 58.67	Pole + Reinf.	TP31.623x31.589x0.4563	Reinf. 1 Tension Rupture	89.2%	Pass
58.67 - 53.67	Pole + Reinf.	TP32.758x31.623x0.45	Reinf. 1 Tension Rupture	92.9%	Pass
53.67 - 53	Pole + Reinf.	TP33.913x32.758x0.45	Reinf. 1 Tension Rupture	93.4%	Pass
53 - 47.58	Pole + Reinf.	TP33.515x32.285x0.6375	Reinf. 3 Tension Rupture	76.2%	Pass
47.58 - 42.58	Pole + Reinf.	TP34.65x33.515x0.625	Reinf. 3 Tension Rupture	79.0%	Pass
42.58 - 40	Pole + Reinf.	TP35.236x34.65x0.6125	Reinf. 3 Tension Rupture	80.3%	Pass
40 - 39.75	Pole + Reinf.	TP35.293x35.236x0.8125	Reinf. 3 Tension Rupture	62.4%	Pass
39.75 - 34.75	Pole + Reinf.	TP36.428x35.293x0.7875	Reinf. 3 Tension Rupture	64.5%	Pass
34.75 - 32.5	Pole + Reinf.	TP36.939x36.428x0.7875	Reinf. 3 Tension Rupture	65.4%	Pass
32.5 - 32.25	Pole + Reinf.	TP36.995x36.939x0.6125	Reinf. 5 Compression	81.3%	Pass
32.25 - 31.42	Pole + Reinf.	TP37.185x36.995x0.6	Reinf. 5 Compression	81.7%	Pass
31.42 - 31.17	Pole + Reinf.	TP37.241x37.185x0.775	Reinf. 2 Tension Rupture	66.0%	Pass
31.17 - 29	Pole + Reinf.	TP37.733x37.241x0.7625	Reinf. 2 Tension Rupture	66.8%	Pass
29 - 28.75	Pole + Reinf.	TP37.79x37.733x0.5875	Reinf. 2 Tension Rupture	85.6%	Pass
28.75 - 23.75	Pole + Reinf.	TP38.925x37.79x0.5875	Reinf. 2 Tension Rupture	87.6%	Pass
23.75 - 18.75	Pole + Reinf.	TP40.06x38.925x0.575	Reinf. 2 Tension Rupture	89.5%	Pass
18.75 - 13.75	Pole + Reinf.	TP41.195x40.06x0.5625	Reinf. 2 Tension Rupture	91.2%	Pass
13.75 - 8.75	Pole + Reinf.	TP42.331x41.195x0.5625	Reinf. 2 Tension Rupture	92.8%	Pass
8.75 - 3.75	Pole + Reinf.	TP43.466x42.331x0.55	Reinf. 2 Tension Rupture	94.3%	Pass
3.75 - 0	Pole + Reinf.	TP44.317x43.466x0.55	Reinf. 2 Tension Rupture	95.3%	Pass
				Summary	
			Pole	98.9%	Pass
			Reinforcement	95.3%	Pass
			Overall	98.9%	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
140 - 135	211	n/a	211	8.40	n/a	8.40	18.3%					
135 - 130	266	n/a	266	9.07	n/a	9.07	32.9%					
130 - 125	330	n/a	330	9.75	n/a	9.75	44.0%					
125 - 120	404	n/a	404	10.42	n/a	10.42	52.6%					
120 - 115	487	n/a	487	11.10	n/a	11.10	68.2%					
115 - 110	582	n/a	582	11.77	n/a	11.77	80.5%					
110 - 105	688	n/a	688	12.45	n/a	12.45	92.3%					
105 - 101.58	767	n/a	767	12.91	n/a	12.91	98.9%					
101.58 - 96.58	1466	n/a	1466	22.52	n/a	22.52	65.8%					
96.58 - 91.58	1697	n/a	1697	23.64	n/a	23.64	72.9%					
91.58 - 86.58	1951	n/a	1951	24.77	n/a	24.77	79.5%					
86.58 - 81.58	2230	n/a	2230	25.90	n/a	25.90	85.0%					
81.58 - 76.58	2533	n/a	2533	27.02	n/a	27.02	89.5%					
76.58 - 71.58	2863	n/a	2863	28.15	n/a	28.15	94.7%					
71.58 - 70.08	2967	n/a	2967	28.48	n/a	28.48	96.4%					
70.08 - 69.83	2995	1613	4608	28.54	17.25	45.79	64.9%				77.0%	
69.83 - 64.83	3363	1736	5099	29.67	17.25	46.92	69.1%				82.0%	
64.83 - 59.83	3760	1863	5623	30.79	17.25	48.04	72.8%				86.5%	
59.83 - 59.08	3822	1882	5704	30.96	17.25	48.21	73.4%				87.2%	
59.08 - 58.82	3833	1674	5507	31.02	12.39	43.41	73.0%	89.1%				
58.82 - 58.67	3845	1677	5523	31.06	12.39	43.45	73.1%	89.2%				
58.67 - 53.67	4279	1795	6074	32.18	12.39	44.57	76.2%	92.9%				
53.67 - 53	4339	1811	6150	32.33	12.39	44.72	76.6%	93.4%				
53 - 47.58	4585	4469	9054	32.93	29.64	62.57	58.7%	71.5%		76.2%		
47.58 - 42.58	5072	4764	9836	34.06	29.64	63.70	60.9%	74.1%		79.0%		
42.58 - 40	5336	4921	10256	34.64	29.64	64.28	62.0%	75.3%		80.3%		
40 - 39.75	5362	7927	13289	34.69	47.64	82.33	48.1%	58.5%		62.4%		62.0%
39.75 - 34.75	5901	8427	14327	35.82	47.64	83.46	49.8%	60.5%		64.5%		63.2%
34.75 - 32.5	6155	8656	14811	36.33	47.64	83.97	50.6%	61.4%		65.5%		64.1%
32.5 - 32.25	6183	5544	11728	36.38	30.39	66.77	64.2%	77.9%				81.3%
32.25 - 31.42	6280	5599	11879	36.57	30.39	66.96	64.5%	78.2%				81.7%
31.42 - 31.17	6309	8794	15102	36.63	47.64	84.27	51.0%	61.9%	66.0%			64.6%
31.17 - 29	6564	9019	15584	37.12	47.64	84.76	51.7%	62.7%	66.8%			66.5%
29 - 28.75	6594	5632	12227	37.17	29.64	66.81	66.2%	80.3%	85.6%			
28.75 - 23.75	7212	5964	13176	38.30	29.64	67.94	67.8%	82.2%	87.6%			
23.75 - 18.75	7866	6306	14172	39.42	29.64	69.06	69.3%	83.9%	89.5%			
18.75 - 13.75	8560	6657	15216	40.55	29.64	70.19	70.7%	85.5%	91.2%			
13.75 - 8.75	9293	7017	16310	41.68	29.64	71.32	72.0%	87.0%	92.8%			
8.75 - 3.75	10066	7387	17453	42.80	29.64	72.44	73.1%	88.3%	94.3%			
3.75 - 0	10674	7671	18345	43.65	29.64	73.29	74.0%	89.3%	95.3%			

Note: Section capacity checked in 5 degree increments.

FDH ENGINEERING INNOVATION
FDH Engineering, Inc., 6521 Meridien Dr. Raleigh, NC 27616, Ph. 919.755.1012, Fax 919.755.1031

Anchor Rod Design

Site Name:	Shelton NE
Job No. :	
Elevation:	
	Input Cells in Yellow

*Note: Use Anchor Rod Transfer Plate Design Spreadsheet in Conjunction

Code (F or G):	F	Pull Down
Anchor Bolts (Yes or No)	Yes	Pull Down
P (from RISA)	34	kips
V (from RISA)	28	kips
M (from RISA)	2619	ft-kips

Existing Rods		
y	25.5	in
No. Bolts	12	
BC	51	in
I	15527.97	in^4
Bolt Grade	A615-75	Pull Down
Thread Form	Non-Upset	-
d (in)	2.25	Pull Down
Ag	3.98	in^2
Ae	3.25	in^2
Fy	75	ksi
Fu	100	ksi

New Rods		
y new	25.5	in
No. Bolts new	4	
BC new	51	in
Inew	5,176	in^4
Bolt Grade	A193 B7	Pull Down
Thread Form	Non-Upset	Pull Down
d new (in)	2.25	Pull Down
Ag new	3.98	in^2
Ae new	3.25	in^2
Fy new	105	ksi
Fu new	125	ksi

Req'd Embedment Length for New Rods		
f'c, caisson's concrete strength	3000	psi
fy, rebar yield strength	60000	psi
d_b, diameter of vertical rebar	1	in
vertical rebar cage BC ø	22	in
vertical rebar top cover distance	3	in
τ, Ultimate Hilti Bond Resistance	1.8	ksi

****Note For New Anchor Rods:****
Williams Bars (Upset)
A722 (Fy=127.7 ksi, Fu=150 ksi)
A615-75 (Fy=75 ksi, Fu=100 ksi)

Itot	20703.96	in^4

T	151.934	kips
V	1.750	kips

Tnew	151.934	kips
Vnew	1.750	kips

				% Capacity	**Pullout Test Value**
Tn/Ω	194.5	kips	OK	**78.12**	**218.90 kips**
Tn/Ω, new	218.9	kips	OK	**69.41**	
øTn	260	kips			
øTn, new	325	kips			

l_d (vertical rebar dev. Length)	32.863	in
l_{dH} (Hilti dev. length)	76.630	in
G/1.5	-9.667	in

Total Embed. Length of New Bolts	76.63	in
	6.39	ft

Equations:

T = (M*y*Ag)/Itot-P*(Ag/Atotal)

Tn/Ω = 0.33*Fu*Ag*(4/3)

øTn = 0.8*Fu*Ae (anchor bolts only)

øTn = 0.75*Fu*Ae (non anchor bolts)

I = (No. Bolts/8)*BC^2*Ag

l_d = [(fy*ψ$_t$ψ$_e$λ)/(20*√f'c)]*d_b PER ACI 12.2.2

l_{dH} = (øTn*FS)/(τ*pi*d_{new})

See Worksheet "New (Design Procedure)" for diagram

Notes:

***Ag and Ae are taken from AISC 13th Ed. Manual (pg. 7-83)**

***I calc. will only work for symmetric bolt group, otherwise use CAD**

Interaction Equation Checks per Rev. G: See section 4.9.9			(works for Rev F also)
Detail Type (see sheet 2)	c	Pull Down	(see sheet 2 for Detail Type)
η	0.55		
l_{ar}, for Detail Type d only	3	in	(length from top of concrete to bottom of leveling nut)

øRnt	194.5	kips
øRnv	119.4	kips
øRnm	94.922	kip-in
Mu	3.413	kip-in

(Pu+Vu/η)/øRnt	0.798	<1?	OK

$(Vu/øRnv)^2 + ((Pu/øRnt)+(Mu/øRnm))^2$	N/A		(only applicable for Detail Type d)

Bearing Strength Check of Anchor Rod Pipe Sleeve		
New Anchor Rod Diameter	2.25	in
Selected Pipe Sleeve Area	0	in^2
Selected Pipe Sleeve Fy	0	ksi
Rn/Ω (Rev F) or øRn (Rev G)	0.00	k
% Capacity	**#DIV/0!**	**No Good**

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev F

Site Data

Project No.
Site Name: *Shelton NE*
Site ID: *842873*

Pole Manufacturer:	*Other*

Reactions		
Moment:	2619.0056	ft-kips
Axial:	34	kips
Shear:	28	kips

Anchor Rod Data		
Qty:	16	
Diam:	2.25	in
Rod Material:	A615-J	**
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	51	in

If No stiffeners, Criteria:	AISC ASD	<-Only Applcable to Unstiffened Cases

Anchor Rod Results

Maximum Rod Tension:	151.9 Kips	Rigid
Allowable Tension:	195.0 Kips	Service, ASD
Anchor Rod Stress Ratio:	77.9% **Pass**	Fty*ASIF

****Note: anchor rod grade is assumed to be lowest grade of all existing rods**

Plate Data		
Diam:	57	in
Thick:	2.25	in
Grade:	60	ksi
Single-Rod B-eff:	8.79	in

Base Plate Results Flexural Check

Base Plate Stress:	43.5 ksi	Rigid
Allowable Plate Stress:	60.0 ksi	Service ASD
Base Plate Stress Ratio:	72.5% **Pass**	0.75*Fy*ASIF
		Y.L. Length: 25.24

Stiffener Data (Welding at both sides)		
Config:		*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

Stiffener Results

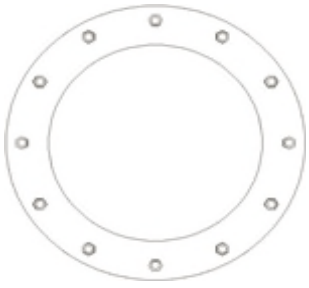
Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

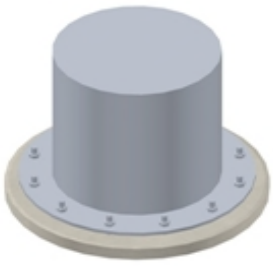
Pole Results

Pole Punching Shear Check: n/a

Pole Data		
Diam:	44.317	in
Thick:	0.3125	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

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

FDH Engineering, Inc., 6521 Meridien Drive Raleigh, NC 27616, Ph. 919.755.1012, Fax 919.755.1031

Base Transfer Stiffeners for Flat Plate Reinforcement Termination

Site Name:	Shelton NE
Job No. :	
Elevation:	

Code	F	F or G

Monopole and Flat Plate Properties		
Monopole Ø	44.317	in
Monopole Thickness	0.3125	in
No. of Sides	18	
No. of Flat Plates		
No. of Term Bolts at Btm		

Transfer Stiffener Input		
Gap Between BP and Bottom of FP	6	in
Width of Transfer Stiffener	6	in
Stiffener Thickness	1.25	in
No. of Transfer Sitffeners	6	
Notch Length	0.75	in
Height of Stiffener	36	in
Transfer Stiffener Plate Fy	65	ksi
Transfer Stiffener Plate Fu	80	ksi

Transfer Stiffener Section Properties			
Gross Cross Sectional Area (Ag)	7.5	in^2	
Ø of Stiffeners	50.317	in	
Outermost Fiber (y)	28.1585	in	
$I_{stiffeners}$	12469.43	in^4	CAD

Check Tension		
Tu	250.52	k
Tn/Ω	341.16	k
%Capacity	73.43%	Pass

Check Compression		
Pu	261.86	k
b/a	0.166667	
z	1.057454	
Pn/Ω	412.30	k
%Capacity	63.51%	Pass

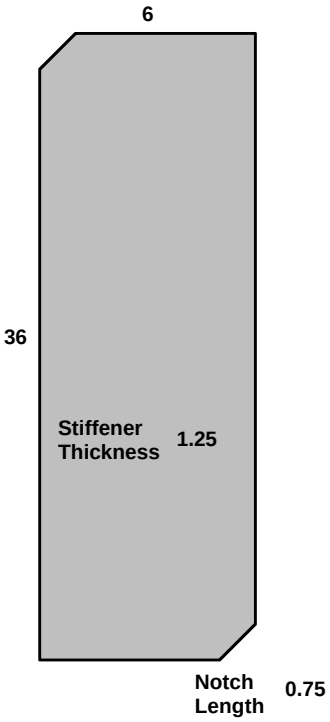
Check Stress		
σu	38.98742	ksi
σn/Ω	51.99	ksi
%Capacity	74.99%	Pass

Check Eccentric Weld		
Tu	250.52	k
Rn/Ω	524.18	k
%Capacity	47.79%	Pass

Reactions:		
Moment	2619	k-ft
Axial	34	k
Shear	28	k

Eccentric Weld Properties		
Weld Thk	6	No. of 1/16ths (whole number)
L_{weld}	35.25	in
e_x	3	in
a	0.0851064	use in Table 8-4, pg 8-66 AISC
C	3.7185106	From Table 8-4, pg. 8-66 AISC
C1	1	70 ksi weld = 1, 80 ksi = 1.03

Legend
Input
Output
Notes



Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev F

Site Data

Project No.:
Site Name: *Shelton NE*
Site ID: *842873*

Pole Manufacturer:	Other

Reactions		
Moment:	293.97	ft-kips
Axial:	5.15	kips
Shear:	11.64	kips
Elevation:	101.58	feet

If No stiffeners, Criteria: AISC ASD <-Only Applcable to Unstiffened Cases

Bolt Data			
Qty:	16		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	Bolt Fty:
N/A:		<-- Disregard	44.00
Circle (in.):	26		

Plate Data		
Diam:	30	in
Thick, t:	1.5	in
Grade (Fy):	50	ksi
Strength, Fu:	65	ksi
Single-Rod B-eff:	4.34	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Diam:	21.882	in
Thick:	0.1875	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	

Flange Bolt Results

			Rigid
Bolt Tension Capacity, **B**:	46.07	kips	Service, ASD
Max Bolt directly applied T:	33.60	Kips	Fty*ASIF
Min. PL "tc" for **B** cap. **w/o** Pry:	1.416	in	
Min PL "treq" for actual **T w/ Pry**:	0.914	in	
Min PL "t1" for actual **T w/o Pry**:	1.210	in	
T allowable w/o Prying:	46.07	kips	α'<0 case
Prying Force, Q:	0.00	kips	
Total Bolt Tension=T+Q:	33.60	kips	
Non-Prying Bolt Stress Ratio, T/B:	72.9%	**Pass**	

Exterior Flange Plate Results Flexural Check

			Rigid
Compression Side Plate Stress:	26.2	ksi	Service ASD
Allowable Plate Stress:	50.0	ksi	0.75*Fy*ASIF
Compression Plate Stress Ratio:	52.5%	**Pass**	Comp. Y.L. Length:
No Prying			14.04
Tension Side Stress Ratio, (treq/t)^2:	37.1%	**Pass**	

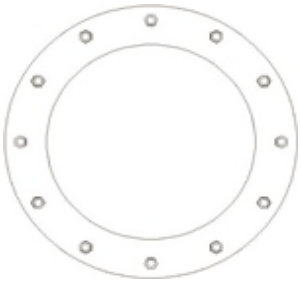
n/a

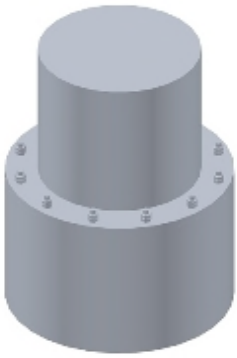
Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

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

CAISSON Version 10.61 4:36:51 PM Tuesday, July 14, 2015
FDH Engineering

```
*************************************************************************************************
*                                                                                               *
* CAISSON - Pier Foundations Analysis and Design -  Copyright Power Line Systems, Inc. 1993-2010 *
*                                                                                               *
*************************************************************************************************
```

Project Title: Shelton NE
Project Notes:

Calculation Method: Full 8CD

******* I N P U T D A T A

Pier Properties

Diameter (ft)	Distance of Top of Pier above Ground (ft)	Concrete Strength (ksi)	Steel Yield Strength (ksi)
6.00	0.50	3.00	60.00

Soil Properties

Layer	Type	Thickness (ft)	Depth at Top of Layer (ft)	Density (lbs/ft^3)	CU (psf)	KP	PHI (deg)
1	Clay	3.00	0.00	100.0	0.0		
2	Clay	5.50	3.00	130.0	4000.0		
3	Clay	20.00	8.50	130.0	12000.0		

Design (Factored) Loads at Top of Pier

Moment (ft-k)	Axial Load (kips)	Shear Load (kips)	Additional Safety Factor Against Soil Failure
2619.0	34.0	28.00	3.30 => 2/3.3 = **60.6%**

******* R E S U L T S

Calculated Pier Properties

Length (ft)	Weight (kips)	Pressure Due To Axial Load (psf)	Pressure Due To Weight (psf)	Total End-Bearing Pressure (psf)
14.500	61.497	1202.5	2175.0	3377.5

Ultimate Resisting Forces Along Pier

Type	Distance of Top of Layer to Top of Pier (ft)	Thickness (ft)	Density (lbs/ft^3)	CU (psf)	KP	Force (kips)	Arm (ft)
Clay	0.50	3.00	100.0	0.0		0.00	2.00
Clay	3.50	5.50	130.0	4000.0		1056.00	6.25
Clay	9.00	1.91	130.0	12000.0		1102.43	9.96
Clay	10.91	3.59	130.0	12000.0		-2065.57	12.71

Shear and Moments Along Pier

Distance below Top of Pier (ft)	Shear (with Safety Factor) (kips)	Moment (with Safety Factor) (ft-k)	Shear (without Safety Factor) (kips)	Moment (without Safety Factor) (ft-k)
0.00	92.9	8670.3	28.1	2627.4
1.45	92.9	8804.9	28.1	2668.2
2.90	92.9	8939.6	28.1	2709.0
4.35	-70.3	9004.8	-21.3	2728.7
5.80	-348.7	8701.0	-105.7	2636.7
7.25	-627.1	7993.5	-190.0	2422.3
8.70	-905.5	6882.3	-274.4	2085.5
10.15	-1625.5	5113.5	-492.6	1549.6
11.60	-1670.4	2422.1	-506.2	734.0
13.05	-835.2	605.5	-253.1	183.5
14.50	-0.0	0.0	-0.0	0.0

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

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

Site Data

FDH Job No.
Site Name: *Shelton NE*
Site No. *842873*

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

Pier Properties

Concrete:

Pier Diameter =	6.0	ft
Concrete Area =	4071.5	in^2

Reinforcement:

Clear Cover to **Tie**=	3.00	in
Horiz. **Tie** Bar Size=	5	
Vert. Cage Diameter =	5.28	ft
Vert. Cage Diameter =	63.34	in
Vertical Bar Size =	11	
Bar Diameter =	1.41	in
Bar Area =	1.56	in^2
Number of Bars =	26	
As Total=	40.56	in^2
A s/ Aconc, Rho:	0.0100	1.00%

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

Minimum Rho Check:

Actual Req'd Min. Rho:	0.33%	Flexural
Provided Rho:	1.00%	**OK**

Ref. Shaft Max Axial Capacities, ϕ Max(Pn or Tn):		
Max Pu = (φ=0.65) Pn.		
Pn per ACI 318 (10-2)	6610.50	kips
at Mu=(ϕ=0.65)Mn=	3403.65	ft-kips
Max Tu, (φ=0.9) Tn =	2190.24	kips
at Mu=ϕ=(0.90)Mn=	0.00	ft-kips

Maximum Shaft Superimposed Forces

TIA Revision:	F	
Max. Service Shaft M:	2728.7	ft-kips **(* Note)**
Max. Service Shaft P:	34	kips
Max Axial Force Type:	Comp.	

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

Load Factor	Shaft Factored Loads		
1.30	Mu:	3547.31	ft-kips
1.30	Pu:	44.2	kips

Material Properties

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

ACI 318 Code

Select Analysis ACI Code=	2005	

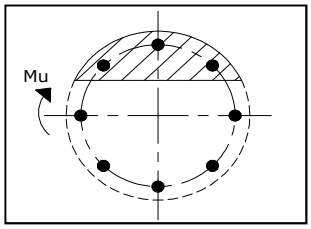
Seismic Properties

Seismic Design Category =	C	
Seismic Risk =	**Moderate**	

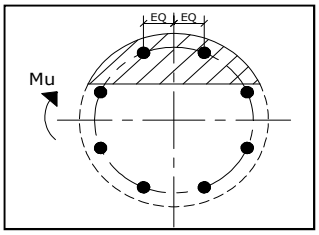
Solve (Run) <-- Press Upon Completing All Input

Results:

Governing Orientation Case: **2**



Case 1



Case 2

Dist. From Edge to Neutral Axis:	**15.05**	in
Extreme Steel Strain, ϵt:	**0.0104**	
	ϵt > 0.0050, Tension Controlled	
Reduction Factor,φ:	**0.900**	

Output Note: Negative Pu=Tension

For Axial Compression, φ Pn = Pu:	44.20	kips
Drilled Shaft Moment Capacity, φMn:	**5174.94**	ft-kips
Drilled Shaft Superimposed Mu:	**3547.31**	ft-kips

(Mu/φMn, Drilled Shaft Flexure CSR:	**68.5%**

APPENDIX D

MODIFICATION DRAWINGS

PROJECT DESCRIPTION:

MODIFICATION DRAWINGS FOR A 140' MONOPOLE

CROWN CASTLE

SITE NAME:

SHELTON NE

SITE NUMBER:

842873

SITE ADDRESS:

30 OLIVER TERRACE
SHELTON, CT 06484

COORDINATES:

LAT: 41.2939°
LONG: -73.1072°

ATTENTION ALL CONTRACTORS, ANYTIME YOU ACCESS A CROWN SITE FOR ANY REASON YOU ARE TO CALL THE CROWN NOC UPON ARRIVAL AND DEPARTURE, DAILY AT 800-788-7011.

PROJECT DATA

CODES AND STANDARDS	
BUILDING CODE	2005 CONNECTICUT BUILDING CODE
TIA STANDARD	TIA/EIA-222-F
NOMINAL WIND SPEED WITHOUT ICE (MPH)	85
NOMINAL WIND SPEED WITH ICE (MPH)	38
SERVICE WIND SPEED (MPH)	50
ICE THICKNESS (IN)	0.75
EXPOSURE CATEGORY	-
RISK CATEGORY	-
TOPOGRAPHIC CATEGORY	-
CREST HEIGHT (FT)	-
S_S (G)	-
S_1 (G)	-

PROJECT CONTACTS

CCI PROJECT MANAGER NAME	DAN VADNEY
CCI PROJECT MANAGER EMAIL ADDRESS	DAN.VADNEY@CROWNCASTLE.COM
CCI PROJECT MANAGER PHONE NUMBER	(518) 373-3510
CCI CONSTRUCTION MANAGER NAME	JASON D'AMICO
CCI CONSTRUCTION MANAGER EMAIL ADDRESS	JASON.D'AMICO@CROWNCASTLE.COM
CCI CONSTRUCTION MANAGER PHONE NUMBER	(860) 209-0104
FDH VELOCITEL PROJECT ENGINEER NAME	**DREW ALEXANDER, EI**
FDH VELOCITEL PROJECT ENGINEER EMAIL ADDRESS	**DREW.ALEXANDER@FDHVELOCITEL.COM**
FDH VELOCITEL PROJECT ENGINEER PHONE NUMBER	**(919) 755-1012**

FAILING STRUCTURAL ANALYSIS	
STRUCTURAL ANALYSIS COMPANY	FDH VELOCITEL
PROJECT NO.	15BQWD1400
DATE	MAY 29, 2015
WORK ORDER#	1065069
CCI DOC#	5729974
PASSING STRUCTURAL ANALYSIS / MODIFICATION DRAWINGS	
STRUCTURAL ANALYSIS COMPANY	FDH VELOCITEL
PROJECT NO.	15BTZC1400
DATE	JULY 15, 2015
SDD WORK ORDER#	1082003
CARRIER NAME	T-MOBILE
APPLICATION	271495 REV. 7
TOWER MANUFACTURER	FWT, INC.
JOB#	J030219001

THIS REPORT WAS BASED ON A SPECIFIC ANTENNA AND COAX CONFIGURATION PROVIDED BY THE TOWER OWNER. ANY CHANGE TO THIS INFORMATION MUST BE REVIEWED BY FDH VELOCITEL.

ALL CONSTRUCTION SHALL COMPLY WITH THE TIA-1019-A STANDARD

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S-4	FORGBOLT & NEXGEN2 SPECIFICATIONS AND TIGHTENING PROCEDURES.	0
S-5	MODIFICATION SCHEDULE & FLAT PLATE INSTALLATION DETAILS	0

PREPARED BY:

FDH VELOCITEL
ENGINEERING INNOVATION
VELOCITEL, INC., d.b.a. FDH VELOCITEL
6521 MERIDEN DRIVE RALEIGH, NC 27616
PHONE: 919-755-1012 FAX: 919-755-1031

PREPARED FOR:

CROWN CASTLE

STATE OF CONNECTICUT
DENNIS D. ABEL
No. 23247
LICENSED PROFESSIONAL ENGINEER

07/15/15

DENNIS D. ABEL, PE
CONNECTICUT LIC. NO. 23247

DRAWN BY:	RWC
CHECKED BY:	DMA
ENG APPV'D:	DDA

SUBMITTALS		
DATE	DESCRIPTION	REV
07/15/15	CONSTRUCTION	0

FDH PROJECT NUMBER:

15BTZC1400

SITE NAME:

SHELTON NE

SITE NUMBER:

842873

SITE ADDRESS:

30 OLIVER TERRACE
SHELTON, CT 06484

SHEET TITLE

TITLE SHEET

SHEET NUMBER

S-1

MODIFICATION INSPECTION NOTES:

MI CHECKLIST	
INSPECTIONS AND TESTING REQUIRED	REPORT ITEM
PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWING
X	EOR APPROVAL
X	FABRICATION INSPECTION
N/A	FABRICATOR CERTIFIED WELD INSPECTION
X	MATERIAL TEST REPORT (MTR)
N/A	FABRICATOR NDE INSPECTION
N/A	NDE REPORT OF MONOPOLE BASE PLATE
X	PACKING SLIPS
ADDITIONAL TESTING AND INSPECTIONS:	
CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMPRESSIVE STRENGTH AND SLUMP TESTS
N/A	POST INSTALLED ANCHOR ROD VERIFICATION
N/A	BASE PLATE GROUT VERIFICATION
N/A	CONTRACTOR'S CERTIFIED WELD INSPECTION AND NDE REPORTS
N/A	EARTHWORK: LIFT AND DENSITY
X	ON SITE COLD GALVANIZATIONS
N/A	GUY WIRE TENSION REPORT
X	GC AS BUILT DOCUMENTS
ADDITIONAL TESTING AND INSPECTIONS:	
POST-CONSTRUCTION	
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING
X	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE PMI REPORT
N/A DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE PMI REPORT

GENERAL:

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

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

ALL MI'S SHALL BE CONDUCTED BY A CROWN ENGINEERING VENDOR (AEV) OR ENGINEERING SERVICE VENDOR (AESV) THAT IS APPROVED TO PERFORM ELEVATED WORK FOR CROWN. SEE ENG-BUL-10173 LIST OF APPROVED MI VENDORS.

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

REFER TO ENG-SOW-10007 : MODIFICATION INSPECTION SOW FOR FURTHER DETAILS AND REQUIREMENTS.

MI INSPECTOR:

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

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

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

GENERAL CONTRACTOR:

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

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

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST AND ENG-SOW-10007.

RECOMMENDATIONS:

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

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
- IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

CANCELLATION OR DELAYS IN SCHEDULED MI:

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

CORRECTION OF FAILING MI'S:

IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI ("FAILED MI"), THE GC SHALL WORK WITH CROWN TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
- OR, WITH CROWN'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION

MI VERIFICATION INSPECTIONS:

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

ALL VERIFICATION INSPECTIONS SHALL BE HELD TO THE SAME SPECIFICATIONS AND REQUIREMENTS IN THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH ENG-SOW-10007.

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

REQUIRED PHOTOS:

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

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

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

THIS IS NOT A COMPLETE LIST OF REQUIRED PHOTOS, PLEASE REFER TO ENG-SOW-10007.

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15BTZC1400

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SHELTON NE

SITE NUMBER:

842873

SITE ADDRESS:

30 OLIVER TERRACE
SHELTON, CT 06484

SHEET TITLE

MODIFICATION INSPECTION CHECKLIST

SHEET NUMBER

S-2

GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL PERMITS NECESSARY TO COMPLETE THE PROJECT AND ABIDE BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS 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 FDH VELOCITEL FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
3. INCORRECTLY FABRICATED, DAMAGED, OTHERWISE MISFITTING, OR NON-CONFORMING MATERIALS AND CONDITIONS SHALL BE REPORTED TO FDH VELOCITEL PRIOR TO ANY REMEDIAL OR CORRECTIVE ACTION. ALL ACTIONS SHALL REQUIRE FDH VELOCITEL APPROVAL.
4. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AFTER THE COMPLETION OF THE PROJECT.
5. CONTRACTOR SHALL PROMPTLY REMOVE ANY & ALL DEBRIS FROM SITE AND RESTORE AS BEST AS POSSIBLE TO PRECONSTRUCTION CONDITION.

CONTRACTOR QUALIFICATION NOTES:

1. ALL REPAIRS SHALL BE PERFORMED BY A TOWER CONTRACTOR WITH A MINIMUM 5 YEARS EXPERIENCE IN TOWER ERECTION AND RETROFIT AND WITH WORKING KNOWLEDGE OF THE TIA/EIA 222-F "STRUCTURAL STANDARD FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES".
2. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. SHOULD THE CONTRACTOR REQUIRE DIRECT CONSULTATION, FDH VELOCITEL IS WILLING TO OFFER SERVICES BASED UPON AN AGREED FEE FOR THE WORK REQUIRED.
3. ALL SUBMITTAL INFORMATION MUST BE SENT TO FDH VELOCITEL 6521 MERIDIEN DRIVE, RALEIGH NC, 27616, TEL. (919) 755-1012, FAX. (919) 755-1031, E-MAIL INFO@FDHVELOCITEL.COM. ANY VARIATION OF THESE SPECIFICATIONS OR DRAWINGS WITHOUT CONSENT FROM FDH VELOCITEL WILL VOID ANY RESPONSIBILITY OR LIABILITY FOR DAMAGE (MATERIAL OR PHYSICAL) TOWARDS FDH VELOCITEL
4. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE TIA-1019-A STANDARD.

JOB SITE SAFETY & NOTES:

1. NEITHER THE PROFESSIONAL ACTIVITIES OF FDH VELOCITEL NOR THE PRESENCE OF FDH VELOCITEL OR EMPLOYEES AND SUB-CONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE GENERAL CONTRACTOR AND OR SUBCONTRACTORS AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE GENERAL CONTRACTOR AND OR SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY, AND WARRANTS THAT THIS INTENT IS EVIDENT BY ACCEPTING THIS WORK.

STEEL:

1. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC CODE AND ASTM SPECIFICATIONS.
2. ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING SPECIFIED WELDS WITH WELDING ELECTRODES E-70XX OR SPECIFIED HIGH STRENGTH BOLTS TO BE ASTM A325N, THREAD INCLUDED WITH SHEAR PLANE (UNLESS OTHERWISE NOTED).
3. ALL BOLTED CONNECTIONS TO BE INSTALLED TO A SNUG-TIGHTENED CONDITION IN ACCORDANCE WITH AISC 13 PART 16.2, "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", SECTION 8.1, UNLESS OTHERWISE SPECIFIED. WHEN "X" TYPE BOLTS ARE USED, CONTRACTOR MAY BE REQUIRED TO STACK ADDITIONAL WASHERS TO OBTAIN PROPER SNUG TIGHT INSTALLATION. ALL NUTS SHALL BE HEAVY HEX UNLESS OTHERWISE NOTED.
4. ALL STEEL, AFTER FABRICATION, SHALL BE HOT DIPPED GALVANIZED PER ASTM A-123. ALL DAMAGED SURFACES, WELDED AREAS AND AUTHORIZED NON-GALVANIZED MEMBERS OR PARTS (EXISTING OR NEW) SHALL BE PAINTED WITH MULTIPLE COATS OF ZRC COLD GALVANIZING COMPOUND ACHEIVING A MINIMUM OF 4 MILS DRY FILM PER ASTM A 780.
5. ALL SHOP AND FIELD WELDING SHALL BE DONE BY WELDERS QUALIFIED AS DESCRIBED IN THE "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE" TO PERFORM THE TYPE OF WORK REQUIRED. CONTRACTOR IS REQUIRED TO PROVIDE FDH VELOCITEL WITH A PASSING CERTIFIED WELDING INSPECTION FOR ALL WELDS.
6. STRUCTURAL STEEL MAY NOT BE TORCH CUT FOR FABRICATION. ALL STEEL FABRICATION MUST FOLLOW AISC STANDARDS.

MISC. NOTES:

1. ALL MODIFICATIONS ARE ASSUMED TO BE MADE ON AN EMPTY TOWER. CONTRACTOR IS RESPONSIBLE TO MAKE PROVISIONS TO SUPPORT OR WORK AROUND EXISTING ANTENNAS AND TRANSMISSION LINES. MODIFICATIONS MUST BE CONTINUOUS THROUGH ALL AREAS SHOWN.
2. CONTRACTOR FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

FABRICATION NOTES:

1. ALL DIMENSIONS ARE PRELIMINARY UNTIL FIELD VERIFIED BY CONTRACTOR. ANY CHANGES MUST BE APPROVED BY ENGINEER OF RECORD IN WRITING PRIOR TO FABRICATION AND INSTALLATION.
2. NEW STEEL MEMBERS MUST HAVE SINGLE DRILLED HOLES. SLOTTED AND DOUBLE DRILLED HOLES ARE NOT ACCEPTABLE MEANS OF FABRICATION.

SUBSTITUTES AND/OR EQUALS:

1. IF CONTRACTOR WISHES TO FURNISH OR USE A SUBSTITUTE ITEM OF MATERIAL OR EQUIPMENT, CONTRACTOR SHALL FIRST MAKE WRITTEN APPLICATION TO ENGINEER OF RECORD FOR ACCEPTANCE THEREOF, CERTIFYING THAT THE PROPOSED SUBSTITUTE WILL PERFORM ADEQUATELY THE FUNCTIONS AND ACHIEVE THE RESULTS CALLED FOR BY THE GENERAL DESIGN, BE SIMILAR IN SUBSTANCE TO THAT SPECIFIED AND SUITED TO THE SAME USE AS THAT SPECIFIED. ALL VARIATIONS OF THE PROPOSED SUBSTITUTE FROM THAT SPECIFIED WILL BE IDENTIFIED IN THE APPLICATION AND AVAILABLE MAINTENANCE, REPAIR AND REPLACEMENT SERVICE WILL BE INDICATED. THE APPLICATION WILL ALSO CONTAIN AN ITEMIZED ESTIMATE OF ALL COSTS OR CREDITS THAT WILL RESULT DIRECTLY OR INDIRECTLY FROM ACCEPTANCE OF SUCH SUBSTITUTE INCLUDING COSTS OF REDESIGN AND CLAIMS OF OTHER CONTRACTORS AFFECTED BY THE RESULTING CHANGE, ALL OF WHICH WILL BE CONSIDERED BY ENGINEER OF RECORD IN EVALUATION OF THE PROPOSED SUBSTITUTE. ENGINEER OF RECORD MAY REQUIRE CONTRACTOR TO FURNISH ADDITIONAL DATA ABOUT THE PROPOSED SUBSTITUTE.

COLD GALVANIZATION/SURFACE PREPARATION NOTES:

1. CONTRACTOR TO USE ZINGA OR ZRC COLD GALVANIZATION COMPOUNDS OR APPROVED EQUIVALENT.
2. PREPARE RUSTED/CORRODED SURFACE FOR TREATMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR TO APPLY (2) COATS OF COLD GALVANIZATION COMPOUND PER MANUFACTURER'S RECOMMENDATION. DRYING AND CURING TIMES MUST BE UTILIZED PER MANUFACTURER'S RECOMMENDATION.
4. APPLY ALL COATINGS BY BRUSH IN CALM WIND CONDITIONS. THE USE OF AEROSOL IS NOT PERMITTED.
5. IF THE TOWER IS PAINTED, BRUSH PAINT ALL TREATED AREAS TO MATCH TOWER AFTER COLD GALVANIZATION COMPOUND IS ALLOWED TO CURE.

NEW MONOPOLE REINFORCEMENT NOTES:

1. CONTRACTOR TO FIELD VERIFY PROPOSED LOCATION OF REINFORCEMENT TO ENSURE THAT PROPER SPACING CAN BE MET.
2. CONTRACTOR TO REPLACE AND/OR RELOCATE ANY CLIMBING PEGS THAT INTERFERE WITH THE INSTALLATION OF FLAT PLATE.
3. ALL BLIND BOLT CONNECTIONS TO USE HIGH TENSILE SLEEVE PROVIDED BY MANUFACTURER. BLIND BOLT ASSEMBLY TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS. SEE BLIND BOLT ASSEMBLY DETAILS ON SHEET S-4.
4. ALL SHEAR SLEEVES TO BE HOT DIPPED GALVANIZED PRIOR TO INSTALLATION.
5. PRIOR TO FLAT PLATE INSTALLATION, SLIP JOINTS MUST BE TIGHTENED WITH A MINIMUM JACKING FORCE OF 6000 LBS.
6. NEW REINFORCEMENT TO BE INSTALLED ON THE CENTER OF PROPOSED SIDE UNLESS OTHERWISE NOTED.
7. EXISTING COAX BANDS TO BE REPLACED AFTER REINFORCEMENT INSTALLATION. NEW FLAT PLATE TO BE INSTALLED BENEATH EXISTING COAX BANDS.
8. SHIMS FOR MONOPOLE REINFORCEMENT MEMBERS SHALL BE REQUIRED WHERE GAPS BETWEEN THE POLE SHAFT AND REINFORCING MEMBER EXIST AT FASTENER LOCATIONS. FOR INTERMEDIATE CONNECTIONS, THE MINIMUM SHIM LENGTH AND WIDTH SHALL BE THE WIDTH OF THE REINFORCING MEMBER. FOR TERMINATION CONNECTIONS, A CONTINUOUS SHIM PLATE (PREFERRED) OR EQUIVALENT INDIVIDUAL SHIM PLATES, MATCHING THE WIDTH OF THE REINFORCING MEMBER MAY BE USED. SHIM THICKNESS SHALL BE NO LESS THAN 1/16". STACKING OF SHIMS IS PERMITTED. THE MAXIMUM GAP SHIMMED SHALL BE NO MORE THAN 1/4" WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER OF RECORD.
9. REINFORCEMENT PIECES SHALL NOT BE MADE BY SPLICING TOGETHER TWO SMALLER PIECES UNLESS SPECIFIED ON THIS DRAWING OR OTHERWISE APPROVED IN WRITING BY THE ENGINEER ON RECORD.
10. CONTRACTOR MUST UTILIZE THE SAME MANUFACTURER/TYPE OF BLIND BOLT FOR THE ENTIRETY OF THE MODIFICATION.

CONSTRUCTION NOTES:

1. CONTRACTOR TO FIELD VERIFY PROPOSED REINFORCEMENT LAYOUT PRIOR TO CONSTRUCTION. IF ISSUES ARE PRESENT IN THE FIT OF THE REINFORCEMENT, CONTRACTOR TO CONTACT ENGINEER OF RECORD OR FDH VELOCITEL PROJECT MANAGER PRIOR TO PROCEEDING WITH PROPOSED MODIFICATION OR FABRICATION.

STEEL GRADE SCHEDULE

SCOPE	SHAPE	GRADE	YIELD STRENGTH (F_y)	ULTIMATE STRENGTH (F_u)
MONOPOLE REINFORCEMENT	PLATE	A572-65	65 KSI	80 KSI

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DRAWN BY:	RWC
CHECKED BY:	DMA
ENG APPV'D:	DDA

SUBMITTALS

DATE	DESCRIPTION	REV
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15BTZC1400

SITE NAME:

SHELTON NE

SITE NUMBER:

842873

SITE ADDRESS:

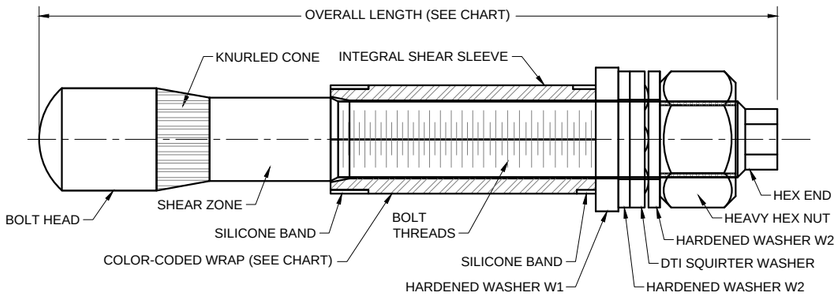
30 OLIVER TERRACE
SHELTON, CT 06484

SHEET TITLE

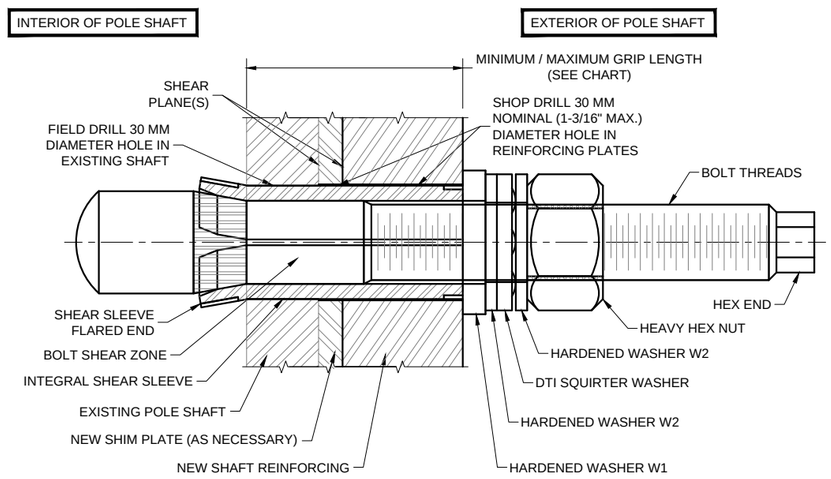
GENERAL NOTES

SHEET NUMBER

S-3



PRE-INSTALLED FORGBolt™ ASSEMBLY DETAIL 1



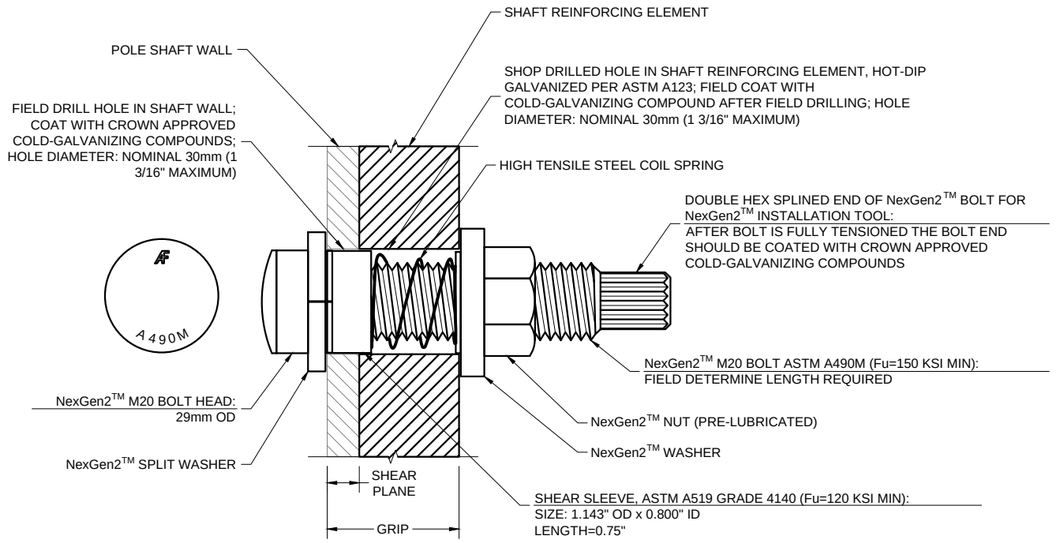
INSTALLED FORGBolt™ ASSEMBLY DETAIL 2

FORGBolt™ NOTE SHEET: A325/PC8.8 LANDSCAPE VERSION DATE 01/29/2015; Rev. 1.0 04/23/2015

NOTES:

1. ALL STRUCTURAL BOLTS SHALL BE INSTALLED AND TIGHTENED TO THE PRETENSIONED CONDITION ACCORDING TO THE REQUIREMENTS OF THE AISC 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 31, 2009.
2. ALL STRUCTURAL BOLTS SHALL BE INSPECTED ACCORDING TO THE REQUIREMENTS OF THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS', DEC. 31, 2009.

FORGBolt™		AISC Group A Material: ASTM A325 and PC8.8 (Tensile Stress, Fu = 102 ksi minimum)					
GROUP A		FORGBolt™ Size (mm)	Overall Length (inches)	Estimated Weight Each (lbs)	Grip Range (inch)	Comment	Color Code
FORGBolt™ A325 - PC8.8	1	135	5.31	1.3	3/8 to 1"	--	RED
	2	160	6.30	1.6	3/4 to 1-1/2"	--	GREEN
	3	195	7.68	1.9	1-1/4 to 2-1/4"	--	BLUE
	4	260	10.24	2.6	2" to 3-1/2"	Splice Bolt	YELLOW
	5	365	14.37	3.6	3-1/2" to 5-1/2"	Flange Jump Bolt	ORANGE
	6	440	17.32	4.3	5-1/2" ro 8-1/2"	Flange Jump Bolt	BLACK
DTI Note	Each Group A (A325/PC8.8) FORGBolt™ assembly shall have a 'Squirter' DTI that is compatible with a M20-PC8.8 bolt.						



NexGen2™ BOLT ASSEMBLY

SCALE: NTS

NEXGEN2 BLIND BOLT ASSEMBLY NOTES:

1. ALL SHOP AND FIELD DRILLED HOLES SHALL BE NOMINAL 30 MM DIAMETER. THE MAXIMUM HOLE DIAMETER PERMITTED IS 1-3/16"
2. NEXGEN2™ COMPLETE ASSEMBLY SHALL BE MAGNI 565 COATED PER ASTM F2833 AS APPROPRIATE.
3. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

FORGBolt™ Installation

Follow all Manufacturer/Distributer Recommendations for Installation, Tightening, and Inspection.

1. FIELD DRILL HOLES TO 30 MM DIAMETER.
2. SELECT CORRECT BOLT SIZE FOR INSTALLATION GRIP (REFER TO PLANS).
3. INSERT BOLT ASSEMBLY THROUGH HOLES IN SHAFT REINFORCING PLATES AND SEAT HARDENED WASHER W1 FLUSH AGAINST OUTSIDE OF PLATE.
4. HAND TIGHTEN NUT TO FINGER TIGHT.
5. TIGHTEN NUT TO PRETENSIONED CONDITION AND UNTIL DTI SHOWS PROPER INDICATION.
6. PROPERLY DOCUMENT AND INSPECT BOLT TIGHTENING PER PLAN REQUIREMENTS.

DISTRIBUTOR CONTACT:
PRECISION TOWER PRODUCTS
PHONE: **888-926-4857**
EMAIL: info@precisiontowerproducts.com
WEB: www.precisiontowerproducts.com

CONTAINS PROPRIETARY INFORMATION PATENT PENDING

BOLT HOLE NOTES:

1. ALL SHOP-DRILLED HOLES SHALL BE NOMINAL 30 MM DIAMETER. THE MAXIMUM SHOP-DRILLED HOLE DIAMETER PERMITTED IS 1-3/16".
2. ALL FIELD-DRILLED HOLES SHALL BE NOMINAL 30 MM DIAMETER. THE MAXIMUM FIELD-DRILLED HOLE DIAMETER PERMITTED IS 30 MM.

PREPARED BY:
FDH VELOCITEL
ENGINEERING INNOVATION
VELOCITEL, INC., d.b.a. FDH VELOCITEL
6521 MERIDIEN DRIVE RALEIGH, NC 27616
PHONE: 919-755-1012 FAX: 919-755-1031

PREPARED FOR:

CROWN CASTLE

STATE OF CONNECTICUT
DENNIS D. ABEL
No. 23247
LICENSED PROFESSIONAL ENGINEER

07/15/15

DENNIS D. ABEL, PE
CONNECTICUT LIC. NO. 23247

DRAWN BY:	RWC
CHECKED BY:	DMA
ENG APPV'D:	DDA

SUBMITTALS		
DATE	DESCRIPTION	REV
07/15/15	CONSTRUCTION	0

FDH PROJECT NUMBER:

15BTZC1400

SITE NAME:

SHELTON NE

SITE NUMBER:

842873

SITE ADDRESS:

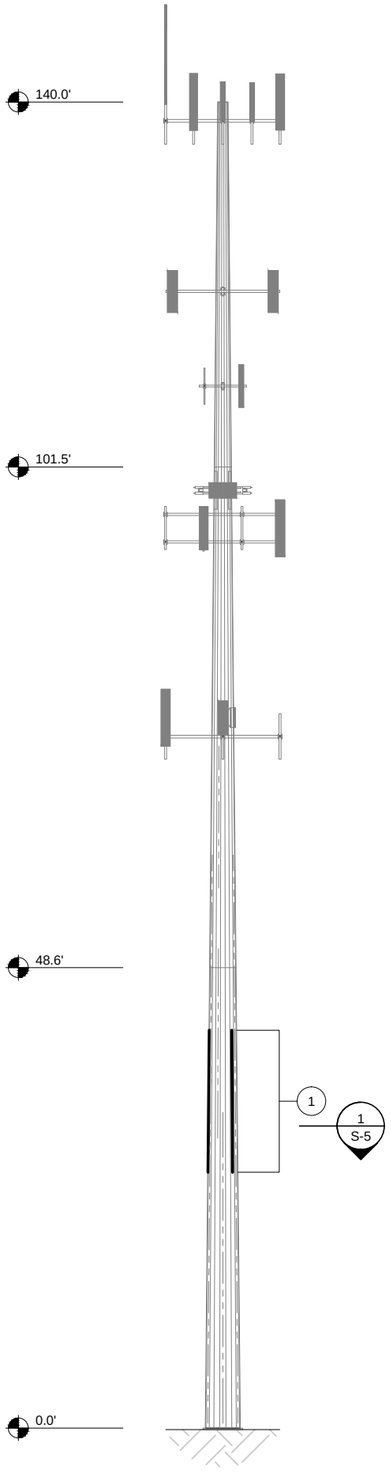
30 OLIVER TERRACE SHELTON, CT 06484

SHEET TITLE

FORGBOLT & NEXGEN2 SPECIFICATIONS AND TIGHTENING PROCEDURE

SHEET NUMBER

S-4



TOWER ELEVATION

SCALE: NTS

- CONTRACTOR SHALL VERIFY ALL APPURTENANCE CONDITIONS AND DIMENSIONS IN RELATIONSHIP TO THIS MODIFICATION. APPURTENANCES MAY NEED TO BE TEMPORARILY REMOVED OR MOVED DURING THE INSTALLATION OF THIS MODIFICATION. CONTRACTOR SHALL IMMEDIATELY REPORT ANY AND ALL DISCREPANCIES TO THE EOR AND CROWN CASTLE PRIOR TO PROCEEDING WITH THE WORK.
- ALL MODIFICATIONS TO BE INSTALLED CONTINUOUSLY THROUGH EXISTING EQUIPMENT. ALL EXISTING EQUIPMENT NOT TO BE DAMAGED OR TAKEN OFF AIR DURING INSTALLATION.
- SEE STRUCTURAL ANALYSIS REPORT FOR EXISTING ANTENNA LOADING.
- CONTRACTOR TO FIELD VERIFY DIMENSIONS & LOCATIONS OF PROPOSED MODIFICATIONS PRIOR TO STEEL FABRICATION.

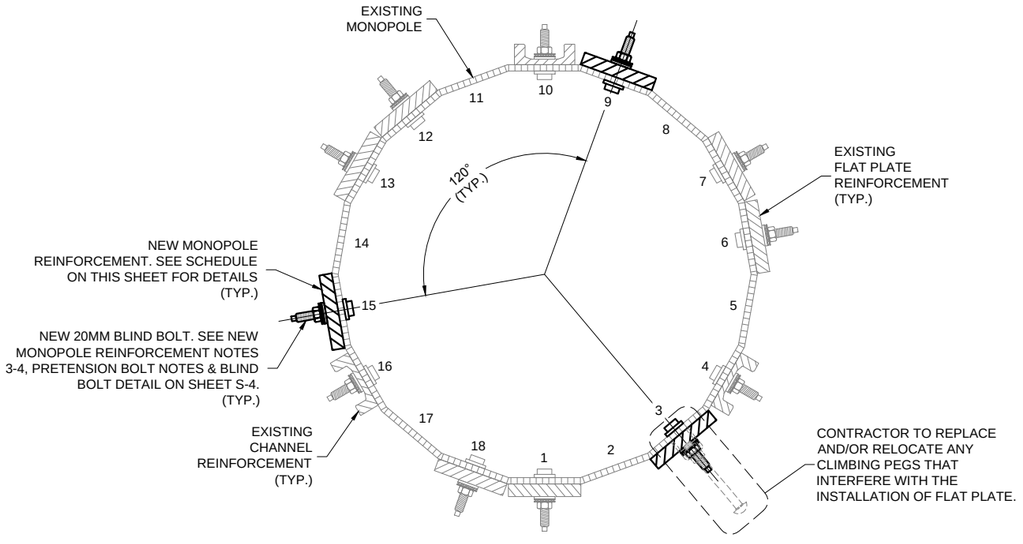
TOWER MODIFICATION SCHEDULE

NO.	TYPE OF MODIFICATION	BTM. ELEV.	TOP ELEV.	SHEET
1	INSTALLATION OF NEW MONOPOLE REINFORCEMENT.	27.0'±	42.0'±	S-5

CROWN CASTLE REINFORCEMENT INSTALLATION SCHEDULE

ELEVATION**	QTY.	FLAT NUMBER	CCI-65FP PLATE (65 KSI)	MAX. STITCH BOLT SPACING	BLIND BOLT QUANTITY	STEEL WEIGHT (LBS.)
27'-0"± TO 42'-0"±	3	3 - 9 - 15	CCI-SFP-06010015	1'-4"	24*	306.0*
				TOTAL	72	918.0

*QUANTITY SHOWN IS FOR (1) REINFORCEMENT PLATE.



MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

1 / S-5 SECTION

NTS

PREPARED BY:

FDH VELOCITEL
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6521 MERIDIEN DRIVE RALEIGH, NC 27616
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SUBMITTALS

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SHELTON NE

SITE NUMBER:

842873

SITE ADDRESS:

30 OLIVER TERRACE
SHELTON, CT 06484

SHEET TITLE

MODIFICATION SCHEDULE & FLAT PLATE INSTALLATION DETAILS

SHEET NUMBER

S-5

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

T-Mobile Existing Facility

Site ID: CTFF531A

Shelton_RT 8- AT&T
30 Oliver Terrace
Shelton, CT 06484

August 10, 2015

EBI Project Number: 6215002702

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	59.27 %

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

EBI Consulting
environmental | engineering | due diligence

August 10, 2015

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

Emissions Analysis for Site: **CTFF531A – Shelton_RT 8- AT&T**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **30 Oliver Terrace, Shelton, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **30 Oliver Terrace, Shelton, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

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

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

3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

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

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

7) The antennas used in this modeling are the **RFS APX16PV-16PVL & RFS APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APX16PV-16PVL & RFS APX16DWV-16DWVS-E-A20** have a maximum gain of **16.3 dBd** at their main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antenna mounting height centerline of the proposed antennas is **120 feet** above ground level (AGL).

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

All calculations were done with respect to uncontrolled / general public threshold limits.

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APX16PV-16PVL	Make / Model:	RFS APX16PV-16PVL	Make / Model:	RFS APX16PV-16PVL
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	120	Height (AGL):	120	Height (AGL):	120
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	2	Channel Count	2	# PCS Channels:	2
Total TX Power:	120	Total TX Power:	120	# AWS Channels:	120
ERP (W):	5,118.95	ERP (W):	5,118.95	ERP (W):	5,118.95
Antenna A1 MPE%	1.42	Antenna B1 MPE%	1.42	Antenna C1 MPE%	1.42
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APX16DWV-16DWVS	Make / Model:	RFS APX16DWV-16DWVS	Make / Model:	RFS APX16DWV-16DWVS
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	120	Height (AGL):	120	Height (AGL):	120
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	5,118.95	ERP (W):	5,118.95	ERP (W):	5,118.95
Antenna A2 MPE%	1.42	Antenna B2 MPE%	1.42	Antenna C2 MPE%	1.42
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	120	Height (AGL):	120	Height (AGL):	120
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.51	Antenna B3 MPE%	0.51	Antenna C3 MPE%	0.51

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile	**10.03**
On Site Measurements per CSC MPE database	49.24 %
Site Total MPE %:	**59.27 %**

T-Mobile Sector 1 Total:	3.34 %
T-Mobile Sector 2 Total:	3.34 %
T-Mobile Sector 3 Total:	3.34 %
Site Total:	59.27 %

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Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector 1:	3.34 %
Sector 2:	3.34 %
Sector 3 :	3.34 %
T-Mobile Total:	10.03 %
Site Total:	59.27 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **59.27%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan
RF Engineering Director

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21 B Street
Burlington, MA 01803