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

December 27, 2018

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

RE: **Request of T-Mobile Northeast LLC for an Order to Approve the Shared Use of an Existing Tower at 24 Dinglebrook Lane, Newtown, CT**

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes ("C.G.S.") §16-50aa, as amended, T-Mobile Northeast LLC ("T-Mobile") hereby requests an order from the Connecticut Siting Council ("Council") to approve the shared use by T-Mobile of an existing telecommunication tower at 24 Dinglebrook Lane, Newtown, CT (the "Property") The existing 149-foot tower is owned by Crown Castle International Corp. ("Crown Castle"). The underlying property is owned by Genesis TT, LLC.[1] T-Mobile requests that the Council find that the proposed shared us of the Crown Castle tower satisfies the criteria of C.G.S. §16-50aa and issue an order approving the proposed shared us. A copy of this filing is being sent to Daniel Roesenthal, Newtown's First Selectman; George Benson, Newtown's Direector of Planning, as well as the property owners.

Background

The existing Crown Castle facility consists of a 149-foot monopole tower on 0 -acre parcel along the north east side of Dinglebrook Lane. AT&T maintains antennas at the 148-foot level, Verizon currently maintains antennas at the 140-foot level. AT&T's equipment is located to south of the tower, Verizon's equipment shelter is located to the north.

T-Mobile is licensed by the Federal Communications Commission ("FCC") to provide wireless services throughout the State of Connecticut. T-Mobile and Crown Castle have agreed to the proposed shared use of the 124 Dinglebrook Lane tower pursuant to mutually acceptable terms and conditions. Likewise, T-Mobile and Crown Castle have agreed to the proposed installation of equipment cabinets on the ground on the south side of the tower. Crown Castle has authorized T-Mobile to apply for all necessary permits and approvals that may be required to share the existing tower.

1. **Warranty Deed included to show proof of ownership as the property recently sold. Property record included as an address reference alone.**

T-Mobile proposes to install eight (8) panel antennas, one (1) MW dish antenna, eight (8) RRUs, four (4) hybrid fiber lines, and (1) coax line.
In addition, T-Mobile will install a diesel fueled 220 gallon 25 KW DC back-up generator within a 10'x 15' concrete pad. Included in the Construction Drawings are T-Mobile's project specifications for locations of all proposed site improvements. The Construction Drawings also contain specifications for T-Mobile's proposed antennas and backup generator.

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, "if the Council finds that het proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such a shared use." T-Mobile respectfully submits that the shared use of the tower satisfies these criteria.

A. Technical Feasibility. The existing Crown Castle tower is structurally capable of supporting T-Mobile's proposed improvements. The prosed shared use of this tower is, therefore, technically feasible. A Feasibility Structural Analysis Report ("Structural Report") prepared for this project confirms that this tower can support T-Mobile's proposed loading. A copy of the Structural Report has been included in this application.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue order approving the shared use of an existing tower such as the Crown Castle tower. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. In addition, § 16-50x(a) directs the Council to "give such consideration to the other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use of the Crown Castle tower would have a minimal environmental effect for the following reasons:

1. The proposed installation of eight (8) panel antennas, one (1) MW dish antenna, eight (8) RRUs, four (4) hybrid fiber lines, and (1) coax line will have no visual impact on the area of the tower. T-Mobile's cabinet and generator would be installed within an expanded facility compound. T-Mobile's shared use of this tower therefore will not cause any significant change or alteration in the physical or environmental characteristics of the existing site.

2. Operation of T-Mobile's antennas at this site would not exceed the RF emissions standard adopted by the Federal Communications Commission ("FCC"). Included in the EME report of this filing are the approximation tables that demonstrate that T-Mobile's proposed facility will operate well within the FCC RF emissions safety standards.

3. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or sanitary facilities. After construction is complete the proposed installations would not generate any increased traffic to the Crown Castle facility other than periodic maintenance. The proposed shared use of the Crown Castle tower, would, therefore, have a minimal environmental effect, and is environmentally feasible.

D. Economic Feasibility. As previously mentioned, T-Mobile has entered into an agreement with Crown Castle for the shared use of the existing facility subject to mutually agreeable terms. The proposed tower sharing is, therefore, economically feasible. (Please see included authorization.)

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting T-Mobile's full array eight (8) panel antennas, one (1) MW dish antenna, eight (8) RRUs, four (4) hybrid fiber lines, (1) coax line and all related equipment. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing Crown Castle tower.

Conclusion

For the reasons discussed above, the proposed shared use of the existing Crown Castle tower at 300 Governors Highway satisfies the criteria state in C.G.S. §16-50aa and advances the General Assembly's and the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, respectfully requests that the Council issue an order approving the prosed shared use.

Sincerely,

William Stone
Real Estate Specialist
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
518-373-3543
William.stone@crowncastle.com

Attachments:

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)

Copies to:

Daniel Rosenthal, First Selectman
Town of Newtown
3 Primrose St
Newtown, CT 06470

George Benson, Director of Planning
Town of Newtown
3 Primrose St
Newtown, CT 06470

Genesis TT, LLC
1001 3rd Ave West
Suite 420
Bradenton, FL 34205

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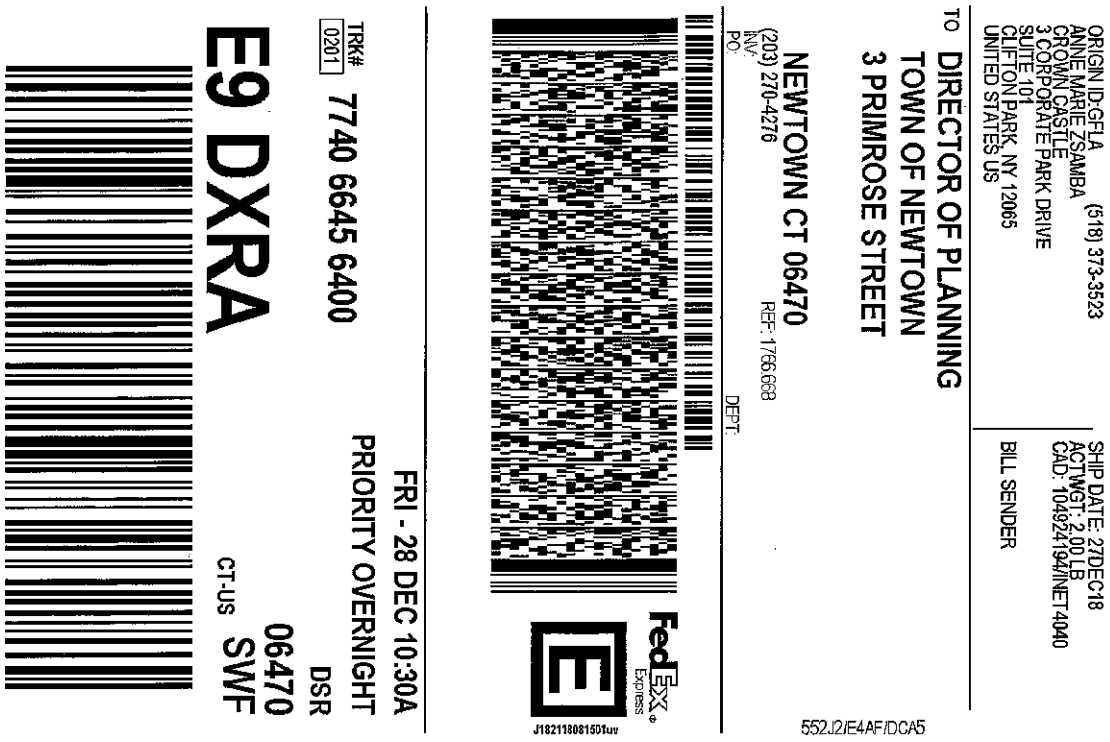

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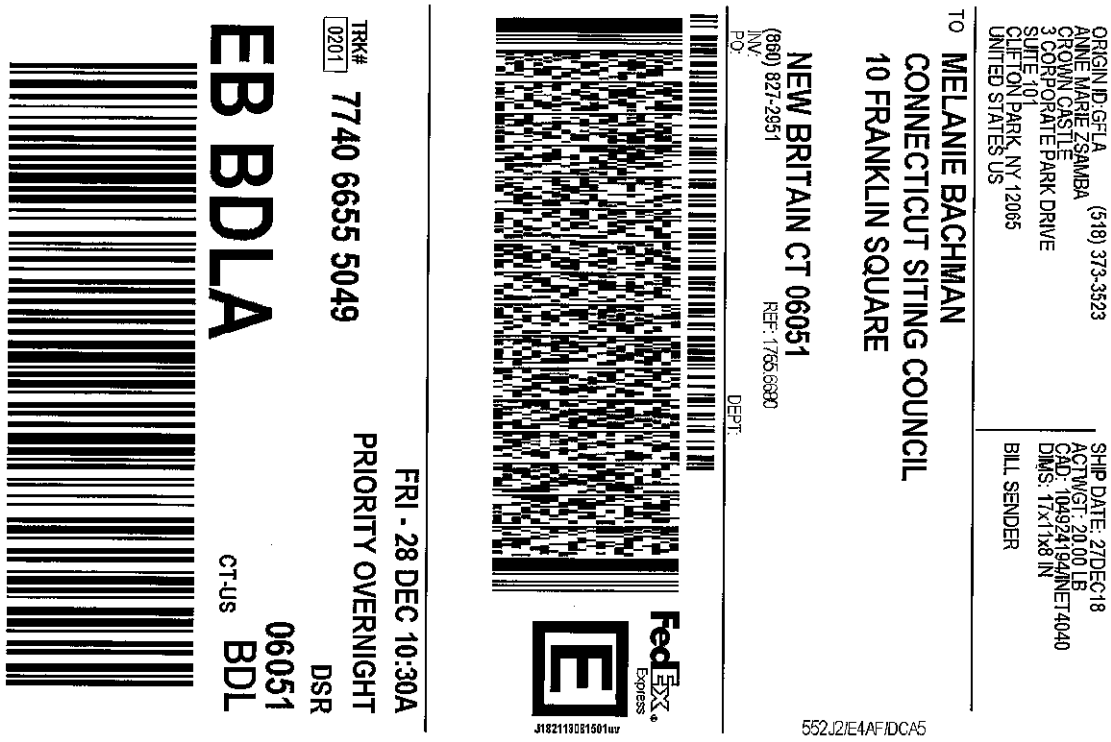

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Transcend Wireless

10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

Site ID: CTFF013A
Site Address: 24 Dinglebrook Lane, Newtown, CT 06470

To Whom It May Concern,

Genesis TT, LLC, does hereby authorize T-Mobile and its authorized contractors/agents to act as "Applicant" in the processing of all applications, permits, and other related activities associated with the zoning, permitting and construction of telecommunications equipment and antennas for the proposed wireless communications facility described above.

By Property Owner: Genesis TT, LLC
By: Tarpon Towers II, LLC
Its: Sole Manager

Signature: _____

Name: Brett Buggeln

Title: Chief Operating Officer

Date: 11/30/18

Doc ID: 004010450005 Type: LAN
BK 1120 PG 239-243

After recording return to:
Chipman Mazzucco Emerson, LLC
44 Old Ridgebury Road, Suite 320
Danbury, CT 06810

WARRANTY DEED

TO ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME, GREETING:

KNOW YE, That, LINDA LUNDGREN of Cypress, Texas, **KARL LUNDGREN** of Newtown, Connecticut, and **BARRY A. LUNDGREN** of Amherst, Virginia (hereinafter referred to collectively as "Grantor") for the consideration of **SIX HUNDRED TWENTY THOUSAND ($620,000.00) DOLLARS**, received to their full satisfaction of **GENESIS TT, LLC,** a Delaware Limited Liability Company with an office located at 1001 3rd Avenue West, Suite 420, Bradenton, Florida, (hereinafter referred to as "Grantee") does hereby give, grant, bargain, sell and confirm unto the said Grantor forever, that certain piece and parcel of land together with buildings and improvements thereon located in the Town of Newtown, County of Fairfield and State of Connecticut, commonly known as **24 Dinglebrook Lane,** and more particularly bounded and described on Schedule A, attached hereto and made a part hereof.

Subject to:

1. A Memorandum of Lease by Barry Lundgren, Karl Lundgren and Linda Lundgren and New Cingular Wireless PCS dated July 29, 2008 and recorded in Volume 934 at Page 41 of the Newtown Land Records. As amended by a First Amendment to Memorandum of Lease dated September 10, 2010 and recorded in Volume 972 at Page 688 of the Newtown Land Records.

2. Electric Distribution Easement in favor of the Connecticut Light and Power Company dated October 29, 2010 and recorded in Volume 976 at Page 197 of the Newtown Land Records.

3. Telephone Distribution Easement in favor of The Southern New England Telephone Company dba AT & T Connecticut dated October 29, 2010 in Volume 976 ay Page 204 of the Newtown Land Records.

4. Taxes on the Grand List of 2017, hereafter due and payable, which taxes the Grantees, by the acceptance of this deed assume and agree to pay.

TO HAVE AND TO HOLD the above granted and bargained premises, with the appurtenances thereof, unto the said Grantee forever, for its own proper use and behoof, and, the said Grantor does for itself, its successors and assigns covenant with the said Grantee, that at and until the ensealing of these presents, it is well seized of the premises, as a good indefeasible estate in FEE SIMPLE; and it has good right to bargain and sell the same in manner and form as

STATE OF CONNECTICUT
$ 1750.00 Conveyance Tax Received
Debbie Aurelia Halstead
Town Clerk of Newtown

$ 155D.00 Conveyance Tax Received
Debbie Aurelia Halstead
Town Clerk of Newtown

is above written; and that the same is free from all encumbrances whatsoever, except as above stated.

AND FURTHERMORE, that the said Grantor does by these presents bind themselves and their successors and assigns forever to WARRANT AND DEFEND the above granted and bargained premises to the said Grantee against all claims and demands whatsoever, except as above stated.

IN WITNESS WHEREOF, LINDA LUNDGREN, KARL LUNDGREN and BARRY A. LUNDGREN, have hereunto set their hands and seals.

Signed, Sealed and Delivered
in the presence of:

GRANTOR:

Linda Lundgren

STATE OF TEXAS)
) ss.
COUNTY OF Harris)

On this the 29th day of **November, 2018,** before me, the undersigned officer, personally **Linda Lundgren,** to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purposes therein contained.

In Witness Whereof, I have hereunto set my hand.

Notary Public

Signed, Sealed and Delivered
in the presence of:

E Lavert
E LAVERTY
Laurelyn Gordon

GRANTOR:

Karl Lundgren

STATE OF CONNECTICUT)
) ss. Norwalk
COUNTY OF Fairfield)

On this the 25th day of **November, 2018**, before me, the undersigned officer, personally **Karl Lundgren**, to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In Witness Whereof, I have hereunto set my hand.

Notary Public
My Commission Expires: 11/30/21

RICARDO COELHO
Notary Public
Connecticut
My Commission Expires Nov 30, 2021

Signed, Sealed and Delivered
in the presence of:

GRANTOR:

Barry A. Lundgren

STATE OF VIRGINIA)
) ss.
COUNTY OF)

On this the 29th day of **November, 2018**, before me, the undersigned officer, personally **Barry A. Lundgren,** to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In Witness Whereof, I have hereunto set my hand.

JULIA SEEWALD
NOTARY PUBLIC
REG. #7756068
MY COMMISSION EXPIRES
11/30/2022
COMMONWEALTH OF VIRGINIA

Notary Public

SCHEDULE A

That certain tract or parcel of land situated in Hanover District (so-called) in the Town of Newtown, County of Fairfield and State of Connecticut, bounded and described as follows:

Starting at an iron pipe in the ground, at the Southwest corner abutting the highway known as Dingle Brook Lane and abutting the land of Glenn Merry, thence along abutting land of said Glenn Merry North 51° 58' East 187.30 feet, thence North 59° 46' 30" East 329.04 feet to a large pointed stone at foot of a twelve inch white oak tree, thence North 69° 38' 40" East 265.62 feet to a square stone monument, thence South 81° 27' 30" East 180.22 feet to a painted square on ledge, thence along abutting land of Maynard and Beatrice McLaughlin, North 26° 28' 50" East 132.95 feet to drill hole on ledge, thence North 01° 54' 20" East 164.02 feet to an iron pipe at land of Ralph and Lillian Zeno, thence along abutting land of said Zenos, North 68° 30' 50" West 81.0 feet, thence along abutting land now or formerly of Lester and Bessie Reynolds, the following courses and distances: North 61° 22' 25" West 135.24 feet, thence North 38° 30' West 48.50 feet, thence North 18° 16' West 109.69 feet, thence North 21° 49' West 71.60 feet, thence North 26° 02' 10" West 197.55 feet, thence North 13° 16' West 111.41 feet, thence North 03° 26' West 58.60 feet, thence North 12° 21' 30" West 40.88 feet, thence North 28° 07' 20" West 228.43 feet, thence North 35° 06' West 161.61 feet to an eighteen inch Birch tree, thence South 18° 03' West 158.48 feet to a stone wall, thence South 02° 39' 20" West 277.02 feet, thence South 51° 25' West 238.28 feet, thence South 55° 52' 40" West 90.85 feet, thence South 44° 46' 20" West 170.84 feet, thence South 38° 59' 40" West 55.49 feet, thence South 50° 54' 20" West 81.57 feet to the highway known as Dingle Brook Lane, thence along said highway, South 16° 31' East 242.34 feet, thence South 19° 28' East 165.83 feet, thence South 11° 30' East 208.89 feet, thence South 20° 52' East 82.66 feet, thence South 33° 14' East 224.62 feet, thence South 25° 6' East 49.59 feet to point of beginning and containing 24.61 acres.

Being the same property as described in a survey entitled "ALTA/NSPS Land Title Survey prepared for Genesis TT, LLC – 24 Dinglebrook Lane, Newtown, Connecticut" Scale: 1" = 60' dated November 14, 2018 Brautigam Land Surveyors, P.C., 90 South Main Street, Newtown, Connecticut 06470 - telephone (203) 270-7810.

Received for Record at Newtown, CT
On 12/05/2018 At 4:00:24 pm
Dessie Cunalia Holstead

Town of Newtown, CT

Property Listing Report

Map Block Lot 22-3-4-C

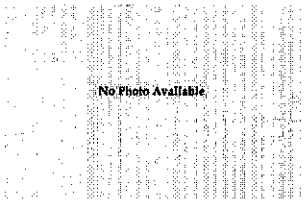
Account 00174600C

Property Information

Property Location	24 DINGLEBROOK LANE
Owner	LUNDGREN LINDA LIFE USE
Co-Owner	LINDA, KARL & BARRY LUNDGREN TEN
Mailing Address	17918 EMROSE LANE CYPRESS TX 77429
Land Use	4310 CELL SITE
Land Class	I
Zoning Code	R-2
Census Tract	
Sub Lot	

Neighborhood	
Acreage	0
Utilities	Well,Septic
Lot Setting/Desc	
Survey Map	
TC Survey Numbers	

Photo



Sketch

Primary Construction Details

Year Built		Bedrooms		Exterior Walls	
Stories		Full Bathrooms		Interior Walls	
Building Style		Half Bathrooms		Heating Type	
Building Use		Bath Style		Heating Fuel	
Building Condition		Kitchen Style		AC Type	
Floors		Roof Style		Gross Bldg Area	
Total Rooms		Roof Cover		Total Living Area	

Report Created On 12/6/2018

Town of Newtown, CT

Property Listing Report | **Map Block Lot** 22-3-4-C | **Account** 00174600C

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings		
Extras		
Outbuildings		
Land		
Total		

Outbuilding and Extra Items

Type	Description
Cell Tower	1 Units
Cellular Shed	400 S.F.
Cellular Shed	360 S.F.
Cell Tower	1 Units
Shed	140 S.F.
Fence	250 L.F.

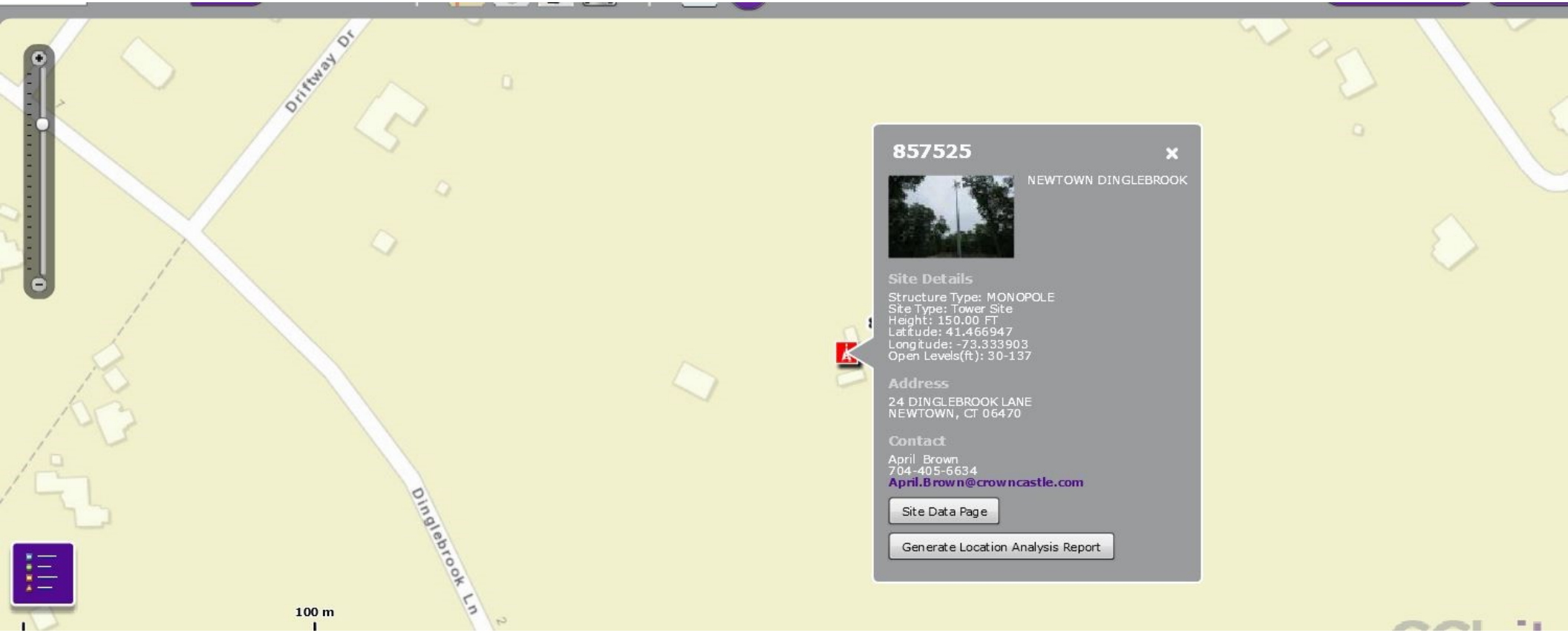
Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
LUNDGREN LINDA LIFE USE	1112/ 725	6/4/2018	0
LUNDGREN PAUL R EST	0857/0723	12/25/2009	

Report Created On 12/6/2018


Driftway Dr
Dinglebrook Ln
857525
NEWTOWN DINGLEBROOK
Site Details
Structure Type: MONOPOLE
Site Type: Tower Site
Height: 150.00 FT
Latitude: 41.466947
Longitude: -73.333903
Open Levels(ft): 30-137
Address
24 DINGLEBROOK LANE
NEWTOWN, CT 06470
Contact
April Brown
704-405-6634
April.Brown@crowncastle.com
Site Data Page
Generate Location Analysis Report
100 m

DOCKET NO. 376 - New Cingular Wireless PCS, LLC (AT&T) application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 24 Dinglebrook Lane, Newtown, Connecticut.	}	Connecticut Siting Council August 27, 2009

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to New Cingular Wireless PCS, LLC (AT&T), hereinafter referred to as the Certificate Holder, for a telecommunications facility located at 24 Dinglebrook Lane, Newtown, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the Certificate Holder and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level. The height at the top of the Certificate Holder's antennas shall not exceed 152-foot 6-inches feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Newtown for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road including its possible relocation, utility line, and landscaping; and
    b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Newtown public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.

8. Not later than 45 days after the installation of the monopole, at least one carrier's antennas shall be installed on the tower.

9. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Newtown. Any proposed modifications to this Decision and Order shall likewise be so served.

10. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

11. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Newtown Bee.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
New Cingular Wireless PCS, LLC (AT&T)	Christopher B. Fisher, Esq. Cuddy & Feder LLP 445 Hamilton Avenue, 14th Floor White Plains, NY 10601 AT&T 500 Enterprise Drive Rocky Hill, CT 06067 Attention: Michele Briggs
Intervenor	**Its Representative**
Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597

CROWN CASTLE

T-Mobile

NORTHEAST, LLC.

COVERAGE STRATEGY

CROWN SITE NAME:

NEWTOWN DINGLEBROOK

SITE ID #: 857525

APP ID #: 428769

T-MOBILE SITE I.D. NUMBER:

CTFF013A

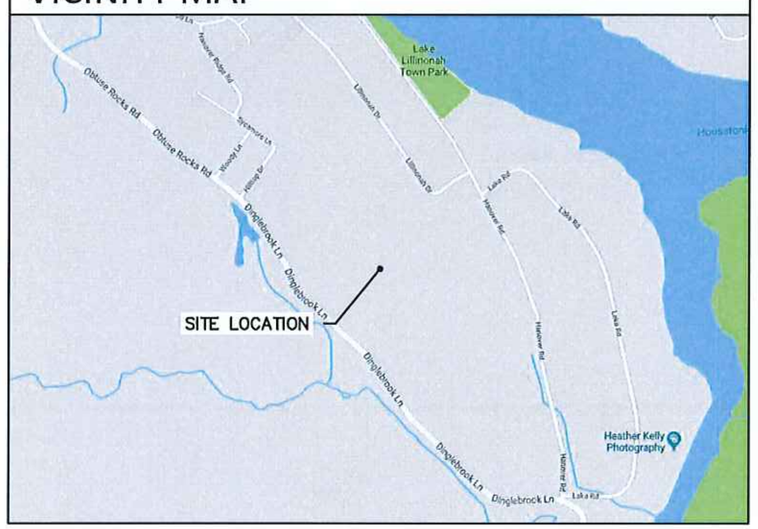
T-MOBILE SITE NAME:

CTF013A

CONFIGURATION:

4Sec-6797DB2

VICINITY MAP



SITE DIRECTIONS

DIRECTIONS:

TAKE I-84 TO EXIT 9 TO TURN LEFT ONTO CT-25 N/HAWLEYVILLE RD AND FOLLOW FOR 0.9± MILES. TURN RIGHT ONTO CURRITUCK RD AND FOLLOW FOR 0.5± MILES. TURN LEFT ONTO BUTTERFIELD RD AND FOLLOW FOR 2.0± MILES. TURN LEFT ONOT HANOVER RD AND FOLLOW FOR 1.0± MILES. CONTINUE ONTO DINGLBROOK LN AND FOLLOW FOR 0.6± MILES. THE SITE WILL BE ON THE RIGHT.

PROJECT SUMMARY

T-MOBILE SITE NUMBER:	CTFF013A
SITE ADDRESS:	24 DINGLEBROOK LANE NEWTOWN, CT 06470
MUNICIPALITY:	TOWN OF NEWTOWN
COUNTY:	FAIRFIELD
APPLICANT:	T-MOBILE NORTHEAST LLC. 4 SYLVAN WAY PARSIPPANY, NJ 07054
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	150'±
ANTENNA RAD CENTER:	128'±
LATITUDE: (NAD 83)	41° 28' 1.01" N
LONGITUDE: (NAD 83)	73° 20' 2.05" W
GRADE ELEVATION:	440'± AMSL
CONSTRUCTION MANAGER:	CROWN CASTLE 3 CORPORATE PARK DR. SUITE 101 CLIFTON PARK, NY 12065
CONTACT: PHONE:	BILL WOLFF (603) 894-5019
PROJECT MANAGER:	CROWN CASTLE 3 CORPORATE PARK DR. SUITE 101 CLIFTON PARK, NY 12065
CONTACT: PHONE:	WILL STONE (518) 373-3543
ENGINEER:	TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. 36 BRITISH AMERICAN BLVD SUITE 101 LATHAM, NY 12110
CONTACT: PHONE:	STEVE MATTHEWS (518) 783-1630

APPLICABLE CODES

DESIGN CRITERIA:

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

1. 2016 CT STATE BUILDING CODE (IBC 2012)
2. ACCESSIBILITY CODE ADA 2015. BASED ON ICC/ANSI A117.1-LATEST EDITION
3. 2014 NATIONAL ELECTRIC CODE
4. FIRE/LIFE SAFETY CODE - IFC 2015
5. ENERGY CODE IECC 2012

811 DigSafe

SHEET INDEX

SHEET NO	DESCRIPTION	REV NO	REVISION DATE
T-1	TITLE SHEET	1	11/30/18
GN-1	GENERAL NOTES	1	11/30/18
GN-2	GENERAL NOTES	1	11/30/18
A-1	SITE PLAN	1	11/30/18
A-2	ELEVATION & ANTENNA PLAN	1	11/30/18
A-3	ANTENNA & COAX SCHEDULE	1	11/30/18
A-4	ANTENNA & MOUNTING DETAILS	1	11/30/18
A-5	ANTENNA & MOUNTING DETAILS	1	11/30/18
A-6	DETAILS	1	11/30/18
A-7	DETAILS	1	11/30/18
A-8	FOUNDATION PLAN & DETAILS	1	11/30/18
E-1	ELECTRICAL DETAILS	1	11/30/18
E-2	ELECTRICAL DIAGRAMS & DETAILS	1	11/30/18
G-1	GROUNDING PLAN & NOTES	1	11/30/18
G-2	GROUNDING DETAILS & NOTES	1	11/30/18

THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL ITEMS HAVE BEEN ADDRESSED AND EACH OF THE DRAWINGS HAS BEEN REVISED AND ISSUED "FOR CONSTRUCTION".

PROJECT SCOPE OF WORK

THE PROPOSED COLO WORK CONSISTS OF:

- INSTALL (1) PROPOSED T-MOBILE CONCRETE EQUIPMENT PAD
- INSTALL (2) PROPOSED T-MOBILE EQUIPMENT CABINETS ON NEW EQUIP. PAD
- INSTALL (1) PROPOSED T-MOBILE DIESEL GENERATOR
- INSTALL (1) PROPOSED T-MOBILE DISH ANTENNA & (1) COAX LINE
- INSTALL (8) PROPOSED T-MOBILE PANEL ANTENNAS
- INSTALL (4) PROPOSED T-MOBILE RRUS 4449
- INSTALL (4) PROPOSED T-MOBILE RRUS 2217
- INSTALL (4) PROPOSED T-MOBILE 6x12 HYBRID CABLES
- INSTALL (1) PROPOSED T-MOBILE ANTENNA PLATFORM MOUNT & HANDRAILS

CONFIGURATION

4Sec-6797DB2

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

CROWN CASTLE
3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

T-Mobile
NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

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WORK ORDER NUMBER	DRAWN BY
9166.46	TLS

NO.	DATE	ISSUE
0	10/12/18	FOR PERMIT
1	11/30/18	PER COMMENTS

RELEASED BY	DATE

STATE OF CONNECTICUT EDWARD N. IAMICELI 28473 LICENSED PROFESSIONAL ENGINEER

0 1 2 3
ORIGINAL SIZE IN INCHES

CROWN SITE INFORMATION

SITE ID #: 857525
APP ID #: 428769
SITE NAME: NEWTOWN DINGLEBROOK

T-MOBILE SITE INFORMATION

SITE ID #: CTFF013A
SITE NAME: CTFF013A

SITE ADDRESS

24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

LEGEND

- PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING BRUSH LINE
- EXISTING TREE LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL DRIVE
- EXISTING FENCE
- EXISTING UNDERGROUND UTILITIES
- EXISTING OVERHEAD WIRES
- EXISTING UTILITY POLE
- EXISTING IRON ROD/PIPE
- EXISTING CENTERLINE OF DITCH
- EXISTING STORM SEWER
- EXISTING CATCH BASIN
- PROPOSED LEASE LINE
- PROPOSED EASEMENT LINE
- PROPOSED CHAINLINK FENCE
- PROPOSED SILT FENCE
- PROPOSED UNDERGROUND UTILITIES
- PROPOSED FUTURE U/G UTILITIES
- TREE TO BE REMOVED
- TREE TO REMAIN
- PROPOSED LIMITS OF CLEARING

CONCRETE NOTES

1. DESIGN AND CONSTRUCTION OF ALL CONCRETE SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" ACI 318.
2. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3500 PSI.
3. CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C150 – TYPE I OR II.
4. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60, "DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT".
5. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, "WELDED STEEL WIRE FABRIC PLAIN FOR CONCRETE REINFORCEMENT".
6. CONCRETE WORK AND MATERIALS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 301.
7. SUBMIT CONCRETE MIX DESIGN TO THE DESIGN ENGINEER FOR APPROVAL NOT LESS THAN 3 DAYS PRIOR TO CONSTRUCTION. MIX DESIGN SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF CONCRETE.
8. READY MIX CONCRETE SHALL COMPLY WITH ACI 304 AND ASTM C94 WITH A MAXIMUM WATER–CEMENT RATIO OF 0.50. TIME BETWEEN INTRODUCTION OF WATER AND THE PLACEMENT OF CONCRETE SHALL NOT EXCEED 1–1/2 HOURS.
9. CONCRETE AGGREGATES SHALL BE NORMAL WEIGHT, CONFORMING TO ASTM C33. MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 3/4".
10. CHLORIDE–CONTAINING ADMIXTURES SHALL NOT BE USED.
11. CONCRETE SLUMP SHALL NOT EXCEED 5 INCHES UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER. SLUMP SHALL BE DETERMINED IN ACCORDANCE WITH ASTM C143.
12. PROVIDE AIR ENTRAINMENT IN EXTERIOR EXPOSED CONCRETE TO OBTAIN TOTAL AIR CONTENT OF 5% ± 1% IN ACCORDANCE WITH ACI 301.
13. FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, CONCRETE COVER FOR REINFORCING SHALL BE: 3" FOR ALL BARS
    FOR CONCRETE EXPOSED TO EARTH OR WEATHER, MINIMUM COVER SHALL BE:
    2" FOR #6 AND LARGER BARS
    1–1/2" FOR #5 AND SMALLER BARS OR WIRE FABRIC
14. LAP SPLICES FOR REINFORCING SHALL BE IN ACCORDANCE WITH ACI 318.12 AND STANDARD HOOKS SHALL CONFORM TO ACI 318.7.
15. WELDING OF REINFORCING STEEL OR THE APPLICATION OF HEAT TO FACILITATE BENDING IS SPECIFICALLY PROHIBITED.
16. ALL REINFORCING, ANCHOR BOLTS, DOWELS, EMBEDDED STEEL, INSERTS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
17. PROVIDE A 3/4" CHAMFER AT ALL EXPOSED EDGES OF CONCRETE, UNLESS OTHERWISE NOTED.
18. PROVIDE NOT LESS THAN 48 HOURS NOTICE TO THE FIELD REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.
19. WHEN AMBIENT TEMPERATURE IS BELOW 50 DEGREES F, CONCRETE MATERIALS AND PLACEMENT SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 306R "COLD WEATHER CONCRETING".
20. WHEN AMBIENT TEMPERATURE IS ABOVE 90 DEGREES F, CONCRETE MATERIALS AND PLACEMENT SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 305R "HOT WEATHER CONCRETING".
21. REMOVE ALL LOOSE MATERIAL AND DEBRIS FROM COMPACTED SUBGRADE SURFACE PRIOR TO PLACING CONCRETE. CONCRETE SHALL NOT BE PLACED ON FROZEN SUBGRADE.
22. CONCRETE SHALL BE SUFFICIENTLY CONSOLIDATED BY VIBRATION TO REMOVE AIR VOIDS. VIBRATION SHALL BE IN ACCORDANCE WITH ACI 309 "STANDARD PRACTICE FOR CONSOLIDATION OF CONCRETE".
23. THE TOP OF ALL CONCRETE SURFACES SHALL BE TRUE AND LEVEL WITH A SMOOTH FLOAT FINISH, UNLESS OTHERWISE NOTED. ALL DIMENSIONS SHALL BE WITHIN ± 1/8 INCH.
24. TESTING OF CONCRETE SHALL BE PERFORMED IN ACCORDANCE WITH ACI 318. REQUIRED, TESTING OF CONCRETE SHALL BE PERFORMED UNDER THE DIRECTION OF THE CONSTRUCTION MANAGER.
25. THROUGHOUT CONSTRUCTION, THE CONCRETE WORK SHALL BE ADEQUATELY PROTECTED AGAINST DAMAGE DUE TO EXCESSIVE LOADING, CONSTRUCTION EQUIPMENT, MATERIALS OR METHODS, ICE, RAIN, OR SNOW. PROTECT CONCRETE FROM EXCESSIVE HEAT AND FREEZING FOR NOT LESS THAN 14 DAYS.
26. DRYING OUT OF CONCRETE, ESPECIALLY DURING THE FIRST 24 HOURS, SHALL BE CAREFULLY GUARDED AGAINST. ALL SURFACES SHALL BE MOIST CURED OR PROTECTED USING A MEMBRANE CURING AGENT CONFORMING TO ASTM C309 APPLIED AS SOON AS FORMS ARE REMOVED. IF MEMBRANE CURING AGENT IS USED, EXERCISE CARE NOT TO DAMAGE SURFACE.
27. CONTRACTOR SHALL BRING TO THE IMMEDIATE ATTENTION OF THE CONSTRUCTION MANAGER ANY DEFECTS OR ERRORS IN THE WORK, PRIOR TO MAKING REPAIRS. CONTRACTOR SHALL OBTAIN PERMISSION FROM THE CONSTRUCTION MANAGER TO PATCH OR OTHERWISE REPAIR DEFECTS OTHER THAN MINOR HONEYCOMBING.
28. FABRIC AND STONE SHALL BE INSTALLED THE ENTIRE LENGTH AND WIDTH BENEATH THE PLATFORM.
29. JOINT FILLER SHALL BE PREFORMED RESILIENT BITUMINOUS EXPANSION JOINT FILLER CONFORMING TO ASTM D1751.
30. EXTERIOR WALKING SURFACES SHALL RECEIVE A BROOM FINISH.
31. GROUT SHALL BE NON METALLIC, NON SHRINK PREPACKAGED GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS. GROUT SHALL BE FIVE STAR GROUT AS MANUFACTURED BY FIVE STAR PRODUCTS, FAIRFIELD, CT OR APPROVED EQUAL.
32. CONCRETE ANCHORS SHALL BE HEADED STEEL STUDS MEETING THE REQUIREMENTS OF ASTM A108 "STEEL BARS, CARBON, COLD FINISHED, STANDARD QUALITY".

SITE NOTES

1. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS.
2. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
3. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE PROPOSED PLATFORM.
4. 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.
5. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
6. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES.
7. 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 THE ENGINEER.
8. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH.
9. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE STATE GUIDELINES AND ANY LOCAL REGULATIONS.
10. ALL RESTORATION ISSUES SHALL BE COMPLETED WITHIN 72 HOURS OF THE COMPLETION OF THE WORK ACTIVITY OR WITHIN A REASONABLE AMOUNT OF TIME AS DIRECTED BY CONSTRUCTION MANAGER/ENGINEER.
11. CARE SHALL BE TAKEN TO RETAIN NATURAL GROWTH AND PREVENT DAMAGE TO TREES WITHIN AND OUTSIDE THE LIMITS OF CONSTRUCTION AND SPECIFIED WORK AREAS CAUSED BY EQUIPMENT AND MATERIALS. ANY DAMAGE TO THIS NATURAL GROWTH SHALL BE RESTORED AT THE EXPENSE OF THE CONTRACTOR.
12. ALL AREAS DISTURBED BY THE CONTRACTOR WITHOUT AUTHORIZATION SHALL BE RESTORED BY THE CONTRACTOR.
13. IN THE EVENT THE CONTRACTOR DAMAGES AN EXISTING UTILITY SERVICE CAUSING AN INTERRUPTION IN SAID SERVICE, HE SHALL IMMEDIATELY COMMENCE WORK TO RESTORE SERVICE AND MAY NOT CONTINUE HIS WORK OPERATION UNTIL SERVICE IS RESTORED.

ANTENNA MOUNTING NOTES

1. THE DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO ANSI/TIA–222–G "STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS," THE BUILDING CODE OF STATE OF CONNECTICUT, AND ALL OTHER APPLICABLE LOCAL, STATE, AND FEDERAL CODES.
2. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT–DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
3. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC–COATING (HOT–DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
4. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
5. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH DOUBLE NUTS AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
6. DESIGN OF THE ANTENNA MOUNTING BRACKETS, SUPPORTS, AND ALL COMPONENTS THEREOF AND ATTACHMENT THERETO SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER. MANUFACTURER SHALL PROVIDE THE OWNER DRAWINGS DETAILING ALL COMPONENTS OF THE ASSEMBLY, INCLUDING CONNECTIONS, DESIGN LOADS, AND ALL OTHER PERTINENT DATA. MANUFACTURER SHALL ALSO PROVIDE THE OWNER WITH A STATEMENT OF COMPLIANCE, INDICATING THAT THE ANTENNA SUPPORTS HAVE BEEN DESIGNED IN ACCORDANCE WITH ANSI/TIA–222–G STANDARDS. ALL SUBMISSIONS SHALL BEAR THE SIGNATURE AND SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT.

STRUCTURAL NOTE

1. ALL WORK SHALL CONFORM TO THE CURRENT STANDARD (ANSI/TIA–222–G "STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS"), 2015 STATE OF CONNECTICUT BUILDING CODE, AND ALL OTHER APPLICABLE LOCAL, STATE, AND FEDERAL CODES.
2. REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY CROWN CASTLE, DATED AUGUST 3, 2018.
3. **MODIFICATIONS TO THE EXISTING TOWER AS INDICATED IN THE ABOVE STRUCTURAL REPORT SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND EQUIPMENT.**

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF CONNECTICUT BUILDING CODE, AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS OTHERWISE NOTED. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
4. DIMENSIONS SHOWN ARE TO FINISH SURFACES, UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE CARRIER'S AUTHORIZED REPRESENTATIVE OR THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
5. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
6. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
7. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND TO BE IN THE FIELD.
8. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.
9. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS, AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
11. CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
13. CONTRACTOR SHALL MAINTAIN LIABILITY INSURANCE TO PROTECT THE OWNER AND CARRIER.
14. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
15. MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SURFACES, EQUIPMENT, IMPROVEMENTS, PIPING, ANTENNA AND ANTENNA CABLES. REPAIR ANY DAMAGE THAT OCCURS DURING CONSTRUCTION.
16. REPAIR ALL EXISTING SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
17. KEEP CONTRACT AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
18. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
19. CONTRACTOR SHALL SECURE ALL NECESSARY BUILDING PERMITS AND INSPECTIONS AND PAY ALL REQUIRED FEES.
20. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2–A OR 2–A/10–BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF THE BUILDOUT AREA DURING CONSTRUCTION.
21. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS AND OTHER DOCUMENTATION SHALL BE TURNED OVER TO CARRIER AT COMPLETION OF CONSTRUCTION.
22. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF ACCEPTANCE BY CARRIER. ANY WORK, MATERIALS, OR EQUIPMENT FOUND TO BE DEFECTIVE DURING THAT PERIOD SHALL BE CORRECTED IMMEDIATELY UPON WRITTEN NOTIFICATION AT NO ADDITIONAL COST TO CARRIER.
23. RIGGING OPERATIONS SHALL BE DONE IN ACCORDANCE WITH STATE AND FEDERAL SAFETY REGULATIONS (OSHA). TECTONIC, CARRIER AND THE OWNER SHALL BE HELD HARMLESS IN THE EVENT THE CONTRACTOR DOES NOT FOLLOW SUCH SAFETY REGULATIONS.
24. CONTRACTOR SHALL PROVIDE ACCESS TO THE SITE AND ASSIST THE RADIO EQUIPMENT VENDOR AND THE ANTENNA INSTALLATION CONTRACTOR AS THEY MAY REQUIRE.

CONFIGURATION

4Sec–6797DB2

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

CROWN CASTLE
3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

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STATE OF CONNECTICUT
EDWARD N. IAMICELI
28473
LICENSED
PROFESSIONAL ENGINEER

0 1 2 3
ORIGINAL SIZE IN INCHES

CROWN SITE INFORMATION

SITE ID #: 857525
APP ID #: 428769
SITE NAME: NEWTOWN DINGLEBROOK

T–MOBILE SITE INFORMATION

SITE ID #: CTFF013A
SITE NAME: CTFF013A

SITE ADDRESS

24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN–1

ELECTRICAL INSTALLATION NOTES

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
2. ALL ELECTRICAL EQUIPMENT AND ACCESSORIES SHALL BE U.L. APPROVED OR LISTED.
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.
5. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
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.
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. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, 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 AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE USE-2 CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT RHW-2 OR XHHW-2, STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 90°C.
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID METALLIC CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR RIGID METALLIC CONDUIT (RMC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. PVC SCHEDULE 40 CONDUIT SHALL BE USED UNDERGROUND EXCEPT IN AREAS OF VEHICULAR TRAFFIC. IN SUCH AREAS, PVC SCHEDULE 80 SHOULD BE USED.
18. ALL OUTDOOR EXPOSED CONDUIT SHALL BE PVC SCHEDULE 80 AND SHALL BE SUPPORTED ADEQUATELY.
19. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED. LFMC SHALL CONFORM TO NEC ARTICLE 350.
20. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
21. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
22. 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.
23. 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
24. 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.
25. NON-METALLIC 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.
26. CONTRACTOR SHALL APPLY FOR ELECTRICAL SERVICE AS SOON AS POSSIBLE AND COORDINATE REQUIREMENTS, SERVICE ROUTING, AND METER SOCKET TYPE WITH LOCAL POWER COMPANY.
27. CONTRACTOR SHALL APPLY FOR TELEPHONE SERVICE AS SOON AS POSSIBLE AND COORDINATE REQUIREMENTS AND SERVICE ROUTING WITH TELEPHONE COMPANY.
28. CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY PERMIT FEES, AND SCHEDULE INSPECTIONS.
29. CONTRACTOR SHALL LABEL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC 110.16 AND 110.24.
30. CONTRACTOR SHALL VERIFY THAT THE MAIN BONDING JUMPER AND GROUNDING ELECTRODE CONDUCTOR IS INSTALLED PROPERLY AT SERVICE ENTRANCE.
31. CONTRACTOR SHALL SEAL AROUND ALL CONDUIT PENETRATIONS THROUGH WALLS, FLOORS AND ROOFS TO PREVENT MOISTURE PENETRATION OR VERMIN INFESTATIONS.
32. WHERE ELECTRICAL POWER IS TO BE SUB-FED FROM AN EXISTING DISTRIBUTION SYSTEM, THE FOLLOWING SHALL APPLY:
    A. CONTRACTOR SHALL PERFORM LOAD TESTING TO DETERMINE MAXIMUM FEEDER DEMAND PER N.E.C. ARTICLE 220.
    B. CONTRACTOR SHALL VERIFY WHETHER EXISTING FEEDER CAPACITY EXCEEDS VALUE CALCULATED PER N.E.C. ARTICLE 220.
    C. EACH BRANCH CIRCUIT PROTECTIVE DEVICE SHALL HAVE SAME INTERRUPTING RATING AS EQUIPMENT SUPPLYING IT.
    D. PREFERRED MEANS OF SUPPLY SHALL BE A BRANCH CIRCUIT PROTECTIVE DEVICE LOCATED IN EXISTING PANEL.
36. DURING TRENCH BACK-FILLING FOR EACH UNDERGROUND ELECTRICAL, TELEPHONE, SIGNAL AND COMMUNICATIONS LINE, PROVIDE A CONTINUOUS UNDERGROUND WARNING TAPE TWELVE INCHES BELOW FINISHED GRADE.

GROUNDING NOTES

GROUND TESTING AFTER CONSTRUCTION

1. AFTER COMPLETION OF CONSTRUCTION OF THE CELL SITE GROUND SYSTEM, A POST INSTALLATION GROUND TEST SHALL BE PERFORMED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE THE GROUND RESISTANCE FOR ALL SITES AFTER INSTALLATION OF THE EARTH GROUND SYSTEM. A PRELIMINARY EARTH RESISTIVITY TEST (3 POLE TEST OR CLAMP-ON-METER) SHALL BE PERFORMED PRIOR TO BACK FILLING ALL TRENCHES AS SPECIFIED IN T-MOBILE NETWORK STANDARDS (NSTD46) AND THE NATIONAL ELECTRIC CODE.
2. APPROVED MEASUREMENT METHODS FOR POST INSTALLATION GROUND TESTING SHALL BE ONE OF THE FOLLOWING METHODS:
    A. FALL OF POTENTIAL METHOD – 3 POINT
    B. CLAMP-ON RESISTANCE TEST
    C. TOWER AND EXTERNAL CONDUCTOR TEST
3. A GROUNDING RESISTANCE TEST REPORT SHALL BE PREPARED UPON COMPLETION OF THE TESTING. THE TEST REPORT SHALL SHOW THE RESISTANCE IN OHMS AT 40%, 52%, 62%, 72% AND 82% POINTS IN 10% INTERVALS. RESISTANCE IS TO BE RECORDED AT EACH INTERVAL FOR EACH POINT FOR FOUR (4) DIFFERENT DIRECTIONS UNTIL THERE IS A PLATEAU SEEN AT THE 62% POINT. TESTING SHOULD BE COMPLETED IN A MINIMUM OF TWO (2) DIFFERENT DIRECTIONS AT 90 DEGREES APART. RECORD THE AVERAGE OR MEAN AS THE RESISTANCE OF THE SITE AND ENTER THIS ON THE POST RESISTANCE DATA CHART.
4. PROVIDE THE POST INSTALLATION – GROUND RESISTANCE TEST REPORT TO THE REGIONAL PROJECT ENGINEER ACCOMPANIED BY THE POST RESISTANCE DATE CHART.

CONFIGURATION

4Sec-6797DB2

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

CROWN CASTLE
3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

T-Mobile
NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

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STATE OF CONNECTICUT
EDWARD N. IAMICELI
28473
LICENSED PROFESSIONAL ENGINEER

0 1 2 3
ORIGINAL SIZE IN INCHES

CROWN SITE INFORMATION

SITE ID #: 857525
APP ID #: 428769
SITE NAME: NEWTOWN DINGLEBROOK

T-MOBILE SITE INFORMATION

SITE ID #: CTFF013A
SITE NAME: CTFF013A

SITE ADDRESS

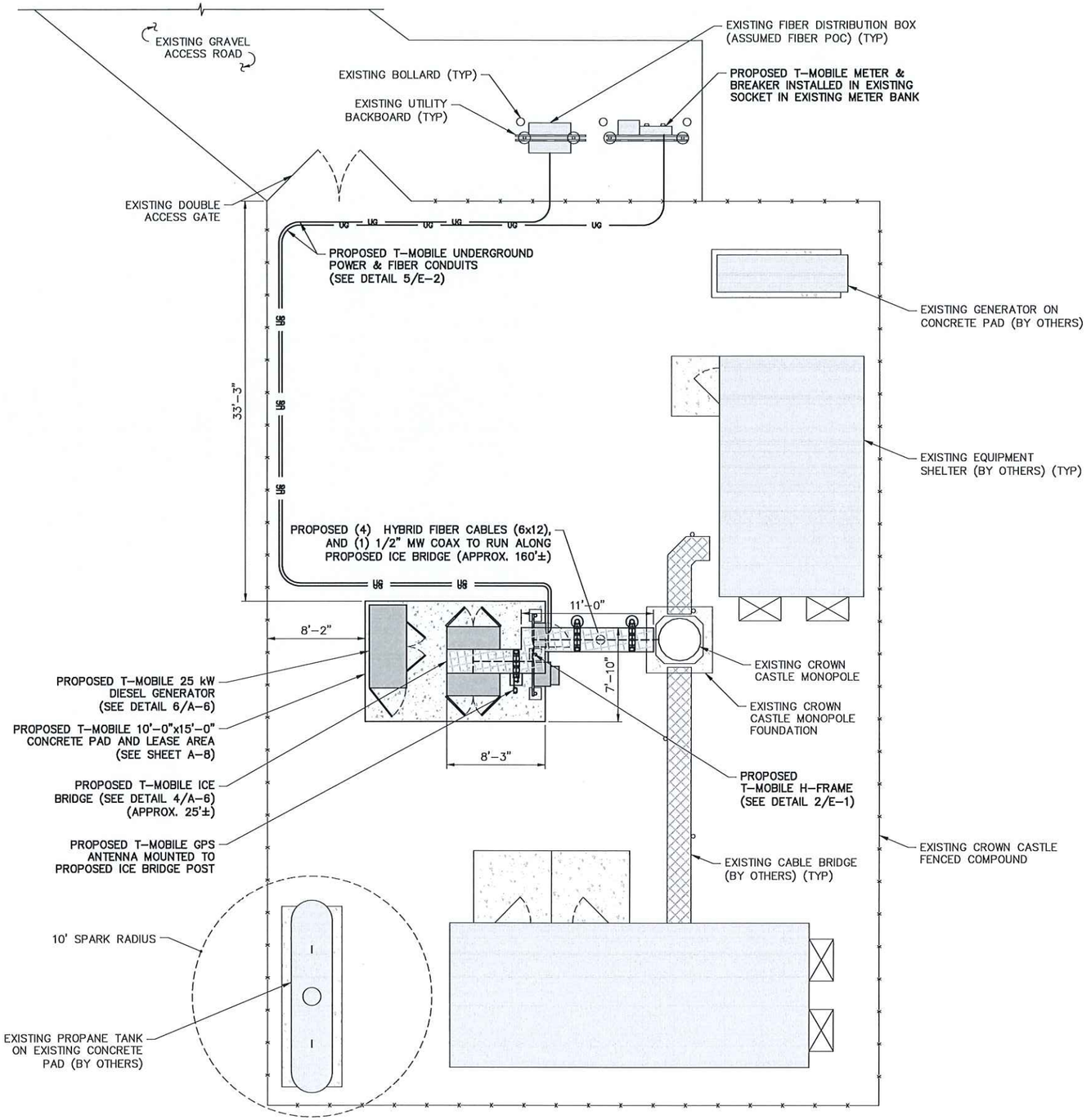
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2



NOTE:

SITE INFORMATION BASED ON DRAWINGS BY CROWN CASTLE AND A SITE VISIT PERFORMED BY TOWER ENGINEERING PROFESSIONALS ON 9/6/18.

1/A-1 SITE PLAN

SCALE: 1" = 10' (11x17 SIZE)
1" = 5' (22x34 SIZE)

CONFIGURATION
4Sec-6797DB2
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

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3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

T-Mobile
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STATE OF CONNECTICUT
EDWARD W. IAMICELI
28478
LICENSED
PROFESSIONAL ENGINEER

0 1 2 3
ORIGINAL SIZE IN INCHES

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APP ID #: 428769
SITE NAME: NEWTOWN DINGLEBROOK

T-MOBILE SITE INFORMATION
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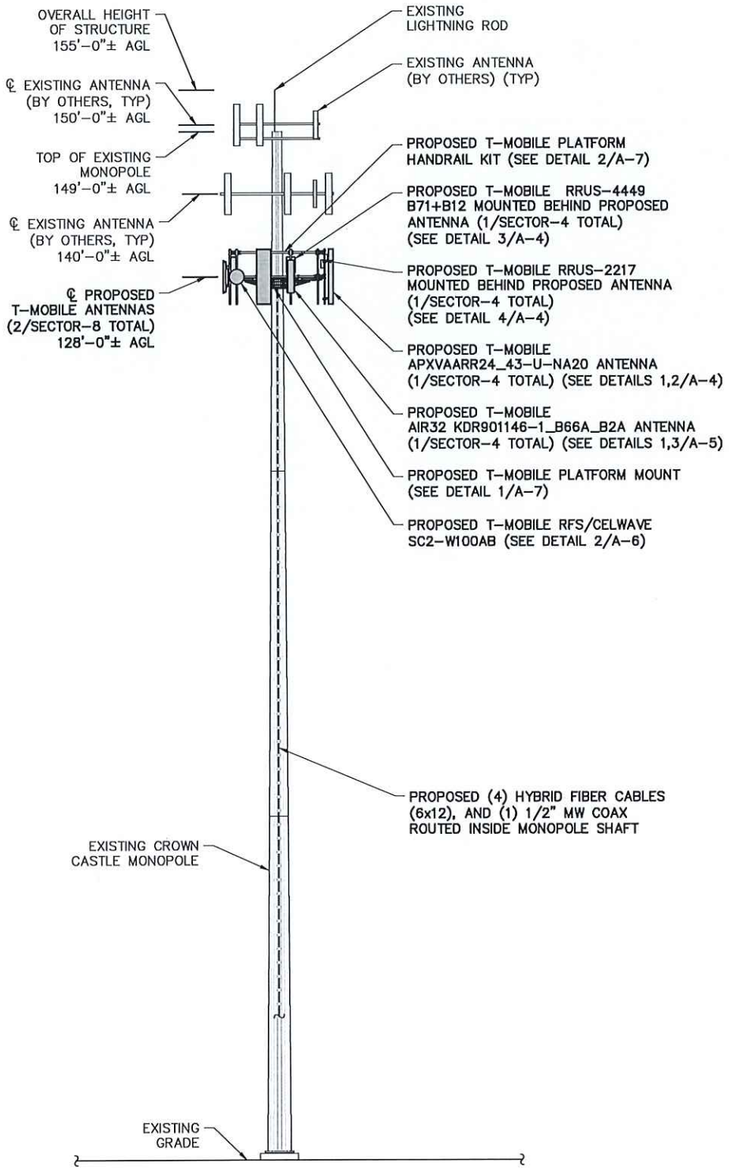
SITE NAME: CTFF013A

SITE ADDRESS
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

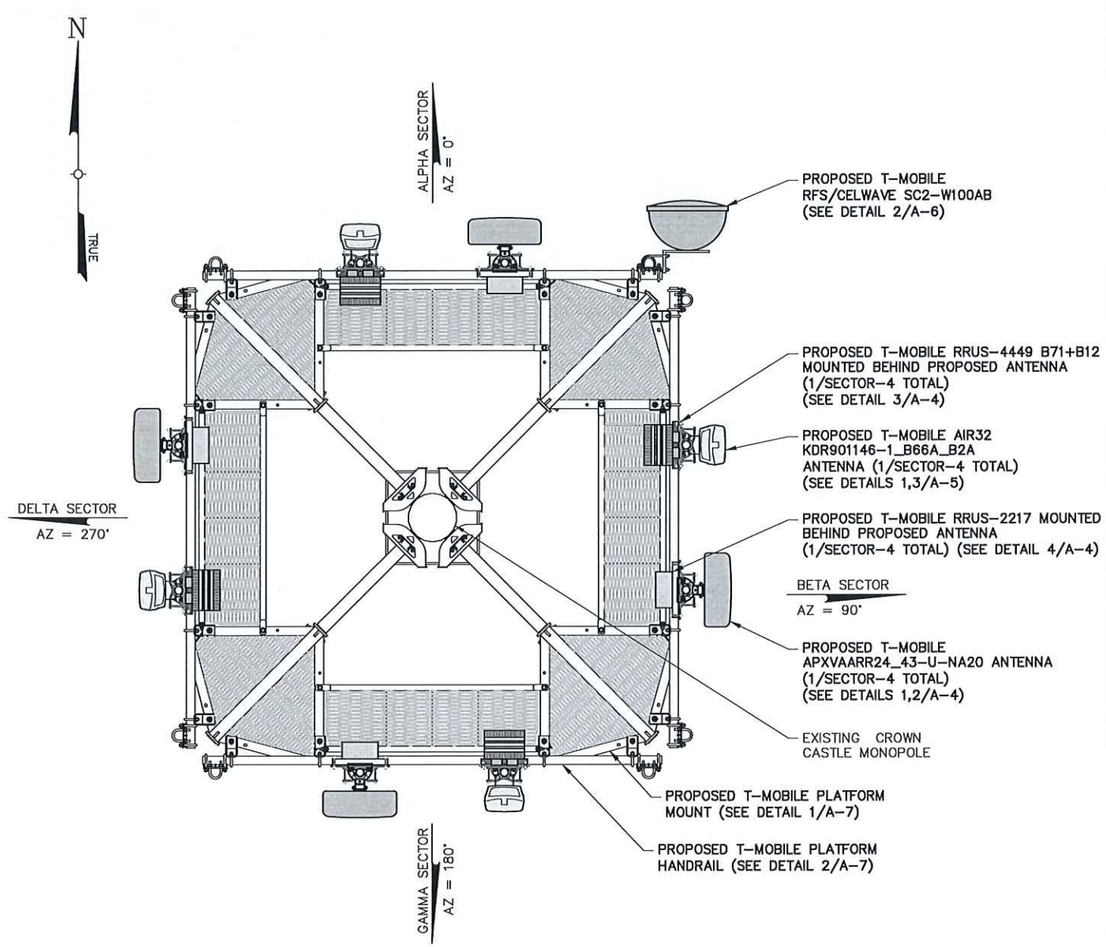
SHEET TITLE
SITE PLAN

SHEET NUMBER
A-1



1/A-2 ELEVATION

SCALE: 3/64" = 1' (11x17 SIZE)
3/32" = 1' (22x34 SIZE)



2/A-2 PROPOSED ORIENTATION PLAN

SCALE: 1/2" = 1'-0" (22x34 SIZE)
1/4" = 1'-0" (11x17 SIZE)

NORTH NOTE: NORTH SHOWN HAS BEEN ESTABLISHED USING THE USGS QUADRANGLE 7.5 MINUTE MAPS AND IS APPROXIMATE. VERIFY TRUE NORTH PRIOR TO INSTALLATION OF ANTENNAS.

STRUCTURAL NOTE:
REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY FDH INFRASTRUCTURE SERVICES, LLC, DATED SEPTEMBER 18, 2018.

MODIFICATIONS TO THE EXISTING TOWER AS INDICATED IN THE ABOVE STRUCTURAL REPORT SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND EQUIPMENT.

CONFIGURATION
4Sec-6797DB2
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

CROWN CASTLE
3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

T-Mobile
NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

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EDWARD N. IAMICELI
21473
LICENSED PROFESSIONAL ENGINEER

0 1 2 3
ORIGINAL SIZE IN INCHES

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APP ID #: 428769
SITE NAME: NEWTOWN DINGLEBROOK

T-MOBILE SITE INFORMATION
SITE ID #: CTFF013A
SITE NAME: CTFF013A

SITE ADDRESS
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE
ELEVATION & ANTENNA PLAN

SHEET NUMBER
A-2

ANTENNA AND CABLE SCHEDULE

SECTOR MARK	SECTOR	STATUS	ANTENNA DATA	MECHANICAL DOWN TILT	ELECTRICAL DOWN TILT	AZIMUTH (TRUE NORTH)	ANTENNA ℄ HEIGHT (AGL)	TMA/RRU	CABLE	JUMPER TYPE	CABLE LENGTH
A–1	LEFT/CENTER ALPHA	PROPOSED	ERICSSON AIR32 B66A/B2A 56.6" x 12.9" x 8.7", 132.2 LBS	0°	2°,2°	0°	128'	0/0	SHARED 6x12 HYBRID TRUNK FIBER	7/8" COAX/ DC FIBER	–
A–2	RIGHT/CENTER ALPHA	PROPOSED	APXVAARR24_43–U–NA20 95.9" x 24" x 8.7", 128 LBS	0°	2°,2°,2°	0°	128'	0/2	PROPOSED JUMPER FROM RRH	DC FIBER	15'–0"
A–3	RIGHT ALPHA	PROPOSED	RFS/CELWAVE / SC2–W100AB 26.4"ø x 16.3"D, 22.0 LBS	0°	0°	0°	128'	0/0	(1) (P) 1/2" MW COAX	1/2" MW COAX	170'–0"
B–1	LEFT/CENTER BETA	PROPOSED	ERICSSON AIR32 B66A/B2A 56.6" x 12.9" x 8.7", 132.2 LBS	0°	2°,2°	90°	128'	0/0	SHARED 6x12 HYBRID TRUNK FIBER	7/8" COAX/ DC FIBER	–
B–2	RIGHT/CENTER BETA	PROPOSED	APXVAARR24_43–U–NA20 95.9" x 24" x 8.7", 128 LBS	0°	2°,2°,2°	90°	128'	0/2	PROPOSED JUMPER FROM RRH	DC FIBER	15'–0"
C–1	LEFT/CENTER GAMMA	PROPOSED	ERICSSON AIR32 B66A/B2A 56.6" x 12.9" x 8.7", 132.2 LBS	0°	2°,2°	180°	128'	0/0	SHARED 6x12 HYBRID TRUNK FIBER	7/8" COAX/ DC FIBER	–
C–2	RIGHT/CENTER GAMMA	PROPOSED	APXVAARR24_43–U–NA20 95.9" x 24" x 8.7", 128 LBS	0°	2°,2°,2°	180°	128'	0/2	PROPOSED JUMPER FROM RRH	DC FIBER	15'–0"
D–1	LEFT/CENTER DELTA	PROPOSED	ERICSSON AIR32 B66A/B2A 56.6" x 12.9" x 8.7", 132.2 LBS	0°	2°,2°	270°	128'	0/0	SHARED 6x12 HYBRID TRUNK FIBER	7/8" COAX/ DC FIBER	–
D–2	RIGHT/CENTER DELTA	PROPOSED	APXVAARR24_43–U–NA20 95.9" x 24" x 8.7", 128 LBS	0°	2°,2°,2°	270°	128'	0/2	PROPOSED JUMPER FROM RRH	DC FIBER	15'–0"

NOTE:
- INFORMATION BASED ON CROWN CASTLE APPLICATION #428769 REVISION 7, DATED 2/26/2018.
- INFORMATION BASED ON RFDS VERSION R0.1 DRAFT, DATED 7/13/2018.

RRH AND HYBRID SCHEDULE

SECTOR	STATUS	UNITS	UNIT DATA	# OF UNITS	CABLE TYPE	# OF CABLES	CABLE LENGTH
ALPHA	PROPOSED	RRUS 4449	14.95" x 13.19" x 9.25", 75 LBS	1	PROPOSED 6x12 HYBRID TRUNK	1	170'–0"
ALPHA	PROPOSED	RRUS 2217	13.80" x 11.73" x 5.40", 28.22 LBS	1	SHARED HYBRID TRUNK	–	–
BETA	PROPOSED	RRUS 4449	14.95" x 13.19" x 9.25", 75 LBS	1	PROPOSED 6x12 HYBRID TRUNK	1	170'–0"
BETA	PROPOSED	RRUS 2217	13.80" x 11.73" x 5.40", 28.22 LBS	1	SHARED HYBRID TRUNK	–	–
GAMMA	PROPOSED	RRUS 4449	14.95" x 13.19" x 9.25", 75 LBS	1	PROPOSED 6x12 HYBRID TRUNK	1	170'–0"
GAMMA	PROPOSED	RRUS 2217	13.80" x 11.73" x 5.40", 28.22 LBS	1	SHARED HYBRID TRUNK	–	–
DELTA	PROPOSED	RRUS 4449	14.95" x 13.19" x 9.25", 75 LBS	1	PROPOSED 6x12 HYBRID TRUNK	1	170'–0"
DELTA	PROPOSED	RRUS 2217	13.80" x 11.73" x 5.40", 28.22 LBS	1	SHARED HYBRID TRUNK	–	–

CONFIGURATION
4Sec–6797DB2
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3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

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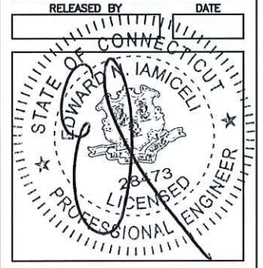

CROWN SITE INFORMATION
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APP ID #: 428769
SITE NAME: NEWTOWN DINGLEBROOK

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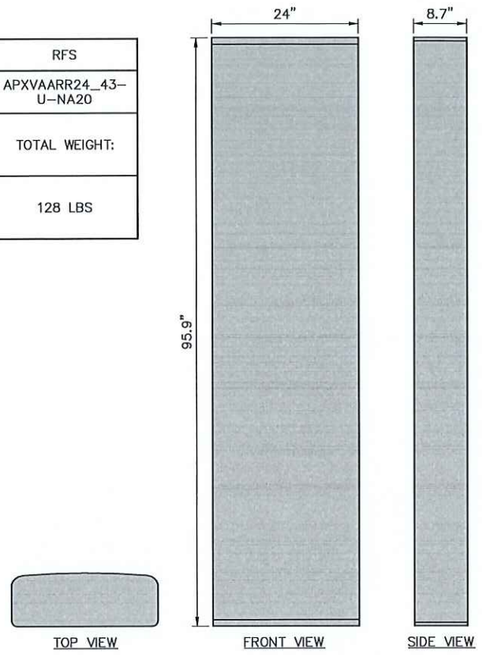
SITE NAME: CTFF013A

SITE ADDRESS
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE
ANTENNA &
COAX SCHEDULE

SHEET NUMBER
A-3

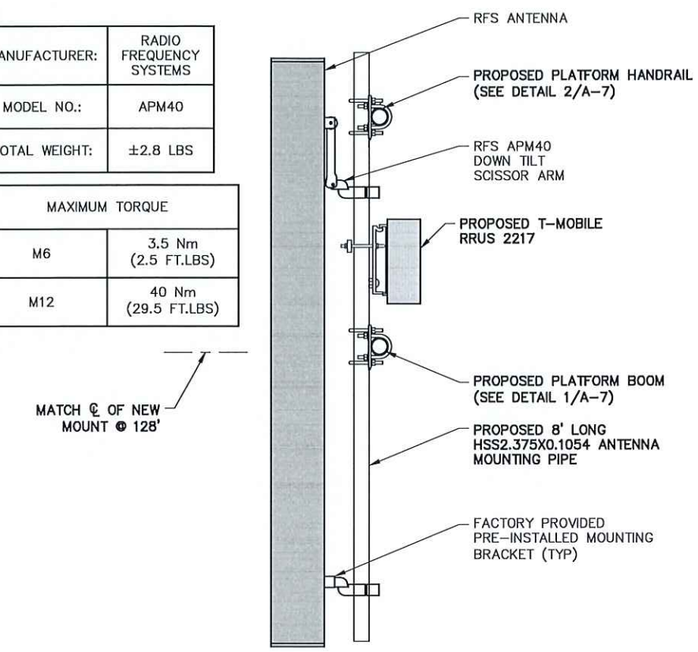
MANUFACTURER:		RFS
MODEL NO.:		APXVAARR24_43-U-NA20
DIMENSIONS		TOTAL WEIGHT:
A	95.9"	
B	24"	128 LBS
C	8.7"	



1/A-4 RFS ANTENNA DETAIL
SCALE: 1" = 1'-0" (22x34 SIZE)
2" = 1'-0" (11x17 SIZE)

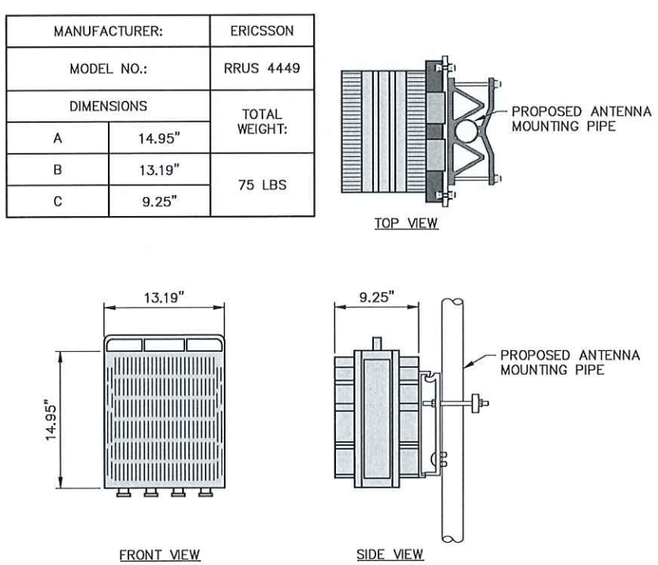
MANUFACTURER:	RADIO FREQUENCY SYSTEMS
MODEL NO.:	APM40
TOTAL WEIGHT:	±2.8 LBS

MAXIMUM TORQUE	
M6	3.5 Nm (2.5 FT.LBS)
M12	40 Nm (29.5 FT.LBS)



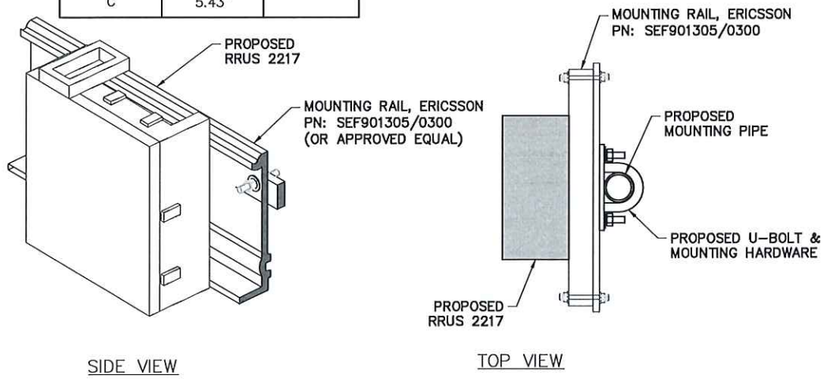
2/A-4 MOUNTING DETAIL
SCALE: NTS (22x34 SIZE)
NTS (11x17 SIZE)

MANUFACTURER:		ERICSSON
MODEL NO.:		RRUS 4449
DIMENSIONS		TOTAL WEIGHT:
A	14.95"	
B	13.19"	75 LBS
C	9.25"	



3/A-4 RRUS-4449 DETAIL
SCALE: 1-1/2" = 1'-0" (22x34 SIZE)
3" = 1'-0" (11x17 SIZE)

MANUFACTURER:		ERICSSON
MODEL NO.:		RRUS 2217
DIMENSIONS		TOTAL WEIGHT:
A	13.8"	
B	11.73"	28.22 LBS
C	5.43"	



4/A-4 RRUS-2217 DETAIL
SCALE: NTS

CONFIGURATION
4Sec-6797DB2
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

CROWN CASTLE
3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

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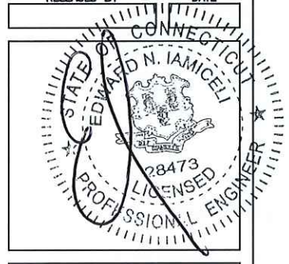

0 1 2 3
ORIGINAL SIZE IN INCHES

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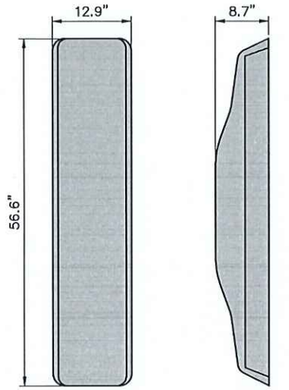
SITE NAME: CTFF013A

SITE ADDRESS
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE
ANTENNA & MOUNTING DETAILS

SHEET NUMBER
A-4

MANUFACTURER:		ERICSSON
MODEL NO.:		AIR32 KRD901146-1 B2A/B66AA
DIMENSIONS		TOTAL WEIGHT:
A	56.6"	
B	12.9"	132.2 LBS
C	8.7"	



1 / A-5 AIR32 ANTENNA DETAIL

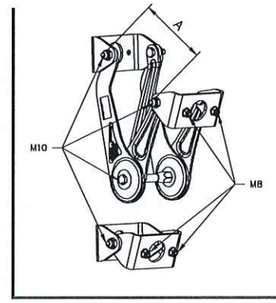
SCALE: 1" = 1'-0" (22x34 SIZE)
2" = 1'-0" (11x17 SIZE)

MANUFACTURER:	KATHREIN
MODEL NO.:	85010084
TOTAL WEIGHT:	±28.7 LBS

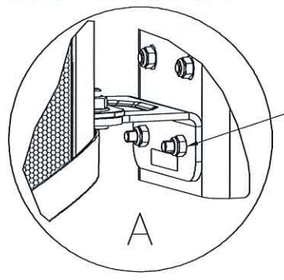
MAXIMUM TORQUE	
M10	50Nm (36.88 FT.LBS)

SCREW SIZE	TORQUE
M8	20Nm
M10	50Nm

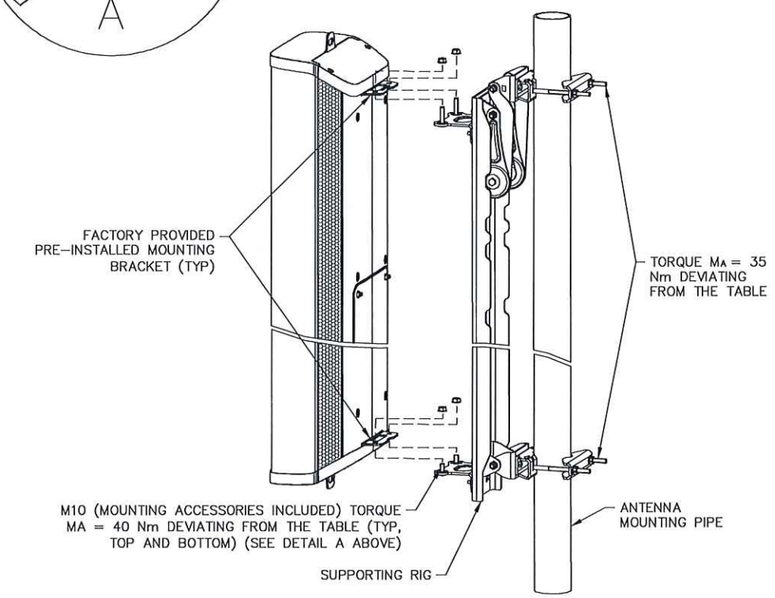
∢	A mm
1°	69
2°	79
3°	93
4°	110
5°	129
6°	149
7°	169
8°	190
9°	211
10°	232
11°	253
12°	275
13°	296
14°	318
15°	340
16°	362
17°	383



HANG ANTENNA ON BRACKET STUDS AND SECURE WITH NUTS. ADJUST LOWER CARRIER AS SHOWN IN DETAIL A



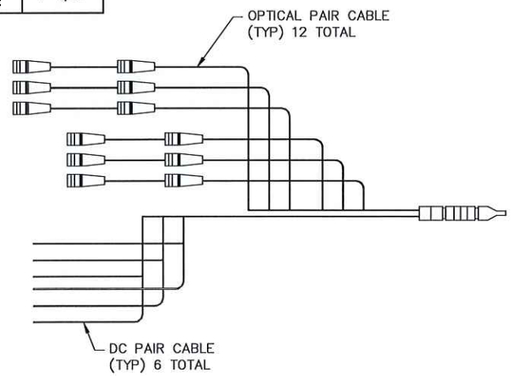
ATTENTION: LOOSEN BOTH SCREWS TO ADJUST THE LOWER CARRIER AND RESECURE THEM AFTERWARDS



3 / A-5 AIR32 ANTENNA MOUNTING DETAIL

SCALE: NTS (22x34 SIZE)
NTS (11x17 SIZE)

MANUFACTURER:	ERICSSON
MODEL NO.:	HCS 6x12
WEIGHT:	1.7 LBS/FT
DIAMETER:	1.38" (±.1")
COAX EQUIVALENT:	1-3/8"



2 / A-5 6x12 HYBRID CABLE DETAIL

SCALE: NTS (22x34 SIZE)
NTS (11x17 SIZE)

CONFIGURATION
4Sec-6797DB2
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

CROWN CASTLE
3 CORPORATE PARK DR. STE 101
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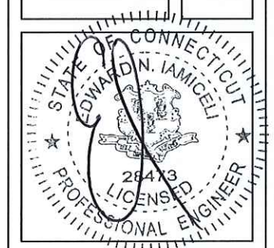


0 1 2 3
ORIGINAL SIZE IN INCHES

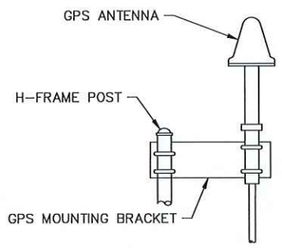
CROWN SITE INFORMATION
SITE ID #: 857525
APP ID #: 428769
SITE NAME: NEWTOWN DINGLEBROOK

T-MOBILE SITE INFORMATION
SITE ID #: CTFF013A
SITE NAME: CTFF013A

SITE ADDRESS
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE
ANTENNA & MOUNTING DETAILS

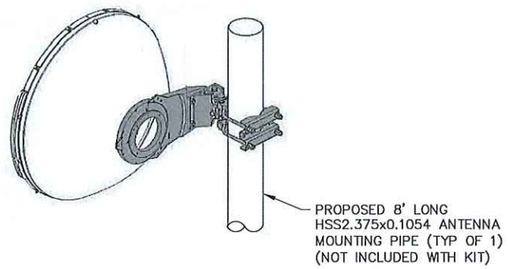
SHEET NUMBER
A-5



MANUFACTURER:	NAIS
MODEL NO.:	CCAH32ST03
HEIGHT:	3.9"
WIDTH:	3.5"

1 A-6 GPS ANTENNA MOUNTING DETAIL
SCALE: NTS

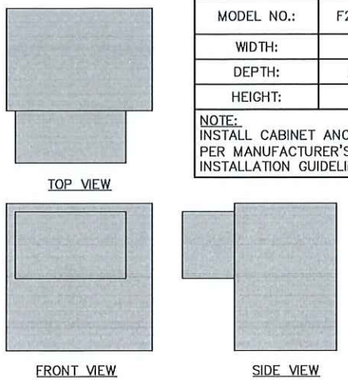
MANUFACTURER:	RFS
MODEL NO.:	SC2-W100AB
DIAM:	26.4"
DEPTH:	16.3
WEIGHT:	22 LBS



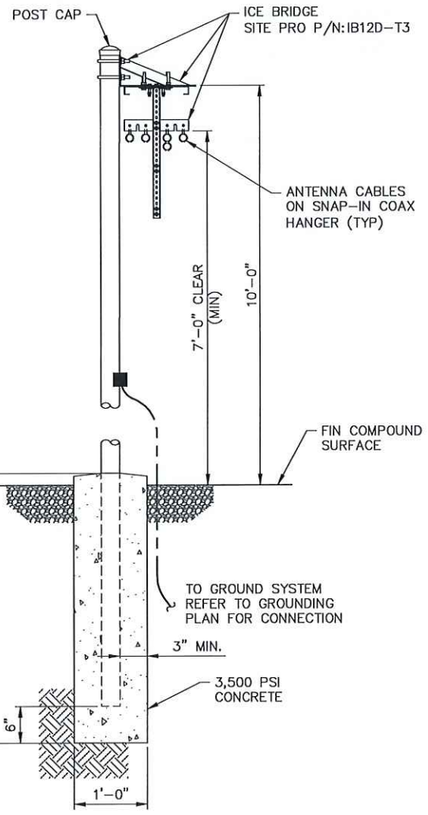
2 A-6 MW DISH ANTENNA DETAIL
SCALE: NTS

AAV CABINET	
MANUFACTURER:	EMERSON
MODEL NO.:	F2013074
WIDTH:	24"
DEPTH:	25.24"
HEIGHT:	24"

NOTE:
INSTALL CABINET ANCHORS PER MANUFACTURER'S INSTALLATION GUIDELINES.

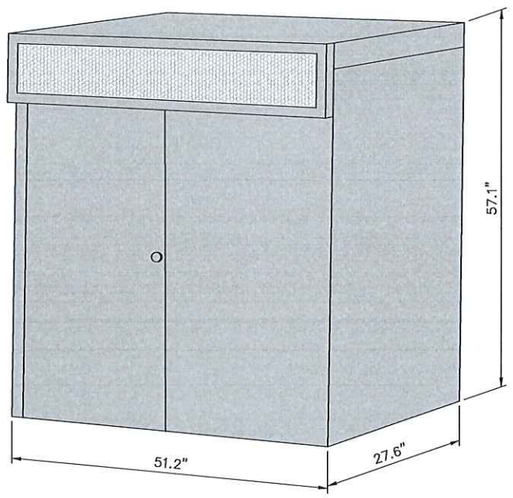


3 A-6 AAV DETAIL
SCALE: NTS



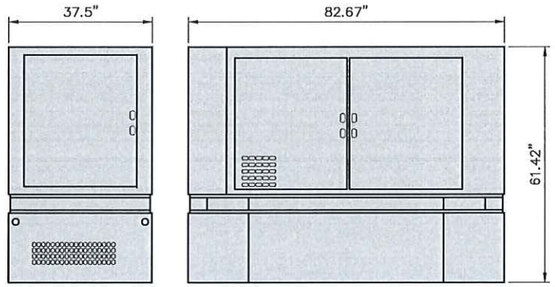
4 A-6 CABLE BRIDGE DETAIL
SCALE: 1/2" = 1'-0" (11x17 SIZE)
1" = 1'-0" (22x34 SIZE)

MANUFACTURER:	ERICSSON
MODEL NO.:	MUAC 6102
WIDTH:	51.2"
DEPTH:	27.6"
HEIGHT:	57.1"
WEIGHT (W/O BACKUP BATTERIES):	728 LBS



5 A-6 PROPOSED 6102 EQUIPMENT CABINET
SCALE: NTS

MANUFACTURER:	DELTA
MODEL NO.:	25000
TANK SIZE:	130 GAL.
WEIGHT:	2,314 LBS
LENGTH:	82.67"
WIDTH:	37.5"
HEIGHT:	61.42"



6 A-6 DIESEL GENERATOR DETAIL
SCALE: NTS

CONFIGURATION
4Sec-6797DB2
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

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EDWARD N. IANNICELLI
28473
LICENSED PROFESSIONAL ENGINEER

0 1 2 3
ORIGINAL SIZE IN INCHES

CROWN SITE INFORMATION
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APP ID #: 428769
SITE NAME: NEWTOWN DINGLEBROOK

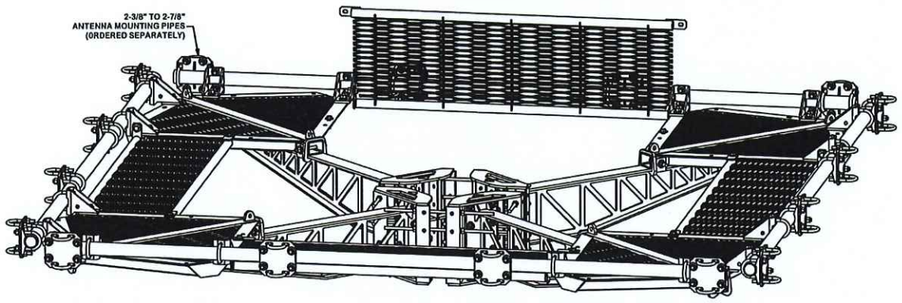
T-MOBILE SITE INFORMATION
SITE ID #: CTFF013A
SITE NAME: CTFF013A

SITE ADDRESS
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE
DETAILS

SHEET NUMBER
A-6

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	X-LPP-CW	LOW PROFILE PLATFORM CORNER WELDMENT		198.75	795.01
2	4	X-LPP-SA12	SIDE ARM WELDMENT FOR 12' LOW PROFILE PLATFORMS		119.21	476.84
3	4	X-RM4HD	WELDMENT FOR 4-SIDED HEAVY DUTY RING MOUNT		71.27	285.08
4	4	X-LPP-W12	WALKWAY FOR 12' LOW PROFILE PLATFORM		86.48	345.92
5	16	X-LPP-PC	FACE PIPE CONNECTION BRACKET FORTRESS PLATFORM		7.01	112.15
6	16	X-SCX3-FR	FORTRESS CROSSOVER PLATE		6.61	105.82
7	16	X-LPP-A7	CORNER WELDMENT ATTACHMENT ANGLE	2 1/2 in	1.27	20.33
8	8	X-LPP-H	HINGE FOR LOW PROFILE PLATFORM WALKWAY		2.78	22.22
9	4	P30150	2-7/8" X 150" (2-1/2" SCH. 40) GALVANIZED PIPE	150 in	76.94	307.75
10	16	G58R-48	5/8" x 48" THREADED ROD (HDG.)	48 in	0.40	6.38
10	16	G58R-24	5/8" x 24" THREADED ROD (HDG.)	24 in	0.40	6.38
11	8	G58R-8	5/8" x 8" THREADED ROD (HDG.)		0.70	5.58
12	64	X-UB5300	5/8" X 3" X 5-1/4" X 2-1/2" U-BOLT (HDG.)		1.15	73.56
13	32	X-UB5258	5/8" X 2-5/8" X 4-1/2" X 2" U-BOLT (HDG.)		1.00	32.00
14	16	X-UB5304	5/8" X 3" X 4-1/4" X 2-1/2" U-BOLT (HDG.)		0.98	15.60
15	64	G58214	5/8" x 2-1/4" HDG HEX BOLT GR5		0.29	18.66
16	256	G58FW	5/8" HDG USS FLATWASHER	1/8 in	0.07	18.04
17	272	G58LW	5/8" HDG LOCKWASHER		0.03	7.10
18	272	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	35.33
					TOTAL WT. #	2777.35



TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.010")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

PROPRIETARY NOTE:
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION: 12' FORTRESS™ QUAD-PLATFORM MOUNT WITH WALKWAYS

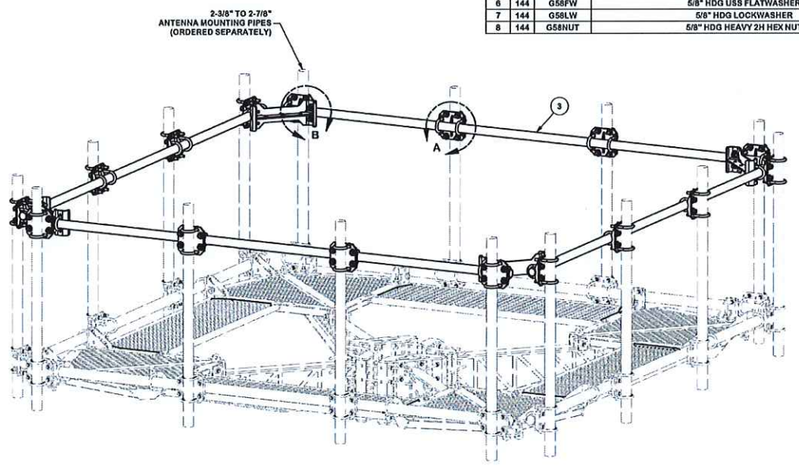
SITE PRO 1 — Engineering Support Team: 1-888-753-7448 — A valmont company

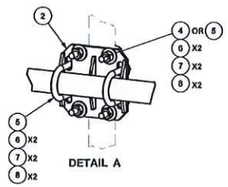
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

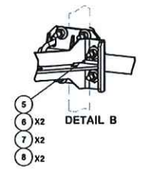
CFD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 8/9/2017		F4P-12W	1 OF 4
CLASS / SUB: 81 / 02	DRAWING USAGE: CUSTOMER	CHECKED BY: BMC 8/30/2017	DWG. NO.: F4P-12W	

1 / A-7 PLATFORM MOUNT DETAIL
SCALE: NTS

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	X-F4PHRW	CORNER WELDMENT FOR 4-SIDED FORTRESS PLATFORM HANDRAIL KITS		19.32	77.27
2	16	X-SCX3-FR	FORTRESS CROSSOVER PLATE		6.61	105.82
3	4	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	183.07
4	32	X-UB5300	5/8" X 3" X 5-1/4" X 2-1/2" U-BOLT (HDG.)		1.15	36.78
5	72	X-UB5258	5/8" X 2-5/8" X 4-1/2" X 2" U-BOLT (HDG.)		1.00	72.01
6	144	G58FW	5/8" HDG USS FLATWASHER	1/8 in	0.07	10.15
7	144	G58LW	5/8" HDG LOCKWASHER		0.03	3.76
8	144	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	18.70
					TOTAL WT. #	507.57







TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.010")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

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DESCRIPTION: HANDRAIL KIT FOR 12' 4-SIDED FORTRESS™ PLATFORM

SITE PRO 1 — Engineering Support Team: 1-888-753-7448 — A valmont company

Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CFD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 8/29/2017		F4P-HRK12	1 OF 2
CLASS / SUB: 81 / 02	DRAWING USAGE: CUSTOMER	CHECKED BY	DWG. NO.: F4P-HRK12	

2 / A-7 HANDRAIL MOUNT DETAIL
SCALE: NTS

CROWN CASTLE
3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

T-Mobile
NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

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STATE OF CONNECTICUT
EDWARD N. IANICELLI
28473
LICENSED
PROFESSIONAL ENGINEER

0 1 2 3
ORIGINAL SIZE IN INCHES

CROWN SITE INFORMATION
SITE ID #: 857525
APP ID #: 428769
SITE NAME: NEWTOWN DINGLEBROOK

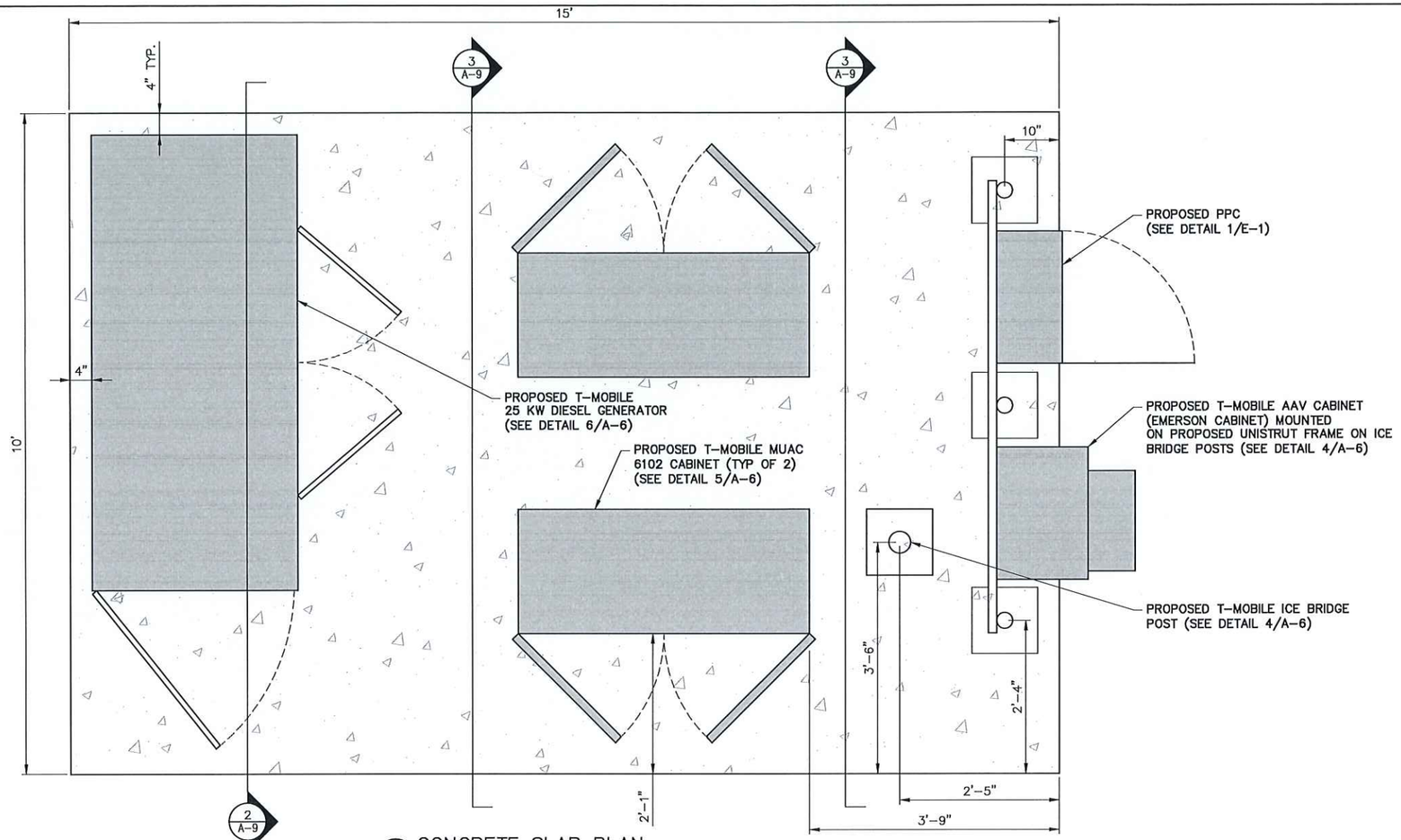
T-MOBILE SITE INFORMATION
SITE ID #: CTFF013A
SITE NAME: CTFF013A

SITE ADDRESS
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE
DETAILS

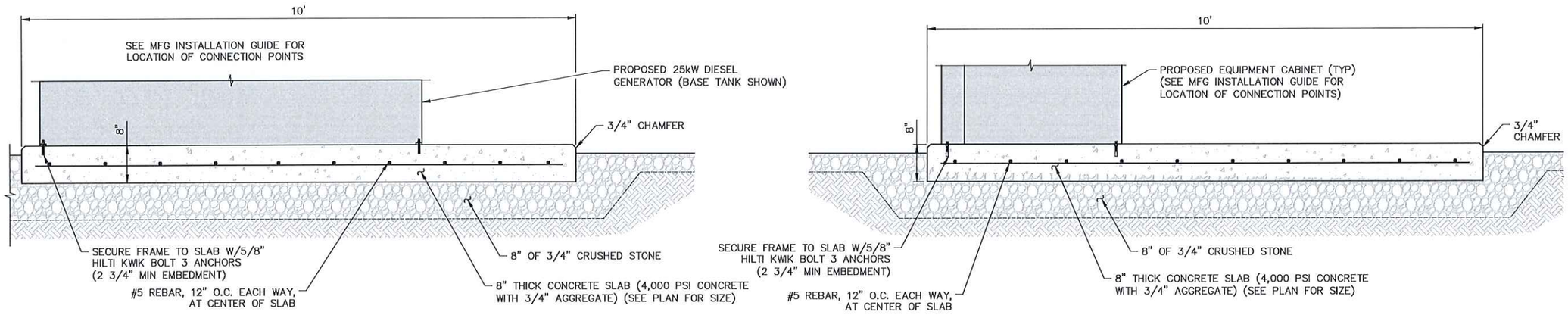
SHEET NUMBER
A-7

CONFIGURATION
4Sec-6797DB2
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM



1 A-8 CONCRETE SLAB PLAN

SCALE: 1" = 2" (11x17 SIZE)
1" = 1" (22x34 SIZE)



2 A-8 DIESEL GENERATOR ON SLAB DETAIL

SCALE: 1" = 2" (11x17 SIZE)
1" = 1" (22x34 SIZE)

3 A-8 CABINETS ON SLAB DETAIL

SCALE: 1" = 2" (11x17 SIZE)
1" = 1" (22x34 SIZE)

CONFIGURATION

4Sec-6797DB2

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

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SITE ID #: CTFF013A
SITE NAME: CTFF013A

SITE ADDRESS

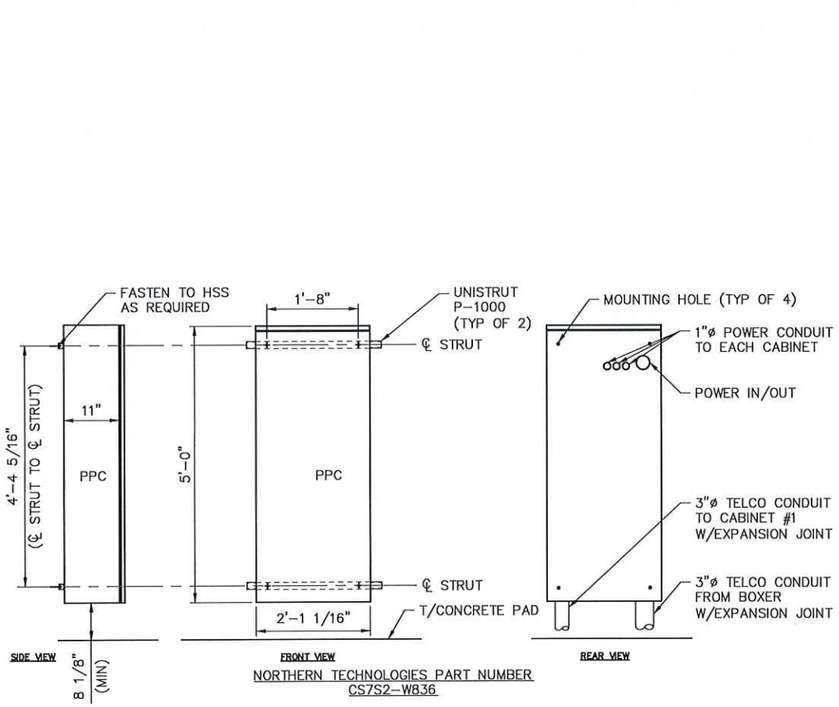
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE

FOUNDATION PLAN
& DETAILS

SHEET NUMBER

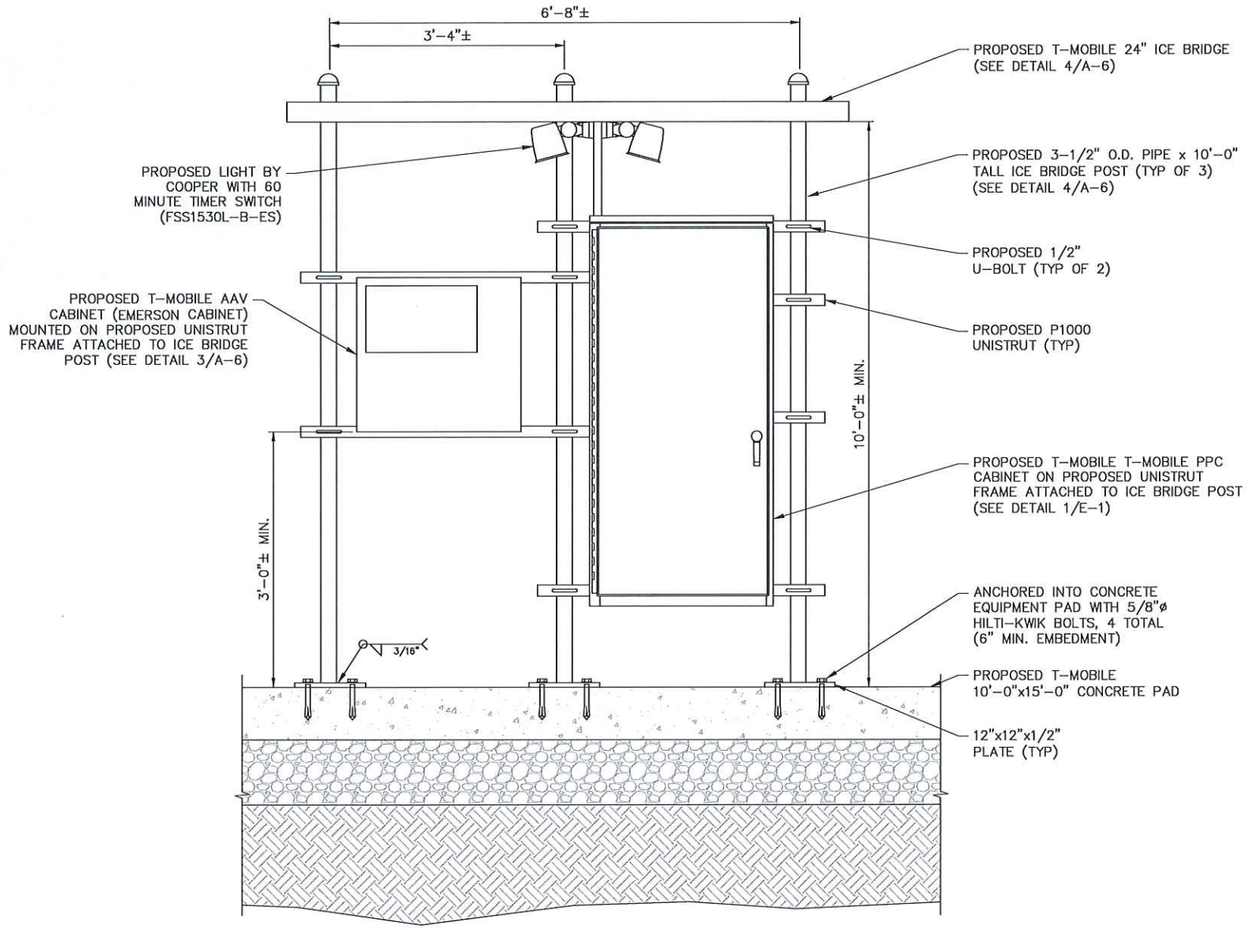
A-8



NORTHERN TECHNOLOGIES PART NUMBER
CS7S2-W836

1 E-1 PPC CABINET DETAIL

SCALE: 3/4" = 1'-0" (22x34 SIZE)
3/8" = 1'-0" (11x17 SIZE)



2 E-1 UTILITY BACKBOARD ELEVATION

SCALE: NTS

CONFIGURATION
4Sec-6797DB2
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

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STATE OF CONNECTICUT
EDWARD V. IAMICELI
28478
LICENSED
PROFESSIONAL ENGINEER

0 1 2 3
ORIGINAL SIZE IN INCHES

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SITE NAME: NEWTOWN DINGLEBROOK

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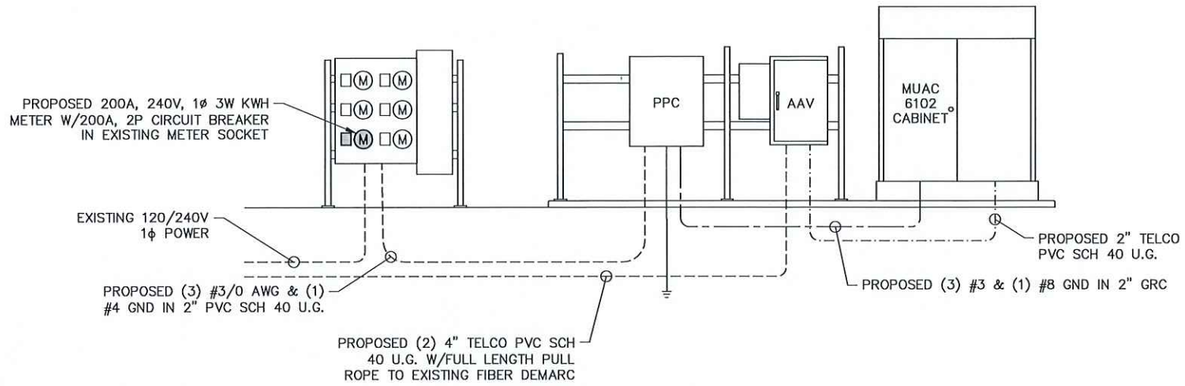
SITE NAME: CTFF013A

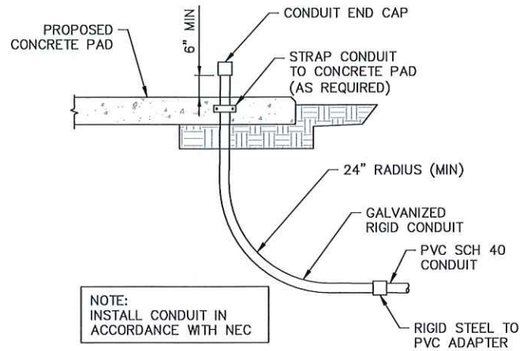
SITE ADDRESS
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-1

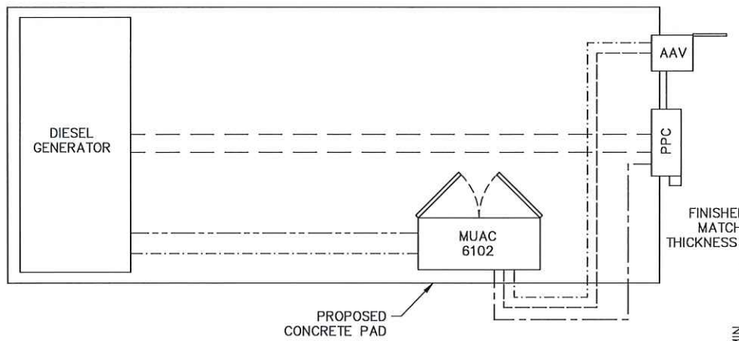


1 E-2 POWER RISER DIAGRAM
SCALE: NTS



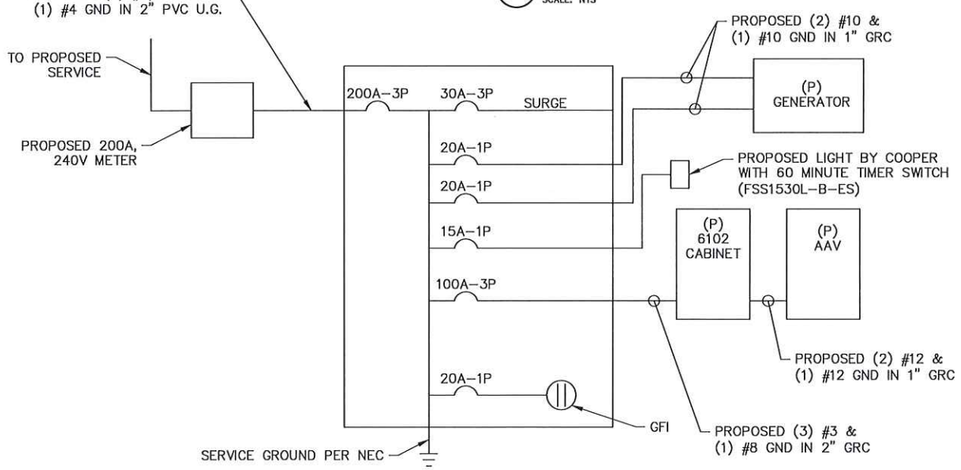
2 E-2 CONDUIT SWEEP DETAIL
SCALE: NTS

CONDUIT LEGEND	
– – – – – – – –	(1) 1"ø PVC SCH 40 CONDUIT FROM 6102 TO AAV CABINET FOR –48 POWER
– – – – – – – –	(2) 1"ø PVC SCH 40 CONDUIT FROM PPC TO GENERATOR FOR BLOCK HEATER AND TRICKLE CHARGER
– – – – – – – –	2"ø PVC SCH 40 CONDUIT AC–POWER, BELOW CONCRETE PAD, (1) CONDUIT PPC TO MUAC 6102
– · – · – · – · –	2"ø PVC SCH 40 CONDUIT, TELCO, BELOW CONCRETE PAD, (1) CONDUIT PPC TO MUAC 6102 AND (1) CONDUIT MUAC 6102 FOR DAISY CHAIN TO FUTURE MUAC 6102
– – – – – – – –	1"ø CONDUIT, CAT 5 ALARM CABLE, ON CONCRETE PAD, (1) CONDUIT MUAC 6102 TO GENERATOR
————————	2–1/2"ø RGS ABOVE CONCRETE PAD FROM MUAC 6102 TO GENERATOR (CONDUCTOR TO BE 2 500MCM TELCO FLEX11 OUTDOOR RATED BLACK JACKETED WIRE

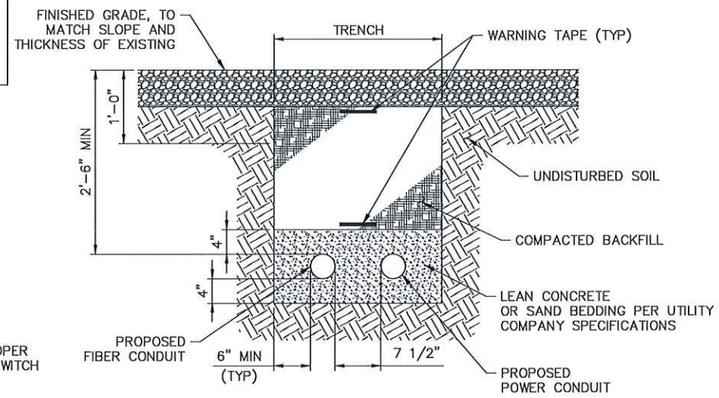


3 E-2 CONDUIT PLAN
SCALE: NTS

LEGEND	
A	AMPERE
V	VOLT
KMH	KILOWATT – HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
BGR	BURIED GROUND RING
BTCW	BARE TINNED SOLID COPPER WIRE
G	GROUND
⏚	GROUND
MGB	MASTER GROUND BAR O MECHANICAL CONNECTION ● CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR
—G—	GROUND COPPER WIRE, SIZE AS NOTED
———	EXPOSED WIRING
———	#6G AWG INSULATED STRANDED
———	COAXIAL CABLE/HYBRID CABLE
⊙	5/8"x8' COPPER CLAD STAINLESS STEEL GROUND ROD
⊛	GROUND ROD WITH TEST WELL
—o—●—	● EXOTHERMIC (CAD WELD) OR O MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
⊠	OMNI–DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL



4 E-2 EQUIPMENT ON LINE DIAGRAM
SCALE: NTS



NOTES:
1. BACKFILL SHALL BE CLEAN FILL WITHOUT STONES AND SHALL BE THOROUGHLY COMPACTED IN 12" LAYERS BY TAMPING OR APPROVED EQUAL METHOD. NO BELLYING OF TRENCH SHALL BE ALLOWED.
2. SCH 40 PVC CONDUIT SHALL BE USED BELOW GRADE.
3. SCH 80 PVC CONDUIT SHALL BE USED UNDER ROADWAY.

5 E-2 ELECTRIC TRENCH DETAIL
SCALE: 1/2" = 1'–0" (11x17 SIZE)
1" = 1'–0" (22x34 SIZE)

CONFIGURATION
4Sec–6797DB2
REFER TO LATEST T–MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

CROWN CASTLE
3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

T-Mobile
NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

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WORK ORDER NUMBER	DRAWN BY
9166.46	TLS

NO.	DATE	ISSUE
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RELEASED BY	DATE

STATE OF CONNECTICUT
EDWARD N. IANNICELLI
28473
LICENSED PROFESSIONAL ENGINEER

0 1 2 3
ORIGINAL SIZE IN INCHES

CROWN SITE INFORMATION
SITE ID #: 857525
APP ID #: 428769
SITE NAME: NEWTOWN DINGLEBROOK

T–MOBILE SITE INFORMATION
SITE ID #: CTFF013A
SITE NAME: CTFF013A

SITE ADDRESS
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE
ELECTRICAL DIAGRAMS & DETAILS

SHEET NUMBER
E-2

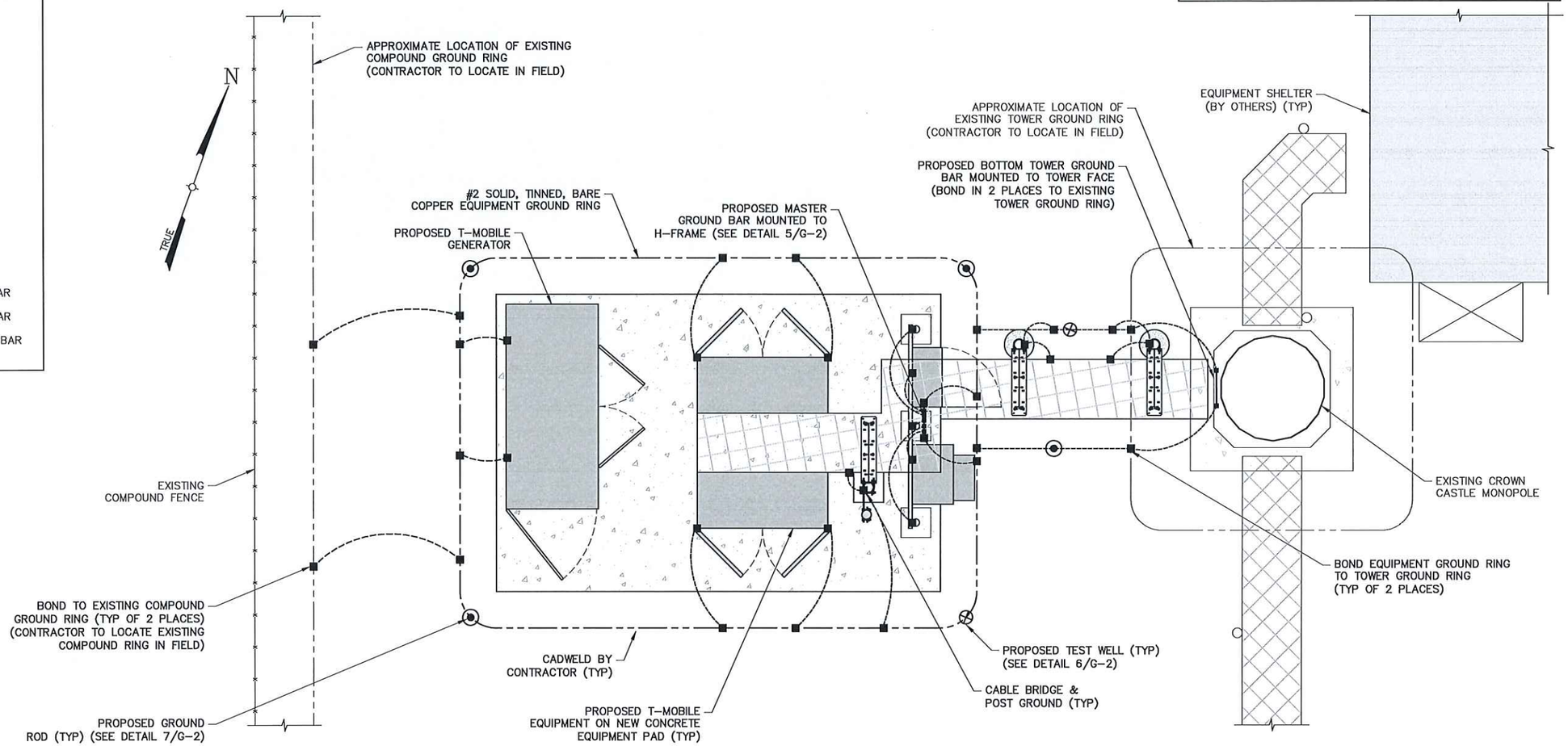
LEGEND

METER	COPPER GROUND BAR
CIRCUIT BREAKER	GROUND CONDUCTOR BY CONTRACTOR
CADWELD TYPE CONNECTION BY CONTRACTOR	GROUND RING BY CONTRACTOR
COAXIAL CABLE SHIELD GROUND KIT CONNECTION	GROUND ROD WITH TEST WELL
COMPRESSION FITTING GROUND CONNECTION	GROUND ROD

ABBREVIATIONS

A	AMPERE
C	CONDUIT
GND	GROUND
KWH	KILOWATT HOUR
P	POLE
SN	SOLID NEUTRAL
SW	SWITCH
V	VOLT
W	WIRE
WP	WEATHERPROOF
ø	PHASE
TGB	TOP GROUND BAR
MGB	MASTER GROUND BAR
BGB	BOTTOM GROUND BAR
PGB	EXISTING GROUND BAR

NOTE:
1. BASE BID TO INCLUDE INSTALLATION OF A BURIED GROUND RING AND (6) GROUND RODS OR SINGLE XIT HORIZONTAL CHEMICAL ROD AS DETERMINED BY FIELD CONDITIONS. ADDITIONAL RODS AS REQUIRED TO ACHIEVE 5 OHMS RESISTANCE.
2. MAXIMUM VERTICAL/HORIZONTAL DISTANCE BETWEEN CABLE GROUNDING KITS SHALL NOT EXCEED 100 FEET. INSTALL ADDITIONAL KITS AS REQUIRED BY FIELD CONDITIONS.
3. ALL CONNECTIONS TO EQUIPMENT PER MANUFACTURER'S GUIDELINES.
4. ALL ABOVE-GRADE DOWNLEADS TO BGR SHALL BE INSTALLED IN 1" NON-METALLIC CONDUIT SECURED EVERY 2' WITH NON-METALLIC CLIPS.



1 / G-1 GROUNDING PLAN
SCALE: 1" = 2'-0" (22X34)
1" = 4'-0" (11X17)

CONFIGURATION
4Sec-6797DB2
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

CROWN CASTLE
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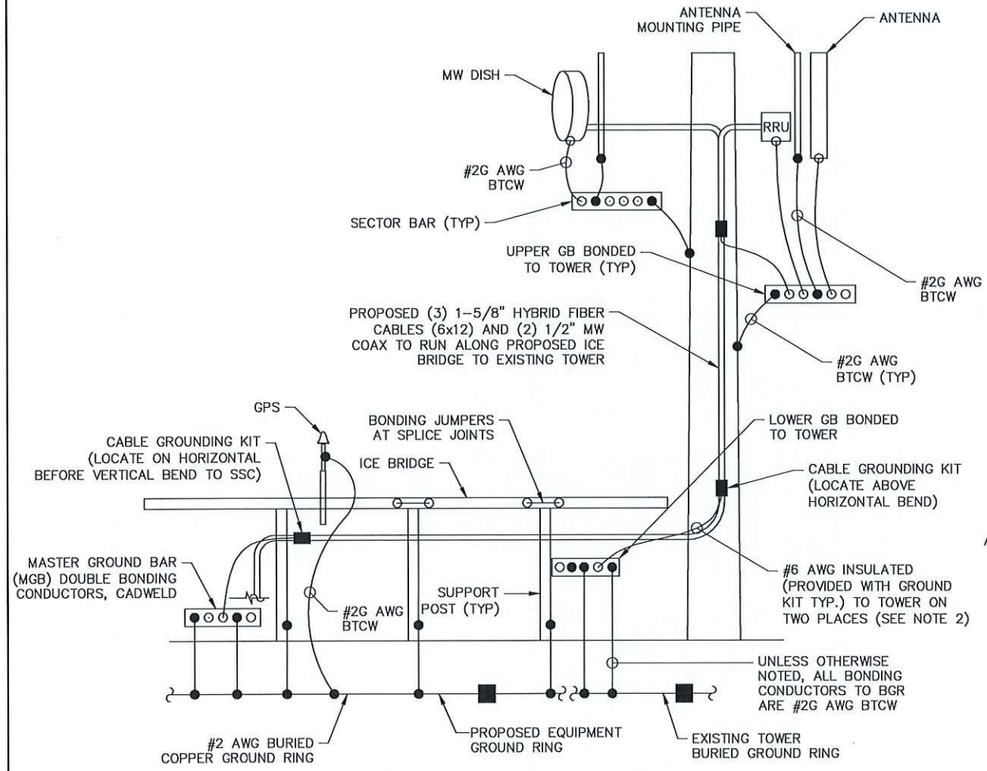
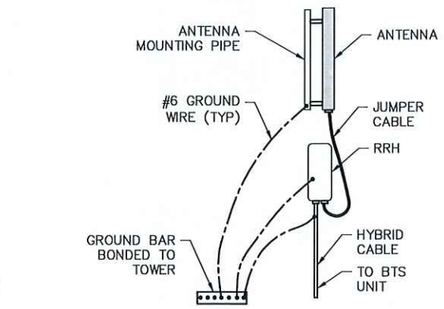
SITE ADDRESS
24 DINGLEBROOK LANE
TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE
GROUND PLAN & NOTES

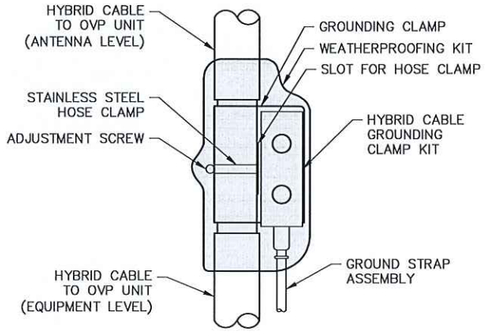
SHEET NUMBER
G-1



1 G-2 GROUNDING RISER DIAGRAM
SCALE: NTS



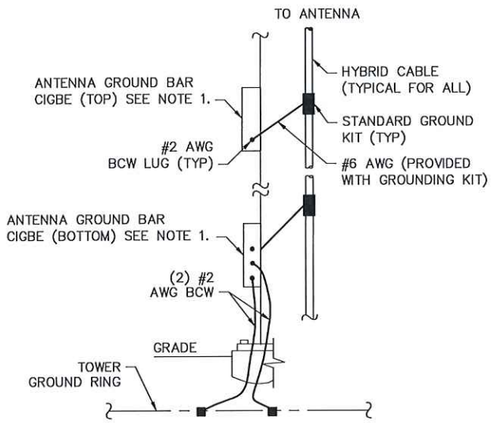
2 G-2 HYBRID CABLE CONNECTION DETAIL
SCALE: NTS



3 G-2 HYBRID CABLE GROUNDING DETAIL
SCALE: NTS

GROUNDING NOTES

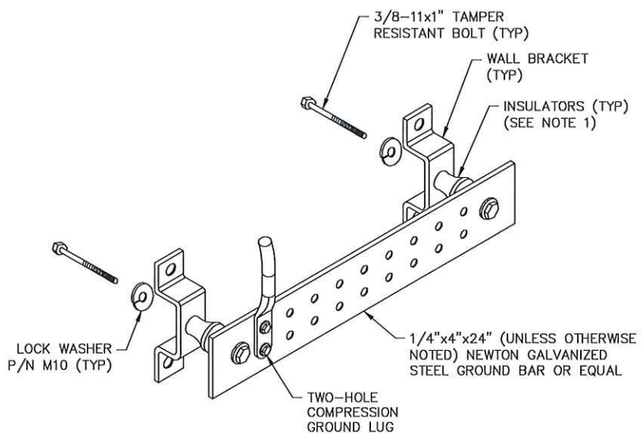
1. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
2. ALL GROUNDING WORK SHALL BE IN ACCORDANCE WITH T-MOBILE STANDARD PRACTICE.
3. ALL BUS CONNECTORS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS, T&B OR EQUAL, UNLESS OTHERWISE NOTED ON DRAWINGS. ALL LUGS SHALL BE ATTACHED TO BUSSES USING BOLTS, NUTS, AND LOCK WASHERS. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED.
4. ALL CONNECTORS SHALL BE CRIMPED USING HYDRAULIC CRIMPING TOOLS, T&B #TBM 8 OR EQUIVALENT.
5. ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FILED TO ENSURE PROPER CONTACT. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NON-OXIDIZING AGENT APPLIED PRIOR TO INSTALLATION.
6. ALL COPPER BUSSES SHALL BE CLEANED, POLISHED, AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.
7. ALL BENDS SHALL BE AS SHALLOW AS POSSIBLE, WITH NO TURN SHORTER THAN AN 8-INCH NOMINAL RADIUS.
8. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2. ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS, OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
9. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 10 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
10. ALL ROOF TOP ANTENNA MOUNTS SHALL BE GROUNDED WITH A #2 GROUND WIRE CONNECTED TO THE NEAREST GROUND BUS. ALL CONNECTIONS ARE TO BE CAD-WELDED IF POSSIBLE.
11. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO THE PROJECT MANAGER.
12. GROUNDING CONNECTION TO TRAVEL IN A DOWNWARD DIRECTION.
13. ALL EXPOSED #2 WIRE MUST BE TINN NOT BTW.
14. TECTONIC TAKES NO RESPONSIBILITY OR LIABILITY FOR THE GROUNDING SYSTEM AS SHOWN ON THIS SITE. THIS IS A STANDARD GROUNDING SYSTEM.



NOTES:

1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS UNIT IF REQUIRED.

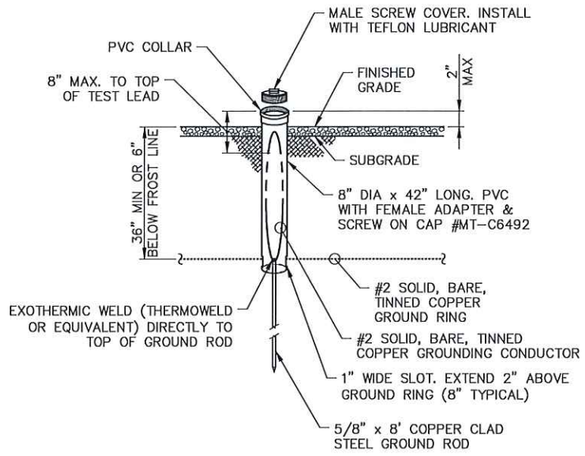
4 G-2 ANTENNA CABLE GROUNDING
SCALE: NTS



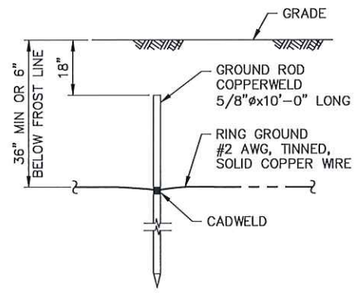
NOTE:

1. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATOR WHEN ATTACHING TO BUILDING OR SHELTERS.

5 G-2 GROUND BUS BAR DETAIL
SCALE: NTS



6 G-2 GROUND ROD WITH TEST WELL
SCALE: NTS



7 G-2 GROUND ROD
SCALE: NTS

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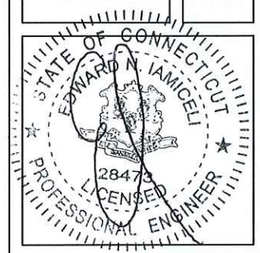

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SITE ADDRESS
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TOWN OF NEWTOWN
FAIRFIELD COUNTY
CT 06470

SHEET TITLE
GROUNDING DETAILS & NOTES

SHEET NUMBER
G-2

Date: **September 18, 2018**

Timothy Howell
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

FDH Infrastructure Services, LLC
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:	CTFF013A
	Carrier Site Name:	CTFF013A
Crown Castle Designation:	**Crown Castle BU Number:**	857525
	Crown Castle Site Name:	NEWTOWN DINGLEBROOK
	Crown Castle JDE Job Number:	488939
	Crown Castle Work Order Number:	1621394
	Crown Castle Order Number:	428769 Rev. 7
Engineering Firm Designation:	**FDH-IS Project Number:**	18SJCH1400
Site Data:	**24 DINGLEBROOK LANE, NEWTOWN, Fairfield County, CT**	
	Latitude *41° 28' 1.01"*, Longitude *-73° 20' 2.05"*	
	149 Foot - Monopole Tower	

Dear Timothy Howell,

FDH Infrastructure Services, LLC is pleased to submit this **"Structural Modification Report"** to determine the structural integrity of the above mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level including the proposed modifications as outlined in the attached drawings, "Appendix D". Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC4: Modified Structure w/ Proposed Equipment Configuration **Sufficient Capacity**

The analysis has been performed in accordance with the TIA-222-G Standard. This analysis utilizes an ultimate 3-second gust wind speed of 120 mph (converted to an equivalent 93 mph nominal 3-second gust wind speed per Section 1609.3.1 for use with TIA-222 G) as required by the 2016 Connecticut State Building Code. Exposure Category C with a maximum topographic factor, K_{zt}, of 1.000 and Risk Category II were used in this analysis.

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.

Respectfully submitted by:

Nicolette M. Camishion, EIT
Project Engineer II

Reviewed by:

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

STATE OF CONNECTICUT
DENNIS D. ABEL
No. 23247
LICENSED
PROFESSIONAL ENGINEER
09-18-2018

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 149 ft Monopole tower designed by Sabre Communications.

The tower has been modified per reinforcement drawings prepared by GPD Group in March of 2013. Reinforcement consists of flat plate from 0.0' to 120.0' and anchor rods. The tower was later modified per reinforcement drawings prepared by GPR Group in December of 2014. Reinforcement consists of flat plate from 25.0' to 126.0', anchor rods, additional pier rebar, and extensions to both the foundation pad and collar.

The modification drawings designed by FDH Infrastructure Services, LLC and attached in Appendix D have been considered in this analysis.

2) ANALYSIS CRITERIA

Building Code:	2016 Connecticut State Building Code
TIA-222 Revision:	TIA-222-G
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	0.75 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
128.0	128.0	4	ericsson	AIR 32 B2A/B66AA	1 4	1/2 1-3/8
		4	ericsson	RADIO 2217		
		4	ericsson	RADIO 4449 B12/B71		
		4	rfs celwave	APXVAA24_43-U-A20		
		1	rfs celwave	SC2-W100AB		
		1	SitePro1	F4P-12W Platform Mount		
		4	SitePro1	F4P-HRK12 Handrail Kit		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
148.0	150.0	3	ericsson	RRUS-11	1 2 12	1/2 3/4 1-5/8
		3	kmw comm	AM-X-CD-16-65-00T-RET		
		6	powerwave tech	P90-14-XLH-RR		
		6	powerwave tech	TT19-08BP111-001		
		1	raycap	DC6-48-60-18-8F		
	148.0	1	crown mounts	Platform Mount [LP 602-1]		
140.0	140.0	3	alcatel lucent	B13 RRH 4X30	8	1-5/8
		3	alcatel lucent	B66A RRH4X45		
		6	andrew	DB846F65ZAXY		
		3	commscope	BSAMNT-SBS-2-2		
		6	commscope	JAHH-65B-R3B		
		1	crown mounts	T-Arm Mount [TA 602-3]		
		3	nokia	AIRSCALE RRH 4T4R B5 160W		
		1	rfs celwave	DB-C1-12C-24AB-0Z		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, P.E., P.C.	4308150	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Sabre Communications	4570932	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Group	4860017	CCISITES
4-POST-MODIFICATION INSPECTION	Centek Engineering	4871327	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Sabre Communications	4895572	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Group	5461906	CCISITES
4-POST-MODIFICATION INSPECTION	Tower Engineering Professionals	5652840	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	FDH Infrastructure Services, LLC	Appendix D	On File

3.1) Analysis Method

tnxTower (version 8.0.4.0), 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.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the reinforced leg sections. These calculations are presented in Appendix C.

3.2) Assumptions

1) Tower and structures were built and maintained in accordance with the manufacturer's specifications.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) The existing base plate grout was not considered in this analysis.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
149 - 144	Pole	TP16.865x16x0.1875	Pole	11.0%	Pass
144 - 139	Pole	TP17.73x16.865x0.1875	Pole	21.9%	Pass
139 - 134	Pole	TP18.595x17.73x0.1875	Pole	38.4%	Pass
134 - 129	Pole	TP19.459x18.595x0.1875	Pole	52.6%	Pass
129 - 124.5	Pole	TP20.238x19.459x0.1875	Pole	72.1%	Pass
124.5 - 124.25	Pole + Reinf.	TP20.281x20.238x0.35	Reinf. 9 Tension Rupture	71.8%	Pass
124.25 - 119.25	Pole + Reinf.	TP21.146x20.281x0.3438	Reinf. 9 Tension Rupture	92.2%	Pass
119.25 - 118.5	Pole + Reinf.	TP21.276x21.146x0.3438	Reinf. 9 Tension Rupture	95.1%	Pass
118.5 - 118.25	Pole + Reinf.	TP21.319x21.276x0.7	Reinf. 5 Bolt-Shaft Bearing	70.5%	Pass
118.25 - 116	Pole + Reinf.	TP21.708x21.319x0.6875	Reinf. 5 Tension Rupture	55.9%	Pass
116 - 115.75	Pole + Reinf.	TP21.751x21.708x0.6875	Reinf. 5 Tension Rupture	56.5%	Pass
115.75 - 110.75	Pole + Reinf.	TP22.616x21.751x0.6625	Reinf. 5 Tension Rupture	66.3%	Pass
110.75 - 105.75	Pole + Reinf.	TP23.481x22.616x0.6375	Reinf. 5 Tension Rupture	75.5%	Pass
105.75 - 102	Pole + Reinf.	TP24.735x23.481x0.6125	Reinf. 5 Tension Rupture	81.9%	Pass
102 - 97	Pole + Reinf.	TP24.62x23.755x0.675	Reinf. 5 Tension Rupture	82.9%	Pass
97 - 96.75	Pole + Reinf.	TP24.663x24.62x0.825	Reinf. 5 Tension Rupture	69.7%	Pass
96.75 - 93.98	Pole + Reinf.	TP25.142x24.663x0.8125	Reinf. 5 Tension Rupture	72.9%	Pass
93.98 - 93.73	Pole + Reinf.	TP25.186x25.142x0.8	Reinf. 5 Tension Rupture	73.2%	Pass
93.73 - 91.5	Pole + Reinf.	TP25.572x25.186x0.8	Reinf. 5 Bolt Shear	79.3%	Pass
91.5 - 91.25	Pole + Reinf.	TP25.615x25.572x0.6375	Reinf. 24 Tension Rupture	90.1%	Pass
91.25 - 90.25	Pole + Reinf.	TP25.788x25.615x0.6375	Reinf. 24 Tension Rupture	91.3%	Pass
90.25 - 90	Pole + Reinf.	TP25.831x25.788x0.975	Reinf. 24 Tension Rupture	62.3%	Pass
90 - 89	Pole + Reinf.	TP26.004x25.831x0.975	Reinf. 24 Tension Rupture	63.2%	Pass
89 - 88.75	Pole + Reinf.	TP26.047x26.004x0.825	Reinf. 24 Tension Rupture	73.2%	Pass
88.75 - 83.75	Pole + Reinf.	TP26.913x26.047x0.8	Reinf. 24 Tension Rupture	78.0%	Pass
83.75 - 80.08	Pole + Reinf.	TP27.548x26.913x0.775	Reinf. 24 Tension Rupture	81.4%	Pass
80.08 - 79.83	Pole + Reinf.	TP27.591x27.548x0.95	Reinf. 23 Tension Rupture	70.1%	Pass
79.83 - 74.83	Pole + Reinf.	TP28.456x27.591x0.925	Reinf. 23 Tension Rupture	73.9%	Pass
74.83 - 73.5	Pole + Reinf.	TP28.686x28.456x0.925	Reinf. 23 Tension Rupture	74.9%	Pass
73.5 - 73.25	Pole + Reinf.	TP28.73x28.686x1.125	Reinf. 23 Tension Rupture	62.8%	Pass
73.25 - 71	Pole + Reinf.	TP29.119x28.73x1.1	Reinf. 23 Tension Rupture	64.2%	Pass
71 - 70.75	Pole + Reinf.	TP29.162x29.119x1	Reinf. 24 Tension Rupture	70.2%	Pass
70.75 - 65.75	Pole + Reinf.	TP30.027x29.162x0.975	Reinf. 24 Tension Rupture	73.4%	Pass
65.75 - 63	Pole + Reinf.	TP30.503x30.027x0.95	Reinf. 24 Tension Rupture	75.1%	Pass
63 - 62.75	Pole + Reinf.	TP30.547x30.503x0.9	Reinf. 22 Tension Rupture	79.4%	Pass
62.75 - 62.08	Pole + Reinf.	TP30.663x30.547x0.9	Reinf. 22 Tension Rupture	79.8%	Pass
62.08 - 61.83	Pole + Reinf.	TP30.706x30.663x0.7625	Reinf. 21 Tension Rupture	90.1%	Pass
61.83 - 60.67	Pole + Reinf.	TP30.907x30.706x0.75	Reinf. 21 Tension Rupture	90.9%	Pass
60.67 - 60.42	Pole + Reinf.	TP30.95x30.907x0.75	Reinf. 21 Tension Rupture	91.0%	Pass
60.42 - 59	Pole + Reinf.	TP31.196x30.95x0.75	Reinf. 21 Tension Rupture	91.9%	Pass
59 - 58.75	Pole + Reinf.	TP31.239x31.196x0.825	Reinf. 14 Tension Rupture	81.8%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
58.75 - 53.75	Pole + Reinf.	TP32.104x31.239x0.8	Reinf. 14 Tension Rupture	84.7%	Pass
53.75 - 53.25	Pole + Reinf.	TP33.013x32.104x0.8	Reinf. 14 Tension Rupture	85.0%	Pass
53.25 - 47.5	Pole + Reinf.	TP32.682x31.691x0.8625	Reinf. 3 Tension Rupture	80.8%	Pass
47.5 - 45.75	Pole + Reinf.	TP32.984x32.682x0.8625	Reinf. 3 Tension Rupture	81.6%	Pass
45.75 - 45.5	Pole + Reinf.	TP33.027x32.984x0.8625	Reinf. 11 Tension Rupture	79.8%	Pass
45.5 - 45	Pole + Reinf.	TP33.113x33.027x0.8625	Reinf. 11 Tension Rupture	80.1%	Pass
45 - 44.75	Pole + Reinf.	TP33.157x33.113x0.9125	Reinf. 18 Tension Rupture	77.4%	Pass
44.75 - 43.5	Pole + Reinf.	TP33.372x33.157x0.9125	Reinf. 18 Tension Rupture	77.9%	Pass
43.5 - 43.25	Pole + Reinf.	TP33.415x33.372x1.0125	Reinf. 6 Tension Rupture	74.6%	Pass
43.25 - 38.25	Pole + Reinf.	TP34.278x33.415x1	Reinf. 6 Tension Rupture	76.6%	Pass
38.25 - 33.25	Pole + Reinf.	TP35.14x34.278x0.9875	Reinf. 6 Tension Rupture	78.5%	Pass
33.25 - 30.5	Pole + Reinf.	TP35.614x35.14x0.9625	Reinf. 6 Tension Rupture	79.5%	Pass
30.5 - 30.25	Pole + Reinf.	TP35.658x35.614x0.9625	Reinf. 6 Tension Rupture	79.3%	Pass
30.25 - 29.67	Pole + Reinf.	TP35.758x35.658x0.9625	Reinf. 6 Tension Rupture	79.5%	Pass
29.67 - 29.42	Pole + Reinf.	TP35.801x35.758x0.7625	Reinf. 11 Tension Rupture	92.4%	Pass
29.42 - 28	Pole + Reinf.	TP36.046x35.801x0.7625	Reinf. 11 Tension Rupture	92.9%	Pass
28 - 27.75	Pole + Reinf.	TP36.089x36.046x0.9125	Reinf. 13 Tension Rupture	85.6%	Pass
27.75 - 26.92	Pole + Reinf.	TP36.232x36.089x0.9125	Reinf. 13 Tension Rupture	85.9%	Pass
26.92 - 26.67	Pole + Reinf.	TP36.275x36.232x0.875	Reinf. 13 Tension Rupture	86.9%	Pass
26.67 - 26.5	Pole + Reinf.	TP36.304x36.275x0.875	Reinf. 13 Tension Rupture	87.0%	Pass
26.5 - 26.25	Pole + Reinf.	TP36.347x36.304x0.8375	Reinf. 13 Tension Rupture	87.7%	Pass
26.25 - 24.92	Pole + Reinf.	TP36.577x36.347x0.8375	Reinf. 13 Tension Rupture	88.2%	Pass
24.92 - 24.67	Pole + Reinf.	TP36.62x36.577x0.8	Reinf. 1 Tension Rupture	87.1%	Pass
24.67 - 22.17	Pole + Reinf.	TP37.051x36.62x0.7875	Reinf. 1 Tension Rupture	87.9%	Pass
22.17 - 21.92	Pole + Reinf.	TP37.094x37.051x0.8625	Reinf. 1 Tension Rupture	79.3%	Pass
21.92 - 16.92	Pole + Reinf.	TP37.957x37.094x0.8375	Reinf. 1 Tension Rupture	80.8%	Pass
16.92 - 11.92	Pole + Reinf.	TP38.819x37.957x0.825	Reinf. 1 Tension Rupture	82.1%	Pass
11.92 - 6.92	Pole + Reinf.	TP39.681x38.819x0.8125	Reinf. 1 Tension Rupture	83.4%	Pass
6.92 - 1.92	Pole + Reinf.	TP40.544x39.681x0.8	Reinf. 1 Tension Rupture	84.6%	Pass
1.92 - 0	Pole + Reinf.	TP40.875x40.544x0.7875	Reinf. 1 Tension Rupture	85.0%	Pass
				Summary	
			Pole	72.1%	Pass
			Reinforcement	95.1%	Pass
			Overall	**95.1%**	**Pass**

Table 5 - Tower Component Stresses vs. Capacity - LC4

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Transfer Stiffeners	0	87.1	Pass
1	Anchor Rods	0	80.8	Pass
1	Base Plate	0	94.9	Pass
1	Base Foundation	0	64.1	Pass
1	Base Foundation Soil Interaction	0	56.2	Pass

Structure Rating (max from all components) =	95.1%

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

4.1) Recommendations

Perform the modifications detailed in "Appendix D" to remedy the deficiencies identified in Crown Castle Work Order No. 1612222.

The results of the tilt and twist values for a 60 mph 3-second gust service wind speed per the TIA-222-G Standard are given below:

Table 6 - Maximum Antenna Rotation under Service Winds (Proposed Carrier Only)

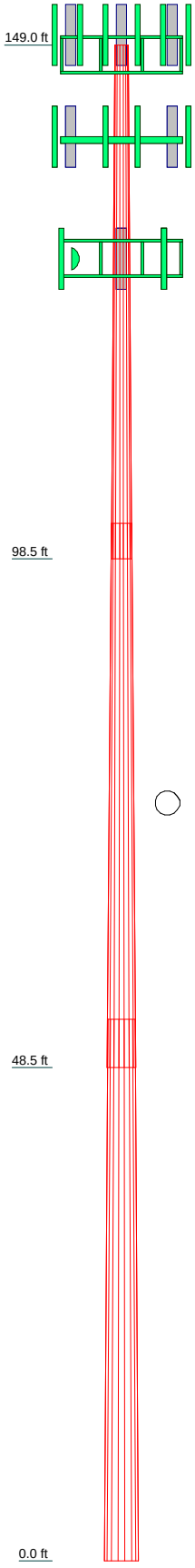
Elevation (ft)	Antenna	Tilt (deg)*	Twist (deg)*
128.0	SC2-W100AB	6.4421	0.0387

*Tilt and twist to be reviewed by the carrier

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	50.50	18	0.1875	3.50	16.0000	24.7350		2.1
2	53.50	18	0.2500	4.75	23.7546	33.0125	A572-65	4.1
3	53.25	18	0.3125		31.6905	40.8750		6.5
								12.6



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 5/8x4'	149	B13 RRH 4X30	140
Platform Mount [LP 602-1]	148	B13 RRH 4X30	140
(2) P90-14-XLH-RR w/ Mount Pipe	148	B13 RRH 4X30	140
(2) P90-14-XLH-RR w/ Mount Pipe	148	B66A RRH4X45	140
(2) P90-14-XLH-RR w/ Mount Pipe	148	B66A RRH4X45	140
AM-X-CD-16-65-00T-RET w/ Mount Pipe	148	B66A RRH4X45	140
AM-X-CD-16-65-00T-RET w/ Mount Pipe	148	DB-C1-12C-24AB-0Z	140
AM-X-CD-16-65-00T-RET w/ Mount Pipe	148	F4P-12W Platform Mount	128
(2) TT19-08BP111-001	148	F4P-HRK12 Handrail Kit	128
(2) TT19-08BP111-001	148	F4P-HRK12 Handrail Kit	128
(2) TT19-08BP111-001	148	F4P-HRK12 Handrail Kit	128
RRUS-11	148	F4P-HRK12 Handrail Kit	128
RRUS-11	148	Pipe Mount	128
RRUS-11	148	Pipe Mount	128
DC6-48-60-18-8F	148	Pipe Mount	128
T-Arm Mount [TA 602-3]	140	Pipe Mount	128
BSAMNT-SBS-2-2	140	AIR 32 B2A/B66AA w/Mount Pipe	128
BSAMNT-SBS-2-2	140	AIR 32 B2A/B66AA w/Mount Pipe	128
BSAMNT-SBS-2-2	140	AIR 32 B2A/B66AA w/Mount Pipe	128
Pipe Mount	140	AIR 32 B2A/B66AA w/Mount Pipe	128
Pipe Mount	140	APXVAA24_43-U-A20 w/Mount Pipe	128
Pipe Mount	140	APXVAA24_43-U-A20 w/Mount Pipe	128
(2) DB846F65ZAXY w/ Mount Pipe	140	APXVAA24_43-U-A20 w/Mount Pipe	128
(2) DB846F65ZAXY w/ Mount Pipe	140	APXVAA24_43-U-A20 w/Mount Pipe	128
(2) DB846F65ZAXY w/ Mount Pipe	140	RADIO 4449 B12/B71	128
(2) JAHH-65B-R3B w/ Mount Pipe	140	RADIO 4449 B12/B71	128
(2) JAHH-65B-R3B w/ Mount Pipe	140	RADIO 2217	128
(2) JAHH-65B-R3B w/ Mount Pipe	140	RADIO 2217	128
AIRSCALE RRH 4T4R B5 160W	140	RADIO 2217	128
AIRSCALE RRH 4T4R B5 160W	140	RADIO 2217	128
AIRSCALE RRH 4T4R B5 160W	140	RADIO 4449 B12/B71	128
		RADIO 4449 B12/B71	128
		SC2-W100AB	128

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

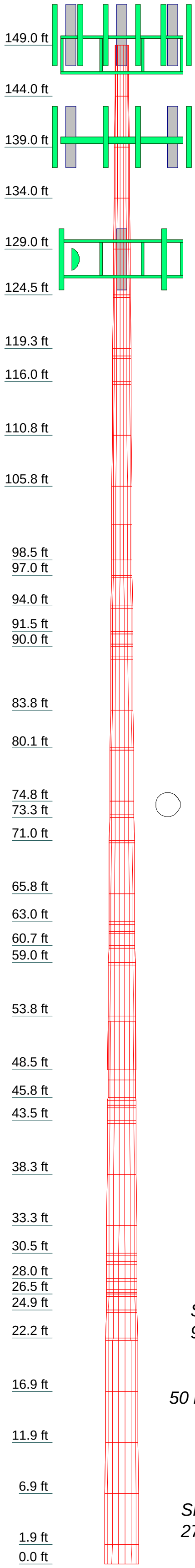
1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft

FDH INFRASTRUCTURE SERVICES
ENGINEERING INNOVATION

FDH Infrastructure Services
6521 Meridien Drive, Suite 107
Raleigh, North Carolina 27616
Phone: 9197551012
FAX: 9197551031

Job:	***857525 Newtown Dinglebrook***		
Project:	***18SWZL1400***		
Client: Crown Castle	Drawn by: N Camishion		App'd:
Code: TIA-222-G	Date: 09/18/18		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		16.0000	16.8649	A572-65	0.2
2	5.00	18	0.1875		16.8649	17.7297		0.2
3	5.00	18	0.1875		17.7297	18.5946		0.2
4	5.00	18	0.1875		18.5946	19.4594		0.2
5–12	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
13	5.00	18	0.6375		22.6161	23.4810		0.7
14	[illegible]	18	0.6125	3.50	23.4810	24.7350		1.0
15–24	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
25	5.00	18	0.800[illegible]		26.0[illegible]	26.9[illegible]		1.0
26–41	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
42	5.00	18	0.8000		31.23[illegible]	32.1[illegible]		1.2
43	[illegible]	18	[illegible]	4.75	32.1040	33.0125		1.3
44–50	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
51	5.00	18	1.000[illegible]		33.4[illegible]	34.27[illegible]		1.6
52	5.00	18	0.9875		34.2777	35.1401		1.7
53–67	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
68	5.00	18	0.8250		37.9567	38.8191		1.7
69	5.00	18	0.8125		38.8191	39.6815		1.7
70	5.00	18	0.8000		39.6815	40.5438		1.7
71	1.92	18	0.7875		40.5438	40.8750		0.7
								33.4



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
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(2) P90-14-XLH-RR w/ Mount Pipe	148	B66A RRH4X45	140
(2) P90-14-XLH-RR w/ Mount Pipe	148	B66A RRH4X45	140
AM-X-CD-16-65-00T-RET w/ Mount Pipe	148	B66A RRH4X45	140
		DB-C1-12C-24AB-0Z	140
AM-X-CD-16-65-00T-RET w/ Mount Pipe	148	F4P-12W Platform Mount	128
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AIRSCALE RRH 4T4R B5 160W	140	SC2-W100AB	128
AIRSCALE RRH 4T4R B5 160W	140		

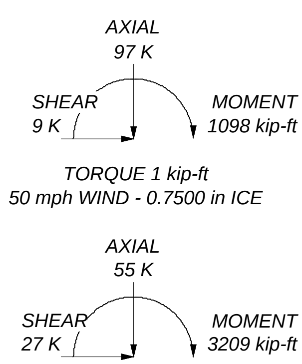
MATERIAL STRENGTH

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 Exposure C to the TIA-222-G Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 72.1%

ALL REACTIONS ARE FACTORED



FDH Infrastructure Services 6521 Meridien Drive, Suite 107 Raleigh, North Carolina 27616 Phone: 9197551012 FAX: 9197551031	Job: **857525 Newtown Dinglebrook**		
	Project: **18SWZL1400**		
	Client: Crown Castle	Drawn by: N Camishion	App'd:
	Code: TIA-222-G	Date: 09/18/18	Scale: NTS
	Path:		Dwg No. E-1

Tower Input Data

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

Tower is located in Fairfield County, Connecticut.
ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
Basic wind speed of 93 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade

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	149.00-144.00	5.00	0.00	18	16.0000	16.8649	0.1875	0.7500	A572-65 (65 ksi)
L2	144.00-139.00	5.00	0.00	18	16.8649	17.7297	0.1875	0.7500	A572-65 (65 ksi)
L3	139.00-134.00	5.00	0.00	18	17.7297	18.5946	0.1875	0.7500	A572-65 (65 ksi)
L4	134.00-129.00	5.00	0.00	18	18.5946	19.4594	0.1875	0.7500	A572-65 (65 ksi)
L5	129.00-124.50	4.50	0.00	18	19.4594	20.2378	0.1875	0.7500	A572-65 (65 ksi)
L6	124.50-124.25	0.25	0.00	18	20.2378	20.2810	0.3500	1.4000	A572-65 (65 ksi)
L7	124.25-119.25	5.00	0.00	18	20.2810	21.1459	0.3438	1.3750	A572-65 (65 ksi)
L8	119.25-118.50	0.75	0.00	18	21.1459	21.2756	0.3438	1.3750	A572-65 (65 ksi)
L9	118.50-118.25	0.25	0.00	18	21.2756	21.3188	0.7000	2.8000	A572-65 (65 ksi)
L10	118.25-116.00	2.25	0.00	18	21.3188	21.7080	0.6875	2.7500	A572-65 (65 ksi)
L11	116.00-115.75	0.25	0.00	18	21.7080	21.7513	0.6875	2.7500	A572-65 (65 ksi)
L12	115.75-110.75	5.00	0.00	18	21.7513	22.6161	0.6625	2.6500	A572-65 (65 ksi)
L13	110.75-105.75	5.00	0.00	18	22.6161	23.4810	0.6375	2.5500	A572-65 (65 ksi)
L14	105.75-98.50	7.25	3.50	18	23.4810	24.7350	0.6125	2.4500	A572-65 (65 ksi)
L15	98.50-97.00	5.00	0.00	18	23.7546	24.6198	0.6750	2.7000	A572-65 (65 ksi)
L16	97.00-96.75	0.25	0.00	18	24.6198	24.6631	0.8250	3.3000	A572-65 (65 ksi)
L17	96.75-93.98	2.77	0.00	18	24.6631	25.1424	0.8125	3.2500	A572-65 (65 ksi)
L18	93.98-93.73	0.25	0.00	18	25.1424	25.1857	0.8000	3.2000	A572-65 (65 ksi)
L19	93.73-91.50	2.23	0.00	18	25.1857	25.5716	0.8000	3.2000	A572-65 (65 ksi)
L20	91.50-91.25	0.25	0.00	18	25.5716	25.6148	0.6375	2.5500	A572-65 (65 ksi)
L21	91.25-90.25	1.00	0.00	18	25.6148	25.7879	0.6375	2.5500	A572-65 (65 ksi)
L22	90.25-90.00	0.25	0.00	18	25.7879	25.8311	0.9750	3.9000	A572-65 (65 ksi)
L23	90.00-89.00	1.00	0.00	18	25.8311	26.0042	0.9750	3.9000	A572-65 (65 ksi)
L24	89.00-88.75	0.25	0.00	18	26.0042	26.0474	0.8250	3.3000	A572-65 (65 ksi)
L25	88.75-83.75	5.00	0.00	18	26.0474	26.9127	0.8000	3.2000	A572-65 (65 ksi)
L26	83.75-80.08	3.67	0.00	18	26.9127	27.5477	0.7750	3.1000	A572-65 (65 ksi)
L27	80.08-79.83	0.25	0.00	18	27.5477	27.5910	0.9500	3.8000	A572-65 (65 ksi)
L28	79.83-74.83	5.00	0.00	18	27.5910	28.4562	0.9250	3.7000	A572-65 (65 ksi)
L29	74.83-73.50	1.33	0.00	18	28.4562	28.6864	0.9250	3.7000	A572-65 (65 ksi)
L30	73.50-73.25	0.25	0.00	18	28.6864	28.7296	1.1250	4.5000	A572-65 (65 ksi)
L31	73.25-71.00	2.25	0.00	18	28.7296	29.1190	1.1000	4.4000	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
									(65 ksi)
L32	71.00-70.75	0.25	0.00	18	29.1190	29.1623	1.0000	4.0000	A572-65 (65 ksi)
L33	70.75-65.75	5.00	0.00	18	29.1623	30.0275	0.9750	3.9000	A572-65 (65 ksi)
L34	65.75-63.00	2.75	0.00	18	30.0275	30.5034	0.9500	3.8000	A572-65 (65 ksi)
L35	63.00-62.75	0.25	0.00	18	30.5034	30.5466	0.9000	3.6000	A572-65 (65 ksi)
L36	62.75-62.08	0.67	0.00	18	30.5466	30.6626	0.9000	3.6000	A572-65 (65 ksi)
L37	62.08-61.83	0.25	0.00	18	30.6626	30.7058	0.7625	3.0500	A572-65 (65 ksi)
L38	61.83-60.67	1.16	0.00	18	30.7058	30.9065	0.7500	3.0000	A572-65 (65 ksi)
L39	60.67-60.42	0.25	0.00	18	30.9065	30.9498	0.7500	3.0000	A572-65 (65 ksi)
L40	60.42-59.00	1.42	0.00	18	30.9498	31.1955	0.7500	3.0000	A572-65 (65 ksi)
L41	59.00-58.75	0.25	0.00	18	31.1955	31.2388	0.8250	3.3000	A572-65 (65 ksi)
L42	58.75-53.75	5.00	0.00	18	31.2388	32.1040	0.8000	3.2000	A572-65 (65 ksi)
L43	53.75-48.50	5.25	4.75	18	32.1040	33.0125	0.8000	3.2000	A572-65 (65 ksi)
L44	48.50-47.50	5.75	0.00	18	31.6905	32.6823	0.8625	3.4500	A572-65 (65 ksi)
L45	47.50-45.75	1.75	0.00	18	32.6823	32.9841	0.8625	3.4500	A572-65 (65 ksi)
L46	45.75-45.50	0.25	0.00	18	32.9841	33.0272	0.8625	3.4500	A572-65 (65 ksi)
L47	45.50-45.00	0.50	0.00	18	33.0272	33.1135	0.8625	3.4500	A572-65 (65 ksi)
L48	45.00-44.75	0.25	0.00	18	33.1135	33.1566	0.9125	3.6500	A572-65 (65 ksi)
L49	44.75-43.50	1.25	0.00	18	33.1566	33.3722	0.9125	3.6500	A572-65 (65 ksi)
L50	43.50-43.25	0.25	0.00	18	33.3722	33.4153	1.0125	4.0500	A572-65 (65 ksi)
L51	43.25-38.25	5.00	0.00	18	33.4153	34.2777	1.0000	4.0000	A572-65 (65 ksi)
L52	38.25-33.25	5.00	0.00	18	34.2777	35.1401	0.9875	3.9500	A572-65 (65 ksi)
L53	33.25-30.50	2.75	0.00	18	35.1401	35.6144	0.9625	3.8500	A572-65 (65 ksi)
L54	30.50-30.25	0.25	0.00	18	35.6144	35.6575	0.9625	3.8500	A572-65 (65 ksi)
L55	30.25-29.67	0.58	0.00	18	35.6575	35.7576	0.9625	3.8500	A572-65 (65 ksi)
L56	29.67-29.42	0.25	0.00	18	35.7576	35.8007	0.7625	3.0500	A572-65 (65 ksi)
L57	29.42-28.00	1.42	0.00	18	35.8007	36.0456	0.7625	3.0500	A572-65 (65 ksi)
L58	28.00-27.75	0.25	0.00	18	36.0456	36.0887	0.9125	3.6500	A572-65 (65 ksi)
L59	27.75-26.92	0.83	0.00	18	36.0887	36.2319	0.9125	3.6500	A572-65 (65 ksi)
L60	26.92-26.67	0.25	0.00	18	36.2319	36.2750	0.8750	3.5000	A572-65 (65 ksi)
L61	26.67-26.50	0.17	0.00	18	36.2750	36.3043	0.8750	3.5000	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
L62	26.50-26.25	0.25	0.00	18	36.3043	36.3474	0.8375	3.3500	A572-65 (65 ksi)
L63	26.25-24.92	1.33	0.00	18	36.3474	36.5768	0.8375	3.3500	A572-65 (65 ksi)
L64	24.92-24.67	0.25	0.00	18	36.5768	36.6200	0.8000	3.2000	A572-65 (65 ksi)
L65	24.67-22.17	2.50	0.00	18	36.6200	37.0512	0.7875	3.1500	A572-65 (65 ksi)
L66	22.17-21.92	0.25	0.00	18	37.0512	37.0943	0.8625	3.4500	A572-65 (65 ksi)
L67	21.92-16.92	5.00	0.00	18	37.0943	37.9567	0.8375	3.3500	A572-65 (65 ksi)
L68	16.92-11.92	5.00	0.00	18	37.9567	38.8191	0.8250	3.3000	A572-65 (65 ksi)
L69	11.92-6.92	5.00	0.00	18	38.8191	39.6815	0.8125	3.2500	A572-65 (65 ksi)
L70	6.92-1.92	5.00	0.00	18	39.6815	40.5438	0.8000	3.2000	A572-65 (65 ksi)
L71	1.92-0.00	1.92		18	40.5438	40.8750	0.7875	3.1500	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	16.2179	9.4104	297.2674	5.6134	8.1280	36.5733	594.9259	4.7061	2.4860	13.259
	17.0961	9.9251	348.7602	5.9205	8.5673	40.7081	697.9793	4.9635	2.6382	14.07
L2	17.0961	9.9251	348.7602	5.9205	8.5673	40.7081	697.9793	4.9635	2.6382	14.07
	17.9743	10.4398	405.8804	6.2275	9.0067	45.0643	812.2948	5.2209	2.7904	14.882
L3	17.9743	10.4398	405.8804	6.2275	9.0067	45.0643	812.2948	5.2209	2.7904	14.882
	18.8525	10.9545	468.9198	6.5345	9.4460	49.6420	938.4565	5.4783	2.9426	15.694
L4	18.8525	10.9545	468.9198	6.5345	9.4460	49.6420	938.4565	5.4783	2.9426	15.694
	19.7307	11.4692	538.1702	6.8415	9.8854	54.4410	1077.0485	5.7357	3.0949	16.506
L5	19.7307	11.4692	538.1702	6.8415	9.8854	54.4410	1077.0485	5.7357	3.0949	16.506
	20.5210	11.9324	606.0472	7.1178	10.2808	58.9495	1212.8919	5.9673	3.2318	17.237
L6	20.4960	22.0933	1104.0045	7.0602	10.2808	107.3852	2209.4616	11.0488	2.9458	8.417
	20.5399	22.1414	1111.2216	7.0755	10.3028	107.8567	2223.9053	11.0728	2.9535	8.438
L7	20.5409	21.7528	1092.4053	7.0777	10.3028	106.0304	2186.2481	10.8785	2.9645	8.624
	21.4190	22.6964	1240.8224	7.3848	10.7421	115.5102	2483.2776	11.3504	3.1167	9.067
L8	21.4190	22.6964	1240.8224	7.3848	10.7421	115.5102	2483.2776	11.3504	3.1167	9.067
	21.5508	22.8380	1264.1819	7.4308	10.8080	116.9672	2530.0271	11.4211	3.1395	9.133
L9	21.4958	45.7149	2445.1165	7.3043	10.8080	226.2321	4893.4504	22.8618	2.5125	3.589
	21.5397	45.8109	2460.5652	7.3197	10.8300	227.1997	4924.3682	22.9098	2.5201	3.6
L10	21.5417	45.0202	2421.0244	7.3241	10.8300	223.5486	4845.2345	22.5144	2.5421	3.698
	21.9368	45.8694	2560.6335	7.4623	11.0277	232.2007	5124.6364	22.9391	2.6106	3.797
L11	21.9368	45.8694	2560.6335	7.4623	11.0277	232.2007	5124.6364	22.9391	2.6106	3.797
	21.9808	45.9638	2576.4690	7.4776	11.0496	233.1722	5156.3281	22.9862	2.6182	3.808
L12	21.9846	44.3449	2491.6299	7.4865	11.0496	225.4942	4986.5384	22.1767	2.6622	4.018
	22.8628	46.1635	2810.9189	7.7935	11.4890	244.6621	5625.5365	23.0861	2.8144	4.248
L13	22.8667	44.4721	2714.0976	7.8024	11.4890	236.2347	5431.7665	22.2403	2.8584	4.484
	23.7449	46.2220	3047.2671	8.1094	11.9283	255.4647	6098.5439	23.1154	3.0106	4.723
L14	23.7487	44.4580	2937.3894	8.1183	11.9283	246.2532	5878.6440	22.2332	3.0546	4.987
	25.0221	46.8959	3447.6043	8.5635	12.5654	274.3733	6899.7450	23.4524	3.2754	5.348
L15	24.6319	49.4469	3327.6160	8.1933	12.0673	275.7539	6659.6105	24.7281	2.9928	4.434
	24.8955	51.3006	3716.0650	8.5004	12.5069	297.1218	7437.0197	25.6552	3.1451	4.659
L16	24.8724	62.3079	4457.0348	8.4472	12.5069	356.3669	8919.9343	31.1599	2.8811	3.492

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
	24.9163	62.4212	4481.3889	8.4625	12.5288	357.6856	8968.6746	31.2165	2.8887	3.501
L17	24.9182	61.5077	4420.4356	8.4670	12.5288	352.8206	8846.6878	30.7597	2.9107	3.582
	25.4049	62.7438	4692.3452	8.6371	12.7724	367.3830	9390.8647	31.3779	2.9951	3.686
L18	25.4069	61.8103	4627.2800	8.6416	12.7724	362.2888	9260.6487	30.9110	3.0171	3.771
	25.4508	61.9201	4651.9946	8.6569	12.7943	363.5982	9310.1104	30.9659	3.0247	3.781
L19	25.4508	61.9201	4651.9946	8.6569	12.7943	363.5982	9310.1104	30.9659	3.0247	3.781
	25.8426	62.9000	4876.3535	8.7939	12.9904	375.3825	9759.1234	31.4560	3.0926	3.866
L20	25.8677	50.4522	3962.8196	8.8516	12.9904	305.0585	7930.8536	25.2309	3.3786	5.3
	25.9116	50.5398	3983.4822	8.8670	13.0123	306.1312	7972.2059	25.2747	3.3862	5.312
L21	25.9116	50.5398	3983.4822	8.8670	13.0123	306.1312	7972.2059	25.2747	3.3862	5.312
	26.0874	50.8899	4066.8507	8.9284	13.1002	310.4409	8139.0526	25.4498	3.4167	5.359
L22	26.0353	76.7872	5972.8351	8.8086	13.1002	455.9331	11953.5294	38.4009	2.8227	2.895
	26.0792	76.9211	6004.1305	8.8239	13.1222	457.5545	12016.1613	38.4678	2.8303	2.903
L23	26.0792	76.9211	6004.1305	8.8239	13.1222	457.5545	12016.1613	38.4678	2.8303	2.903
	26.2549	77.4566	6130.4051	8.8854	13.2101	464.0686	12268.8768	38.7356	2.8607	2.934
L24	26.2781	65.9330	5281.0878	8.9386	13.2101	399.7757	10569.1246	32.9727	3.1247	3.788
	26.3220	66.0462	5308.3554	8.9540	13.2321	401.1725	10623.6957	33.0294	3.1324	3.797
L25	26.3259	64.1083	5162.8177	8.9628	13.2321	390.1736	10332.4287	32.0603	3.1764	3.97
	27.2044	66.3053	5712.0009	9.2700	13.6716	417.7993	11431.5178	33.1589	3.3286	4.161
L26	27.2083	64.2948	5549.4092	9.2789	13.6716	405.9067	11106.1205	32.1535	3.3726	4.352
	27.8532	65.8569	5963.8239	9.5043	13.9943	426.1623	11935.4952	32.9347	3.4844	4.496
L27	27.8262	80.2002	7168.0737	9.4422	13.9943	512.2155	14345.5794	40.1077	3.1764	3.344
	27.8701	80.3306	7203.1072	9.4576	14.0162	513.9118	14415.6925	40.1729	3.1840	3.352
L28	27.8739	78.2901	7033.3149	9.4664	14.0162	501.7979	14075.8845	39.1525	3.2280	3.49
	28.7525	80.8303	7740.3926	9.7736	14.4558	535.4537	15490.9701	40.4228	3.3803	3.654
L29	28.7525	80.8303	7740.3926	9.7736	14.4558	535.4537	15490.9701	40.4228	3.3803	3.654
	28.9862	81.5060	7936.1392	9.8553	14.5727	544.5902	15882.7209	40.7608	3.4208	3.698
L30	28.9554	98.4148	9444.9527	9.7843	14.5727	648.1273	18902.3334	49.2168	3.0688	2.728
	28.9993	98.5693	9489.4978	9.7996	14.5947	650.2035	18991.4822	49.2940	3.0764	2.735
L31	29.0031	96.4661	9303.8524	9.8085	14.5947	637.4834	18619.9470	48.2422	3.1204	2.837
	29.3985	97.8255	9702.7445	9.9467	14.7924	655.9255	19418.2561	48.9221	3.1889	2.899
L32	29.4139	89.2497	8915.4575	9.9822	14.7924	602.7033	17842.6461	44.6333	3.3649	3.365
	29.4579	89.3870	8956.6702	9.9976	14.8144	604.5912	17925.1258	44.7020	3.3726	3.373
L33	29.4617	87.2297	8756.0306	10.0065	14.8144	591.0476	17523.5827	43.6231	3.4166	3.504
	30.3403	89.9072	9587.3483	10.3136	15.2540	628.5154	19187.3119	44.9622	3.5688	3.66
L34	30.3441	87.6773	9365.6551	10.3225	15.2540	613.9819	18743.6338	43.8470	3.6128	3.803
	30.8274	89.1122	9833.0479	10.4914	15.4957	634.5661	19679.0344	44.5646	3.6966	3.891
L35	30.8351	84.5649	9362.8807	10.5092	15.4957	604.2244	18738.0813	42.2905	3.7846	4.205
	30.8790	84.6885	9403.9883	10.5245	15.5177	606.0177	18820.3507	42.3523	3.7922	4.214
L36	30.8790	84.6885	9403.9883	10.5245	15.5177	606.0177	18820.3507	42.3523	3.7922	4.214
	30.9967	85.0197	9514.7499	10.5657	15.5766	610.8370	19042.0195	42.5179	3.8126	4.236
L37	31.0179	72.3634	8173.3490	10.6145	15.5766	524.7205	16357.4527	36.1886	4.0546	5.318
	31.0619	72.4681	8208.8774	10.6299	15.5986	526.2589	16428.5563	36.2409	4.0622	5.328
L38	31.0638	71.3098	8084.4219	10.6343	15.5986	518.2802	16179.4814	35.6617	4.0842	5.446
	31.2676	71.7877	8248.0329	10.7056	15.7005	525.3349	16506.9188	35.9006	4.1196	5.493
L39	31.2676	71.7877	8248.0329	10.7056	15.7005	525.3349	16506.9188	35.9006	4.1196	5.493
	31.3116	71.8906	8283.5806	10.7209	15.7225	526.8615	16578.0609	35.9522	4.1272	5.503
L40	31.3116	71.8906	8283.5806	10.7209	15.7225	526.8615	16578.0609	35.9522	4.1272	5.503
	31.5611	72.4756	8487.4307	10.8082	15.8473	535.5748	16986.0294	36.2447	4.1704	5.561
L41	31.5495	79.5268	9267.3470	10.7815	15.8473	584.7892	18546.8881	39.7709	4.0384	4.895
	31.5934	79.6400	9307.0059	10.7969	15.8693	586.4785	18626.2582	39.8276	4.0460	4.904
L42	31.5973	77.2902	9047.2492	10.8058	15.8693	570.1100	18106.4030	38.6524	4.0900	5.113
	32.4759	79.4872	9840.8924	11.1129	16.3088	603.4085	19694.7337	39.7511	4.2423	5.303
L43	32.4759	79.4872	9840.8924	11.1129	16.3088	603.4085	19694.7337	39.7511	4.2423	5.303
	33.3984	81.7940	10722.7864	11.4354	16.7704	639.3895	21459.6821	40.9048	4.4022	5.503
L44	32.8783	84.3941	10133.0714	10.9440	16.0988	629.4305	20279.4761	42.2051	4.0595	4.707
	33.0534	87.1091	11142.8240	11.2960	16.6026	671.1493	22300.3100	43.5628	4.2341	4.909
L45	33.0534	87.1091	11142.8240	11.2960	16.6026	671.1493	22300.3100	43.5628	4.2341	4.909
	33.3599	87.9354	11462.9379	11.4032	16.7559	684.1121	22940.9591	43.9760	4.2872	4.971
L46	33.3599	87.9354	11462.9379	11.4032	16.7559	684.1121	22940.9591	43.9760	4.2872	4.971
	33.4037	88.0534	11509.1629	11.4185	16.7778	685.9741	23033.4699	44.0351	4.2948	4.979
L47	33.4037	88.0534	11509.1629	11.4185	16.7778	685.9741	23033.4699	44.0351	4.2948	4.979

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	33.4913	88.2895	11601.9854	11.4491	16.8216	689.7056	23219.2369	44.1531	4.3100	4.997
L48	33.4835	93.2629	12217.5634	11.4313	16.8216	726.3000	24451.2030	46.6403	4.2220	4.627
	33.5273	93.3878	12266.7099	11.4467	16.8436	728.2733	24549.5606	46.7028	4.2296	4.635
L49	33.5273	93.3878	12266.7099	11.4467	16.8436	728.2733	24549.5606	46.7028	4.2296	4.635
	33.7463	94.0122	12514.4201	11.5232	16.9531	738.1798	25045.3069	47.0150	4.2675	4.677
L50	33.7308	103.9936	13757.9220	11.4877	16.9531	811.5295	27533.9470	52.0067	4.0915	4.041
	33.7746	104.1321	13812.9929	11.5030	16.9750	813.7265	27644.1613	52.0760	4.0991	4.048
L51	33.7765	102.8862	13658.2567	11.5074	16.9750	804.6110	27334.4854	51.4529	4.1211	4.121
	34.6522	105.6235	14777.6258	11.8136	17.4131	848.6511	29574.6964	52.8218	4.2729	4.273
L52	34.6542	104.3423	14609.3561	11.8180	17.4131	838.9876	29237.9356	52.1811	4.2949	4.349
	35.5299	107.0454	15774.3989	12.1242	17.8512	883.6618	31569.5542	53.5328	4.4467	4.503
L53	35.5337	104.4117	15408.8358	12.1330	17.8512	863.1835	30837.9469	52.2158	4.4907	4.666
	36.0153	105.8607	16059.3092	12.3014	18.0921	887.6409	32139.7496	52.9404	4.5741	4.752
L54	36.0153	105.8607	16059.3092	12.3014	18.0921	887.6409	32139.7496	52.9404	4.5741	4.752
	36.0591	105.9925	16119.3346	12.3167	18.1140	889.8813	32259.8794	53.0063	4.5817	4.76
L55	36.0591	105.9925	16119.3346	12.3167	18.1140	889.8813	32259.8794	53.0063	4.5817	4.76
	36.1607	106.2981	16259.1692	12.3523	18.1648	895.0898	32539.7327	53.1591	4.5993	4.779
L56	36.1916	84.6942	13104.0312	12.4233	18.1648	721.3951	26225.3049	42.3551	4.9513	6.494
	36.2353	84.7986	13152.5297	12.4386	18.1868	723.1929	26322.3658	42.4073	4.9589	6.504
L57	36.2353	84.7986	13152.5297	12.4386	18.1868	723.1929	26322.3658	42.4073	4.9589	6.504
	36.4840	85.3913	13430.2729	12.5255	18.3112	733.4470	26878.2178	42.7038	5.0020	6.56
L58	36.4609	101.7552	15868.1784	12.4723	18.3112	866.5846	31757.2366	50.8872	4.7380	5.192
	36.5047	101.8800	15926.6761	12.4876	18.3331	868.7400	31874.3089	50.9497	4.7456	5.201
L59	36.5047	101.8800	15926.6761	12.4876	18.3331	868.7400	31874.3089	50.9497	4.7456	5.201
	36.6501	102.2947	16121.9192	12.5384	18.4058	875.9152	32265.0520	51.1570	4.7708	5.228
L60	36.6558	98.1949	15508.6683	12.5517	18.4058	842.5969	31037.7434	49.1068	4.8368	5.528
	36.6996	98.3147	15565.4784	12.5670	18.4277	844.6781	31151.4383	49.1667	4.8444	5.536
L61	36.6996	98.3147	15565.4784	12.5670	18.4277	844.6781	31151.4383	49.1667	4.8444	5.536
	36.7294	98.3961	15604.1884	12.5774	18.4426	846.0949	31228.9092	49.2074	4.8496	5.542
L62	36.7352	94.2788	14982.9127	12.5907	18.4426	812.4079	29985.5403	47.1484	4.9156	5.869
	36.7790	94.3934	15037.6266	12.6060	18.4645	814.4073	30095.0400	47.2057	4.9232	5.878
L63	36.7790	94.3934	15037.6266	12.6060	18.4645	814.4073	30095.0400	47.2057	4.9232	5.878
	37.0119	95.0032	15330.9446	12.6875	18.5810	825.0855	30682.0621	47.5106	4.9635	5.927
L64	37.0177	90.8446	14690.6306	12.7008	18.5810	790.6249	29400.5915	45.4309	5.0295	6.287
	37.0615	90.9541	14743.8117	12.7161	18.6029	792.5527	29507.0237	45.4857	5.0371	6.296
L65	37.0634	89.5641	14528.6391	12.7205	18.6029	780.9861	29076.3953	44.7906	5.0591	6.424
	37.5012	90.6419	15059.4738	12.8736	18.8220	800.1000	30138.7633	45.3296	5.1350	6.521
L66	37.4897	99.0692	16391.5847	12.8470	18.8220	870.8742	32804.7380	49.5440	5.0030	5.801
	37.5335	99.1872	16450.2473	12.8623	18.8439	872.9750	32922.1403	49.6030	5.0106	5.809
L67	37.5373	96.3787	16006.5165	12.8712	18.8439	849.4272	32034.0948	48.1985	5.0546	6.035
	38.4130	98.6711	17176.0752	13.1773	19.2820	890.7834	34374.7512	49.3449	5.2064	6.217
L68	38.4149	97.2311	16936.8150	13.1817	19.2820	878.3749	33895.9158	48.6248	5.2284	6.337
	39.2906	99.4893	18144.5182	13.4879	19.7201	920.1036	36312.9114	49.7541	5.3802	6.521
L69	39.2926	98.0142	17887.2443	13.4923	19.7201	907.0573	35798.0250	49.0164	5.4022	6.649
	40.1683	100.2382	19132.6974	13.7985	20.1582	949.1284	38290.5702	50.1286	5.5539	6.836
L70	40.1702	98.7278	18856.5290	13.8029	20.1582	935.4283	37737.8698	49.3733	5.5759	6.97
	41.0459	100.9176	20139.2781	14.1091	20.5963	977.8118	40305.0560	50.4684	5.7277	7.16
L71	41.0478	99.3720	19843.3131	14.1135	20.5963	963.4420	39712.7366	49.6954	5.7497	7.301
	41.3841	100.1997	20343.3211	14.2311	20.7645	979.7164	40713.4104	50.1094	5.8080	7.375

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 149.00-144.00				1	1	1			
L2 144.00-139.00				1	1	1			
L3 139.00-134.00				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	Double Angle Stitch Bolt Spacing Redundants in
L4 134.00-129.00				1	1	1			
L5 129.00-124.50				1	1	1			
L6 124.50-124.25				1	1	0.946576			
L7 124.25-119.25				1	1	0.946104			
L8 119.25-118.50				1	1	0.943621			
L9 118.50-118.25				1	1	0.863915			
L10 118.25-116.00				1	1	0.867863			
L11 116.00-115.75				1	1	0.866642			
L12 115.75-110.75				1	1	0.874041			
L13 110.75-105.75				1	1	0.88407			
L14 105.75-98.50				1	1	0.90224			
L15 98.50-97.00				1	1	0.903273			
L16 97.00-96.75				1	1	0.887087			
L17 96.75-93.98				1	1	0.888588			
L18 93.98-93.73				1	1	0.900963			
L19 93.73-91.50				1	1	0.891796			
L20 91.50-91.25				1	1	0.932493			
L21 91.25-90.25				1	1	0.928775			
L22 90.25-90.00				1	1	0.883053			
L23 90.00-89.00				1	1	0.87872			
L24 89.00-88.75				1	1	0.894777			
L25 88.75-83.75				1	1	0.901636			
L26 83.75-80.08				1	1	0.915426			
L27 80.08-79.83				1	1	0.93765			
L28 79.83-74.83				1	1	0.940347			
L29 74.83-73.50				1	1	0.934792			
L30 73.50-73.25				1	1	0.910284			
L31 73.25-71.00				1	1	0.920363			
L32 71.00-70.75				1	1	0.906944			
L33				1	1	0.909332			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
70.75-65.75									
L34				1	1	0.921682			
65.75-63.00									
L35				1	1	0.945139			
63.00-62.75									
L36				1	1	0.942539			
62.75-62.08									
L37				1	1	0.982066			
62.08-61.83									
L38				1	1	0.993592			
61.83-60.67									
L39				1	1	0.980475			
60.67-60.42									
L40				1	1	0.975252			
60.42-59.00									
L41				1	1	0.906784			
59.00-58.75									
L42				1	1	0.917166			
58.75-53.75									
L43				1	1	0.915499			
53.75-48.50									
L44				1	1	0.94977			
48.50-47.50									
L45				1	1	0.94425			
47.50-45.75									
L46				1	1	0.94347			
45.75-45.50									
L47				1	1	0.941916			
45.50-45.00									
L48				1	1	0.987328			
45.00-44.75									
L49				1	1	0.983045			
44.75-43.50									
L50				1	1	0.931136			
43.50-43.25									
L51				1	1	0.926087			
43.25-38.25									
L52				1	1	0.921777			
38.25-33.25									
L53				1	1	0.936536			
33.25-30.50									
L54				1	1	0.944031			
30.50-30.25									
L55				1	1	0.942251			
30.25-29.67									
L56				1	1	1.05782			
29.67-29.42									
L57				1	1	1.05332			
29.42-28.00									
L58				1	1	0.944618			
28.00-27.75									
L59				1	1	0.942178			
27.75-26.92									
L60				1	1	0.919723			
26.92-26.67									
L61				1	1	0.919258			
26.67-26.50									
L62				1	1	0.911017			
26.50-26.25									

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L63 26.25-24.92				1	1	0.907564			
L64 24.92-24.67				1	1	0.975925			
L65 24.67-22.17				1	1	0.984004			
L66 22.17-21.92				1	1	0.972757			
L67 21.92-16.92				1	1	0.986514			
L68 16.92-11.92				1	1	0.986999			
L69 11.92-6.92				1	1	0.988159			
L70 6.92-1.92				1	1	0.989983			
L71 1.92-0.00				1	1	1.00035			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
***										
Safety Line 3/8	A	No	Surface Ar (CaAa)	149.00 - 8.00	1	1	0.000 0.000	0.3750		0.00
***										
HJ7-50A(1-5/8")	B	No	Surface Ar (CaAa)	140.00 - 8.00	2	2	-0.170 0.080	1.9800		0.00
***										
LDF4-50A(1/2")	B	No	Surface Ar (CaAa)	128.00 - 8.00	1	1	0.350 0.350	0.6250		0.00
HCS 6X12 6AWG(1-3/8)	B	No	Surface Ar (CaAa)	128.00 - 8.00	4	4	0.333 0.500	1.3800		0.00
***										
***										
***										
5.5" x 1.25" Flat Plate (G)	C	No	Surface Af (CaAa)	30.50 - 0.50	1	1	-0.167 -0.167	5.5000	13.5000	0.00
5.5" x 1.25" Flat Plate (G)	B	No	Surface Af (CaAa)	30.50 - 0.50	1	1	0.000 0.000	5.5000	13.5000	0.00
5.5" x 1.25" Flat Plate (G)	A	No	Surface Af (CaAa)	30.50 - 0.50	1	1	0.333 0.333	5.5000	13.5000	0.00
5.5" x 1.25" Flat Plate (G)	A	No	Surface Af (CaAa)	30.50 - 0.50	1	1	-0.500 -0.500	5.5000	13.5000	0.00
***										
5.5" x 1.25" Flat Plate (G)	C	No	Surface Af (CaAa)	48.25 - 30.50	1	1	-0.333 -0.333	5.5000	13.5000	0.00
5.5" x 1.25" Flat Plate (G)	B	No	Surface Af (CaAa)	48.25 - 30.50	1	1	-0.333 -0.333	5.5000	13.5000	0.00
5.5" x 1.25" Flat Plate (G)	A	No	Surface Af (CaAa)	48.25 - 30.50	1	1	-0.333 -0.333	5.5000	13.5000	0.00
***										
5.5" x 1.25" Flat Plate (G)	C	No	Surface Af (CaAa)	65.50 - 48.25	1	1	-0.167 -0.167	5.5000	13.5000	0.00
5.5" x 1.25" Flat Plate	B	No	Surface Af	65.50 -	1	1	-0.167	5.5000	13.5000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
(G)			(CaAa)	48.25			-0.167			
5.5" x 1.25" Flat Plate	A	No	Surface Af	65.50 -	1	1	-0.167	5.5000	13.5000	0.00
(G)			(CaAa)	48.25			-0.167			
***										
5.5" x 1.25" Flat Plate	B	No	Surface Af	92.75 -	1	1	0.333	5.5000	13.5000	0.00
(G)			(CaAa)	65.50			0.333			
5.5" x 1.25" Flat Plate	A	No	Surface Af	92.75 -	1	1	0.333	5.5000	13.5000	0.00
(G)			(CaAa)	65.50			0.333			
5.5" x 1.25" Flat Plate	C	No	Surface Af	92.75 -	1	1	0.333	5.5000	13.5000	0.00
(G)			(CaAa)	65.50			0.333			
***										
4" x 1.25" Flat Plate (G)	C	No	Surface Af	120.00 -	1	1	-0.167	4.0000	10.5000	0.00
			(CaAa)	92.75			-0.167			
4" x 1.25" Flat Plate (G)	B	No	Surface Af	120.00 -	1	1	-0.167	4.0000	10.5000	0.00
			(CaAa)	92.75			-0.167			
4" x 1.25" Flat Plate (G)	A	No	Surface Af	120.00 -	1	1	-0.167	4.0000	10.5000	0.00
			(CaAa)	92.75			-0.167			
***										
4.5" x 1" Flat Plate (G)	B	No	Surface Af	45.00 -	1	1	0.167	4.5000	11.0000	0.00
			(CaAa)	25.00			0.167			
4.5" x 1" Flat Plate (G)	A	No	Surface Af	45.00 -	1	1	0.167	4.5000	11.0000	0.00
			(CaAa)	25.00			0.167			
4.5" x 1" Flat Plate (G)	C	No	Surface Af	45.00 -	1	1	0.167	4.5000	11.0000	0.00
			(CaAa)	25.00			0.167			
***										
***										
4.5" x 1" Flat Plate (G)	C	No	Surface Af	75.00 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	50.00			0.000			
4.5" x 1" Flat Plate (G)	B	No	Surface Af	75.00 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	50.00			0.000			
4.5" x 1" Flat Plate (G)	A	No	Surface Af	75.00 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	50.00			0.000			
***										
4" x 0.75" Flat Plate (G)	C	No	Surface Af	98.00 -	1	1	0.000	4.0000	9.5000	0.00
			(CaAa)	88.00			0.000			
4" x 0.75" Flat Plate (G)	B	No	Surface Af	98.00 -	1	1	0.000	4.0000	9.5000	0.00
			(CaAa)	88.00			0.000			
4" x 0.75" Flat Plate (G)	A	No	Surface Af	98.00 -	1	1	0.000	4.0000	9.5000	0.00
			(CaAa)	88.00			0.000			
***										
4" x 0.75" Flat Plate (G)	B	No	Surface Af	126.00 -	1	1	0.167	4.0000	9.5000	0.00
			(CaAa)	116.00			0.167			
4" x 0.75" Flat Plate (G)	A	No	Surface Af	126.00 -	1	1	0.167	4.0000	9.5000	0.00
			(CaAa)	116.00			0.167			
4" x 0.75" Flat Plate (G)	C	No	Surface Af	126.00 -	1	1	0.167	4.0000	9.5000	0.00
			(CaAa)	116.00			0.167			
***										
6.5" x 1.25" Flat Plate	C	No	Surface Af	27.67 - 0.50	1	1	-0.333	6.5000	15.5000	0.00
(G)			(CaAa)				-0.333			
6.5" x 1.25" Flat Plate	A	No	Surface Af	27.67 - 0.50	1	1	-0.333	6.5000	15.5000	0.00
(G)			(CaAa)				-0.333			
***										
6.5" x 1.25" Flat Plate	B	No	Surface Af	24.92 - 0.50	1	1	0.167	6.5000	15.5000	0.00
(G)			(CaAa)				0.167			
6.5" x 1.25" Flat Plate	A	No	Surface Af	24.92 - 0.50	1	1	0.167	6.5000	15.5000	0.00
(G)			(CaAa)				0.168			
***										
6" x 1" Flat Plate (G)	C	No	Surface Af	61.00 -	1	1	-0.500	6.0000	14.0000	0.00
			(CaAa)	26.00			-0.500			
6" x 1" Flat Plate (G)	B	No	Surface Af	61.00 -	1	1	-0.500	6.0000	14.0000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
			(CaAa)	26.00			-0.500			
***										
6" x 1" Flat Plate (G)	C	No	Surface Af (CaAa)	62.67 - 26.00	1	1	0.333 0.333	6.0000	14.0000	0.00
***										
6" x 1" Flat Plate (G)	A	No	Surface Af (CaAa)	49.92 - 30.58	1	1	0.000 0.000	6.0000	14.0000	0.00
6" x 1" Flat Plate (G)	A	No	Surface Af (CaAa)	49.92 - 24.92	1	1	0.000 0.000	6.0000	14.0000	0.00
***										
4" x 0.75" Flat Plate (G)	C	No	Surface Af (CaAa)	81.08 - 61.08	1	1	-0.500 -0.500	4.0000	9.5000	0.00
4" x 0.75" Flat Plate (G)	B	No	Surface Af (CaAa)	81.08 - 61.08	1	1	0.167 0.167	4.0000	9.5000	0.00
4" x 0.75" Flat Plate (G)	B	No	Surface Af (CaAa)	81.08 - 61.08	1	1	-0.500 -0.500	4.0000	9.5000	0.00
4" x 0.75" Flat Plate (G)	A	No	Surface Af (CaAa)	81.08 - 61.08	1	1	0.167 0.167	4.0000	9.5000	0.00
4" x 0.75" Flat Plate (G)	C	No	Surface Af (CaAa)	81.08 - 61.08	1	1	0.167 0.167	4.0000	9.5000	0.00
***										
4" x 0.75" Flat Plate (G)	C	No	Surface Af (CaAa)	89.92 - 65.58	1	1	-0.167 -0.167	4.0000	9.5000	0.00
4" x 0.75" Flat Plate (G)	B	No	Surface Af (CaAa)	89.92 - 65.58	1	1	-0.167 -0.167	4.0000	9.5000	0.00
4" x 0.75" Flat Plate (G)	A	No	Surface Af (CaAa)	89.92 - 65.58	1	1	-0.167 -0.167	4.0000	9.5000	0.00
***										
4" x 0.75" Flat Plate (G)	C	No	Surface Af (CaAa)	95.00 - 70.00	1	1	-0.333 -0.333	4.0000	9.5000	0.00
4" x 0.75" Flat Plate (G)	B	No	Surface Af (CaAa)	95.00 - 70.00	1	1	-0.333 -0.333	4.0000	9.5000	0.00
4" x 0.75" Flat Plate (G)	A	No	Surface Af (CaAa)	95.00 - 70.00	1	1	-0.333 -0.333	4.0000	9.5000	0.00
***										
***										
4" x 0.75" Flat Plate (G)	B	No	Surface Af (CaAa)	115.92 - 95.08	1	1	0.167 0.167	4.0000	9.5000	0.00
4" x 0.75" Flat Plate (G)	A	No	Surface Af (CaAa)	115.92 - 95.08	1	1	0.167 0.167	4.0000	9.5000	0.00
4" x 0.75" Flat Plate (G)	C	No	Surface Af (CaAa)	115.92 - 95.08	1	1	0.167 0.167	4.0000	9.5000	0.00
***										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
***									
LDF4-50A(1/2")	A	No	No	Inside Pole	148.00 - 8.00	1	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
9776(3/4")	A	No	No	Inside Pole	148.00 - 8.00	2	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF7-50A(1-5/8")	A	No	No	Inside Pole	148.00 - 8.00	12	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
LDF7-50A(1-5/8")	B	No	No	Inside Pole	140.00 - 8.00	6	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
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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	149.00-144.00	A	0.000	0.000	0.188	0.000	0.04
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	144.00-139.00	A	0.000	0.000	0.188	0.000	0.05
		B	0.000	0.000	0.396	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L3	139.00-134.00	A	0.000	0.000	0.188	0.000	0.05
		B	0.000	0.000	1.980	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.00
L4	134.00-129.00	A	0.000	0.000	0.188	0.000	0.05
		B	0.000	0.000	1.980	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.00
L5	129.00-124.50	A	0.000	0.000	1.169	0.000	0.05
		B	0.000	0.000	4.933	0.000	0.06
		C	0.000	0.000	1.000	0.000	0.00
L6	124.50-124.25	A	0.000	0.000	0.176	0.000	0.00
		B	0.000	0.000	0.419	0.000	0.00
		C	0.000	0.000	0.167	0.000	0.00
L7	124.25-119.25	A	0.000	0.000	4.021	0.000	0.05
		B	0.000	0.000	8.886	0.000	0.07
		C	0.000	0.000	3.833	0.000	0.00
L8	119.25-118.50	A	0.000	0.000	1.028	0.000	0.01
		B	0.000	0.000	1.758	0.000	0.01
		C	0.000	0.000	1.000	0.000	0.00
L9	118.50-118.25	A	0.000	0.000	0.343	0.000	0.00
		B	0.000	0.000	0.586	0.000	0.00
		C	0.000	0.000	0.333	0.000	0.00
L10	118.25-116.00	A	0.000	0.000	3.084	0.000	0.02
		B	0.000	0.000	5.274	0.000	0.03
		C	0.000	0.000	3.000	0.000	0.00
L11	116.00-115.75	A	0.000	0.000	0.289	0.000	0.00
		B	0.000	0.000	0.533	0.000	0.00
		C	0.000	0.000	0.280	0.000	0.00
L12	115.75-110.75	A	0.000	0.000	6.854	0.000	0.05
		B	0.000	0.000	11.719	0.000	0.07
		C	0.000	0.000	6.667	0.000	0.00
L13	110.75-105.75	A	0.000	0.000	6.854	0.000	0.05
		B	0.000	0.000	11.719	0.000	0.07

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	6.667	0.000	0.00
L14	105.75-98.50	A	0.000	0.000	9.939	0.000	0.08
		B	0.000	0.000	16.993	0.000	0.10
		C	0.000	0.000	9.667	0.000	0.00
L15	98.50-97.00	A	0.000	0.000	2.723	0.000	0.02
		B	0.000	0.000	4.182	0.000	0.02
		C	0.000	0.000	2.667	0.000	0.00
L16	97.00-96.75	A	0.000	0.000	0.509	0.000	0.00
		B	0.000	0.000	0.753	0.000	0.00
		C	0.000	0.000	0.500	0.000	0.00
L17	96.75-93.98	A	0.000	0.000	5.591	0.000	0.03
		B	0.000	0.000	8.286	0.000	0.04
		C	0.000	0.000	5.487	0.000	0.00
L18	93.98-93.73	A	0.000	0.000	0.509	0.000	0.00
		B	0.000	0.000	0.753	0.000	0.00
		C	0.000	0.000	0.500	0.000	0.00
L19	93.73-91.50	A	0.000	0.000	4.856	0.000	0.02
		B	0.000	0.000	7.026	0.000	0.03
		C	0.000	0.000	4.773	0.000	0.00
L20	91.50-91.25	A	0.000	0.000	0.572	0.000	0.00
		B	0.000	0.000	0.815	0.000	0.00
		C	0.000	0.000	0.563	0.000	0.00
L21	91.25-90.25	A	0.000	0.000	2.288	0.000	0.01
		B	0.000	0.000	3.261	0.000	0.01
		C	0.000	0.000	2.250	0.000	0.00
L22	90.25-90.00	A	0.000	0.000	0.572	0.000	0.00
		B	0.000	0.000	0.815	0.000	0.00
		C	0.000	0.000	0.563	0.000	0.00
L23	90.00-89.00	A	0.000	0.000	2.901	0.000	0.01
		B	0.000	0.000	3.874	0.000	0.01
		C	0.000	0.000	2.863	0.000	0.00
L24	89.00-88.75	A	0.000	0.000	0.739	0.000	0.00
		B	0.000	0.000	0.982	0.000	0.00
		C	0.000	0.000	0.729	0.000	0.00
L25	88.75-83.75	A	0.000	0.000	11.938	0.000	0.05
		B	0.000	0.000	16.802	0.000	0.07
		C	0.000	0.000	11.750	0.000	0.00
L26	83.75-80.08	A	0.000	0.000	9.062	0.000	0.04
		B	0.000	0.000	13.299	0.000	0.05
		C	0.000	0.000	9.591	0.000	0.00
L27	80.08-79.83	A	0.000	0.000	0.739	0.000	0.00
		B	0.000	0.000	1.148	0.000	0.00
		C	0.000	0.000	0.896	0.000	0.00
L28	79.83-74.83	A	0.000	0.000	14.898	0.000	0.05
		B	0.000	0.000	23.097	0.000	0.07
		C	0.000	0.000	18.044	0.000	0.00
L29	74.83-73.50	A	0.000	0.000	4.927	0.000	0.01
		B	0.000	0.000	7.107	0.000	0.02
		C	0.000	0.000	5.763	0.000	0.00
L30	73.50-73.25	A	0.000	0.000	0.926	0.000	0.00
		B	0.000	0.000	1.336	0.000	0.00
		C	0.000	0.000	1.083	0.000	0.00
L31	73.25-71.00	A	0.000	0.000	8.334	0.000	0.02
		B	0.000	0.000	12.024	0.000	0.03
		C	0.000	0.000	9.750	0.000	0.00
L32	71.00-70.75	A	0.000	0.000	0.926	0.000	0.00
		B	0.000	0.000	1.336	0.000	0.00
		C	0.000	0.000	1.083	0.000	0.00
L33	70.75-65.75	A	0.000	0.000	15.688	0.000	0.05
		B	0.000	0.000	23.886	0.000	0.07
		C	0.000	0.000	18.833	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
L34	65.75-63.00	A	0.000	0.000	6.633	0.000	0.03
		B	0.000	0.000	11.142	0.000	0.04
		C	0.000	0.000	8.363	0.000	0.00
L35	63.00-62.75	A	0.000	0.000	0.593	0.000	0.00
		B	0.000	0.000	1.003	0.000	0.00
		C	0.000	0.000	0.750	0.000	0.00
L36	62.75-62.08	A	0.000	0.000	1.588	0.000	0.01
		B	0.000	0.000	2.687	0.000	0.01
		C	0.000	0.000	2.600	0.000	0.00
L37	62.08-61.83	A	0.000	0.000	0.593	0.000	0.00
		B	0.000	0.000	1.003	0.000	0.00
		C	0.000	0.000	1.000	0.000	0.00
L38	61.83-60.67	A	0.000	0.000	2.477	0.000	0.01
		B	0.000	0.000	4.436	0.000	0.02
		C	0.000	0.000	4.423	0.000	0.00
L39	60.67-60.42	A	0.000	0.000	0.426	0.000	0.00
		B	0.000	0.000	0.919	0.000	0.00
		C	0.000	0.000	0.917	0.000	0.00
L40	60.42-59.00	A	0.000	0.000	2.420	0.000	0.02
		B	0.000	0.000	5.222	0.000	0.02
		C	0.000	0.000	5.207	0.000	0.00
L41	59.00-58.75	A	0.000	0.000	0.426	0.000	0.00
		B	0.000	0.000	0.919	0.000	0.00
		C	0.000	0.000	0.917	0.000	0.00
L42	58.75-53.75	A	0.000	0.000	8.521	0.000	0.05
		B	0.000	0.000	18.386	0.000	0.07
		C	0.000	0.000	18.333	0.000	0.00
L43	53.75-48.50	A	0.000	0.000	10.662	0.000	0.06
		B	0.000	0.000	18.180	0.000	0.07
		C	0.000	0.000	18.125	0.000	0.00
L44	48.50-47.50	A	0.000	0.000	2.954	0.000	0.01
		B	0.000	0.000	2.927	0.000	0.01
		C	0.000	0.000	2.917	0.000	0.00
L45	47.50-45.75	A	0.000	0.000	5.170	0.000	0.02
		B	0.000	0.000	5.123	0.000	0.02
		C	0.000	0.000	5.104	0.000	0.00
L46	45.75-45.50	A	0.000	0.000	0.739	0.000	0.00
		B	0.000	0.000	0.732	0.000	0.00
		C	0.000	0.000	0.729	0.000	0.00
L47	45.50-45.00	A	0.000	0.000	1.477	0.000	0.01
		B	0.000	0.000	1.464	0.000	0.01
		C	0.000	0.000	1.458	0.000	0.00
L48	45.00-44.75	A	0.000	0.000	0.926	0.000	0.00
		B	0.000	0.000	0.919	0.000	0.00
		C	0.000	0.000	0.917	0.000	0.00
L49	44.75-43.50	A	0.000	0.000	4.630	0.000	0.01
		B	0.000	0.000	4.596	0.000	0.02
		C	0.000	0.000	4.583	0.000	0.00
L50	43.50-43.25	A	0.000	0.000	0.926	0.000	0.00
		B	0.000	0.000	0.919	0.000	0.00
		C	0.000	0.000	0.917	0.000	0.00
L51	43.25-38.25	A	0.000	0.000	18.521	0.000	0.05
		B	0.000	0.000	18.386	0.000	0.07
		C	0.000	0.000	18.333	0.000	0.00
L52	38.25-33.25	A	0.000	0.000	18.521	0.000	0.05
		B	0.000	0.000	18.386	0.000	0.07
		C	0.000	0.000	18.333	0.000	0.00
L53	33.25-30.50	A	0.000	0.000	10.106	0.000	0.03
		B	0.000	0.000	10.112	0.000	0.04
		C	0.000	0.000	10.083	0.000	0.00
L54	30.50-30.25	A	0.000	0.000	0.905	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
		B	0.000	0.000	0.919	0.000	0.00
		C	0.000	0.000	0.917	0.000	0.00
L55	30.25-29.67	A	0.000	0.000	2.100	0.000	0.01
		B	0.000	0.000	2.133	0.000	0.01
		C	0.000	0.000	2.127	0.000	0.00
L56	29.67-29.42	A	0.000	0.000	0.905	0.000	0.00
		B	0.000	0.000	0.919	0.000	0.00
		C	0.000	0.000	0.917	0.000	0.00
L57	29.42-28.00	A	0.000	0.000	5.142	0.000	0.02
		B	0.000	0.000	5.222	0.000	0.02
		C	0.000	0.000	5.207	0.000	0.00
L58	28.00-27.75	A	0.000	0.000	0.905	0.000	0.00
		B	0.000	0.000	0.919	0.000	0.00
		C	0.000	0.000	0.917	0.000	0.00
L59	27.75-26.92	A	0.000	0.000	3.818	0.000	0.01
		B	0.000	0.000	3.052	0.000	0.01
		C	0.000	0.000	3.856	0.000	0.00
L60	26.92-26.67	A	0.000	0.000	1.176	0.000	0.00
		B	0.000	0.000	0.919	0.000	0.00
		C	0.000	0.000	1.188	0.000	0.00
L61	26.67-26.50	A	0.000	0.000	0.800	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.808	0.000	0.00
L62	26.50-26.25	A	0.000	0.000	1.176	0.000	0.00
		B	0.000	0.000	0.919	0.000	0.00
		C	0.000	0.000	1.188	0.000	0.00
L63	26.25-24.92	A	0.000	0.000	6.197	0.000	0.01
		B	0.000	0.000	3.751	0.000	0.02
		C	0.000	0.000	4.098	0.000	0.00
L64	24.92-24.67	A	0.000	0.000	1.009	0.000	0.00
		B	0.000	0.000	0.753	0.000	0.00
		C	0.000	0.000	0.500	0.000	0.00
L65	24.67-22.17	A	0.000	0.000	10.094	0.000	0.03
		B	0.000	0.000	7.526	0.000	0.03
		C	0.000	0.000	5.000	0.000	0.00
L66	22.17-21.92	A	0.000	0.000	1.009	0.000	0.00
		B	0.000	0.000	0.753	0.000	0.00
		C	0.000	0.000	0.500	0.000	0.00
L67	21.92-16.92	A	0.000	0.000	20.188	0.000	0.05
		B	0.000	0.000	15.053	0.000	0.07
		C	0.000	0.000	10.000	0.000	0.00
L68	16.92-11.92	A	0.000	0.000	20.188	0.000	0.05
		B	0.000	0.000	15.053	0.000	0.07
		C	0.000	0.000	10.000	0.000	0.00
L69	11.92-6.92	A	0.000	0.000	20.147	0.000	0.04
		B	0.000	0.000	13.961	0.000	0.05
		C	0.000	0.000	10.000	0.000	0.00
L70	6.92-1.92	A	0.000	0.000	20.000	0.000	0.00
		B	0.000	0.000	10.000	0.000	0.00
		C	0.000	0.000	10.000	0.000	0.00
L71	1.92-0.00	A	0.000	0.000	5.680	0.000	0.00
		B	0.000	0.000	2.840	0.000	0.00
		C	0.000	0.000	2.840	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	149.00-144.00	A	1.741	0.000	0.000	1.929	0.000	0.07
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	144.00-139.00	A	1.735	0.000	0.000	1.923	0.000	0.08
		B		0.000	0.000	0.929	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.00
L3	139.00-134.00	A	1.729	0.000	0.000	1.916	0.000	0.08
		B		0.000	0.000	4.636	0.000	0.09
		C		0.000	0.000	0.000	0.000	0.00
L4	134.00-129.00	A	1.722	0.000	0.000	1.910	0.000	0.08
		B		0.000	0.000	4.628	0.000	0.09
		C		0.000	0.000	0.000	0.000	0.00
L5	129.00-124.50	A	1.716	0.000	0.000	3.050	0.000	0.08
		B		0.000	0.000	10.832	0.000	0.18
		C		0.000	0.000	1.337	0.000	0.02
L6	124.50-124.25	A	1.713	0.000	0.000	0.318	0.000	0.01
		B		0.000	0.000	0.834	0.000	0.01
		C		0.000	0.000	0.223	0.000	0.00
L7	124.25-119.25	A	1.709	0.000	0.000	7.107	0.000	0.14
		B		0.000	0.000	17.430	0.000	0.27
		C		0.000	0.000	5.210	0.000	0.06
L8	119.25-118.50	A	1.705	0.000	0.000	1.707	0.000	0.03
		B		0.000	0.000	3.254	0.000	0.05
		C		0.000	0.000	1.424	0.000	0.02
L9	118.50-118.25	A	1.704	0.000	0.000	0.569	0.000	0.01
		B		0.000	0.000	1.085	0.000	0.02
		C		0.000	0.000	0.474	0.000	0.01
L10	118.25-116.00	A	1.703	0.000	0.000	5.120	0.000	0.08
		B		0.000	0.000	9.757	0.000	0.14
		C		0.000	0.000	4.269	0.000	0.05
L11	116.00-115.75	A	1.701	0.000	0.000	0.517	0.000	0.01
		B		0.000	0.000	1.032	0.000	0.02
		C		0.000	0.000	0.423	0.000	0.00
L12	115.75-110.75	A	1.697	0.000	0.000	11.945	0.000	0.18
		B		0.000	0.000	22.237	0.000	0.32
		C		0.000	0.000	10.060	0.000	0.11
L13	110.75-105.75	A	1.689	0.000	0.000	11.922	0.000	0.18
		B		0.000	0.000	22.195	0.000	0.32
		C		0.000	0.000	10.045	0.000	0.11
L14	105.75-98.50	A	1.679	0.000	0.000	17.244	0.000	0.26
		B		0.000	0.000	32.104	0.000	0.45
		C		0.000	0.000	14.537	0.000	0.15
L15	98.50-97.00	A	1.672	0.000	0.000	4.456	0.000	0.06
		B		0.000	0.000	7.531	0.000	0.10
		C		0.000	0.000	3.896	0.000	0.04
L16	97.00-96.75	A	1.671	0.000	0.000	0.815	0.000	0.01
		B		0.000	0.000	1.326	0.000	0.02
		C		0.000	0.000	0.722	0.000	0.01
L17	96.75-93.98	A	1.668	0.000	0.000	8.945	0.000	0.13
		B		0.000	0.000	14.607	0.000	0.20
		C		0.000	0.000	7.918	0.000	0.09
L18	93.98-93.73	A	1.665	0.000	0.000	0.814	0.000	0.01
		B		0.000	0.000	1.325	0.000	0.02
		C		0.000	0.000	0.721	0.000	0.01
L19	93.73-91.50	A	1.663	0.000	0.000	7.571	0.000	0.11
		B		0.000	0.000	12.123	0.000	0.16
		C		0.000	0.000	6.746	0.000	0.07
L20	91.50-91.25	A	1.661	0.000	0.000	0.876	0.000	0.01
		B		0.000	0.000	1.386	0.000	0.02
		C		0.000	0.000	0.783	0.000	0.01
L21	91.25-90.25	A	1.660	0.000	0.000	3.503	0.000	0.05

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	5.542	0.000	0.07
		C		0.000	0.000	3.133	0.000	0.03
L22	90.25-90.00	A	1.659	0.000	0.000	0.875	0.000	0.01
		B		0.000	0.000	1.385	0.000	0.02
		C		0.000	0.000	0.783	0.000	0.01
L23	90.00-89.00	A	1.657	0.000	0.000	4.419	0.000	0.06
		B		0.000	0.000	6.458	0.000	0.08
		C		0.000	0.000	4.050	0.000	0.04
L24	89.00-88.75	A	1.656	0.000	0.000	1.125	0.000	0.01
		B		0.000	0.000	1.634	0.000	0.02
		C		0.000	0.000	1.032	0.000	0.01
L25	88.75-83.75	A	1.651	0.000	0.000	18.706	0.000	0.25
		B		0.000	0.000	28.884	0.000	0.38
		C		0.000	0.000	16.867	0.000	0.17
L26	83.75-80.08	A	1.643	0.000	0.000	14.213	0.000	0.18
		B		0.000	0.000	22.664	0.000	0.29
		C		0.000	0.000	13.865	0.000	0.14
L27	80.08-79.83	A	1.639	0.000	0.000	1.148	0.000	0.01
		B		0.000	0.000	1.904	0.000	0.02
		C		0.000	0.000	1.306	0.000	0.01
L28	79.83-74.83	A	1.633	0.000	0.000	23.120	0.000	0.29
		B		0.000	0.000	38.220	0.000	0.46
		C		0.000	0.000	26.266	0.000	0.26
L29	74.83-73.50	A	1.627	0.000	0.000	7.522	0.000	0.09
		B		0.000	0.000	11.533	0.000	0.14
		C		0.000	0.000	8.359	0.000	0.08
L30	73.50-73.25	A	1.625	0.000	0.000	1.413	0.000	0.02
		B		0.000	0.000	2.167	0.000	0.03
		C		0.000	0.000	1.571	0.000	0.02
L31	73.25-71.00	A	1.622	0.000	0.000	12.714	0.000	0.15
		B		0.000	0.000	19.491	0.000	0.23
		C		0.000	0.000	14.129	0.000	0.14
L32	71.00-70.75	A	1.619	0.000	0.000	1.412	0.000	0.02
		B		0.000	0.000	2.164	0.000	0.03
		C		0.000	0.000	1.569	0.000	0.02
L33	70.75-65.75	A	1.613	0.000	0.000	23.995	0.000	0.29
		B		0.000	0.000	39.024	0.000	0.47
		C		0.000	0.000	27.140	0.000	0.27
L34	65.75-63.00	A	1.604	0.000	0.000	10.197	0.000	0.13
		B		0.000	0.000	18.445	0.000	0.23
		C		0.000	0.000	11.927	0.000	0.12
L35	63.00-62.75	A	1.600	0.000	0.000	0.911	0.000	0.01
		B		0.000	0.000	1.660	0.000	0.02
		C		0.000	0.000	1.068	0.000	0.01
L36	62.75-62.08	A	1.599	0.000	0.000	2.441	0.000	0.03
		B		0.000	0.000	4.448	0.000	0.05
		C		0.000	0.000	3.641	0.000	0.04
L37	62.08-61.83	A	1.598	0.000	0.000	0.910	0.000	0.01
		B		0.000	0.000	1.659	0.000	0.02
		C		0.000	0.000	1.398	0.000	0.01
L38	61.83-60.67	A	1.596	0.000	0.000	3.819	0.000	0.05
		B		0.000	0.000	7.322	0.000	0.09
		C		0.000	0.000	6.110	0.000	0.06
L39	60.67-60.42	A	1.594	0.000	0.000	0.663	0.000	0.01
		B		0.000	0.000	1.495	0.000	0.02
		C		0.000	0.000	1.234	0.000	0.01
L40	60.42-59.00	A	1.592	0.000	0.000	3.766	0.000	0.05
		B		0.000	0.000	8.486	0.000	0.11
		C		0.000	0.000	7.005	0.000	0.07
L41	59.00-58.75	A	1.589	0.000	0.000	0.663	0.000	0.01
		B		0.000	0.000	1.493	0.000	0.02

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	1.233	0.000	0.01
L42	58.75-53.75	A	1.582	0.000	0.000	13.234	0.000	0.19
		B		0.000	0.000	29.822	0.000	0.37
		C		0.000	0.000	24.629	0.000	0.24
L43	53.75-48.50	A	1.567	0.000	0.000	15.986	0.000	0.21
		B		0.000	0.000	29.618	0.000	0.37
		C		0.000	0.000	24.205	0.000	0.23
L44	48.50-47.50	A	1.557	0.000	0.000	4.205	0.000	0.05
		B		0.000	0.000	4.885	0.000	0.06
		C		0.000	0.000	3.854	0.000	0.04
L45	47.50-45.75	A	1.553	0.000	0.000	7.341	0.000	0.09
		B		0.000	0.000	8.523	0.000	0.11
		C		0.000	0.000	6.732	0.000	0.06
L46	45.75-45.50	A	1.549	0.000	0.000	1.048	0.000	0.01
		B		0.000	0.000	1.217	0.000	0.02
		C		0.000	0.000	0.961	0.000	0.01
L47	45.50-45.00	A	1.548	0.000	0.000	2.096	0.000	0.03
		B		0.000	0.000	2.433	0.000	0.03
		C		0.000	0.000	1.922	0.000	0.02
L48	45.00-44.75	A	1.547	0.000	0.000	1.312	0.000	0.02
		B		0.000	0.000	1.481	0.000	0.02
		C		0.000	0.000	1.226	0.000	0.01
L49	44.75-43.50	A	1.544	0.000	0.000	6.559	0.000	0.08
		B		0.000	0.000	7.400	0.000	0.09
		C		0.000	0.000	6.126	0.000	0.06
L50	43.50-43.25	A	1.542	0.000	0.000	1.311	0.000	0.01
		B		0.000	0.000	1.479	0.000	0.02
		C		0.000	0.000	1.225	0.000	0.01
L51	43.25-38.25	A	1.532	0.000	0.000	26.176	0.000	0.30
		B		0.000	0.000	29.523	0.000	0.36
		C		0.000	0.000	24.456	0.000	0.23
L52	38.25-33.25	A	1.512	0.000	0.000	26.079	0.000	0.29
		B		0.000	0.000	29.397	0.000	0.35
		C		0.000	0.000	24.379	0.000	0.22
L53	33.25-30.50	A	1.495	0.000	0.000	14.193	0.000	0.16
		B		0.000	0.000	16.108	0.000	0.19
		C		0.000	0.000	13.372	0.000	0.12
L54	30.50-30.25	A	1.488	0.000	0.000	1.277	0.000	0.01
		B		0.000	0.000	1.462	0.000	0.02
		C		0.000	0.000	1.214	0.000	0.01
L55	30.25-29.67	A	1.486	0.000	0.000	2.962	0.000	0.03
		B		0.000	0.000	3.390	0.000	0.04
		C		0.000	0.000	2.816	0.000	0.03
L56	29.67-29.42	A	1.484	0.000	0.000	1.276	0.000	0.01
		B		0.000	0.000	1.461	0.000	0.02
		C		0.000	0.000	1.213	0.000	0.01
L57	29.42-28.00	A	1.479	0.000	0.000	7.242	0.000	0.08
		B		0.000	0.000	8.289	0.000	0.10
		C		0.000	0.000	6.887	0.000	0.06
L58	28.00-27.75	A	1.475	0.000	0.000	1.274	0.000	0.01
		B		0.000	0.000	1.458	0.000	0.02
		C		0.000	0.000	1.212	0.000	0.01
L59	27.75-26.92	A	1.472	0.000	0.000	5.260	0.000	0.06
		B		0.000	0.000	4.837	0.000	0.06
		C		0.000	0.000	5.054	0.000	0.04
L60	26.92-26.67	A	1.469	0.000	0.000	1.617	0.000	0.02
		B		0.000	0.000	1.456	0.000	0.02
		C		0.000	0.000	1.555	0.000	0.01
L61	26.67-26.50	A	1.468	0.000	0.000	1.099	0.000	0.01
		B		0.000	0.000	0.990	0.000	0.01
		C		0.000	0.000	1.057	0.000	0.01

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
L62	26.50-26.25	A	1.467	0.000	0.000	1.616	0.000	0.02
		B		0.000	0.000	1.455	0.000	0.02
		C		0.000	0.000	1.554	0.000	0.01
L63	26.25-24.92	A	1.462	0.000	0.000	8.507	0.000	0.09
		B		0.000	0.000	6.255	0.000	0.08
		C		0.000	0.000	5.387	0.000	0.05
L64	24.92-24.67	A	1.458	0.000	0.000	1.374	0.000	0.01
		B		0.000	0.000	1.213	0.000	0.01
		C		0.000	0.000	0.646	0.000	0.01
L65	24.67-22.17	A	1.449	0.000	0.000	13.717	0.000	0.15
		B		0.000	0.000	12.105	0.000	0.15
		C		0.000	0.000	6.449	0.000	0.06
L66	22.17-21.92	A	1.441	0.000	0.000	1.370	0.000	0.01
		B		0.000	0.000	1.208	0.000	0.01
		C		0.000	0.000	0.644	0.000	0.01
L67	21.92-16.92	A	1.422	0.000	0.000	27.300	0.000	0.29
		B		0.000	0.000	24.061	0.000	0.29
		C		0.000	0.000	12.845	0.000	0.11
L68	16.92-11.92	A	1.381	0.000	0.000	27.091	0.000	0.28
		B		0.000	0.000	23.832	0.000	0.28
		C		0.000	0.000	12.761	0.000	0.11
L69	11.92-6.92	A	1.323	0.000	0.000	26.477	0.000	0.25
		B		0.000	0.000	21.167	0.000	0.23
		C		0.000	0.000	12.646	0.000	0.10
L70	6.92-1.92	A	1.227	0.000	0.000	24.906	0.000	0.18
		B		0.000	0.000	12.453	0.000	0.09
		C		0.000	0.000	12.453	0.000	0.09
L71	1.92-0.00	A	1.053	0.000	0.000	6.876	0.000	0.04
		B		0.000	0.000	3.438	0.000	0.02
		C		0.000	0.000	3.438	0.000	0.02

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	149.00-144.00	-0.2904	-0.1677	-1.1698	-0.6754
L2	144.00-139.00	0.3248	-0.5774	-0.5190	-0.9813
L3	139.00-134.00	2.0615	-1.7360	1.0857	-1.7201
L4	134.00-129.00	2.0801	-1.7527	1.1071	-1.7572
L5	129.00-124.50	2.9477	-0.3788	2.4377	-0.5700
L6	124.50-124.25	2.2067	-0.1318	2.2331	-0.3156
L7	124.25-119.25	2.0863	-0.1244	2.1612	-0.3050
L8	119.25-118.50	1.5224	-0.0905	1.7374	-0.2449
L9	118.50-118.25	1.5279	-0.0908	1.7435	-0.2457
L10	118.25-116.00	1.5403	-0.0915	1.7566	-0.2474
L11	116.00-115.75	1.7309	-0.1027	1.8629	-0.2623
L12	115.75-110.75	1.5795	-0.0936	1.7476	-0.2457
L13	110.75-105.75	1.6287	-0.0961	1.7981	-0.2523
L14	105.75-98.50	1.6882	-0.0993	1.8590	-0.2601
L15	98.50-97.00	1.4236	-0.0836	1.6531	-0.2312
L16	97.00-96.75	1.3206	-0.0775	1.5658	-0.2186
L17	96.75-93.98	1.3418	-0.0787	1.5873	-0.2214
L18	93.98-93.73	1.3445	-0.0788	1.5910	-0.2218
L19	93.73-91.50	1.2917	-0.0756	1.5593	-0.2172
L20	91.50-91.25	1.2555	-0.0735	1.5375	-0.2141
L21	91.25-90.25	1.2599	-0.0737	1.5424	-0.2147

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L22	90.25-90.00	1.2646	-0.0739	1.5479	-0.2154
L23	90.00-89.00	1.0545	-0.0616	1.3291	-0.1849
L24	89.00-88.75	1.0428	-0.0609	1.3168	-0.1831
L25	88.75-83.75	1.2413	-0.0724	1.5106	-0.2098
L26	83.75-80.08	1.2869	-0.3973	1.5418	-0.4856
L27	80.08-79.83	1.2515	-1.0322	1.4762	-1.0386
L28	79.83-74.83	1.2618	-1.0414	1.4881	-1.0476
L29	74.83-73.50	1.1006	-0.9090	1.3233	-0.9322
L30	73.50-73.25	1.1053	-0.9131	1.3287	-0.9361
L31	73.25-71.00	1.1126	-0.9193	1.3368	-0.9421
L32	71.00-70.75	1.1198	-0.9256	1.3448	-0.9480
L33	70.75-65.75	1.2836	-1.0616	1.5139	-1.0677
L34	65.75-63.00	1.5720	-1.3011	1.7993	-1.2700
L35	63.00-62.75	1.6016	-1.3261	1.8285	-1.2910
L36	62.75-62.08	0.1772	-0.8258	0.7014	-0.9017
L37	62.08-61.83	-0.0004	-0.7650	0.5591	-0.8538
L38	61.83-60.67	0.0273	-0.9019	0.5992	-0.9306
L39	60.67-60.42	0.1942	-1.5366	0.7496	-1.3613
L40	60.42-59.00	0.1946	-1.5430	0.7517	-1.3665
L41	59.00-58.75	0.1951	-1.5494	0.7539	-1.3717
L42	58.75-53.75	0.1965	-1.5694	0.7606	-1.3878
L43	53.75-48.50	-0.5377	-2.0503	0.2060	-1.7672
L44	48.50-47.50	-2.5421	-3.2341	-1.3539	-2.7072
L45	47.50-45.75	-2.5585	-3.2547	-1.3650	-2.7223
L46	45.75-45.50	-2.5703	-3.2695	-1.3717	-2.7336
L47	45.50-45.00	-2.5748	-3.2751	-1.3742	-2.7379
L48	45.00-44.75	-2.1089	-2.6824	-1.1677	-2.3258
L49	44.75-43.50	-2.1163	-2.6917	-1.1721	-2.3333
L50	43.50-43.25	-2.1238	-2.7011	-1.1766	-2.3409
L51	43.25-38.25	-2.1496	-2.7336	-1.1920	-2.3668
L52	38.25-33.25	-2.1986	-2.7952	-1.2217	-2.4158
L53	33.25-30.50	-2.2060	-2.8286	-1.2186	-2.4413
L54	30.50-30.25	0.7693	-1.5257	1.2183	-1.3663
L55	30.25-29.67	0.7706	-1.5283	1.2200	-1.3685
L56	29.67-29.42	0.7718	-1.5307	1.2214	-1.3705
L57	29.42-28.00	0.7743	-1.5358	1.2246	-1.3748
L58	28.00-27.75	0.7769	-1.5411	1.2279	-1.3793
L59	27.75-26.92	0.9951	0.0837	1.3602	-0.0783
L60	26.92-26.67	1.0164	0.2320	1.3749	0.0445
L61	26.67-26.50	1.0173	0.2321	1.3758	0.0446
L62	26.50-26.25	1.0182	0.2323	1.3768	0.0448
L63	26.25-24.92	2.1476	1.4789	2.3443	1.0153
L64	24.92-24.67	5.3305	1.3108	4.9244	0.8709
L65	24.67-22.17	5.3602	1.3183	4.9483	0.8763
L66	22.17-21.92	5.3901	1.3258	4.9724	0.8819
L67	21.92-16.92	5.4466	1.3400	5.0174	0.8924
L68	16.92-11.92	5.5539	1.3669	5.1013	0.9133
L69	11.92-6.92	5.4489	1.4484	4.9751	1.0340
L70	6.92-1.92	4.5986	1.6717	4.1080	1.4934
L71	1.92-0.00	4.3156	1.5688	3.7152	1.3506

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	2	Safety Line 3/8	144.00 - 149.00	1.0000	1.0000
L2	2	Safety Line 3/8	139.00 - 144.00	1.0000	1.0000
L2	8	HJ7-50A(1-5/8")	139.00 - 140.00	1.0000	1.0000
L3	2	Safety Line 3/8	134.00 - 139.00	1.0000	1.0000
L3	8	HJ7-50A(1-5/8")	134.00 - 139.00	1.0000	1.0000
L4	2	Safety Line 3/8	129.00 - 134.00	1.0000	1.0000
L4	8	HJ7-50A(1-5/8")	129.00 - 134.00	1.0000	1.0000
L5	2	Safety Line 3/8	124.50 - 129.00	1.0000	1.0000
L5	8	HJ7-50A(1-5/8")	124.50 - 129.00	1.0000	1.0000
L5	12	LDF4-50A(1/2")	124.50 - 128.00	1.0000	1.0000
L5	13	HCS 6X12 6AWG(1-3/8)	124.50 - 128.00	1.0000	1.0000
L5	54	4" x 0.75" Flat Plate (G)	124.50 - 126.00	1.0000	1.0000
L5	55	4" x 0.75" Flat Plate (G)	124.50 - 126.00	1.0000	1.0000
L5	56	4" x 0.75" Flat Plate (G)	124.50 - 126.00	1.0000	1.0000
L6	2	Safety Line 3/8	124.25 - 124.50	1.0000	1.0000
L6	8	HJ7-50A(1-5/8")	124.25 - 124.50	1.0000	1.0000
L6	12	LDF4-50A(1/2")	124.25 - 124.50	1.0000	1.0000
L6	13	HCS 6X12 6AWG(1-3/8)	124.25 - 124.50	1.0000	1.0000
L6	54	4" x 0.75" Flat Plate (G)	124.25 - 124.50	1.0000	1.0000
L6	55	4" x 0.75" Flat Plate (G)	124.25 - 124.50	1.0000	1.0000
L6	56	4" x 0.75" Flat Plate (G)	124.25 - 124.50	1.0000	1.0000
L7	2	Safety Line 3/8	119.25 - 124.25	1.0000	1.0000
L7	8	HJ7-50A(1-5/8")	119.25 - 124.25	1.0000	1.0000
L7	12	LDF4-50A(1/2")	119.25 - 124.25	1.0000	1.0000
L7	13	HCS 6X12 6AWG(1-3/8)	119.25 - 124.25	1.0000	1.0000
L7	34	4" x 1.25" Flat Plate (G)	119.25 - 120.00	1.0000	1.0000
L7	35	4" x 1.25" Flat Plate (G)	119.25 - 120.00	1.0000	1.0000
L7	36	4" x 1.25" Flat Plate (G)	119.25 - 120.00	1.0000	1.0000
L7	54	4" x 0.75" Flat Plate (G)	119.25 - 124.25	1.0000	1.0000
L7	55	4" x 0.75" Flat Plate (G)	119.25 - 124.25	1.0000	1.0000
L7	56	4" x 0.75" Flat Plate (G)	119.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			124.25		
L8	2	Safety Line 3/8	118.50 - 119.25	1.0000	1.0000
L8	8	HJ7-50A(1-5/8")	118.50 - 119.25	1.0000	1.0000
L8	12	LDF4-50A(1/2")	118.50 - 119.25	1.0000	1.0000
L8	13	HCS 6X12 6AWG(1-3/8)	118.50 - 119.25	1.0000	1.0000
L8	34	4" x 1.25" Flat Plate (G)	118.50 - 119.25	1.0000	1.0000
L8	35	4" x 1.25" Flat Plate (G)	118.50 - 119.25	1.0000	1.0000
L8	36	4" x 1.25" Flat Plate (G)	118.50 - 119.25	1.0000	1.0000
L8	54	4" x 0.75" Flat Plate (G)	118.50 - 119.25	1.0000	1.0000
L8	55	4" x 0.75" Flat Plate (G)	118.50 - 119.25	1.0000	1.0000
L8	56	4" x 0.75" Flat Plate (G)	118.50 - 119.25	1.0000	1.0000
L9	2	Safety Line 3/8	118.25 - 118.50	1.0000	1.0000
L9	8	HJ7-50A(1-5/8")	118.25 - 118.50	1.0000	1.0000
L9	12	LDF4-50A(1/2")	118.25 - 118.50	1.0000	1.0000
L9	13	HCS 6X12 6AWG(1-3/8)	118.25 - 118.50	1.0000	1.0000
L9	34	4" x 1.25" Flat Plate (G)	118.25 - 118.50	1.0000	1.0000
L9	35	4" x 1.25" Flat Plate (G)	118.25 - 118.50	1.0000	1.0000
L9	36	4" x 1.25" Flat Plate (G)	118.25 - 118.50	1.0000	1.0000
L9	54	4" x 0.75" Flat Plate (G)	118.25 - 118.50	1.0000	1.0000
L9	55	4" x 0.75" Flat Plate (G)	118.25 - 118.50	1.0000	1.0000
L9	56	4" x 0.75" Flat Plate (G)	118.25 - 118.50	1.0000	1.0000
L10	2	Safety Line 3/8	116.00 - 118.25	1.0000	1.0000
L10	8	HJ7-50A(1-5/8")	116.00 - 118.25	1.0000	1.0000
L10	12	LDF4-50A(1/2")	116.00 - 118.25	1.0000	1.0000
L10	13	HCS 6X12 6AWG(1-3/8)	116.00 - 118.25	1.0000	1.0000
L10	34	4" x 1.25" Flat Plate (G)	116.00 - 118.25	1.0000	1.0000
L10	35	4" x 1.25" Flat Plate (G)	116.00 - 118.25	1.0000	1.0000
L10	36	4" x 1.25" Flat Plate (G)	116.00 - 118.25	1.0000	1.0000
L10	54	4" x 0.75" Flat Plate (G)	116.00 - 118.25	1.0000	1.0000
L10	55	4" x 0.75" Flat Plate (G)	116.00 - 118.25	1.0000	1.0000
L10	56	4" x 0.75" Flat Plate (G)	116.00 - 118.25	1.0000	1.0000
L11	2	Safety Line 3/8	115.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			116.00		
L11	8	HJ7-50A(1-5/8")	115.75 - 116.00	1.0000	1.0000
L11	12	LDF4-50A(1/2")	115.75 - 116.00	1.0000	1.0000
L11	13	HCS 6X12 6AWG(1-3/8)	115.75 - 116.00	1.0000	1.0000
L11	34	4" x 1.25" Flat Plate (G)	115.75 - 116.00	1.0000	1.0000
L11	35	4" x 1.25" Flat Plate (G)	115.75 - 116.00	1.0000	1.0000
L11	36	4" x 1.25" Flat Plate (G)	115.75 - 116.00	1.0000	1.0000
L11	87	4" x 0.75" Flat Plate (G)	115.75 - 115.92	1.0000	1.0000
L11	88	4" x 0.75" Flat Plate (G)	115.75 - 115.92	1.0000	1.0000
L11	89	4" x 0.75" Flat Plate (G)	115.75 - 115.92	1.0000	1.0000
L12	2	Safety Line 3/8	110.75 - 115.75	1.0000	1.0000
L12	8	HJ7-50A(1-5/8")	110.75 - 115.75	1.0000	1.0000
L12	12	LDF4-50A(1/2")	110.75 - 115.75	1.0000	1.0000
L12	13	HCS 6X12 6AWG(1-3/8)	110.75 - 115.75	1.0000	1.0000
L12	34	4" x 1.25" Flat Plate (G)	110.75 - 115.75	1.0000	1.0000
L12	35	4" x 1.25" Flat Plate (G)	110.75 - 115.75	1.0000	1.0000
L12	36	4" x 1.25" Flat Plate (G)	110.75 - 115.75	1.0000	1.0000
L12	87	4" x 0.75" Flat Plate (G)	110.75 - 115.75	1.0000	1.0000
L12	88	4" x 0.75" Flat Plate (G)	110.75 - 115.75	1.0000	1.0000
L12	89	4" x 0.75" Flat Plate (G)	110.75 - 115.75	1.0000	1.0000
L13	2	Safety Line 3/8	105.75 - 110.75	1.0000	1.0000
L13	8	HJ7-50A(1-5/8")	105.75 - 110.75	1.0000	1.0000
L13	12	LDF4-50A(1/2")	105.75 - 110.75	1.0000	1.0000
L13	13	HCS 6X12 6AWG(1-3/8)	105.75 - 110.75	1.0000	1.0000
L13	34	4" x 1.25" Flat Plate (G)	105.75 - 110.75	1.0000	1.0000
L13	35	4" x 1.25" Flat Plate (G)	105.75 - 110.75	1.0000	1.0000
L13	36	4" x 1.25" Flat Plate (G)	105.75 - 110.75	1.0000	1.0000
L13	87	4" x 0.75" Flat Plate (G)	105.75 - 110.75	1.0000	1.0000
L13	88	4" x 0.75" Flat Plate (G)	105.75 - 110.75	1.0000	1.0000
L13	89	4" x 0.75" Flat Plate (G)	105.75 - 110.75	1.0000	1.0000
L14	2	Safety Line 3/8	98.50 - 105.75	1.0000	1.0000
L14	8	HJ7-50A(1-5/8")	98.50 - 105.75	1.0000	1.0000
L14	12	LDF4-50A(1/2")	98.50 - 105.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L14	13	HCS 6X12 6AWG(1-3/8)	98.50 - 105.75	1.0000	1.0000
L14	34	4" x 1.25" Flat Plate (G)	98.50 - 105.75	1.0000	1.0000
L14	35	4" x 1.25" Flat Plate (G)	98.50 - 105.75	1.0000	1.0000
L14	36	4" x 1.25" Flat Plate (G)	98.50 - 105.75	1.0000	1.0000
L14	87	4" x 0.75" Flat Plate (G)	98.50 - 105.75	1.0000	1.0000
L14	88	4" x 0.75" Flat Plate (G)	98.50 - 105.75	1.0000	1.0000
L14	89	4" x 0.75" Flat Plate (G)	98.50 - 105.75	1.0000	1.0000
L14	50	4" x 0.75" Flat Plate (G)	98.50 - 98.00	1.0000	1.0000
L14	51	4" x 0.75" Flat Plate (G)	98.50 - 98.00	1.0000	1.0000
L14	52	4" x 0.75" Flat Plate (G)	98.50 - 98.00	1.0000	1.0000
L16	2	Safety Line 3/8	96.75 - 97.00	1.0000	1.0000
L16	8	HJ7-50A(1-5/8")	96.75 - 97.00	1.0000	1.0000
L16	12	LDF4-50A(1/2")	96.75 - 97.00	1.0000	1.0000
L16	13	HCS 6X12 6AWG(1-3/8)	96.75 - 97.00	1.0000	1.0000
L16	34	4" x 1.25" Flat Plate (G)	96.75 - 97.00	1.0000	1.0000
L16	35	4" x 1.25" Flat Plate (G)	96.75 - 97.00	1.0000	1.0000
L16	36	4" x 1.25" Flat Plate (G)	96.75 - 97.00	1.0000	1.0000
L16	50	4" x 0.75" Flat Plate (G)	96.75 - 97.00	1.0000	1.0000
L16	51	4" x 0.75" Flat Plate (G)	96.75 - 97.00	1.0000	1.0000
L16	52	4" x 0.75" Flat Plate (G)	96.75 - 97.00	1.0000	1.0000
L16	87	4" x 0.75" Flat Plate (G)	96.75 - 97.00	1.0000	1.0000
L16	88	4" x 0.75" Flat Plate (G)	96.75 - 97.00	1.0000	1.0000
L16	89	4" x 0.75" Flat Plate (G)	96.75 - 97.00	1.0000	1.0000
L17	2	Safety Line 3/8	93.98 - 96.75	1.0000	1.0000
L17	8	HJ7-50A(1-5/8")	93.98 - 96.75	1.0000	1.0000
L17	12	LDF4-50A(1/2")	93.98 - 96.75	1.0000	1.0000
L17	13	HCS 6X12 6AWG(1-3/8)	93.98 - 96.75	1.0000	1.0000
L17	34	4" x 1.25" Flat Plate (G)	93.98 - 96.75	1.0000	1.0000
L17	35	4" x 1.25" Flat Plate (G)	93.98 - 96.75	1.0000	1.0000
L17	36	4" x 1.25" Flat Plate (G)	93.98 - 96.75	1.0000	1.0000
L17	50	4" x 0.75" Flat Plate (G)	93.98 - 96.75	1.0000	1.0000
L17	51	4" x 0.75" Flat Plate (G)	93.98 - 96.75	1.0000	1.0000
L17	52	4" x 0.75" Flat Plate (G)	93.98 - 96.75	1.0000	1.0000
L17	82	4" x 0.75" Flat Plate (G)	93.98 - 95.00	1.0000	1.0000
L17	83	4" x 0.75" Flat Plate (G)	93.98 - 95.00	1.0000	1.0000
L17	84	4" x 0.75" Flat Plate (G)	93.98 - 95.00	1.0000	1.0000
L17	87	4" x 0.75" Flat Plate (G)	95.08 - 96.75	1.0000	1.0000
L17	88	4" x 0.75" Flat Plate (G)	95.08 - 96.75	1.0000	1.0000
L17	89	4" x 0.75" Flat Plate (G)	95.08 - 96.75	1.0000	1.0000
L18	2	Safety Line 3/8	93.73 - 93.98	1.0000	1.0000
L18	8	HJ7-50A(1-5/8")	93.73 - 93.98	1.0000	1.0000
L18	12	LDF4-50A(1/2")	93.73 - 93.98	1.0000	1.0000
L18	13	HCS 6X12 6AWG(1-3/8)	93.73 - 93.98	1.0000	1.0000
L18	34	4" x 1.25" Flat Plate (G)	93.73 - 93.98	1.0000	1.0000
L18	35	4" x 1.25" Flat Plate (G)	93.73 - 93.98	1.0000	1.0000
L18	36	4" x 1.25" Flat Plate (G)	93.73 - 93.98	1.0000	1.0000
L18	50	4" x 0.75" Flat Plate (G)	93.73 - 93.98	1.0000	1.0000
L18	51	4" x 0.75" Flat Plate (G)	93.73 - 93.98	1.0000	1.0000
L18	52	4" x 0.75" Flat Plate (G)	93.73 - 93.98	1.0000	1.0000
L18	82	4" x 0.75" Flat Plate (G)	93.73 - 93.98	1.0000	1.0000
L18	83	4" x 0.75" Flat Plate (G)	93.73 - 93.98	1.0000	1.0000
L18	84	4" x 0.75" Flat Plate (G)	93.73 - 93.98	1.0000	1.0000
L19	2	Safety Line 3/8	91.50 - 93.73	1.0000	1.0000
L19	8	HJ7-50A(1-5/8")	91.50 - 93.73	1.0000	1.0000
L19	12	LDF4-50A(1/2")	91.50 - 93.73	1.0000	1.0000
L19	13	HCS 6X12 6AWG(1-3/8)	91.50 - 93.73	1.0000	1.0000
L19	30	5.5" x 1.25" Flat Plate (G)	91.50 - 92.75	1.0000	1.0000
L19	31	5.5" x 1.25" Flat Plate (G)	91.50 - 92.75	1.0000	1.0000
L19	32	5.5" x 1.25" Flat Plate (G)	91.50 - 92.75	1.0000	1.0000
L19	34	4" x 1.25" Flat Plate (G)	92.75 - 93.73	1.0000	1.0000
L19	35	4" x 1.25" Flat Plate (G)	92.75 - 93.73	1.0000	1.0000
L19	36	4" x 1.25" Flat Plate (G)	92.75 - 93.73	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L19	50	4" x 0.75" Flat Plate (G)	91.50 - 93.73	1.0000	1.0000
L19	51	4" x 0.75" Flat Plate (G)	91.50 - 93.73	1.0000	1.0000
L19	52	4" x 0.75" Flat Plate (G)	91.50 - 93.73	1.0000	1.0000
L19	82	4" x 0.75" Flat Plate (G)	91.50 - 93.73	1.0000	1.0000
L19	83	4" x 0.75" Flat Plate (G)	91.50 - 93.73	1.0000	1.0000
L19	84	4" x 0.75" Flat Plate (G)	91.50 - 93.73	1.0000	1.0000
L20	2	Safety Line 3/8	91.25 - 91.50	1.0000	1.0000
L20	8	HJ7-50A(1-5/8")	91.25 - 91.50	1.0000	1.0000
L20	12	LDF4-50A(1/2")	91.25 - 91.50	1.0000	1.0000
L20	13	HCS 6X12 6AWG(1-3/8)	91.25 - 91.50	1.0000	1.0000
L20	30	5.5" x 1.25" Flat Plate (G)	91.25 - 91.50	1.0000	1.0000
L20	31	5.5" x 1.25" Flat Plate (G)	91.25 - 91.50	1.0000	1.0000
L20	32	5.5" x 1.25" Flat Plate (G)	91.25 - 91.50	1.0000	1.0000
L20	50	4" x 0.75" Flat Plate (G)	91.25 - 91.50	1.0000	1.0000
L20	51	4" x 0.75" Flat Plate (G)	91.25 - 91.50	1.0000	1.0000
L20	52	4" x 0.75" Flat Plate (G)	91.25 - 91.50	1.0000	1.0000
L20	82	4" x 0.75" Flat Plate (G)	91.25 - 91.50	1.0000	1.0000
L20	83	4" x 0.75" Flat Plate (G)	91.25 - 91.50	1.0000	1.0000
L20	84	4" x 0.75" Flat Plate (G)	91.25 - 91.50	1.0000	1.0000
L21	2	Safety Line 3/8	90.25 - 91.25	1.0000	1.0000
L21	8	HJ7-50A(1-5/8")	90.25 - 91.25	1.0000	1.0000
L21	12	LDF4-50A(1/2")	90.25 - 91.25	1.0000	1.0000
L21	13	HCS 6X12 6AWG(1-3/8)	90.25 - 91.25	1.0000	1.0000
L21	30	5.5" x 1.25" Flat Plate (G)	90.25 - 91.25	1.0000	1.0000
L21	31	5.5" x 1.25" Flat Plate (G)	90.25 - 91.25	1.0000	1.0000
L21	32	5.5" x 1.25" Flat Plate (G)	90.25 - 91.25	1.0000	1.0000
L21	50	4" x 0.75" Flat Plate (G)	90.25 - 91.25	1.0000	1.0000
L21	51	4" x 0.75" Flat Plate (G)	90.25 - 91.25	1.0000	1.0000
L21	52	4" x 0.75" Flat Plate (G)	90.25 - 91.25	1.0000	1.0000
L21	82	4" x 0.75" Flat Plate (G)	90.25 - 91.25	1.0000	1.0000
L21	83	4" x 0.75" Flat Plate (G)	90.25 - 91.25	1.0000	1.0000
L21	84	4" x 0.75" Flat Plate (G)	90.25 - 91.25	1.0000	1.0000
L22	2	Safety Line 3/8	90.00 - 90.25	1.0000	1.0000
L22	8	HJ7-50A(1-5/8")	90.00 - 90.25	1.0000	1.0000
L22	12	LDF4-50A(1/2")	90.00 - 90.25	1.0000	1.0000
L22	13	HCS 6X12 6AWG(1-3/8)	90.00 - 90.25	1.0000	1.0000
L22	30	5.5" x 1.25" Flat Plate (G)	90.00 - 90.25	1.0000	1.0000
L22	31	5.5" x 1.25" Flat Plate (G)	90.00 - 90.25	1.0000	1.0000
L22	32	5.5" x 1.25" Flat Plate (G)	90.00 - 90.25	1.0000	1.0000
L22	50	4" x 0.75" Flat Plate (G)	90.00 - 90.25	1.0000	1.0000
L22	51	4" x 0.75" Flat Plate (G)	90.00 - 90.25	1.0000	1.0000
L22	52	4" x 0.75" Flat Plate (G)	90.00 - 90.25	1.0000	1.0000
L22	82	4" x 0.75" Flat Plate (G)	90.00 - 90.25	1.0000	1.0000
L22	83	4" x 0.75" Flat Plate (G)	90.00 - 90.25	1.0000	1.0000
L22	84	4" x 0.75" Flat Plate (G)	90.00 - 90.25	1.0000	1.0000
L23	2	Safety Line 3/8	89.00 - 90.00	1.0000	1.0000
L23	8	HJ7-50A(1-5/8")	89.00 - 90.00	1.0000	1.0000
L23	12	LDF4-50A(1/2")	89.00 - 90.00	1.0000	1.0000
L23	13	HCS 6X12 6AWG(1-3/8)	89.00 - 90.00	1.0000	1.0000
L23	30	5.5" x 1.25" Flat Plate (G)	89.00 - 90.00	1.0000	1.0000
L23	31	5.5" x 1.25" Flat Plate (G)	89.00 - 90.00	1.0000	1.0000
L23	32	5.5" x 1.25" Flat Plate (G)	89.00 - 90.00	1.0000	1.0000
L23	50	4" x 0.75" Flat Plate (G)	89.00 - 90.00	1.0000	1.0000
L23	51	4" x 0.75" Flat Plate (G)	89.00 - 90.00	1.0000	1.0000
L23	52	4" x 0.75" Flat Plate (G)	89.00 - 90.00	1.0000	1.0000
L23	78	4" x 0.75" Flat Plate (G)	89.00 - 89.92	1.0000	1.0000
L23	79	4" x 0.75" Flat Plate (G)	89.00 - 89.92	1.0000	1.0000
L23	80	4" x 0.75" Flat Plate (G)	89.00 - 89.92	1.0000	1.0000
L23	82	4" x 0.75" Flat Plate (G)	89.00 - 90.00	1.0000	1.0000
L23	83	4" x 0.75" Flat Plate (G)	89.00 - 90.00	1.0000	1.0000
L23	84	4" x 0.75" Flat Plate (G)	89.00 - 90.00	1.0000	1.0000
L24	2	Safety Line 3/8	88.75 - 89.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L24	8	HJ7-50A(1-5/8")	88.75 - 89.00	1.0000	1.0000
L24	12	LDF4-50A(1/2")	88.75 - 89.00	1.0000	1.0000
L24	13	HCS 6X12 6AWG(1-3/8)	88.75 - 89.00	1.0000	1.0000
L24	30	5.5" x 1.25" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L24	31	5.5" x 1.25" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L24	32	5.5" x 1.25" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L24	50	4" x 0.75" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L24	51	4" x 0.75" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L24	52	4" x 0.75" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L24	78	4" x 0.75" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L24	79	4" x 0.75" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L24	80	4" x 0.75" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L24	82	4" x 0.75" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L24	83	4" x 0.75" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L24	84	4" x 0.75" Flat Plate (G)	88.75 - 89.00	1.0000	1.0000
L25	2	Safety Line 3/8	83.75 - 88.75	1.0000	1.0000
L25	8	HJ7-50A(1-5/8")	83.75 - 88.75	1.0000	1.0000
L25	12	LDF4-50A(1/2")	83.75 - 88.75	1.0000	1.0000
L25	13	HCS 6X12 6AWG(1-3/8)	83.75 - 88.75	1.0000	1.0000
L25	30	5.5" x 1.25" Flat Plate (G)	83.75 - 88.75	1.0000	1.0000
L25	31	5.5" x 1.25" Flat Plate (G)	83.75 - 88.75	1.0000	1.0000
L25	32	5.5" x 1.25" Flat Plate (G)	83.75 - 88.75	1.0000	1.0000
L25	50	4" x 0.75" Flat Plate (G)	88.00 - 88.75	1.0000	1.0000
L25	51	4" x 0.75" Flat Plate (G)	88.00 - 88.75	1.0000	1.0000
L25	52	4" x 0.75" Flat Plate (G)	88.00 - 88.75	1.0000	1.0000
L25	78	4" x 0.75" Flat Plate (G)	83.75 - 88.75	1.0000	1.0000
L25	79	4" x 0.75" Flat Plate (G)	83.75 - 88.75	1.0000	1.0000
L25	80	4" x 0.75" Flat Plate (G)	83.75 - 88.75	1.0000	1.0000
L25	82	4" x 0.75" Flat Plate (G)	83.75 - 88.75	1.0000	1.0000
L25	83	4" x 0.75" Flat Plate (G)	83.75 - 88.75	1.0000	1.0000
L25	84	4" x 0.75" Flat Plate (G)	83.75 - 88.75	1.0000	1.0000
L26	2	Safety Line 3/8	80.08 - 83.75	1.0000	1.0000
L26	8	HJ7-50A(1-5/8")	80.08 - 83.75	1.0000	1.0000
L26	12	LDF4-50A(1/2")	80.08 - 83.75	1.0000	1.0000
L26	13	HCS 6X12 6AWG(1-3/8)	80.08 - 83.75	1.0000	1.0000
L26	30	5.5" x 1.25" Flat Plate (G)	80.08 - 83.75	1.0000	1.0000
L26	31	5.5" x 1.25" Flat Plate (G)	80.08 - 83.75	1.0000	1.0000
L26	32	5.5" x 1.25" Flat Plate (G)	80.08 - 83.75	1.0000	1.0000
L26	72	4" x 0.75" Flat Plate (G)	80.08 - 81.08	1.0000	1.0000
L26	73	4" x 0.75" Flat Plate (G)	80.08 - 81.08	1.0000	1.0000
L26	74	4" x 0.75" Flat Plate (G)	80.08 - 81.08	1.0000	1.0000
L26	75	4" x 0.75" Flat Plate (G)	80.08 - 81.08	1.0000	1.0000
L26	76	4" x 0.75" Flat Plate (G)	80.08 - 81.08	1.0000	1.0000
L26	78	4" x 0.75" Flat Plate (G)	80.08 - 83.75	1.0000	1.0000
L26	79	4" x 0.75" Flat Plate (G)	80.08 - 83.75	1.0000	1.0000
L26	80	4" x 0.75" Flat Plate (G)	80.08 - 83.75	1.0000	1.0000
L26	82	4" x 0.75" Flat Plate (G)	80.08 - 83.75	1.0000	1.0000
L26	83	4" x 0.75" Flat Plate (G)	80.08 - 83.75	1.0000	1.0000
L26	84	4" x 0.75" Flat Plate (G)	80.08 - 83.75	1.0000	1.0000
L27	2	Safety Line 3/8	79.83 - 80.08	1.0000	1.0000
L27	8	HJ7-50A(1-5/8")	79.83 - 80.08	1.0000	1.0000
L27	12	LDF4-50A(1/2")	79.83 - 80.08	1.0000	1.0000
L27	13	HCS 6X12 6AWG(1-3/8)	79.83 - 80.08	1.0000	1.0000
L27	30	5.5" x 1.25" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	31	5.5" x 1.25" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	32	5.5" x 1.25" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	72	4" x 0.75" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	73	4" x 0.75" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	74	4" x 0.75" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	75	4" x 0.75" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	76	4" x 0.75" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	78	4" x 0.75" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L27	79	4" x 0.75" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	80	4" x 0.75" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	82	4" x 0.75" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	83	4" x 0.75" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L27	84	4" x 0.75" Flat Plate (G)	79.83 - 80.08	1.0000	1.0000
L28	2	Safety Line 3/8	74.83 - 79.83	1.0000	1.0000
L28	8	HJ7-50A(1-5/8")	74.83 - 79.83	1.0000	1.0000
L28	12	LDF4-50A(1/2")	74.83 - 79.83	1.0000	1.0000
L28	13	HCS 6X12 6AWG(1-3/8)	74.83 - 79.83	1.0000	1.0000
L28	30	5.5" x 1.25" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	31	5.5" x 1.25" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	32	5.5" x 1.25" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	46	4.5" x 1" Flat Plate (G)	74.83 - 75.00	1.0000	1.0000
L28	47	4.5" x 1" Flat Plate (G)	74.83 - 75.00	1.0000	1.0000
L28	48	4.5" x 1" Flat Plate (G)	74.83 - 75.00	1.0000	1.0000
L28	72	4" x 0.75" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	73	4" x 0.75" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	74	4" x 0.75" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	75	4" x 0.75" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	76	4" x 0.75" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	78	4" x 0.75" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	79	4" x 0.75" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	80	4" x 0.75" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	82	4" x 0.75" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	83	4" x 0.75" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L28	84	4" x 0.75" Flat Plate (G)	74.83 - 79.83	1.0000	1.0000
L29	2	Safety Line 3/8	73.50 - 74.83	1.0000	1.0000
L29	8	HJ7-50A(1-5/8")	73.50 - 74.83	1.0000	1.0000
L29	12	LDF4-50A(1/2")	73.50 - 74.83	1.0000	1.0000
L29	13	HCS 6X12 6AWG(1-3/8)	73.50 - 74.83	1.0000	1.0000
L29	30	5.5" x 1.25" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	31	5.5" x 1.25" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	32	5.5" x 1.25" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	46	4.5" x 1" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	47	4.5" x 1" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	48	4.5" x 1" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	72	4" x 0.75" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	73	4" x 0.75" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	74	4" x 0.75" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	75	4" x 0.75" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	76	4" x 0.75" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	78	4" x 0.75" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	79	4" x 0.75" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	80	4" x 0.75" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	82	4" x 0.75" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	83	4" x 0.75" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L29	84	4" x 0.75" Flat Plate (G)	73.50 - 74.83	1.0000	1.0000
L30	2	Safety Line 3/8	73.25 - 73.50	1.0000	1.0000
L30	8	HJ7-50A(1-5/8")	73.25 - 73.50	1.0000	1.0000
L30	12	LDF4-50A(1/2")	73.25 - 73.50	1.0000	1.0000
L30	13	HCS 6X12 6AWG(1-3/8)	73.25 - 73.50	1.0000	1.0000
L30	30	5.5" x 1.25" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	31	5.5" x 1.25" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	32	5.5" x 1.25" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	46	4.5" x 1" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	47	4.5" x 1" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	48	4.5" x 1" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	72	4" x 0.75" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	73	4" x 0.75" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	74	4" x 0.75" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	75	4" x 0.75" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	76	4" x 0.75" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L30	78	4" x 0.75" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	79	4" x 0.75" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	80	4" x 0.75" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	82	4" x 0.75" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	83	4" x 0.75" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L30	84	4" x 0.75" Flat Plate (G)	73.25 - 73.50	1.0000	1.0000
L31	2	Safety Line 3/8	71.00 - 73.25	1.0000	1.0000
L31	8	HJ7-50A(1-5/8")	71.00 - 73.25	1.0000	1.0000
L31	12	LDF4-50A(1/2")	71.00 - 73.25	1.0000	1.0000
L31	13	HCS 6X12 6AWG(1-3/8)	71.00 - 73.25	1.0000	1.0000
L31	30	5.5" x 1.25" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	31	5.5" x 1.25" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	32	5.5" x 1.25" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	46	4.5" x 1" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	47	4.5" x 1" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	48	4.5" x 1" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	72	4" x 0.75" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	73	4" x 0.75" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	74	4" x 0.75" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	75	4" x 0.75" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	76	4" x 0.75" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	78	4" x 0.75" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	79	4" x 0.75" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	80	4" x 0.75" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	82	4" x 0.75" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	83	4" x 0.75" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L31	84	4" x 0.75" Flat Plate (G)	71.00 - 73.25	1.0000	1.0000
L32	2	Safety Line 3/8	70.75 - 71.00	1.0000	1.0000
L32	8	HJ7-50A(1-5/8")	70.75 - 71.00	1.0000	1.0000
L32	12	LDF4-50A(1/2")	70.75 - 71.00	1.0000	1.0000
L32	13	HCS 6X12 6AWG(1-3/8)	70.75 - 71.00	1.0000	1.0000
L32	30	5.5" x 1.25" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	31	5.5" x 1.25" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	32	5.5" x 1.25" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	46	4.5" x 1" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	47	4.5" x 1" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	48	4.5" x 1" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	72	4" x 0.75" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	73	4" x 0.75" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	74	4" x 0.75" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	75	4" x 0.75" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	76	4" x 0.75" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	78	4" x 0.75" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	79	4" x 0.75" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	80	4" x 0.75" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	82	4" x 0.75" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	83	4" x 0.75" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L32	84	4" x 0.75" Flat Plate (G)	70.75 - 71.00	1.0000	1.0000
L33	2	Safety Line 3/8	65.75 - 70.75	1.0000	1.0000
L33	8	HJ7-50A(1-5/8")	65.75 - 70.75	1.0000	1.0000
L33	12	LDF4-50A(1/2")	65.75 - 70.75	1.0000	1.0000
L33	13	HCS 6X12 6AWG(1-3/8)	65.75 - 70.75	1.0000	1.0000
L33	30	5.5" x 1.25" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	31	5.5" x 1.25" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	32	5.5" x 1.25" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	46	4.5" x 1" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	47	4.5" x 1" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	48	4.5" x 1" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	72	4" x 0.75" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	73	4" x 0.75" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	74	4" x 0.75" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	75	4" x 0.75" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L33	76	4" x 0.75" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	78	4" x 0.75" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	79	4" x 0.75" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	80	4" x 0.75" Flat Plate (G)	65.75 - 70.75	1.0000	1.0000
L33	82	4" x 0.75" Flat Plate (G)	70.00 - 70.75	1.0000	1.0000
L33	83	4" x 0.75" Flat Plate (G)	70.00 - 70.75	1.0000	1.0000
L33	84	4" x 0.75" Flat Plate (G)	70.00 - 70.75	1.0000	1.0000
L34	2	Safety Line 3/8	63.00 - 65.75	1.0000	1.0000
L34	8	HJ7-50A(1-5/8")	63.00 - 65.75	1.0000	1.0000
L34	12	LDF4-50A(1/2")	63.00 - 65.75	1.0000	1.0000
L34	13	HCS 6X12 6AWG(1-3/8)	63.00 - 65.75	1.0000	1.0000
L34	26	5.5" x 1.25" Flat Plate (G)	63.00 - 65.50	1.0000	1.0000
L34	27	5.5" x 1.25" Flat Plate (G)	63.00 - 65.50	1.0000	1.0000
L34	28	5.5" x 1.25" Flat Plate (G)	63.00 - 65.50	1.0000	1.0000
L34	30	5.5" x 1.25" Flat Plate (G)	65.50 - 65.75	1.0000	1.0000
L34	31	5.5" x 1.25" Flat Plate (G)	65.50 - 65.75	1.0000	1.0000
L34	32	5.5" x 1.25" Flat Plate (G)	65.50 - 65.75	1.0000	1.0000
L34	46	4.5" x 1" Flat Plate (G)	63.00 - 65.75	1.0000	1.0000
L34	47	4.5" x 1" Flat Plate (G)	63.00 - 65.75	1.0000	1.0000
L34	48	4.5" x 1" Flat Plate (G)	63.00 - 65.75	1.0000	1.0000
L34	72	4" x 0.75" Flat Plate (G)	63.00 - 65.75	1.0000	1.0000
L34	73	4" x 0.75" Flat Plate (G)	63.00 - 65.75	1.0000	1.0000
L34	74	4" x 0.75" Flat Plate (G)	63.00 - 65.75	1.0000	1.0000
L34	75	4" x 0.75" Flat Plate (G)	63.00 - 65.75	1.0000	1.0000
L34	76	4" x 0.75" Flat Plate (G)	63.00 - 65.75	1.0000	1.0000
L34	78	4" x 0.75" Flat Plate (G)	65.58 - 65.75	1.0000	1.0000
L34	79	4" x 0.75" Flat Plate (G)	65.58 - 65.75	1.0000	1.0000
L34	80	4" x 0.75" Flat Plate (G)	65.58 - 65.75	1.0000	1.0000
L35	2	Safety Line 3/8	62.75 - 63.00	1.0000	1.0000
L35	8	HJ7-50A(1-5/8")	62.75 - 63.00	1.0000	1.0000
L35	12	LDF4-50A(1/2")	62.75 - 63.00	1.0000	1.0000
L35	13	HCS 6X12 6AWG(1-3/8)	62.75 - 63.00	1.0000	1.0000
L35	26	5.5" x 1.25" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L35	27	5.5" x 1.25" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L35	28	5.5" x 1.25" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L35	46	4.5" x 1" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L35	47	4.5" x 1" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L35	48	4.5" x 1" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L35	72	4" x 0.75" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L35	73	4" x 0.75" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L35	74	4" x 0.75" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L35	75	4" x 0.75" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L35	76	4" x 0.75" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L36	2	Safety Line 3/8	62.08 - 62.75	1.0000	1.0000
L36	8	HJ7-50A(1-5/8")	62.08 - 62.75	1.0000	1.0000
L36	12	LDF4-50A(1/2")	62.08 - 62.75	1.0000	1.0000
L36	13	HCS 6X12 6AWG(1-3/8)	62.08 - 62.75	1.0000	1.0000
L36	26	5.5" x 1.25" Flat Plate (G)	62.08 - 62.75	1.0000	1.0000
L36	27	5.5" x 1.25" Flat Plate (G)	62.08 - 62.75	1.0000	1.0000
L36	28	5.5" x 1.25" Flat Plate (G)	62.08 - 62.75	1.0000	1.0000
L36	46	4.5" x 1" Flat Plate (G)	62.08 - 62.75	1.0000	1.0000
L36	47	4.5" x 1" Flat Plate (G)	62.08 - 62.75	1.0000	1.0000
L36	48	4.5" x 1" Flat Plate (G)	62.08 - 62.75	1.0000	1.0000
L36	67	6" x 1" Flat Plate (G)	62.08 - 62.67	1.0000	1.0000
L36	72	4" x 0.75" Flat Plate (G)	62.08 - 62.75	1.0000	1.0000
L36	73	4" x 0.75" Flat Plate (G)	62.08 - 62.75	1.0000	1.0000
L36	74	4" x 0.75" Flat Plate (G)	62.08 - 62.75	1.0000	1.0000
L36	75	4" x 0.75" Flat Plate (G)	62.08 - 62.75	1.0000	1.0000
L36	76	4" x 0.75" Flat Plate (G)	62.08 - 62.75	1.0000	1.0000
L37	2	Safety Line 3/8	61.83 - 62.08	1.0000	1.0000
L37	8	HJ7-50A(1-5/8")	61.83 - 62.08	1.0000	1.0000
L37	12	LDF4-50A(1/2")	61.83 - 62.08	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L37	13	HCS 6X12 6AWG(1-3/8)	61.83 - 62.08	1.0000	1.0000
L37	26	5.5" x 1.25" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L37	27	5.5" x 1.25" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L37	28	5.5" x 1.25" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L37	46	4.5" x 1" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L37	47	4.5" x 1" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L37	48	4.5" x 1" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L37	67	6" x 1" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L37	72	4" x 0.75" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L37	73	4" x 0.75" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L37	74	4" x 0.75" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L37	75	4" x 0.75" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L37	76	4" x 0.75" Flat Plate (G)	61.83 - 62.08	1.0000	1.0000
L38	2	Safety Line 3/8	60.67 - 61.83	1.0000	1.0000
L38	8	HJ7-50A(1-5/8")	60.67 - 61.83	1.0000	1.0000
L38	12	LDF4-50A(1/2")	60.67 - 61.83	1.0000	1.0000
L38	13	HCS 6X12 6AWG(1-3/8)	60.67 - 61.83	1.0000	1.0000
L38	26	5.5" x 1.25" Flat Plate (G)	60.67 - 61.83	1.0000	1.0000
L38	27	5.5" x 1.25" Flat Plate (G)	60.67 - 61.83	1.0000	1.0000
L38	28	5.5" x 1.25" Flat Plate (G)	60.67 - 61.83	1.0000	1.0000
L38	46	4.5" x 1" Flat Plate (G)	60.67 - 61.83	1.0000	1.0000
L38	47	4.5" x 1" Flat Plate (G)	60.67 - 61.83	1.0000	1.0000
L38	48	4.5" x 1" Flat Plate (G)	60.67 - 61.83	1.0000	1.0000
L38	64	6" x 1" Flat Plate (G)	60.67 - 61.00	1.0000	1.0000
L38	65	6" x 1" Flat Plate (G)	60.67 - 61.00	1.0000	1.0000
L38	67	6" x 1" Flat Plate (G)	60.67 - 61.83	1.0000	1.0000
L38	72	4" x 0.75" Flat Plate (G)	61.08 - 61.83	1.0000	1.0000
L38	73	4" x 0.75" Flat Plate (G)	61.08 - 61.83	1.0000	1.0000
L38	74	4" x 0.75" Flat Plate (G)	61.08 - 61.83	1.0000	1.0000
L38	75	4" x 0.75" Flat Plate (G)	61.08 - 61.83	1.0000	1.0000
L38	76	4" x 0.75" Flat Plate (G)	61.08 - 61.83	1.0000	1.0000
L39	2	Safety Line 3/8	60.42 - 60.67	1.0000	1.0000
L39	8	HJ7-50A(1-5/8")	60.42 - 60.67	1.0000	1.0000
L39	12	LDF4-50A(1/2")	60.42 - 60.67	1.0000	1.0000
L39	13	HCS 6X12 6AWG(1-3/8)	60.42 - 60.67	1.0000	1.0000
L39	26	5.5" x 1.25" Flat Plate (G)	60.42 - 60.67	1.0000	1.0000
L39	27	5.5" x 1.25" Flat Plate (G)	60.42 - 60.67	1.0000	1.0000
L39	28	5.5" x 1.25" Flat Plate (G)	60.42 - 60.67	1.0000	1.0000
L39	46	4.5" x 1" Flat Plate (G)	60.42 - 60.67	1.0000	1.0000
L39	47	4.5" x 1" Flat Plate (G)	60.42 - 60.67	1.0000	1.0000
L39	48	4.5" x 1" Flat Plate (G)	60.42 - 60.67	1.0000	1.0000
L39	64	6" x 1" Flat Plate (G)	60.42 - 60.67	1.0000	1.0000
L39	65	6" x 1" Flat Plate (G)	60.42 - 60.67	1.0000	1.0000
L39	67	6" x 1" Flat Plate (G)	60.42 - 60.67	1.0000	1.0000
L40	2	Safety Line 3/8	59.00 - 60.42	1.0000	1.0000
L40	8	HJ7-50A(1-5/8")	59.00 - 60.42	1.0000	1.0000
L40	12	LDF4-50A(1/2")	59.00 - 60.42	1.0000	1.0000
L40	13	HCS 6X12 6AWG(1-3/8)	59.00 - 60.42	1.0000	1.0000
L40	26	5.5" x 1.25" Flat Plate (G)	59.00 - 60.42	1.0000	1.0000
L40	27	5.5" x 1.25" Flat Plate (G)	59.00 - 60.42	1.0000	1.0000
L40	28	5.5" x 1.25" Flat Plate (G)	59.00 - 60.42	1.0000	1.0000
L40	46	4.5" x 1" Flat Plate (G)	59.00 - 60.42	1.0000	1.0000
L40	47	4.5" x 1" Flat Plate (G)	59.00 - 60.42	1.0000	1.0000
L40	48	4.5" x 1" Flat Plate (G)	59.00 - 60.42	1.0000	1.0000
L40	64	6" x 1" Flat Plate (G)	59.00 - 60.42	1.0000	1.0000
L40	65	6" x 1" Flat Plate (G)	59.00 - 60.42	1.0000	1.0000
L40	67	6" x 1" Flat Plate (G)	59.00 - 60.42	1.0000	1.0000
L41	2	Safety Line 3/8	58.75 - 59.00	1.0000	1.0000
L41	8	HJ7-50A(1-5/8")	58.75 - 59.00	1.0000	1.0000
L41	12	LDF4-50A(1/2")	58.75 - 59.00	1.0000	1.0000
L41	13	HCS 6X12 6AWG(1-3/8)	58.75 - 59.00	1.0000	1.0000
L41	26	5.5" x 1.25" Flat Plate (G)	58.75 - 59.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L41	27	5.5" x 1.25" Flat Plate (G)	58.75 - 59.00	1.0000	1.0000
L41	28	5.5" x 1.25" Flat Plate (G)	58.75 - 59.00	1.0000	1.0000
L41	46	4.5" x 1" Flat Plate (G)	58.75 - 59.00	1.0000	1.0000
L41	47	4.5" x 1" Flat Plate (G)	58.75 - 59.00	1.0000	1.0000
L41	48	4.5" x 1" Flat Plate (G)	58.75 - 59.00	1.0000	1.0000
L41	64	6" x 1" Flat Plate (G)	58.75 - 59.00	1.0000	1.0000
L41	65	6" x 1" Flat Plate (G)	58.75 - 59.00	1.0000	1.0000
L41	67	6" x 1" Flat Plate (G)	58.75 - 59.00	1.0000	1.0000
L42	2	Safety Line 3/8	53.75 - 58.75	1.0000	1.0000
L42	8	HJ7-50A(1-5/8")	53.75 - 58.75	1.0000	1.0000
L42	12	LDF4-50A(1/2")	53.75 - 58.75	1.0000	1.0000
L42	13	HCS 6X12 6AWG(1-3/8)	53.75 - 58.75	1.0000	1.0000
L42	26	5.5" x 1.25" Flat Plate (G)	53.75 - 58.75	1.0000	1.0000
L42	27	5.5" x 1.25" Flat Plate (G)	53.75 - 58.75	1.0000	1.0000
L42	28	5.5" x 1.25" Flat Plate (G)	53.75 - 58.75	1.0000	1.0000
L42	46	4.5" x 1" Flat Plate (G)	53.75 - 58.75	1.0000	1.0000
L42	47	4.5" x 1" Flat Plate (G)	53.75 - 58.75	1.0000	1.0000
L42	48	4.5" x 1" Flat Plate (G)	53.75 - 58.75	1.0000	1.0000
L42	64	6" x 1" Flat Plate (G)	53.75 - 58.75	1.0000	1.0000
L42	65	6" x 1" Flat Plate (G)	53.75 - 58.75	1.0000	1.0000
L42	67	6" x 1" Flat Plate (G)	53.75 - 58.75	1.0000	1.0000
L43	2	Safety Line 3/8	48.50 - 53.75	1.0000	1.0000
L43	8	HJ7-50A(1-5/8")	48.50 - 53.75	1.0000	1.0000
L43	12	LDF4-50A(1/2")	48.50 - 53.75	1.0000	1.0000
L43	13	HCS 6X12 6AWG(1-3/8)	48.50 - 53.75	1.0000	1.0000
L43	26	5.5" x 1.25" Flat Plate (G)	48.50 - 53.75	1.0000	1.0000
L43	27	5.5" x 1.25" Flat Plate (G)	48.50 - 53.75	1.0000	1.0000
L43	28	5.5" x 1.25" Flat Plate (G)	48.50 - 53.75	1.0000	1.0000
L43	46	4.5" x 1" Flat Plate (G)	50.00 - 53.75	1.0000	1.0000
L43	47	4.5" x 1" Flat Plate (G)	50.00 - 53.75	1.0000	1.0000
L43	48	4.5" x 1" Flat Plate (G)	50.00 - 53.75	1.0000	1.0000
L43	64	6" x 1" Flat Plate (G)	48.50 - 53.75	1.0000	1.0000
L43	65	6" x 1" Flat Plate (G)	48.50 - 53.75	1.0000	1.0000
L43	67	6" x 1" Flat Plate (G)	48.50 - 53.75	1.0000	1.0000
L43	69	6" x 1" Flat Plate (G)	48.50 - 49.92	1.0000	1.0000
L43	70	6" x 1" Flat Plate (G)	48.50 - 49.92	1.0000	1.0000
L43	22	5.5" x 1.25" Flat Plate (G)	48.50 - 48.25	1.0000	1.0000
L43	23	5.5" x 1.25" Flat Plate (G)	48.50 - 48.25	1.0000	1.0000
L43	24	5.5" x 1.25" Flat Plate (G)	48.50 - 48.25	1.0000	1.0000
L45	2	Safety Line 3/8	45.75 - 47.50	1.0000	1.0000
L45	8	HJ7-50A(1-5/8")	45.75 - 47.50	1.0000	1.0000
L45	12	LDF4-50A(1/2")	45.75 - 47.50	1.0000	1.0000
L45	13	HCS 6X12 6AWG(1-3/8)	45.75 - 47.50	1.0000	1.0000
L45	22	5.5" x 1.25" Flat Plate (G)	45.75 - 47.50	1.0000	1.0000
L45	23	5.5" x 1.25" Flat Plate (G)	45.75 - 47.50	1.0000	1.0000
L45	24	5.5" x 1.25" Flat Plate (G)	45.75 - 47.50	1.0000	1.0000
L45	64	6" x 1" Flat Plate (G)	45.75 - 47.50	1.0000	1.0000
L45	65	6" x 1" Flat Plate (G)	45.75 - 47.50	1.0000	1.0000
L45	67	6" x 1" Flat Plate (G)	45.75 - 47.50	1.0000	1.0000
L45	69	6" x 1" Flat Plate (G)	45.75 - 47.50	1.0000	1.0000
L45	70	6" x 1" Flat Plate (G)	45.75 - 47.50	1.0000	1.0000
L46	2	Safety Line 3/8	45.50 - 45.75	1.0000	1.0000
L46	8	HJ7-50A(1-5/8")	45.50 - 45.75	1.0000	1.0000
L46	12	LDF4-50A(1/2")	45.50 - 45.75	1.0000	1.0000
L46	13	HCS 6X12 6AWG(1-3/8)	45.50 - 45.75	1.0000	1.0000
L46	22	5.5" x 1.25" Flat Plate (G)	45.50 - 45.75	1.0000	1.0000
L46	23	5.5" x 1.25" Flat Plate (G)	45.50 - 45.75	1.0000	1.0000
L46	24	5.5" x 1.25" Flat Plate (G)	45.50 - 45.75	1.0000	1.0000
L46	64	6" x 1" Flat Plate (G)	45.50 - 45.75	1.0000	1.0000
L46	65	6" x 1" Flat Plate (G)	45.50 - 45.75	1.0000	1.0000
L46	67	6" x 1" Flat Plate (G)	45.50 - 45.75	1.0000	1.0000
L46	69	6" x 1" Flat Plate (G)	45.50 - 45.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L46	70	6" x 1" Flat Plate (G)	45.50 - 45.75	1.0000	1.0000
L47	2	Safety Line 3/8	45.00 - 45.50	1.0000	1.0000
L47	8	HJ7-50A(1-5/8")	45.00 - 45.50	1.0000	1.0000
L47	12	LDF4-50A(1/2")	45.00 - 45.50	1.0000	1.0000
L47	13	HCS 6X12 6AWG(1-3/8)	45.00 - 45.50	1.0000	1.0000
L47	22	5.5" x 1.25" Flat Plate (G)	45.00 - 45.50	1.0000	1.0000
L47	23	5.5" x 1.25" Flat Plate (G)	45.00 - 45.50	1.0000	1.0000
L47	24	5.5" x 1.25" Flat Plate (G)	45.00 - 45.50	1.0000	1.0000
L47	64	6" x 1" Flat Plate (G)	45.00 - 45.50	1.0000	1.0000
L47	65	6" x 1" Flat Plate (G)	45.00 - 45.50	1.0000	1.0000
L47	67	6" x 1" Flat Plate (G)	45.00 - 45.50	1.0000	1.0000
L47	69	6" x 1" Flat Plate (G)	45.00 - 45.50	1.0000	1.0000
L47	70	6" x 1" Flat Plate (G)	45.00 - 45.50	1.0000	1.0000
L48	2	Safety Line 3/8	44.75 - 45.00	1.0000	1.0000
L48	8	HJ7-50A(1-5/8")	44.75 - 45.00	1.0000	1.0000
L48	12	LDF4-50A(1/2")	44.75 - 45.00	1.0000	1.0000
L48	13	HCS 6X12 6AWG(1-3/8)	44.75 - 45.00	1.0000	1.0000
L48	22	5.5" x 1.25" Flat Plate (G)	44.75 - 45.00	1.0000	1.0000
L48	23	5.5" x 1.25" Flat Plate (G)	44.75 - 45.00	1.0000	1.0000
L48	24	5.5" x 1.25" Flat Plate (G)	44.75 - 45.00	1.0000	1.0000
L48	38	4.5" x 1" Flat Plate (G)	44.75 - 45.00	1.0000	1.0000
L48	39	4.5" x 1" Flat Plate (G)	44.75 - 45.00	1.0000	1.0000
L48	40	4.5" x 1" Flat Plate (G)	44.75 - 45.00	1.0000	1.0000
L48	64	6" x 1" Flat Plate (G)	44.75 - 45.00	1.0000	1.0000
L48	65	6" x 1" Flat Plate (G)	44.75 - 45.00	1.0000	1.0000
L48	67	6" x 1" Flat Plate (G)	44.75 - 45.00	1.0000	1.0000
L48	69	6" x 1" Flat Plate (G)	44.75 - 45.00	1.0000	1.0000
L48	70	6" x 1" Flat Plate (G)	44.75 - 45.00	1.0000	1.0000
L49	2	Safety Line 3/8	43.50 - 44.75	1.0000	1.0000
L49	8	HJ7-50A(1-5/8")	43.50 - 44.75	1.0000	1.0000
L49	12	LDF4-50A(1/2")	43.50 - 44.75	1.0000	1.0000
L49	13	HCS 6X12 6AWG(1-3/8)	43.50 - 44.75	1.0000	1.0000
L49	22	5.5" x 1.25" Flat Plate (G)	43.50 - 44.75	1.0000	1.0000
L49	23	5.5" x 1.25" Flat Plate (G)	43.50 - 44.75	1.0000	1.0000
L49	24	5.5" x 1.25" Flat Plate (G)	43.50 - 44.75	1.0000	1.0000
L49	38	4.5" x 1" Flat Plate (G)	43.50 - 44.75	1.0000	1.0000
L49	39	4.5" x 1" Flat Plate (G)	43.50 - 44.75	1.0000	1.0000
L49	40	4.5" x 1" Flat Plate (G)	43.50 - 44.75	1.0000	1.0000
L49	64	6" x 1" Flat Plate (G)	43.50 - 44.75	1.0000	1.0000
L49	65	6" x 1" Flat Plate (G)	43.50 - 44.75	1.0000	1.0000
L49	67	6" x 1" Flat Plate (G)	43.50 - 44.75	1.0000	1.0000
L49	69	6" x 1" Flat Plate (G)	43.50 - 44.75	1.0000	1.0000
L49	70	6" x 1" Flat Plate (G)	43.50 - 44.75	1.0000	1.0000
L50	2	Safety Line 3/8	43.25 - 43.50	1.0000	1.0000
L50	8	HJ7-50A(1-5/8")	43.25 - 43.50	1.0000	1.0000
L50	12	LDF4-50A(1/2")	43.25 - 43.50	1.0000	1.0000
L50	13	HCS 6X12 6AWG(1-3/8)	43.25 - 43.50	1.0000	1.0000
L50	22	5.5" x 1.25" Flat Plate (G)	43.25 - 43.50	1.0000	1.0000
L50	23	5.5" x 1.25" Flat Plate (G)	43.25 - 43.50	1.0000	1.0000
L50	24	5.5" x 1.25" Flat Plate (G)	43.25 - 43.50	1.0000	1.0000
L50	38	4.5" x 1" Flat Plate (G)	43.25 - 43.50	1.0000	1.0000
L50	39	4.5" x 1" Flat Plate (G)	43.25 - 43.50	1.0000	1.0000
L50	40	4.5" x 1" Flat Plate (G)	43.25 - 43.50	1.0000	1.0000
L50	64	6" x 1" Flat Plate (G)	43.25 - 43.50	1.0000	1.0000
L50	65	6" x 1" Flat Plate (G)	43.25 - 43.50	1.0000	1.0000
L50	67	6" x 1" Flat Plate (G)	43.25 - 43.50	1.0000	1.0000
L50	69	6" x 1" Flat Plate (G)	43.25 - 43.50	1.0000	1.0000
L50	70	6" x 1" Flat Plate (G)	43.25 - 43.50	1.0000	1.0000
L51	2	Safety Line 3/8	38.25 - 43.25	1.0000	1.0000
L51	8	HJ7-50A(1-5/8")	38.25 - 43.25	1.0000	1.0000
L51	12	LDF4-50A(1/2")	38.25 - 43.25	1.0000	1.0000
L51	13	HCS 6X12 6AWG(1-3/8)	38.25 - 43.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L51	22	5.5" x 1.25" Flat Plate (G)	38.25 - 43.25	1.0000	1.0000
L51	23	5.5" x 1.25" Flat Plate (G)	38.25 - 43.25	1.0000	1.0000
L51	24	5.5" x 1.25" Flat Plate (G)	38.25 - 43.25	1.0000	1.0000
L51	38	4.5" x 1" Flat Plate (G)	38.25 - 43.25	1.0000	1.0000
L51	39	4.5" x 1" Flat Plate (G)	38.25 - 43.25	1.0000	1.0000
L51	40	4.5" x 1" Flat Plate (G)	38.25 - 43.25	1.0000	1.0000
L51	64	6" x 1" Flat Plate (G)	38.25 - 43.25	1.0000	1.0000
L51	65	6" x 1" Flat Plate (G)	38.25 - 43.25	1.0000	1.0000
L51	67	6" x 1" Flat Plate (G)	38.25 - 43.25	1.0000	1.0000
L51	69	6" x 1" Flat Plate (G)	38.25 - 43.25	1.0000	1.0000
L51	70	6" x 1" Flat Plate (G)	38.25 - 43.25	1.0000	1.0000
L52	2	Safety Line 3/8	33.25 - 38.25	1.0000	1.0000
L52	8	HJ7-50A(1-5/8")	33.25 - 38.25	1.0000	1.0000
L52	12	LDF4-50A(1/2")	33.25 - 38.25	1.0000	1.0000
L52	13	HCS 6X12 6AWG(1-3/8)	33.25 - 38.25	1.0000	1.0000
L52	22	5.5" x 1.25" Flat Plate (G)	33.25 - 38.25	1.0000	1.0000
L52	23	5.5" x 1.25" Flat Plate (G)	33.25 - 38.25	1.0000	1.0000
L52	24	5.5" x 1.25" Flat Plate (G)	33.25 - 38.25	1.0000	1.0000
L52	38	4.5" x 1" Flat Plate (G)	33.25 - 38.25	1.0000	1.0000
L52	39	4.5" x 1" Flat Plate (G)	33.25 - 38.25	1.0000	1.0000
L52	40	4.5" x 1" Flat Plate (G)	33.25 - 38.25	1.0000	1.0000
L52	64	6" x 1" Flat Plate (G)	33.25 - 38.25	1.0000	1.0000
L52	65	6" x 1" Flat Plate (G)	33.25 - 38.25	1.0000	1.0000
L52	67	6" x 1" Flat Plate (G)	33.25 - 38.25	1.0000	1.0000
L52	69	6" x 1" Flat Plate (G)	33.25 - 38.25	1.0000	1.0000
L52	70	6" x 1" Flat Plate (G)	33.25 - 38.25	1.0000	1.0000
L53	2	Safety Line 3/8	30.50 - 33.25	1.0000	1.0000
L53	8	HJ7-50A(1-5/8")	30.50 - 33.25	1.0000	1.0000
L53	12	LDF4-50A(1/2")	30.50 - 33.25	1.0000	1.0000
L53	13	HCS 6X12 6AWG(1-3/8)	30.50 - 33.25	1.0000	1.0000
L53	22	5.5" x 1.25" Flat Plate (G)	30.50 - 33.25	1.0000	1.0000
L53	23	5.5" x 1.25" Flat Plate (G)	30.50 - 33.25	1.0000	1.0000
L53	24	5.5" x 1.25" Flat Plate (G)	30.50 - 33.25	1.0000	1.0000
L53	38	4.5" x 1" Flat Plate (G)	30.50 - 33.25	1.0000	1.0000
L53	39	4.5" x 1" Flat Plate (G)	30.50 - 33.25	1.0000	1.0000
L53	40	4.5" x 1" Flat Plate (G)	30.50 - 33.25	1.0000	1.0000
L53	64	6" x 1" Flat Plate (G)	30.50 - 33.25	1.0000	1.0000
L53	65	6" x 1" Flat Plate (G)	30.50 - 33.25	1.0000	1.0000
L53	67	6" x 1" Flat Plate (G)	30.50 - 33.25	1.0000	1.0000
L53	69	6" x 1" Flat Plate (G)	30.58 - 33.25	1.0000	1.0000
L53	70	6" x 1" Flat Plate (G)	30.50 - 33.25	1.0000	1.0000
L54	2	Safety Line 3/8	30.25 - 30.50	1.0000	1.0000
L54	8	HJ7-50A(1-5/8")	30.25 - 30.50	1.0000	1.0000
L54	12	LDF4-50A(1/2")	30.25 - 30.50	1.0000	1.0000
L54	13	HCS 6X12 6AWG(1-3/8)	30.25 - 30.50	1.0000	1.0000
L54	17	5.5" x 1.25" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L54	18	5.5" x 1.25" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L54	19	5.5" x 1.25" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L54	20	5.5" x 1.25" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L54	38	4.5" x 1" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L54	39	4.5" x 1" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L54	40	4.5" x 1" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L54	64	6" x 1" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L54	65	6" x 1" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L54	67	6" x 1" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L54	70	6" x 1" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L55	2	Safety Line 3/8	29.67 - 30.25	1.0000	1.0000
L55	8	HJ7-50A(1-5/8")	29.67 - 30.25	1.0000	1.0000
L55	12	LDF4-50A(1/2")	29.67 - 30.25	1.0000	1.0000
L55	13	HCS 6X12 6AWG(1-3/8)	29.67 - 30.25	1.0000	1.0000
L55	17	5.5" x 1.25" Flat Plate (G)	29.67 - 30.25	1.0000	1.0000
L55	18	5.5" x 1.25" Flat Plate (G)	29.67 - 30.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L55	19	5.5" x 1.25" Flat Plate (G)	29.67 - 30.25	1.0000	1.0000
L55	20	5.5" x 1.25" Flat Plate (G)	29.67 - 30.25	1.0000	1.0000
L55	38	4.5" x 1" Flat Plate (G)	29.67 - 30.25	1.0000	1.0000
L55	39	4.5" x 1" Flat Plate (G)	29.67 - 30.25	1.0000	1.0000
L55	40	4.5" x 1" Flat Plate (G)	29.67 - 30.25	1.0000	1.0000
L55	64	6" x 1" Flat Plate (G)	29.67 - 30.25	1.0000	1.0000
L55	65	6" x 1" Flat Plate (G)	29.67 - 30.25	1.0000	1.0000
L55	67	6" x 1" Flat Plate (G)	29.67 - 30.25	1.0000	1.0000
L55	70	6" x 1" Flat Plate (G)	29.67 - 30.25	1.0000	1.0000
L56	2	Safety Line 3/8	29.42 - 29.67	1.0000	1.0000
L56	8	HJ7-50A(1-5/8")	29.42 - 29.67	1.0000	1.0000
L56	12	LDF4-50A(1/2")	29.42 - 29.67	1.0000	1.0000
L56	13	HCS 6X12 6AWG(1-3/8)	29.42 - 29.67	1.0000	1.0000
L56	17	5.5" x 1.25" Flat Plate (G)	29.42 - 29.67	1.0000	1.0000
L56	18	5.5" x 1.25" Flat Plate (G)	29.42 - 29.67	1.0000	1.0000
L56	19	5.5" x 1.25" Flat Plate (G)	29.42 - 29.67	1.0000	1.0000
L56	20	5.5" x 1.25" Flat Plate (G)	29.42 - 29.67	1.0000	1.0000
L56	38	4.5" x 1" Flat Plate (G)	29.42 - 29.67	1.0000	1.0000
L56	39	4.5" x 1" Flat Plate (G)	29.42 - 29.67	1.0000	1.0000
L56	40	4.5" x 1" Flat Plate (G)	29.42 - 29.67	1.0000	1.0000
L56	64	6" x 1" Flat Plate (G)	29.42 - 29.67	1.0000	1.0000
L56	65	6" x 1" Flat Plate (G)	29.42 - 29.67	1.0000	1.0000
L56	67	6" x 1" Flat Plate (G)	29.42 - 29.67	1.0000	1.0000
L56	70	6" x 1" Flat Plate (G)	29.42 - 29.67	1.0000	1.0000
L57	2	Safety Line 3/8	28.00 - 29.42	1.0000	1.0000
L57	8	HJ7-50A(1-5/8")	28.00 - 29.42	1.0000	1.0000
L57	12	LDF4-50A(1/2")	28.00 - 29.42	1.0000	1.0000
L57	13	HCS 6X12 6AWG(1-3/8)	28.00 - 29.42	1.0000	1.0000
L57	17	5.5" x 1.25" Flat Plate (G)	28.00 - 29.42	1.0000	1.0000
L57	18	5.5" x 1.25" Flat Plate (G)	28.00 - 29.42	1.0000	1.0000
L57	19	5.5" x 1.25" Flat Plate (G)	28.00 - 29.42	1.0000	1.0000
L57	20	5.5" x 1.25" Flat Plate (G)	28.00 - 29.42	1.0000	1.0000
L57	38	4.5" x 1" Flat Plate (G)	28.00 - 29.42	1.0000	1.0000
L57	39	4.5" x 1" Flat Plate (G)	28.00 - 29.42	1.0000	1.0000
L57	40	4.5" x 1" Flat Plate (G)	28.00 - 29.42	1.0000	1.0000
L57	64	6" x 1" Flat Plate (G)	28.00 - 29.42	1.0000	1.0000
L57	65	6" x 1" Flat Plate (G)	28.00 - 29.42	1.0000	1.0000
L57	67	6" x 1" Flat Plate (G)	28.00 - 29.42	1.0000	1.0000
L57	70	6" x 1" Flat Plate (G)	28.00 - 29.42	1.0000	1.0000
L58	2	Safety Line 3/8	27.75 - 28.00	1.0000	1.0000
L58	8	HJ7-50A(1-5/8")	27.75 - 28.00	1.0000	1.0000
L58	12	LDF4-50A(1/2")	27.75 - 28.00	1.0000	1.0000
L58	13	HCS 6X12 6AWG(1-3/8)	27.75 - 28.00	1.0000	1.0000
L58	17	5.5" x 1.25" Flat Plate (G)	27.75 - 28.00	1.0000	1.0000
L58	18	5.5" x 1.25" Flat Plate (G)	27.75 - 28.00	1.0000	1.0000
L58	19	5.5" x 1.25" Flat Plate (G)	27.75 - 28.00	1.0000	1.0000
L58	20	5.5" x 1.25" Flat Plate (G)	27.75 - 28.00	1.0000	1.0000
L58	38	4.5" x 1" Flat Plate (G)	27.75 - 28.00	1.0000	1.0000
L58	39	4.5" x 1" Flat Plate (G)	27.75 - 28.00	1.0000	1.0000
L58	40	4.5" x 1" Flat Plate (G)	27.75 - 28.00	1.0000	1.0000
L58	64	6" x 1" Flat Plate (G)	27.75 - 28.00	1.0000	1.0000
L58	65	6" x 1" Flat Plate (G)	27.75 - 28.00	1.0000	1.0000
L58	67	6" x 1" Flat Plate (G)	27.75 - 28.00	1.0000	1.0000
L58	70	6" x 1" Flat Plate (G)	27.75 - 28.00	1.0000	1.0000
L59	2	Safety Line 3/8	26.92 - 27.75	1.0000	1.0000
L59	8	HJ7-50A(1-5/8")	26.92 - 27.75	1.0000	1.0000
L59	12	LDF4-50A(1/2")	26.92 - 27.75	1.0000	1.0000
L59	13	HCS 6X12 6AWG(1-3/8)	26.92 - 27.75	1.0000	1.0000
L59	17	5.5" x 1.25" Flat Plate (G)	26.92 - 27.75	1.0000	1.0000
L59	18	5.5" x 1.25" Flat Plate (G)	26.92 - 27.75	1.0000	1.0000
L59	19	5.5" x 1.25" Flat Plate (G)	26.92 - 27.75	1.0000	1.0000
L59	20	5.5" x 1.25" Flat Plate (G)	26.92 - 27.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L59	38	4.5" x 1" Flat Plate (G)	26.92 - 27.75	1.0000	1.0000
L59	39	4.5" x 1" Flat Plate (G)	26.92 - 27.75	1.0000	1.0000
L59	40	4.5" x 1" Flat Plate (G)	26.92 - 27.75	1.0000	1.0000
L59	58	6.5" x 1.25" Flat Plate (G)	26.92 - 27.67	1.0000	1.0000
L59	59	6.5" x 1.25" Flat Plate (G)	26.92 - 27.67	1.0000	1.0000
L59	64	6" x 1" Flat Plate (G)	26.92 - 27.75	1.0000	1.0000
L59	65	6" x 1" Flat Plate (G)	26.92 - 27.75	1.0000	1.0000
L59	67	6" x 1" Flat Plate (G)	26.92 - 27.75	1.0000	1.0000
L59	70	6" x 1" Flat Plate (G)	26.92 - 27.75	1.0000	1.0000
L60	2	Safety Line 3/8	26.67 - 26.92	1.0000	1.0000
L60	8	HJ7-50A(1-5/8")	26.67 - 26.92	1.0000	1.0000
L60	12	LDF4-50A(1/2")	26.67 - 26.92	1.0000	1.0000
L60	13	HCS 6X12 6AWG(1-3/8)	26.67 - 26.92	1.0000	1.0000
L60	17	5.5" x 1.25" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	18	5.5" x 1.25" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	19	5.5" x 1.25" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	20	5.5" x 1.25" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	38	4.5" x 1" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	39	4.5" x 1" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	40	4.5" x 1" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	58	6.5" x 1.25" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	59	6.5" x 1.25" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	64	6" x 1" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	65	6" x 1" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	67	6" x 1" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L60	70	6" x 1" Flat Plate (G)	26.67 - 26.92	1.0000	1.0000
L61	2	Safety Line 3/8	26.50 - 26.67	1.0000	1.0000
L61	8	HJ7-50A(1-5/8")	26.50 - 26.67	1.0000	1.0000
L61	12	LDF4-50A(1/2")	26.50 - 26.67	1.0000	1.0000
L61	13	HCS 6X12 6AWG(1-3/8)	26.50 - 26.67	1.0000	1.0000
L61	17	5.5" x 1.25" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	18	5.5" x 1.25" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	19	5.5" x 1.25" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	20	5.5" x 1.25" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	38	4.5" x 1" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	39	4.5" x 1" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	40	4.5" x 1" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	58	6.5" x 1.25" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	59	6.5" x 1.25" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	64	6" x 1" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	65	6" x 1" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	67	6" x 1" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L61	70	6" x 1" Flat Plate (G)	26.50 - 26.67	1.0000	1.0000
L62	2	Safety Line 3/8	26.25 - 26.50	1.0000	1.0000
L62	8	HJ7-50A(1-5/8")	26.25 - 26.50	1.0000	1.0000
L62	12	LDF4-50A(1/2")	26.25 - 26.50	1.0000	1.0000
L62	13	HCS 6X12 6AWG(1-3/8)	26.25 - 26.50	1.0000	1.0000
L62	17	5.5" x 1.25" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	18	5.5" x 1.25" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	19	5.5" x 1.25" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	20	5.5" x 1.25" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	38	4.5" x 1" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	39	4.5" x 1" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	40	4.5" x 1" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	58	6.5" x 1.25" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	59	6.5" x 1.25" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	64	6" x 1" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	65	6" x 1" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	67	6" x 1" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L62	70	6" x 1" Flat Plate (G)	26.25 - 26.50	1.0000	1.0000
L63	2	Safety Line 3/8	24.92 - 26.25	1.0000	1.0000
L63	8	HJ7-50A(1-5/8")	24.92 - 26.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L63	12	LDF4-50A(1/2")	24.92 - 26.25	1.0000	1.0000
L63	13	HCS 6X12 6AWG(1-3/8)	24.92 - 26.25	1.0000	1.0000
L63	17	5.5" x 1.25" Flat Plate (G)	24.92 - 26.25	1.0000	1.0000
L63	18	5.5" x 1.25" Flat Plate (G)	24.92 - 26.25	1.0000	1.0000
L63	19	5.5" x 1.25" Flat Plate (G)	24.92 - 26.25	1.0000	1.0000
L63	20	5.5" x 1.25" Flat Plate (G)	24.92 - 26.25	1.0000	1.0000
L63	38	4.5" x 1" Flat Plate (G)	25.00 - 26.25	1.0000	1.0000
L63	39	4.5" x 1" Flat Plate (G)	25.00 - 26.25	1.0000	1.0000
L63	40	4.5" x 1" Flat Plate (G)	25.00 - 26.25	1.0000	1.0000
L63	58	6.5" x 1.25" Flat Plate (G)	24.92 - 26.25	1.0000	1.0000
L63	59	6.5" x 1.25" Flat Plate (G)	24.92 - 26.25	1.0000	1.0000
L63	64	6" x 1" Flat Plate (G)	26.00 - 26.25	1.0000	1.0000
L63	65	6" x 1" Flat Plate (G)	26.00 - 26.25	1.0000	1.0000
L63	67	6" x 1" Flat Plate (G)	26.00 - 26.25	1.0000	1.0000
L63	70	6" x 1" Flat Plate (G)	24.92 - 26.25	1.0000	1.0000
L64	2	Safety Line 3/8	24.67 - 24.92	1.0000	1.0000
L64	8	HJ7-50A(1-5/8")	24.67 - 24.92	1.0000	1.0000
L64	12	LDF4-50A(1/2")	24.67 - 24.92	1.0000	1.0000
L64	13	HCS 6X12 6AWG(1-3/8)	24.67 - 24.92	1.0000	1.0000
L64	17	5.5" x 1.25" Flat Plate (G)	24.67 - 24.92	1.0000	1.0000
L64	18	5.5" x 1.25" Flat Plate (G)	24.67 - 24.92	1.0000	1.0000
L64	19	5.5" x 1.25" Flat Plate (G)	24.67 - 24.92	1.0000	1.0000
L64	20	5.5" x 1.25" Flat Plate (G)	24.67 - 24.92	1.0000	1.0000
L64	58	6.5" x 1.25" Flat Plate (G)	24.67 - 24.92	1.0000	1.0000
L64	59	6.5" x 1.25" Flat Plate (G)	24.67 - 24.92	1.0000	1.0000
L64	61	6.5" x 1.25" Flat Plate (G)	24.67 - 24.92	1.0000	1.0000
L64	62	6.5" x 1.25" Flat Plate (G)	24.67 - 24.92	1.0000	1.0000
L65	2	Safety Line 3/8	22.17 - 24.67	1.0000	1.0000
L65	8	HJ7-50A(1-5/8")	22.17 - 24.67	1.0000	1.0000
L65	12	LDF4-50A(1/2")	22.17 - 24.67	1.0000	1.0000
L65	13	HCS 6X12 6AWG(1-3/8)	22.17 - 24.67	1.0000	1.0000
L65	17	5.5" x 1.25" Flat Plate (G)	22.17 - 24.67	1.0000	1.0000
L65	18	5.5" x 1.25" Flat Plate (G)	22.17 - 24.67	1.0000	1.0000
L65	19	5.5" x 1.25" Flat Plate (G)	22.17 - 24.67	1.0000	1.0000
L65	20	5.5" x 1.25" Flat Plate (G)	22.17 - 24.67	1.0000	1.0000
L65	58	6.5" x 1.25" Flat Plate (G)	22.17 - 24.67	1.0000	1.0000
L65	59	6.5" x 1.25" Flat Plate (G)	22.17 - 24.67	1.0000	1.0000
L65	61	6.5" x 1.25" Flat Plate (G)	22.17 - 24.67	1.0000	1.0000
L65	62	6.5" x 1.25" Flat Plate (G)	22.17 - 24.67	1.0000	1.0000
L66	2	Safety Line 3/8	21.92 - 22.17	1.0000	1.0000
L66	8	HJ7-50A(1-5/8")	21.92 - 22.17	1.0000	1.0000
L66	12	LDF4-50A(1/2")	21.92 - 22.17	1.0000	1.0000
L66	13	HCS 6X12 6AWG(1-3/8)	21.92 - 22.17	1.0000	1.0000
L66	17	5.5" x 1.25" Flat Plate (G)	21.92 - 22.17	1.0000	1.0000
L66	18	5.5" x 1.25" Flat Plate (G)	21.92 - 22.17	1.0000	1.0000
L66	19	5.5" x 1.25" Flat Plate (G)	21.92 - 22.17	1.0000	1.0000
L66	20	5.5" x 1.25" Flat Plate (G)	21.92 - 22.17	1.0000	1.0000
L66	58	6.5" x 1.25" Flat Plate (G)	21.92 - 22.17	1.0000	1.0000
L66	59	6.5" x 1.25" Flat Plate (G)	21.92 - 22.17	1.0000	1.0000
L66	61	6.5" x 1.25" Flat Plate (G)	21.92 - 22.17	1.0000	1.0000
L66	62	6.5" x 1.25" Flat Plate (G)	21.92 - 22.17	1.0000	1.0000
L67	2	Safety Line 3/8	16.92 - 21.92	1.0000	1.0000
L67	8	HJ7-50A(1-5/8")	16.92 - 21.92	1.0000	1.0000
L67	12	LDF4-50A(1/2")	16.92 - 21.92	1.0000	1.0000
L67	13	HCS 6X12 6AWG(1-3/8)	16.92 - 21.92	1.0000	1.0000
L67	17	5.5" x 1.25" Flat Plate (G)	16.92 - 21.92	1.0000	1.0000
L67	18	5.5" x 1.25" Flat Plate (G)	16.92 - 21.92	1.0000	1.0000
L67	19	5.5" x 1.25" Flat Plate (G)	16.92 - 21.92	1.0000	1.0000
L67	20	5.5" x 1.25" Flat Plate (G)	16.92 - 21.92	1.0000	1.0000
L67	58	6.5" x 1.25" Flat Plate (G)	16.92 - 21.92	1.0000	1.0000
L67	59	6.5" x 1.25" Flat Plate (G)	16.92 - 21.92	1.0000	1.0000
L67	61	6.5" x 1.25" Flat Plate (G)	16.92 - 21.92	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L67	62	6.5" x 1.25" Flat Plate (G)	16.92 - 21.92	1.0000	1.0000
L68	2	Safety Line 3/8	11.92 - 16.92	1.0000	1.0000
L68	8	HJ7-50A(1-5/8")	11.92 - 16.92	1.0000	1.0000
L68	12	LDF4-50A(1/2")	11.92 - 16.92	1.0000	1.0000
L68	13	HCS 6X12 6AWG(1-3/8)	11.92 - 16.92	1.0000	1.0000
L68	17	5.5" x 1.25" Flat Plate (G)	11.92 - 16.92	1.0000	1.0000
L68	18	5.5" x 1.25" Flat Plate (G)	11.92 - 16.92	1.0000	1.0000
L68	19	5.5" x 1.25" Flat Plate (G)	11.92 - 16.92	1.0000	1.0000
L68	20	5.5" x 1.25" Flat Plate (G)	11.92 - 16.92	1.0000	1.0000
L68	58	6.5" x 1.25" Flat Plate (G)	11.92 - 16.92	1.0000	1.0000
L68	59	6.5" x 1.25" Flat Plate (G)	11.92 - 16.92	1.0000	1.0000
L68	61	6.5" x 1.25" Flat Plate (G)	11.92 - 16.92	1.0000	1.0000
L68	62	6.5" x 1.25" Flat Plate (G)	11.92 - 16.92	1.0000	1.0000
L69	2	Safety Line 3/8	8.00 - 11.92	1.0000	1.0000
L69	8	HJ7-50A(1-5/8")	8.00 - 11.92	1.0000	1.0000
L69	12	LDF4-50A(1/2")	8.00 - 11.92	1.0000	1.0000
L69	13	HCS 6X12 6AWG(1-3/8)	8.00 - 11.92	1.0000	1.0000
L69	17	5.5" x 1.25" Flat Plate (G)	6.92 - 11.92	1.0000	1.0000
L69	18	5.5" x 1.25" Flat Plate (G)	6.92 - 11.92	1.0000	1.0000
L69	19	5.5" x 1.25" Flat Plate (G)	6.92 - 11.92	1.0000	1.0000
L69	20	5.5" x 1.25" Flat Plate (G)	6.92 - 11.92	1.0000	1.0000
L69	58	6.5" x 1.25" Flat Plate (G)	6.92 - 11.92	1.0000	1.0000
L69	59	6.5" x 1.25" Flat Plate (G)	6.92 - 11.92	1.0000	1.0000
L69	61	6.5" x 1.25" Flat Plate (G)	6.92 - 11.92	1.0000	1.0000
L69	62	6.5" x 1.25" Flat Plate (G)	6.92 - 11.92	1.0000	1.0000
L70	17	5.5" x 1.25" Flat Plate (G)	1.92 - 6.92	1.0000	1.0000
L70	18	5.5" x 1.25" Flat Plate (G)	1.92 - 6.92	1.0000	1.0000
L70	19	5.5" x 1.25" Flat Plate (G)	1.92 - 6.92	1.0000	1.0000
L70	20	5.5" x 1.25" Flat Plate (G)	1.92 - 6.92	1.0000	1.0000
L70	58	6.5" x 1.25" Flat Plate (G)	1.92 - 6.92	1.0000	1.0000
L70	59	6.5" x 1.25" Flat Plate (G)	1.92 - 6.92	1.0000	1.0000
L70	61	6.5" x 1.25" Flat Plate (G)	1.92 - 6.92	1.0000	1.0000
L70	62	6.5" x 1.25" Flat Plate (G)	1.92 - 6.92	1.0000	1.0000
L71	17	5.5" x 1.25" Flat Plate (G)	0.50 - 1.92	1.0000	1.0000
L71	18	5.5" x 1.25" Flat Plate (G)	0.50 - 1.92	1.0000	1.0000
L71	19	5.5" x 1.25" Flat Plate (G)	0.50 - 1.92	1.0000	1.0000
L71	20	5.5" x 1.25" Flat Plate (G)	0.50 - 1.92	1.0000	1.0000
L71	58	6.5" x 1.25" Flat Plate (G)	0.50 - 1.92	1.0000	1.0000
L71	59	6.5" x 1.25" Flat Plate (G)	0.50 - 1.92	1.0000	1.0000
L71	61	6.5" x 1.25" Flat Plate (G)	0.50 - 1.92	1.0000	1.0000
L71	62	6.5" x 1.25" Flat Plate (G)	0.50 - 1.92	1.0000	1.0000

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 5/8x4'	C	From Leg	0.00 0.00 2.00	0.0000	149.00	No Ice 1/2" Ice 1" Ice	0.25 0.66 0.97	0.25 0.66 0.97	0.03 0.03 0.04

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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
Platform Mount [LP 602-1]	C	None		0.0000	148.00	No Ice	32.03	32.03	1.34
						1/2" Ice	38.71	38.71	1.80
						1" Ice	45.39	45.39	2.26
(2) P90-14-XLH-RR w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	5.30 5.69 6.09	4.05 4.67 5.29	0.05 0.09 0.15
(2) P90-14-XLH-RR w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	5.30 5.69 6.09	4.05 4.67 5.29	0.05 0.09 0.15
(2) P90-14-XLH-RR w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	5.30 5.69 6.09	4.05 4.67 5.29	0.05 0.09 0.15
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	6.30 7.48 8.37	0.07 0.14 0.21
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	6.30 7.48 8.37	0.07 0.14 0.21
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	6.30 7.48 8.37	0.07 0.14 0.21
(2) TT19-08BP111-001	A	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	0.55 0.64 0.74	0.44 0.53 0.63	0.02 0.02 0.03
(2) TT19-08BP111-001	B	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	0.55 0.64 0.74	0.44 0.53 0.63	0.02 0.02 0.03
(2) TT19-08BP111-001	C	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	0.55 0.64 0.74	0.44 0.53 0.63	0.02 0.02 0.03
RRUS-11	A	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	2.52 2.72 2.92	1.07 1.21 1.36	0.06 0.07 0.10
RRUS-11	B	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	2.52 2.72 2.92	1.07 1.21 1.36	0.06 0.07 0.10
RRUS-11	C	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	2.52 2.72 2.92	1.07 1.21 1.36	0.06 0.07 0.10
DC6-48-60-18-8F	A	From Leg	4.00 0.00 2.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	1.21 1.89 2.11	1.21 1.89 2.11	0.03 0.05 0.08
***									
T-Arm Mount [TA 602-3]	C	None		0.0000	140.00	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
BSAMNT-SBS-2-2	A	From Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	0.06 0.07 0.08
BSAMNT-SBS-2-2	B	From Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	0.06 0.07 0.08
BSAMNT-SBS-2-2	C	From Face	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	0.06 0.07 0.08
Pipe Mount	A	From Leg	4.00 0.00	0.0000	140.00	No Ice 1/2" Ice	1.20 1.50	1.20 1.50	0.02 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" Ice	1.81	1.81	0.04
Pipe Mount	B	From Leg	4.00	0.0000	140.00	No Ice	1.20	1.20	0.02
			0.00			1/2" Ice	1.50	1.50	0.03
			0.00			1" Ice	1.81	1.81	0.04
Pipe Mount	C	From Leg	4.00	0.0000	140.00	No Ice	1.20	1.20	0.02
			0.00			1/2" Ice	1.50	1.50	0.03
			0.00			1" Ice	1.81	1.81	0.04
(2) DB846F65ZAXY w/ Mount Pipe	A	From Leg	4.00	0.0000	140.00	No Ice	7.27	7.82	0.05
			0.00			1/2" Ice	7.83	9.01	0.11
			0.00			1" Ice	8.35	9.91	0.19
(2) DB846F65ZAXY w/ Mount Pipe	B	From Leg	4.00	0.0000	140.00	No Ice	7.27	7.82	0.05
			0.00			1/2" Ice	7.83	9.01	0.11
			0.00			1" Ice	8.35	9.91	0.19
(2) DB846F65ZAXY w/ Mount Pipe	C	From Leg	4.00	0.0000	140.00	No Ice	7.27	7.82	0.05
			0.00			1/2" Ice	7.83	9.01	0.11
			0.00			1" Ice	8.35	9.91	0.19
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00	0.0000	140.00	No Ice	9.35	7.65	0.09
			0.00			1/2" Ice	9.92	8.83	0.16
			0.00			1" Ice	10.46	9.73	0.25
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00	0.0000	140.00	No Ice	9.35	7.65	0.09
			0.00			1/2" Ice	9.92	8.83	0.16
			0.00			1" Ice	10.46	9.73	0.25
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00	0.0000	140.00	No Ice	9.35	7.65	0.09
			0.00			1/2" Ice	9.92	8.83	0.16
			0.00			1" Ice	10.46	9.73	0.25
AIRSCALE RRH 4T4R B5 160W	A	From Leg	4.00	0.0000	140.00	No Ice	1.29	0.72	0.04
			0.00			1/2" Ice	1.43	0.83	0.05
			0.00			1" Ice	1.58	0.96	0.06
AIRSCALE RRH 4T4R B5 160W	B	From Leg	4.00	0.0000	140.00	No Ice	1.29	0.72	0.04
			0.00			1/2" Ice	1.43	0.83	0.05
			0.00			1" Ice	1.58	0.96	0.06
AIRSCALE RRH 4T4R B5 160W	C	From Leg	4.00	0.0000	140.00	No Ice	1.29	0.72	0.04
			0.00			1/2" Ice	1.43	0.83	0.05
			0.00			1" Ice	1.58	0.96	0.06
B13 RRH 4X30	A	From Leg	4.00	0.0000	140.00	No Ice	2.06	1.32	0.06
			0.00			1/2" Ice	2.24	1.48	0.07
			0.00			1" Ice	2.43	1.64	0.09
B13 RRH 4X30	B	From Leg	4.00	0.0000	140.00	No Ice	2.06	1.32	0.06
			0.00			1/2" Ice	2.24	1.48	0.07
			0.00			1" Ice	2.43	1.64	0.09
B13 RRH 4X30	C	From Leg	4.00	0.0000	140.00	No Ice	2.06	1.32	0.06
			0.00			1/2" Ice	2.24	1.48	0.07
			0.00			1" Ice	2.43	1.64	0.09
B66A RRH4X45	A	From Leg	4.00	0.0000	140.00	No Ice	2.58	1.63	0.06
			0.00			1/2" Ice	2.79	1.81	0.08
			0.00			1" Ice	3.01	2.00	0.10
B66A RRH4X45	B	From Leg	4.00	0.0000	140.00	No Ice	2.58	1.63	0.06
			0.00			1/2" Ice	2.79	1.81	0.08
			0.00			1" Ice	3.01	2.00	0.10
B66A RRH4X45	C	From Leg	4.00	0.0000	140.00	No Ice	2.58	1.63	0.06
			0.00			1/2" Ice	2.79	1.81	0.08
			0.00			1" Ice	3.01	2.00	0.10
DB-C1-12C-24AB-0Z	B	From Leg	0.50	0.0000	140.00	No Ice	4.73	3.61	0.03
			0.00			1/2" Ice	5.03	3.89	0.07
			0.00			1" Ice	5.35	4.18	0.11
***									
F4P-12W Platform Mount	C	None		0.0000	128.00	No Ice	38.83	38.83	2.64

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1/2" Ice	48.20	48.20	3.48
						1" Ice	60.47	60.47	4.64
F4P-HRK12 Handrail Kit	C	From Leg	6.00	-50.0000	128.00	No Ice	3.46	0.05	0.13
			0.00			1/2" Ice	4.46	0.09	0.14
			0.00			1" Ice	5.46	0.13	0.16
F4P-HRK12 Handrail Kit	C	From Leg	4.00	70.0000	128.00	No Ice	3.46	0.05	0.13
			0.00			1/2" Ice	4.46	0.09	0.14
			0.00			1" Ice	5.46	0.13	0.16
F4P-HRK12 Handrail Kit	A	From Leg	5.00	40.0000	128.00	No Ice	3.46	0.05	0.13
			0.00			1/2" Ice	4.46	0.09	0.14
			0.00			1" Ice	5.46	0.13	0.16
F4P-HRK12 Handrail Kit	B	From Leg	4.00	0.0000	128.00	No Ice	3.46	0.05	0.13
			0.00			1/2" Ice	4.46	0.09	0.14
			0.00			1" Ice	5.46	0.13	0.16
Pipe Mount	C	From Leg	4.00	-50.0000	128.00	No Ice	1.20	1.20	0.02
			0.00			1/2" Ice	1.50	1.50	0.03
			0.00			1" Ice	1.81	1.81	0.04
Pipe Mount	C	From Leg	4.00	70.0000	128.00	No Ice	1.20	1.20	0.02
			0.00			1/2" Ice	1.50	1.50	0.03
			0.00			1" Ice	1.81	1.81	0.04
Pipe Mount	A	From Leg	5.00	40.0000	128.00	No Ice	1.20	1.20	0.02
			0.00			1/2" Ice	1.50	1.50	0.03
			0.00			1" Ice	1.81	1.81	0.04
Pipe Mount	B	From Leg	4.00	0.0000	128.00	No Ice	1.20	1.20	0.02
			0.00			1/2" Ice	1.50	1.50	0.03
			0.00			1" Ice	1.81	1.81	0.04
AIR 32 B2A/B66AA w/Mount Pipe	B	From Leg	4.00	-50.0000	128.00	No Ice	6.51	5.74	0.15
			0.00			1/2" Ice	6.89	6.37	0.21
			0.00			1" Ice	7.27	7.01	0.27
AIR 32 B2A/B66AA w/Mount Pipe	A	From Leg	6.00	70.0000	128.00	No Ice	6.51	5.74	0.15
			0.00			1/2" Ice	6.89	6.37	0.21
			0.00			1" Ice	7.27	7.01	0.27
AIR 32 B2A/B66AA w/Mount Pipe	A	From Leg	4.00	40.0000	128.00	No Ice	6.51	5.74	0.15
			0.00			1/2" Ice	6.89	6.37	0.21
			0.00			1" Ice	7.27	7.01	0.27
AIR 32 B2A/B66AA w/Mount Pipe	B	From Leg	4.00	0.0000	128.00	No Ice	6.51	5.74	0.15
			0.00			1/2" Ice	6.89	6.37	0.21
			0.00			1" Ice	7.27	7.01	0.27
APXVAA24_43-U-A20 w/Mount Pipe	C	From Leg	6.00	-50.0000	128.00	No Ice	22.40	10.64	0.13
			0.00			1/2" Ice	23.18	12.07	0.26
			0.00			1" Ice	23.97	13.35	0.41
APXVAA24_43-U-A20 w/Mount Pipe	A	From Leg	4.00	70.0000	128.00	No Ice	22.40	10.64	0.13
			0.00			1/2" Ice	23.18	12.07	0.26
			0.00			1" Ice	23.97	13.35	0.41
APXVAA24_43-U-A20 w/Mount Pipe	B	From Leg	4.00	40.0000	128.00	No Ice	22.40	10.64	0.13
			0.00			1/2" Ice	23.18	12.07	0.26
			0.00			1" Ice	23.97	13.35	0.41
APXVAA24_43-U-A20 w/Mount Pipe	B	From Leg	4.00	0.0000	128.00	No Ice	22.40	10.64	0.13
			0.00			1/2" Ice	23.18	12.07	0.26
			0.00			1" Ice	23.97	13.35	0.41
RADIO 4449 B12/B71	B	From Leg	4.00	-50.0000	128.00	No Ice	1.65	1.30	0.08
			0.00			1/2" Ice	1.81	1.44	0.09
			0.00			1" Ice	1.98	1.60	0.11
RADIO 4449 B12/B71	C	From Leg	4.00	-50.0000	128.00	No Ice	1.65	1.30	0.08
			0.00			1/2" Ice	1.81	1.44	0.09
			0.00			1" Ice	1.98	1.60	0.11
RADIO 2217	C	From Leg	6.00	70.0000	128.00	No Ice	1.35	0.62	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	1.49	0.73	0.04
			0.00			1" Ice	1.65	0.85	0.05
RADIO 2217	A	From Leg	6.00	70.0000	128.00	No Ice	1.35	0.62	0.03
			0.00			1/2" Ice	1.49	0.73	0.04
			0.00			1" Ice	1.65	0.85	0.05
RADIO 2217	A	From Leg	6.00	40.0000	128.00	No Ice	1.35	0.62	0.03
			0.00			1/2" Ice	1.49	0.73	0.04
			0.00			1" Ice	1.65	0.85	0.05
RADIO 2217	B	From Leg	4.00	40.0000	128.00	No Ice	1.35	0.62	0.03
			0.00			1/2" Ice	1.49	0.73	0.04
			0.00			1" Ice	1.65	0.85	0.05
RADIO 4449 B12/B71	B	From Leg	4.00	0.0000	128.00	No Ice	1.65	1.30	0.08
			0.00			1/2" Ice	1.81	1.44	0.09
			0.00			1" Ice	1.98	1.60	0.11
RADIO 4449 B12/B71	B	From Leg	4.00	0.0000	128.00	No Ice	1.65	1.30	0.08
			0.00			1/2" Ice	1.81	1.44	0.09
			0.00			1" Ice	1.98	1.60	0.11
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Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
SC2-W100AB	C	Paraboloid w/o Radome	From Leg	4.00	-50.0000		128.00	2.20	No Ice	3.80	0.02
				0.00					1/2" Ice	4.10	0.04
				0.00					1" Ice	4.39	0.06
***											

Tower Pressures - No Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1	146.48	1.372	29	6.940	A	0.000	6.940	6.940	100.00	0.188	0.000
149.00-144.00					B	0.000	6.940		100.00	0.000	0.000
					C	0.000	6.940		100.00	0.000	0.000
L2	141.48	1.362	29	7.306	A	0.000	7.306	7.306	100.00	0.188	0.000
144.00-139.00					B	0.000	7.306		100.00	0.396	0.000
					C	0.000	7.306		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
L3	136.48	1.351	28	7.672	A	0.000	7.672	7.672	100.00	0.188	0.000
139.00-134.00					B	0.000	7.672		100.00	1.980	0.000
					C	0.000	7.672		100.00	0.000	0.000
L4	131.48	1.341	28	8.038	A	0.000	8.038	8.038	100.00	0.188	0.000
134.00-129.00					B	0.000	8.038		100.00	1.980	0.000
					C	0.000	8.038		100.00	0.000	0.000
L5	126.74	1.33	28	7.547	A	0.000	7.547	7.547	100.00	1.169	0.000
129.00-124.50					B	0.000	7.547		100.00	4.933	0.000
					C	0.000	7.547		100.00	1.000	0.000
L6	124.37	1.325	28	0.427	A	0.000	0.427	0.427	100.00	0.176	0.000
124.50-124.25					B	0.000	0.427		100.00	0.419	0.000
					C	0.000	0.427		100.00	0.167	0.000
L7	121.73	1.319	28	8.742	A	0.000	8.742	8.742	100.00	4.021	0.000
124.25-119.25					B	0.000	8.742		100.00	8.886	0.000
					C	0.000	8.742		100.00	3.833	0.000
L8	118.87	1.313	28	1.343	A	0.000	1.343	1.343	100.00	1.028	0.000
119.25-118.50					B	0.000	1.343		100.00	1.758	0.000
					C	0.000	1.343		100.00	1.000	0.000
L9	118.37	1.311	28	0.448	A	0.000	0.448	0.448	100.00	0.343	0.000
118.50-118.25					B	0.000	0.448		100.00	0.586	0.000
					C	0.000	0.448		100.00	0.333	0.000
L10	117.12	1.308	28	4.076	A	0.000	4.076	4.076	100.00	3.084	0.000
118.25-116.00					B	0.000	4.076		100.00	5.274	0.000
					C	0.000	4.076		100.00	3.000	0.000
L11	115.87	1.305	27	0.457	A	0.000	0.457	0.457	100.00	0.289	0.000
116.00-115.75					B	0.000	0.457		100.00	0.533	0.000
					C	0.000	0.457		100.00	0.280	0.000
L12	113.23	1.299	27	9.343	A	0.000	9.343	9.343	100.00	6.854	0.000
115.75-110.75					B	0.000	9.343		100.00	11.719	0.000
					C	0.000	9.343		100.00	6.667	0.000
L13	108.23	1.287	27	9.711	A	0.000	9.711	9.711	100.00	6.854	0.000
110.75-105.75					B	0.000	9.711		100.00	11.719	0.000
					C	0.000	9.711		100.00	6.667	0.000
L14	102.09	1.271	27	14.733	A	0.000	14.733	14.733	100.00	9.939	0.000
105.75-98.50					B	0.000	14.733		100.00	16.993	0.000
					C	0.000	14.733		100.00	9.667	0.000
L15	97.75	1.26	26	3.095	A	0.000	3.095	3.095	100.00	2.723	0.000
98.50-97.00					B	0.000	3.095		100.00	4.182	0.000
					C	0.000	3.095		100.00	2.667	0.000
L16	96.87	1.257	26	0.519	A	0.000	0.519	0.519	100.00	0.509	0.000
97.00-96.75					B	0.000	0.519		100.00	0.753	0.000
					C	0.000	0.519		100.00	0.500	0.000
L17	95.36	1.253	26	5.808	A	0.000	5.808	5.808	100.00	5.591	0.000
96.75-93.98					B	0.000	5.808		100.00	8.286	0.000
					C	0.000	5.808		100.00	5.487	0.000
L18	93.85	1.249	26	0.530	A	0.000	0.530	0.530	100.00	0.509	0.000
93.98-93.73					B	0.000	0.530		100.00	0.753	0.000
					C	0.000	0.530		100.00	0.500	0.000
L19	92.61	1.245	26	4.766	A	0.000	4.766	4.766	100.00	4.856	0.000
93.73-91.50					B	0.000	4.766		100.00	7.026	0.000
					C	0.000	4.766		100.00	4.773	0.000
L20	91.37	1.242	26	0.539	A	0.000	0.539	0.539	100.00	0.572	0.000
91.50-91.25					B	0.000	0.539		100.00	0.815	0.000
					C	0.000	0.539		100.00	0.563	0.000
L21	90.75	1.24	26	2.167	A	0.000	2.167	2.167	100.00	2.288	0.000
91.25-90.25					B	0.000	2.167		100.00	3.261	0.000
					C	0.000	2.167		100.00	2.250	0.000
L22	90.12	1.238	26	0.543	A	0.000	0.543	0.543	100.00	0.572	0.000
90.25-90.00					B	0.000	0.543		100.00	0.815	0.000
					C	0.000	0.543		100.00	0.563	0.000

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
L23	89.50	1.236	26	2.181	A	0.000	2.181	2.181	100.00	2.901	0.000
90.00-89.00					B	0.000	2.181		100.00	3.874	0.000
					C	0.000	2.181		100.00	2.863	0.000
L24	88.87	1.235	26	0.548	A	0.000	0.548	0.548	100.00	0.739	0.000
89.00-88.75					B	0.000	0.548		100.00	0.982	0.000
					C	0.000	0.548		100.00	0.729	0.000
L25	86.24	1.227	26	11.152	A	0.000	11.152	11.152	100.00	11.938	0.000
88.75-83.75					B	0.000	11.152		100.00	16.802	0.000
					C	0.000	11.152		100.00	11.750	0.000
L26	81.91	1.214	26	8.420	A	0.000	8.420	8.420	100.00	9.062	0.000
83.75-80.08					B	0.000	8.420		100.00	13.299	0.000
					C	0.000	8.420		100.00	9.591	0.000
L27	79.95	1.207	25	0.580	A	0.000	0.580	0.580	100.00	0.739	0.000
80.08-79.83					B	0.000	0.580		100.00	1.148	0.000
					C	0.000	0.580		100.00	0.896	0.000
L28	77.32	1.199	25	11.797	A	0.000	11.797	11.797	100.00	14.898	0.000
79.83-74.83					B	0.000	11.797		100.00	23.097	0.000
					C	0.000	11.797		100.00	18.044	0.000
L29	74.16	1.188	25	3.200	A	0.000	3.200	3.200	100.00	4.927	0.000
74.83-73.50					B	0.000	3.200		100.00	7.107	0.000
					C	0.000	3.200		100.00	5.763	0.000
L30	73.37	1.186	25	0.604	A	0.000	0.604	0.604	100.00	0.926	0.000
73.50-73.25					B	0.000	0.604		100.00	1.336	0.000
					C	0.000	0.604		100.00	1.083	0.000
L31	72.12	1.181	25	5.475	A	0.000	5.475	5.475	100.00	8.334	0.000
73.25-71.00					B	0.000	5.475		100.00	12.024	0.000
					C	0.000	5.475		100.00	9.750	0.000
L32	70.87	1.177	25	0.613	A	0.000	0.613	0.613	100.00	0.926	0.000
71.00-70.75					B	0.000	0.613		100.00	1.336	0.000
					C	0.000	0.613		100.00	1.083	0.000
L33	68.24	1.168	25	12.459	A	0.000	12.459	12.459	100.00	15.688	0.000
70.75-65.75					B	0.000	12.459		100.00	23.886	0.000
					C	0.000	12.459		100.00	18.833	0.000
L34	64.37	1.154	24	7.009	A	0.000	7.009	7.009	100.00	6.633	0.000
65.75-63.00					B	0.000	7.009		100.00	11.142	0.000
					C	0.000	7.009		100.00	8.363	0.000
L35	62.87	1.148	24	0.643	A	0.000	0.643	0.643	100.00	0.593	0.000
63.00-62.75					B	0.000	0.643		100.00	1.003	0.000
					C	0.000	0.643		100.00	0.750	0.000
L36	62.41	1.146	24	1.727	A	0.000	1.727	1.727	100.00	1.588	0.000
62.75-62.08					B	0.000	1.727		100.00	2.687	0.000
					C	0.000	1.727		100.00	2.600	0.000
L37	61.95	1.144	24	0.647	A	0.000	0.647	0.647	100.00	0.593	0.000
62.08-61.83					B	0.000	0.647		100.00	1.003	0.000
					C	0.000	0.647		100.00	1.000	0.000
L38	61.25	1.142	24	3.013	A	0.000	3.013	3.013	100.00	2.477	0.000
61.83-60.67					B	0.000	3.013		100.00	4.436	0.000
					C	0.000	3.013		100.00	4.423	0.000
L39	60.54	1.139	24	0.652	A	0.000	0.652	0.652	100.00	0.426	0.000
60.67-60.42					B	0.000	0.652		100.00	0.919	0.000
					C	0.000	0.652		100.00	0.917	0.000
L40	59.71	1.135	24	3.720	A	0.000	3.720	3.720	100.00	2.420	0.000
60.42-59.00					B	0.000	3.720		100.00	5.222	0.000
					C	0.000	3.720		100.00	5.207	0.000
L41	58.87	1.132	24	0.658	A	0.000	0.658	0.658	100.00	0.426	0.000
59.00-58.75					B	0.000	0.658		100.00	0.919	0.000
					C	0.000	0.658		100.00	0.917	0.000
L42	56.24	1.121	24	13.349	A	0.000	13.349	13.349	100.00	8.521	0.000
58.75-53.75					B	0.000	13.349		100.00	18.386	0.000
					C	0.000	13.349		100.00	18.333	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
L43	51.11	1.099	23	14.410	A	0.000	14.410	14.410	100.00	10.662	0.000
53.75-48.50					B	0.000	14.410		100.00	18.180	0.000
					C	0.000	14.410		100.00	18.125	0.000
L44	48.00	1.084	23	2.747	A	0.000	2.747	2.747	100.00	2.954	0.000
48.50-47.50					B	0.000	2.747		100.00	2.927	0.000
					C	0.000	2.747		100.00	2.917	0.000
L45	46.62	1.078	23	4.843	A	0.000	4.843	4.843	100.00	5.170	0.000
47.50-45.75					B	0.000	4.843		100.00	5.123	0.000
					C	0.000	4.843		100.00	5.104	0.000
L46	45.62	1.073	23	0.695	A	0.000	0.695	0.695	100.00	0.739	0.000
45.75-45.50					B	0.000	0.695		100.00	0.732	0.000
					C	0.000	0.695		100.00	0.729	0.000
L47	45.25	1.071	23	1.394	A	0.000	1.394	1.394	100.00	1.477	0.000
45.50-45.00					B	0.000	1.394		100.00	1.464	0.000
					C	0.000	1.394		100.00	1.458	0.000
L48	44.87	1.069	22	0.698	A	0.000	0.698	0.698	100.00	0.926	0.000
45.00-44.75					B	0.000	0.698		100.00	0.919	0.000
					C	0.000	0.698		100.00	0.917	0.000
L49	44.12	1.065	22	3.504	A	0.000	3.504	3.504	100.00	4.630	0.000
44.75-43.50					B	0.000	3.504		100.00	4.596	0.000
					C	0.000	3.504		100.00	4.583	0.000
L50	43.37	1.062	22	0.703	A	0.000	0.703	0.703	100.00	0.926	0.000
43.50-43.25					B	0.000	0.703		100.00	0.919	0.000
					C	0.000	0.703		100.00	0.917	0.000
L51	40.74	1.048	22	14.256	A	0.000	14.256	14.256	100.00	18.521	0.000
43.25-38.25					B	0.000	14.256		100.00	18.386	0.000
					C	0.000	14.256		100.00	18.333	0.000
L52	35.74	1.019	21	14.622	A	0.000	14.622	14.622	100.00	18.521	0.000
38.25-33.25					B	0.000	14.622		100.00	18.386	0.000
					C	0.000	14.622		100.00	18.333	0.000
L53	31.87	0.995	21	8.198	A	0.000	8.198	8.198	100.00	10.106	0.000
33.25-30.50					B	0.000	8.198		100.00	10.112	0.000
					C	0.000	8.198		100.00	10.083	0.000
L54	30.37	0.985	21	0.751	A	0.000	0.751	0.751	100.00	0.905	0.000
30.50-30.25					B	0.000	0.751		100.00	0.919	0.000
					C	0.000	0.751		100.00	0.917	0.000
L55	29.96	0.982	21	1.745	A	0.000	1.745	1.745	100.00	2.100	0.000
30.25-29.67					B	0.000	1.745		100.00	2.133	0.000
					C	0.000	1.745		100.00	2.127	0.000
L56	29.54	0.979	21	0.754	A	0.000	0.754	0.754	100.00	0.905	0.000
29.67-29.42					B	0.000	0.754		100.00	0.919	0.000
					C	0.000	0.754		100.00	0.917	0.000
L57	28.71	0.973	20	4.303	A	0.000	4.303	4.303	100.00	5.142	0.000
29.42-28.00					B	0.000	4.303		100.00	5.222	0.000
					C	0.000	4.303		100.00	5.207	0.000
L58	27.87	0.967	20	0.760	A	0.000	0.760	0.760	100.00	0.905	0.000
28.00-27.75					B	0.000	0.760		100.00	0.919	0.000
					C	0.000	0.760		100.00	0.917	0.000
L59	27.33	0.963	20	2.530	A	0.000	2.530	2.530	100.00	3.818	0.000
27.75-26.92					B	0.000	2.530		100.00	3.052	0.000
					C	0.000	2.530		100.00	3.856	0.000
L60	26.79	0.959	20	0.764	A	0.000	0.764	0.764	100.00	1.176	0.000
26.92-26.67					B	0.000	0.764		100.00	0.919	0.000
					C	0.000	0.764		100.00	1.188	0.000
L61	26.58	0.958	20	0.520	A	0.000	0.520	0.520	100.00	0.800	0.000
26.67-26.50					B	0.000	0.520		100.00	0.625	0.000
					C	0.000	0.520		100.00	0.808	0.000
L62	26.37	0.956	20	0.766	A	0.000	0.766	0.766	100.00	1.176	0.000
26.50-26.25					B	0.000	0.766		100.00	0.919	0.000
					C	0.000	0.766		100.00	1.188	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
L63	25.58	0.95	20	4.089	A	0.000	4.089	4.089	100.00	6.197	0.000
26.25-24.92					B	0.000	4.089		100.00	3.751	0.000
					C	0.000	4.089		100.00	4.098	0.000
L64	24.79	0.944	20	0.772	A	0.000	0.772	0.772	100.00	1.009	0.000
24.92-24.67					B	0.000	0.772		100.00	0.753	0.000
					C	0.000	0.772		100.00	0.500	0.000
L65	23.42	0.932	20	7.767	A	0.000	7.767	7.767	100.00	10.094	0.000
24.67-22.17					B	0.000	7.767		100.00	7.526	0.000
					C	0.000	7.767		100.00	5.000	0.000
L66	22.04	0.921	19	0.781	A	0.000	0.781	0.781	100.00	1.009	0.000
22.17-21.92					B	0.000	0.781		100.00	0.753	0.000
					C	0.000	0.781		100.00	0.500	0.000
L67	19.41	0.896	19	15.823	A	0.000	15.823	15.823	100.00	20.188	0.000
21.92-16.92					B	0.000	15.823		100.00	15.053	0.000
					C	0.000	15.823		100.00	10.000	0.000
L68	14.41	0.85	18	16.189	A	0.000	16.189	16.189	100.00	20.188	0.000
16.92-11.92					B	0.000	16.189		100.00	15.053	0.000
					C	0.000	16.189		100.00	10.000	0.000
L69 11.92-6.92	9.41	0.85	18	16.554	A	0.000	16.554	16.554	100.00	20.147	0.000
					B	0.000	16.554		100.00	13.961	0.000
					C	0.000	16.554		100.00	10.000	0.000
L70 6.92-1.92	4.41	0.85	18	16.920	A	0.000	16.920	16.920	100.00	20.000	0.000
					B	0.000	16.920		100.00	10.000	0.000
					C	0.000	16.920		100.00	10.000	0.000
L71 1.92-0.00	0.96	0.85	18	6.595	A	0.000	6.595	6.595	100.00	5.680	0.000
					B	0.000	6.595		100.00	2.840	0.000
					C	0.000	6.595		100.00	2.840	0.000

Tower Pressure - With Ice

G_H = 1.100

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	146.48	1.372	8	1.7411	8.391	A	0.000	8.391	8.391	100.00	1.929	0.000
149.00-144.00						B	0.000	8.391		100.00	0.000	0.000
						C	0.000	8.391		100.00	0.000	0.000
L2	141.48	1.362	8	1.7350	8.752	A	0.000	8.752	8.752	100.00	1.923	0.000
144.00-139.00						B	0.000	8.752		100.00	0.929	0.000
						C	0.000	8.752		100.00	0.000	0.000
L3	136.48	1.351	8	1.7288	9.113	A	0.000	9.113	9.113	100.00	1.916	0.000
139.00-134.00						B	0.000	9.113		100.00	4.636	0.000
						C	0.000	9.113		100.00	0.000	0.000
L4	131.48	1.341	8	1.7224	9.473	A	0.000	9.473	9.473	100.00	1.910	0.000
134.00-129.00						B	0.000	9.473		100.00	4.628	0.000
						C	0.000	9.473		100.00	0.000	0.000
L5	126.74	1.33	8	1.7160	8.834	A	0.000	8.834	8.834	100.00	3.050	0.000
129.00-124.50						B	0.000	8.834		100.00	10.832	0.000
						C	0.000	8.834		100.00	1.337	0.000
L6	124.37	1.325	8	1.7128	0.499	A	0.000	0.499	0.499	100.00	0.318	0.000
124.50-124.25						B	0.000	0.499		100.00	0.834	0.000
						C	0.000	0.499		100.00	0.223	0.000
L7	121.73	1.319	8	1.7092	10.166	A	0.000	10.166	10.166	100.00	7.107	0.000
124.25-119.25						B	0.000	10.166		100.00	17.430	0.000

Section Elevation	z	K_Z	q_z	t_Z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	in	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
						C	0.000	10.166		100.00	5.210	0.000
L8	118.87	1.313	8	1.7051	1.556	A	0.000	1.556	1.556	100.00	1.707	0.000
119.25-118.50						B	0.000	1.556		100.00	3.254	0.000
						C	0.000	1.556		100.00	1.424	0.000
L9	118.37	1.311	8	1.7044	0.519	A	0.000	0.519	0.519	100.00	0.569	0.000
118.50-118.25						B	0.000	0.519		100.00	1.085	0.000
						C	0.000	0.519		100.00	0.474	0.000
L10	117.12	1.308	8	1.7026	4.715	A	0.000	4.715	4.715	100.00	5.120	0.000
118.25-116.00						B	0.000	4.715		100.00	9.757	0.000
						C	0.000	4.715		100.00	4.269	0.000
L11	115.87	1.305	8	1.7007	0.528	A	0.000	0.528	0.528	100.00	0.517	0.000
116.00-115.75						B	0.000	0.528		100.00	1.032	0.000
						C	0.000	0.528		100.00	0.423	0.000
L12	113.23	1.299	8	1.6968	10.757	A	0.000	10.757	10.757	100.00	11.945	0.000
115.75-110.75						B	0.000	10.757		100.00	22.237	0.000
						C	0.000	10.757		100.00	10.060	0.000
L13	108.23	1.287	8	1.6892	11.118	A	0.000	11.118	11.118	100.00	11.922	0.000
110.75-105.75						B	0.000	11.118		100.00	22.195	0.000
						C	0.000	11.118		100.00	10.045	0.000
L14	102.09	1.271	8	1.6793	16.762	A	0.000	16.762	16.762	100.00	17.244	0.000
105.75-98.50						B	0.000	16.762		100.00	32.104	0.000
						C	0.000	16.762		100.00	14.537	0.000
L15 98.50-97.00	97.75	1.26	8	1.6721	3.515	A	0.000	3.515	3.515	100.00	4.456	0.000
						B	0.000	3.515		100.00	7.531	0.000
						C	0.000	3.515		100.00	3.896	0.000
L16 97.00-96.75	96.87	1.257	8	1.6706	0.588	A	0.000	0.588	0.588	100.00	0.815	0.000
						B	0.000	0.588		100.00	1.326	0.000
						C	0.000	0.588		100.00	0.722	0.000
L17 96.75-93.98	95.36	1.253	8	1.6679	6.578	A	0.000	6.578	6.578	100.00	8.945	0.000
						B	0.000	6.578		100.00	14.607	0.000
						C	0.000	6.578		100.00	7.918	0.000
L18 93.98-93.73	93.85	1.249	8	1.6653	0.599	A	0.000	0.599	0.599	100.00	0.814	0.000
						B	0.000	0.599		100.00	1.325	0.000
						C	0.000	0.599		100.00	0.721	0.000
L19 93.73-91.50	92.61	1.245	8	1.6631	5.384	A	0.000	5.384	5.384	100.00	7.571	0.000
						B	0.000	5.384		100.00	12.123	0.000
						C	0.000	5.384		100.00	6.746	0.000
L20 91.50-91.25	91.37	1.242	8	1.6608	0.609	A	0.000	0.609	0.609	100.00	0.876	0.000
						B	0.000	0.609		100.00	1.386	0.000
						C	0.000	0.609		100.00	0.783	0.000
L21 91.25-90.25	90.75	1.24	8	1.6597	2.443	A	0.000	2.443	2.443	100.00	3.503	0.000
						B	0.000	2.443		100.00	5.542	0.000
						C	0.000	2.443		100.00	3.133	0.000
L22 90.25-90.00	90.12	1.238	8	1.6585	0.612	A	0.000	0.612	0.612	100.00	0.875	0.000
						B	0.000	0.612		100.00	1.385	0.000
						C	0.000	0.612		100.00	0.783	0.000
L23 90.00-89.00	89.50	1.236	8	1.6574	2.457	A	0.000	2.457	2.457	100.00	4.419	0.000
						B	0.000	2.457		100.00	6.458	0.000
						C	0.000	2.457		100.00	4.050	0.000
L24 89.00-88.75	88.87	1.235	8	1.6562	0.617	A	0.000	0.617	0.617	100.00	1.125	0.000
						B	0.000	0.617		100.00	1.634	0.000
						C	0.000	0.617		100.00	1.032	0.000
L25 88.75-83.75	86.24	1.227	7	1.6512	12.528	A	0.000	12.528	12.528	100.00	18.706	0.000
						B	0.000	12.528		100.00	28.884	0.000
						C	0.000	12.528		100.00	16.867	0.000
L26 83.75-80.08	81.91	1.214	7	1.6428	9.425	A	0.000	9.425	9.425	100.00	14.213	0.000
						B	0.000	9.425		100.00	22.664	0.000
						C	0.000	9.425		100.00	13.865	0.000
L27 80.08-79.83	79.95	1.207	7	1.6388	0.648	A	0.000	0.648	0.648	100.00	1.148	0.000
						B	0.000	0.648		100.00	1.904	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg % %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
						C	0.000	0.648		100.00	1.306	0.000
L28 79.83-74.83	77.32	1.199	7	1.6333	13.158	A	0.000	13.158	13.158	100.00	23.120	0.000
						B	0.000	13.158		100.00	38.220	0.000
						C	0.000	13.158		100.00	26.266	0.000
L29 74.83-73.50	74.16	1.188	7	1.6265	3.560	A	0.000	3.560	3.560	100.00	7.522	0.000
						B	0.000	3.560		100.00	11.533	0.000
						C	0.000	3.560		100.00	8.359	0.000
L30 73.50-73.25	73.37	1.186	7	1.6248	0.671	A	0.000	0.671	0.671	100.00	1.413	0.000
						B	0.000	0.671		100.00	2.167	0.000
						C	0.000	0.671		100.00	1.571	0.000
L31 73.25-71.00	72.12	1.181	7	1.6220	6.083	A	0.000	6.083	6.083	100.00	12.714	0.000
						B	0.000	6.083		100.00	19.491	0.000
						C	0.000	6.083		100.00	14.129	0.000
L32 71.00-70.75	70.87	1.177	7	1.6192	0.681	A	0.000	0.681	0.681	100.00	1.412	0.000
						B	0.000	0.681		100.00	2.164	0.000
						C	0.000	0.681		100.00	1.569	0.000
L33 70.75-65.75	68.24	1.168	7	1.6130	13.803	A	0.000	13.803	13.803	100.00	23.995	0.000
						B	0.000	13.803		100.00	39.024	0.000
						C	0.000	13.803		100.00	27.140	0.000
L34 65.75-63.00	64.37	1.154	7	1.6036	7.744	A	0.000	7.744	7.744	100.00	10.197	0.000
						B	0.000	7.744		100.00	18.445	0.000
						C	0.000	7.744		100.00	11.927	0.000
L35 63.00-62.75	62.87	1.148	7	1.5999	0.710	A	0.000	0.710	0.710	100.00	0.911	0.000
						B	0.000	0.710		100.00	1.660	0.000
						C	0.000	0.710		100.00	1.068	0.000
L36 62.75-62.08	62.41	1.146	7	1.5987	1.906	A	0.000	1.906	1.906	100.00	2.441	0.000
						B	0.000	1.906		100.00	4.448	0.000
						C	0.000	1.906		100.00	3.641	0.000
L37 62.08-61.83	61.95	1.144	7	1.5975	0.713	A	0.000	0.713	0.713	100.00	0.910	0.000
						B	0.000	0.713		100.00	1.659	0.000
						C	0.000	0.713		100.00	1.398	0.000
L38 61.83-60.67	61.25	1.142	7	1.5957	3.321	A	0.000	3.321	3.321	100.00	3.819	0.000
						B	0.000	3.321		100.00	7.322	0.000
						C	0.000	3.321		100.00	6.110	0.000
L39 60.67-60.42	60.54	1.139	7	1.5939	0.718	A	0.000	0.718	0.718	100.00	0.663	0.000
						B	0.000	0.718		100.00	1.495	0.000
						C	0.000	0.718		100.00	1.234	0.000
L40 60.42-59.00	59.71	1.135	7	1.5916	4.097	A	0.000	4.097	4.097	100.00	3.766	0.000
						B	0.000	4.097		100.00	8.486	0.000
						C	0.000	4.097		100.00	7.005	0.000
L41 59.00-58.75	58.87	1.132	7	1.5894	0.724	A	0.000	0.724	0.724	100.00	0.663	0.000
						B	0.000	0.724		100.00	1.493	0.000
						C	0.000	0.724		100.00	1.233	0.000
L42 58.75-53.75	56.24	1.121	7	1.5821	14.667	A	0.000	14.667	14.667	100.00	13.234	0.000
						B	0.000	14.667		100.00	29.822	0.000
						C	0.000	14.667		100.00	24.629	0.000
L43 53.75-48.50	51.11	1.099	7	1.5671	15.781	A	0.000	15.781	15.781	100.00	15.986	0.000
						B	0.000	15.781		100.00	29.618	0.000
						C	0.000	15.781		100.00	24.205	0.000
L44 48.50-47.50	48.00	1.084	7	1.5573	3.008	A	0.000	3.008	3.008	100.00	4.205	0.000
						B	0.000	3.008		100.00	4.885	0.000
						C	0.000	3.008		100.00	3.854	0.000
L45 47.50-45.75	46.62	1.078	7	1.5527	5.296	A	0.000	5.296	5.296	100.00	7.341	0.000
						B	0.000	5.296		100.00	8.523	0.000
						C	0.000	5.296		100.00	6.732	0.000
L46 45.75-45.50	45.62	1.073	7	1.5494	0.760	A	0.000	0.760	0.760	100.00	1.048	0.000
						B	0.000	0.760		100.00	1.217	0.000
						C	0.000	0.760		100.00	0.961	0.000
L47 45.50-45.00	45.25	1.071	7	1.5481	1.523	A	0.000	1.523	1.523	100.00	2.096	0.000
						B	0.000	1.523		100.00	2.433	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	0.000	1.523		100.00	1.922	0.000
L48 45.00-44.75	44.87	1.069	7	1.5468	0.762	A	0.000	0.762	0.762	100.00	1.312	0.000
						B	0.000	0.762		100.00	1.481	0.000
						C	0.000	0.762		100.00	1.226	0.000
L49 44.75-43.50	44.12	1.065	6	1.5442	3.826	A	0.000	3.826	3.826	100.00	6.559	0.000
						B	0.000	3.826		100.00	7.400	0.000
						C	0.000	3.826		100.00	6.126	0.000
L50 43.50-43.25	43.37	1.062	6	1.5416	0.767	A	0.000	0.767	0.767	100.00	1.311	0.000
						B	0.000	0.767		100.00	1.479	0.000
						C	0.000	0.767		100.00	1.225	0.000
L51 43.25-38.25	40.74	1.048	6	1.5319	15.533	A	0.000	15.533	15.533	100.00	26.176	0.000
						B	0.000	15.533		100.00	29.523	0.000
						C	0.000	15.533		100.00	24.456	0.000
L52 38.25-33.25	35.74	1.019	6	1.5120	15.882	A	0.000	15.882	15.882	100.00	26.079	0.000
						B	0.000	15.882		100.00	29.397	0.000
						C	0.000	15.882		100.00	24.379	0.000
L53 33.25-30.50	31.87	0.995	6	1.4948	8.883	A	0.000	8.883	8.883	100.00	14.193	0.000
						B	0.000	8.883		100.00	16.108	0.000
						C	0.000	8.883		100.00	13.372	0.000
L54 30.50-30.25	30.37	0.985	6	1.4876	0.813	A	0.000	0.813	0.813	100.00	1.277	0.000
						B	0.000	0.813		100.00	1.462	0.000
						C	0.000	0.813		100.00	1.214	0.000
L55 30.25-29.67	29.96	0.982	6	1.4856	1.889	A	0.000	1.889	1.889	100.00	2.962	0.000
						B	0.000	1.889		100.00	3.390	0.000
						C	0.000	1.889		100.00	2.816	0.000
L56 29.67-29.42	29.54	0.979	6	1.4835	0.816	A	0.000	0.816	0.816	100.00	1.276	0.000
						B	0.000	0.816		100.00	1.461	0.000
						C	0.000	0.816		100.00	1.213	0.000
L57 29.42-28.00	28.71	0.973	6	1.4793	4.653	A	0.000	4.653	4.653	100.00	7.242	0.000
						B	0.000	4.653		100.00	8.289	0.000
						C	0.000	4.653		100.00	6.887	0.000
L58 28.00-27.75	27.87	0.967	6	1.4749	0.822	A	0.000	0.822	0.822	100.00	1.274	0.000
						B	0.000	0.822		100.00	1.458	0.000
						C	0.000	0.822		100.00	1.212	0.000
L59 27.75-26.92	27.33	0.963	6	1.4720	2.734	A	0.000	2.734	2.734	100.00	5.260	0.000
						B	0.000	2.734		100.00	4.837	0.000
						C	0.000	2.734		100.00	5.054	0.000
L60 26.92-26.67	26.79	0.959	6	1.4691	0.825	A	0.000	0.825	0.825	100.00	1.617	0.000
						B	0.000	0.825		100.00	1.456	0.000
						C	0.000	0.825		100.00	1.555	0.000
L61 26.67-26.50	26.58	0.958	6	1.4679	0.562	A	0.000	0.562	0.562	100.00	1.099	0.000
						B	0.000	0.562		100.00	0.990	0.000
						C	0.000	0.562		100.00	1.057	0.000
L62 26.50-26.25	26.37	0.956	6	1.4668	0.827	A	0.000	0.827	0.827	100.00	1.616	0.000
						B	0.000	0.827		100.00	1.455	0.000
						C	0.000	0.827		100.00	1.554	0.000
L63 26.25-24.92	25.58	0.95	6	1.4623	4.413	A	0.000	4.413	4.413	100.00	8.507	0.000
						B	0.000	4.413		100.00	6.255	0.000
						C	0.000	4.413		100.00	5.387	0.000
L64 24.92-24.67	24.79	0.944	6	1.4577	0.832	A	0.000	0.832	0.832	100.00	1.374	0.000
						B	0.000	0.832		100.00	1.213	0.000
						C	0.000	0.832		100.00	0.646	0.000
L65 24.67-22.17	23.42	0.932	6	1.4494	8.371	A	0.000	8.371	8.371	100.00	13.717	0.000
						B	0.000	8.371		100.00	12.105	0.000
						C	0.000	8.371		100.00	6.449	0.000
L66 22.17-21.92	22.04	0.921	6	1.4407	0.842	A	0.000	0.842	0.842	100.00	1.370	0.000
						B	0.000	0.842		100.00	1.208	0.000
						C	0.000	0.842		100.00	0.644	0.000
L67 21.92-16.92	19.41	0.896	5	1.4225	17.008	A	0.000	17.008	17.008	100.00	27.300	0.000
						B	0.000	17.008		100.00	24.061	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	0.000	17.008		100.00	12.845	0.000
L68 16.92-11.92	14.41	0.85	5	1.3807	17.339	A	0.000	17.339	17.339	100.00	27.091	0.000
						B	0.000	17.339		100.00	23.832	0.000
						C	0.000	17.339		100.00	12.761	0.000
L69 11.92-6.92	9.41	0.85	5	1.3231	17.657	A	0.000	17.657	17.657	100.00	26.477	0.000
						B	0.000	17.657		100.00	21.167	0.000
						C	0.000	17.657		100.00	12.646	0.000
L70 6.92-1.92	4.41	0.85	5	1.2266	17.942	A	0.000	17.942	17.942	100.00	24.906	0.000
						B	0.000	17.942		100.00	12.453	0.000
						C	0.000	17.942		100.00	12.453	0.000
L71 1.92-0.00	0.96	0.85	5	1.0530	6.931	A	0.000	6.931	6.931	100.00	6.876	0.000
						B	0.000	6.931		100.00	3.438	0.000
						C	0.000	6.931		100.00	3.438	0.000

Tower Pressure - Service

$G_H = 1.100$

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	146.48	1.372	11	6.940	A	0.000	6.940	6.940	100.00	0.188	0.000
149.00-144.00					B	0.000	6.940		100.00	0.000	0.000
					C	0.000	6.940		100.00	0.000	0.000
L2	141.48	1.362	11	7.306	A	0.000	7.306	7.306	100.00	0.188	0.000
144.00-139.00					B	0.000	7.306		100.00	0.396	0.000
					C	0.000	7.306		100.00	0.000	0.000
L3	136.48	1.351	11	7.672	A	0.000	7.672	7.672	100.00	0.188	0.000
139.00-134.00					B	0.000	7.672		100.00	1.980	0.000
					C	0.000	7.672		100.00	0.000	0.000
L4	131.48	1.341	11	8.038	A	0.000	8.038	8.038	100.00	0.188	0.000
134.00-129.00					B	0.000	8.038		100.00	1.980	0.000
					C	0.000	8.038		100.00	0.000	0.000
L5	126.74	1.33	10	7.547	A	0.000	7.547	7.547	100.00	1.169	0.000
129.00-124.50					B	0.000	7.547		100.00	4.933	0.000
					C	0.000	7.547		100.00	1.000	0.000
L6	124.37	1.325	10	0.427	A	0.000	0.427	0.427	100.00	0.176	0.000
124.50-124.25					B	0.000	0.427		100.00	0.419	0.000
					C	0.000	0.427		100.00	0.167	0.000
L7	121.73	1.319	10	8.742	A	0.000	8.742	8.742	100.00	4.021	0.000
124.25-119.25					B	0.000	8.742		100.00	8.886	0.000
					C	0.000	8.742		100.00	3.833	0.000
L8	118.87	1.313	10	1.343	A	0.000	1.343	1.343	100.00	1.028	0.000
119.25-118.50					B	0.000	1.343		100.00	1.758	0.000
					C	0.000	1.343		100.00	1.000	0.000
L9	118.37	1.311	10	0.448	A	0.000	0.448	0.448	100.00	0.343	0.000
118.50-118.25					B	0.000	0.448		100.00	0.586	0.000
					C	0.000	0.448		100.00	0.333	0.000
L10	117.12	1.308	10	4.076	A	0.000	4.076	4.076	100.00	3.084	0.000
118.25-116.00					B	0.000	4.076		100.00	5.274	0.000
					C	0.000	4.076		100.00	3.000	0.000
L11	115.87	1.305	10	0.457	A	0.000	0.457	0.457	100.00	0.289	0.000
116.00-115.75					B	0.000	0.457		100.00	0.533	0.000
					C	0.000	0.457		100.00	0.280	0.000

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
L12	113.23	1.299	10	9.343	A	0.000	9.343	9.343	100.00	6.854	0.000
115.75-110.75					B	0.000	9.343		100.00	11.719	0.000
					C	0.000	9.343		100.00	6.667	0.000
L13	108.23	1.287	10	9.711	A	0.000	9.711	9.711	100.00	6.854	0.000
110.75-105.75					B	0.000	9.711		100.00	11.719	0.000
					C	0.000	9.711		100.00	6.667	0.000
L14	102.09	1.271	10	14.733	A	0.000	14.733	14.733	100.00	9.939	0.000
105.75-98.50					B	0.000	14.733		100.00	16.993	0.000
					C	0.000	14.733		100.00	9.667	0.000
L15	97.75	1.26	10	3.095	A	0.000	3.095	3.095	100.00	2.723	0.000
98.50-97.00					B	0.000	3.095		100.00	4.182	0.000
					C	0.000	3.095		100.00	2.667	0.000
L16	96.87	1.257	10	0.519	A	0.000	0.519	0.519	100.00	0.509	0.000
97.00-96.75					B	0.000	0.519		100.00	0.753	0.000
					C	0.000	0.519		100.00	0.500	0.000
L17	95.36	1.253	10	5.808	A	0.000	5.808	5.808	100.00	5.591	0.000
96.75-93.98					B	0.000	5.808		100.00	8.286	0.000
					C	0.000	5.808		100.00	5.487	0.000
L18	93.85	1.249	10	0.530	A	0.000	0.530	0.530	100.00	0.509	0.000
93.98-93.73					B	0.000	0.530		100.00	0.753	0.000
					C	0.000	0.530		100.00	0.500	0.000
L19	92.61	1.245	10	4.766	A	0.000	4.766	4.766	100.00	4.856	0.000
93.73-91.50					B	0.000	4.766		100.00	7.026	0.000
					C	0.000	4.766		100.00	4.773	0.000
L20	91.37	1.242	10	0.539	A	0.000	0.539	0.539	100.00	0.572	0.000
91.50-91.25					B	0.000	0.539		100.00	0.815	0.000
					C	0.000	0.539		100.00	0.563	0.000
L21	90.75	1.24	10	2.167	A	0.000	2.167	2.167	100.00	2.288	0.000
91.25-90.25					B	0.000	2.167		100.00	3.261	0.000
					C	0.000	2.167		100.00	2.250	0.000
L22	90.12	1.238	10	0.543	A	0.000	0.543	0.543	100.00	0.572	0.000
90.25-90.00					B	0.000	0.543		100.00	0.815	0.000
					C	0.000	0.543		100.00	0.563	0.000
L23	89.50	1.236	10	2.181	A	0.000	2.181	2.181	100.00	2.901	0.000
90.00-89.00					B	0.000	2.181		100.00	3.874	0.000
					C	0.000	2.181		100.00	2.863	0.000
L24	88.87	1.235	10	0.548	A	0.000	0.548	0.548	100.00	0.739	0.000
89.00-88.75					B	0.000	0.548		100.00	0.982	0.000
					C	0.000	0.548		100.00	0.729	0.000
L25	86.24	1.227	10	11.152	A	0.000	11.152	11.152	100.00	11.938	0.000
88.75-83.75					B	0.000	11.152		100.00	16.802	0.000
					C	0.000	11.152		100.00	11.750	0.000
L26	81.91	1.214	10	8.420	A	0.000	8.420	8.420	100.00	9.062	0.000
83.75-80.08					B	0.000	8.420		100.00	13.299	0.000
					C	0.000	8.420		100.00	9.591	0.000
L27	79.95	1.207	9	0.580	A	0.000	0.580	0.580	100.00	0.739	0.000
80.08-79.83					B	0.000	0.580		100.00	1.148	0.000
					C	0.000	0.580		100.00	0.896	0.000
L28	77.32	1.199	9	11.797	A	0.000	11.797	11.797	100.00	14.898	0.000
79.83-74.83					B	0.000	11.797		100.00	23.097	0.000
					C	0.000	11.797		100.00	18.044	0.000
L29	74.16	1.188	9	3.200	A	0.000	3.200	3.200	100.00	4.927	0.000
74.83-73.50					B	0.000	3.200		100.00	7.107	0.000
					C	0.000	3.200		100.00	5.763	0.000
L30	73.37	1.186	9	0.604	A	0.000	0.604	0.604	100.00	0.926	0.000
73.50-73.25					B	0.000	0.604		100.00	1.336	0.000
					C	0.000	0.604		100.00	1.083	0.000
L31	72.12	1.181	9	5.475	A	0.000	5.475	5.475	100.00	8.334	0.000
73.25-71.00					B	0.000	5.475		100.00	12.024	0.000
					C	0.000	5.475		100.00	9.750	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
L32	70.87	1.177	9	0.613	A	0.000	0.613	0.613	100.00	0.926	0.000
71.00-70.75					B	0.000	0.613		100.00	1.336	0.000
					C	0.000	0.613		100.00	1.083	0.000
L33	68.24	1.168	9	12.459	A	0.000	12.459	12.459	100.00	15.688	0.000
70.75-65.75					B	0.000	12.459		100.00	23.886	0.000
					C	0.000	12.459		100.00	18.833	0.000
L34	64.37	1.154	9	7.009	A	0.000	7.009	7.009	100.00	6.633	0.000
65.75-63.00					B	0.000	7.009		100.00	11.142	0.000
					C	0.000	7.009		100.00	8.363	0.000
L35	62.87	1.148	9	0.643	A	0.000	0.643	0.643	100.00	0.593	0.000
63.00-62.75					B	0.000	0.643		100.00	1.003	0.000
					C	0.000	0.643		100.00	0.750	0.000
L36	62.41	1.146	9	1.727	A	0.000	1.727	1.727	100.00	1.588	0.000
62.75-62.08					B	0.000	1.727		100.00	2.687	0.000
					C	0.000	1.727		100.00	2.600	0.000
L37	61.95	1.144	9	0.647	A	0.000	0.647	0.647	100.00	0.593	0.000
62.08-61.83					B	0.000	0.647		100.00	1.003	0.000
					C	0.000	0.647		100.00	1.000	0.000
L38	61.25	1.142	9	3.013	A	0.000	3.013	3.013	100.00	2.477	0.000
61.83-60.67					B	0.000	3.013		100.00	4.436	0.000
					C	0.000	3.013		100.00	4.423	0.000
L39	60.54	1.139	9	0.652	A	0.000	0.652	0.652	100.00	0.426	0.000
60.67-60.42					B	0.000	0.652		100.00	0.919	0.000
					C	0.000	0.652		100.00	0.917	0.000
L40	59.71	1.135	9	3.720	A	0.000	3.720	3.720	100.00	2.420	0.000
60.42-59.00					B	0.000	3.720		100.00	5.222	0.000
					C	0.000	3.720		100.00	5.207	0.000
L41	58.87	1.132	9	0.658	A	0.000	0.658	0.658	100.00	0.426	0.000
59.00-58.75					B	0.000	0.658		100.00	0.919	0.000
					C	0.000	0.658		100.00	0.917	0.000
L42	56.24	1.121	9	13.349	A	0.000	13.349	13.349	100.00	8.521	0.000
58.75-53.75					B	0.000	13.349		100.00	18.386	0.000
					C	0.000	13.349		100.00	18.333	0.000
L43	51.11	1.099	9	14.410	A	0.000	14.410	14.410	100.00	10.662	0.000
53.75-48.50					B	0.000	14.410		100.00	18.180	0.000
					C	0.000	14.410		100.00	18.125	0.000
L44	48.00	1.084	8	2.747	A	0.000	2.747	2.747	100.00	2.954	0.000
48.50-47.50					B	0.000	2.747		100.00	2.927	0.000
					C	0.000	2.747		100.00	2.917	0.000
L45	46.62	1.078	8	4.843	A	0.000	4.843	4.843	100.00	5.170	0.000
47.50-45.75					B	0.000	4.843		100.00	5.123	0.000
					C	0.000	4.843		100.00	5.104	0.000
L46	45.62	1.073	8	0.695	A	0.000	0.695	0.695	100.00	0.739	0.000
45.75-45.50					B	0.000	0.695		100.00	0.732	0.000
					C	0.000	0.695		100.00	0.729	0.000
L47	45.25	1.071	8	1.394	A	0.000	1.394	1.394	100.00	1.477	0.000
45.50-45.00					B	0.000	1.394		100.00	1.464	0.000
					C	0.000	1.394		100.00	1.458	0.000
L48	44.87	1.069	8	0.698	A	0.000	0.698	0.698	100.00	0.926	0.000
45.00-44.75					B	0.000	0.698		100.00	0.919	0.000
					C	0.000	0.698		100.00	0.917	0.000
L49	44.12	1.065	8	3.504	A	0.000	3.504	3.504	100.00	4.630	0.000
44.75-43.50					B	0.000	3.504		100.00	4.596	0.000
					C	0.000	3.504		100.00	4.583	0.000
L50	43.37	1.062	8	0.703	A	0.000	0.703	0.703	100.00	0.926	0.000
43.50-43.25					B	0.000	0.703		100.00	0.919	0.000
					C	0.000	0.703		100.00	0.917	0.000
L51	40.74	1.048	8	14.256	A	0.000	14.256	14.256	100.00	18.521	0.000
43.25-38.25					B	0.000	14.256		100.00	18.386	0.000
					C	0.000	14.256		100.00	18.333	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
L52	35.74	1.019	8	14.622	A	0.000	14.622	14.622	100.00	18.521	0.000
38.25-33.25					B	0.000	14.622		100.00	18.386	0.000
					C	0.000	14.622		100.00	18.333	0.000
L53	31.87	0.995	8	8.198	A	0.000	8.198	8.198	100.00	10.106	0.000
33.25-30.50					B	0.000	8.198		100.00	10.112	0.000
					C	0.000	8.198		100.00	10.083	0.000
L54	30.37	0.985	8	0.751	A	0.000	0.751	0.751	100.00	0.905	0.000
30.50-30.25					B	0.000	0.751		100.00	0.919	0.000
					C	0.000	0.751		100.00	0.917	0.000
L55	29.96	0.982	8	1.745	A	0.000	1.745	1.745	100.00	2.100	0.000
30.25-29.67					B	0.000	1.745		100.00	2.133	0.000
					C	0.000	1.745		100.00	2.127	0.000
L56	29.54	0.979	8	0.754	A	0.000	0.754	0.754	100.00	0.905	0.000
29.67-29.42					B	0.000	0.754		100.00	0.919	0.000
					C	0.000	0.754		100.00	0.917	0.000
L57	28.71	0.973	8	4.303	A	0.000	4.303	4.303	100.00	5.142	0.000
29.42-28.00					B	0.000	4.303		100.00	5.222	0.000
					C	0.000	4.303		100.00	5.207	0.000
L58	27.87	0.967	8	0.760	A	0.000	0.760	0.760	100.00	0.905	0.000
28.00-27.75					B	0.000	0.760		100.00	0.919	0.000
					C	0.000	0.760		100.00	0.917	0.000
L59	27.33	0.963	8	2.530	A	0.000	2.530	2.530	100.00	3.818	0.000
27.75-26.92					B	0.000	2.530		100.00	3.052	0.000
					C	0.000	2.530		100.00	3.856	0.000
L60	26.79	0.959	8	0.764	A	0.000	0.764	0.764	100.00	1.176	0.000
26.92-26.67					B	0.000	0.764		100.00	0.919	0.000
					C	0.000	0.764		100.00	1.188	0.000
L61	26.58	0.958	8	0.520	A	0.000	0.520	0.520	100.00	0.800	0.000
26.67-26.50					B	0.000	0.520		100.00	0.625	0.000
					C	0.000	0.520		100.00	0.808	0.000
L62	26.37	0.956	7	0.766	A	0.000	0.766	0.766	100.00	1.176	0.000
26.50-26.25					B	0.000	0.766		100.00	0.919	0.000
					C	0.000	0.766		100.00	1.188	0.000
L63	25.58	0.95	7	4.089	A	0.000	4.089	4.089	100.00	6.197	0.000
26.25-24.92					B	0.000	4.089		100.00	3.751	0.000
					C	0.000	4.089		100.00	4.098	0.000
L64	24.79	0.944	7	0.772	A	0.000	0.772	0.772	100.00	1.009	0.000
24.92-24.67					B	0.000	0.772		100.00	0.753	0.000
					C	0.000	0.772		100.00	0.500	0.000
L65	23.42	0.932	7	7.767	A	0.000	7.767	7.767	100.00	10.094	0.000
24.67-22.17					B	0.000	7.767		100.00	7.526	0.000
					C	0.000	7.767		100.00	5.000	0.000
L66	22.04	0.921	7	0.781	A	0.000	0.781	0.781	100.00	1.009	0.000
22.17-21.92					B	0.000	0.781		100.00	0.753	0.000
					C	0.000	0.781		100.00	0.500	0.000
L67	19.41	0.896	7	15.823	A	0.000	15.823	15.823	100.00	20.188	0.000
21.92-16.92					B	0.000	15.823		100.00	15.053	0.000
					C	0.000	15.823		100.00	10.000	0.000
L68	14.41	0.85	7	16.189	A	0.000	16.189	16.189	100.00	20.188	0.000
16.92-11.92					B	0.000	16.189		100.00	15.053	0.000
					C	0.000	16.189		100.00	10.000	0.000
L69 11.92-6.92	9.41	0.85	7	16.554	A	0.000	16.554	16.554	100.00	20.147	0.000
					B	0.000	16.554		100.00	13.961	0.000
					C	0.000	16.554		100.00	10.000	0.000
L70 6.92-1.92	4.41	0.85	7	16.920	A	0.000	16.920	16.920	100.00	20.000	0.000
					B	0.000	16.920		100.00	10.000	0.000
					C	0.000	16.920		100.00	10.000	0.000
L71 1.92-0.00	0.96	0.85	7	6.595	A	0.000	6.595	6.595	100.00	5.680	0.000
					B	0.000	6.595		100.00	2.840	0.000
					C	0.000	6.595		100.00	2.840	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L1	0.04	0.16	A	1	0.65	29	1	1	6.940	0.14	0.03	C
149.00-144.00			B	1	0.65		1	1	6.940			
			C	1	0.65		1	1	6.940			
L2	0.06	0.17	A	1	0.65	29	1	1	7.306	0.15	0.03	C
144.00-139.00			B	1	0.65		1	1	7.306			
			C	1	0.65		1	1	7.306			
L3	0.09	0.18	A	1	0.65	28	1	1	7.672	0.16	0.03	C
139.00-134.00			B	1	0.65		1	1	7.672			
			C	1	0.65		1	1	7.672			
L4	0.09	0.19	A	1	0.65	28	1	1	8.038	0.16	0.03	C
134.00-129.00			B	1	0.65		1	1	8.038			
			C	1	0.65		1	1	8.038			
L5	0.10	0.18	A	1	0.65	28	1	1	7.547	0.16	0.03	C
129.00-124.50			B	1	0.65		1	1	7.547			
			C	1	0.674		1	1	7.547			
L6	0.01	0.02	A	1	0.677	28	1	1	0.427	0.01	0.04	C
124.50-124.25			B	1	0.65		1	1	0.427			
			C	1	0.737		1	1	0.427			
L7	0.12	0.36	A	1	0.687	28	1	1	8.742	0.20	0.04	C
124.25-119.25			B	1	0.65		1	1	8.742			
			C	1	0.745		1	1	8.742			
L8	0.02	0.05	A	1	0.763	28	1	1	1.343	0.03	0.04	C
119.25-118.50			B	1	0.65		1	1	1.343			
			C	1	0.82		1	1	1.343			
L9	0.01	0.03	A	1	0.762	28	1	1	0.448	0.01	0.04	C
118.50-118.25			B	1	0.65		1	1	0.448			
			C	1	0.819		1	1	0.448			
L10	0.06	0.30	A	1	0.759	28	1	1	4.076	0.10	0.04	C
118.25-116.00			B	1	0.65		1	1	4.076			
			C	1	0.816		1	1	4.076			
L11	0.01	0.03	A	1	0.738	27	1	1	0.457	0.01	0.04	C
116.00-115.75			B	1	0.65		1	1	0.457			
			C	1	0.794		1	1	0.457			
L12	0.12	0.67	A	1	0.748	27	1	1	9.343	0.23	0.05	C
115.75-110.75			B	1	0.65		1	1	9.343			
			C	1	0.803		1	1	9.343			
L13	0.12	0.68	A	1	0.737	27	1	1	9.711	0.23	0.05	C
110.75-105.75			B	1	0.65		1	1	9.711			
			C	1	0.79		1	1	9.711			
L14	0.18	1.02	A	1	0.724	27	1	1	14.733	0.34	0.05	C
105.75-98.50			B	1	0.65		1	1	14.733			
			C	1	0.775		1	1	14.733			
L15	0.04	0.77	A	1	0.72	26	1	1	3.095	0.07	0.05	C
98.50-97.00			B	1	0.65		1	1	3.095			
			C	1	0.77		1	1	3.095			
L16	0.01	0.05	A	1	0.719	26	1	1	0.519	0.01	0.05	C
97.00-96.75			B	1	0.65		1	1	0.519			
			C	1	0.768		1	1	0.519			
L17	0.07	0.52	A	1	0.714	26	1	1	5.808	0.13	0.05	C
96.75-93.98			B	1	0.65		1	1	5.808			
			C	1	0.763		1	1	5.808			
L18	0.01	0.05	A	1	0.711	26	1	1	0.530	0.01	0.05	C
93.98-93.73			B	1	0.65		1	1	0.530			
			C	1	0.76		1	1	0.530			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L19	0.06	0.42	A	1	0.708	26	1	1	4.766	0.10	0.05	C
93.73-91.50			B	1	0.65		1	1	4.766			
			C	1	0.756		1	1	4.766			
L20	0.01	0.04	A	1	0.704	26	1	1	0.539	0.01	0.05	C
91.50-91.25			B	1	0.65		1	1	0.539			
			C	1	0.752		1	1	0.539			
L21	0.02	0.16	A	1	0.703	26	1	1	2.167	0.05	0.05	C
91.25-90.25			B	1	0.65		1	1	2.167			
			C	1	0.75		1	1	2.167			
L22	0.01	0.06	A	1	0.703	26	1	1	0.543	0.01	0.05	C
90.25-90.00			B	1	0.65		1	1	0.543			
			C	1	0.75		1	1	0.543			
L23	0.02	0.23	A	1	0.738	26	1	1	2.181	0.05	0.05	C
90.00-89.00			B	1	0.65		1	1	2.181			
			C	1	0.785		1	1	2.181			
L24	0.01	0.05	A	1	0.739	26	1	1	0.548	0.01	0.05	C
89.00-88.75			B	1	0.65		1	1	0.548			
			C	1	0.786		1	1	0.548			
L25	0.12	1.00	A	1	0.735	26	1	1	11.152	0.25	0.05	C
88.75-83.75			B	1	0.65		1	1	11.152			
			C	1	0.78		1	1	11.152			
L26	0.09	0.74	A	1	0.737	26	1	1	8.420	0.18	0.05	C
83.75-80.08			B	1	0.65		1	1	8.420			
			C	1	0.781		1	1	8.420			
L27	0.01	0.06	A	1	0.76	25	1	1	0.580	0.01	0.05	C
80.08-79.83			B	1	0.65		1	1	0.580			
			C	1	0.804		1	1	0.580			
L28	0.12	1.27	A	1	0.755	25	1	1	11.797	0.26	0.05	C
79.83-74.83			B	1	0.65		1	1	11.797			
			C	1	0.798		1	1	11.797			
L29	0.03	0.34	A	1	0.749	25	1	1	3.200	0.07	0.05	C
74.83-73.50			B	1	0.65		1	1	3.200			
			C	1	0.792		1	1	3.200			
L30	0.01	0.08	A	1	0.748	25	1	1	0.604	0.01	0.05	C
73.50-73.25			B	1	0.65		1	1	0.604			
			C	1	0.791		1	1	0.604			
L31	0.06	0.68	A	1	0.746	25	1	1	5.475	0.12	0.05	C
73.25-71.00			B	1	0.65		1	1	5.475			
			C	1	0.788		1	1	5.475			
L32	0.01	0.07	A	1	0.744	25	1	1	0.613	0.01	0.05	C
71.00-70.75			B	1	0.65		1	1	0.613			
			C	1	0.785		1	1	0.613			
L33	0.12	1.37	A	1	0.709	25	1	1	12.459	0.25	0.05	C
70.75-65.75			B	1	0.65		1	1	12.459			
			C	1	0.751		1	1	12.459			
L34	0.07	0.76	A	1	0.665	24	1	1	7.009	0.13	0.05	C
65.75-63.00			B	1	0.65		1	1	7.009			
			C	1	0.706		1	1	7.009			
L35	0.01	0.07	A	1	0.661	24	1	1	0.643	0.01	0.05	C
63.00-62.75			B	1	0.65		1	1	0.643			
			C	1	0.701		1	1	0.643			
L36	0.02	0.18	A	1	0.702	24	1	1	1.727	0.03	0.05	A
62.75-62.08			B	1	0.65		1	1	1.727			
			C	1	0.701		1	1	1.727			
L37	0.01	0.06	A	1	0.706	24	1	1	0.647	0.01	0.05	A
62.08-61.83			B	1	0.65		1	1	0.647			
			C	1	0.7		1	1	0.647			
L38	0.03	0.28	A	1	0.694	24	1	1	3.013	0.06	0.05	A
61.83-60.67			B	1	0.65		1	1	3.013			
			C	1	0.687		1	1	3.013			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L39	0.01	0.06	A	1	0.672	24	1	1	0.652	0.01	0.05	A
60.67-60.42			B	1	0.65		1	1	0.652			
			C	1	0.665		1	1	0.652			
L40	0.04	0.34	A	1	0.671	24	1	1	3.720	0.07	0.05	A
60.42-59.00			B	1	0.65		1	1	3.720			
			C	1	0.664		1	1	3.720			
L41	0.01	0.06	A	1	0.67	24	1	1	0.658	0.01	0.05	A
59.00-58.75			B	1	0.65		1	1	0.658			
			C	1	0.663		1	1	0.658			
L42	0.12	1.22	A	1	0.667	24	1	1	13.349	0.23	0.05	A
58.75-53.75			B	1	0.65		1	1	13.349			
			C	1	0.66		1	1	13.349			
L43	0.13	1.32	A	1	0.661	23	1	1	14.410	0.24	0.05	A
53.75-48.50			B	1	0.65		1	1	14.410			
			C	1	0.655		1	1	14.410			
L44	0.02	1.59	A	1	0.66	23	1	1	2.747	0.05	0.05	A
48.50-47.50			B	1	0.65		1	1	2.747			
			C	1	0.654		1	1	2.747			
L45	0.04	0.49	A	1	0.658	23	1	1	4.843	0.08	0.05	A
47.50-45.75			B	1	0.65		1	1	4.843			
			C	1	0.652		1	1	4.843			
L46	0.01	0.07	A	1	0.657	23	1	1	0.695	0.01	0.05	A
45.75-45.50			B	1	0.65		1	1	0.695			
			C	1	0.651		1	1	0.695			
L47	0.01	0.14	A	1	0.657	23	1	1	1.394	0.02	0.05	A
45.50-45.00			B	1	0.65		1	1	1.394			
			C	1	0.651		1	1	1.394			
L48	0.01	0.08	A	1	0.698	22	1	1	0.698	0.01	0.05	A
45.00-44.75			B	1	0.65		1	1	0.698			
			C	1	0.692		1	1	0.698			
L49	0.03	0.39	A	1	0.698	22	1	1	3.504	0.06	0.05	A
44.75-43.50			B	1	0.65		1	1	3.504			
			C	1	0.691		1	1	3.504			
L50	0.01	0.08	A	1	0.697	22	1	1	0.703	0.01	0.05	A
43.50-43.25			B	1	0.65		1	1	0.703			
			C	1	0.691		1	1	0.703			
L51	0.12	1.64	A	1	0.693	22	1	1	14.256	0.24	0.05	A
43.25-38.25			B	1	0.65		1	1	14.256			
			C	1	0.687		1	1	14.256			
L52	0.12	1.66	A	1	0.687	21	1	1	14.622	0.24	0.05	A
38.25-33.25			B	1	0.65		1	1	14.622			
			C	1	0.682		1	1	14.622			
L53	0.07	0.92	A	1	0.683	21	1	1	8.198	0.13	0.05	A
33.25-30.50			B	1	0.65		1	1	8.198			
			C	1	0.677		1	1	8.198			
L54	0.01	0.09	A	1	0.65	21	1	1	0.751	0.01	0.04	C
30.50-30.25			B	1	0.65		1	1	0.751			
			C	1	0.65		1	1	0.751			
L55	0.01	0.20	A	1	0.65	21	1	1	1.745	0.03	0.04	C
30.25-29.67			B	1	0.65		1	1	1.745			
			C	1	0.65		1	1	1.745			
L56	0.01	0.08	A	1	0.65	21	1	1	0.754	0.01	0.04	C
29.67-29.42			B	1	0.65		1	1	0.754			
			C	1	0.65		1	1	0.754			
L57	0.04	0.43	A	1	0.65	20	1	1	4.303	0.06	0.04	C
29.42-28.00			B	1	0.65		1	1	4.303			
			C	1	0.65		1	1	4.303			
L58	0.01	0.08	A	1	0.65	20	1	1	0.760	0.01	0.04	C
28.00-27.75			B	1	0.65		1	1	0.760			
			C	1	0.65		1	1	0.760			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L59	0.02	0.27	A	1	0.65	20	1	1	2.530	0.04	0.05	C
27.75-26.92			B	1	0.65		1	1	2.530			
			C	1	0.666		1	1	2.530			
L60	0.01	0.08	A	1	0.65	20	1	1	0.764	0.01	0.05	C
26.92-26.67			B	1	0.65		1	1	0.764			
			C	1	0.67		1	1	0.764			
L61	0.00	0.05	A	1	0.65	20	1	1	0.520	0.01	0.05	C
26.67-26.50			B	1	0.65		1	1	0.520			
			C	1	0.67		1	1	0.520			
L62	0.01	0.07	A	1	0.65	20	1	1	0.766	0.01	0.05	C
26.50-26.25			B	1	0.65		1	1	0.766			
			C	1	0.67		1	1	0.766			
L63	0.03	0.39	A	1	0.65	20	1	1	4.089	0.06	0.05	C
26.25-24.92			B	1	0.65		1	1	4.089			
			C	1	0.667		1	1	4.089			
L64	0.01	0.08	A	1	0.65	20	1	1	0.772	0.01	0.05	C
24.92-24.67			B	1	0.654		1	1	0.772			
			C	1	0.679		1	1	0.772			
L65	0.06	0.75	A	1	0.65	20	1	1	7.767	0.11	0.05	C
24.67-22.17			B	1	0.652		1	1	7.767			
			C	1	0.678		1	1	7.767			
L66	0.01	0.08	A	1	0.65	19	1	1	0.781	0.01	0.05	C
22.17-21.92			B	1	0.651		1	1	0.781			
			C	1	0.677		1	1	0.781			
L67	0.12	1.64	A	1	0.65	19	1	1	15.823	0.22	0.04	C
21.92-16.92			B	1	0.65		1	1	15.823			
			C	1	0.674		1	1	15.823			
L68	0.12	1.65	A	1	0.65	18	1	1	16.189	0.21	0.04	C
16.92-11.92			B	1	0.65		1	1	16.189			
			C	1	0.669		1	1	16.189			
L69	0.10	1.67	A	1	0.65	18	1	1	16.554	0.21	0.04	C
11.92-6.92			B	1	0.65		1	1	16.554			
			C	1	0.65		1	1	16.554			
L70 6.92-1.92	0.00	1.68	A	1	0.65	18	1	1	16.920	0.22	0.04	C
			B	1	0.65		1	1	16.920			
			C	1	0.65		1	1	16.920			
L71 1.92-0.00	0.00	0.65	A	1	0.65	18	1	1	6.595	0.08	0.04	C
			B	1	0.65		1	1	6.595			
			C	1	0.65		1	1	6.595			
Sum Weight:	3.27	33.40						OTM	466.05 kip-ft	6.54		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L1	0.04	0.16	A	1	0.65	29	1	1	6.940	0.14	0.03	C
149.00-144.00			B	1	0.65		1	1	6.940			
			C	1	0.65		1	1	6.940			
L2	0.06	0.17	A	1	0.65	29	1	1	7.306	0.15	0.03	C
144.00-139.00			B	1	0.65		1	1	7.306			
			C	1	0.65		1	1	7.306			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L3	0.09	0.18	A	1	0.65	28	1	1	7.672	0.16	0.03	C
139.00-134.00			B	1	0.65		1	1	7.672			
			C	1	0.65		1	1	7.672			
L4	0.09	0.19	A	1	0.65	28	1	1	8.038	0.16	0.03	C
134.00-129.00			B	1	0.65		1	1	8.038			
			C	1	0.65		1	1	8.038			
L5	0.10	0.18	A	1	0.674	28	1	1	7.547	0.16	0.03	A
129.00-124.50			B	1	0.65		1	1	7.547			
			C	1	0.65		1	1	7.547			
L6	0.01	0.02	A	1	0.737	28	1	1	0.427	0.01	0.04	A
124.50-124.25			B	1	0.677		1	1	0.427			
			C	1	0.65		1	1	0.427			
L7	0.12	0.36	A	1	0.745	28	1	1	8.742	0.20	0.04	A
124.25-119.25			B	1	0.687		1	1	8.742			
			C	1	0.65		1	1	8.742			
L8	0.02	0.05	A	1	0.82	28	1	1	1.343	0.03	0.04	A
119.25-118.50			B	1	0.763		1	1	1.343			
			C	1	0.65		1	1	1.343			
L9	0.01	0.03	A	1	0.819	28	1	1	0.448	0.01	0.04	A
118.50-118.25			B	1	0.762		1	1	0.448			
			C	1	0.65		1	1	0.448			
L10	0.06	0.30	A	1	0.816	28	1	1	4.076	0.10	0.04	A
118.25-116.00			B	1	0.759		1	1	4.076			
			C	1	0.65		1	1	4.076			
L11	0.01	0.03	A	1	0.794	27	1	1	0.457	0.01	0.04	A
116.00-115.75			B	1	0.738		1	1	0.457			
			C	1	0.65		1	1	0.457			
L12	0.12	0.67	A	1	0.803	27	1	1	9.343	0.23	0.05	A
115.75-110.75			B	1	0.748		1	1	9.343			
			C	1	0.65		1	1	9.343			
L13	0.12	0.68	A	1	0.79	27	1	1	9.711	0.23	0.05	A
110.75-105.75			B	1	0.737		1	1	9.711			
			C	1	0.65		1	1	9.711			
L14	0.18	1.02	A	1	0.775	27	1	1	14.733	0.34	0.05	A
105.75-98.50			B	1	0.724		1	1	14.733			
			C	1	0.65		1	1	14.733			
L15	0.04	0.77	A	1	0.77	26	1	1	3.095	0.07	0.05	A
98.50-97.00			B	1	0.72		1	1	3.095			
			C	1	0.65		1	1	3.095			
L16	0.01	0.05	A	1	0.768	26	1	1	0.519	0.01	0.05	A
97.00-96.75			B	1	0.719		1	1	0.519			
			C	1	0.65		1	1	0.519			
L17	0.07	0.52	A	1	0.763	26	1	1	5.808	0.13	0.05	A
96.75-93.98			B	1	0.714		1	1	5.808			
			C	1	0.65		1	1	5.808			
L18	0.01	0.05	A	1	0.76	26	1	1	0.530	0.01	0.05	A
93.98-93.73			B	1	0.711		1	1	0.530			
			C	1	0.65		1	1	0.530			
L19	0.06	0.42	A	1	0.756	26	1	1	4.766	0.10	0.05	A
93.73-91.50			B	1	0.708		1	1	4.766			
			C	1	0.65		1	1	4.766			
L20	0.01	0.04	A	1	0.752	26	1	1	0.539	0.01	0.05	A
91.50-91.25			B	1	0.704		1	1	0.539			
			C	1	0.65		1	1	0.539			
L21	0.02	0.16	A	1	0.75	26	1	1	2.167	0.05	0.05	A
91.25-90.25			B	1	0.703		1	1	2.167			
			C	1	0.65		1	1	2.167			
L22	0.01	0.06	A	1	0.75	26	1	1	0.543	0.01	0.05	A
90.25-90.00			B	1	0.703		1	1	0.543			
			C	1	0.65		1	1	0.543			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L23	0.02	0.23	A	1	0.785	26	1	1	2.181	0.05	0.05	A
90.00-89.00			B	1	0.738		1	1	2.181			
			C	1	0.65		1	1	2.181			
L24	0.01	0.05	A	1	0.786	26	1	1	0.548	0.01	0.05	A
89.00-88.75			B	1	0.739		1	1	0.548			
			C	1	0.65		1	1	0.548			
L25	0.12	1.00	A	1	0.78	26	1	1	11.152	0.25	0.05	A
88.75-83.75			B	1	0.735		1	1	11.152			
			C	1	0.65		1	1	11.152			
L26	0.09	0.74	A	1	0.781	26	1	1	8.420	0.18	0.05	A
83.75-80.08			B	1	0.737		1	1	8.420			
			C	1	0.65		1	1	8.420			
L27	0.01	0.06	A	1	0.804	25	1	1	0.580	0.01	0.05	A
80.08-79.83			B	1	0.76		1	1	0.580			
			C	1	0.65		1	1	0.580			
L28	0.12	1.27	A	1	0.798	25	1	1	11.797	0.26	0.05	A
79.83-74.83			B	1	0.755		1	1	11.797			
			C	1	0.65		1	1	11.797			
L29	0.03	0.34	A	1	0.792	25	1	1	3.200	0.07	0.05	A
74.83-73.50			B	1	0.749		1	1	3.200			
			C	1	0.65		1	1	3.200			
L30	0.01	0.08	A	1	0.791	25	1	1	0.604	0.01	0.05	A
73.50-73.25			B	1	0.748		1	1	0.604			
			C	1	0.65		1	1	0.604			
L31	0.06	0.68	A	1	0.788	25	1	1	5.475	0.12	0.05	A
73.25-71.00			B	1	0.746		1	1	5.475			
			C	1	0.65		1	1	5.475			
L32	0.01	0.07	A	1	0.785	25	1	1	0.613	0.01	0.05	A
71.00-70.75			B	1	0.744		1	1	0.613			
			C	1	0.65		1	1	0.613			
L33	0.12	1.37	A	1	0.751	25	1	1	12.459	0.25	0.05	A
70.75-65.75			B	1	0.709		1	1	12.459			
			C	1	0.65		1	1	12.459			
L34	0.07	0.76	A	1	0.706	24	1	1	7.009	0.13	0.05	A
65.75-63.00			B	1	0.665		1	1	7.009			
			C	1	0.65		1	1	7.009			
L35	0.01	0.07	A	1	0.701	24	1	1	0.643	0.01	0.05	A
63.00-62.75			B	1	0.661		1	1	0.643			
			C	1	0.65		1	1	0.643			
L36	0.02	0.18	A	1	0.701	24	1	1	1.727	0.03	0.05	B
62.75-62.08			B	1	0.702		1	1	1.727			
			C	1	0.65		1	1	1.727			
L37	0.01	0.06	A	1	0.7	24	1	1	0.647	0.01	0.05	B
62.08-61.83			B	1	0.706		1	1	0.647			
			C	1	0.65		1	1	0.647			
L38	0.03	0.28	A	1	0.687	24	1	1	3.013	0.06	0.05	B
61.83-60.67			B	1	0.694		1	1	3.013			
			C	1	0.65		1	1	3.013			
L39	0.01	0.06	A	1	0.665	24	1	1	0.652	0.01	0.05	B
60.67-60.42			B	1	0.672		1	1	0.652			
			C	1	0.65		1	1	0.652			
L40	0.04	0.34	A	1	0.664	24	1	1	3.720	0.07	0.05	B
60.42-59.00			B	1	0.671		1	1	3.720			
			C	1	0.65		1	1	3.720			
L41	0.01	0.06	A	1	0.663	24	1	1	0.658	0.01	0.05	B
59.00-58.75			B	1	0.67		1	1	0.658			
			C	1	0.65		1	1	0.658			
L42	0.12	1.22	A	1	0.66	24	1	1	13.349	0.23	0.05	B
58.75-53.75			B	1	0.667		1	1	13.349			
			C	1	0.65		1	1	13.349			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L43	0.13	1.32	A	1	0.655	23	1	1	14.410	0.24	0.05	B
53.75-48.50			B	1	0.661		1	1	14.410			
			C	1	0.65		1	1	14.410			
L44	0.02	1.59	A	1	0.654	23	1	1	2.747	0.05	0.05	B
48.50-47.50			B	1	0.66		1	1	2.747			
			C	1	0.65		1	1	2.747			
L45	0.04	0.49	A	1	0.652	23	1	1	4.843	0.08	0.05	B
47.50-45.75			B	1	0.658		1	1	4.843			
			C	1	0.65		1	1	4.843			
L46	0.01	0.07	A	1	0.651	23	1	1	0.695	0.01	0.05	B
45.75-45.50			B	1	0.657		1	1	0.695			
			C	1	0.65		1	1	0.695			
L47	0.01	0.14	A	1	0.651	23	1	1	1.394	0.02	0.05	B
45.50-45.00			B	1	0.657		1	1	1.394			
			C	1	0.65		1	1	1.394			
L48	0.01	0.08	A	1	0.692	22	1	1	0.698	0.01	0.05	B
45.00-44.75			B	1	0.698		1	1	0.698			
			C	1	0.65		1	1	0.698			
L49	0.03	0.39	A	1	0.691	22	1	1	3.504	0.06	0.05	B
44.75-43.50			B	1	0.698		1	1	3.504			
			C	1	0.65		1	1	3.504			
L50	0.01	0.08	A	1	0.691	22	1	1	0.703	0.01	0.05	B
43.50-43.25			B	1	0.697		1	1	0.703			
			C	1	0.65		1	1	0.703			
L51	0.12	1.64	A	1	0.687	22	1	1	14.256	0.24	0.05	B
43.25-38.25			B	1	0.693		1	1	14.256			
			C	1	0.65		1	1	14.256			
L52	0.12	1.66	A	1	0.682	21	1	1	14.622	0.24	0.05	B
38.25-33.25			B	1	0.687		1	1	14.622			
			C	1	0.65		1	1	14.622			
L53	0.07	0.92	A	1	0.677	21	1	1	8.198	0.13	0.05	B
33.25-30.50			B	1	0.683		1	1	8.198			
			C	1	0.65		1	1	8.198			
L54	0.01	0.09	A	1	0.65	21	1	1	0.751	0.01	0.04	C
30.50-30.25			B	1	0.65		1	1	0.751			
			C	1	0.65		1	1	0.751			
L55	0.01	0.20	A	1	0.65	21	1	1	1.745	0.03	0.04	C
30.25-29.67			B	1	0.65		1	1	1.745			
			C	1	0.65		1	1	1.745			
L56	0.01	0.08	A	1	0.65	21	1	1	0.754	0.01	0.04	C
29.67-29.42			B	1	0.65		1	1	0.754			
			C	1	0.65		1	1	0.754			
L57	0.04	0.43	A	1	0.65	20	1	1	4.303	0.06	0.04	C
29.42-28.00			B	1	0.65		1	1	4.303			
			C	1	0.65		1	1	4.303			
L58	0.01	0.08	A	1	0.65	20	1	1	0.760	0.01	0.04	C
28.00-27.75			B	1	0.65		1	1	0.760			
			C	1	0.65		1	1	0.760			
L59	0.02	0.27	A	1	0.666	20	1	1	2.530	0.04	0.05	A
27.75-26.92			B	1	0.65		1	1	2.530			
			C	1	0.65		1	1	2.530			
L60	0.01	0.08	A	1	0.67	20	1	1	0.764	0.01	0.05	A
26.92-26.67			B	1	0.65		1	1	0.764			
			C	1	0.65		1	1	0.764			
L61	0.00	0.05	A	1	0.67	20	1	1	0.520	0.01	0.05	A
26.67-26.50			B	1	0.65		1	1	0.520			
			C	1	0.65		1	1	0.520			
L62	0.01	0.07	A	1	0.67	20	1	1	0.766	0.01	0.05	A
26.50-26.25			B	1	0.65		1	1	0.766			
			C	1	0.65		1	1	0.766			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L63	0.03	0.39	A	1	0.667	20	1	1	4.089	0.06	0.05	A
26.25-24.92			B	1	0.65		1	1	4.089			
			C	1	0.65		1	1	4.089			
L64	0.01	0.08	A	1	0.679	20	1	1	0.772	0.01	0.05	A
24.92-24.67			B	1	0.65		1	1	0.772			
			C	1	0.654		1	1	0.772			
L65	0.06	0.75	A	1	0.678	20	1	1	7.767	0.11	0.05	A
24.67-22.17			B	1	0.65		1	1	7.767			
			C	1	0.652		1	1	7.767			
L66	0.01	0.08	A	1	0.677	19	1	1	0.781	0.01	0.05	A
22.17-21.92			B	1	0.65		1	1	0.781			
			C	1	0.651		1	1	0.781			
L67	0.12	1.64	A	1	0.674	19	1	1	15.823	0.22	0.04	A
21.92-16.92			B	1	0.65		1	1	15.823			
			C	1	0.65		1	1	15.823			
L68	0.12	1.65	A	1	0.669	18	1	1	16.189	0.21	0.04	A
16.92-11.92			B	1	0.65		1	1	16.189			
			C	1	0.65		1	1	16.189			
L69	0.10	1.67	A	1	0.65	18	1	1	16.554	0.21	0.04	C
11.92-6.92			B	1	0.65		1	1	16.554			
			C	1	0.65		1	1	16.554			
L70 6.92-1.92	0.00	1.68	A	1	0.65	18	1	1	16.920	0.22	0.04	C
			B	1	0.65		1	1	16.920			
			C	1	0.65		1	1	16.920			
L71 1.92-0.00	0.00	0.65	A	1	0.65	18	1	1	6.595	0.08	0.04	C
			B	1	0.65		1	1	6.595			
			C	1	0.65		1	1	6.595			
Sum Weight:	3.27	33.40						OTM	466.05 kip-ft	6.54		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L1	0.04	0.16	A	1	0.65	29	1	1	6.940	0.14	0.03	C
149.00-144.00			B	1	0.65		1	1	6.940			
			C	1	0.65		1	1	6.940			
L2	0.06	0.17	A	1	0.65	29	1	1	7.306	0.15	0.03	C
144.00-139.00			B	1	0.65		1	1	7.306			
			C	1	0.65		1	1	7.306			
L3	0.09	0.18	A	1	0.65	28	1	1	7.672	0.16	0.03	B
139.00-134.00			B	1	0.665		1	1	7.672			
			C	1	0.65		1	1	7.672			
L4	0.09	0.19	A	1	0.65	28	1	1	8.038	0.16	0.03	B
134.00-129.00			B	1	0.655		1	1	8.038			
			C	1	0.65		1	1	8.038			
L5	0.10	0.18	A	1	0.65	28	1	1	7.547	0.15	0.03	C
129.00-124.50			B	1	0.65		1	1	7.547			
			C	1	0.65		1	1	7.547			
L6	0.01	0.02	A	1	0.65	28	1	1	0.427	0.01	0.03	B
124.50-124.25			B	1	0.65		1	1	0.427			
			C	1	0.65		1	1	0.427			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L7	0.12	0.36	A	1	0.65	28	1	1	8.742	0.17	0.03	B
124.25-119.25			B	1	0.652		1	1	8.742			
			C	1	0.65		1	1	8.742			
L8	0.02	0.05	A	1	0.663	28	1	1	1.343	0.03	0.04	B
119.25-118.50			B	1	0.684		1	1	1.343			
			C	1	0.65		1	1	1.343			
L9	0.01	0.03	A	1	0.663	28	1	1	0.448	0.01	0.04	B
118.50-118.25			B	1	0.683		1	1	0.448			
			C	1	0.65		1	1	0.448			
L10	0.06	0.30	A	1	0.661	28	1	1	4.076	0.08	0.04	B
118.25-116.00			B	1	0.681		1	1	4.076			
			C	1	0.65		1	1	4.076			
L11	0.01	0.03	A	1	0.652	27	1	1	0.457	0.01	0.04	B
116.00-115.75			B	1	0.672		1	1	0.457			
			C	1	0.65		1	1	0.457			
L12	0.12	0.67	A	1	0.65	27	1	1	9.343	0.19	0.04	B
115.75-110.75			B	1	0.668		1	1	9.343			
			C	1	0.65		1	1	9.343			
L13	0.12	0.68	A	1	0.65	27	1	1	9.711	0.19	0.04	B
110.75-105.75			B	1	0.66		1	1	9.711			
			C	1	0.65		1	1	9.711			
L14	0.18	1.02	A	1	0.65	27	1	1	14.733	0.28	0.04	B
105.75-98.50			B	1	0.651		1	1	14.733			
			C	1	0.65		1	1	14.733			
L15	0.04	0.77	A	1	0.669	26	1	1	3.095	0.06	0.04	B
98.50-97.00			B	1	0.687		1	1	3.095			
			C	1	0.65		1	1	3.095			
L16	0.01	0.05	A	1	0.688	26	1	1	0.519	0.01	0.04	B
97.00-96.75			B	1	0.705		1	1	0.519			
			C	1	0.65		1	1	0.519			
L17	0.07	0.52	A	1	0.685	26	1	1	5.808	0.12	0.04	B
96.75-93.98			B	1	0.703		1	1	5.808			
			C	1	0.65		1	1	5.808			
L18	0.01	0.05	A	1	0.683	26	1	1	0.530	0.01	0.04	B
93.98-93.73			B	1	0.7		1	1	0.530			
			C	1	0.65		1	1	0.530			
L19	0.06	0.42	A	1	0.675	26	1	1	4.766	0.10	0.04	B
93.73-91.50			B	1	0.692		1	1	4.766			
			C	1	0.65		1	1	4.766			
L20	0.01	0.04	A	1	0.669	26	1	1	0.539	0.01	0.04	B
91.50-91.25			B	1	0.686		1	1	0.539			
			C	1	0.65		1	1	0.539			
L21	0.02	0.16	A	1	0.668	26	1	1	2.167	0.04	0.04	B
91.25-90.25			B	1	0.685		1	1	2.167			
			C	1	0.65		1	1	2.167			
L22	0.01	0.06	A	1	0.668	26	1	1	0.543	0.01	0.04	B
90.25-90.00			B	1	0.684		1	1	0.543			
			C	1	0.65		1	1	0.543			
L23	0.02	0.23	A	1	0.667	26	1	1	2.181	0.04	0.04	B
90.00-89.00			B	1	0.683		1	1	2.181			
			C	1	0.65		1	1	2.181			
L24	0.01	0.05	A	1	0.666	26	1	1	0.548	0.01	0.04	B
89.00-88.75			B	1	0.682		1	1	0.548			
			C	1	0.65		1	1	0.548			
L25	0.12	1.00	A	1	0.65	26	1	1	11.152	0.21	0.04	C
88.75-83.75			B	1	0.65		1	1	11.152			
			C	1	0.65		1	1	11.152			
L26	0.09	0.74	A	1	0.65	26	1	1	8.420	0.15	0.04	C
83.75-80.08			B	1	0.65		1	1	8.420			
			C	1	0.65		1	1	8.420			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L27	0.01	0.06	A	1	0.654	25	1	1	0.580	0.01	0.04	A
80.08-79.83			B	1	0.65		1	1	0.580			
			C	1	0.65		1	1	0.580			
L28	0.12	1.27	A	1	0.653	25	1	1	11.797	0.21	0.04	A
79.83-74.83			B	1	0.65		1	1	11.797			
			C	1	0.65		1	1	11.797			
L29	0.03	0.34	A	1	0.714	25	1	1	3.200	0.06	0.05	A
74.83-73.50			B	1	0.679		1	1	3.200			
			C	1	0.65		1	1	3.200			
L30	0.01	0.08	A	1	0.713	25	1	1	0.604	0.01	0.05	A
73.50-73.25			B	1	0.678		1	1	0.604			
			C	1	0.65		1	1	0.604			
L31	0.06	0.68	A	1	0.711	25	1	1	5.475	0.11	0.05	A
73.25-71.00			B	1	0.676		1	1	5.475			
			C	1	0.65		1	1	5.475			
L32	0.01	0.07	A	1	0.709	25	1	1	0.613	0.01	0.05	A
71.00-70.75			B	1	0.675		1	1	0.613			
			C	1	0.65		1	1	0.613			
L33	0.12	1.37	A	1	0.705	25	1	1	12.459	0.24	0.05	A
70.75-65.75			B	1	0.671		1	1	12.459			
			C	1	0.65		1	1	12.459			
L34	0.07	0.76	A	1	0.693	24	1	1	7.009	0.13	0.05	A
65.75-63.00			B	1	0.66		1	1	7.009			
			C	1	0.65		1	1	7.009			
L35	0.01	0.07	A	1	0.69	24	1	1	0.643	0.01	0.05	A
63.00-62.75			B	1	0.657		1	1	0.643			
			C	1	0.65		1	1	0.643			
L36	0.02	0.18	A	1	0.69	24	1	1	1.727	0.03	0.05	A
62.75-62.08			B	1	0.657		1	1	1.727			
			C	1	0.65		1	1	1.727			
L37	0.01	0.06	A	1	0.689	24	1	1	0.647	0.01	0.05	A
62.08-61.83			B	1	0.656		1	1	0.647			
			C	1	0.65		1	1	0.647			
L38	0.03	0.28	A	1	0.689	24	1	1	3.013	0.05	0.05	A
61.83-60.67			B	1	0.655		1	1	3.013			
			C	1	0.65		1	1	3.013			
L39	0.01	0.06	A	1	0.703	24	1	1	0.652	0.01	0.05	A
60.67-60.42			B	1	0.654		1	1	0.652			
			C	1	0.65		1	1	0.652			
L40	0.04	0.34	A	1	0.701	24	1	1	3.720	0.07	0.05	A
60.42-59.00			B	1	0.653		1	1	3.720			
			C	1	0.65		1	1	3.720			
L41	0.01	0.06	A	1	0.7	24	1	1	0.658	0.01	0.05	A
59.00-58.75			B	1	0.653		1	1	0.658			
			C	1	0.65		1	1	0.658			
L42	0.12	1.22	A	1	0.697	24	1	1	13.349	0.24	0.05	A
58.75-53.75			B	1	0.65		1	1	13.349			
			C	1	0.65		1	1	13.349			
L43	0.13	1.32	A	1	0.705	23	1	1	14.410	0.26	0.05	A
53.75-48.50			B	1	0.65		1	1	14.410			
			C	1	0.65		1	1	14.410			
L44	0.02	1.59	A	1	0.746	23	1	1	2.747	0.05	0.05	A
48.50-47.50			B	1	0.65		1	1	2.747			
			C	1	0.65		1	1	2.747			
L45	0.04	0.49	A	1	0.743	23	1	1	4.843	0.09	0.05	A
47.50-45.75			B	1	0.65		1	1	4.843			
			C	1	0.65		1	1	4.843			
L46	0.01	0.07	A	1	0.741	23	1	1	0.695	0.01	0.05	A
45.75-45.50			B	1	0.65		1	1	0.695			
			C	1	0.65		1	1	0.695			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L47	0.01	0.14	A	1	0.741	23	1	1	1.394	0.03	0.05	A
45.50-45.00			B	1	0.65		1	1	1.394			
			C	1	0.65		1	1	1.394			
L48	0.01	0.08	A	1	0.74	22	1	1	0.698	0.01	0.05	A
45.00-44.75			B	1	0.65		1	1	0.698			
			C	1	0.65		1	1	0.698			
L49	0.03	0.39	A	1	0.739	22	1	1	3.504	0.06	0.05	A
44.75-43.50			B	1	0.65		1	1	3.504			
			C	1	0.65		1	1	3.504			
L50	0.01	0.08	A	1	0.738	22	1	1	0.703	0.01	0.05	A
43.50-43.25			B	1	0.65		1	1	0.703			
			C	1	0.65		1	1	0.703			
L51	0.12	1.64	A	1	0.734	22	1	1	14.256	0.25	0.05	A
43.25-38.25			B	1	0.65		1	1	14.256			
			C	1	0.65		1	1	14.256			
L52	0.12	1.66	A	1	0.727	21	1	1	14.622	0.25	0.05	A
38.25-33.25			B	1	0.65		1	1	14.622			
			C	1	0.65		1	1	14.622			
L53	0.07	0.92	A	1	0.72	21	1	1	8.198	0.14	0.05	A
33.25-30.50			B	1	0.65		1	1	8.198			
			C	1	0.65		1	1	8.198			
L54	0.01	0.09	A	1	0.658	21	1	1	0.751	0.01	0.05	B
30.50-30.25			B	1	0.697		1	1	0.751			
			C	1	0.65		1	1	0.751			
L55	0.01	0.20	A	1	0.658	21	1	1	1.745	0.03	0.05	B
30.25-29.67			B	1	0.697		1	1	1.745			
			C	1	0.65		1	1	1.745			
L56	0.01	0.08	A	1	0.657	21	1	1	0.754	0.01	0.05	B
29.67-29.42			B	1	0.696		1	1	0.754			
			C	1	0.65		1	1	0.754			
L57	0.04	0.43	A	1	0.656	20	1	1	4.303	0.07	0.05	B
29.42-28.00			B	1	0.695		1	1	4.303			
			C	1	0.65		1	1	4.303			
L58	0.01	0.08	A	1	0.656	20	1	1	0.760	0.01	0.05	B
28.00-27.75			B	1	0.694		1	1	0.760			
			C	1	0.65		1	1	0.760			
L59	0.02	0.27	A	1	0.656	20	1	1	2.530	0.04	0.05	B
27.75-26.92			B	1	0.694		1	1	2.530			
			C	1	0.65		1	1	2.530			
L60	0.01	0.08	A	1	0.655	20	1	1	0.764	0.01	0.05	B
26.92-26.67			B	1	0.694		1	1	0.764			
			C	1	0.65		1	1	0.764			
L61	0.00	0.05	A	1	0.655	20	1	1	0.520	0.01	0.05	B
26.67-26.50			B	1	0.693		1	1	0.520			
			C	1	0.65		1	1	0.520			
L62	0.01	0.07	A	1	0.655	20	1	1	0.766	0.01	0.05	B
26.50-26.25			B	1	0.693		1	1	0.766			
			C	1	0.65		1	1	0.766			
L63	0.03	0.39	A	1	0.65	20	1	1	4.089	0.06	0.05	B
26.25-24.92			B	1	0.692		1	1	4.089			
			C	1	0.65		1	1	4.089			
L64	0.01	0.08	A	1	0.65	20	1	1	0.772	0.01	0.05	B
24.92-24.67			B	1	0.692		1	1	0.772			
			C	1	0.65		1	1	0.772			
L65	0.06	0.75	A	1	0.65	20	1	1	7.767	0.12	0.05	B
24.67-22.17			B	1	0.69		1	1	7.767			
			C	1	0.65		1	1	7.767			
L66	0.01	0.08	A	1	0.65	19	1	1	0.781	0.01	0.05	B
22.17-21.92			B	1	0.689		1	1	0.781			
			C	1	0.65		1	1	0.781			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L67	0.12	1.64	A	1	0.65	19	1	1	15.823	0.23	0.05	B
21.92-16.92			B	1	0.686		1	1	15.823			
			C	1	0.65		1	1	15.823			
L68	0.12	1.65	A	1	0.65	18	1	1	16.189	0.22	0.04	B
16.92-11.92			B	1	0.681		1	1	16.189			
			C	1	0.65		1	1	16.189			
L69	0.10	1.67	A	1	0.65	18	1	1	16.554	0.21	0.04	B
11.92-6.92			B	1	0.655		1	1	16.554			
			C	1	0.65		1	1	16.554			
L70 6.92-1.92	0.00	1.68	A	1	0.65	18	1	1	16.920	0.22	0.04	C
			B	1	0.65		1	1	16.920			
			C	1	0.65		1	1	16.920			
L71 1.92-0.00	0.00	0.65	A	1	0.65	18	1	1	6.595	0.08	0.04	C
			B	1	0.65		1	1	6.595			
			C	1	0.65		1	1	6.595			
Sum Weight:	3.27	33.40						OTM	433.97 kip-ft	6.27		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L1	0.07	0.36	A	1	1.2	8	1	1	8.391	0.09	0.02	C
149.00-144.00			B	1	1.2		1	1	8.391			
			C	1	1.2		1	1	8.391			
L2	0.09	0.38	A	1	1.2	8	1	1	8.752	0.10	0.02	C
144.00-139.00			B	1	1.2		1	1	8.752			
			C	1	1.2		1	1	8.752			
L3	0.17	0.39	A	1	1.2	8	1	1	9.113	0.10	0.02	C
139.00-134.00			B	1	1.2		1	1	9.113			
			C	1	1.2		1	1	9.113			
L4	0.17	0.41	A	1	1.2	8	1	1	9.473	0.10	0.02	C
134.00-129.00			B	1	1.2		1	1	9.473			
			C	1	1.2		1	1	9.473			
L5	0.28	0.38	A	1	1.2	8	1	1	8.834	0.13	0.03	C
129.00-124.50			B	1	1.2		1	1	8.834			
			C	1	1.2		1	1	8.834			
L6	0.02	0.03	A	1	1.2	8	1	1	0.499	0.01	0.03	C
124.50-124.25			B	1	1.2		1	1	0.499			
			C	1	1.2		1	1	0.499			
L7	0.47	0.59	A	1	1.2	8	1	1	10.166	0.16	0.03	C
124.25-119.25			B	1	1.2		1	1	10.166			
			C	1	1.2		1	1	10.166			
L8	0.09	0.09	A	1	1.2	8	1	1	1.556	0.03	0.04	C
119.25-118.50			B	1	1.2		1	1	1.556			
			C	1	1.2		1	1	1.556			
L9	0.03	0.05	A	1	1.2	8	1	1	0.519	0.01	0.04	C
118.50-118.25			B	1	1.2		1	1	0.519			
			C	1	1.2		1	1	0.519			
L10	0.28	0.41	A	1	1.2	8	1	1	4.715	0.08	0.04	C
118.25-116.00			B	1	1.2		1	1	4.715			
			C	1	1.2		1	1	4.715			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L11	0.03	0.05	A	1	1.2	8	1	1	0.528	0.01	0.03	C
116.00-115.75			B	1	1.2		1	1	0.528			
			C	1	1.2		1	1	0.528			
L12	0.61	0.92	A	1	1.2	8	1	1	10.757	0.18	0.04	C
115.75-110.75			B	1	1.2		1	1	10.757			
			C	1	1.2		1	1	10.757			
L13	0.61	0.94	A	1	1.2	8	1	1	11.118	0.18	0.04	C
110.75-105.75			B	1	1.2		1	1	11.118			
			C	1	1.2		1	1	11.118			
L14	0.87	1.40	A	1	1.2	8	1	1	16.762	0.26	0.04	C
105.75-98.50			B	1	1.2		1	1	16.762			
			C	1	1.2		1	1	16.762			
L15	0.21	0.86	A	1	1.2	8	1	1	3.515	0.06	0.04	C
98.50-97.00			B	1	1.2		1	1	3.515			
			C	1	1.2		1	1	3.515			
L16	0.04	0.06	A	1	1.2	8	1	1	0.588	0.01	0.04	C
97.00-96.75			B	1	1.2		1	1	0.588			
			C	1	1.2		1	1	0.588			
L17	0.41	0.67	A	1	1.2	8	1	1	6.578	0.10	0.04	C
96.75-93.98			B	1	1.2		1	1	6.578			
			C	1	1.2		1	1	6.578			
L18	0.04	0.06	A	1	1.2	8	1	1	0.599	0.01	0.04	C
93.98-93.73			B	1	1.2		1	1	0.599			
			C	1	1.2		1	1	0.599			
L19	0.34	0.55	A	1	1.2	8	1	1	5.384	0.08	0.04	C
93.73-91.50			B	1	1.2		1	1	5.384			
			C	1	1.2		1	1	5.384			
L20	0.04	0.05	A	1	1.2	8	1	1	0.609	0.01	0.04	C
91.50-91.25			B	1	1.2		1	1	0.609			
			C	1	1.2		1	1	0.609			
L21	0.16	0.22	A	1	1.2	8	1	1	2.443	0.04	0.04	C
91.25-90.25			B	1	1.2		1	1	2.443			
			C	1	1.2		1	1	2.443			
L22	0.04	0.07	A	1	1.2	8	1	1	0.612	0.01	0.04	C
90.25-90.00			B	1	1.2		1	1	0.612			
			C	1	1.2		1	1	0.612			
L23	0.18	0.29	A	1	1.2	8	1	1	2.457	0.04	0.04	C
90.00-89.00			B	1	1.2		1	1	2.457			
			C	1	1.2		1	1	2.457			
L24	0.05	0.06	A	1	1.2	8	1	1	0.617	0.01	0.04	C
89.00-88.75			B	1	1.2		1	1	0.617			
			C	1	1.2		1	1	0.617			
L25	0.79	1.29	A	1	1.2	7	1	1	12.528	0.20	0.04	C
88.75-83.75			B	1	1.2		1	1	12.528			
			C	1	1.2		1	1	12.528			
L26	0.61	0.96	A	1	1.2	7	1	1	9.425	0.15	0.04	C
83.75-80.08			B	1	1.2		1	1	9.425			
			C	1	1.2		1	1	9.425			
L27	0.05	0.08	A	1	1.2	7	1	1	0.648	0.01	0.04	C
80.08-79.83			B	1	1.2		1	1	0.648			
			C	1	1.2		1	1	0.648			
L28	1.02	1.57	A	1	1.2	7	1	1	13.158	0.21	0.04	C
79.83-74.83			B	1	1.2		1	1	13.158			
			C	1	1.2		1	1	13.158			
L29	0.31	0.42	A	1	1.2	7	1	1	3.560	0.06	0.04	C
74.83-73.50			B	1	1.2		1	1	3.560			
			C	1	1.2		1	1	3.560			
L30	0.06	0.09	A	1	1.2	7	1	1	0.671	0.01	0.04	C
73.50-73.25			B	1	1.2		1	1	0.671			
			C	1	1.2		1	1	0.671			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L31	0.52	0.82	A	1	1.2	7	1	1	6.083	0.09	0.04	C
73.25-71.00			B	1	1.2		1	1	6.083			
			C	1	1.2		1	1	6.083			
L32	0.06	0.08	A	1	1.2	7	1	1	0.681	0.01	0.04	C
71.00-70.75			B	1	1.2		1	1	0.681			
			C	1	1.2		1	1	0.681			
L33	1.03	1.68	A	1	1.2	7	1	1	13.803	0.20	0.04	C
70.75-65.75			B	1	1.2		1	1	13.803			
			C	1	1.2		1	1	13.803			
L34	0.48	0.94	A	1	1.2	7	1	1	7.744	0.10	0.04	C
65.75-63.00			B	1	1.2		1	1	7.744			
			C	1	1.2		1	1	7.744			
L35	0.04	0.08	A	1	1.2	7	1	1	0.710	0.01	0.04	C
63.00-62.75			B	1	1.2		1	1	0.710			
			C	1	1.2		1	1	0.710			
L36	0.12	0.22	A	1	1.2	7	1	1	1.906	0.03	0.04	C
62.75-62.08			B	1	1.2		1	1	1.906			
			C	1	1.2		1	1	1.906			
L37	0.05	0.08	A	1	1.2	7	1	1	0.713	0.01	0.04	C
62.08-61.83			B	1	1.2		1	1	0.713			
			C	1	1.2		1	1	0.713			
L38	0.20	0.35	A	1	1.2	7	1	1	3.321	0.04	0.04	C
61.83-60.67			B	1	1.2		1	1	3.321			
			C	1	1.2		1	1	3.321			
L39	0.04	0.08	A	1	1.2	7	1	1	0.718	0.01	0.04	C
60.67-60.42			B	1	1.2		1	1	0.718			
			C	1	1.2		1	1	0.718			
L40	0.23	0.43	A	1	1.2	7	1	1	4.097	0.05	0.04	C
60.42-59.00			B	1	1.2		1	1	4.097			
			C	1	1.2		1	1	4.097			
L41	0.04	0.08	A	1	1.2	7	1	1	0.724	0.01	0.04	C
59.00-58.75			B	1	1.2		1	1	0.724			
			C	1	1.2		1	1	0.724			
L42	0.79	1.55	A	1	1.2	7	1	1	14.667	0.18	0.04	C
58.75-53.75			B	1	1.2		1	1	14.667			
			C	1	1.2		1	1	14.667			
L43	0.81	1.67	A	1	1.2	7	1	1	15.781	0.19	0.04	C
53.75-48.50			B	1	1.2		1	1	15.781			
			C	1	1.2		1	1	15.781			
L44	0.15	1.66	A	1	1.2	7	1	1	3.008	0.03	0.03	C
48.50-47.50			B	1	1.2		1	1	3.008			
			C	1	1.2		1	1	3.008			
L45	0.26	0.61	A	1	1.2	7	1	1	5.296	0.06	0.03	C
47.50-45.75			B	1	1.2		1	1	5.296			
			C	1	1.2		1	1	5.296			
L46	0.04	0.09	A	1	1.2	7	1	1	0.760	0.01	0.03	C
45.75-45.50			B	1	1.2		1	1	0.760			
			C	1	1.2		1	1	0.760			
L47	0.07	0.17	A	1	1.2	7	1	1	1.523	0.02	0.03	C
45.50-45.00			B	1	1.2		1	1	1.523			
			C	1	1.2		1	1	1.523			
L48	0.04	0.09	A	1	1.2	7	1	1	0.762	0.01	0.04	C
45.00-44.75			B	1	1.2		1	1	0.762			
			C	1	1.2		1	1	0.762			
L49	0.22	0.47	A	1	1.2	6	1	1	3.826	0.05	0.04	C
44.75-43.50			B	1	1.2		1	1	3.826			
			C	1	1.2		1	1	3.826			
L50	0.04	0.10	A	1	1.2	6	1	1	0.767	0.01	0.04	C
43.50-43.25			B	1	1.2		1	1	0.767			
			C	1	1.2		1	1	0.767			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L51	0.88	1.98	A	1	1.2	6	1	1	15.533	0.18	0.04	C
43.25-38.25			B	1	1.2		1	1	15.533			
			C	1	1.2		1	1	15.533			
L52	0.87	2.00	A	1	1.2	6	1	1	15.882	0.18	0.04	C
38.25-33.25			B	1	1.2		1	1	15.882			
			C	1	1.2		1	1	15.882			
L53	0.47	1.11	A	1	1.2	6	1	1	8.883	0.10	0.04	C
33.25-30.50			B	1	1.2		1	1	8.883			
			C	1	1.2		1	1	8.883			
L54	0.04	0.10	A	1	1.2	6	1	1	0.813	0.01	0.03	C
30.50-30.25			B	1	1.2		1	1	0.813			
			C	1	1.2		1	1	0.813			
L55	0.10	0.24	A	1	1.2	6	1	1	1.889	0.02	0.03	C
30.25-29.67			B	1	1.2		1	1	1.889			
			C	1	1.2		1	1	1.889			
L56	0.04	0.09	A	1	1.2	6	1	1	0.816	0.01	0.03	C
29.67-29.42			B	1	1.2		1	1	0.816			
			C	1	1.2		1	1	0.816			
L57	0.24	0.53	A	1	1.2	6	1	1	4.653	0.05	0.03	C
29.42-28.00			B	1	1.2		1	1	4.653			
			C	1	1.2		1	1	4.653			
L58	0.04	0.10	A	1	1.2	6	1	1	0.822	0.01	0.03	C
28.00-27.75			B	1	1.2		1	1	0.822			
			C	1	1.2		1	1	0.822			
L59	0.16	0.33	A	1	1.2	6	1	1	2.734	0.03	0.03	C
27.75-26.92			B	1	1.2		1	1	2.734			
			C	1	1.2		1	1	2.734			
L60	0.05	0.09	A	1	1.2	6	1	1	0.825	0.01	0.03	C
26.92-26.67			B	1	1.2		1	1	0.825			
			C	1	1.2		1	1	0.825			
L61	0.03	0.06	A	1	1.2	6	1	1	0.562	0.01	0.03	C
26.67-26.50			B	1	1.2		1	1	0.562			
			C	1	1.2		1	1	0.562			
L62	0.05	0.09	A	1	1.2	6	1	1	0.827	0.01	0.03	C
26.50-26.25			B	1	1.2		1	1	0.827			
			C	1	1.2		1	1	0.827			
L63	0.22	0.48	A	1	1.2	6	1	1	4.413	0.05	0.03	C
26.25-24.92			B	1	1.2		1	1	4.413			
			C	1	1.2		1	1	4.413			
L64	0.04	0.09	A	1	1.2	6	1	1	0.832	0.01	0.03	C
24.92-24.67			B	1	1.2		1	1	0.832			
			C	1	1.2		1	1	0.832			
L65	0.35	0.93	A	1	1.2	6	1	1	8.371	0.08	0.03	C
24.67-22.17			B	1	1.2		1	1	8.371			
			C	1	1.2		1	1	8.371			
L66	0.03	0.10	A	1	1.2	6	1	1	0.842	0.01	0.03	C
22.17-21.92			B	1	1.2		1	1	0.842			
			C	1	1.2		1	1	0.842			
L67	0.69	1.98	A	1	1.2	5	1	1	17.008	0.16	0.03	C
21.92-16.92			B	1	1.2		1	1	17.008			
			C	1	1.2		1	1	17.008			
L68	0.67	1.99	A	1	1.2	5	1	1	17.339	0.16	0.03	C
16.92-11.92			B	1	1.2		1	1	17.339			
			C	1	1.2		1	1	17.339			
L69	0.59	2.00	A	1	1.2	5	1	1	17.657	0.15	0.03	C
11.92-6.92			B	1	1.2		1	1	17.657			
			C	1	1.2		1	1	17.657			
L70 6.92-1.92	0.37	1.99	A	1	1.2	5	1	1	17.942	0.12	0.02	C
			B	1	1.2		1	1	17.942			
			C	1	1.2		1	1	17.942			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L71 1.92-0.00	0.09	0.76	A	1	1.2	5	1	1	6.931	0.05	0.02	C
			B	1	1.2		1	1	6.931			
			C	1	1.2		1	1	6.931			
Sum Weight:	19.36	42.01						OTM	355.20 kip-ft	4.94		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L1	0.07	0.36	A	1	1.2	8	1	1	8.391	0.09	0.02	C
149.00-144.00			B	1	1.2		1	1	8.391			
			C	1	1.2		1	1	8.391			
L2	0.09	0.38	A	1	1.2	8	1	1	8.752	0.10	0.02	C
144.00-139.00			B	1	1.2		1	1	8.752			
			C	1	1.2		1	1	8.752			
L3	0.17	0.39	A	1	1.2	8	1	1	9.113	0.10	0.02	C
139.00-134.00			B	1	1.2		1	1	9.113			
			C	1	1.2		1	1	9.113			
L4	0.17	0.41	A	1	1.2	8	1	1	9.473	0.10	0.02	C
134.00-129.00			B	1	1.2		1	1	9.473			
			C	1	1.2		1	1	9.473			
L5	0.28	0.38	A	1	1.2	8	1	1	8.834	0.13	0.03	A
129.00-124.50			B	1	1.2		1	1	8.834			
			C	1	1.2		1	1	8.834			
L6	0.02	0.03	A	1	1.2	8	1	1	0.499	0.01	0.03	A
124.50-124.25			B	1	1.2		1	1	0.499			
			C	1	1.2		1	1	0.499			
L7	0.47	0.59	A	1	1.2	8	1	1	10.166	0.16	0.03	A
124.25-119.25			B	1	1.2		1	1	10.166			
			C	1	1.2		1	1	10.166			
L8	0.09	0.09	A	1	1.2	8	1	1	1.556	0.03	0.04	A
119.25-118.50			B	1	1.2		1	1	1.556			
			C	1	1.2		1	1	1.556			
L9	0.03	0.05	A	1	1.2	8	1	1	0.519	0.01	0.04	A
118.50-118.25			B	1	1.2		1	1	0.519			
			C	1	1.2		1	1	0.519			
L10	0.28	0.41	A	1	1.2	8	1	1	4.715	0.08	0.04	A
118.25-116.00			B	1	1.2		1	1	4.715			
			C	1	1.2		1	1	4.715			
L11	0.03	0.05	A	1	1.2	8	1	1	0.528	0.01	0.03	A
116.00-115.75			B	1	1.2		1	1	0.528			
			C	1	1.2		1	1	0.528			
L12	0.61	0.92	A	1	1.2	8	1	1	10.757	0.18	0.04	A
115.75-110.75			B	1	1.2		1	1	10.757			
			C	1	1.2		1	1	10.757			
L13	0.61	0.94	A	1	1.2	8	1	1	11.118	0.18	0.04	A
110.75-105.75			B	1	1.2		1	1	11.118			
			C	1	1.2		1	1	11.118			
L14	0.87	1.40	A	1	1.2	8	1	1	16.762	0.26	0.04	A
105.75-98.50			B	1	1.2		1	1	16.762			
			C	1	1.2		1	1	16.762			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L15	0.21	0.86	A	1	1.2	8	1	1	3.515	0.06	0.04	A
98.50-97.00			B	1	1.2		1	1	3.515			
			C	1	1.2		1	1	3.515			
L16	0.04	0.06	A	1	1.2	8	1	1	0.588	0.01	0.04	A
97.00-96.75			B	1	1.2		1	1	0.588			
			C	1	1.2		1	1	0.588			
L17	0.41	0.67	A	1	1.2	8	1	1	6.578	0.10	0.04	A
96.75-93.98			B	1	1.2		1	1	6.578			
			C	1	1.2		1	1	6.578			
L18	0.04	0.06	A	1	1.2	8	1	1	0.599	0.01	0.04	A
93.98-93.73			B	1	1.2		1	1	0.599			
			C	1	1.2		1	1	0.599			
L19	0.34	0.55	A	1	1.2	8	1	1	5.384	0.08	0.04	A
93.73-91.50			B	1	1.2		1	1	5.384			
			C	1	1.2		1	1	5.384			
L20	0.04	0.05	A	1	1.2	8	1	1	0.609	0.01	0.04	A
91.50-91.25			B	1	1.2		1	1	0.609			
			C	1	1.2		1	1	0.609			
L21	0.16	0.22	A	1	1.2	8	1	1	2.443	0.04	0.04	A
91.25-90.25			B	1	1.2		1	1	2.443			
			C	1	1.2		1	1	2.443			
L22	0.04	0.07	A	1	1.2	8	1	1	0.612	0.01	0.04	A
90.25-90.00			B	1	1.2		1	1	0.612			
			C	1	1.2		1	1	0.612			
L23	0.18	0.29	A	1	1.2	8	1	1	2.457	0.04	0.04	A
90.00-89.00			B	1	1.2		1	1	2.457			
			C	1	1.2		1	1	2.457			
L24	0.05	0.06	A	1	1.2	8	1	1	0.617	0.01	0.04	A
89.00-88.75			B	1	1.2		1	1	0.617			
			C	1	1.2		1	1	0.617			
L25	0.79	1.29	A	1	1.2	7	1	1	12.528	0.20	0.04	A
88.75-83.75			B	1	1.2		1	1	12.528			
			C	1	1.2		1	1	12.528			
L26	0.61	0.96	A	1	1.2	7	1	1	9.425	0.15	0.04	A
83.75-80.08			B	1	1.2		1	1	9.425			
			C	1	1.2		1	1	9.425			
L27	0.05	0.08	A	1	1.2	7	1	1	0.648	0.01	0.04	A
80.08-79.83			B	1	1.2		1	1	0.648			
			C	1	1.2		1	1	0.648			
L28	1.02	1.57	A	1	1.2	7	1	1	13.158	0.21	0.04	A
79.83-74.83			B	1	1.2		1	1	13.158			
			C	1	1.2		1	1	13.158			
L29	0.31	0.42	A	1	1.2	7	1	1	3.560	0.06	0.04	A
74.83-73.50			B	1	1.2		1	1	3.560			
			C	1	1.2		1	1	3.560			
L30	0.06	0.09	A	1	1.2	7	1	1	0.671	0.01	0.04	A
73.50-73.25			B	1	1.2		1	1	0.671			
			C	1	1.2		1	1	0.671			
L31	0.52	0.82	A	1	1.2	7	1	1	6.083	0.09	0.04	A
73.25-71.00			B	1	1.2		1	1	6.083			
			C	1	1.2		1	1	6.083			
L32	0.06	0.08	A	1	1.2	7	1	1	0.681	0.01	0.04	A
71.00-70.75			B	1	1.2		1	1	0.681			
			C	1	1.2		1	1	0.681			
L33	1.03	1.68	A	1	1.2	7	1	1	13.803	0.20	0.04	A
70.75-65.75			B	1	1.2		1	1	13.803			
			C	1	1.2		1	1	13.803			
L34	0.48	0.94	A	1	1.2	7	1	1	7.744	0.10	0.04	A
65.75-63.00			B	1	1.2		1	1	7.744			
			C	1	1.2		1	1	7.744			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L35	0.04	0.08	A	1	1.2	7	1	1	0.710	0.01	0.04	A
63.00-62.75			B	1	1.2		1	1	0.710			
			C	1	1.2		1	1	0.710			
L36	0.12	0.22	A	1	1.2	7	1	1	1.906	0.03	0.04	A
62.75-62.08			B	1	1.2		1	1	1.906			
			C	1	1.2		1	1	1.906			
L37	0.05	0.08	A	1	1.2	7	1	1	0.713	0.01	0.04	A
62.08-61.83			B	1	1.2		1	1	0.713			
			C	1	1.2		1	1	0.713			
L38	0.20	0.35	A	1	1.2	7	1	1	3.321	0.04	0.04	A
61.83-60.67			B	1	1.2		1	1	3.321			
			C	1	1.2		1	1	3.321			
L39	0.04	0.08	A	1	1.2	7	1	1	0.718	0.01	0.04	A
60.67-60.42			B	1	1.2		1	1	0.718			
			C	1	1.2		1	1	0.718			
L40	0.23	0.43	A	1	1.2	7	1	1	4.097	0.05	0.04	A
60.42-59.00			B	1	1.2		1	1	4.097			
			C	1	1.2		1	1	4.097			
L41	0.04	0.08	A	1	1.2	7	1	1	0.724	0.01	0.04	A
59.00-58.75			B	1	1.2		1	1	0.724			
			C	1	1.2		1	1	0.724			
L42	0.79	1.55	A	1	1.2	7	1	1	14.667	0.18	0.04	A
58.75-53.75			B	1	1.2		1	1	14.667			
			C	1	1.2		1	1	14.667			
L43	0.81	1.67	A	1	1.2	7	1	1	15.781	0.19	0.04	A
53.75-48.50			B	1	1.2		1	1	15.781			
			C	1	1.2		1	1	15.781			
L44	0.15	1.66	A	1	1.2	7	1	1	3.008	0.03	0.03	A
48.50-47.50			B	1	1.2		1	1	3.008			
			C	1	1.2		1	1	3.008			
L45	0.26	0.61	A	1	1.2	7	1	1	5.296	0.06	0.03	A
47.50-45.75			B	1	1.2		1	1	5.296			
			C	1	1.2		1	1	5.296			
L46	0.04	0.09	A	1	1.2	7	1	1	0.760	0.01	0.03	A
45.75-45.50			B	1	1.2		1	1	0.760			
			C	1	1.2		1	1	0.760			
L47	0.07	0.17	A	1	1.2	7	1	1	1.523	0.02	0.03	A
45.50-45.00			B	1	1.2		1	1	1.523			
			C	1	1.2		1	1	1.523			
L48	0.04	0.09	A	1	1.2	7	1	1	0.762	0.01	0.04	A
45.00-44.75			B	1	1.2		1	1	0.762			
			C	1	1.2		1	1	0.762			
L49	0.22	0.47	A	1	1.2	6	1	1	3.826	0.05	0.04	A
44.75-43.50			B	1	1.2		1	1	3.826			
			C	1	1.2		1	1	3.826			
L50	0.04	0.10	A	1	1.2	6	1	1	0.767	0.01	0.04	A
43.50-43.25			B	1	1.2		1	1	0.767			
			C	1	1.2		1	1	0.767			
L51	0.88	1.98	A	1	1.2	6	1	1	15.533	0.18	0.04	A
43.25-38.25			B	1	1.2		1	1	15.533			
			C	1	1.2		1	1	15.533			
L52	0.87	2.00	A	1	1.2	6	1	1	15.882	0.18	0.04	A
38.25-33.25			B	1	1.2		1	1	15.882			
			C	1	1.2		1	1	15.882			
L53	0.47	1.11	A	1	1.2	6	1	1	8.883	0.10	0.04	A
33.25-30.50			B	1	1.2		1	1	8.883			
			C	1	1.2		1	1	8.883			
L54	0.04	0.10	A	1	1.2	6	1	1	0.813	0.01	0.03	A
30.50-30.25			B	1	1.2		1	1	0.813			
			C	1	1.2		1	1	0.813			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L55	0.10	0.24	A	1	1.2	6	1	1	1.889	0.02	0.03	A
30.25-29.67			B	1	1.2		1	1	1.889			
			C	1	1.2		1	1	1.889			
L56	0.04	0.09	A	1	1.2	6	1	1	0.816	0.01	0.03	A
29.67-29.42			B	1	1.2		1	1	0.816			
			C	1	1.2		1	1	0.816			
L57	0.24	0.53	A	1	1.2	6	1	1	4.653	0.05	0.03	A
29.42-28.00			B	1	1.2		1	1	4.653			
			C	1	1.2		1	1	4.653			
L58	0.04	0.10	A	1	1.2	6	1	1	0.822	0.01	0.03	A
28.00-27.75			B	1	1.2		1	1	0.822			
			C	1	1.2		1	1	0.822			
L59	0.16	0.33	A	1	1.2	6	1	1	2.734	0.03	0.03	A
27.75-26.92			B	1	1.2		1	1	2.734			
			C	1	1.2		1	1	2.734			
L60	0.05	0.09	A	1	1.2	6	1	1	0.825	0.01	0.03	A
26.92-26.67			B	1	1.2		1	1	0.825			
			C	1	1.2		1	1	0.825			
L61	0.03	0.06	A	1	1.2	6	1	1	0.562	0.01	0.03	A
26.67-26.50			B	1	1.2		1	1	0.562			
			C	1	1.2		1	1	0.562			
L62	0.05	0.09	A	1	1.2	6	1	1	0.827	0.01	0.03	A
26.50-26.25			B	1	1.2		1	1	0.827			
			C	1	1.2		1	1	0.827			
L63	0.22	0.48	A	1	1.2	6	1	1	4.413	0.05	0.03	A
26.25-24.92			B	1	1.2		1	1	4.413			
			C	1	1.2		1	1	4.413			
L64	0.04	0.09	A	1	1.2	6	1	1	0.832	0.01	0.03	A
24.92-24.67			B	1	1.2		1	1	0.832			
			C	1	1.2		1	1	0.832			
L65	0.35	0.93	A	1	1.2	6	1	1	8.371	0.08	0.03	A
24.67-22.17			B	1	1.2		1	1	8.371			
			C	1	1.2		1	1	8.371			
L66	0.03	0.10	A	1	1.2	6	1	1	0.842	0.01	0.03	A
22.17-21.92			B	1	1.2		1	1	0.842			
			C	1	1.2		1	1	0.842			
L67	0.69	1.98	A	1	1.2	5	1	1	17.008	0.16	0.03	A
21.92-16.92			B	1	1.2		1	1	17.008			
			C	1	1.2		1	1	17.008			
L68	0.67	1.99	A	1	1.2	5	1	1	17.339	0.16	0.03	A
16.92-11.92			B	1	1.2		1	1	17.339			
			C	1	1.2		1	1	17.339			
L69	0.59	2.00	A	1	1.2	5	1	1	17.657	0.15	0.03	A
11.92-6.92			B	1	1.2		1	1	17.657			
			C	1	1.2		1	1	17.657			
L70 6.92-1.92	0.37	1.99	A	1	1.2	5	1	1	17.942	0.12	0.02	C
			B	1	1.2		1	1	17.942			
			C	1	1.2		1	1	17.942			
L71 1.92-0.00	0.09	0.76	A	1	1.2	5	1	1	6.931	0.05	0.02	C
			B	1	1.2		1	1	6.931			
			C	1	1.2		1	1	6.931			
Sum Weight:	19.36	42.01						OTM	355.20 kip-ft	4.94		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L1	0.07	0.36	A	1	1.2	8	1	1	8.391	0.09	0.02	C
149.00-144.00			B	1	1.2		1	1	8.391			
			C	1	1.2		1	1	8.391			
L2	0.09	0.38	A	1	1.2	8	1	1	8.752	0.10	0.02	C
144.00-139.00			B	1	1.2		1	1	8.752			
			C	1	1.2		1	1	8.752			
L3	0.17	0.39	A	1	1.2	8	1	1	9.113	0.10	0.02	C
139.00-134.00			B	1	1.2		1	1	9.113			
			C	1	1.2		1	1	9.113			
L4	0.17	0.41	A	1	1.2	8	1	1	9.473	0.10	0.02	C
134.00-129.00			B	1	1.2		1	1	9.473			
			C	1	1.2		1	1	9.473			
L5	0.28	0.38	A	1	1.2	8	1	1	8.834	0.13	0.03	A
129.00-124.50			B	1	1.2		1	1	8.834			
			C	1	1.2		1	1	8.834			
L6	0.02	0.03	A	1	1.2	8	1	1	0.499	0.01	0.03	A
124.50-124.25			B	1	1.2		1	1	0.499			
			C	1	1.2		1	1	0.499			
L7	0.47	0.59	A	1	1.2	8	1	1	10.166	0.16	0.03	A
124.25-119.25			B	1	1.2		1	1	10.166			
			C	1	1.2		1	1	10.166			
L8	0.09	0.09	A	1	1.2	8	1	1	1.556	0.02	0.03	A
119.25-118.50			B	1	1.2		1	1	1.556			
			C	1	1.2		1	1	1.556			
L9	0.03	0.05	A	1	1.2	8	1	1	0.519	0.01	0.03	A
118.50-118.25			B	1	1.2		1	1	0.519			
			C	1	1.2		1	1	0.519			
L10	0.28	0.41	A	1	1.2	8	1	1	4.715	0.08	0.03	A
118.25-116.00			B	1	1.2		1	1	4.715			
			C	1	1.2		1	1	4.715			
L11	0.03	0.05	A	1	1.2	8	1	1	0.528	0.01	0.03	A
116.00-115.75			B	1	1.2		1	1	0.528			
			C	1	1.2		1	1	0.528			
L12	0.61	0.92	A	1	1.2	8	1	1	10.757	0.17	0.03	A
115.75-110.75			B	1	1.2		1	1	10.757			
			C	1	1.2		1	1	10.757			
L13	0.61	0.94	A	1	1.2	8	1	1	11.118	0.17	0.03	A
110.75-105.75			B	1	1.2		1	1	11.118			
			C	1	1.2		1	1	11.118			
L14	0.87	1.40	A	1	1.2	8	1	1	16.762	0.25	0.03	A
105.75-98.50			B	1	1.2		1	1	16.762			
			C	1	1.2		1	1	16.762			
L15	0.21	0.86	A	1	1.2	8	1	1	3.515	0.05	0.04	A
98.50-97.00			B	1	1.2		1	1	3.515			
			C	1	1.2		1	1	3.515			
L16	0.04	0.06	A	1	1.2	8	1	1	0.588	0.01	0.04	A
97.00-96.75			B	1	1.2		1	1	0.588			
			C	1	1.2		1	1	0.588			
L17	0.41	0.67	A	1	1.2	8	1	1	6.578	0.10	0.04	A
96.75-93.98			B	1	1.2		1	1	6.578			
			C	1	1.2		1	1	6.578			
L18	0.04	0.06	A	1	1.2	8	1	1	0.599	0.01	0.04	A
93.98-93.73			B	1	1.2		1	1	0.599			
			C	1	1.2		1	1	0.599			
L19	0.34	0.55	A	1	1.2	8	1	1	5.384	0.08	0.04	A
93.73-91.50			B	1	1.2		1	1	5.384			
			C	1	1.2		1	1	5.384			
L20	0.04	0.05	A	1	1.2	8	1	1	0.609	0.01	0.04	A
91.50-91.25			B	1	1.2		1	1	0.609			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
			C	1	1.2		1	1	0.609			
L21	0.16	0.22	A	1	1.2	8	1	1	2.443	0.04	0.04	A
91.25-90.25			B	1	1.2		1	1	2.443			
			C	1	1.2		1	1	2.443			
L22	0.04	0.07	A	1	1.2	8	1	1	0.612	0.01	0.04	A
90.25-90.00			B	1	1.2		1	1	0.612			
			C	1	1.2		1	1	0.612			
L23	0.18	0.29	A	1	1.2	8	1	1	2.457	0.04	0.04	A
90.00-89.00			B	1	1.2		1	1	2.457			
			C	1	1.2		1	1	2.457			
L24	0.05	0.06	A	1	1.2	8	1	1	0.617	0.01	0.04	A
89.00-88.75			B	1	1.2		1	1	0.617			
			C	1	1.2		1	1	0.617			
L25	0.79	1.29	A	1	1.2	7	1	1	12.528	0.18	0.04	A
88.75-83.75			B	1	1.2		1	1	12.528			
			C	1	1.2		1	1	12.528			
L26	0.61	0.96	A	1	1.2	7	1	1	9.425	0.14	0.04	A
83.75-80.08			B	1	1.2		1	1	9.425			
			C	1	1.2		1	1	9.425			
L27	0.05	0.08	A	1	1.2	7	1	1	0.648	0.01	0.04	A
80.08-79.83			B	1	1.2		1	1	0.648			
			C	1	1.2		1	1	0.648			
L28	1.02	1.57	A	1	1.2	7	1	1	13.158	0.20	0.04	A
79.83-74.83			B	1	1.2		1	1	13.158			
			C	1	1.2		1	1	13.158			
L29	0.31	0.42	A	1	1.2	7	1	1	3.560	0.06	0.04	A
74.83-73.50			B	1	1.2		1	1	3.560			
			C	1	1.2		1	1	3.560			
L30	0.06	0.09	A	1	1.2	7	1	1	0.671	0.01	0.04	A
73.50-73.25			B	1	1.2		1	1	0.671			
			C	1	1.2		1	1	0.671			
L31	0.52	0.82	A	1	1.2	7	1	1	6.083	0.10	0.04	A
73.25-71.00			B	1	1.2		1	1	6.083			
			C	1	1.2		1	1	6.083			
L32	0.06	0.08	A	1	1.2	7	1	1	0.681	0.01	0.04	A
71.00-70.75			B	1	1.2		1	1	0.681			
			C	1	1.2		1	1	0.681			
L33	1.03	1.68	A	1	1.2	7	1	1	13.803	0.21	0.04	A
70.75-65.75			B	1	1.2		1	1	13.803			
			C	1	1.2		1	1	13.803			
L34	0.48	0.94	A	1	1.2	7	1	1	7.744	0.11	0.04	A
65.75-63.00			B	1	1.2		1	1	7.744			
			C	1	1.2		1	1	7.744			
L35	0.04	0.08	A	1	1.2	7	1	1	0.710	0.01	0.04	A
63.00-62.75			B	1	1.2		1	1	0.710			
			C	1	1.2		1	1	0.710			
L36	0.12	0.22	A	1	1.2	7	1	1	1.906	0.03	0.04	A
62.75-62.08			B	1	1.2		1	1	1.906			
			C	1	1.2		1	1	1.906			
L37	0.05	0.08	A	1	1.2	7	1	1	0.713	0.01	0.04	A
62.08-61.83			B	1	1.2		1	1	0.713			
			C	1	1.2		1	1	0.713			
L38	0.20	0.35	A	1	1.2	7	1	1	3.321	0.05	0.04	A
61.83-60.67			B	1	1.2		1	1	3.321			
			C	1	1.2		1	1	3.321			
L39	0.04	0.08	A	1	1.2	7	1	1	0.718	0.01	0.04	A
60.67-60.42			B	1	1.2		1	1	0.718			
			C	1	1.2		1	1	0.718			
L40	0.23	0.43	A	1	1.2	7	1	1	4.097	0.06	0.04	A
60.42-59.00			B	1	1.2		1	1	4.097			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
			C	1	1.2		1	1	4.097			
L41	0.04	0.08	A	1	1.2	7	1	1	0.724	0.01	0.04	A
59.00-58.75			B	1	1.2		1	1	0.724			
			C	1	1.2		1	1	0.724			
L42	0.79	1.55	A	1	1.2	7	1	1	14.667	0.19	0.04	A
58.75-53.75			B	1	1.2		1	1	14.667			
			C	1	1.2		1	1	14.667			
L43	0.81	1.67	A	1	1.2	7	1	1	15.781	0.21	0.04	A
53.75-48.50			B	1	1.2		1	1	15.781			
			C	1	1.2		1	1	15.781			
L44	0.15	1.66	A	1	1.2	7	1	1	3.008	0.04	0.04	A
48.50-47.50			B	1	1.2		1	1	3.008			
			C	1	1.2		1	1	3.008			
L45	0.26	0.61	A	1	1.2	7	1	1	5.296	0.07	0.04	A
47.50-45.75			B	1	1.2		1	1	5.296			
			C	1	1.2		1	1	5.296			
L46	0.04	0.09	A	1	1.2	7	1	1	0.760	0.01	0.04	A
45.75-45.50			B	1	1.2		1	1	0.760			
			C	1	1.2		1	1	0.760			
L47	0.07	0.17	A	1	1.2	7	1	1	1.523	0.02	0.04	A
45.50-45.00			B	1	1.2		1	1	1.523			
			C	1	1.2		1	1	1.523			
L48	0.04	0.09	A	1	1.2	7	1	1	0.762	0.01	0.04	A
45.00-44.75			B	1	1.2		1	1	0.762			
			C	1	1.2		1	1	0.762			
L49	0.22	0.47	A	1	1.2	6	1	1	3.826	0.05	0.04	A
44.75-43.50			B	1	1.2		1	1	3.826			
			C	1	1.2		1	1	3.826			
L50	0.04	0.10	A	1	1.2	6	1	1	0.767	0.01	0.04	A
43.50-43.25			B	1	1.2		1	1	0.767			
			C	1	1.2		1	1	0.767			
L51	0.88	1.98	A	1	1.2	6	1	1	15.533	0.20	0.04	A
43.25-38.25			B	1	1.2		1	1	15.533			
			C	1	1.2		1	1	15.533			
L52	0.87	2.00	A	1	1.2	6	1	1	15.882	0.20	0.04	A
38.25-33.25			B	1	1.2		1	1	15.882			
			C	1	1.2		1	1	15.882			
L53	0.47	1.11	A	1	1.2	6	1	1	8.883	0.11	0.04	A
33.25-30.50			B	1	1.2		1	1	8.883			
			C	1	1.2		1	1	8.883			
L54	0.04	0.10	A	1	1.2	6	1	1	0.813	0.01	0.04	A
30.50-30.25			B	1	1.2		1	1	0.813			
			C	1	1.2		1	1	0.813			
L55	0.10	0.24	A	1	1.2	6	1	1	1.889	0.02	0.04	A
30.25-29.67			B	1	1.2		1	1	1.889			
			C	1	1.2		1	1	1.889			
L56	0.04	0.09	A	1	1.2	6	1	1	0.816	0.01	0.04	A
29.67-29.42			B	1	1.2		1	1	0.816			
			C	1	1.2		1	1	0.816			
L57	0.24	0.53	A	1	1.2	6	1	1	4.653	0.05	0.04	A
29.42-28.00			B	1	1.2		1	1	4.653			
			C	1	1.2		1	1	4.653			
L58	0.04	0.10	A	1	1.2	6	1	1	0.822	0.01	0.04	A
28.00-27.75			B	1	1.2		1	1	0.822			
			C	1	1.2		1	1	0.822			
L59	0.16	0.33	A	1	1.2	6	1	1	2.734	0.03	0.04	A
27.75-26.92			B	1	1.2		1	1	2.734			
			C	1	1.2		1	1	2.734			
L60	0.05	0.09	A	1	1.2	6	1	1	0.825	0.01	0.04	A
26.92-26.67			B	1	1.2		1	1	0.825			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
			C	1	1.2		1	1	0.825			
L61	0.03	0.06	A	1	1.2	6	1	1	0.562	0.01	0.04	A
26.67-26.50			B	1	1.2		1	1	0.562			
			C	1	1.2		1	1	0.562			
L62	0.05	0.09	A	1	1.2	6	1	1	0.827	0.01	0.04	A
26.50-26.25			B	1	1.2		1	1	0.827			
			C	1	1.2		1	1	0.827			
L63	0.22	0.48	A	1	1.2	6	1	1	4.413	0.05	0.03	B
26.25-24.92			B	1	1.2		1	1	4.413			
			C	1	1.2		1	1	4.413			
L64	0.04	0.09	A	1	1.2	6	1	1	0.832	0.01	0.03	B
24.92-24.67			B	1	1.2		1	1	0.832			
			C	1	1.2		1	1	0.832			
L65	0.35	0.93	A	1	1.2	6	1	1	8.371	0.09	0.03	B
24.67-22.17			B	1	1.2		1	1	8.371			
			C	1	1.2		1	1	8.371			
L66	0.03	0.10	A	1	1.2	6	1	1	0.842	0.01	0.03	B
22.17-21.92			B	1	1.2		1	1	0.842			
			C	1	1.2		1	1	0.842			
L67	0.69	1.98	A	1	1.2	5	1	1	17.008	0.17	0.03	B
21.92-16.92			B	1	1.2		1	1	17.008			
			C	1	1.2		1	1	17.008			
L68	0.67	1.99	A	1	1.2	5	1	1	17.339	0.16	0.03	B
16.92-11.92			B	1	1.2		1	1	17.339			
			C	1	1.2		1	1	17.339			
L69	0.59	2.00	A	1	1.2	5	1	1	17.657	0.16	0.03	B
11.92-6.92			B	1	1.2		1	1	17.657			
			C	1	1.2		1	1	17.657			
L70 6.92-1.92	0.37	1.99	A	1	1.2	5	1	1	17.942	0.12	0.02	C
			B	1	1.2		1	1	17.942			
			C	1	1.2		1	1	17.942			
L71 1.92-0.00	0.09	0.76	A	1	1.2	5	1	1	6.931	0.05	0.02	C
			B	1	1.2		1	1	6.931			
			C	1	1.2		1	1	6.931			
Sum Weight:	19.36	42.01						OTM	353.10 kip-ft	5.01		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L1	0.04	0.16	A	1	0.65	11	1	1	6.940	0.05	0.01	C
149.00-144.00			B	1	0.65		1	1	6.940			
			C	1	0.65		1	1	6.940			
L2	0.06	0.17	A	1	0.65	11	1	1	7.306	0.06	0.01	C
144.00-139.00			B	1	0.65		1	1	7.306			
			C	1	0.65		1	1	7.306			
L3	0.09	0.18	A	1	0.65	11	1	1	7.672	0.06	0.01	C
139.00-134.00			B	1	0.65		1	1	7.672			
			C	1	0.65		1	1	7.672			
L4	0.09	0.19	A	1	0.65	11	1	1	8.038	0.06	0.01	C
134.00-129.00			B	1	0.65		1	1	8.038			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
			C	1	0.65		1	1	8.038			
L5	0.10	0.18	A	1	0.65	10	1	1	7.547	0.06	0.01	C
129.00-124.50			B	1	0.65		1	1	7.547			
			C	1	0.674		1	1	7.547			
L6	0.01	0.02	A	1	0.677	10	1	1	0.427	0.00	0.01	C
124.50-124.25			B	1	0.65		1	1	0.427			
			C	1	0.737		1	1	0.427			
L7	0.12	0.36	A	1	0.687	10	1	1	8.742	0.07	0.01	C
124.25-119.25			B	1	0.65		1	1	8.742			
			C	1	0.745		1	1	8.742			
L8	0.02	0.05	A	1	0.763	10	1	1	1.343	0.01	0.02	C
119.25-118.50			B	1	0.65		1	1	1.343			
			C	1	0.82		1	1	1.343			
L9	0.01	0.03	A	1	0.762	10	1	1	0.448	0.00	0.02	C
118.50-118.25			B	1	0.65		1	1	0.448			
			C	1	0.819		1	1	0.448			
L10	0.06	0.30	A	1	0.759	10	1	1	4.076	0.04	0.02	C
118.25-116.00			B	1	0.65		1	1	4.076			
			C	1	0.816		1	1	4.076			
L11	0.01	0.03	A	1	0.738	10	1	1	0.457	0.00	0.02	C
116.00-115.75			B	1	0.65		1	1	0.457			
			C	1	0.794		1	1	0.457			
L12	0.12	0.67	A	1	0.748	10	1	1	9.343	0.08	0.02	C
115.75-110.75			B	1	0.65		1	1	9.343			
			C	1	0.803		1	1	9.343			
L13	0.12	0.68	A	1	0.737	10	1	1	9.711	0.09	0.02	C
110.75-105.75			B	1	0.65		1	1	9.711			
			C	1	0.79		1	1	9.711			
L14	0.18	1.02	A	1	0.724	10	1	1	14.733	0.13	0.02	C
105.75-98.50			B	1	0.65		1	1	14.733			
			C	1	0.775		1	1	14.733			
L15	0.04	0.77	A	1	0.72	10	1	1	3.095	0.03	0.02	C
98.50-97.00			B	1	0.65		1	1	3.095			
			C	1	0.77		1	1	3.095			
L16	0.01	0.05	A	1	0.719	10	1	1	0.519	0.00	0.02	C
97.00-96.75			B	1	0.65		1	1	0.519			
			C	1	0.768		1	1	0.519			
L17	0.07	0.52	A	1	0.714	10	1	1	5.808	0.05	0.02	C
96.75-93.98			B	1	0.65		1	1	5.808			
			C	1	0.763		1	1	5.808			
L18	0.01	0.05	A	1	0.711	10	1	1	0.530	0.00	0.02	C
93.98-93.73			B	1	0.65		1	1	0.530			
			C	1	0.76		1	1	0.530			
L19	0.06	0.42	A	1	0.708	10	1	1	4.766	0.04	0.02	C
93.73-91.50			B	1	0.65		1	1	4.766			
			C	1	0.756		1	1	4.766			
L20	0.01	0.04	A	1	0.704	10	1	1	0.539	0.00	0.02	C
91.50-91.25			B	1	0.65		1	1	0.539			
			C	1	0.752		1	1	0.539			
L21	0.02	0.16	A	1	0.703	10	1	1	2.167	0.02	0.02	C
91.25-90.25			B	1	0.65		1	1	2.167			
			C	1	0.75		1	1	2.167			
L22	0.01	0.06	A	1	0.703	10	1	1	0.543	0.00	0.02	C
90.25-90.00			B	1	0.65		1	1	0.543			
			C	1	0.75		1	1	0.543			
L23	0.02	0.23	A	1	0.738	10	1	1	2.181	0.02	0.02	C
90.00-89.00			B	1	0.65		1	1	2.181			
			C	1	0.785		1	1	2.181			
L24	0.01	0.05	A	1	0.739	10	1	1	0.548	0.00	0.02	C
89.00-88.75			B	1	0.65		1	1	0.548			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
			C	1	0.786		1	1	0.548			
L25	0.12	1.00	A	1	0.735	10	1	1	11.152	0.09	0.02	C
88.75-83.75			B	1	0.65		1	1	11.152			
			C	1	0.78		1	1	11.152			
L26	0.09	0.74	A	1	0.737	10	1	1	8.420	0.07	0.02	C
83.75-80.08			B	1	0.65		1	1	8.420			
			C	1	0.781		1	1	8.420			
L27	0.01	0.06	A	1	0.76	9	1	1	0.580	0.00	0.02	C
80.08-79.83			B	1	0.65		1	1	0.580			
			C	1	0.804		1	1	0.580			
L28	0.12	1.27	A	1	0.755	9	1	1	11.797	0.10	0.02	C
79.83-74.83			B	1	0.65		1	1	11.797			
			C	1	0.798		1	1	11.797			
L29	0.03	0.34	A	1	0.749	9	1	1	3.200	0.03	0.02	C
74.83-73.50			B	1	0.65		1	1	3.200			
			C	1	0.792		1	1	3.200			
L30	0.01	0.08	A	1	0.748	9	1	1	0.604	0.00	0.02	C
73.50-73.25			B	1	0.65		1	1	0.604			
			C	1	0.791		1	1	0.604			
L31	0.06	0.68	A	1	0.746	9	1	1	5.475	0.04	0.02	C
73.25-71.00			B	1	0.65		1	1	5.475			
			C	1	0.788		1	1	5.475			
L32	0.01	0.07	A	1	0.744	9	1	1	0.613	0.00	0.02	C
71.00-70.75			B	1	0.65		1	1	0.613			
			C	1	0.785		1	1	0.613			
L33	0.12	1.37	A	1	0.709	9	1	1	12.459	0.09	0.02	C
70.75-65.75			B	1	0.65		1	1	12.459			
			C	1	0.751		1	1	12.459			
L34	0.07	0.76	A	1	0.665	9	1	1	7.009	0.05	0.02	C
65.75-63.00			B	1	0.65		1	1	7.009			
			C	1	0.706		1	1	7.009			
L35	0.01	0.07	A	1	0.661	9	1	1	0.643	0.00	0.02	C
63.00-62.75			B	1	0.65		1	1	0.643			
			C	1	0.701		1	1	0.643			
L36	0.02	0.18	A	1	0.702	9	1	1	1.727	0.01	0.02	A
62.75-62.08			B	1	0.65		1	1	1.727			
			C	1	0.701		1	1	1.727			
L37	0.01	0.06	A	1	0.706	9	1	1	0.647	0.00	0.02	A
62.08-61.83			B	1	0.65		1	1	0.647			
			C	1	0.7		1	1	0.647			
L38	0.03	0.28	A	1	0.694	9	1	1	3.013	0.02	0.02	A
61.83-60.67			B	1	0.65		1	1	3.013			
			C	1	0.687		1	1	3.013			
L39	0.01	0.06	A	1	0.672	9	1	1	0.652	0.00	0.02	A
60.67-60.42			B	1	0.65		1	1	0.652			
			C	1	0.665		1	1	0.652			
L40	0.04	0.34	A	1	0.671	9	1	1	3.720	0.02	0.02	A
60.42-59.00			B	1	0.65		1	1	3.720			
			C	1	0.664		1	1	3.720			
L41	0.01	0.06	A	1	0.67	9	1	1	0.658	0.00	0.02	A
59.00-58.75			B	1	0.65		1	1	0.658			
			C	1	0.663		1	1	0.658			
L42	0.12	1.22	A	1	0.667	9	1	1	13.349	0.09	0.02	A
58.75-53.75			B	1	0.65		1	1	13.349			
			C	1	0.66		1	1	13.349			
L43	0.13	1.32	A	1	0.661	9	1	1	14.410	0.09	0.02	A
53.75-48.50			B	1	0.65		1	1	14.410			
			C	1	0.655		1	1	14.410			
L44	0.02	1.59	A	1	0.66	8	1	1	2.747	0.02	0.02	A
48.50-47.50			B	1	0.65		1	1	2.747			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
			C	1	0.654		1	1	2.747			
L45	0.04	0.49	A	1	0.658	8	1	1	4.843	0.03	0.02	A
47.50-45.75			B	1	0.65		1	1	4.843			
			C	1	0.652		1	1	4.843			
L46	0.01	0.07	A	1	0.657	8	1	1	0.695	0.00	0.02	A
45.75-45.50			B	1	0.65		1	1	0.695			
			C	1	0.651		1	1	0.695			
L47	0.01	0.14	A	1	0.657	8	1	1	1.394	0.01	0.02	A
45.50-45.00			B	1	0.65		1	1	1.394			
			C	1	0.651		1	1	1.394			
L48	0.01	0.08	A	1	0.698	8	1	1	0.698	0.00	0.02	A
45.00-44.75			B	1	0.65		1	1	0.698			
			C	1	0.692		1	1	0.698			
L49	0.03	0.39	A	1	0.698	8	1	1	3.504	0.02	0.02	A
44.75-43.50			B	1	0.65		1	1	3.504			
			C	1	0.691		1	1	3.504			
L50	0.01	0.08	A	1	0.697	8	1	1	0.703	0.00	0.02	A
43.50-43.25			B	1	0.65		1	1	0.703			
			C	1	0.691		1	1	0.703			
L51	0.12	1.64	A	1	0.693	8	1	1	14.256	0.09	0.02	A
43.25-38.25			B	1	0.65		1	1	14.256			
			C	1	0.687		1	1	14.256			
L52	0.12	1.66	A	1	0.687	8	1	1	14.622	0.09	0.02	A
38.25-33.25			B	1	0.65		1	1	14.622			
			C	1	0.682		1	1	14.622			
L53	0.07	0.92	A	1	0.683	8	1	1	8.198	0.05	0.02	A
33.25-30.50			B	1	0.65		1	1	8.198			
			C	1	0.677		1	1	8.198			
L54	0.01	0.09	A	1	0.65	8	1	1	0.751	0.00	0.02	C
30.50-30.25			B	1	0.65		1	1	0.751			
			C	1	0.65		1	1	0.751			
L55	0.01	0.20	A	1	0.65	8	1	1	1.745	0.01	0.02	C
30.25-29.67			B	1	0.65		1	1	1.745			
			C	1	0.65		1	1	1.745			
L56	0.01	0.08	A	1	0.65	8	1	1	0.754	0.00	0.02	C
29.67-29.42			B	1	0.65		1	1	0.754			
			C	1	0.65		1	1	0.754			
L57	0.04	0.43	A	1	0.65	8	1	1	4.303	0.02	0.02	C
29.42-28.00			B	1	0.65		1	1	4.303			
			C	1	0.65		1	1	4.303			
L58	0.01	0.08	A	1	0.65	8	1	1	0.760	0.00	0.02	C
28.00-27.75			B	1	0.65		1	1	0.760			
			C	1	0.65		1	1	0.760			
L59	0.02	0.27	A	1	0.65	8	1	1	2.530	0.01	0.02	C
27.75-26.92			B	1	0.65		1	1	2.530			
			C	1	0.666		1	1	2.530			
L60	0.01	0.08	A	1	0.65	8	1	1	0.764	0.00	0.02	C
26.92-26.67			B	1	0.65		1	1	0.764			
			C	1	0.67		1	1	0.764			
L61	0.00	0.05	A	1	0.65	8	1	1	0.520	0.00	0.02	C
26.67-26.50			B	1	0.65		1	1	0.520			
			C	1	0.67		1	1	0.520			
L62	0.01	0.07	A	1	0.65	7	1	1	0.766	0.00	0.02	C
26.50-26.25			B	1	0.65		1	1	0.766			
			C	1	0.67		1	1	0.766			
L63	0.03	0.39	A	1	0.65	7	1	1	4.089	0.02	0.02	C
26.25-24.92			B	1	0.65		1	1	4.089			
			C	1	0.667		1	1	4.089			
L64	0.01	0.08	A	1	0.65	7	1	1	0.772	0.00	0.02	C
24.92-24.67			B	1	0.654		1	1	0.772			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
			C	1	0.679		1	1	0.772			
L65	0.06	0.75	A	1	0.65	7	1	1	7.767	0.04	0.02	C
24.67-22.17			B	1	0.652		1	1	7.767			
			C	1	0.678		1	1	7.767			
L66	0.01	0.08	A	1	0.65	7	1	1	0.781	0.00	0.02	C
22.17-21.92			B	1	0.651		1	1	0.781			
			C	1	0.677		1	1	0.781			
L67	0.12	1.64	A	1	0.65	7	1	1	15.823	0.08	0.02	C
21.92-16.92			B	1	0.65		1	1	15.823			
			C	1	0.674		1	1	15.823			
L68	0.12	1.65	A	1	0.65	7	1	1	16.189	0.08	0.02	C
16.92-11.92			B	1	0.65		1	1	16.189			
			C	1	0.669		1	1	16.189			
L69	0.10	1.67	A	1	0.65	7	1	1	16.554	0.08	0.02	C
11.92-6.92			B	1	0.65		1	1	16.554			
			C	1	0.65		1	1	16.554			
L70 6.92-1.92	0.00	1.68	A	1	0.65	7	1	1	16.920	0.08	0.02	C
			B	1	0.65		1	1	16.920			
			C	1	0.65		1	1	16.920			
L71 1.92-0.00	0.00	0.65	A	1	0.65	7	1	1	6.595	0.03	0.02	C
			B	1	0.65		1	1	6.595			
			C	1	0.65		1	1	6.595			
Sum Weight:	3.27	33.40						OTM	173.57 kip-ft	2.43		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L1	0.04	0.16	A	1	0.65	11	1	1	6.940	0.05	0.01	C
149.00-144.00			B	1	0.65		1	1	6.940			
			C	1	0.65		1	1	6.940			
L2	0.06	0.17	A	1	0.65	11	1	1	7.306	0.06	0.01	C
144.00-139.00			B	1	0.65		1	1	7.306			
			C	1	0.65		1	1	7.306			
L3	0.09	0.18	A	1	0.65	11	1	1	7.672	0.06	0.01	C
139.00-134.00			B	1	0.65		1	1	7.672			
			C	1	0.65		1	1	7.672			
L4	0.09	0.19	A	1	0.65	11	1	1	8.038	0.06	0.01	C
134.00-129.00			B	1	0.65		1	1	8.038			
			C	1	0.65		1	1	8.038			
L5	0.10	0.18	A	1	0.674	10	1	1	7.547	0.06	0.01	A
129.00-124.50			B	1	0.65		1	1	7.547			
			C	1	0.65		1	1	7.547			
L6	0.01	0.02	A	1	0.737	10	1	1	0.427	0.00	0.01	A
124.50-124.25			B	1	0.677		1	1	0.427			
			C	1	0.65		1	1	0.427			
L7	0.12	0.36	A	1	0.745	10	1	1	8.742	0.07	0.01	A
124.25-119.25			B	1	0.687		1	1	8.742			
			C	1	0.65		1	1	8.742			
L8	0.02	0.05	A	1	0.82	10	1	1	1.343	0.01	0.02	A
119.25-118.50			B	1	0.763		1	1	1.343			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
			C	1	0.65		1	1	1.343			
L9	0.01	0.03	A	1	0.819	10	1	1	0.448	0.00	0.02	A
118.50-118.25			B	1	0.762		1	1	0.448			
			C	1	0.65		1	1	0.448			
L10	0.06	0.30	A	1	0.816	10	1	1	4.076	0.04	0.02	A
118.25-116.00			B	1	0.759		1	1	4.076			
			C	1	0.65		1	1	4.076			
L11	0.01	0.03	A	1	0.794	10	1	1	0.457	0.00	0.02	A
116.00-115.75			B	1	0.738		1	1	0.457			
			C	1	0.65		1	1	0.457			
L12	0.12	0.67	A	1	0.803	10	1	1	9.343	0.08	0.02	A
115.75-110.75			B	1	0.748		1	1	9.343			
			C	1	0.65		1	1	9.343			
L13	0.12	0.68	A	1	0.79	10	1	1	9.711	0.09	0.02	A
110.75-105.75			B	1	0.737		1	1	9.711			
			C	1	0.65		1	1	9.711			
L14	0.18	1.02	A	1	0.775	10	1	1	14.733	0.13	0.02	A
105.75-98.50			B	1	0.724		1	1	14.733			
			C	1	0.65		1	1	14.733			
L15	0.04	0.77	A	1	0.77	10	1	1	3.095	0.03	0.02	A
98.50-97.00			B	1	0.72		1	1	3.095			
			C	1	0.65		1	1	3.095			
L16	0.01	0.05	A	1	0.768	10	1	1	0.519	0.00	0.02	A
97.00-96.75			B	1	0.719		1	1	0.519			
			C	1	0.65		1	1	0.519			
L17	0.07	0.52	A	1	0.763	10	1	1	5.808	0.05	0.02	A
96.75-93.98			B	1	0.714		1	1	5.808			
			C	1	0.65		1	1	5.808			
L18	0.01	0.05	A	1	0.76	10	1	1	0.530	0.00	0.02	A
93.98-93.73			B	1	0.711		1	1	0.530			
			C	1	0.65		1	1	0.530			
L19	0.06	0.42	A	1	0.756	10	1	1	4.766	0.04	0.02	A
93.73-91.50			B	1	0.708		1	1	4.766			
			C	1	0.65		1	1	4.766			
L20	0.01	0.04	A	1	0.752	10	1	1	0.539	0.00	0.02	A
91.50-91.25			B	1	0.704		1	1	0.539			
			C	1	0.65		1	1	0.539			
L21	0.02	0.16	A	1	0.75	10	1	1	2.167	0.02	0.02	A
91.25-90.25			B	1	0.703		1	1	2.167			
			C	1	0.65		1	1	2.167			
L22	0.01	0.06	A	1	0.75	10	1	1	0.543	0.00	0.02	A
90.25-90.00			B	1	0.703		1	1	0.543			
			C	1	0.65		1	1	0.543			
L23	0.02	0.23	A	1	0.785	10	1	1	2.181	0.02	0.02	A
90.00-89.00			B	1	0.738		1	1	2.181			
			C	1	0.65		1	1	2.181			
L24	0.01	0.05	A	1	0.786	10	1	1	0.548	0.00	0.02	A
89.00-88.75			B	1	0.739		1	1	0.548			
			C	1	0.65		1	1	0.548			
L25	0.12	1.00	A	1	0.78	10	1	1	11.152	0.09	0.02	A
88.75-83.75			B	1	0.735		1	1	11.152			
			C	1	0.65		1	1	11.152			
L26	0.09	0.74	A	1	0.781	10	1	1	8.420	0.07	0.02	A
83.75-80.08			B	1	0.737		1	1	8.420			
			C	1	0.65		1	1	8.420			
L27	0.01	0.06	A	1	0.804	9	1	1	0.580	0.00	0.02	A
80.08-79.83			B	1	0.76		1	1	0.580			
			C	1	0.65		1	1	0.580			
L28	0.12	1.27	A	1	0.798	9	1	1	11.797	0.10	0.02	A
79.83-74.83			B	1	0.755		1	1	11.797			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
			C	1	0.65		1	1	11.797			
L29	0.03	0.34	A	1	0.792	9	1	1	3.200	0.03	0.02	A
74.83-73.50			B	1	0.749		1	1	3.200			
			C	1	0.65		1	1	3.200			
L30	0.01	0.08	A	1	0.791	9	1	1	0.604	0.00	0.02	A
73.50-73.25			B	1	0.748		1	1	0.604			
			C	1	0.65		1	1	0.604			
L31	0.06	0.68	A	1	0.788	9	1	1	5.475	0.04	0.02	A
73.25-71.00			B	1	0.746		1	1	5.475			
			C	1	0.65		1	1	5.475			
L32	0.01	0.07	A	1	0.785	9	1	1	0.613	0.00	0.02	A
71.00-70.75			B	1	0.744		1	1	0.613			
			C	1	0.65		1	1	0.613			
L33	0.12	1.37	A	1	0.751	9	1	1	12.459	0.09	0.02	A
70.75-65.75			B	1	0.709		1	1	12.459			
			C	1	0.65		1	1	12.459			
L34	0.07	0.76	A	1	0.706	9	1	1	7.009	0.05	0.02	A
65.75-63.00			B	1	0.665		1	1	7.009			
			C	1	0.65		1	1	7.009			
L35	0.01	0.07	A	1	0.701	9	1	1	0.643	0.00	0.02	A
63.00-62.75			B	1	0.661		1	1	0.643			
			C	1	0.65		1	1	0.643			
L36	0.02	0.18	A	1	0.701	9	1	1	1.727	0.01	0.02	B
62.75-62.08			B	1	0.702		1	1	1.727			
			C	1	0.65		1	1	1.727			
L37	0.01	0.06	A	1	0.7	9	1	1	0.647	0.00	0.02	B
62.08-61.83			B	1	0.706		1	1	0.647			
			C	1	0.65		1	1	0.647			
L38	0.03	0.28	A	1	0.687	9	1	1	3.013	0.02	0.02	B
61.83-60.67			B	1	0.694		1	1	3.013			
			C	1	0.65		1	1	3.013			
L39	0.01	0.06	A	1	0.665	9	1	1	0.652	0.00	0.02	B
60.67-60.42			B	1	0.672		1	1	0.652			
			C	1	0.65		1	1	0.652			
L40	0.04	0.34	A	1	0.664	9	1	1	3.720	0.02	0.02	B
60.42-59.00			B	1	0.671		1	1	3.720			
			C	1	0.65		1	1	3.720			
L41	0.01	0.06	A	1	0.663	9	1	1	0.658	0.00	0.02	B
59.00-58.75			B	1	0.67		1	1	0.658			
			C	1	0.65		1	1	0.658			
L42	0.12	1.22	A	1	0.66	9	1	1	13.349	0.09	0.02	B
58.75-53.75			B	1	0.667		1	1	13.349			
			C	1	0.65		1	1	13.349			
L43	0.13	1.32	A	1	0.655	9	1	1	14.410	0.09	0.02	B
53.75-48.50			B	1	0.661		1	1	14.410			
			C	1	0.65		1	1	14.410			
L44	0.02	1.59	A	1	0.654	8	1	1	2.747	0.02	0.02	B
48.50-47.50			B	1	0.66		1	1	2.747			
			C	1	0.65		1	1	2.747			
L45	0.04	0.49	A	1	0.652	8	1	1	4.843	0.03	0.02	B
47.50-45.75			B	1	0.658		1	1	4.843			
			C	1	0.65		1	1	4.843			
L46	0.01	0.07	A	1	0.651	8	1	1	0.695	0.00	0.02	B
45.75-45.50			B	1	0.657		1	1	0.695			
			C	1	0.65		1	1	0.695			
L47	0.01	0.14	A	1	0.651	8	1	1	1.394	0.01	0.02	B
45.50-45.00			B	1	0.657		1	1	1.394			
			C	1	0.65		1	1	1.394			
L48	0.01	0.08	A	1	0.692	8	1	1	0.698	0.00	0.02	B
45.00-44.75			B	1	0.698		1	1	0.698			

Section Elevation	Add Weight	Self Weight	Face	e	C_F	q_z psf	D_F	D_R	A_E	F	w	Ctrl. Face
ft	K	K							ft^2	K	klf	
			C	1	0.65		1	1	0.698			
L49	0.03	0.39	A	1	0.691	8	1	1	3.504	0.02	0.02	B
44.75-43.50			B	1	0.698		1	1	3.504			
			C	1	0.65		1	1	3.504			
L50	0.01	0.08	A	1	0.691	8	1	1	0.703	0.00	0.02	B
43.50-43.25			B	1	0.697		1	1	0.703			
			C	1	0.65		1	1	0.703			
L51	0.12	1.64	A	1	0.687	8	1	1	14.256	0.09	0.02	B
43.25-38.25			B	1	0.693		1	1	14.256			
			C	1	0.65		1	1	14.256			
L52	0.12	1.66	A	1	0.682	8	1	1	14.622	0.09	0.02	B
38.25-33.25			B	1	0.687		1	1	14.622			
			C	1	0.65		1	1	14.622			
L53	0.07	0.92	A	1	0.677	8	1	1	8.198	0.05	0.02	B
33.25-30.50			B	1	0.683		1	1	8.198			
			C	1	0.65		1	1	8.198			
L54	0.01	0.09	A	1	0.65	8	1	1	0.751	0.00	0.02	C
30.50-30.25			B	1	0.65		1	1	0.751			
			C	1	0.65		1	1	0.751			
L55	0.01	0.20	A	1	0.65	8	1	1	1.745	0.01	0.02	C
30.25-29.67			B	1	0.65		1	1	1.745			
			C	1	0.65		1	1	1.745			
L56	0.01	0.08	A	1	0.65	8	1	1	0.754	0.00	0.02	C
29.67-29.42			B	1	0.65		1	1	0.754			
			C	1	0.65		1	1	0.754			
L57	0.04	0.43	A	1	0.65	8	1	1	4.303	0.02	0.02	C
29.42-28.00			B	1	0.65		1	1	4.303			
			C	1	0.65		1	1	4.303			
L58	0.01	0.08	A	1	0.65	8	1	1	0.760	0.00	0.02	C
28.00-27.75			B	1	0.65		1	1	0.760			
			C	1	0.65		1	1	0.760			
L59	0.02	0.27	A	1	0.666	8	1	1	2.530	0.01	0.02	A
27.75-26.92			B	1	0.65		1	1	2.530			
			C	1	0.65		1	1	2.530			
L60	0.01	0.08	A	1	0.67	8	1	1	0.764	0.00	0.02	A
26.92-26.67			B	1	0.65		1	1	0.764			
			C	1	0.65		1	1	0.764			
L61	0.00	0.05	A	1	0.67	8	1	1	0.520	0.00	0.02	A
26.67-26.50			B	1	0.65		1	1	0.520			
			C	1	0.65		1	1	0.520			
L62	0.01	0.07	A	1	0.67	7	1	1	0.766	0.00	0.02	A
26.50-26.25			B	1	0.65		1	1	0.766			
			C	1	0.65		1	1	0.766			
L63	0.03	0.39	A	1	0.667	7	1	1	4.089	0.02	0.02	A
26.25-24.92			B	1	0.65		1	1	4.089			
			C	1	0.65		1	1	4.089			
L64	0.01	0.08	A	1	0.679	7	1	1	0.772	0.00	0.02	A
24.92-24.67			B	1	0.65		1	1	0.772			
			C	1	0.654		1	1	0.772			
L65	0.06	0.75	A	1	0.678	7	1	1	7.767	0.04	0.02	A
24.67-22.17			B	1	0.65		1	1	7.767			
			C	1	0.652		1	1	7.767			
L66	0.01	0.08	A	1	0.677	7	1	1	0.781	0.00	0.02	A
22.17-21.92			B	1	0.65		1	1	0.781			
			C	1	0.651		1	1	0.781			
L67	0.12	1.64	A	1	0.674	7	1	1	15.823	0.08	0.02	A
21.92-16.92			B	1	0.65		1	1	15.823			
			C	1	0.65		1	1	15.823			
L68	0.12	1.65	A	1	0.669	7	1	1	16.189	0.08	0.02	A
16.92-11.92			B	1	0.65		1	1	16.189			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
			C	1	0.65		1	1	16.189			
L69	0.10	1.67	A	1	0.65	7	1	1	16.554	0.08	0.02	C
11.92-6.92			B	1	0.65		1	1	16.554			
			C	1	0.65		1	1	16.554			
L70 6.92-1.92	0.00	1.68	A	1	0.65	7	1	1	16.920	0.08	0.02	C
			B	1	0.65		1	1	16.920			
			C	1	0.65		1	1	16.920			
L71 1.92-0.00	0.00	0.65	A	1	0.65	7	1	1	6.595	0.03	0.02	C
			B	1	0.65		1	1	6.595			
			C	1	0.65		1	1	6.595			
Sum Weight:	3.27	33.40						OTM	173.57 kip-ft	2.43		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L1	0.04	0.16	A	1	0.65	11	1	1	6.940	0.05	0.01	C
149.00-144.00			B	1	0.65		1	1	6.940			
			C	1	0.65		1	1	6.940			
L2	0.06	0.17	A	1	0.65	11	1	1	7.306	0.06	0.01	C
144.00-139.00			B	1	0.65		1	1	7.306			
			C	1	0.65		1	1	7.306			
L3	0.09	0.18	A	1	0.65	11	1	1	7.672	0.06	0.01	B
139.00-134.00			B	1	0.665		1	1	7.672			
			C	1	0.65		1	1	7.672			
L4	0.09	0.19	A	1	0.65	11	1	1	8.038	0.06	0.01	B
134.00-129.00			B	1	0.655		1	1	8.038			
			C	1	0.65		1	1	8.038			
L5	0.10	0.18	A	1	0.65	10	1	1	7.547	0.06	0.01	C
129.00-124.50			B	1	0.65		1	1	7.547			
			C	1	0.65		1	1	7.547			
L6	0.01	0.02	A	1	0.65	10	1	1	0.427	0.00	0.01	B
124.50-124.25			B	1	0.65		1	1	0.427			
			C	1	0.65		1	1	0.427			
L7	0.12	0.36	A	1	0.65	10	1	1	8.742	0.06	0.01	B
124.25-119.25			B	1	0.652		1	1	8.742			
			C	1	0.65		1	1	8.742			
L8	0.02	0.05	A	1	0.663	10	1	1	1.343	0.01	0.01	B
119.25-118.50			B	1	0.684		1	1	1.343			
			C	1	0.65		1	1	1.343			
L9	0.01	0.03	A	1	0.663	10	1	1	0.448	0.00	0.01	B
118.50-118.25			B	1	0.683		1	1	0.448			
			C	1	0.65		1	1	0.448			
L10	0.06	0.30	A	1	0.661	10	1	1	4.076	0.03	0.01	B
118.25-116.00			B	1	0.681		1	1	4.076			
			C	1	0.65		1	1	4.076			
L11	0.01	0.03	A	1	0.652	10	1	1	0.457	0.00	0.01	B
116.00-115.75			B	1	0.672		1	1	0.457			
			C	1	0.65		1	1	0.457			
L12	0.12	0.67	A	1	0.65	10	1	1	9.343	0.07	0.01	B
115.75-110.75			B	1	0.668		1	1	9.343			

Section Elevation	Add Weight	Self Weight	Face	e	C_F	q_z	D_F	D_R	A_E	F	w	Ctrl. Face
ft	K	K				psf			ft^2	K	klf	
			C	1	0.65		1	1	9.343			
L13	0.12	0.68	A	1	0.65	10	1	1	9.711	0.07	0.01	B
110.75-105.75			B	1	0.66		1	1	9.711			
			C	1	0.65		1	1	9.711			
L14	0.18	1.02	A	1	0.65	10	1	1	14.733	0.11	0.01	B
105.75-98.50			B	1	0.651		1	1	14.733			
			C	1	0.65		1	1	14.733			
L15	0.04	0.77	A	1	0.669	10	1	1	3.095	0.02	0.02	B
98.50-97.00			B	1	0.687		1	1	3.095			
			C	1	0.65		1	1	3.095			
L16	0.01	0.05	A	1	0.688	10	1	1	0.519	0.00	0.02	B
97.00-96.75			B	1	0.705		1	1	0.519			
			C	1	0.65		1	1	0.519			
L17	0.07	0.52	A	1	0.685	10	1	1	5.808	0.04	0.02	B
96.75-93.98			B	1	0.703		1	1	5.808			
			C	1	0.65		1	1	5.808			
L18	0.01	0.05	A	1	0.683	10	1	1	0.530	0.00	0.02	B
93.98-93.73			B	1	0.7		1	1	0.530			
			C	1	0.65		1	1	0.530			
L19	0.06	0.42	A	1	0.675	10	1	1	4.766	0.04	0.02	B
93.73-91.50			B	1	0.692		1	1	4.766			
			C	1	0.65		1	1	4.766			
L20	0.01	0.04	A	1	0.669	10	1	1	0.539	0.00	0.02	B
91.50-91.25			B	1	0.686		1	1	0.539			
			C	1	0.65		1	1	0.539			
L21	0.02	0.16	A	1	0.668	10	1	1	2.167	0.02	0.02	B
91.25-90.25			B	1	0.685		1	1	2.167			
			C	1	0.65		1	1	2.167			
L22	0.01	0.06	A	1	0.668	10	1	1	0.543	0.00	0.02	B
90.25-90.00			B	1	0.684		1	1	0.543			
			C	1	0.65		1	1	0.543			
L23	0.02	0.23	A	1	0.667	10	1	1	2.181	0.02	0.02	B
90.00-89.00			B	1	0.683		1	1	2.181			
			C	1	0.65		1	1	2.181			
L24	0.01	0.05	A	1	0.666	10	1	1	0.548	0.00	0.02	B
89.00-88.75			B	1	0.682		1	1	0.548			
			C	1	0.65		1	1	0.548			
L25	0.12	1.00	A	1	0.65	10	1	1	11.152	0.08	0.02	C
88.75-83.75			B	1	0.65		1	1	11.152			
			C	1	0.65		1	1	11.152			
L26	0.09	0.74	A	1	0.65	10	1	1	8.420	0.06	0.02	C
83.75-80.08			B	1	0.65		1	1	8.420			
			C	1	0.65		1	1	8.420			
L27	0.01	0.06	A	1	0.654	9	1	1	0.580	0.00	0.02	A
80.08-79.83			B	1	0.65		1	1	0.580			
			C	1	0.65		1	1	0.580			
L28	0.12	1.27	A	1	0.653	9	1	1	11.797	0.08	0.02	A
79.83-74.83			B	1	0.65		1	1	11.797			
			C	1	0.65		1	1	11.797			
L29	0.03	0.34	A	1	0.714	9	1	1	3.200	0.02	0.02	A
74.83-73.50			B	1	0.679		1	1	3.200			
			C	1	0.65		1	1	3.200			
L30	0.01	0.08	A	1	0.713	9	1	1	0.604	0.00	0.02	A
73.50-73.25			B	1	0.678		1	1	0.604			
			C	1	0.65		1	1	0.604			
L31	0.06	0.68	A	1	0.711	9	1	1	5.475	0.04	0.02	A
73.25-71.00			B	1	0.676		1	1	5.475			
			C	1	0.65		1	1	5.475			
L32	0.01	0.07	A	1	0.709	9	1	1	0.613	0.00	0.02	A
71.00-70.75			B	1	0.675		1	1	0.613			

Section Elevation	Add Weight	Self Weight	Face	e	C_F	q_z	D_F	D_R	A_E	F	w	Ctrl. Face
ft	K	K				psf			ft^2	K	klf	
			C	1	0.65		1	1	0.613			
L33	0.12	1.37	A	1	0.705	9	1	1	12.459	0.09	0.02	A
70.75-65.75			B	1	0.671		1	1	12.459			
			C	1	0.65		1	1	12.459			
L34	0.07	0.76	A	1	0.693	9	1	1	7.009	0.05	0.02	A
65.75-63.00			B	1	0.66		1	1	7.009			
			C	1	0.65		1	1	7.009			
L35	0.01	0.07	A	1	0.69	9	1	1	0.643	0.00	0.02	A
63.00-62.75			B	1	0.657		1	1	0.643			
			C	1	0.65		1	1	0.643			
L36	0.02	0.18	A	1	0.69	9	1	1	1.727	0.01	0.02	A
62.75-62.08			B	1	0.657		1	1	1.727			
			C	1	0.65		1	1	1.727			
L37	0.01	0.06	A	1	0.689	9	1	1	0.647	0.00	0.02	A
62.08-61.83			B	1	0.656		1	1	0.647			
			C	1	0.65		1	1	0.647			
L38	0.03	0.28	A	1	0.689	9	1	1	3.013	0.02	0.02	A
61.83-60.67			B	1	0.655		1	1	3.013			
			C	1	0.65		1	1	3.013			
L39	0.01	0.06	A	1	0.703	9	1	1	0.652	0.00	0.02	A
60.67-60.42			B	1	0.654		1	1	0.652			
			C	1	0.65		1	1	0.652			
L40	0.04	0.34	A	1	0.701	9	1	1	3.720	0.03	0.02	A
60.42-59.00			B	1	0.653		1	1	3.720			
			C	1	0.65		1	1	3.720			
L41	0.01	0.06	A	1	0.7	9	1	1	0.658	0.00	0.02	A
59.00-58.75			B	1	0.653		1	1	0.658			
			C	1	0.65		1	1	0.658			
L42	0.12	1.22	A	1	0.697	9	1	1	13.349	0.09	0.02	A
58.75-53.75			B	1	0.65		1	1	13.349			
			C	1	0.65		1	1	13.349			
L43	0.13	1.32	A	1	0.705	9	1	1	14.410	0.10	0.02	A
53.75-48.50			B	1	0.65		1	1	14.410			
			C	1	0.65		1	1	14.410			
L44	0.02	1.59	A	1	0.746	8	1	1	2.747	0.02	0.02	A
48.50-47.50			B	1	0.65		1	1	2.747			
			C	1	0.65		1	1	2.747			
L45	0.04	0.49	A	1	0.743	8	1	1	4.843	0.03	0.02	A
47.50-45.75			B	1	0.65		1	1	4.843			
			C	1	0.65		1	1	4.843			
L46	0.01	0.07	A	1	0.741	8	1	1	0.695	0.00	0.02	A
45.75-45.50			B	1	0.65		1	1	0.695			
			C	1	0.65		1	1	0.695			
L47	0.01	0.14	A	1	0.741	8	1	1	1.394	0.01	0.02	A
45.50-45.00			B	1	0.65		1	1	1.394			
			C	1	0.65		1	1	1.394			
L48	0.01	0.08	A	1	0.74	8	1	1	0.698	0.00	0.02	A
45.00-44.75			B	1	0.65		1	1	0.698			
			C	1	0.65		1	1	0.698			
L49	0.03	0.39	A	1	0.739	8	1	1	3.504	0.02	0.02	A
44.75-43.50			B	1	0.65		1	1	3.504			
			C	1	0.65		1	1	3.504			
L50	0.01	0.08	A	1	0.738	8	1	1	0.703	0.00	0.02	A
43.50-43.25			B	1	0.65		1	1	0.703			
			C	1	0.65		1	1	0.703			
L51	0.12	1.64	A	1	0.734	8	1	1	14.256	0.09	0.02	A
43.25-38.25			B	1	0.65		1	1	14.256			
			C	1	0.65		1	1	14.256			
L52	0.12	1.66	A	1	0.727	8	1	1	14.622	0.09	0.02	A
38.25-33.25			B	1	0.65		1	1	14.622			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
			C	1	0.65		1	1	14.622			
L53	0.07	0.92	A	1	0.72	8	1	1	8.198	0.05	0.02	A
33.25-30.50			B	1	0.65		1	1	8.198			
			C	1	0.65		1	1	8.198			
L54	0.01	0.09	A	1	0.658	8	1	1	0.751	0.00	0.02	B
30.50-30.25			B	1	0.697		1	1	0.751			
			C	1	0.65		1	1	0.751			
L55	0.01	0.20	A	1	0.658	8	1	1	1.745	0.01	0.02	B
30.25-29.67			B	1	0.697		1	1	1.745			
			C	1	0.65		1	1	1.745			
L56	0.01	0.08	A	1	0.657	8	1	1	0.754	0.00	0.02	B
29.67-29.42			B	1	0.696		1	1	0.754			
			C	1	0.65		1	1	0.754			
L57	0.04	0.43	A	1	0.656	8	1	1	4.303	0.03	0.02	B
29.42-28.00			B	1	0.695		1	1	4.303			
			C	1	0.65		1	1	4.303			
L58	0.01	0.08	A	1	0.656	8	1	1	0.760	0.00	0.02	B
28.00-27.75			B	1	0.694		1	1	0.760			
			C	1	0.65		1	1	0.760			
L59	0.02	0.27	A	1	0.656	8	1	1	2.530	0.01	0.02	B
27.75-26.92			B	1	0.694		1	1	2.530			
			C	1	0.65		1	1	2.530			
L60	0.01	0.08	A	1	0.655	8	1	1	0.764	0.00	0.02	B
26.92-26.67			B	1	0.694		1	1	0.764			
			C	1	0.65		1	1	0.764			
L61	0.00	0.05	A	1	0.655	8	1	1	0.520	0.00	0.02	B
26.67-26.50			B	1	0.693		1	1	0.520			
			C	1	0.65		1	1	0.520			
L62	0.01	0.07	A	1	0.655	7	1	1	0.766	0.00	0.02	B
26.50-26.25			B	1	0.693		1	1	0.766			
			C	1	0.65		1	1	0.766			
L63	0.03	0.39	A	1	0.65	7	1	1	4.089	0.02	0.02	B
26.25-24.92			B	1	0.692		1	1	4.089			
			C	1	0.65		1	1	4.089			
L64	0.01	0.08	A	1	0.65	7	1	1	0.772	0.00	0.02	B
24.92-24.67			B	1	0.692		1	1	0.772			
			C	1	0.65		1	1	0.772			
L65	0.06	0.75	A	1	0.65	7	1	1	7.767	0.04	0.02	B
24.67-22.17			B	1	0.69		1	1	7.767			
			C	1	0.65		1	1	7.767			
L66	0.01	0.08	A	1	0.65	7	1	1	0.781	0.00	0.02	B
22.17-21.92			B	1	0.689		1	1	0.781			
			C	1	0.65		1	1	0.781			
L67	0.12	1.64	A	1	0.65	7	1	1	15.823	0.08	0.02	B
21.92-16.92			B	1	0.686		1	1	15.823			
			C	1	0.65		1	1	15.823			
L68	0.12	1.65	A	1	0.65	7	1	1	16.189	0.08	0.02	B
16.92-11.92			B	1	0.681		1	1	16.189			
			C	1	0.65		1	1	16.189			
L69	0.10	1.67	A	1	0.65	7	1	1	16.554	0.08	0.02	B
11.92-6.92			B	1	0.655		1	1	16.554			
			C	1	0.65		1	1	16.554			
L70 6.92-1.92	0.00	1.68	A	1	0.65	7	1	1	16.920	0.08	0.02	C
			B	1	0.65		1	1	16.920			
			C	1	0.65		1	1	16.920			
L71 1.92-0.00	0.00	0.65	A	1	0.65	7	1	1	6.595	0.03	0.02	C
			B	1	0.65		1	1	6.595			
			C	1	0.65		1	1	6.595			
Sum Weight:	3.27	33.40						OTM	161.62 kip-ft	2.33		

Discrete Appurtenance Pressures - No Ice $G_H = 1.100$

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 5/8x4'	240.0000	0.03	-0.58	0.33	151.00	1.380	29	0.25	0.25
Platform Mount [LP 602-1]	0.0000	1.34	0.00	0.00	148.00	1.375	29	32.03	32.03
P90-14-XLH-RR w/ Mount Pipe	0.0000	0.10	0.00	-4.67	150.00	1.378	29	10.61	8.11
P90-14-XLH-RR w/ Mount Pipe	120.0000	0.10	4.05	2.34	150.00	1.378	29	10.61	8.11
P90-14-XLH-RR w/ Mount Pipe	240.0000	0.10	-4.05	2.34	150.00	1.378	29	10.61	8.11
AM-X-CD-16-65-00T-RET w/ Mount Pipe	0.0000	0.07	0.00	-4.67	150.00	1.378	29	8.26	6.30
AM-X-CD-16-65-00T-RET w/ Mount Pipe	120.0000	0.07	4.05	2.34	150.00	1.378	29	8.26	6.30
AM-X-CD-16-65-00T-RET w/ Mount Pipe	240.0000	0.07	-4.05	2.34	150.00	1.378	29	8.26	6.30
TT19-08BP111-001	0.0000	0.04	0.00	-4.67	150.00	1.378	29	1.09	0.88
TT19-08BP111-001	120.0000	0.04	4.05	2.34	150.00	1.378	29	1.09	0.88
TT19-08BP111-001	240.0000	0.04	-4.05	2.34	150.00	1.378	29	1.09	0.88
RRUS-11	0.0000	0.06	0.00	-4.67	150.00	1.378	29	2.52	1.07
RRUS-11	120.0000	0.06	4.05	2.34	150.00	1.378	29	2.52	1.07
RRUS-11	240.0000	0.06	-4.05	2.34	150.00	1.378	29	2.52	1.07
DC6-48-60-18-8F	0.0000	0.03	0.00	-4.67	150.00	1.378	29	1.21	1.21
T-Arm Mount [TA 602-3]	0.0000	0.77	0.00	0.00	140.00	1.359	29	11.59	11.59
BSAMNT-SBS-2-2	300.0000	0.06	-4.10	-2.37	140.00	1.359	29	0.00	0.00
BSAMNT-SBS-2-2	60.0000	0.06	4.10	-2.37	140.00	1.359	29	0.00	0.00
BSAMNT-SBS-2-2	180.0000	0.06	0.00	4.73	140.00	1.359	29	0.00	0.00
Pipe Mount	0.0000	0.02	0.00	-4.73	140.00	1.359	29	1.20	1.20
Pipe Mount	120.0000	0.02	4.10	2.37	140.00	1.359	29	1.20	1.20
Pipe Mount	240.0000	0.02	-4.10	2.37	140.00	1.359	29	1.20	1.20
DB846F65ZAXY w/ Mount Pipe	0.0000	0.10	0.00	-4.73	140.00	1.359	29	14.54	15.64
DB846F65ZAXY w/ Mount Pipe	120.0000	0.10	4.10	2.37	140.00	1.359	29	14.54	15.64
DB846F65ZAXY w/ Mount Pipe	240.0000	0.10	-4.10	2.37	140.00	1.359	29	14.54	15.64
JAHH-65B-R3B w/ Mount Pipe	0.0000	0.18	0.00	-4.73	140.00	1.359	29	18.70	15.29
JAHH-65B-R3B w/ Mount Pipe	120.0000	0.18	4.10	2.37	140.00	1.359	29	18.70	15.29
JAHH-65B-R3B w/ Mount Pipe	240.0000	0.18	-4.10	2.37	140.00	1.359	29	18.70	15.29
AIRSCALE RRH 4T4R B5 160W	0.0000	0.04	0.00	-4.73	140.00	1.359	29	1.29	0.72
AIRSCALE RRH 4T4R B5 160W	120.0000	0.04	4.10	2.37	140.00	1.359	29	1.29	0.72
AIRSCALE RRH 4T4R B5 160W	240.0000	0.04	-4.10	2.37	140.00	1.359	29	1.29	0.72
B13 RRH 4X30	0.0000	0.06	0.00	-4.73	140.00	1.359	29	2.06	1.32
B13 RRH 4X30	120.0000	0.06	4.10	2.37	140.00	1.359	29	2.06	1.32
B13 RRH 4X30	240.0000	0.06	-4.10	2.37	140.00	1.359	29	2.06	1.32
B66A RRH4X45	0.0000	0.06	0.00	-4.73	140.00	1.359	29	2.58	1.63
B66A RRH4X45	120.0000	0.06	4.10	2.37	140.00	1.359	29	2.58	1.63

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
B66A RRH4X45	240.0000	0.06	-4.10	2.37	140.00	1.359	29	2.58	1.63
DB-C1-12C-24AB-0Z	120.0000	0.03	1.07	0.62	140.00	1.359	29	4.73	3.61
F4P-12W Platform Mount	0.0000	2.64	0.00	0.00	128.00	1.333	28	38.83	38.83
F4P-HRK12 Handrail Kit	190.0000	0.13	-5.90	3.41	128.00	1.333	28	3.46	0.05
F4P-HRK12 Handrail Kit	310.0000	0.13	-4.17	2.41	128.00	1.333	28	3.46	0.05
F4P-HRK12 Handrail Kit	40.0000	0.13	0.00	-5.82	128.00	1.333	28	3.46	0.05
F4P-HRK12 Handrail Kit	120.0000	0.13	4.17	2.41	128.00	1.333	28	3.46	0.05
Pipe Mount	190.0000	0.02	-4.17	2.41	128.00	1.333	28	1.20	1.20
Pipe Mount	310.0000	0.02	-4.17	2.41	128.00	1.333	28	1.20	1.20
Pipe Mount	40.0000	0.02	0.00	-5.82	128.00	1.333	28	1.20	1.20
Pipe Mount	120.0000	0.02	4.17	2.41	128.00	1.333	28	1.20	1.20
AIR 32 B2A/B66AA w/Mount Pipe	70.0000	0.15	4.17	2.41	128.00	1.333	28	6.51	5.74
AIR 32 B2A/B66AA w/Mount Pipe	70.0000	0.15	0.00	-6.82	128.00	1.333	28	6.51	5.74
AIR 32 B2A/B66AA w/Mount Pipe	40.0000	0.15	0.00	-4.82	128.00	1.333	28	6.51	5.74
AIR 32 B2A/B66AA w/Mount Pipe	120.0000	0.15	4.17	2.41	128.00	1.333	28	6.51	5.74
APXVAA24_43-U-A20 w/Mount Pipe	190.0000	0.13	-5.90	3.41	128.00	1.333	28	22.40	10.64
APXVAA24_43-U-A20 w/Mount Pipe	70.0000	0.13	0.00	-4.82	128.00	1.333	28	22.40	10.64
APXVAA24_43-U-A20 w/Mount Pipe	160.0000	0.13	4.17	2.41	128.00	1.333	28	22.40	10.64
APXVAA24_43-U-A20 w/Mount Pipe	120.0000	0.13	4.17	2.41	128.00	1.333	28	22.40	10.64
RADIO 4449 B12/B71	70.0000	0.08	4.17	2.41	128.00	1.333	28	1.65	1.30
RADIO 4449 B12/B71	190.0000	0.08	-4.17	2.41	128.00	1.333	28	1.65	1.30
RADIO 2217	310.0000	0.03	-5.90	3.41	128.00	1.333	28	1.35	0.62
RADIO 2217	70.0000	0.03	0.00	-6.82	128.00	1.333	28	1.35	0.62
RADIO 2217	40.0000	0.03	0.00	-6.82	128.00	1.333	28	1.35	0.62
RADIO 2217	160.0000	0.03	4.17	2.41	128.00	1.333	28	1.35	0.62
RADIO 4449 B12/B71	120.0000	0.08	4.17	2.41	128.00	1.333	28	1.65	1.30
RADIO 4449 B12/B71	120.0000	0.08	4.17	2.41	128.00	1.333	28	1.65	1.30
	Sum Weight:	9.39							

Discrete Appurtenance Pressures - With Ice $G_H = 1.100$

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 5/8x4'	240.0000	0.05	-0.58	0.33	151.00	1.380	8	1.36	1.36	1.7464
Platform Mount [LP 602-1]	0.0000	2.94	0.00	0.00	148.00	1.375	8	55.31	55.31	1.7429
P90-14-XLH-RR w/ Mount Pipe	0.0000	0.48	0.00	-4.67	150.00	1.378	8	13.39	12.49	1.7452
P90-14-XLH-RR w/ Mount Pipe	120.0000	0.48	4.05	2.34	150.00	1.378	8	13.39	12.49	1.7452
P90-14-XLH-RR w/ Mount Pipe	240.0000	0.48	-4.05	2.34	150.00	1.378	8	13.39	12.49	1.7452
AM-X-CD-16-65-00T-RET w/ Mount Pipe	0.0000	0.34	0.00	-4.67	150.00	1.378	8	10.15	9.72	1.7452
AM-X-CD-16-65-00T-RET w/ Mount Pipe	120.0000	0.34	4.05	2.34	150.00	1.378	8	10.15	9.72	1.7452
AM-X-CD-16-65-00T-R	240.0000	0.34	-4.05	2.34	150.00	1.378	8	10.15	9.72	1.7452

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
ET w/ Mount Pipe										
TT19-08BP111-001	0.0000	0.09	0.00	-4.67	150.00	1.378	8	1.83	1.57	1.7452
TT19-08BP111-001	120.0000	0.09	4.05	2.34	150.00	1.378	8	1.83	1.57	1.7452
TT19-08BP111-001	240.0000	0.09	-4.05	2.34	150.00	1.378	8	1.83	1.57	1.7452
RRUS-11	0.0000	0.14	0.00	-4.67	150.00	1.378	8	3.24	1.60	1.7452
RRUS-11	120.0000	0.14	4.05	2.34	150.00	1.378	8	3.24	1.60	1.7452
RRUS-11	240.0000	0.14	-4.05	2.34	150.00	1.378	8	3.24	1.60	1.7452
DC6-48-60-18-8F	0.0000	0.12	0.00	-4.67	150.00	1.378	8	2.45	2.45	1.7452
T-Arm Mount [TA 602-3]	0.0000	1.52	0.00	0.00	140.00	1.359	8	24.94	24.94	1.7332
BSAMNT-SBS-2-2	300.0000	0.08	-4.10	-2.37	140.00	1.359	8	0.00	0.00	1.7332
BSAMNT-SBS-2-2	60.0000	0.08	4.10	-2.37	140.00	1.359	8	0.00	0.00	1.7332
BSAMNT-SBS-2-2	180.0000	0.08	0.00	4.73	140.00	1.359	8	0.00	0.00	1.7332
Pipe Mount	0.0000	0.07	0.00	-4.73	140.00	1.359	8	2.29	2.29	1.7332
Pipe Mount	120.0000	0.07	4.10	2.37	140.00	1.359	8	2.29	2.29	1.7332
Pipe Mount	240.0000	0.07	-4.10	2.37	140.00	1.359	8	2.29	2.29	1.7332
DB846F65ZAXY w/ Mount Pipe	0.0000	0.64	0.00	-4.73	140.00	1.359	8	18.24	22.49	1.7332
DB846F65ZAXY w/ Mount Pipe	120.0000	0.64	4.10	2.37	140.00	1.359	8	18.24	22.49	1.7332
DB846F65ZAXY w/ Mount Pipe	240.0000	0.64	-4.10	2.37	140.00	1.359	8	18.24	22.49	1.7332
JAHH-65B-R3B w/ Mount Pipe	0.0000	0.78	0.00	-4.73	140.00	1.359	8	22.51	22.15	1.7332
JAHH-65B-R3B w/ Mount Pipe	120.0000	0.78	4.10	2.37	140.00	1.359	8	22.51	22.15	1.7332
JAHH-65B-R3B w/ Mount Pipe	240.0000	0.78	-4.10	2.37	140.00	1.359	8	22.51	22.15	1.7332
AIRSCALE RRH 4T4R B5 160W	0.0000	0.09	0.00	-4.73	140.00	1.359	8	1.81	1.15	1.7332
AIRSCALE RRH 4T4R B5 160W	120.0000	0.09	4.10	2.37	140.00	1.359	8	1.81	1.15	1.7332
AIRSCALE RRH 4T4R B5 160W	240.0000	0.09	-4.10	2.37	140.00	1.359	8	1.81	1.15	1.7332
B13 RRH 4X30	0.0000	0.13	0.00	-4.73	140.00	1.359	8	2.73	1.90	1.7332
B13 RRH 4X30	120.0000	0.13	4.10	2.37	140.00	1.359	8	2.73	1.90	1.7332
B13 RRH 4X30	240.0000	0.13	-4.10	2.37	140.00	1.359	8	2.73	1.90	1.7332
B66A RRH4X45	0.0000	0.14	0.00	-4.73	140.00	1.359	8	3.36	2.29	1.7332
B66A RRH4X45	120.0000	0.14	4.10	2.37	140.00	1.359	8	3.36	2.29	1.7332
B66A RRH4X45	240.0000	0.14	-4.10	2.37	140.00	1.359	8	3.36	2.29	1.7332
DB-C1-12C-24AB-0Z	120.0000	0.18	1.07	0.62	140.00	1.359	8	5.82	4.61	1.7332
F4P-12W Platform Mount	0.0000	6.30	0.00	0.00	128.00	1.333	8	78.08	78.08	1.7178
F4P-HRK12 Handrail Kit	190.0000	0.20	-5.90	3.41	128.00	1.333	8	6.91	0.22	1.7178
F4P-HRK12 Handrail Kit	310.0000	0.20	-4.17	2.41	128.00	1.333	8	6.91	0.22	1.7178
F4P-HRK12 Handrail Kit	40.0000	0.20	0.00	-5.82	128.00	1.333	8	6.91	0.22	1.7178
F4P-HRK12 Handrail Kit	120.0000	0.20	4.17	2.41	128.00	1.333	8	6.91	0.22	1.7178
Pipe Mount	190.0000	0.07	-4.17	2.41	128.00	1.333	8	2.28	2.28	1.7178
Pipe Mount	310.0000	0.07	-4.17	2.41	128.00	1.333	8	2.28	2.28	1.7178
Pipe Mount	40.0000	0.07	0.00	-5.82	128.00	1.333	8	2.28	2.28	1.7178
Pipe Mount	120.0000	0.07	4.17	2.41	128.00	1.333	8	2.28	2.28	1.7178
AIR 32 B2A/B66AA w/Mount Pipe	70.0000	0.38	4.17	2.41	128.00	1.333	8	7.84	7.97	1.7178
AIR 32 B2A/B66AA w/Mount Pipe	70.0000	0.38	0.00	-6.82	128.00	1.333	8	7.84	7.97	1.7178
AIR 32 B2A/B66AA w/Mount Pipe	40.0000	0.38	0.00	-4.82	128.00	1.333	8	7.84	7.97	1.7178
AIR 32 B2A/B66AA w/Mount Pipe	120.0000	0.38	4.17	2.41	128.00	1.333	8	7.84	7.97	1.7178
APXVAA24_43-U-A20 w/Mount Pipe	190.0000	0.64	-5.90	3.41	128.00	1.333	8	25.13	14.95	1.7178

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
APXVAA24_43-U-A20 w/Mount Pipe	70.0000	0.64	0.00	-4.82	128.00	1.333	8	25.13	14.95	1.7178
APXVAA24_43-U-A20 w/Mount Pipe	160.0000	0.64	4.17	2.41	128.00	1.333	8	25.13	14.95	1.7178
APXVAA24_43-U-A20 w/Mount Pipe	120.0000	0.64	4.17	2.41	128.00	1.333	8	25.13	14.95	1.7178
RADIO 4449 B12/B71	70.0000	0.15	4.17	2.41	128.00	1.333	8	2.23	1.83	1.7178
RADIO 4449 B12/B71	190.0000	0.15	-4.17	2.41	128.00	1.333	8	2.23	1.83	1.7178
RADIO 2217	310.0000	0.08	-5.90	3.41	128.00	1.333	8	1.88	1.03	1.7178
RADIO 2217	70.0000	0.08	0.00	-6.82	128.00	1.333	8	1.88	1.03	1.7178
RADIO 2217	40.0000	0.08	0.00	-6.82	128.00	1.333	8	1.88	1.03	1.7178
RADIO 2217	160.0000	0.08	4.17	2.41	128.00	1.333	8	1.88	1.03	1.7178
RADIO 4449 B12/B71	120.0000	0.15	4.17	2.41	128.00	1.333	8	2.23	1.83	1.7178
RADIO 4449 B12/B71	120.0000	0.15	4.17	2.41	128.00	1.333	8	2.23	1.83	1.7178
	Sum Weight:	26.09								

Discrete Appurtenance Pressures - Service $G_H = 1.100$

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 5/8x4'	240.0000	0.03	-0.58	0.33	151.00	1.380	11	0.25	0.25
Platform Mount [LP 602-1]	0.0000	1.34	0.00	0.00	148.00	1.375	11	32.03	32.03
P90-14-XLH-RR w/ Mount Pipe	0.0000	0.10	0.00	-4.67	150.00	1.378	11	10.61	8.11
P90-14-XLH-RR w/ Mount Pipe	120.0000	0.10	4.05	2.34	150.00	1.378	11	10.61	8.11
P90-14-XLH-RR w/ Mount Pipe	240.0000	0.10	-4.05	2.34	150.00	1.378	11	10.61	8.11
AM-X-CD-16-65-00T-RET w/ Mount Pipe	0.0000	0.07	0.00	-4.67	150.00	1.378	11	8.26	6.30
AM-X-CD-16-65-00T-RET w/ Mount Pipe	120.0000	0.07	4.05	2.34	150.00	1.378	11	8.26	6.30
AM-X-CD-16-65-00T-RET w/ Mount Pipe	240.0000	0.07	-4.05	2.34	150.00	1.378	11	8.26	6.30
TT19-08BP111-001	0.0000	0.04	0.00	-4.67	150.00	1.378	11	1.09	0.88
TT19-08BP111-001	120.0000	0.04	4.05	2.34	150.00	1.378	11	1.09	0.88
TT19-08BP111-001	240.0000	0.04	-4.05	2.34	150.00	1.378	11	1.09	0.88
RRUS-11	0.0000	0.06	0.00	-4.67	150.00	1.378	11	2.52	1.07
RRUS-11	120.0000	0.06	4.05	2.34	150.00	1.378	11	2.52	1.07
RRUS-11	240.0000	0.06	-4.05	2.34	150.00	1.378	11	2.52	1.07
DC6-48-60-18-8F	0.0000	0.03	0.00	-4.67	150.00	1.378	11	1.21	1.21
T-Arm Mount [TA 602-3]	0.0000	0.77	0.00	0.00	140.00	1.359	11	11.59	11.59
BSAMNT-SBS-2-2	300.0000	0.06	-4.10	-2.37	140.00	1.359	11	0.00	0.00
BSAMNT-SBS-2-2	60.0000	0.06	4.10	-2.37	140.00	1.359	11	0.00	0.00
BSAMNT-SBS-2-2	180.0000	0.06	0.00	4.73	140.00	1.359	11	0.00	0.00
Pipe Mount	0.0000	0.02	0.00	-4.73	140.00	1.359	11	1.20	1.20
Pipe Mount	120.0000	0.02	4.10	2.37	140.00	1.359	11	1.20	1.20
Pipe Mount	240.0000	0.02	-4.10	2.37	140.00	1.359	11	1.20	1.20
DB846F65ZAXY w/ Mount Pipe	0.0000	0.10	0.00	-4.73	140.00	1.359	11	14.54	15.64
DB846F65ZAXY w/ Mount Pipe	120.0000	0.10	4.10	2.37	140.00	1.359	11	14.54	15.64
DB846F65ZAXY w/ Mount Pipe	240.0000	0.10	-4.10	2.37	140.00	1.359	11	14.54	15.64

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
JAHH-65B-R3B w/ Mount Pipe	0.0000	0.18	0.00	-4.73	140.00	1.359	11	18.70	15.29
JAHH-65B-R3B w/ Mount Pipe	120.0000	0.18	4.10	2.37	140.00	1.359	11	18.70	15.29
JAHH-65B-R3B w/ Mount Pipe	240.0000	0.18	-4.10	2.37	140.00	1.359	11	18.70	15.29
AIRSCALE RRH 4T4R B5 160W	0.0000	0.04	0.00	-4.73	140.00	1.359	11	1.29	0.72
AIRSCALE RRH 4T4R B5 160W	120.0000	0.04	4.10	2.37	140.00	1.359	11	1.29	0.72
AIRSCALE RRH 4T4R B5 160W	240.0000	0.04	-4.10	2.37	140.00	1.359	11	1.29	0.72
B13 RRH 4X30	0.0000	0.06	0.00	-4.73	140.00	1.359	11	2.06	1.32
B13 RRH 4X30	120.0000	0.06	4.10	2.37	140.00	1.359	11	2.06	1.32
B13 RRH 4X30	240.0000	0.06	-4.10	2.37	140.00	1.359	11	2.06	1.32
B66A RRH4X45	0.0000	0.06	0.00	-4.73	140.00	1.359	11	2.58	1.63
B66A RRH4X45	120.0000	0.06	4.10	2.37	140.00	1.359	11	2.58	1.63
B66A RRH4X45	240.0000	0.06	-4.10	2.37	140.00	1.359	11	2.58	1.63
DB-C1-12C-24AB-0Z	120.0000	0.03	1.07	0.62	140.00	1.359	11	4.73	3.61
F4P-12W Platform Mount	0.0000	2.64	0.00	0.00	128.00	1.333	10	38.83	38.83
F4P-HRK12 Handrail Kit	190.0000	0.13	-5.90	3.41	128.00	1.333	10	3.46	0.05
F4P-HRK12 Handrail Kit	310.0000	0.13	-4.17	2.41	128.00	1.333	10	3.46	0.05
F4P-HRK12 Handrail Kit	40.0000	0.13	0.00	-5.82	128.00	1.333	10	3.46	0.05
F4P-HRK12 Handrail Kit	120.0000	0.13	4.17	2.41	128.00	1.333	10	3.46	0.05
Pipe Mount	190.0000	0.02	-4.17	2.41	128.00	1.333	10	1.20	1.20
Pipe Mount	310.0000	0.02	-4.17	2.41	128.00	1.333	10	1.20	1.20
Pipe Mount	40.0000	0.02	0.00	-5.82	128.00	1.333	10	1.20	1.20
Pipe Mount	120.0000	0.02	4.17	2.41	128.00	1.333	10	1.20	1.20
AIR 32 B2A/B66AA w/Mount Pipe	70.0000	0.15	4.17	2.41	128.00	1.333	10	6.51	5.74
AIR 32 B2A/B66AA w/Mount Pipe	70.0000	0.15	0.00	-6.82	128.00	1.333	10	6.51	5.74
AIR 32 B2A/B66AA w/Mount Pipe	40.0000	0.15	0.00	-4.82	128.00	1.333	10	6.51	5.74
AIR 32 B2A/B66AA w/Mount Pipe	120.0000	0.15	4.17	2.41	128.00	1.333	10	6.51	5.74
APXVAA24_43-U-A20 w/Mount Pipe	190.0000	0.13	-5.90	3.41	128.00	1.333	10	22.40	10.64
APXVAA24_43-U-A20 w/Mount Pipe	70.0000	0.13	0.00	-4.82	128.00	1.333	10	22.40	10.64
APXVAA24_43-U-A20 w/Mount Pipe	160.0000	0.13	4.17	2.41	128.00	1.333	10	22.40	10.64
APXVAA24_43-U-A20 w/Mount Pipe	120.0000	0.13	4.17	2.41	128.00	1.333	10	22.40	10.64
RADIO 4449 B12/B71	70.0000	0.08	4.17	2.41	128.00	1.333	10	1.65	1.30
RADIO 4449 B12/B71	190.0000	0.08	-4.17	2.41	128.00	1.333	10	1.65	1.30
RADIO 2217	310.0000	0.03	-5.90	3.41	128.00	1.333	10	1.35	0.62
RADIO 2217	70.0000	0.03	0.00	-6.82	128.00	1.333	10	1.35	0.62
RADIO 2217	40.0000	0.03	0.00	-6.82	128.00	1.333	10	1.35	0.62
RADIO 2217	160.0000	0.03	4.17	2.41	128.00	1.333	10	1.35	0.62
RADIO 4449 B12/B71	120.0000	0.08	4.17	2.41	128.00	1.333	10	1.65	1.30
RADIO 4449 B12/B71	120.0000	0.08	4.17	2.41	128.00	1.333	10	1.65	1.30
	Sum Weight:	9.39							

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
128.00	SC2-W100AB	190.0000	0.02	-4.17	2.41	1.333	3.80	28
		Sum Weight:	0.02					

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
128.00	SC2-W100AB	190.0000	0.10	-4.17	2.41	1.333	4.81	8	1.7178
		Sum Weight:	0.10						

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
128.00	SC2-W100AB	190.0000	0.02	-4.17	2.41	1.333	3.80	10
		Sum Weight:	0.02					

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	33.40					
Bracing Weight	0.00					
Total Member Self-Weight	33.40			-0.50	-2.47	
Total Weight	46.08			-0.50	-2.47	
Wind 0 deg - No Ice		-0.06	-16.99	-1907.71	5.78	-0.84
Wind 30 deg - No Ice		8.13	-14.40	-1618.38	-912.26	-1.82
Wind 60 deg - No Ice		13.99	-8.24	-932.36	-1581.12	-2.45
Wind 90 deg - No Ice		16.22	0.02	2.19	-1833.85	-2.07
Wind 120 deg - No Ice		14.38	8.46	952.05	-1618.81	-1.16
Wind 150 deg - No Ice		8.26	14.31	1612.94	-934.16	-0.34
Wind 180 deg - No Ice		0.10	16.92	1898.44	-15.09	0.67
Wind 210 deg - No Ice		-8.15	14.32	1606.45	910.64	1.37
Wind 240 deg - No Ice		-14.01	8.09	912.72	1578.67	1.74
Wind 270 deg - No Ice		-16.21	-0.06	-8.50	1828.04	1.90
Wind 300 deg - No Ice		-14.37	-8.56	-966.54	1612.15	0.79
Wind 330 deg - No Ice		-8.19	-14.42	-1627.86	920.11	0.10
Member Ice	8.60					
Total Weight Ice	87.55			-2.34	-7.84	
Wind 0 deg - Ice		-0.02	-9.47	-981.22	-4.77	-0.29
Wind 30 deg - Ice		4.64	-8.17	-845.98	-485.45	-0.54
Wind 60 deg - Ice		7.37	-4.32	-460.89	-788.23	-0.70
Wind 90 deg - Ice		8.22	0.01	-1.30	-890.50	-0.53
Wind 120 deg - Ice		7.70	4.50	473.48	-818.71	-0.24
Wind 150 deg - Ice		4.51	7.82	812.12	-477.61	-0.02

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 180 deg - Ice		0.04	9.44	973.51	-12.51	0.23
Wind 210 deg - Ice		-4.65	8.14	837.30	470.98	0.38
Wind 240 deg - Ice		-7.38	4.27	449.39	773.46	0.44
Wind 270 deg - Ice		-8.21	-0.02	-5.32	874.49	0.47
Wind 300 deg - Ice		-7.69	-4.54	-483.10	802.39	0.10
Wind 330 deg - Ice		-4.48	-7.86	-821.89	458.59	-0.06
Total Weight	46.08			-0.50	-2.47	
Wind 0 deg - Service		-0.02	-6.33	-710.05	1.81	-0.31
Wind 30 deg - Service		3.03	-5.36	-602.30	-340.09	-0.68
Wind 60 deg - Service		5.21	-3.07	-346.81	-589.19	-0.91
Wind 90 deg - Service		6.04	0.01	1.23	-683.31	-0.77
Wind 120 deg - Service		5.36	3.15	354.98	-603.22	-0.43
Wind 150 deg - Service		3.08	5.33	601.11	-348.25	-0.13
Wind 180 deg - Service		0.04	6.30	707.43	-5.97	0.25
Wind 210 deg - Service		-3.04	5.33	598.69	338.79	0.51
Wind 240 deg - Service		-5.22	3.01	340.33	587.58	0.65
Wind 270 deg - Service		-6.04	-0.02	-2.75	680.45	0.71
Wind 300 deg - Service		-5.35	-3.19	-359.54	600.05	0.30
Wind 330 deg - Service		-3.05	-5.37	-605.83	342.32	0.04

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	149 - 144	Pole	Max Tension	14	0.00	-0.00	0.00
			Max. Compression	26	-7.15	0.02	0.60
			Max. Mx	20	-2.27	26.68	0.14
			Max. My	2	-2.25	0.03	26.84
			Max. Vy	8	5.23	-26.64	0.13
			Max. Vx	2	-5.24	0.03	26.84
			Max. Torque	8			0.30
L2	144 - 139	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-15.65	-0.21	0.50
			Max. Mx	8	-4.69	-59.18	0.12
			Max. My	2	-4.66	0.04	59.34
			Max. Vy	8	11.17	-59.18	0.12
			Max. Vx	2	-11.16	0.04	59.34
			Max. Torque	8			0.30
L3	139 - 134	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.26	-0.31	0.54
			Max. Mx	8	-5.04	-115.70	0.05
			Max. My	2	-5.01	0.15	115.81
			Max. Vy	8	11.44	-115.70	0.05
			Max. Vx	2	-11.43	0.15	115.81
			Max. Torque	10			0.26
L4	134 - 129	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.90	-0.41	0.58
			Max. Mx	8	-5.42	-173.52	-0.01
			Max. My	2	-5.39	0.25	173.59
			Max. Vy	8	11.70	-173.52	-0.01
			Max. Vx	2	-11.69	0.25	173.59
			Max. Torque	10			0.26
L5	129 - 124.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.02	-4.82	-0.63
			Max. Mx	8	-10.91	-252.43	-0.85
			Max. My	14	-10.84	-2.55	-252.03
			Max. Vy	8	18.84	-252.43	-0.85
			Max. Vx	2	-19.24	-1.04	251.94
			Max. Torque	7			3.86

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L6	124.5 - 124.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.07	-4.84	-0.62
			Max. Mx	8	-10.96	-257.14	-0.86
			Max. My	14	-10.89	-2.59	-256.81
			Max. Vy	8	18.85	-257.14	-0.86
			Max. Vx	2	-19.25	-1.02	256.76
			Max. Torque	7			3.86
L7	124.25 - 119.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.23	-5.07	-0.52
			Max. Mx	8	-11.62	-352.06	-0.97
			Max. My	2	-11.53	-0.53	353.76
			Max. Vy	8	19.11	-352.06	-0.97
			Max. Vx	2	-19.56	-0.53	353.76
			Max. Torque	7			3.86
L8	119.25 - 118.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.43	-5.11	-0.50
			Max. Mx	8	-11.73	-366.41	-0.99
			Max. My	2	-11.64	-0.46	368.44
			Max. Vy	8	19.15	-366.41	-0.99
			Max. Vx	2	-19.60	-0.46	368.44
			Max. Torque	7			3.86
L9	118.5 - 118.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.52	-5.12	-0.50
			Max. Mx	8	-11.79	-371.21	-1.00
			Max. My	2	-11.69	-0.43	373.35
			Max. Vy	8	19.16	-371.21	-1.00
			Max. Vx	2	-19.62	-0.43	373.35
			Max. Torque	7			3.86
L10	118.25 - 116	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.27	-5.23	-0.45
			Max. Mx	8	-12.23	-414.50	-1.05
			Max. My	2	-12.13	-0.21	417.70
			Max. Vy	8	19.31	-414.50	-1.05
			Max. Vx	2	-19.80	-0.21	417.70
			Max. Torque	7			3.86
L11	116 - 115.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.36	-5.24	-0.44
			Max. Mx	8	-12.29	-419.33	-1.06
			Max. My	2	-12.19	-0.19	422.65
			Max. Vy	8	19.33	-419.33	-1.06
			Max. Vx	2	-19.82	-0.19	422.65
			Max. Torque	7			3.86
L12	115.75 - 110.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.05	-5.47	-0.33
			Max. Mx	8	-13.29	-516.80	-1.17
			Max. My	2	-13.19	0.30	522.75
			Max. Vy	8	19.65	-516.80	-1.17
			Max. Vx	2	-20.22	0.30	522.75
			Max. Torque	7			3.86
L13	110.75 - 105.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.76	-5.71	-0.21
			Max. Mx	8	-14.32	-615.87	-1.29
			Max. My	2	-14.22	0.79	624.78
			Max. Vy	8	19.97	-615.87	-1.29
			Max. Vx	2	-20.60	0.79	624.78
			Max. Torque	7			3.85
L14	105.75 - 98.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.05	-5.88	-0.12

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-15.11	-691.20	-1.39
			Max. My	2	-15.01	1.15	702.54
			Max. Vy	8	20.20	-691.20	-1.39
			Max. Vx	2	-20.88	1.15	702.54
			Max. Torque	7			3.85
L15	98.5 - 97	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.69	-6.12	0.00
			Max. Mx	8	-16.83	-793.25	-1.51
			Max. My	2	-16.72	1.64	808.12
			Max. Vy	8	20.60	-793.25	-1.51
			Max. Vx	2	-21.34	1.64	808.12
			Max. Torque	7			3.85
L16	97 - 96.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.80	-6.13	0.01
			Max. Mx	8	-16.91	-798.40	-1.51
			Max. My	2	-16.80	1.66	813.45
			Max. Vy	8	20.60	-798.40	-1.51
			Max. Vx	2	-21.34	1.66	813.45
			Max. Torque	7			3.85
L17	96.75 - 93.98	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.00	-6.26	0.08
			Max. Mx	8	-17.64	-855.74	-1.58
			Max. My	2	-17.53	1.93	872.88
			Max. Vy	8	20.80	-855.74	-1.58
			Max. Vx	2	-21.57	1.93	872.88
			Max. Torque	7			3.85
L18	93.98 - 93.73	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.11	-6.27	0.08
			Max. Mx	8	-17.72	-860.94	-1.59
			Max. My	2	-17.61	1.95	878.28
			Max. Vy	8	20.80	-860.94	-1.59
			Max. Vx	2	-21.58	1.95	878.28
			Max. Torque	7			3.85
L19	93.73 - 91.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.09	-6.38	0.14
			Max. Mx	8	-18.31	-907.52	-1.64
			Max. My	2	-18.21	2.17	926.60
			Max. Vy	8	20.96	-907.52	-1.64
			Max. Vx	2	-21.76	2.17	926.60
			Max. Torque	7			3.85
L20	91.5 - 91.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.20	-6.39	0.15
			Max. Mx	8	-18.38	-912.76	-1.65
			Max. My	2	-18.27	2.19	932.04
			Max. Vy	8	20.97	-912.76	-1.65
			Max. Vx	2	-21.77	2.19	932.04
			Max. Torque	7			3.85
L21	91.25 - 90.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.61	-6.44	0.17
			Max. Mx	8	-18.61	-933.76	-1.68
			Max. My	2	-18.51	2.29	953.84
			Max. Vy	8	21.03	-933.76	-1.68
			Max. Vx	2	-21.85	2.29	953.84
			Max. Torque	7			3.85
L22	90.25 - 90	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.73	-6.45	0.18
			Max. Mx	8	-18.70	-939.02	-1.68
			Max. My	2	-18.60	2.31	959.31
			Max. Vy	8	21.04	-939.02	-1.68
			Max. Vx	2	-21.86	2.31	959.31
			Max. Torque	7			3.85

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L23	90 - 89	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.25	-6.50	0.21
			Max. Mx	8	-19.01	-960.11	-1.71
			Max. My	2	-18.91	2.41	981.21
			Max. Vy	8	21.12	-960.11	-1.71
			Max. Vx	2	-21.95	2.41	981.21
			Max. Torque	7			3.85
L24	89 - 88.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.37	-6.51	0.21
			Max. Mx	8	-19.09	-965.39	-1.71
			Max. My	2	-18.98	2.43	986.70
			Max. Vy	8	21.13	-965.39	-1.71
			Max. Vx	2	-21.96	2.43	986.70
			Max. Torque	7			3.85
L25	88.75 - 83.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.68	-6.75	0.34
			Max. Mx	8	-20.51	-1071.90	-1.84
			Max. My	2	-20.40	2.91	1097.52
			Max. Vy	8	21.46	-1071.90	-1.84
			Max. Vx	2	-22.36	2.91	1097.52
			Max. Torque	7			3.85
L26	83.75 - 80.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.42	-6.94	0.45
			Max. Mx	8	-21.56	-1151.11	-1.93
			Max. My	2	-21.46	3.26	1180.11
			Max. Vy	8	21.70	-1151.11	-1.93
			Max. Vx	2	-22.65	3.26	1180.11
			Max. Torque	7			3.84
L27	80.08 - 79.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.56	-6.96	0.46
			Max. Mx	8	-21.66	-1156.54	-1.94
			Max. My	2	-21.56	3.29	1185.77
			Max. Vy	8	21.71	-1156.54	-1.94
			Max. Vx	2	-22.66	3.29	1185.77
			Max. Torque	7			3.84
L28	79.83 - 74.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.43	-7.28	0.61
			Max. Mx	8	-23.40	-1266.00	-2.06
			Max. My	2	-23.29	3.76	1300.18
			Max. Vy	8	22.06	-1266.00	-2.06
			Max. Vx	2	-23.10	3.76	1300.18
			Max. Torque	7			3.84
L29	74.83 - 73.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.24	-7.36	0.66
			Max. Mx	8	-23.86	-1295.40	-2.10
			Max. My	2	-23.76	3.89	1330.97
			Max. Vy	8	22.16	-1295.40	-2.10
			Max. Vx	2	-23.21	3.89	1330.97
			Max. Torque	7			3.84
L30	73.5 - 73.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.40	-7.38	0.67
			Max. Mx	8	-23.97	-1300.94	-2.10
			Max. My	2	-23.87	3.91	1336.77
			Max. Vy	8	22.17	-1300.94	-2.10
			Max. Vx	2	-23.22	3.91	1336.77
			Max. Torque	7			3.84
L31	73.25 - 71	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.90	-7.53	0.74
			Max. Mx	8	-24.88	-1351.03	-2.16
			Max. My	2	-24.78	4.12	1389.26
			Max. Vy	8	22.34	-1351.03	-2.16

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-23.43	4.12	1389.26
			Max. Torque	7			3.84
L32	71 - 70.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.06	-7.54	0.75
			Max. Mx	8	-24.98	-1356.61	-2.17
			Max. My	2	-24.88	4.15	1395.12
			Max. Vy	8	22.35	-1356.61	-2.17
			Max. Vx	2	-23.44	4.15	1395.12
			Max. Torque	7			3.84
L33	70.75 - 65.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.07	-7.87	0.91
			Max. Mx	8	-26.83	-1469.27	-2.29
			Max. My	2	-26.73	4.62	1513.36
			Max. Vy	8	22.70	-1469.27	-2.29
			Max. Vx	2	-23.85	4.62	1513.36
			Max. Torque	7			3.84
L34	65.75 - 63	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.65	-8.05	1.00
			Max. Mx	8	-27.86	-1531.95	-2.36
			Max. My	2	-27.77	4.88	1579.22
			Max. Vy	8	22.89	-1531.95	-2.36
			Max. Vx	2	-24.06	4.88	1579.22
			Max. Torque	7			3.84
L35	63 - 62.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.79	-8.07	1.01
			Max. Mx	8	-27.97	-1537.68	-2.37
			Max. My	2	-27.87	4.90	1585.23
			Max. Vy	8	22.89	-1537.68	-2.37
			Max. Vx	2	-24.06	4.90	1585.23
			Max. Torque	7			3.84
L36	62.75 - 62.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.17	-8.11	1.02
			Max. Mx	8	-28.21	-1553.04	-2.38
			Max. My	2	-28.12	4.97	1601.37
			Max. Vy	8	22.94	-1553.04	-2.38
			Max. Vx	2	-24.11	4.97	1601.37
			Max. Torque	7			3.84
L37	62.08 - 61.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.31	-8.12	1.03
			Max. Mx	8	-28.30	-1558.78	-2.39
			Max. My	2	-28.20	4.99	1607.40
			Max. Vy	8	22.95	-1558.78	-2.39
			Max. Vx	2	-24.13	4.99	1607.40
			Max. Torque	7			3.84
L38	61.83 - 60.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.93	-8.19	1.05
			Max. Mx	8	-28.68	-1585.45	-2.42
			Max. My	2	-28.59	5.10	1635.44
			Max. Vy	8	23.03	-1585.45	-2.42
			Max. Vx	2	-24.21	5.10	1635.44
			Max. Torque	7			3.84
L39	60.67 - 60.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.06	-8.20	1.05
			Max. Mx	8	-28.78	-1591.21	-2.42
			Max. My	2	-28.68	5.12	1641.49
			Max. Vy	8	23.04	-1591.21	-2.42
			Max. Vx	2	-24.21	5.12	1641.49
			Max. Torque	7			3.84
L40	60.42 - 59	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.79	-8.29	1.08
			Max. Mx	8	-29.24	-1624.00	-2.46

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-29.15	5.26	1675.94
			Max. Vy	8	23.14	-1624.00	-2.46
			Max. Vx	2	-24.32	5.26	1675.94
			Max. Torque	7			3.84
L41	59 - 58.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.92	-8.30	1.08
			Max. Mx	8	-29.34	-1629.78	-2.47
			Max. My	2	-29.25	5.28	1682.02
			Max. Vy	8	23.13	-1629.78	-2.47
			Max. Vx	2	-24.31	5.28	1682.02
			Max. Torque	7			3.84
L42	58.75 - 53.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.53	-8.61	1.18
			Max. Mx	8	-31.03	-1746.23	-2.59
			Max. My	2	-30.95	5.75	1804.36
			Max. Vy	8	23.44	-1746.23	-2.59
			Max. Vx	2	-24.62	5.75	1804.36
			Max. Torque	7			3.84
L43	53.75 - 48.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.79	-8.63	1.19
			Max. Mx	8	-31.21	-1757.96	-2.60
			Max. My	2	-31.13	5.79	1816.67
			Max. Vy	8	23.46	-1757.96	-2.60
			Max. Vx	2	-24.64	5.79	1816.67
			Max. Torque	7			3.83
L44	48.5 - 47.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.73	-8.92	1.34
			Max. Mx	8	-34.77	-1894.27	-2.74
			Max. My	2	-34.70	6.33	1959.78
			Max. Vy	8	23.92	-1894.27	-2.74
			Max. Vx	2	-25.11	6.33	1959.78
			Max. Torque	7			3.83
L45	47.5 - 45.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.71	-8.97	1.40
			Max. Mx	8	-35.44	-1936.21	-2.79
			Max. My	2	-35.36	6.49	2003.79
			Max. Vy	8	24.03	-1936.21	-2.79
			Max. Vx	2	-25.22	6.49	2003.79
			Max. Torque	7			3.83
L46	45.75 - 45.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.85	-8.98	1.41
			Max. Mx	8	-35.55	-1942.22	-2.80
			Max. My	2	-35.48	6.51	2010.10
			Max. Vy	8	24.02	-1942.22	-2.80
			Max. Vx	2	-25.21	6.51	2010.10
			Max. Torque	7			3.83
L47	45.5 - 45	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.13	-9.00	1.43
			Max. Mx	8	-35.74	-1954.24	-2.81
			Max. My	2	-35.67	6.56	2022.71
			Max. Vy	8	24.05	-1954.24	-2.81
			Max. Vx	2	-25.24	6.56	2022.71
			Max. Torque	7			3.83
L48	45 - 44.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.28	-9.00	1.44
			Max. Mx	8	-35.85	-1960.26	-2.81
			Max. My	2	-35.78	6.58	2029.02
			Max. Vy	8	24.06	-1960.26	-2.81
			Max. Vx	2	-25.25	6.58	2029.02
			Max. Torque	7			3.83
L49	44.75 - 43.5	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-71.06	-9.04	1.48
			Max. Mx	8	-36.37	-1990.39	-2.84
			Max. My	2	-36.30	6.70	2060.64
			Max. Vy	8	24.15	-1990.39	-2.84
			Max. Vx	2	-25.34	6.70	2060.64
			Max. Torque	7			3.83
L50	43.5 - 43.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.23	-9.05	1.49
			Max. Mx	8	-36.49	-1996.43	-2.85
			Max. My	2	-36.42	6.72	2066.98
			Max. Vy	8	24.15	-1996.43	-2.85
			Max. Vx	2	-25.35	6.72	2066.98
			Max. Torque	7			3.83
L51	43.25 - 38.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.44	-9.20	1.67
			Max. Mx	8	-38.67	-2117.95	-2.97
			Max. My	2	-38.61	7.18	2194.50
			Max. Vy	8	24.45	-2117.95	-2.97
			Max. Vx	2	-25.66	7.18	2194.50
			Max. Torque	7			3.83
L52	38.25 - 33.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.65	-9.35	1.85
			Max. Mx	8	-40.89	-2240.89	-3.10
			Max. My	2	-40.83	7.64	2323.52
			Max. Vy	8	24.73	-2240.89	-3.10
			Max. Vx	2	-25.95	7.64	2323.52
			Max. Torque	7			3.83
L53	33.25 - 30.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.43	-9.41	1.95
			Max. Mx	8	-42.12	-2309.08	-3.16
			Max. My	2	-42.06	7.89	2395.08
			Max. Vy	8	24.87	-2309.08	-3.16
			Max. Vx	2	-26.11	7.89	2395.08
			Max. Torque	7			3.83
L54	30.5 - 30.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.59	-9.42	1.95
			Max. Mx	8	-42.24	-2315.30	-3.17
			Max. My	2	-42.19	7.91	2401.61
			Max. Vy	8	24.87	-2315.30	-3.17
			Max. Vx	2	-26.11	7.91	2401.61
			Max. Torque	7			3.83
L55	30.25 - 29.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.97	-9.43	1.97
			Max. Mx	8	-42.50	-2329.74	-3.18
			Max. My	2	-42.45	7.96	2416.76
			Max. Vy	8	24.91	-2329.74	-3.18
			Max. Vx	2	-26.14	7.96	2416.76
			Max. Torque	7			3.83
L56	29.67 - 29.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.12	-9.44	1.98
			Max. Mx	8	-42.61	-2335.97	-3.19
			Max. My	2	-42.56	7.99	2423.30
			Max. Vy	8	24.91	-2335.97	-3.19
			Max. Vx	2	-26.15	7.99	2423.30
			Max. Torque	7			3.83
L57	29.42 - 28	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.99	-9.48	2.02
			Max. Mx	8	-43.19	-2371.40	-3.22
			Max. My	2	-43.14	8.11	2460.47
			Max. Vy	8	24.99	-2371.40	-3.22
			Max. Vx	2	-26.23	8.11	2460.47

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	7			3.83
L58	28 - 27.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.15	-9.49	2.03
			Max. Mx	8	-43.31	-2377.64	-3.23
			Max. My	2	-43.26	8.14	2467.03
			Max. Vy	8	24.98	-2377.64	-3.23
			Max. Vx	2	-26.22	8.14	2467.03
			Max. Torque	7			3.83
L59	27.75 - 26.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.69	-9.50	2.04
			Max. Mx	8	-43.67	-2398.41	-3.25
			Max. My	2	-43.62	8.21	2488.81
			Max. Vy	8	25.03	-2398.41	-3.25
			Max. Vx	2	-26.27	8.21	2488.81
			Max. Torque	7			3.83
L60	26.92 - 26.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.85	-9.50	2.04
			Max. Mx	8	-43.78	-2404.67	-3.26
			Max. My	2	-43.73	8.23	2495.37
			Max. Vy	8	25.03	-2404.67	-3.26
			Max. Vx	2	-26.27	8.23	2495.37
			Max. Torque	7			3.83
L61	26.67 - 26.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.96	-9.51	2.04
			Max. Mx	8	-43.85	-2408.92	-3.26
			Max. My	2	-43.80	8.25	2499.84
			Max. Vy	8	25.04	-2408.92	-3.26
			Max. Vx	2	-26.28	8.25	2499.84
			Max. Torque	7			3.83
L62	26.5 - 26.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.11	-9.51	2.05
			Max. Mx	8	-43.95	-2415.19	-3.27
			Max. My	2	-43.90	8.27	2506.41
			Max. Vy	8	25.05	-2415.19	-3.27
			Max. Vx	2	-26.29	8.27	2506.41
			Max. Torque	7			3.83
L63	26.25 - 24.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.89	-9.52	2.07
			Max. Mx	8	-44.47	-2448.56	-3.30
			Max. My	2	-44.42	8.39	2541.42
			Max. Vy	8	25.13	-2448.56	-3.30
			Max. Vx	2	-26.37	8.39	2541.42
			Max. Torque	7			3.83
L64	24.92 - 24.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.03	-9.52	2.08
			Max. Mx	8	-44.58	-2454.84	-3.30
			Max. My	2	-44.54	8.41	2548.01
			Max. Vy	8	25.12	-2454.84	-3.30
			Max. Vx	2	-26.36	8.41	2548.01
			Max. Torque	7			3.83
L65	24.67 - 22.17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.47	-9.59	2.16
			Max. Mx	8	-45.60	-2517.79	-3.36
			Max. My	2	-45.56	8.64	2614.04
			Max. Vy	8	25.24	-2517.79	-3.36
			Max. Vx	2	-26.48	8.64	2614.04
			Max. Torque	7			3.83
L66	22.17 - 21.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.63	-9.59	2.17
			Max. Mx	8	-45.72	-2524.10	-3.37
			Max. My	2	-45.68	8.66	2620.66

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	25.23	-2524.10	-3.37
			Max. Vx	2	-26.47	8.66	2620.66
			Max. Torque	7			3.83
L67	21.92 - 16.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.65	-9.72	2.33
			Max. Mx	8	-47.92	-2650.78	-3.49
			Max. My	2	-47.89	9.10	2753.53
			Max. Vy	8	25.43	-2650.78	-3.49
			Max. Vx	2	-26.68	9.10	2753.53
			Max. Torque	7			3.83
L68	16.92 - 11.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-90.66	-9.85	2.49
			Max. Mx	8	-50.14	-2778.35	-3.61
			Max. My	2	-50.12	9.54	2887.32
			Max. Vy	8	25.60	-2778.35	-3.61
			Max. Vx	2	-26.85	9.54	2887.32
			Max. Torque	7			3.83
L69	11.92 - 6.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-93.60	-9.93	2.61
			Max. Mx	8	-52.35	-2906.71	-3.73
			Max. My	2	-52.34	9.99	3021.91
			Max. Vy	8	25.76	-2906.71	-3.73
			Max. Vx	2	-27.00	9.99	3021.91
			Max. Torque	7			3.83
L70	6.92 - 1.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.29	-9.86	2.62
			Max. Mx	8	-54.47	-3035.79	-3.90
			Max. My	2	-54.46	10.50	3157.19
			Max. Vy	8	25.91	-3035.79	-3.90
			Max. Vx	2	-27.15	10.50	3157.19
			Max. Torque	7			3.83
L71	1.92 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-97.27	-9.85	2.63
			Max. Mx	8	-55.28	-3085.55	-3.96
			Max. My	2	-55.28	10.69	3209.32
			Max. Vy	8	25.99	-3085.55	-3.96
			Max. Vx	2	-27.22	10.69	3209.32
			Max. Torque	7			3.83

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	97.27	0.02	9.47
	Max. H_x	21	41.47	25.94	0.10
	Max. H_z	3	41.47	0.10	27.18
	Max. M_x	2	3209.32	0.10	27.18
	Max. M_z	8	3085.55	-25.95	-0.03
	Max. Torsion	7	3.83	-22.38	13.18
	Min. Vert	7	41.47	-22.38	13.18
	Min. H_x	8	55.30	-25.95	-0.03
	Min. H_z	14	55.30	-0.16	-27.08
	Min. M_x	14	-3194.23	-0.16	-27.08
	Min. M_z	20	-3077.76	25.94	0.10
	Min. Torsion	21	-2.99	25.94	0.10

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	46.08	0.00	0.00	-0.50	-2.53	-0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	55.30	-0.10	-27.18	-3209.32	10.69	-1.25
0.9 Dead+1.6 Wind 0 deg - No Ice	41.47	-0.10	-27.18	-3166.65	11.35	-1.27
1.2 Dead+1.6 Wind 30 deg - No Ice	55.30	13.00	-23.04	-2723.12	-1534.19	-2.80
0.9 Dead+1.6 Wind 30 deg - No Ice	41.47	13.00	-23.04	-2686.79	-1512.99	-2.81
1.2 Dead+1.6 Wind 60 deg - No Ice	55.30	22.38	-13.18	-1568.95	-2660.20	-3.82
0.9 Dead+1.6 Wind 60 deg - No Ice	41.47	22.38	-13.18	-1547.90	-2623.94	-3.83
1.2 Dead+1.6 Wind 90 deg - No Ice	55.30	25.95	0.03	3.96	-3085.55	-3.25
0.9 Dead+1.6 Wind 90 deg - No Ice	41.47	25.95	0.03	4.04	-3043.62	-3.26
1.2 Dead+1.6 Wind 120 deg - No Ice	55.30	23.01	13.53	1602.20	-2722.90	-1.87
0.9 Dead+1.6 Wind 120 deg - No Ice	41.47	23.01	13.53	1581.08	-2685.95	-1.86
1.2 Dead+1.6 Wind 150 deg - No Ice	55.30	13.22	22.89	2714.64	-1571.13	-0.59
0.9 Dead+1.6 Wind 150 deg - No Ice	41.47	13.22	22.89	2678.65	-1549.42	-0.57
1.2 Dead+1.6 Wind 180 deg - No Ice	55.30	0.16	27.08	3194.23	-24.45	0.99
0.9 Dead+1.6 Wind 180 deg - No Ice	41.47	0.16	27.08	3152.05	-23.32	1.01
1.2 Dead+1.6 Wind 210 deg - No Ice	55.30	-13.04	22.91	2703.58	1533.37	2.10
0.9 Dead+1.6 Wind 210 deg - No Ice	41.47	-13.04	22.91	2667.79	1513.79	2.11
1.2 Dead+1.6 Wind 240 deg - No Ice	55.30	-22.41	12.95	1536.45	2658.04	2.70
0.9 Dead+1.6 Wind 240 deg - No Ice	41.47	-22.41	12.95	1516.11	2623.40	2.71
1.2 Dead+1.6 Wind 270 deg - No Ice	55.30	-25.94	-0.10	-14.06	3077.76	2.99
0.9 Dead+1.6 Wind 270 deg - No Ice	41.47	-25.94	-0.10	-13.73	3037.51	2.99
1.2 Dead+1.6 Wind 300 deg - No Ice	55.30	-22.99	-13.70	-1626.12	2713.65	1.27
0.9 Dead+1.6 Wind 300 deg - No Ice	41.47	-22.99	-13.70	-1604.38	2678.41	1.26
1.2 Dead+1.6 Wind 330 deg - No Ice	55.30	-13.10	-23.07	-2739.27	1549.41	0.21
0.9 Dead+1.6 Wind 330 deg - No Ice	41.47	-13.10	-23.07	-2702.65	1529.58	0.20
1.2 Dead+1.0 Ice+1.0 Temp	97.27	0.00	-0.00	-2.63	-9.85	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	97.27	-0.02	-9.47	-1097.86	-6.53	-0.22
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	97.27	4.64	-8.17	-946.37	-544.20	-0.48
1.2 Dead+1.0 Wind 60 deg+1.0	97.27	7.37	-4.32	-516.71	-884.80	-0.66

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	97.27	8.22	0.01	-1.49	-1000.05	-0.53
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	97.27	7.70	4.50	530.21	-918.02	-0.27
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	97.27	4.51	7.82	909.39	-536.05	-0.08
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	97.27	0.04	9.44	1089.13	-15.24	0.16
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	97.27	-4.65	8.14	936.56	525.59	0.32
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	97.27	-7.38	4.27	503.73	865.86	0.40
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	97.27	-8.21	-0.02	-6.01	979.73	0.47
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	97.27	-7.69	-4.54	-541.09	897.35	0.14
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	97.27	-4.48	-7.86	-920.45	512.33	-0.00
Dead+Wind 0 deg - Service	46.08	-0.02	-6.33	-742.13	0.58	-0.30
Dead+Wind 30 deg - Service	46.08	3.03	-5.36	-629.70	-356.45	-0.66
Dead+Wind 60 deg - Service	46.08	5.21	-3.07	-362.95	-616.65	-0.90
Dead+Wind 90 deg - Service	46.08	6.04	0.01	0.54	-714.95	-0.77
Dead+Wind 120 deg - Service	46.08	5.36	3.15	369.92	-631.20	-0.44
Dead+Wind 150 deg - Service	46.08	3.08	5.33	627.01	-365.00	-0.14
Dead+Wind 180 deg - Service	46.08	0.04	6.30	737.90	-7.54	0.24
Dead+Wind 210 deg - Service	46.08	-3.04	5.33	624.43	352.48	0.50
Dead+Wind 240 deg - Service	46.08	-5.22	3.01	354.69	612.36	0.64
Dead+Wind 270 deg - Service	46.08	-6.04	-0.02	-3.62	709.36	0.71
Dead+Wind 300 deg - Service	46.08	-5.35	-3.19	-376.19	625.28	0.30
Dead+Wind 330 deg - Service	46.08	-3.05	-5.37	-633.45	356.20	0.05

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-46.08	0.00	0.00	46.08	0.00	0.000%
2	-0.10	-55.30	-27.18	0.10	55.30	27.18	0.000%
3	-0.10	-41.47	-27.18	0.10	41.47	27.18	0.000%
4	13.00	-55.30	-23.04	-13.00	55.30	23.04	0.000%
5	13.00	-41.47	-23.04	-13.00	41.47	23.04	0.000%
6	22.38	-55.30	-13.18	-22.38	55.30	13.18	0.000%
7	22.38	-41.47	-13.18	-22.38	41.47	13.18	0.000%
8	25.95	-55.30	0.03	-25.95	55.30	-0.03	0.000%
9	25.95	-41.47	0.03	-25.95	41.47	-0.03	0.000%
10	23.01	-55.30	13.53	-23.01	55.30	-13.53	0.000%
11	23.01	-41.47	13.53	-23.01	41.47	-13.53	0.000%
12	13.22	-55.30	22.89	-13.22	55.30	-22.89	0.000%
13	13.22	-41.47	22.89	-13.22	41.47	-22.89	0.000%
14	0.16	-55.30	27.08	-0.16	55.30	-27.08	0.000%
15	0.16	-41.47	27.08	-0.16	41.47	-27.08	0.000%
16	-13.04	-55.30	22.91	13.04	55.30	-22.91	0.000%
17	-13.04	-41.47	22.91	13.04	41.47	-22.91	0.000%
18	-22.41	-55.30	12.95	22.41	55.30	-12.95	0.000%
19	-22.41	-41.47	12.95	22.41	41.47	-12.95	0.000%
20	-25.94	-55.30	-0.10	25.94	55.30	0.10	0.000%
21	-25.94	-41.47	-0.10	25.94	41.47	0.10	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
22	-22.99	-55.30	-13.70	22.99	55.30	13.70	0.000%
23	-22.99	-41.47	-13.70	22.99	41.47	13.70	0.000%
24	-13.10	-55.30	-23.07	13.10	55.30	23.07	0.000%
25	-13.10	-41.47	-23.07	13.10	41.47	23.07	0.000%
26	0.00	-97.27	0.00	-0.00	97.27	0.00	0.000%
27	-0.02	-97.27	-9.47	0.02	97.27	9.47	0.000%
28	4.64	-97.27	-8.17	-4.64	97.27	8.17	0.000%
29	7.37	-97.27	-4.32	-7.37	97.27	4.32	0.000%
30	8.22	-97.27	0.01	-8.22	97.27	-0.01	0.000%
31	7.70	-97.27	4.50	-7.70	97.27	-4.50	0.000%
32	4.51	-97.27	7.82	-4.51	97.27	-7.82	0.000%
33	0.04	-97.27	9.44	-0.04	97.27	-9.44	0.000%
34	-4.65	-97.27	8.14	4.65	97.27	-8.14	0.000%
35	-7.38	-97.27	4.27	7.38	97.27	-4.27	0.000%
36	-8.21	-97.27	-0.02	8.21	97.27	0.02	0.000%
37	-7.69	-97.27	-4.54	7.69	97.27	4.54	0.000%
38	-4.48	-97.27	-7.86	4.48	97.27	7.86	0.000%
39	-0.02	-46.08	-6.33	0.02	46.08	6.33	0.000%
40	3.03	-46.08	-5.36	-3.03	46.08	5.36	0.000%
41	5.21	-46.08	-3.07	-5.21	46.08	3.07	0.000%
42	6.04	-46.08	0.01	-6.04	46.08	-0.01	0.000%
43	5.36	-46.08	3.15	-5.36	46.08	-3.15	0.000%
44	3.08	-46.08	5.33	-3.08	46.08	-5.33	0.000%
45	0.04	-46.08	6.30	-0.04	46.08	-6.30	0.000%
46	-3.04	-46.08	5.33	3.04	46.08	-5.33	0.000%
47	-5.22	-46.08	3.01	5.22	46.08	-3.01	0.000%
48	-6.04	-46.08	-0.02	6.04	46.08	0.02	0.000%
49	-5.35	-46.08	-3.19	5.35	46.08	3.19	0.000%
50	-3.05	-46.08	-5.37	3.05	46.08	5.37	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000395
2	Yes	6	0.00000001	0.00009205
3	Yes	5	0.00000001	0.00079404
4	Yes	7	0.00000001	0.00010203
5	Yes	6	0.00000001	0.00060658
6	Yes	7	0.00000001	0.00011543
7	Yes	6	0.00000001	0.00069164
8	Yes	6	0.00000001	0.00018310
9	Yes	6	0.00000001	0.00006350
10	Yes	7	0.00000001	0.00010716
11	Yes	6	0.00000001	0.00063684
12	Yes	7	0.00000001	0.00011037
13	Yes	6	0.00000001	0.00065759
14	Yes	5	0.00000001	0.00044044
15	Yes	5	0.00000001	0.00020313
16	Yes	7	0.00000001	0.00011082
17	Yes	6	0.00000001	0.00066308
18	Yes	7	0.00000001	0.00010081
19	Yes	6	0.00000001	0.00060166
20	Yes	6	0.00000001	0.00019802
21	Yes	6	0.00000001	0.00006842
22	Yes	7	0.00000001	0.00011365

23	Yes	6	0.00000001	0.00067705
24	Yes	7	0.00000001	0.00010845
25	Yes	6	0.00000001	0.00064626
26	Yes	5	0.00000001	0.00042571
27	Yes	7	0.00000001	0.00044551
28	Yes	7	0.00000001	0.00061111
29	Yes	7	0.00000001	0.00058465
30	Yes	7	0.00000001	0.00042214
31	Yes	7	0.00000001	0.00059704
32	Yes	7	0.00000001	0.00059881
33	Yes	7	0.00000001	0.00044291
34	Yes	7	0.00000001	0.00059128
35	Yes	7	0.00000001	0.00054895
36	Yes	7	0.00000001	0.00040813
37	Yes	7	0.00000001	0.00058634
38	Yes	7	0.00000001	0.00057926
39	Yes	5	0.00000001	0.00010204
40	Yes	5	0.00000001	0.00049162
41	Yes	5	0.00000001	0.00067617
42	Yes	5	0.00000001	0.00019917
43	Yes	5	0.00000001	0.00053194
44	Yes	5	0.00000001	0.00057895
45	Yes	5	0.00000001	0.00008260
46	Yes	5	0.00000001	0.00059709
47	Yes	5	0.00000001	0.00047225
48	Yes	5	0.00000001	0.00018917
49	Yes	5	0.00000001	0.00060609
50	Yes	5	0.00000001	0.00054515

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 144	25.645	39	1.7238	0.0083
L2	144 - 139	23.845	39	1.7103	0.0080
L3	139 - 134	22.071	39	1.6746	0.0077
L4	134 - 129	20.349	39	1.6087	0.0075
L5	129 - 124.5	18.712	39	1.5140	0.0073
L6	124.5 - 124.25	17.334	39	1.4057	0.0057
L7	124.25 - 119.25	17.261	39	1.4020	0.0056
L8	119.25 - 118.5	15.836	39	1.3161	0.0045
L9	118.5 - 118.25	15.630	39	1.3020	0.0043
L10	118.25 - 116	15.562	39	1.2996	0.0043
L11	116 - 115.75	14.955	39	1.2761	0.0041
L12	115.75 - 110.75	14.889	39	1.2734	0.0040
L13	110.75 - 105.75	13.585	39	1.2148	0.0035
L14	105.75 - 98.5	12.347	39	1.1494	0.0031
L15	102 - 97	11.465	39	1.0960	0.0028
L16	97 - 96.75	10.338	39	1.0496	0.0025
L17	96.75 - 93.98	10.283	39	1.0466	0.0025
L18	93.98 - 93.73	9.686	39	1.0129	0.0024
L19	93.73 - 91.5	9.633	39	1.0098	0.0023
L20	91.5 - 91.25	9.168	39	0.9821	0.0022
L21	91.25 - 90.25	9.116	39	0.9782	0.0022
L22	90.25 - 90	8.913	39	0.9630	0.0021
L23	90 - 89	8.863	39	0.9604	0.0021
L24	89 - 88.75	8.663	39	0.9500	0.0021
L25	88.75 - 83.75	8.613	39	0.9469	0.0021
L26	83.75 - 80.08	7.654	39	0.8839	0.0018

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L27	80.08 - 79.83	6.993	39	0.8362	0.0017
L28	79.83 - 74.83	6.949	39	0.8335	0.0017
L29	74.83 - 73.5	6.106	39	0.7782	0.0015
L30	73.5 - 73.25	5.891	39	0.7637	0.0014
L31	73.25 - 71	5.851	39	0.7614	0.0014
L32	71 - 70.75	5.497	39	0.7402	0.0014
L33	70.75 - 65.75	5.458	39	0.7377	0.0014
L34	65.75 - 63	4.713	39	0.6856	0.0012
L35	63 - 62.75	4.327	39	0.6565	0.0011
L36	62.75 - 62.08	4.292	39	0.6537	0.0011
L37	62.08 - 61.83	4.201	39	0.6463	0.0011
L38	61.83 - 60.67	4.167	39	0.6431	0.0011
L39	60.67 - 60.42	4.013	39	0.6281	0.0011
L40	60.42 - 59	3.980	39	0.6249	0.0011
L41	59 - 58.75	3.797	39	0.6067	0.0010
L42	58.75 - 53.75	3.765	39	0.6037	0.0010
L43	53.75 - 48.5	3.165	39	0.5431	0.0009
L44	53.25 - 47.5	3.108	39	0.5370	0.0009
L45	47.5 - 45.75	2.483	39	0.4974	0.0008
L46	45.75 - 45.5	2.304	39	0.4775	0.0007
L47	45.5 - 45	2.279	39	0.4747	0.0007
L48	45 - 44.75	2.230	39	0.4690	0.0007
L49	44.75 - 43.5	2.205	39	0.4663	0.0007
L50	43.5 - 43.25	2.085	39	0.4528	0.0007
L51	43.25 - 38.25	2.061	39	0.4504	0.0007
L52	38.25 - 33.25	1.615	39	0.4011	0.0006
L53	33.25 - 30.5	1.221	39	0.3523	0.0005
L54	30.5 - 30.25	1.026	39	0.3252	0.0005
L55	30.25 - 29.67	1.009	39	0.3227	0.0005
L56	29.67 - 29.42	0.970	39	0.3171	0.0005
L57	29.42 - 28	0.954	39	0.3141	0.0004
L58	28 - 27.75	0.863	39	0.2971	0.0004
L59	27.75 - 26.92	0.847	39	0.2946	0.0004
L60	26.92 - 26.67	0.797	39	0.2862	0.0004
L61	26.67 - 26.5	0.782	39	0.2835	0.0004
L62	26.5 - 26.25	0.772	39	0.2818	0.0004
L63	26.25 - 24.92	0.757	39	0.2790	0.0004
L64	24.92 - 24.67	0.681	39	0.2646	0.0004
L65	24.67 - 22.17	0.668	39	0.2618	0.0004
L66	22.17 - 21.92	0.538	39	0.2331	0.0003
L67	21.92 - 16.92	0.526	39	0.2305	0.0003
L68	16.92 - 11.92	0.312	39	0.1773	0.0002
L69	11.92 - 6.92	0.155	39	0.1244	0.0002
L70	6.92 - 1.92	0.052	39	0.0719	0.0001
L71	1.92 - 0	0.004	39	0.0198	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
149.00	Lightning Rod 5/8x4'	39	25.645	1.7238	0.0101	11374
148.00	Platform Mount [LP 602-1]	39	25.284	1.7219	0.0100	11374
140.00	T-Arm Mount [TA 602-3]	39	22.422	1.6842	0.0096	6475
128.00	SC2-W100AB	39	18.397	1.4881	0.0090	2563

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 144	110.850	2	7.4543	0.0355
L2	144 - 139	103.085	2	7.3976	0.0342
L3	139 - 134	95.432	2	7.2449	0.0329
L4	134 - 129	88.000	2	6.9618	0.0320
L5	129 - 124.5	80.930	2	6.5541	0.0311
L6	124.5 - 124.25	74.976	2	6.0856	0.0241
L7	124.25 - 119.25	74.658	2	6.0693	0.0239
L8	119.25 - 118.5	68.501	2	5.6977	0.0190
L9	118.5 - 118.25	67.613	2	5.6367	0.0184
L10	118.25 - 116	67.318	2	5.6260	0.0183
L11	116 - 115.75	64.695	2	5.5244	0.0173
L12	115.75 - 110.75	64.406	2	5.5128	0.0171
L13	110.75 - 105.75	58.773	2	5.2593	0.0150
L14	105.75 - 98.5	53.419	2	4.9760	0.0131
L15	102 - 97	49.605	2	4.7450	0.0117
L16	97 - 96.75	44.730	2	4.5440	0.0107
L17	96.75 - 93.98	44.492	2	4.5312	0.0106
L18	93.98 - 93.73	41.908	2	4.3853	0.0100
L19	93.73 - 91.5	41.679	2	4.3719	0.0099
L20	91.5 - 91.25	39.667	2	4.2517	0.0094
L21	91.25 - 90.25	39.445	2	4.2352	0.0093
L22	90.25 - 90	38.566	2	4.1692	0.0090
L23	90 - 89	38.348	2	4.1579	0.0090
L24	89 - 88.75	37.483	2	4.1128	0.0088
L25	88.75 - 83.75	37.268	2	4.0996	0.0088
L26	83.75 - 80.08	33.121	2	3.8269	0.0077
L27	80.08 - 79.83	30.260	2	3.6203	0.0070
L28	79.83 - 74.83	30.071	2	3.6086	0.0070
L29	74.83 - 73.5	26.420	2	3.3692	0.0063
L30	73.5 - 73.25	25.491	2	3.3065	0.0061
L31	73.25 - 71	25.318	2	3.2965	0.0060
L32	71 - 70.75	23.787	2	3.2046	0.0058
L33	70.75 - 65.75	23.620	2	3.1936	0.0057
L34	65.75 - 63	20.395	2	2.9680	0.0051
L35	63 - 62.75	18.723	2	2.8419	0.0048
L36	62.75 - 62.08	18.574	2	2.8299	0.0048
L37	62.08 - 61.83	18.180	2	2.7980	0.0047
L38	61.83 - 60.67	18.034	2	2.7841	0.0047
L39	60.67 - 60.42	17.365	2	2.7192	0.0045
L40	60.42 - 59	17.223	2	2.7052	0.0045
L41	59 - 58.75	16.431	2	2.6262	0.0043
L42	58.75 - 53.75	16.294	2	2.6134	0.0043
L43	53.75 - 48.5	13.696	2	2.3507	0.0037
L44	53.25 - 47.5	13.451	2	2.3247	0.0036
L45	47.5 - 45.75	10.742	2	2.1531	0.0033
L46	45.75 - 45.5	9.969	2	2.0670	0.0031
L47	45.5 - 45	9.861	2	2.0546	0.0031
L48	45 - 44.75	9.647	2	2.0299	0.0031
L49	44.75 - 43.5	9.542	2	2.0181	0.0030
L50	43.5 - 43.25	9.021	2	1.9600	0.0029
L51	43.25 - 38.25	8.919	2	1.9494	0.0029
L52	38.25 - 33.25	6.989	2	1.7361	0.0025
L53	33.25 - 30.5	5.283	2	1.5245	0.0022
L54	30.5 - 30.25	4.439	2	1.4072	0.0020
L55	30.25 - 29.67	4.365	2	1.3966	0.0019

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L56	29.67 - 29.42	4.197	2	1.3722	0.0019
L57	29.42 - 28	4.126	2	1.3591	0.0019
L58	28 - 27.75	3.732	2	1.2856	0.0018
L59	27.75 - 26.92	3.665	2	1.2746	0.0018
L60	26.92 - 26.67	3.447	2	1.2383	0.0017
L61	26.67 - 26.5	3.382	2	1.2269	0.0017
L62	26.5 - 26.25	3.339	2	1.2192	0.0017
L63	26.25 - 24.92	3.275	2	1.2074	0.0016
L64	24.92 - 24.67	2.948	2	1.1451	0.0016
L65	24.67 - 22.17	2.888	2	1.1328	0.0015
L66	22.17 - 21.92	2.327	2	1.0087	0.0013
L67	21.92 - 16.92	2.275	2	0.9974	0.0013
L68	16.92 - 11.92	1.351	2	0.7669	0.0010
L69	11.92 - 6.92	0.669	2	0.5381	0.0007
L70	6.92 - 1.92	0.224	2	0.3110	0.0004
L71	1.92 - 0	0.017	2	0.0855	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
149.00	Lightning Rod 5/8x4'	2	110.850	7.4543	0.0440	2762
148.00	Platform Mount [LP 602-1]	2	109.294	7.4463	0.0438	2762
140.00	T-Arm Mount [TA 602-3]	2	96.949	7.2862	0.0419	1558
128.00	SC2-W100AB	2	79.570	6.4421	0.0387	613

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	149 - 144 (1)	TP16.8649x16x0.1875	5.00	0.00	0.0	9.9251	-2.25	737.39	0.003
L2	144 - 139 (2)	TP17.7297x16.8649x0.1875	5.00	0.00	0.0	10.4398	-4.66	775.63	0.006
L3	139 - 134 (3)	TP18.5946x17.7297x0.1875	5.00	0.00	0.0	10.9545	-5.02	813.86	0.006
L4	134 - 129 (4)	TP19.4594x18.5946x0.1875	5.00	0.00	0.0	11.4692	-5.40	846.29	0.006
L5	129 - 124.5 (5)	TP20.2378x19.4594x0.1875	4.50	0.00	0.0	11.9324	-10.86	871.24	0.012
L6	124.5 - 124.25 (6)	TP20.281x20.2378x0.35	0.25	0.00	0.0	22.1414	-10.91	1644.99	0.007
L7	124.25 - 119.25 (7)	TP21.1459x20.281x0.3438	5.00	0.00	0.0	22.6964	-11.56	1686.23	0.007
L8	119.25 - 118.5 (8)	TP21.2756x21.1459x0.3438	0.75	0.00	0.0	22.8379	-11.67	1696.75	0.007
L9	118.5 - 118.25 (9)	TP21.3188x21.2756x0.7	0.25	0.00	0.0	45.8109	-11.73	3403.52	0.003
L10	118.25 - 116 (10)	TP21.708x21.3188x0.6875	2.25	0.00	0.0	45.8694	-12.17	3407.87	0.004
L11	116 - 115.75	TP21.7513x21.708x0.6875	0.25	0.00	0.0	45.9638	-12.23	3414.88	0.004

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L12	115.75 - 110.75 (12)	TP22.6161x21.7513x0.6625	5.00	0.00	0.0	46.1635	-13.19	3429.72	0.004
L13	110.75 - 105.75 (13)	TP23.481x22.6161x0.6375	5.00	0.00	0.0	46.2220	-14.22	3434.07	0.004
L14	105.75 - 98.5 (14)	TP24.735x23.481x0.6125	7.25	0.00	0.0	45.7190	-15.01	3396.69	0.004
L15	98.5 - 97 (15)	TP24.6198x23.7546x0.675	5.00	0.00	0.0	51.3006	-16.72	3811.38	0.004
L16	97 - 96.75 (16)	TP24.6631x24.6198x0.825	0.25	0.00	0.0	62.4212	-16.80	4637.59	0.004
L17	96.75 - 93.98 (17)	TP25.1424x24.6631x0.8125	2.77	0.00	0.0	62.7438	-17.53	4661.55	0.004
L18	93.98 - 93.73 (18)	TP25.1857x25.1424x0.8	0.25	0.00	0.0	61.9201	-17.61	4600.36	0.004
L19	93.73 - 91.5 (19)	TP25.5716x25.1857x0.8	2.23	0.00	0.0	62.9000	-18.21	4673.15	0.004
L20	91.5 - 91.25 (20)	TP25.6148x25.5716x0.6375	0.25	0.00	0.0	50.5398	-18.27	3754.85	0.005
L21	91.25 - 90.25 (21)	TP25.7879x25.6148x0.6375	1.00	0.00	0.0	50.8899	-18.51	3780.87	0.005
L22	90.25 - 90 (22)	TP25.8311x25.7879x0.975	0.25	0.00	0.0	76.9211	-18.60	5714.85	0.003
L23	90 - 89 (23)	TP26.0042x25.8311x0.975	1.00	0.00	0.0	77.4566	-18.91	5754.64	0.003
L24	89 - 88.75 (24)	TP26.0474x26.0042x0.825	0.25	0.00	0.0	66.0462	-18.98	4906.91	0.004
L25	88.75 - 83.75 (25)	TP26.9127x26.0474x0.8	5.00	0.00	0.0	66.3053	-20.40	4926.15	0.004
L26	83.75 - 80.08 (26)	TP27.5477x26.9127x0.775	3.67	0.00	0.0	65.8569	-21.46	4892.84	0.004
L27	80.08 - 79.83 (27)	TP27.591x27.5477x0.95	0.25	0.00	0.0	80.3306	-21.56	5968.16	0.004
L28	79.83 - 74.83 (28)	TP28.4562x27.591x0.925	5.00	0.00	0.0	80.8303	-23.29	6005.29	0.004
L29	74.83 - 73.5 (29)	TP28.6864x28.4562x0.925	1.33	0.00	0.0	81.5060	-23.76	6055.49	0.004
L30	73.5 - 73.25 (30)	TP28.7296x28.6864x1.125	0.25	0.00	0.0	98.5693	-23.87	7323.20	0.003
L31	73.25 - 71 (31)	TP29.119x28.7296x1.1	2.25	0.00	0.0	97.8255	-24.78	7267.95	0.003
L32	71 - 70.75 (32)	TP29.1623x29.119x1	0.25	0.00	0.0	89.3870	-24.88	6641.01	0.004
L33	70.75 - 65.75 (33)	TP30.0275x29.1623x0.975	5.00	0.00	0.0	89.9072	-26.73	6679.66	0.004
L34	65.75 - 63 (34)	TP30.5034x30.0275x0.95	2.75	0.00	0.0	89.1122	-27.77	6620.59	0.004
L35	63 - 62.75 (35)	TP30.5466x30.5034x0.9	0.25	0.00	0.0	84.6885	-27.87	6291.93	0.004
L36	62.75 - 62.08 (36)	TP30.6626x30.5466x0.9	0.67	0.00	0.0	85.0197	-28.12	6316.54	0.004
L37	62.08 - 61.83 (37)	TP30.7058x30.6626x0.7625	0.25	0.00	0.0	72.4681	-28.20	5384.01	0.005
L38	61.83 - 60.67 (38)	TP30.9065x30.7058x0.75	1.16	0.00	0.0	71.7877	-28.59	5333.46	0.005
L39	60.67 - 60.42 (39)	TP30.9498x30.9065x0.75	0.25	0.00	0.0	71.8906	-28.68	5341.12	0.005
L40	60.42 - 59 (40)	TP31.1955x30.9498x0.75	1.42	0.00	0.0	72.4756	-29.15	5384.57	0.005
L41	59 - 58.75 (41)	TP31.2388x31.1955x0.825	0.25	0.00	0.0	79.6400	-29.25	5916.86	0.005
L42	58.75 - 53.75 (42)	TP32.104x31.2388x0.8	5.00	0.00	0.0	79.4872	-30.95	5905.50	0.005
L43	53.75 - 48.5 (43)	TP33.0125x32.104x0.8	5.25	0.00	0.0	79.7069	-31.13	5921.82	0.005
L44	48.5 - 47.5 (44)	TP32.6823x31.6905x0.8625	5.75	0.00	0.0	87.1091	-34.70	6471.77	0.005
L45	47.5 - 45.75 (45)	TP32.9841x32.6823x0.8625	1.75	0.00	0.0	87.9354	-35.36	6533.16	0.005
L46	45.75 - 45.5 (46)	TP33.0272x32.9841x0.8625	0.25	0.00	0.0	88.0534	-35.48	6541.93	0.005
L47	45.5 - 45 (47)	TP33.1135x33.0272x0.8625	0.50	0.00	0.0	88.2895	-35.67	6559.47	0.005

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L48	45 - 44.75 (48)	TP33.1566x33.1135x0.9125	0.25	0.00	0.0	93.3878	-35.78	6938.25	0.005
L49	44.75 - 43.5 (49)	TP33.3722x33.1566x0.9125	1.25	0.00	0.0	94.0122	-36.30	6984.64	0.005
L50	43.5 - 43.25 (50)	TP33.4153x33.3722x1.0125	0.25	0.00	0.0	104.1320	-36.42	7736.50	0.005
L51	43.25 - 38.25 (51)	TP34.2777x33.4153x1	5.00	0.00	0.0	105.6230	-38.61	7847.29	0.005
L52	38.25 - 33.25 (52)	TP35.1401x34.2777x0.9875	5.00	0.00	0.0	107.0450	-40.83	7952.93	0.005
L53	33.25 - 30.5 (53)	TP35.6144x35.1401x0.9625	2.75	0.00	0.0	105.8610	-42.06	7864.92	0.005
L54	30.5 - 30.25 (54)	TP35.6575x35.6144x0.9625	0.25	0.00	0.0	105.9920	-42.19	7874.71	0.005
L55	30.25 - 29.67 (55)	TP35.7576x35.6575x0.9625	0.58	0.00	0.0	106.2980	-42.45	7897.42	0.005
L56	29.67 - 29.42 (56)	TP35.8007x35.7576x0.7625	0.25	0.00	0.0	84.7986	-42.56	6300.11	0.007
L57	29.42 - 28 (57)	TP36.0456x35.8007x0.7625	1.42	0.00	0.0	85.3913	-43.14	6344.15	0.007
L58	28 - 27.75 (58)	TP36.0887x36.0456x0.9125	0.25	0.00	0.0	101.8800	-43.26	7569.18	0.006
L59	27.75 - 26.92 (59)	TP36.2319x36.0887x0.9125	0.83	0.00	0.0	102.2950	-43.62	7599.98	0.006
L60	26.92 - 26.67 (60)	TP36.275x36.2319x0.875	0.25	0.00	0.0	98.3147	-43.73	7304.29	0.006
L61	26.67 - 26.5 (61)	TP36.3043x36.275x0.875	0.17	0.00	0.0	98.3961	-43.80	7310.34	0.006
L62	26.5 - 26.25 (62)	TP36.3474x36.3043x0.8375	0.25	0.00	0.0	94.3934	-43.90	7012.96	0.006
L63	26.25 - 24.92 (63)	TP36.5768x36.3474x0.8375	1.33	0.00	0.0	95.0032	-44.42	7058.26	0.006
L64	24.92 - 24.67 (64)	TP36.62x36.5768x0.8	0.25	0.00	0.0	90.9540	-44.54	6757.43	0.007
L65	24.67 - 22.17 (65)	TP37.0512x36.62x0.7875	2.50	0.00	0.0	90.6419	-45.56	6734.24	0.007
L66	22.17 - 21.92 (66)	TP37.0943x37.0512x0.8625	0.25	0.00	0.0	99.1872	-45.68	7369.11	0.006
L67	21.92 - 16.92 (67)	TP37.9567x37.0943x0.8375	5.00	0.00	0.0	98.6711	-47.89	7330.77	0.007
L68	16.92 - 11.92 (68)	TP38.8191x37.9567x0.825	5.00	0.00	0.0	99.4893	-50.12	7391.56	0.007
L69	11.92 - 6.92 (69)	TP39.6815x38.8191x0.8125	5.00	0.00	0.0	100.2380	-52.34	7447.19	0.007
L70	6.92 - 1.92 (70)	TP40.5438x39.6815x0.8	5.00	0.00	0.0	99.1657	-52.78	7367.52	0.007
L71	1.92 - 0 (71)	TP40.875x40.5438x0.7875	1.92	0.00	0.0	99.3720	-54.50	7382.84	0.007

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	149 - 144 (1)	TP16.8649x16x0.1875	26.84	252.03	0.107	0.00	252.03	0.000
L2	144 - 139 (2)	TP17.7297x16.8649x0.1875	59.34	279.00	0.213	0.00	279.00	0.000
L3	139 - 134 (3)	TP18.5946x17.7297x0.1875	115.87	307.35	0.377	0.00	307.35	0.000
L4	134 - 129 (4)	TP19.4594x18.5946x0.1875	173.77	334.76	0.519	0.00	334.76	0.000
L5	129 - 124.5 (5)	TP20.2378x19.4594x0.1875	253.33	358.68	0.706	0.00	358.68	0.000
L6	124.5 - 124.25	TP20.281x20.2378x0.35	258.10	667.77	0.387	0.00	667.77	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L7	124.25 - 119.25 (7)	TP21.1459x20.281x0.3438	354.52	715.15	0.496	0.00	715.15	0.000
L8	119.25 - 118.5 (8)	TP21.2756x21.1459x0.3438	369.12	724.17	0.510	0.00	724.17	0.000
L9	118.5 - 118.25 (9)	TP21.3188x21.2756x0.7	373.99	1406.65	0.266	0.00	1406.65	0.000
L10	118.25 - 116 (10)	TP21.708x21.3188x0.6875	418.03	1437.62	0.291	0.00	1437.62	0.000
L11	116 - 115.75 (11)	TP21.7513x21.708x0.6875	422.94	1443.63	0.293	0.00	1443.63	0.000
L12	115.75 - 110.75 (12)	TP22.6161x21.7513x0.6625	522.75	1514.77	0.345	0.00	1514.77	0.000
L13	110.75 - 105.75 (13)	TP23.481x22.6161x0.6375	624.78	1581.64	0.395	0.00	1581.64	0.000
L14	105.75 - 98.5 (14)	TP24.735x23.481x0.6125	702.55	1613.49	0.435	0.00	1613.49	0.000
L15	98.5 - 97 (15)	TP24.6198x23.7546x0.675	808.12	1839.56	0.439	0.00	1839.56	0.000
L16	97 - 96.75 (16)	TP24.6631x24.6198x0.825	813.45	2214.53	0.367	0.00	2214.53	0.000
L17	96.75 - 93.98 (17)	TP25.1424x24.6631x0.8125	872.88	2274.56	0.384	0.00	2274.56	0.000
L18	93.98 - 93.73 (18)	TP25.1857x25.1424x0.8	878.27	2251.13	0.390	0.00	2251.13	0.000
L19	93.73 - 91.5 (19)	TP25.5716x25.1857x0.8	926.60	2324.08	0.399	0.00	2324.08	0.000
L20	91.5 - 91.25 (20)	TP25.6148x25.5716x0.6375	932.04	1895.33	0.492	0.00	1895.33	0.000
L21	91.25 - 90.25 (21)	TP25.7879x25.6148x0.6375	953.85	1922.02	0.496	0.00	1922.02	0.000
L22	90.25 - 90 (22)	TP25.8311x25.7879x0.975	959.31	2832.83	0.339	0.00	2832.83	0.000
L23	90 - 89 (23)	TP26.0042x25.8311x0.975	981.22	2873.17	0.342	0.00	2873.17	0.000
L24	89 - 88.75 (24)	TP26.0474x26.0042x0.825	986.70	2483.76	0.397	0.00	2483.76	0.000
L25	88.75 - 83.75 (25)	TP26.9127x26.0474x0.8	1097.53	2586.70	0.424	0.00	2586.70	0.000
L26	83.75 - 80.08 (26)	TP27.5477x26.9127x0.775	1180.12	2638.47	0.447	0.00	2638.47	0.000
L27	80.08 - 79.83 (27)	TP27.591x27.5477x0.95	1185.78	3181.76	0.373	0.00	3181.76	0.000
L28	79.83 - 74.83 (28)	TP28.4562x27.591x0.925	1300.18	3315.13	0.392	0.00	3315.13	0.000
L29	74.83 - 73.5 (29)	TP28.6864x28.4562x0.925	1330.97	3371.69	0.395	0.00	3371.69	0.000
L30	73.5 - 73.25 (30)	TP28.7296x28.6864x1.125	1336.78	4025.57	0.332	0.00	4025.57	0.000
L31	73.25 - 71 (31)	TP29.119x28.7296x1.1	1389.27	4061.00	0.342	0.00	4061.00	0.000
L32	71 - 70.75 (32)	TP29.1623x29.119x1	1395.13	3743.18	0.373	0.00	3743.18	0.000
L33	70.75 - 65.75 (33)	TP30.0275x29.1623x0.975	1513.37	3891.30	0.389	0.00	3891.30	0.000
L34	65.75 - 63 (34)	TP30.5034x30.0275x0.95	1579.22	3928.76	0.402	0.00	3928.76	0.000
L35	63 - 62.75 (35)	TP30.5466x30.5034x0.9	1585.24	3752.01	0.423	0.00	3752.01	0.000
L36	62.75 - 62.08 (36)	TP30.6626x30.5466x0.9	1601.38	3781.84	0.423	0.00	3781.84	0.000
L37	62.08 - 61.83 (37)	TP30.7058x30.6626x0.7625	1607.41	3258.20	0.493	0.00	3258.20	0.000
L38	61.83 - 60.67 (38)	TP30.9065x30.7058x0.75	1635.44	3252.48	0.503	0.00	3252.48	0.000
L39	60.67 - 60.42 (39)	TP30.9498x30.9065x0.75	1641.50	3261.93	0.503	0.00	3261.93	0.000
L40	60.42 - 59 (40)	TP31.1955x30.9498x0.75	1675.95	3315.88	0.505	0.00	3315.88	0.000
L41	59 - 58.75 (41)	TP31.2388x31.1955x0.825	1682.03	3631.03	0.463	0.00	3631.03	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L42	58.75 - 53.75 (42)	TP32.104x31.2388x0.8	1804.37	3735.85	0.483	0.00	3735.85	0.000
L43	53.75 - 48.5 (43)	TP33.0125x32.104x0.8	1816.68	3756.79	0.484	0.00	3756.79	0.000
L44	48.5 - 47.5 (44)	TP32.6823x31.6905x0.8625	1959.78	4155.25	0.472	0.00	4155.25	0.000
L45	47.5 - 45.75 (45)	TP32.9841x32.6823x0.8625	2003.81	4235.51	0.473	0.00	4235.51	0.000
L46	45.75 - 45.5 (46)	TP33.0272x32.9841x0.8625	2010.11	4247.03	0.473	0.00	4247.03	0.000
L47	45.5 - 45 (47)	TP33.1135x33.0272x0.8625	2022.72	4270.14	0.474	0.00	4270.14	0.000
L48	45 - 44.75 (48)	TP33.1566x33.1135x0.9125	2029.03	4508.93	0.450	0.00	4508.93	0.000
L49	44.75 - 43.5 (49)	TP33.3722x33.1566x0.9125	2060.65	4570.26	0.451	0.00	4570.26	0.000
L50	43.5 - 43.25 (50)	TP33.4153x33.3722x1.0125	2066.99	5037.98	0.410	0.00	5037.98	0.000
L51	43.25 - 38.25 (51)	TP34.2777x33.4153x1	2194.51	5254.21	0.418	0.00	5254.21	0.000
L52	38.25 - 33.25 (52)	TP35.1401x34.2777x0.9875	2323.53	5470.98	0.425	0.00	5470.98	0.000
L53	33.25 - 30.5 (53)	TP35.6144x35.1401x0.9625	2395.09	5495.61	0.436	0.00	5495.61	0.000
L54	30.5 - 30.25 (54)	TP35.6575x35.6144x0.9625	2401.62	5509.48	0.436	0.00	5509.48	0.000
L55	30.25 - 29.67 (55)	TP35.7576x35.6575x0.9625	2416.78	5541.73	0.436	0.00	5541.73	0.000
L56	29.67 - 29.42 (56)	TP35.8007x35.7576x0.7625	2423.31	4477.47	0.541	0.00	4477.47	0.000
L57	29.42 - 28 (57)	TP36.0456x35.8007x0.7625	2460.48	4540.95	0.542	0.00	4540.95	0.000
L58	28 - 27.75 (58)	TP36.0887x36.0456x0.9125	2467.04	5378.58	0.459	0.00	5378.58	0.000
L59	27.75 - 26.92 (59)	TP36.2319x36.0887x0.9125	2488.82	5423.01	0.459	0.00	5423.01	0.000
L60	26.92 - 26.67 (60)	TP36.275x36.2319x0.875	2495.39	5229.62	0.477	0.00	5229.62	0.000
L61	26.67 - 26.5 (61)	TP36.3043x36.275x0.875	2499.86	5238.38	0.477	0.00	5238.38	0.000
L62	26.5 - 26.25 (62)	TP36.3474x36.3043x0.8375	2506.43	5042.20	0.497	0.00	5042.20	0.000
L63	26.25 - 24.92 (63)	TP36.5768x36.3474x0.8375	2541.43	5108.31	0.498	0.00	5108.31	0.000
L64	24.92 - 24.67 (64)	TP36.62x36.5768x0.8	2548.03	4906.89	0.519	0.00	4906.89	0.000
L65	24.67 - 22.17 (65)	TP37.0512x36.62x0.7875	2614.06	4953.62	0.528	0.00	4953.62	0.000
L66	22.17 - 21.92 (66)	TP37.0943x37.0512x0.8625	2620.68	5404.81	0.485	0.00	5404.81	0.000
L67	21.92 - 16.92 (67)	TP37.9567x37.0943x0.8375	2753.55	5515.07	0.499	0.00	5515.07	0.000
L68	16.92 - 11.92 (68)	TP38.8191x37.9567x0.825	2887.34	5696.59	0.507	0.00	5696.59	0.000
L69	11.92 - 6.92 (69)	TP39.6815x38.8191x0.8125	3021.93	5876.29	0.514	0.00	5876.29	0.000
L70	6.92 - 1.92 (70)	TP40.5438x39.6815x0.8	3048.93	5843.48	0.522	0.00	5843.48	0.000
L71	1.92 - 0 (71)	TP40.875x40.5438x0.7875	3157.21	5964.91	0.529	0.00	5964.91	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	149 - 144 (1)	TP16.8649x16x0.1875	5.24	368.69	0.014	0.01	505.54	0.000
L2	144 - 139 (2)	TP17.7297x16.8649x0.1875	11.16	387.81	0.029	0.15	559.59	0.000
L3	139 - 134 (3)	TP18.5946x17.7297x0.1875	11.45	406.93	0.028	0.23	616.39	0.000
L4	134 - 129 (4)	TP19.4594x18.5946x0.1875	11.72	423.14	0.028	0.25	671.32	0.000
L5	129 - 124.5 (5)	TP20.2378x19.4594x0.1875	19.05	435.62	0.044	1.89	719.25	0.003
L6	124.5 - 124.25 (6)	TP20.281x20.2378x0.35	19.06	822.50	0.023	1.88	1340.68	0.001
L7	124.25 - 119.25 (7)	TP21.1459x20.281x0.3438	19.45	843.12	0.023	0.59	1435.60	0.000
L8	119.25 - 118.5 (8)	TP21.2756x21.1459x0.3438	19.49	848.37	0.023	0.59	1453.68	0.000
L9	118.5 - 118.25 (9)	TP21.3188x21.2756x0.7	19.50	1701.76	0.011	0.59	2830.86	0.000
L10	118.25 - 116 (10)	TP21.708x21.3188x0.6875	19.66	1703.93	0.012	0.59	2892.66	0.000
L11	116 - 115.75 (11)	TP21.7513x21.708x0.6875	19.67	1707.44	0.012	0.59	2904.73	0.000
L12	115.75 - 110.75 (12)	TP22.6161x21.7513x0.6625	20.22	1714.86	0.012	1.26	3046.79	0.000
L13	110.75 - 105.75 (13)	TP23.481x22.6161x0.6375	20.60	1717.03	0.012	1.26	3180.28	0.000
L14	105.75 - 98.5 (14)	TP24.735x23.481x0.6125	20.88	1698.35	0.012	1.26	3243.43	0.000
L15	98.5 - 97 (15)	TP24.6198x23.7546x0.675	21.34	1905.69	0.011	1.26	3699.02	0.000
L16	97 - 96.75 (16)	TP24.6631x24.6198x0.825	21.34	2318.79	0.009	1.26	4457.11	0.000
L17	96.75 - 93.98 (17)	TP25.1424x24.6631x0.8125	21.57	2330.78	0.009	1.26	4577.16	0.000
L18	93.98 - 93.73 (18)	TP25.1857x25.1424x0.8	21.58	2300.18	0.009	1.26	4529.62	0.000
L19	93.73 - 91.5 (19)	TP25.5716x25.1857x0.8	21.76	2336.58	0.009	1.26	4676.08	0.000
L20	91.5 - 91.25 (20)	TP25.6148x25.5716x0.6375	21.77	1877.43	0.012	1.26	3809.71	0.000
L21	91.25 - 90.25 (21)	TP25.7879x25.6148x0.6375	21.85	1890.43	0.012	1.26	3863.24	0.000
L22	90.25 - 90 (22)	TP25.8311x25.7879x0.975	21.86	2857.43	0.008	1.25	5705.32	0.000
L23	90 - 89 (23)	TP26.0042x25.8311x0.975	21.95	2877.32	0.008	1.25	5786.32	0.000
L24	89 - 88.75 (24)	TP26.0474x26.0042x0.825	21.96	2453.45	0.009	1.25	4997.64	0.000
L25	88.75 - 83.75 (25)	TP26.9127x26.0474x0.8	22.36	2463.08	0.009	1.25	5203.23	0.000
L26	83.75 - 80.08 (26)	TP27.5477x26.9127x0.775	22.65	2446.42	0.009	1.25	5306.08	0.000
L27	80.08 - 79.83 (27)	TP27.591x27.5477x0.95	22.66	2984.08	0.008	1.25	6404.80	0.000
L28	79.83 - 74.83 (28)	TP28.4562x27.591x0.925	23.10	3002.64	0.008	1.25	6671.31	0.000
L29	74.83 - 73.5 (29)	TP28.6864x28.4562x0.925	23.21	3027.75	0.008	1.25	6784.87	0.000
L30	73.5 - 73.25 (30)	TP28.7296x28.6864x1.125	23.22	3661.60	0.006	1.25	8109.23	0.000
L31	73.25 - 71 (31)	TP29.119x28.7296x1.1	23.43	3633.97	0.006	1.25	8178.87	0.000
L32	71 - 70.75 (32)	TP29.1623x29.119x1	23.44	3320.50	0.007	1.25	7534.76	0.000
L33	70.75 - 65.75 (33)	TP30.0275x29.1623x0.975	23.85	3339.83	0.007	1.25	7830.74	0.000
L34	65.75 - 63 (34)	TP30.5034x30.0275x0.95	24.06	3310.30	0.007	1.25	7904.52	0.000
L35	63 - 62.75 (35)	TP30.5466x30.5034x0.9	24.06	3145.97	0.008	1.25	7546.97	0.000
L36	62.75 - 62.08 (36)	TP30.6626x30.5466x0.9	24.11	3158.27	0.008	1.25	7606.86	0.000
L37	62.08 - 61.83 (37)	TP30.7058x30.6626x0.7625	24.13	2692.01	0.009	1.25	6549.07	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L38	61.83 - 60.67 (38)	TP30.9065x30.7058x0.75	24.21	2666.73	0.009	1.25	6537.02	0.000
L39	60.67 - 60.42 (39)	TP30.9498x30.9065x0.75	24.22	2670.56	0.009	1.25	6555.97	0.000
L40	60.42 - 59 (40)	TP31.1955x30.9498x0.75	24.32	2692.29	0.009	1.25	6664.21	0.000
L41	59 - 58.75 (41)	TP31.2388x31.1955x0.825	24.32	2958.43	0.008	1.25	7300.24	0.000
L42	58.75 - 53.75 (42)	TP32.104x31.2388x0.8	24.62	2952.75	0.008	1.25	7509.27	0.000
L43	53.75 - 48.5 (43)	TP33.0125x32.104x0.8	24.64	2960.91	0.008	1.25	7551.28	0.000
L44	48.5 - 47.5 (44)	TP32.6823x31.6905x0.8625	25.11	3235.88	0.008	1.25	8354.17	0.000
L45	47.5 - 45.75 (45)	TP32.9841x32.6823x0.8625	25.22	3266.58	0.008	1.25	8515.17	0.000
L46	45.75 - 45.5 (46)	TP33.0272x32.9841x0.8625	25.21	3270.96	0.008	1.25	8538.33	0.000
L47	45.5 - 45 (47)	TP33.1135x33.0272x0.8625	25.24	3279.73	0.008	1.25	8584.67	0.000
L48	45 - 44.75 (48)	TP33.1566x33.1135x0.9125	25.25	3469.12	0.007	1.25	9066.75	0.000
L49	44.75 - 43.5 (49)	TP33.3722x33.1566x0.9125	25.34	3492.32	0.007	1.25	9189.83	0.000
L50	43.5 - 43.25 (50)	TP33.4153x33.3722x1.0125	25.35	3868.25	0.007	1.25	10134.92	0.000
L51	43.25 - 38.25 (51)	TP34.2777x33.4153x1	25.66	3923.65	0.007	1.25	10568.08	0.000
L52	38.25 - 33.25 (52)	TP35.1401x34.2777x0.9875	25.96	3976.47	0.007	1.25	11002.33	0.000
L53	33.25 - 30.5 (53)	TP35.6144x35.1401x0.9625	26.11	3932.46	0.007	1.25	11050.00	0.000
L54	30.5 - 30.25 (54)	TP35.6575x35.6144x0.9625	26.11	3937.36	0.007	1.25	11077.83	0.000
L55	30.25 - 29.67 (55)	TP35.7576x35.6575x0.9625	26.14	3948.71	0.007	1.25	11142.58	0.000
L56	29.67 - 29.42 (56)	TP35.8007x35.7576x0.7625	26.15	3150.05	0.008	1.25	8995.00	0.000
L57	29.42 - 28 (57)	TP36.0456x35.8007x0.7625	26.23	3172.07	0.008	1.25	9122.33	0.000
L58	28 - 27.75 (58)	TP36.0887x36.0456x0.9125	26.22	3784.59	0.007	1.25	10811.83	0.000
L59	27.75 - 26.92 (59)	TP36.2319x36.0887x0.9125	26.27	3799.99	0.007	1.25	10901.00	0.000
L60	26.92 - 26.67 (60)	TP36.275x36.2319x0.875	26.27	3652.14	0.007	1.25	10510.50	0.000
L61	26.67 - 26.5 (61)	TP36.3043x36.275x0.875	26.28	3655.17	0.007	1.25	10528.17	0.000
L62	26.5 - 26.25 (62)	TP36.3474x36.3043x0.8375	26.29	3506.48	0.007	1.25	10132.17	0.000
L63	26.25 - 24.92 (63)	TP36.5768x36.3474x0.8375	26.37	3529.13	0.007	1.25	10264.83	0.000
L64	24.92 - 24.67 (64)	TP36.62x36.5768x0.8	26.36	3378.72	0.008	1.25	9858.50	0.000
L65	24.67 - 22.17 (65)	TP37.0512x36.62x0.7875	26.48	3367.12	0.008	1.25	9951.50	0.000
L66	22.17 - 21.92 (66)	TP37.0943x37.0512x0.8625	26.47	3684.56	0.007	1.25	10861.17	0.000
L67	21.92 - 16.92 (67)	TP37.9567x37.0943x0.8375	26.68	3665.38	0.007	1.25	11080.75	0.000
L68	16.92 - 11.92 (68)	TP38.8191x37.9567x0.825	26.85	3695.78	0.007	1.25	11444.08	0.000
L69	11.92 - 6.92 (69)	TP39.6815x38.8191x0.8125	27.01	3723.60	0.007	1.25	11803.67	0.000
L70	6.92 - 1.92 (70)	TP40.5438x39.6815x0.8	27.06	3700.03	0.007	1.25	11737.08	0.000
L71	1.92 - 0 (71)	TP40.875x40.5438x0.7875	27.22	3722.17	0.007	1.25	11979.75	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	149 - 144 (1)	0.003	0.107	0.000	0.014	0.000	0.110	1.000	4.8.2
L2	144 - 139 (2)	0.006	0.213	0.000	0.029	0.000	0.220	1.000	4.8.2
L3	139 - 134 (3)	0.006	0.377	0.000	0.028	0.000	0.384	1.000	4.8.2
L4	134 - 129 (4)	0.006	0.519	0.000	0.028	0.000	0.526	1.000	4.8.2
L5	129 - 124.5 (5)	0.012	0.706	0.000	0.044	0.003	0.721	1.000	4.8.2
L6	124.5 - 124.25 (6)	0.007	0.387	0.000	0.023	0.001	0.394	1.000	4.8.2
L7	124.25 - 119.25 (7)	0.007	0.496	0.000	0.023	0.000	0.503	1.000	4.8.2
L8	119.25 - 118.5 (8)	0.007	0.510	0.000	0.023	0.000	0.517	1.000	4.8.2
L9	118.5 - 118.25 (9)	0.003	0.266	0.000	0.011	0.000	0.269	1.000	4.8.2
L10	118.25 - 116 (10)	0.004	0.291	0.000	0.012	0.000	0.294	1.000	4.8.2
L11	116 - 115.75 (11)	0.004	0.293	0.000	0.012	0.000	0.297	1.000	4.8.2
L12	115.75 - 110.75 (12)	0.004	0.345	0.000	0.012	0.000	0.349	1.000	4.8.2
L13	110.75 - 105.75 (13)	0.004	0.395	0.000	0.012	0.000	0.399	1.000	4.8.2
L14	105.75 - 98.5 (14)	0.004	0.435	0.000	0.012	0.000	0.440	1.000	4.8.2
L15	98.5 - 97 (15)	0.004	0.439	0.000	0.011	0.000	0.444	1.000	4.8.2
L16	97 - 96.75 (16)	0.004	0.367	0.000	0.009	0.000	0.371	1.000	4.8.2
L17	96.75 - 93.98 (17)	0.004	0.384	0.000	0.009	0.000	0.388	1.000	4.8.2
L18	93.98 - 93.73 (18)	0.004	0.390	0.000	0.009	0.000	0.394	1.000	4.8.2
L19	93.73 - 91.5 (19)	0.004	0.399	0.000	0.009	0.000	0.403	1.000	4.8.2
L20	91.5 - 91.25 (20)	0.005	0.492	0.000	0.012	0.000	0.497	1.000	4.8.2
L21	91.25 - 90.25 (21)	0.005	0.496	0.000	0.012	0.000	0.501	1.000	4.8.2
L22	90.25 - 90 (22)	0.003	0.339	0.000	0.008	0.000	0.342	1.000	4.8.2
L23	90 - 89 (23)	0.003	0.342	0.000	0.008	0.000	0.345	1.000	4.8.2
L24	89 - 88.75 (24)	0.004	0.397	0.000	0.009	0.000	0.401	1.000	4.8.2
L25	88.75 - 83.75 (25)	0.004	0.424	0.000	0.009	0.000	0.429	1.000	4.8.2
L26	83.75 - 80.08 (26)	0.004	0.447	0.000	0.009	0.000	0.452	1.000	4.8.2
L27	80.08 - 79.83 (27)	0.004	0.373	0.000	0.008	0.000	0.376	1.000	4.8.2
L28	79.83 - 74.83 (28)	0.004	0.392	0.000	0.008	0.000	0.396	1.000	4.8.2
L29	74.83 - 73.5 (29)	0.004	0.395	0.000	0.008	0.000	0.399	1.000	4.8.2
L30	73.5 - 73.25 (30)	0.003	0.332	0.000	0.006	0.000	0.335	1.000	4.8.2
L31	73.25 - 71 (31)	0.003	0.342	0.000	0.006	0.000	0.346	1.000	4.8.2
L32	71 - 70.75 (32)	0.004	0.373	0.000	0.007	0.000	0.377	1.000	4.8.2
L33	70.75 - 65.75	0.004	0.389	0.000	0.007	0.000	0.393	1.000	4.8.2

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	(33)								
L34	65.75 - 63 (34)	0.004	0.402	0.000	0.007	0.000	0.406	1.000	4.8.2
L35	63 - 62.75 (35)	0.004	0.423	0.000	0.008	0.000	0.427	1.000	4.8.2
L36	62.75 - 62.08 (36)	0.004	0.423	0.000	0.008	0.000	0.428	1.000	4.8.2
L37	62.08 - 61.83 (37)	0.005	0.493	0.000	0.009	0.000	0.499	1.000	4.8.2
L38	61.83 - 60.67 (38)	0.005	0.503	0.000	0.009	0.000	0.508	1.000	4.8.2
L39	60.67 - 60.42 (39)	0.005	0.503	0.000	0.009	0.000	0.509	1.000	4.8.2
L40	60.42 - 59 (40)	0.005	0.505	0.000	0.009	0.000	0.511	1.000	4.8.2
L41	59 - 58.75 (41)	0.005	0.463	0.000	0.008	0.000	0.468	1.000	4.8.2
L42	58.75 - 53.75 (42)	0.005	0.483	0.000	0.008	0.000	0.488	1.000	4.8.2
L43	53.75 - 48.5 (43)	0.005	0.484	0.000	0.008	0.000	0.489	1.000	4.8.2
L44	48.5 - 47.5 (44)	0.005	0.472	0.000	0.008	0.000	0.477	1.000	4.8.2
L45	47.5 - 45.75 (45)	0.005	0.473	0.000	0.008	0.000	0.479	1.000	4.8.2
L46	45.75 - 45.5 (46)	0.005	0.473	0.000	0.008	0.000	0.479	1.000	4.8.2
L47	45.5 - 45 (47)	0.005	0.474	0.000	0.008	0.000	0.479	1.000	4.8.2
L48	45 - 44.75 (48)	0.005	0.450	0.000	0.007	0.000	0.455	1.000	4.8.2
L49	44.75 - 43.5 (49)	0.005	0.451	0.000	0.007	0.000	0.456	1.000	4.8.2
L50	43.5 - 43.25 (50)	0.005	0.410	0.000	0.007	0.000	0.415	1.000	4.8.2
L51	43.25 - 38.25 (51)	0.005	0.418	0.000	0.007	0.000	0.423	1.000	4.8.2
L52	38.25 - 33.25 (52)	0.005	0.425	0.000	0.007	0.000	0.430	1.000	4.8.2
L53	33.25 - 30.5 (53)	0.005	0.436	0.000	0.007	0.000	0.441	1.000	4.8.2
L54	30.5 - 30.25 (54)	0.005	0.436	0.000	0.007	0.000	0.441	1.000	4.8.2
L55	30.25 - 29.67 (55)	0.005	0.436	0.000	0.007	0.000	0.442	1.000	4.8.2
L56	29.67 - 29.42 (56)	0.007	0.541	0.000	0.008	0.000	0.548	1.000	4.8.2
L57	29.42 - 28 (57)	0.007	0.542	0.000	0.008	0.000	0.549	1.000	4.8.2
L58	28 - 27.75 (58)	0.006	0.459	0.000	0.007	0.000	0.464	1.000	4.8.2
L59	27.75 - 26.92 (59)	0.006	0.459	0.000	0.007	0.000	0.465	1.000	4.8.2
L60	26.92 - 26.67 (60)	0.006	0.477	0.000	0.007	0.000	0.483	1.000	4.8.2
L61	26.67 - 26.5 (61)	0.006	0.477	0.000	0.007	0.000	0.483	1.000	4.8.2
L62	26.5 - 26.25 (62)	0.006	0.497	0.000	0.007	0.000	0.503	1.000	4.8.2
L63	26.25 - 24.92 (63)	0.006	0.498	0.000	0.007	0.000	0.504	1.000	4.8.2
L64	24.92 - 24.67 (64)	0.007	0.519	0.000	0.008	0.000	0.526	1.000	4.8.2
L65	24.67 - 22.17 (65)	0.007	0.528	0.000	0.008	0.000	0.535	1.000	4.8.2
L66	22.17 - 21.92 (66)	0.006	0.485	0.000	0.007	0.000	0.491	1.000	4.8.2
L67	21.92 - 16.92 (67)	0.007	0.499	0.000	0.007	0.000	0.506	1.000	4.8.2

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L68	16.92 - 11.92 (68)	0.007	0.507	0.000	0.007	0.000	0.514	1.000	4.8.2
L69	11.92 - 6.92 (69)	0.007	0.514	0.000	0.007	0.000	0.521	1.000	4.8.2
L70	6.92 - 1.92 (70)	0.007	0.522	0.000	0.007	0.000	0.529	1.000	4.8.2
L71	1.92 - 0 (71)	0.007	0.529	0.000	0.007	0.000	0.537	1.000	4.8.2

Section Capacity Table

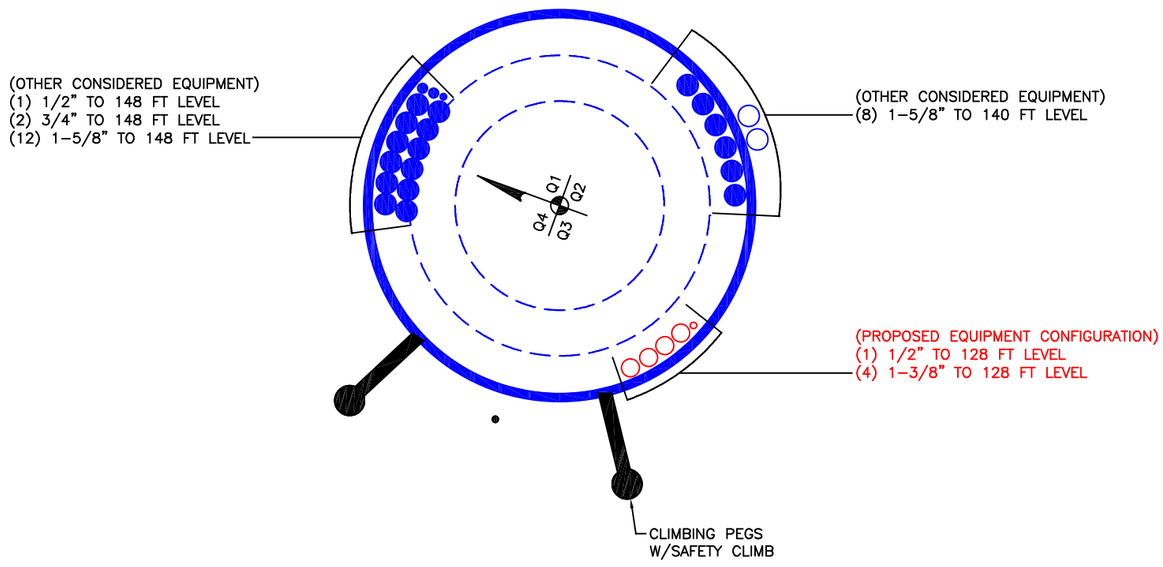
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	149 - 144	Pole	TP16.8649x16x0.1875	1	-2.25	737.39	11.0	Pass
L2	144 - 139	Pole	TP17.7297x16.8649x0.1875	2	-4.66	775.63	22.0	Pass
L3	139 - 134	Pole	TP18.5946x17.7297x0.1875	3	-5.02	813.86	38.4	Pass
L4	134 - 129	Pole	TP19.4594x18.5946x0.1875	4	-5.40	846.29	52.6	Pass
L5	129 - 124.5	Pole	TP20.2378x19.4594x0.1875	5	-10.86	871.24	72.1	Pass
L6	124.5 - 124.25	Pole	TP20.281x20.2378x0.35	6	-10.91	1644.99	39.4	Pass
L7	124.25 - 119.25	Pole	TP21.1459x20.281x0.3438	7	-11.56	1686.23	50.3	Pass
L8	119.25 - 118.5	Pole	TP21.2756x21.1459x0.3438	8	-11.67	1696.75	51.7	Pass
L9	118.5 - 118.25	Pole	TP21.3188x21.2756x0.7	9	-11.73	3403.52	26.9	Pass
L10	118.25 - 116	Pole	TP21.708x21.3188x0.6875	10	-12.17	3407.87	29.4	Pass
L11	116 - 115.75	Pole	TP21.7513x21.708x0.6875	11	-12.23	3414.88	29.7	Pass
L12	115.75 - 110.75	Pole	TP22.6161x21.7513x0.6625	12	-13.19	3429.72	34.9	Pass
L13	110.75 - 105.75	Pole	TP23.481x22.6161x0.6375	13	-14.22	3434.07	39.9	Pass
L14	105.75 - 98.5	Pole	TP24.735x23.481x0.6125	14	-15.01	3396.69	44.0	Pass
L15	98.5 - 97	Pole	TP24.6198x23.7546x0.675	15	-16.72	3811.38	44.4	Pass
L16	97 - 96.75	Pole	TP24.6631x24.6198x0.825	16	-16.80	4637.59	37.1	Pass
L17	96.75 - 93.98	Pole	TP25.1424x24.6631x0.8125	17	-17.53	4661.55	38.8	Pass
L18	93.98 - 93.73	Pole	TP25.1857x25.1424x0.8	18	-17.61	4600.36	39.4	Pass
L19	93.73 - 91.5	Pole	TP25.5716x25.1857x0.8	19	-18.21	4673.15	40.3	Pass
L20	91.5 - 91.25	Pole	TP25.6148x25.5716x0.6375	20	-18.27	3754.85	49.7	Pass
L21	91.25 - 90.25	Pole	TP25.7879x25.6148x0.6375	21	-18.51	3780.87	50.1	Pass
L22	90.25 - 90	Pole	TP25.8311x25.7879x0.975	22	-18.60	5714.85	34.2	Pass
L23	90 - 89	Pole	TP26.0042x25.8311x0.975	23	-18.91	5754.64	34.5	Pass
L24	89 - 88.75	Pole	TP26.0474x26.0042x0.825	24	-18.98	4906.91	40.1	Pass
L25	88.75 - 83.75	Pole	TP26.9127x26.0474x0.8	25	-20.40	4926.15	42.9	Pass
L26	83.75 - 80.08	Pole	TP27.5477x26.9127x0.775	26	-21.46	4892.84	45.2	Pass
L27	80.08 - 79.83	Pole	TP27.591x27.5477x0.95	27	-21.56	5968.16	37.6	Pass
L28	79.83 - 74.83	Pole	TP28.4562x27.591x0.925	28	-23.29	6005.29	39.6	Pass
L29	74.83 - 73.5	Pole	TP28.6864x28.4562x0.925	29	-23.76	6055.49	39.9	Pass
L30	73.5 - 73.25	Pole	TP28.7296x28.6864x1.125	30	-23.87	7323.20	33.5	Pass
L31	73.25 - 71	Pole	TP29.119x28.7296x1.1	31	-24.78	7267.95	34.6	Pass
L32	71 - 70.75	Pole	TP29.1623x29.119x1	32	-24.88	6641.01	37.7	Pass
L33	70.75 - 65.75	Pole	TP30.0275x29.1623x0.975	33	-26.73	6679.66	39.3	Pass
L34	65.75 - 63	Pole	TP30.5034x30.0275x0.95	34	-27.77	6620.59	40.6	Pass
L35	63 - 62.75	Pole	TP30.5466x30.5034x0.9	35	-27.87	6291.93	42.7	Pass
L36	62.75 - 62.08	Pole	TP30.6626x30.5466x0.9	36	-28.12	6316.54	42.8	Pass
L37	62.08 - 61.83	Pole	TP30.7058x30.6626x0.7625	37	-28.20	5384.01	49.9	Pass
L38	61.83 - 60.67	Pole	TP30.9065x30.7058x0.75	38	-28.59	5333.46	50.8	Pass
L39	60.67 - 60.42	Pole	TP30.9498x30.9065x0.75	39	-28.68	5341.12	50.9	Pass
L40	60.42 - 59	Pole	TP31.1955x30.9498x0.75	40	-29.15	5384.57	51.1	Pass
L41	59 - 58.75	Pole	TP31.2388x31.1955x0.825	41	-29.25	5916.86	46.8	Pass
L42	58.75 - 53.75	Pole	TP32.104x31.2388x0.8	42	-30.95	5905.50	48.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L43	53.75 - 48.5	Pole	TP33.0125x32.104x0.8	43	-31.13	5921.82	48.9	Pass
L44	48.5 - 47.5	Pole	TP32.6823x31.6905x0.8625	44	-34.70	6471.77	47.7	Pass
L45	47.5 - 45.75	Pole	TP32.9841x32.6823x0.8625	45	-35.36	6533.16	47.9	Pass
L46	45.75 - 45.5	Pole	TP33.0272x32.9841x0.8625	46	-35.48	6541.93	47.9	Pass
L47	45.5 - 45	Pole	TP33.1135x33.0272x0.8625	47	-35.67	6559.47	47.9	Pass
L48	45 - 44.75	Pole	TP33.1566x33.1135x0.9125	48	-35.78	6938.25	45.5	Pass
L49	44.75 - 43.5	Pole	TP33.3722x33.1566x0.9125	49	-36.30	6984.64	45.6	Pass
L50	43.5 - 43.25	Pole	TP33.4153x33.3722x1.0125	50	-36.42	7736.50	41.5	Pass
L51	43.25 - 38.25	Pole	TP34.2777x33.4153x1	51	-38.61	7847.29	42.3	Pass
L52	38.25 - 33.25	Pole	TP35.1401x34.2777x0.9875	52	-40.83	7952.93	43.0	Pass
L53	33.25 - 30.5	Pole	TP35.6144x35.1401x0.9625	53	-42.06	7864.92	44.1	Pass
L54	30.5 - 30.25	Pole	TP35.6575x35.6144x0.9625	54	-42.19	7874.71	44.1	Pass
L55	30.25 - 29.67	Pole	TP35.7576x35.6575x0.9625	55	-42.45	7897.42	44.2	Pass
L56	29.67 - 29.42	Pole	TP35.8007x35.7576x0.7625	56	-42.56	6300.11	54.8	Pass
L57	29.42 - 28	Pole	TP36.0456x35.8007x0.7625	57	-43.14	6344.15	54.9	Pass
L58	28 - 27.75	Pole	TP36.0887x36.0456x0.9125	58	-43.26	7569.18	46.4	Pass
L59	27.75 - 26.92	Pole	TP36.2319x36.0887x0.9125	59	-43.62	7599.98	46.5	Pass
L60	26.92 - 26.67	Pole	TP36.275x36.2319x0.875	60	-43.73	7304.29	48.3	Pass
L61	26.67 - 26.5	Pole	TP36.3043x36.275x0.875	61	-43.80	7310.34	48.3	Pass
L62	26.5 - 26.25	Pole	TP36.3474x36.3043x0.8375	62	-43.90	7012.96	50.3	Pass
L63	26.25 - 24.92	Pole	TP36.5768x36.3474x0.8375	63	-44.42	7058.26	50.4	Pass
L64	24.92 - 24.67	Pole	TP36.62x36.5768x0.8	64	-44.54	6757.43	52.6	Pass
L65	24.67 - 22.17	Pole	TP37.0512x36.62x0.7875	65	-45.56	6734.24	53.5	Pass
L66	22.17 - 21.92	Pole	TP37.0943x37.0512x0.8625	66	-45.68	7369.11	49.1	Pass
L67	21.92 - 16.92	Pole	TP37.9567x37.0943x0.8375	67	-47.89	7330.77	50.6	Pass
L68	16.92 - 11.92	Pole	TP38.8191x37.9567x0.825	68	-50.12	7391.56	51.4	Pass
L69	11.92 - 6.92	Pole	TP39.6815x38.8191x0.8125	69	-52.34	7447.19	52.1	Pass
L70	6.92 - 1.92	Pole	TP40.5438x39.6815x0.8	70	-52.78	7367.52	52.9	Pass
L71	1.92 - 0	Pole	TP40.875x40.5438x0.7875	71	-54.50	7382.84	53.7	Pass
							Summary	
						Pole (L5)	72.1	Pass
						RATING =	**72.1**	**Pass**

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

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 857525 TOWER ID: C_BASELEVEL

CROWN REGION ADDRESS

USA

1	14/04/14	NEW BUILD PER WORK ORDER # 745023 — NJH
2	14/04/14	AS-BUILT INFORMATION ADDED PER WORK ORDER # 744268 — NJH
3	14/04/14	UPDATED PER WORK ORDER # 713091 — NJH
4	18/05/15	UPDATED PER WORK ORDER # 1053962 — AH
5	07/02/18	UPDATED PER WORK ORDER 1523377 — JG
6	28/02/18	UPDATED PER WORK ORDER 1533899 — PB

DRAWN BY: NJH
CHECKED BY:
DRAWING DATE: 4/14/14

SITE NUMBER:
SITE NAME:

SITE NAME

NEWTOWN DINGLEBROOK

BUSINESS UNIT NUMBER

857525

SITE ADDRESS

24 DINGLEBROOK LANE
NEWTOWN, CT 06470
FAIRFIELD COUNTY
USA

SHEET TITLE

BASE LEVEL

SHEET NUMBER

A1-0

BASE LEVEL DRAWING | 1" = 1'-0" | 1

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- G

Site BU: 857525

Work Order: 1621394

CROWN CASTLE

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	149	50.5	3.5	18	16	24.735	0.1875	Auto	A572-65
2	102	53.5	4.75	18	23.75	33.0125	0.25	Auto	A572-65
3	53.25	53.25	0	18	31.69	40.875	0.3125	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	28	plate	PL 5.5x1.25	3		E1									E1					E1		
2	28	45.75	plate	PL 5.5x1.25	1									E1									
3	45.75	63	plate	PL 5.5x1.25	3		E1						E1						E1				
4	63	90.25	plate	PL 5.5x1.25	2					E1						E1							
5	91.5	118.5	plate	PL 4x1.5	3		E1						E1						E1				
6	26.5	43.5	plate	CCI-SFP-045100	1																		E2
7	51.5	73.5	plate	CCI-SFP-045100	1	E2																	
8	89	97	plate	CCI-SFP-040075	3	E2						E2						E2					
9	116	124.5	plate	CCI-AFP-040075	3						E2						E2						E2
10	0	30.5	plate	PL 5.5x1.25	1							E1											
11	24.92	45.75	plate	PL 5.5x1.25	2			E1												E1			
12	60.67	90.25	plate	PL 5.5x1.25	1																	E1	
13	22.17	45	plate	CCI-SFP-045100	2						E2						E1						
14	47.92	73.5	plate	CCI-SFP-045100	2							E2						E1					
15	0	24.92	plate	CCI-SFP-065125	2			P												P			
16	0	22.17	plate	CCI-SFP-065125	2						P						P						
17	28	59	plate	CCI-SFP-060100	2				P						P								
18	29.67	60.67	plate	CCI-SFP-060100	1																	P	
19	30.5	47.92	plate	CCI-SFP-060100	1							P											
20	26.92	47.92	plate	CCI-SFP-060100	1													P					
21	59	80.08	plate	CCI-SFP-040075	2				P						P								
22	62.08	80.08	plate	CCI-SFP-040075	3						P						P						P
23	71	94	plate	CCI-SFP-040075	3			P						P						P			
24	63	91.5	plate	CCI-SFP-040075	3		P						P						P				
25	94.08	116	plate	CCI-SFP-040075	3						P						P						P
26																							

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	5.5	1.25	6.875	0.625	30.000	30.000	18.000	5.313	1.1875	A572-65
2	5.5	1.25	6.875	0.625	30.000	30.000	18.000	5.313	1.1875	A572-65
3	5.5	1.25	6.875	0.625	30.000	30.000	18.000	5.313	1.1875	A572-65
4	5.5	1.25	6.875	0.625	30.000	30.000	18.000	5.313	1.1875	A572-65
5	4	1.5	6	0.75	18.000	18.000	18.000	4.125	1.1875	A572-65
6	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
7	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
8	4	0.75	3	0.375	12.000	12.000	16.000	2.063	1.1875	A572-65
9	4	0.75	3	0.375	18.000	18.000	16.000	2.063	1.1875	A572-65
10	5.5	1.25	6.875	0.625	30.000	30.000	18.000	5.313	1.1875	A572-65
11	5.5	1.25	6.875	0.625	30.000	30.000	18.000	5.313	1.1875	A572-65
12	5.5	1.25	6.875	0.625	30.000	30.000	18.000	5.313	1.1875	A572-65
13	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
14	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
15	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
16	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
17	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
18	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
19	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
20	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
21	4	0.75	3	0.375	12.000	12.000	16.000	2.063	1.1875	A572-65
22	4	0.75	3	0.375	12.000	12.000	16.000	2.063	1.1875	A572-65
23	4	0.75	3	0.375	12.000	12.000	16.000	2.063	1.1875	A572-65
24	4	0.75	3	0.375	12.000	12.000	16.000	2.063	1.1875	A572-65
25	4	0.75	3	0.375	12.000	12.000	16.000	2.063	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	149 - 144	5		18	16.000	16.865	0.1875	A572-65	1.000
2	144 - 139	5		18	16.865	17.730	0.1875	A572-65	1.000
3	139 - 134	5		18	17.730	18.595	0.1875	A572-65	1.000
4	134 - 129	5		18	18.595	19.459	0.1875	A572-65	1.000
5	129 - 124.5	4.5		18	19.459	20.238	0.1875	A572-65	1.000
6	124.5 - 124.25	0.25		18	20.238	20.281	0.35	A572-65	0.947
7	124.25 - 119.25	5		18	20.281	21.146	0.34375	A572-65	0.946
8	119.25 - 118.5	0.75		18	21.146	21.276	0.34375	A572-65	0.944
9	118.5 - 118.25	0.25		18	21.276	21.319	0.7	A572-65	0.864
10	118.25 - 116	2.25		18	21.319	21.708	0.6875	A572-65	0.868
11	116 - 115.75	0.25		18	21.708	21.751	0.6875	A572-65	0.867
12	115.75 - 110.75	5		18	21.751	22.616	0.6625	A572-65	0.874
13	110.75 - 105.75	5		18	22.616	23.481	0.6375	A572-65	0.884
14	105.75 - 102	7.25	3.5	18	23.481	24.735	0.6125	A572-65	0.902
15	102 - 97	5		18	23.755	24.620	0.675	A572-65	0.903
16	97 - 96.75	0.25		18	24.620	24.663	0.825	A572-65	0.887
17	96.75 - 93.98	2.77		18	24.663	25.142	0.8125	A572-65	0.889
18	93.98 - 93.73	0.25		18	25.142	25.186	0.8	A572-65	0.901
19	93.73 - 91.5	2.23		18	25.186	25.572	0.8	A572-65	0.892
20	91.5 - 91.25	0.25		18	25.572	25.615	0.6375	A572-65	0.932
21	91.25 - 90.25	1		18	25.615	25.788	0.6375	A572-65	0.929
22	90.25 - 90	0.25		18	25.788	25.831	0.975	A572-65	0.883
23	90 - 89	1		18	25.831	26.004	0.975	A572-65	0.879
24	89 - 88.75	0.25		18	26.004	26.047	0.825	A572-65	0.895
25	88.75 - 83.75	5		18	26.047	26.913	0.8	A572-65	0.902
26	83.75 - 80.08	3.67		18	26.913	27.548	0.775	A572-65	0.915
27	80.08 - 79.83	0.25		18	27.548	27.591	0.95	A572-65	0.938
28	79.83 - 74.83	5		18	27.591	28.456	0.925	A572-65	0.940
29	74.83 - 73.5	1.33		18	28.456	28.686	0.925	A572-65	0.935
30	73.5 - 73.25	0.25		18	28.686	28.730	1.125	A572-65	0.910
31	73.25 - 71	2.25		18	28.730	29.119	1.1	A572-65	0.920
32	71 - 70.75	0.25		18	29.119	29.162	1	A572-65	0.907
33	70.75 - 65.75	5		18	29.162	30.027	0.975	A572-65	0.909
34	65.75 - 63	2.75		18	30.027	30.503	0.95	A572-65	0.922
35	63 - 62.75	0.25		18	30.503	30.547	0.9	A572-65	0.945
36	62.75 - 62.08	0.67		18	30.547	30.663	0.9	A572-65	0.943
37	62.08 - 61.83	0.25		18	30.663	30.706	0.7625	A572-65	0.982
38	61.83 - 60.67	1.16		18	30.706	30.907	0.75	A572-65	0.994
39	60.67 - 60.42	0.25		18	30.907	30.950	0.75	A572-65	0.980
40	60.42 - 59	1.42		18	30.950	31.196	0.75	A572-65	0.975
41	59 - 58.75	0.25		18	31.196	31.239	0.825	A572-65	0.907
42	58.75 - 53.75	5		18	31.239	32.104	0.8	A572-65	0.917
43	53.75 - 53.25	5.25	4.75	18	32.104	33.013	0.8	A572-65	0.915
44	53.25 - 47.5	5.75		18	31.691	32.682	0.8625	A572-65	0.950
45	47.5 - 45.75	1.75		18	32.682	32.984	0.8625	A572-65	0.944
46	45.75 - 45.5	0.25		18	32.984	33.027	0.8625	A572-65	0.943
47	45.5 - 45	0.5		18	33.027	33.113	0.8625	A572-65	0.942
48	45 - 44.75	0.25		18	33.113	33.157	0.9125	A572-65	0.987
49	44.75 - 43.5	1.25		18	33.157	33.372	0.9125	A572-65	0.983
50	43.5 - 43.25	0.25		18	33.372	33.415	1.0125	A572-65	0.931
51	43.25 - 38.25	5		18	33.415	34.278	1	A572-65	0.926
52	38.25 - 33.25	5		18	34.278	35.140	0.9875	A572-65	0.922
53	33.25 - 30.5	2.75		18	35.140	35.614	0.9625	A572-65	0.937
54	30.5 - 30.25	0.25		18	35.614	35.658	0.9625	A572-65	0.944
55	30.25 - 29.67	0.58		18	35.658	35.758	0.9625	A572-65	0.942
56	29.67 - 29.42	0.25		18	35.758	35.801	0.7625	A572-65	1.058
57	29.42 - 28	1.42		18	35.801	36.046	0.7625	A572-65	1.053
58	28 - 27.75	0.25		18	36.046	36.089	0.9125	A572-65	0.945
59	27.75 - 26.92	0.83		18	36.089	36.232	0.9125	A572-65	0.942
60	26.92 - 26.67	0.25		18	36.232	36.275	0.875	A572-65	0.920
61	26.67 - 26.5	0.17		18	36.275	36.304	0.875	A572-65	0.919
62	26.5 - 26.25	0.25		18	36.304	36.347	0.8375	A572-65	0.911
63	26.25 - 24.92	1.33		18	36.347	36.577	0.8375	A572-65	0.908
64	24.92 - 24.67	0.25		18	36.577	36.620	0.8	A572-65	0.976
65	24.67 - 22.17	2.5		18	36.620	37.051	0.7875	A572-65	0.984
66	22.17 - 21.92	0.25		18	37.051	37.094	0.8625	A572-65	0.973
67	21.92 - 16.92	5		18	37.094	37.957	0.8375	A572-65	0.987
68	16.92 - 11.92	5		18	37.957	38.819	0.825	A572-65	0.987
69	11.92 - 6.92	5		18	38.819	39.681	0.8125	A572-65	0.988
70	6.92 - 1.92	5		18	39.681	40.544	0.8	A572-65	0.990
71	1.92 - 0	1.92		18	40.544	40.875	0.7875	A572-65	1.000

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	149 - 144	2.25	26.84	5.24
2	144 - 139	4.66	59.34	11.16
3	139 - 134	5.02	115.87	11.45
4	134 - 129	5.40	173.77	11.72
5	129 - 124.5	10.86	253.33	19.05
6	124.5 - 124.25	10.91	258.10	19.06
7	124.25 - 119.25	11.56	354.52	19.45
8	119.25 - 118.5	11.67	369.12	19.49
9	118.5 - 118.25	11.73	373.99	19.50
10	118.25 - 116	12.17	418.03	19.66
11	116 - 115.75	12.23	422.94	19.67
12	115.75 - 110.75	13.19	522.75	20.22
13	110.75 - 105.75	14.22	624.78	20.60
14	105.75 - 102	15.01	702.55	20.88
15	102 - 97	16.72	808.12	21.34
16	97 - 96.75	16.80	813.45	21.34
17	96.75 - 93.98	17.53	872.88	21.57
18	93.98 - 93.73	17.61	878.28	21.58
19	93.73 - 91.5	18.21	926.60	21.76
20	91.5 - 91.25	18.27	932.04	21.77
21	91.25 - 90.25	18.51	953.85	21.85
22	90.25 - 90	18.60	959.31	21.86
23	90 - 89	18.91	981.21	21.95
24	89 - 88.75	18.98	986.70	21.96
25	88.75 - 83.75	20.40	1097.53	22.36
26	83.75 - 80.08	21.46	1180.12	22.65
27	80.08 - 79.83	21.56	1185.78	22.66
28	79.83 - 74.83	23.29	1300.18	23.10
29	74.83 - 73.5	23.76	1330.97	23.21
30	73.5 - 73.25	23.87	1336.78	23.22
31	73.25 - 71	24.78	1389.26	23.43
32	71 - 70.75	24.88	1395.12	23.44
33	70.75 - 65.75	26.73	1513.37	23.85
34	65.75 - 63	27.77	1579.22	24.06
35	63 - 62.75	27.87	1585.24	24.06
36	62.75 - 62.08	28.12	1601.38	24.11
37	62.08 - 61.83	28.20	1607.41	24.13
38	61.83 - 60.67	28.59	1635.44	24.21
39	60.67 - 60.42	28.68	1641.50	24.21
40	60.42 - 59	29.15	1675.95	24.32
41	59 - 58.75	29.25	1682.03	24.32
42	58.75 - 53.75	30.95	1804.37	24.62
43	53.75 - 53.25	31.13	1816.68	24.64
44	53.25 - 47.5	34.70	1959.79	25.11
45	47.5 - 45.75	35.36	2003.80	25.22
46	45.75 - 45.5	35.48	2010.11	25.21
47	45.5 - 45	35.67	2022.72	25.24
48	45 - 44.75	35.78	2029.03	25.25
49	44.75 - 43.5	36.30	2060.65	25.34
50	43.5 - 43.25	36.42	2066.99	25.35
51	43.25 - 38.25	38.61	2194.51	25.66
52	38.25 - 33.25	40.83	2323.53	25.96
53	33.25 - 30.5	42.06	2395.09	26.11
54	30.5 - 30.25	42.19	2401.62	26.11
55	30.25 - 29.67	42.45	2416.77	26.14
56	29.67 - 29.42	42.56	2423.31	26.15
57	29.42 - 28	43.14	2460.49	26.23
58	28 - 27.75	43.26	2467.04	26.22
59	27.75 - 26.92	43.62	2488.82	26.27
60	26.92 - 26.67	43.73	2495.39	26.27
61	26.67 - 26.5	43.80	2499.86	26.28
62	26.5 - 26.25	43.90	2506.43	26.29
63	26.25 - 24.92	44.42	2541.43	26.37
64	24.92 - 24.67	44.54	2548.02	26.36
65	24.67 - 22.17	45.56	2614.06	26.48
66	22.17 - 21.92	45.68	2620.67	26.47
67	21.92 - 16.92	47.89	2753.55	26.68
68	16.92 - 11.92	50.12	2887.34	26.85
69	11.92 - 6.92	52.34	3021.92	27.01
70	6.92 - 1.92	54.46	3157.20	27.15
71	1.92 - 0	55.28	3209.34	27.22

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
149 - 144	Pole	TP16.865x16x0.1875	Pole	11.0%	Pass
144 - 139	Pole	TP17.73x16.865x0.1875	Pole	21.9%	Pass
139 - 134	Pole	TP18.595x17.73x0.1875	Pole	38.4%	Pass
134 - 129	Pole	TP19.459x18.595x0.1875	Pole	52.6%	Pass
129 - 124.5	Pole	TP20.238x19.459x0.1875	Pole	72.1%	Pass
124.5 - 124.25	Pole + Reinf.	TP20.281x20.238x0.35	Reinf. 9 Tension Rupture	71.8%	Pass
124.25 - 119.25	Pole + Reinf.	TP21.146x20.281x0.3438	Reinf. 9 Tension Rupture	92.2%	Pass
119.25 - 118.5	Pole + Reinf.	TP21.276x21.146x0.3438	Reinf. 9 Tension Rupture	95.1%	Pass
118.5 - 118.25	Pole + Reinf.	TP21.319x21.276x0.7	Reinf. 5 Bolt-Shaft Bearing	70.5%	Pass
118.25 - 116	Pole + Reinf.	TP21.708x21.319x0.6875	Reinf. 5 Tension Rupture	55.9%	Pass
116 - 115.75	Pole + Reinf.	TP21.751x21.708x0.6875	Reinf. 5 Tension Rupture	56.5%	Pass
115.75 - 110.75	Pole + Reinf.	TP22.616x21.751x0.6625	Reinf. 5 Tension Rupture	66.3%	Pass
110.75 - 105.75	Pole + Reinf.	TP23.481x22.616x0.6375	Reinf. 5 Tension Rupture	75.5%	Pass
105.75 - 102	Pole + Reinf.	TP24.735x23.481x0.6125	Reinf. 5 Tension Rupture	81.9%	Pass
102 - 97	Pole + Reinf.	TP24.62x23.755x0.675	Reinf. 5 Tension Rupture	82.9%	Pass
97 - 96.75	Pole + Reinf.	TP24.663x24.62x0.825	Reinf. 5 Tension Rupture	69.7%	Pass
96.75 - 93.98	Pole + Reinf.	TP25.142x24.663x0.8125	Reinf. 5 Tension Rupture	72.9%	Pass
93.98 - 93.73	Pole + Reinf.	TP25.186x25.142x0.8	Reinf. 5 Tension Rupture	73.2%	Pass
93.73 - 91.5	Pole + Reinf.	TP25.572x25.186x0.8	Reinf. 5 Bolt Shear	79.3%	Pass
91.5 - 91.25	Pole + Reinf.	TP25.615x25.572x0.6375	Reinf. 24 Tension Rupture	90.1%	Pass
91.25 - 90.25	Pole + Reinf.	TP25.788x25.615x0.6375	Reinf. 24 Tension Rupture	91.3%	Pass
90.25 - 90	Pole + Reinf.	TP25.831x25.788x0.975	Reinf. 24 Tension Rupture	62.3%	Pass
90 - 89	Pole + Reinf.	TP26.004x25.831x0.975	Reinf. 24 Tension Rupture	63.2%	Pass
89 - 88.75	Pole + Reinf.	TP26.047x26.004x0.825	Reinf. 24 Tension Rupture	73.2%	Pass
88.75 - 83.75	Pole + Reinf.	TP26.913x26.047x0.8	Reinf. 24 Tension Rupture	78.0%	Pass
83.75 - 80.08	Pole + Reinf.	TP27.548x26.913x0.775	Reinf. 24 Tension Rupture	81.4%	Pass
80.08 - 79.83	Pole + Reinf.	TP27.591x27.548x0.95	Reinf. 23 Tension Rupture	70.1%	Pass
79.83 - 74.83	Pole + Reinf.	TP28.456x27.591x0.925	Reinf. 23 Tension Rupture	73.9%	Pass
74.83 - 73.5	Pole + Reinf.	TP28.686x28.456x0.925	Reinf. 23 Tension Rupture	74.9%	Pass
73.5 - 73.25	Pole + Reinf.	TP28.73x28.686x1.125	Reinf. 23 Tension Rupture	62.8%	Pass
73.25 - 71	Pole + Reinf.	TP29.119x28.73x1.1	Reinf. 23 Tension Rupture	64.2%	Pass
71 - 70.75	Pole + Reinf.	TP29.162x29.119x1	Reinf. 24 Tension Rupture	70.2%	Pass
70.75 - 65.75	Pole + Reinf.	TP30.027x29.162x0.975	Reinf. 24 Tension Rupture	73.4%	Pass
65.75 - 63	Pole + Reinf.	TP30.503x30.027x0.95	Reinf. 24 Tension Rupture	75.1%	Pass
63 - 62.75	Pole + Reinf.	TP30.547x30.503x0.9	Reinf. 22 Tension Rupture	79.4%	Pass
62.75 - 62.08	Pole + Reinf.	TP30.663x30.547x0.9	Reinf. 22 Tension Rupture	79.8%	Pass
62.08 - 61.83	Pole + Reinf.	TP30.706x30.663x0.7625	Reinf. 21 Tension Rupture	90.1%	Pass
61.83 - 60.67	Pole + Reinf.	TP30.907x30.706x0.75	Reinf. 21 Tension Rupture	90.9%	Pass
60.67 - 60.42	Pole + Reinf.	TP30.95x30.907x0.75	Reinf. 21 Tension Rupture	91.0%	Pass
60.42 - 59	Pole + Reinf.	TP31.196x30.95x0.75	Reinf. 21 Tension Rupture	91.9%	Pass
59 - 58.75	Pole + Reinf.	TP31.239x31.196x0.825	Reinf. 14 Tension Rupture	81.8%	Pass
58.75 - 53.75	Pole + Reinf.	TP32.104x31.239x0.8	Reinf. 14 Tension Rupture	84.7%	Pass
53.75 - 53.25	Pole + Reinf.	TP33.013x32.104x0.8	Reinf. 14 Tension Rupture	85.0%	Pass
53.25 - 47.5	Pole + Reinf.	TP32.682x31.691x0.8625	Reinf. 3 Tension Rupture	80.8%	Pass
47.5 - 45.75	Pole + Reinf.	TP32.984x32.682x0.8625	Reinf. 3 Tension Rupture	81.6%	Pass
45.75 - 45.5	Pole + Reinf.	TP33.027x32.984x0.8625	Reinf. 11 Tension Rupture	79.8%	Pass
45.5 - 45	Pole + Reinf.	TP33.113x33.027x0.8625	Reinf. 11 Tension Rupture	80.1%	Pass
45 - 44.75	Pole + Reinf.	TP33.157x33.113x0.9125	Reinf. 18 Tension Rupture	77.4%	Pass
44.75 - 43.5	Pole + Reinf.	TP33.372x33.157x0.9125	Reinf. 18 Tension Rupture	77.9%	Pass
43.5 - 43.25	Pole + Reinf.	TP33.415x33.372x1.0125	Reinf. 6 Tension Rupture	74.6%	Pass
43.25 - 38.25	Pole + Reinf.	TP34.278x33.415x1	Reinf. 6 Tension Rupture	76.6%	Pass
38.25 - 33.25	Pole + Reinf.	TP35.14x34.278x0.9875	Reinf. 6 Tension Rupture	78.5%	Pass
33.25 - 30.5	Pole + Reinf.	TP35.614x35.14x0.9625	Reinf. 6 Tension Rupture	79.5%	Pass
30.5 - 30.25	Pole + Reinf.	TP35.658x35.614x0.9625	Reinf. 6 Tension Rupture	79.3%	Pass
30.25 - 29.67	Pole + Reinf.	TP35.758x35.658x0.9625	Reinf. 6 Tension Rupture	79.5%	Pass
29.67 - 29.42	Pole + Reinf.	TP35.801x35.758x0.7625	Reinf. 11 Tension Rupture	92.4%	Pass
29.42 - 28	Pole + Reinf.	TP36.046x35.801x0.7625	Reinf. 11 Tension Rupture	92.9%	Pass
28 - 27.75	Pole + Reinf.	TP36.089x36.046x0.9125	Reinf. 13 Tension Rupture	85.6%	Pass
27.75 - 26.92	Pole + Reinf.	TP36.232x36.089x0.9125	Reinf. 13 Tension Rupture	85.9%	Pass
26.92 - 26.67	Pole + Reinf.	TP36.275x36.232x0.875	Reinf. 13 Tension Rupture	86.9%	Pass
26.67 - 26.5	Pole + Reinf.	TP36.304x36.275x0.875	Reinf. 13 Tension Rupture	87.0%	Pass
26.5 - 26.25	Pole + Reinf.	TP36.347x36.304x0.8375	Reinf. 13 Tension Rupture	87.7%	Pass
26.25 - 24.92	Pole + Reinf.	TP36.577x36.347x0.8375	Reinf. 13 Tension Rupture	88.2%	Pass
24.92 - 24.67	Pole + Reinf.	TP36.62x36.577x0.8	Reinf. 1 Tension Rupture	87.1%	Pass
24.67 - 22.17	Pole + Reinf.	TP37.051x36.62x0.7875	Reinf. 1 Tension Rupture	87.9%	Pass
22.17 - 21.92	Pole + Reinf.	TP37.094x37.051x0.8625	Reinf. 1 Tension Rupture	79.3%	Pass
21.92 - 16.92	Pole + Reinf.	TP37.957x37.094x0.8375	Reinf. 1 Tension Rupture	80.8%	Pass
16.92 - 11.92	Pole + Reinf.	TP38.819x37.957x0.825	Reinf. 1 Tension Rupture	82.1%	Pass
11.92 - 6.92	Pole + Reinf.	TP39.681x38.819x0.8125	Reinf. 1 Tension Rupture	83.4%	Pass
6.92 - 1.92	Pole + Reinf.	TP40.544x39.681x0.8	Reinf. 1 Tension Rupture	84.6%	Pass
1.92 - 0	Pole + Reinf.	TP40.875x40.544x0.7875	Reinf. 1 Tension Rupture	85.0%	Pass
				Summary	
			Pole	72.1%	Pass
			Reinforcement	95.1%	Pass
			Overall	95.1%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity																							
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21	R22	R23	R24	R25
149 - 144	349	n/a	349	9.92	n/a	9.92	11.0%																									
144 - 139	406	n/a	406	10.44	n/a	10.44	21.9%																									
139 - 134	469	n/a	469	10.95	n/a	10.95	38.4%																									
134 - 129	538	n/a	538	11.47	n/a	11.47	52.6%																									
129 - 124.5	606	n/a	606	11.93	n/a	11.93	72.1%																									
124.5 - 124.25	610	504	1114	11.96	9.00	20.96	39.6%									71.8%																
124.25 - 119.25	692	546	1238	12.47	9.00	21.47	51.4%									92.2%																
119.25 - 118.5	705	552	1257	12.55	9.00	21.55	53.1%									95.1%																
118.5 - 118.25	709	1739	2449	12.58	27.00	39.58	27.7%					70.5%				49.6%																
118.25 - 116	749	1799	2548	12.81	27.00	39.81	30.4%					55.9%				54.2%																
116 - 115.75	754	1806	2560	12.83	27.00	39.83	30.7%					56.5%																				56.0%
115.75 - 110.75	848	1943	2791	13.35	27.00	40.35	36.6%					66.3%																				64.3%
110.75 - 105.75	950	2085	3034	13.86	27.00	40.86	42.2%					75.5%																				73.2%
105.75 - 102	1032	2194	3226	14.25	27.00	41.25	46.3%					81.9%																				79.5%
102 - 97	1450	2279	3729	19.34	27.00	46.34	43.7%					82.9%																				80.6%
97 - 96.75	1458	3019	4478	19.37	36.00	55.37	36.7%					69.7%			67.7%																	67.7%
96.75 - 93.98	1546	3132	4677	19.75	36.00	55.75	38.5%					72.9%			70.9%															70.9%		
93.98 - 93.73	1554	3142	4696	19.79	36.00	55.79	38.6%					73.2%			71.1%															71.1%		
93.73 - 91.5	1627	3234	4861	20.09	36.00	56.09	40.1%					79.3%			73.6%															73.6%		
91.5 - 91.25	1635	2365	4000	20.13	27.00	47.13	49.1%								90.1%															90.1%	90.1%	
91.25 - 90.25	1669	2396	4065	20.26	27.00	47.26	49.9%								91.3%															91.3%	91.3%	
90.25 - 90	1678	4321	5999	20.30	47.63	67.92	34.1%				56.6%				62.3%				56.6%											62.3%	62.3%	
90 - 89	1712	4377	6089	20.44	47.63	68.06	34.6%				57.4%				63.2%				57.4%											63.2%	63.2%	
89 - 88.75	1721	3577	5297	20.47	38.63	59.09	40.1%				66.4%								66.4%											73.2%	73.2%	
88.75 - 83.75	1900	3806	5706	21.16	38.63	59.78	43.2%				70.7%								70.7%											78.0%	78.0%	
83.75 - 80.08	2039	3980	6018	21.66	38.63	60.28	45.3%				73.7%								73.7%											81.4%	81.4%	
80.08 - 79.83	2055	5220	7275	21.69	53.63	75.32	39.7%				57.9%								63.5%									62.8%	68.2%	70.1%	68.2%	
79.83 - 74.83	2256	5538	7794	22.38	53.63	76.01	42.2%				61.1%								66.9%									66.3%	71.9%	73.9%	71.9%	
74.83 - 73.5	2311	5624	7936	22.56	53.63	76.19	42.9%				61.9%								67.8%									67.1%	72.9%	74.9%	72.9%	
73.5 - 73.25	2320	7150	9470	22.60	67.13	89.72	36.0%				52.6%			57.1%					56.8%		57.1%							57.3%	61.4%	62.8%	61.4%	
73.25 - 71	2416	7337	9753	22.91	67.13	90.03	37.0%				53.8%			58.4%					58.1%		58.4%							58.6%	62.7%	64.2%	62.7%	
71 - 70.75	2427	6524	8951	22.94	58.13	81.07	40.4%				59.9%			65.1%					65.2%		65.1%							65.1%	70.2%		70.2%	
70.75 - 65.75	2651	6901	9552	23.63	58.13	81.75	42.7%				62.6%			68.1%					68.1%		68.1%							68.1%	73.4%		73.4%	
65.75 - 63	2780	7113	9893	24.01	58.13	82.13	43.9%				64.1%			69.7%					69.7%		69.7%							69.7%	75.1%		75.1%	
63 - 62.75	2790	6573	9362	24.04	56.00	80.04	45.8%			70.0%				66.3%					60.5%		76.1%							78.7%	79.4%			
62.75 - 62.08	2822	6621	9442	24.13	56.00	80.13	46.1%			70.3%				66.7%					60.8%		76.5%							79.2%	79.8%			
62.08 - 61.83	2831	5375	8206	24.17	47.00	71.17	52.8%			79.9%				74.8%					67.8%		87.1%							90.1%				
61.83 - 60.67	2887	5442	8329	24.33	47.00	71.33	53.4%			80.6%				75.5%					68.5%		87.9%							90.9%				
60.67 - 60.42	2900	5440	8340	24.36	46.13	70.48	53.7%			81.6%				77.1%							88.3%				68.9%			91.0%				
60.42 - 59	2970	5523	8493	24.55	46.13	70.68	54.4%			82.4%				77.9%							89.3%				69.7%			91.9%				
59 - 58.75	2982	6243	9226	24.59	47.63	72.21	49.9%			80.4%											81.8%			75.4%	77.4%							
58.75 - 53.75	3239	6578	9817	25.28	47.63	72.90	52.2%			83.2%											84.7%			78.1%	80.1%							
53.75 - 53.25	3266	6612	9878	25.34	47.63	72.97	52.4%			83.5%											85.0%			78.3%	80.3%							
53.25 - 47.5	4269	6936	11205	32.11	50.63	82.73	50.1%			80.8%														74.0%	76.9%	68.9%	71.7%					
47.5 - 45.75	4389	7059	11448	32.40	50.63	83.03	50.7%			81.6%														74.7%	77.7%	69.6%	72.5%					
45.75 - 45.5	4397	7214	11611	32.45	50.63	83.07	49.7%		73.3%									79.8%						74.8%	77.8%	69.7%	72.6%					
45.5 - 45	4432	7250	11682	32.53	50.63	83.16	49.8%		73.5%									80.1%						75.0%	78.0%	69.9%	72.8%					
45 - 44.75	4527	7815	12342	32.58	59.63	92.20	50.4%		67.5%									73.5%		68.9%				66.1%	77.4%	62.1%	62.4%					
44.75 - 43.5	4616	7913	12530	32.79	59.63	92.41	50.8%		68.0%									74.0%		69.3%				66.5%	77.9%	62.6%	62.8%					
43.5 - 43.25	4566	9385	13951	32.83	64.13	96.96	43.3%		64.0%				74.6%					68.8%		69.2%				64.8%	67.0%	61.0%	63.2%					
43.25 - 38.25	4932	9856	14787	33.69	64.13	97.81	44.7%		65.8%				76.6%					70.7%		71.1%				66.6%	68.8%	62.7%	64.9%					
38.25 - 33.25	5316	10339	15655	34.54	64.13	98.67	46.2%		67.4%				78.5%					72.4%		72.9%				68.2%	70.5%	64.3%	66.5%					
33.25 - 30.5	5536	10609	16145	35.01	64.13	99.14	47.0%		68.3%				79.5%					73.3%		73.8%				69.1%	71.3%	65.2%	67.4%					
30.5 - 30.25	5564	10719	16282	35.06	65.00	100.06	47.6%		67.3%				79.3%				65.5%	73.3%		74.0%				68.6%	70.9%		67.5%					
30.25 - 29.67	5611	10777	16388	35.16	65.00	100.16	47.7%		67.4%				79.5%				65.7%	73.5%		74.2%				68.8%	71.1%		67.6%					
29.67 - 29.42	5890	7584	13474	35.20	54.50	89.70	63.9%		78.6%								73.5%	92.4%		73.9%				74.3%			69.5%					
29.42 - 28	6011	7685	13696	35.44	54.50	89.94	64.4%		79.1%								74.0%	92.9%		74.4%				74.7%			69.9%					
28 - 27.75	5827	10166	15993	35.48	60.75	96.23	52.3%	76.2%					80.6%				84.8%	71.2%		85.6%							63.3%					
27.75 - 26.92	5897	10244	16141	35.63	60.75	96.38	52.6%	76.4%					80.9%				85.1%	71.5%		85.9%							63.5%					
26.92 - 26.67	5850	9713	15563	35.67	54.75	90.42	52.4%	85.0%					80.4%				85.0%	75.4%		86.9%												
26.67 - 26.5	5864	9728	15593	35.70	54.75	90.45	52.5%	85.0%					80.5%				85.0%	75.5%		87.0%												
26.5 - 26.25	5866	9106	14972	35.74	50.25	85.99	53.7%	87.6%									87.6%	79.7%		87.7%												
26.25 - 24.92	5978	9217	15195	35.97	50.25	86.22	54.1%	88.0%									88.0%	80.1%		88.2%												
24.92 - 24.67	6012	8760	14772	36.01	52.75	88.76	56.8%	87.1%									87.1%			86.3%		73.7%										
24.67 - 22.17	6229	8959	15187	36.44	52.75	89.19	57.6%	87.9%									87.9%			87.1%		74.4%										
22.17 - 21.92	6234	10079	16313	36.48	60.00	96.48	52.0%	79.3%									79.3%					70.1%	70.1%								
21.92 - 16.92	6682	10533	17215	37.34	60.00	97.34	53.3%	80.8%									80.8%					71.4%	71.4%								
16.92 - 11.92	7152	10997	18149	38.19	60.00	98.19	54.7%	82.1%									82.1%					72.6%	72.6%								
11.92 - 6.92	7644	11471	19114	39.05	60.00	99.05	56.0%	83.4%									83.4%					73.8%	73.8%								
6.92 - 1.92	8157	11954	20111	39.90	60.00	99.90	57.2%	84.6%									84.6%					74.9%	74.9%								
1.92 - 0	8360	12143	20503	40.23	60.00	100.23	57.7%	85.0%									85.0%					75.3%	75.3%								

Note: Section capacity checked in 5 degree increments.

FDH INFRASTRUCTURE SERVICES
ENGINEERING INNOVATION

Version:	2.4
Version Date:	10/31/2016

FDH Infrastructure Services, LLC -- 6521 Meridien Drive, Raleigh, NC 27616 -- Ph. 919.755.1012 -- Fax 919.755.1031

Base Transfer Stiffener

Project & Site Details	
Project No.	18SQZL1400
Project Name	Newtown Dinglebrook
Site ID	857525
Date	September 18, 2018
Code	ANSI/TIA-222-G
Maximum Stress Ratio	105%

Tower Reactions		
Moment	3209.34	k-ft
Axial	55.28	kips
Shear	27.22	kips

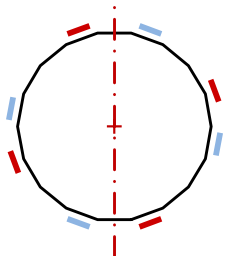
Optional Inputs	
Axis Angle to 0° (°)	0
Additional Inertia (in^4)	

Centroid		
x	0.0000	in
y	0.0000	in

Moment of Inertia		
	I (in^4)	Angle (°)
Min.	13575.7	119
Max.	14362.4	29
Current	**14178.0**	**0**

Pole Properties		
Pole Diameter	40.875	in
Pole Thickness	0.3125	in
Pole Grade	A572-65	
Number of Sides	18	Sided

Stiffener Properties		
Stiffener Quantity	8	Stiffeners
Any Symmetric Plates?	N	(Y/N)



Individual Stiffener Input					
Stiffener Name	Angle to 0° (°)	Axis Angle of Max (°)	Controlling Case	Percentage	Pass/Fail
1. PL 1.57079632679	-160	112	N/A	N/A	N/A
1. PL 1.57079632679	-70	17	N/A	N/A	N/A
1. PL 1.57079632679	20	112	N/A	N/A	N/A
1. PL 1.57079632679	110	17	N/A	N/A	N/A
2. PL 1.202640938x1	160	74	N/A	N/A	N/A
2. PL 1.202640938x1	-100	166	N/A	N/A	N/A
2. PL 1.202640938x1	-20	74	N/A	N/A	N/A
2. PL 1.202640938x1	80	166	N/A	N/A	N/A
Pole		0	Stress	87.1%	Pass
			Overall	**87.1%**	**Pass**

80.8% > 72.4% (Existing Rods)
Controlling Anchor Rod Percentage = **80.8%**

Stiffener 1: 2"Ø Anchor Rod
Allowable Axial Capacity = 231.7 kips
Controlling Axial Force (@ 112°) = 187.19 kips
(187.19/ 231.7) * 100 = **80.8%** > 67.5%

Stiffener 2: 1 3/4"Ø Anchor Rod
Allowable Axial Capacity = 190.0 kips
Controlling Axial Force (@ 74°) = 72.86 kips
(72.86 / 190.0) * 100 = **38.3%** < 61.2%

Stiffener Input													
Stiffener Name	Width (in)	Thickness (in)	Considering Plate Capacity (Y/N)	Height (in)	Notch (in)	Offset from Pole (in)	Grade	Weld Electrode (ksi)	Vertical Weld Size (in)	Horizontal Weld Type	Groove Angle (°)	Horizontal Groove Size (in)	Horizontal Fillet Size (in)
1. PL 1.57079632679	1.570796327	1.570796327	N		0	5.5							
2. PL 1.202640938x1	1.202640938	1.202640938	N		0	5.5							

FDH INFRASTRUCTURE SERVICES
ENGINEERING INNOVATION

Version:	1.7
Version Date:	4/27/2017

FDH Infrastructure Services, LLC -- 6521 Meridien Drive, Raleigh, NC 27616 -- Ph. 919.755.1012 -- Fax 919.755.1031

Monopole Anchor Rod Modifications

Project & Site Details	
Project No.	18SWZL1400
Project Name	Newtown Dinglebrook
Site ID	857525
Date	September 18, 2018
Code	ANSI/TIA-222-G
Maximum Stress Ratio	100%

Tower Reactions		
Moment	3209.34	k-ft
Axial	55.28	k
Shear	27.22	k

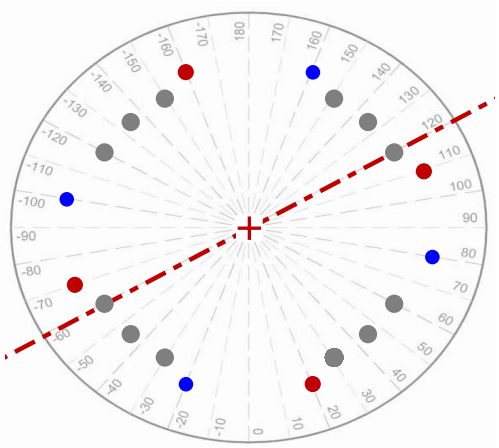
Optional Inputs	
Axis Angle to 0° (°)	120.5
Additional Inertia (in^4)	0

Centroid		
x	0.0000	in
y	0.0000	in

Existing Anchor Rod Input		
Anchor Rods	Y	(Y/N)
Base Plate Type	Square	
Quantity	12	Rods
Grade	A615-75	
Thread Form	Non-Upset	
Diameter	2.25	in
Bolt Circle	46.875	in
Angle to 0° of First Rod		
Spacing	6	in
Detail Type	d	
l_{ar}	1	in
η	0.5	

Foundation Input		
Pier Diameter	5.5	ft
f'c, Pier Concrete Strength	4000	psi
fy, Rebar Yield Strength	60000	psi
Vertical Rebar Size	#7	
Vertical Rebar Quantity		Bars
Horizontal Rebar Size	#4	
Side Cover	3	in
Top Cover	3	in
τ, Ultimate Bond Resistance	1.8	ksi
Vertical Bar Diameter	0.875	in
Horizontal Bar Diameter	0.5	in
Rebar Cage Circle	58.125	in

Moment of Inertia		
	I (in^4)	Angle (°)
Min.	20026.2	120
Max.	21150.2	30
Current	**20026.3**	**120.5**



Post-Installed Anchor Rods		
Quantity	8	Rods
Any Symmetric Rods?	N	(Y/N)

Individual Post-Installed Anchor Rod Input

Name	Angle	Axis Angle of Max (°)	Axial Force (kips)	Allow. Axial (kips)	Controlling	Percentage	Pass/Fail
AR1	-160	111.0	156.5	231.7	Eccentric Weld to Sleeve	67.5%	Pass
AR1	-70	19.0	148.6	231.7	Eccentric Weld to Sleeve	64.2%	Pass
AR1	20	111.0	156.5	231.7	Eccentric Weld to Sleeve	67.5%	Pass
AR1	110	19.0	148.6	231.7	Eccentric Weld to Sleeve	64.2%	Pass
AR2	160	73.0	116.3	190.0	Anchor Rod Tension	61.2%	Pass
AR2	-100	167.0	116.3	190.0	Anchor Rod Tension	61.2%	Pass
AR2	-20	73.0	116.3	190.0	Anchor Rod Tension	61.2%	Pass
AR2	80	167.0	116.3	190.0	Anchor Rod Tension	61.2%	Pass
Existing Rods		120.5	188.4	260.0	Shear-Tension Interaction	72.4%	Pass

Overall	72.4%	Pass

Post-Installed Anchor Rod Summary

Post-Installed Anchor Rods						Anchor Rod Sleeve		Transfer Plate	
Assembly Name	Diameter (in)	Grade	Bolt Circle (in)	Target Tension (kips)	Required Embedment (ft)	Member	Grade	Dimensions (H" x W" x T")	Grade
AR1	2	A193 B7	51.875	146	3.68	4 O.D. x 0.636 thk.	A53-B-42	36 x 3 1/2 x 1 1/4	A572-65
AR2	1.75	A193 B7	51.875	111	3.30	P3x.600 (3.5 OD)	A53-B-42	18 x 3 3/4 x 1	A572-50

Anchor Rod Colors	
Apply New Rod Colors	
AR1	
AR2	

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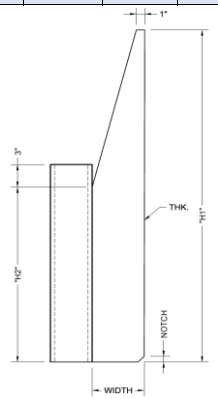
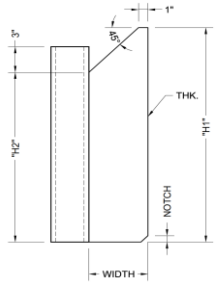
Anchor Rod Assembly Database

Anchor Rod								Anchor Rod Sleeve					Transfer Plate									
Assembly Name	Grade	Thread Form	Diameter (in)	Bolt Circle (in)	Unbraced Length (in)	Installed Through Base Plate? (Y/N)	Breaker Bond Tape Length (in)	Sleeve Member Type	Sleeve Member	Sleeve Grade	Analysis/ Design	AISC Sleeve Comp. Equation (13th Ed.)	Detail	Width (in)	Thickness (in)	Overall Height "H1" (in)	Term Height "H2" (in)	Notch (in)	Plate Grade	Weld Electrode (ksi)	Vert. Weld to Pole Size (in)	Vert. Weld to Sleeve Size (in)
AR1	A193 B7	Non-Upset	2	51.875	6	N	0	Other	4 O.D. x 0.636 thk.	A53-B-42	Analysis	J7-1	1	3.5	1.25	36	14	0	A572-65	70	5/16	3/8
AR2	A193 B7	Non-Upset	1.75	51.875	1.5	N	0	Pipe	P3x.600 (3.5 OD)	A53-B-42	Analysis	J7-1	1	3.75	1	18	12	0	A572-50	80	5/16	3/8



Detail 1



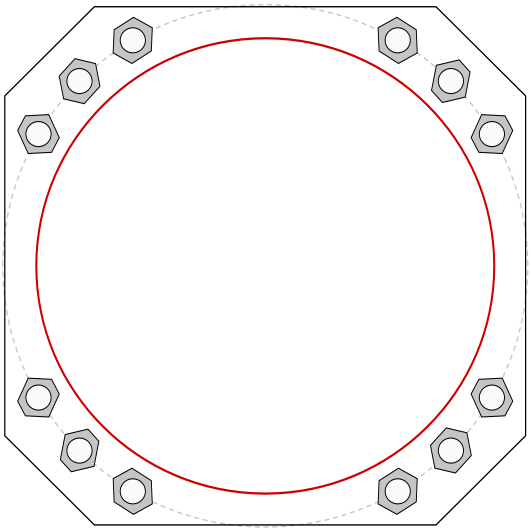
Detail 2

Monopole Base Plate Connection

Site Info	
BU #	857525
Site Name	Newtown Dinglebrook
Order #	428769 Rev. 7

Analysis Considerations	
TIA-222 Revision	G
Grout Considered:	No
l_{ar} (in)	1
Eta Factor, η	0.5

Applied Loads	
Moment (kip-ft)	2100.66
Axial Force (kips)	55.28
Shear Force (kips)	27.22



Connection Properties

Anchor Rod Data

(12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 46.875" BC

Base Plate Data

46.5" OD x 2.25" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

N/A

Pole Data

40.875" x 0.3125" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

Pu = 183.69	ϕPn = 260	**Stress Rating**
Vu = 2.27	ϕVn = n/a	**72.4%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	42.7	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**94.9%**	**Pass**

Pier and Pad Foundation

BU # :	857525
Site Name:	Newtown Dingleb
App. Number:	428769 Rev. 7

TIA-222 Revision:	G
Tower Type:	Monopole

Block Foundation?: ☐

Superstructure Analysis Reactions

Compression, P_{comp}:	55.28	kips
Base Shear, Vu_comp:	27.22	kips
Moment, M_u:	2394.748	ft-kips
Tower Height, **H**:	149	ft
BP Dist. Above Fdn, bp_{dist}:	3.25	in

*Moment adjusted to account for rock anchor capacity

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	10.5	ft
Ext. Above Grade, **E**:	1.00	ft
Pier Rebar Size, **Sc**:	7	
Pier Rebar Quantity, **mc**:	30	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	5.5	ft
Pad Width, **W**:	22.0	ft
Pad Thickness, **T**:	1.50	ft
Pad Rebar Size, **Sp**:	8	
Pad Rebar Quantity, **mp**:	24	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60000	psi
Concrete Compressive Strength, **F'c**:	4000	psi
Dry Concrete Density, **δc**:	150	pcf

Soil Properties

Total Soil Unit Weight, **γ**:	107	pcf
Ultimate Net Bearing, Qnet:	30.000	ksf
Cohesion, **Cu**:	15.000	ksf
Friction Angle, **ϕ**:	0	degrees
SPT Blow Count, N_{blows}:		
Base Friction, **μ**:		
Neglected Depth, **N**:	3.30	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, **gw**:	N/A	ft

Foundation Analysis Checks

	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	6367.61	27.22	**0.4%**	**Pass**
Bearing Pressure (ksf)	22.94	2.69	**11.7%**	**Pass**
*Overturning (kip*ft)*	4590.02	2579.05	**56.2%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	4980.09	2530.85	**50.8%**	**Pass**
Pier Compression (kip)	55135.08	114.91	**0.2%**	**Pass**
*Pad Flexure (kip*ft)*	1097.75	703.51	**64.1%**	**Pass**
Pad Shear - 1-way (kips)	338.11	183.29	**54.2%**	**Pass**
Pad Shear - 2-way (ksi)	0.19	0.00	**0.0%**	**Pass**

Soil Rating:	**56.2%**
Structural Rating:	**64.1%**

M, Original Moment =	3209.34	ft-kips
C, Controlling Rock Anchor Capacity (Allowable) =	159.1	kips
Percentage of C Used =	64	%
Ca, Adjusted Capacity =	101.82	kips
Percentage Used Matches Overall Rating?	Yes	
***Mu*, Adjusted Moment = Mo - (2)(4)*Ca =**	**2394.748**	**ft-kips**

<--Toggle between Gross and Net

Legend	Rock Anchor Spreadsheet (v1.12)	
Input	Site ID:	857525
Output	Site Name:	Newtown Dinglebrook
Calculated Value	Project ID:	18SWZL1400
Passing Result	Design Code:	G
Failing Result	Sheet Type:	Analysis

Notes
Length of anchor is measured from top of soil profile (ie. layer depth = 0 ft.)
For single anchors, leave anchor spacing blank or set to 0 ft.
Spreadsheet is setup for weight of soil to control anchor capacity.
Concrete bearing check is also dependent on the plate width.
Maximum soil layer depth and length of anchor is 50 ft.

Soil Properties

Depth to Bottom of Layer	Layer Thickness	Layer Number	Layer Density	Layer Failure Cone Angle	Allowable Layer Weight	Ultimate Grout to Soil Skin Friction	Skin Friction Grouping Factor	Allowable Grout to Soil Skin Friction
(ft)	(ft)		(pcf)	(deg)	(kips)	(psi)		(psf)
0.9	0.9	1	105	28	18.1	0	1	0
1.5	0.6	2	125	36	20.6	0	0	0
5.5	4	3	160	45	109.2	0	1	0
11.5	6	4	160	45	85.1	0	1	0
22	10.5	5	160	45	13.5	200	1	150

General Anchor Inputs		
Length of Rock Anchor:	21.75	ft
Bore Hole Diameter:	5	in
Grout Type:	Cement Grout	
Lt, Soil Profile to Top Development Length:	11.4	ft
Ldv, Development Length:	10.4	ft
Lwr, Soil Failure Cone Length:	16.6	ft

Weight of Soil Check		
Anchor Spacing:	5.67	ft
Anchor Pattern:	3	
Average Volume Reduction Factor:	0.47	
Weight of Soil Safety Factor:	0.8	
Allowable Weight of Soil:	246.5	kips
Weight of Soil Percent Capacity:	64.5%	OK

Solve

Skin Friction Uplift Check		
Skin Friction Safety Factor:	0.75	
Allowable Grout to Soil Skin Friction:	288.4	kips
Grout to Soil Skin Friction Percent Capacity:	55.2%	OK

Skin Friction Compression Check		
Allowable Grout to Soil Skin Friction:	288.4	kips
Grout to Soil Skin Friction Percent Capacity:	55.2%	OK

Rod Tension Check		
Rod Grade:	Williams A722 (Fu=150)	
Rod Yield Strength:	105	ksi
Rod Ultimate Strength:	150	ksi
Rod Thread Form:	Upset (Fu=150)	
Rod Nominal Diameter:	2.5	in
Rod Gross Area:	5.94	in^2
Rod Net Area:	5.19	in^2
Rod Tension Safety Factor:	0.75	
Williams Design Safety Factor:	1	
Allowable Rod Tension:	408.7	kips
Rod Tensile Percent Capacity:	38.9%	OK

Rod Compression Check		
Rod Compression Safety Factor:	0.90	
Allowable Rod Compression:	561.3	kips
Rod Compression Percent Capacity:	28.3%	OK

Bond Strength Check		
Grout Ultimate Bond Strength:	0.51	ksi
Rod Solid Diameter:	2.50	in
Bond Strength Safety Factor:	0.50	
Allowable Grout to Steel Bond Strength:	247.8	kips
Grout to Steel Percent Capacity:	64.2%	OK

Plate Shear Check		
Plate Width:	6	in
Plate Thickness:	1	in
Plate Grade:	A572 (Gr. 65)	
Plate Yield Stress:	65	ksi
Maximum Shear:	79.6	kips
Plate Shear Safety Factor:	0.9	
Allowable Shear Capacity:	210.6	kips
Equivalent Allowable Point Load:	421.2	kips
Plate Percent Capacity:	37.8%	OK

Concrete Bearing Check		
Concrete Compressive Strength:	4	ksi
Min. Top/Bot. of Concrete To Plate Center:	15	in
Minimum Anchor Edge Distance:	7.5	in
Effective Concrete Depth:	14.5	in
Maximum Bearing Load:	159.1	kips
Concrete Bearing Safety Factor:	0.65	
Allowable Concrete Bearing:	159.1	kips
Concrete Bearing Percent Capacity:	100.0%	OK

Analysis Summary		
Plate:	PL 6" x 6" x 1" A572 (Gr. 65) with 2-14/16" Ø Hole	
Anchor Rod:	2.5" Ø (Williams A722 (Fu=150))	
Grout Column:	5" Ø Bore Hole with Cement Grout	
Length of Anchor:	21.75	ft
Allowable Anchor Uplift Capacity:	159.1	kips
Allowable Anchor Compression Capacity:	159.1	kips
Micropile Verification Testing Design Load:	122.4	kips
Existing Pier/Caisson Diameter:	5.5	ft
Maximum Deflection:	3.3	in

Ultimate Capacities		
Weight of Soil:	328.7	kips
Skin Friction Uplift:	384.5	kips
Skin Friction Compression:	384.5	kips
Rod Tension:	545.0	kips
Rod Compression:	623.7	kips
Bond Strength:	495.5	kips
Plate Shear (Equivalent Point Load):	468.0	kips
Concrete Bearing:	244.8	kips

FDH INFRASTRUCTURE SERVICES
ENGINEERING INNOVATION

Version: 2.0
Issue Date: 5/9/2016

Concrete Wing Design (HILTI - RE 500)

Project Details:	
Site Name	Newtown Dinglebrook
Job No.	18SWZL1400
Code	G
Maximum Stress Ratio	1

Allowable Tension	
f'_c *(psi)*	4000
Pile Axial Capacity *(k)*	159.1
Edge Dist. *(in)* **"B"**	3
Pile Distance from Face *(in)* **"C"**	15
If Two Rows, Dist Btw Rows *(in)* **"D"**	0

Wing Size Information	
Length *(in)*	30
Width *(in)*	126
Depth *(in)*	27

Rebar Information	
F_y *(ksi)*	60
F_u *(ksi)*	80
Rebar Size	8
Rebar ø *(in)*	1
A_s *(in^2)*	0.79
# per row	17
# rows	1
A_s total *(in^2)*	13.43
a *(in)*	1.88
d-a/2 *(in)*	22.06
M_u *(k-in)*	2386.5
φ M_n *(k-in)*	15998.01
% Capacity	**14.92%**

Stirrup Information	
Size	4
ø *(in)*	0.5
A_s *(in^2)*	0.2
Spacing *(in)* **"A"**	12
b *(in)*	126
d *(in)*	23.00
V_c *(k)*	366.57
V_s *(k)*	46.00
V_u *(k)*	159.10
φ V_n *(k)*	309.43
% Capacity	**51.42%**

Hilti Check (RE 500)

Tension	
Existing Foundation Concrete Strength *(psi)*	4000
Embedment *(in)* **"E"**	9
Tension *(k)*	71.100
Depth of wing below top of foundation *(in)* **"F"**	33
Lateral Rebar Spacing *(in)* **"G"**	7.5
If two rows, distance btw rows *(in)* **"D"**	0
Edge distance ⊥ *(in)* **"H"**	36
Edge distance *(in)* **"I"**	12
Space Reduction, Left	0.80
Space Reduction, Right	0.80
Space Reduction, Bottom (2 rows only)	1.00
Edge Reduction	1.00
Total Reduction	0.80
φT_n *(k)*	42.66
T_u *(k)*	6.36
% Capacity	**14.92%**

Shear	
Space Reduction, Left	0.8
Space Reduction, Right	0.8
Space Reduction, Bottom	1
Edge, ⊥	1
Edge,	0.76
Total Reduction	0.78
φV_n *(k)*	22.18
V_u *(k)*	4.68
% Capacity	**21.09%**

Interaction Check	
$T_u/(T_n/\lambda) + V_u/(V_n/\lambda)$	**36.01%**

Min. Spacing & ED Checks	
s, left *(in)*	**7.5**
s, right *(in)*	**7.5**
s, two rows *(in)* **"D"**	**N/A**
c *(in)* **"I"**	**36**
c, ⊥ *(in)* **"H"**	**36**
c, *(in)* **"I"**	**12**

Pier and Pad Foundation (Original Pier w/ Mod Collar)

BU # :	857525
Site Name:	Newtown Dingleb
App. Number:	428769 Rev. 7

TIA-222 Revision:	G
Tower Type:	Monopole

Block Foundation?:	☐

Superstructure Analysis Reactions

Compression, P_{comp}:	55.28	kips
Base Shear, Vu_comp:	27.22	kips
Moment, M_u:	3209.34	ft-kips
Tower Height, **H**:	149	ft
BP Dist. Above Fdn, bp_{dist}:	3.25	in

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	5.5	ft
Ext. Above Grade, **E**:	1.00	ft
Pier Rebar Size, **Sc**:	7	
Pier Rebar Quantity, **mc**:	30	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	4.0	ft
Pad Width, **W**:	10.5	ft
Pad Thickness, **T**:	2.3	ft
Pad Rebar Size, **Sp**:	8	
Pad Rebar Quantity, **mp**:	17	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60000	psi
Concrete Compressive Strength, **F'c**:	4000	psi
Dry Concrete Density, **δc**:	150	pcf

Soil Properties

Total Soil Unit Weight, **γ**:	107	pcf
Ultimate Gross Bearing, Qult:	30.000	ksf
Cohesion, **Cu**:	15.000	ksf
Friction Angle, **ϕ**:	0	degrees
SPT Blow Count, N_{blows}:		
Base Friction, **μ**:		
Neglected Depth, **N**:	3.30	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	1407.84	27.22	**1.9%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	7263.97	3284.20	**45.2%**	**Pass**
Pier Compression (kip)	18378.36	70.25	**0.4%**	**Pass**
*Pad Flexure (kip*ft)*	1302.95	311.54	**23.9%**	**Pass**
Pad Shear - 1-way (kips)	268.95	128.75	**47.9%**	**Pass**
Pad Shear - 2-way (ksi)	0.19	0.00	**0.0%**	**Pass**

Structural Rating:	**47.9%**

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

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

Site Data

BU#: *857525*
Site Name: *Newtown Dingleb*
App #: *428769 Rev. 7*

Loads Already Factored		
For M (WL):	1.00	
For P (DL):	1.00	

Pier Properties

Concrete:

Pier Diameter =	5.5	ft
Concrete Area =	3421.2	in^2

Reinforcement:

Clear Cover to **Tie**=	3.00	in
Horiz. **Tie** Bar Size=	4	
Vert. Cage Diameter =	4.82	ft
Vert. Cage Diameter =	57.87	in
Vertical Bar Size =	9	
Bar Diameter =	1.13	in
Bar Area =	1	in^2
Number of Bars =	65.7129	
As Total=	65.7129	in^2
A s/ Aconc, Rho:	0.0192	1.92%

ACI 10.5 , ACI 21.10.4, and IBC 1810.
Min As for Flexural, Tension Controlled, Shafts:

(3)*(Sqrt(f'c)/Fy:	0.0032
200 / Fy:	0.0033

Minimum Rho Check:

Assumed Min. Rho:	0.50%	
Provided Rho:	1.92%	**OK**

Ref. Shaft Max Axial Capacities, ϕ Max(Pn or Tn):		
Max Pu = (φ=0.65) Pn. Pn per ACI 318 (10-2)	7982.73	kips
at Mu=(ϕ=0.65)Mn=	3612.58	ft-kips
Max Tu, (φ=0.9) Tn =	3548.497	kips
at Mu=ϕ=(0.90)Mn=	0.00	ft-kips

Maximum Shaft Superimposed Forces		
TIA Revision:	G	
Max. Factored Shaft Mu:	3284.195	ft-kips **(* Note)**
Max. Factored Shaft Pu:	55.28	kips
Max Axial Force Type:	Comp.	

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

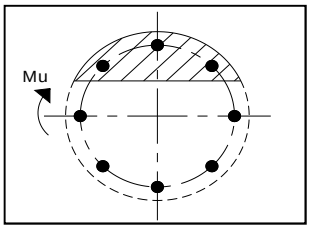
Load Factor	Shaft Factored Loads		
1.00	Mu:	3284.195	ft-kips
1.00	Pu:	55.28	kips

Material Properties		
Concrete Comp. strength, f'c =	4000	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	

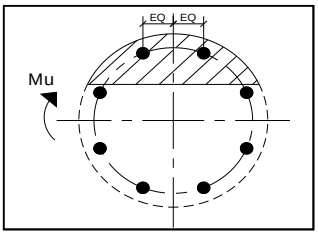
SOLVE <-- Press Upon Completing All Input

Results:

Governing Orientation Case: **1**



Case 1



Case 2

Dist. From Edge to Neutral Axis:	**16.34**	in
Extreme Steel Strain, ϵt:	**0.0084**	
	ϵt > 0.0050, Tension Controlled	
Reduction Factor,φ:	**0.900**	

Output Note: Negative Pu=Tension

For Axial Compression, φ Pn = Pu:	49.75	kips
Drilled Shaft Moment Capacity, φMn:	**7263.97**	ft-kips
Drilled Shaft Superimposed Mu:	**3284.20**	ft-kips

(Mu/φMn, Drilled Shaft Flexure CSR:	**45.2%**

FDH INFRASTRUCTURE SERVICES
ENGINEERING INNOVATION

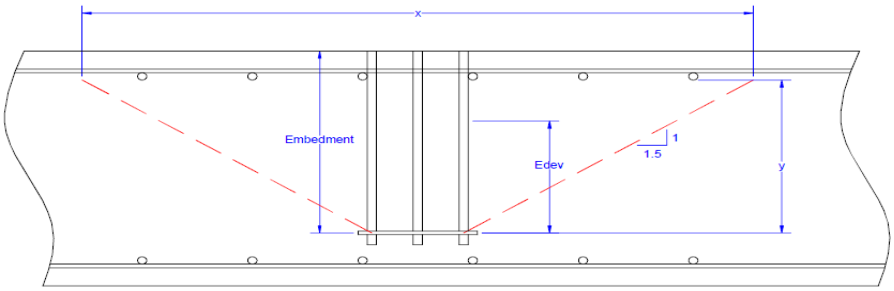
Vertical Development Length in a Pad Foundation

Project & Site Details	
Project Number:	18SWZL1400
Site Name:	Newtown Dingkebrook
Site ID:	857525
Code:	ANSI/TIA-222-G
Embedment Type?:	Anchor Rods

Pad Input			
Horizontal Rebar Size:	*Pad_Rebar*	#8	-
Pad Thickness:	*Pad_T*	2.3	in
Clear Cover:	*CC*	3	in
Strength of Concrete, f'_c:	*fc*	4000	psi
Rebar Diameter:	*Rebar_dia*	1	in
Bottom Clearance:	*Btm_clear*	-74.7	in
1/4 * E_{dev}:	*Edev_Qtr*	10.2	in

Horizontal Development Length			
Development Cone Depth, y:	*Y*	67.0	in
Critical Length, x:	*X_2*	247.9	in
Development length, l_d:	*Ld*	28.5	in
1.3l_d:	*L_1.3*	**37.0**	in
Development Check:	***Sufficient***		
Note: *x must be greater than 1.3l_d*			

Embedded Anchor Rod Input			
Anchor Rod Diameter:	*AR_dia*	2.25	in
Anchor Rod Grade:	*AR_grade*	A615-75	-
Yield Strength of Steel, Fy:	*Fy_2*	75	ksi
Tensile Strength of Steel, F_u:	*Fu_2*	100	ksi
Gross Anchor Rod Area, A_g:	*Ag_2*	3.980	in^2
Effective Anchor Rod Area, A_e:	*Ae_2*	3.250	in^2
Allowable Tensile Strength, Tn/Ω:	*Tn*	175.1	k
Allowable Tensile Strength, ΦT_n:	*Phi_Tn2*	260.0	k
Ult. Bond Strength, τ:	*T_2*	1.8	ksi
Epoxy Development Length, E_{dev}:	*E_dev2*	40.9	in
Minimum Embedment:	*Min_embed*	45.9	in
Maximum Embedment:	*Max_embed2*	-2.7	in
USE Embedment:	*Use_embed*	72	in
AR Template Plate?:	*TP*	Yes	-
AR Bolt Circle Ø:	*AR_bc*	46.875	in



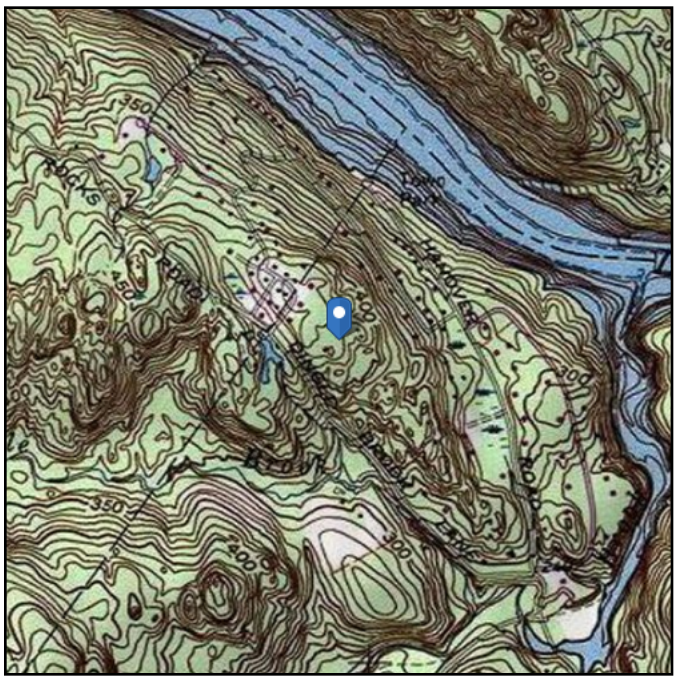
Constants			
Rebar Grade:	*Rebar_Grade*	60	ksi
Reinf. Cover Factor, c_b:	*Cb*	3.5	-
Reinf. Location Factor, Ψ_t:	*Wt*	1.0	-
Reinf. Coating Factor, Ψ_e:	*We*	1.0	-
Reinf. Size Factor, Ψ_s:	*Ws*	1.0	-
$(c_b+K_{tr})/d_b$:	*cb_db*	2.5	-
Concrete Weight Factor, λ:	*Lamda*	1.0	-

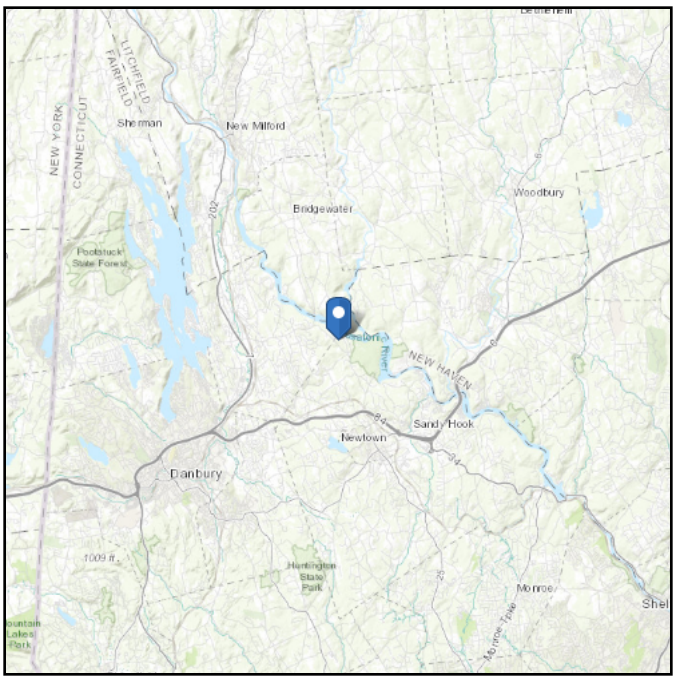
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: C - Very Dense Soil and Soft Rock

Elevation: 437.7 ft (NAVD 88)
Latitude: 41.466947
Longitude: -73.333903





Wind

Results:

Wind Speed:	117 Vmph	*120 mph per JDX
10-year MRI	76 Vmph	
25-year MRI	85 Vmph	
50-year MRI	90 Vmph	
100-year MRI	96 Vmph	

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

Date Accessed: Tue Sep 18 2018

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

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

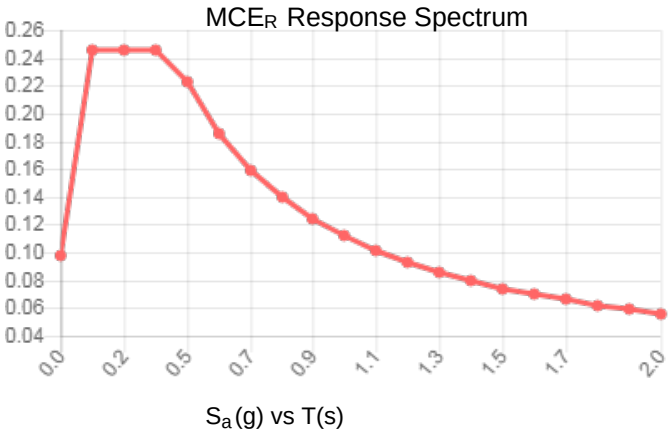
Seismic

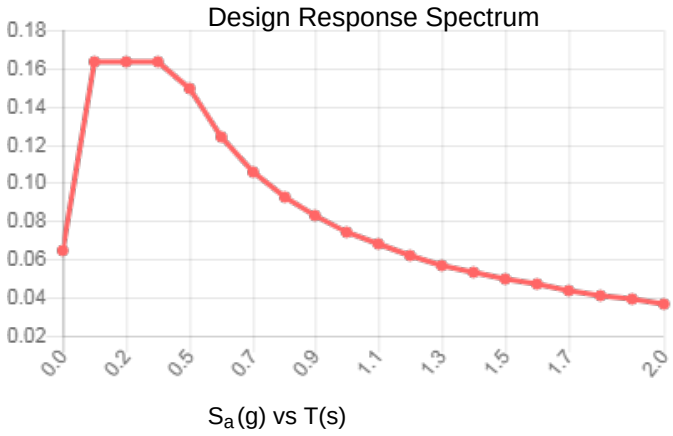
Site Soil Class: C - Very Dense Soil and Soft Rock

Results:

S_S :	0.204	S_{DS} :	0.163
S_1 :	0.066	S_{D1} :	0.074
F_a :	1.200	T_L :	6.000
F_v :	1.700	PGA :	0.109
S_{MS} :	0.245	PGA_M :	0.131
S_{M1} :	0.112	F_{PGA} :	1.200
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Sep 18 2018

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Sep 18 2018

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

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

APPENDIX D

REQUIRED MODIFICATION DRAWINGS

PROJECT DESCRIPTION:

MODIFICATION DRAWINGS FOR A 149' MONOPOLE

CROWN CASTLE

HOT WORK INCLUDED	
N/A	BASE GRINDING ONLY
X	BASE WELDING (AND GRINDING)
X	AERIAL GRINDING ONLY
N/A	AERIAL WELDING (AND GRINDING)

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.

QUALIFIED ENGINEERING SERVICES ARE AVAILABLE FROM FDH TO ASSIST CONTRACTORS IN CLASS IV RIGGING PLAN REVIEWS. TO REQUEST QUALIFIED ENGINEERING SERVICES, PLEASE CONTACT FDH AT RIGGING@FDH-IS.COM OR (919) 755-1012

PROJECT DATA

CODES AND STANDARDS	
BUILDING CODE	2016 CONNECTICUT STATE BUILDING CODE
TIA STANDARD	ANSI/TIA-222-G
ULTIMATE WIND SPEED WITHOUT ICE (MPH)	120
NOMINAL WIND SPEED WITH ICE (MPH)	50
SERVICE WIND SPEED (MPH)	60
ICE THICKNESS (IN)	0.75
EXPOSURE CATEGORY	C
RISK CATEGORY	II
TOPOGRAPHIC CATEGORY	1
CREST HEIGHT (FT)	0
S_S (G)	0.204
S_1 (G)	0.066

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 PROJECT ENGINEER NAME	**NICOLETTE CAMISHION, EIT**
FDH PROJECT ENGINEER EMAIL ADDRESS	**NICOLETTE.CAMISHION@FDH-IS.COM**
FDH PROJECT ENGINEER PHONE NUMBER	**(919) 755-1012**

SITE NAME:

NEWTOWN DINGLEBROOK

SITE NUMBER:

857525

SITE ADDRESS:

24 DINGLEBROOK LANE
NEWTOWN, CT 06470

COORDINATES:

LAT: 41.4669°
LONG: -73.3339°

FAILING STRUCTURAL ANALYSIS REPORT	
STRUCTURAL ANALYSIS COMPANY	GPD ENGINEERING AND ARCHITECTURE PROFESSIONAL CORP
PROJECT NO.	2018777.857525.07
DATE	AUGUST 09, 2018
WORK ORDER#	1612222
CCI DOC#	7718868
PASSING STRUCTURAL ANALYSIS / MODIFICATION DRAWINGS	
STRUCTURAL ANALYSIS COMPANY	FDH INFRASTRUCTURE SERVICES, LLC
PROJECT NO.	18SWZL1400
DATE	SEPTEMBER 18, 2018
SDD WORK ORDER#	1621394
CARRIER NAME	T-MOBILE
ORDER	428769 REV. 7
TOWER MANUFACTURER	SABRE COMMUNICATIONS CORP
JOB#	11-05139

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.

ALL CONSTRUCTION SHALL COMPLY WITH THE ANSI/ASSE A10.48 AND ANSI/TIA-322 STANDARDS.

LOOK UP!

SAFETY CLIMB: "LOOK UP"
THE INTEGRITY OF THE WIRE ROPE SAFETY CLIMB SYSTEM SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER REINFORCEMENTS AND EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF ANY WIRE ROPE SAFETY CLIMB ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, OR IMPACT TO THE ANCHORAGE POINTS IN ANY WAY. ANY COMPROMISED SAFETY CLIMB MUST BE REPORTED TO YOUR CROWN POC FOR RESOLUTION, INCLUDING EXISTING CONDITIONS.

SHEET INDEX

SHEET	DESCRIPTION	REV.
S-1	TITLE SHEET	0
S-2	MODIFICATION INSPECTION CHECKLIST	0
S-3	GENERAL NOTES	0
S-4	FOUNDATION NOTES & BASE LEVEL LAYOUT	0
S-5	FORGBOLT SPECIFICATIONS AND TIGHTENING PROCEDURE	0
S-6	NEXGEN2 BOLT SPECIFICATIONS AND TIGHTENING PROCEDURE	0
S-7	AJAX ONESIDE BOLT SPECIFICATIONS AND TIGHTENING PROCEDURE	0
S-8	MODIFICATION SCHEDULE & FLAT PLATE INSTALLATION DETAILS I	0
S-9	FLAT PLATE INSTALLATION DETAILS II	0
S-10	FLAT PLATE INSTALLATION DETAILS III	0
S-11	FLAT PLATE INSTALLATION DETAILS IV	0
S-12	FLAT PLATE INSTALLATION DETAILS V	0
S-13	FLAT PLATE FABRICATION DETAILS	0
S-14	SPLICE PLATE FABRICATION DETAILS	0
S-15	ANCHOR ROD BRACKET EXTENSION INSTALLATION DETAILS	0
S-16	SITE PLAN	0
S-17	ROCK ANCHOR AND CONCRETE CAP INSTALLATION DETAILS I	0
S-18	ROCK ANCHOR AND CONCRETE CAP INSTALLATION DETAILS II	0

PREPARED BY:

FDH INFRASTRUCTURE SERVICES
ENGINEERING INNOVATION
FDH INFRASTRUCTURE SERVICES, LLC
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

09/18/18

DENNIS D. ABEL, P.E.
CONNECTICUT LIC. NO. 23247

DRAWN BY:	JS
CHECKED BY:	NMC
ENG APPV'D:	DDA

SUBMITTALS		
DATE	DESCRIPTION	REV
09/18/18	CONSTRUCTION	0

FDH PROJECT NUMBER:

18SWZL1400

SITE NAME:

NEWTOWN DINGLEBROOK

SITE NUMBER:

857525

SITE ADDRESS:

24 DINGLEBROOK LANE
NEWTOWN, CT 06470

SHEET TITLE

TITLE SHEET

SHEET NUMBER

S-1

MODIFICATION INSPECTION NOTES:

MI CHECKLIST			
REQUIRED	REPORT ITEM	APPLICABLE CROWN DOC #	BRIEF DESCRIPTION
PRE-CONSTRUCTION			
X	MI CHECKLIST DRAWING	CED-SOW-10007	THIS CHECKLIST SHALL BE INCLUDED IN THE MI REPORT.
X	EOR APPROVED SHOP DRAWINGS	CED-SOW-10007	ONCE THE PRE-MODIFICATION MAPPING IS COMPLETE AND PRIOR TO FABRICATION, THE CONTRACTOR SHALL PROVIDE DETAILED ASSEMBLY DRAWINGS AND/OR SHOP DRAWINGS. THESE ARE TO INCLUDE, BUT ARE NOT LIMITED TO, A VISUAL LAYOUT OF NEW REINFORCEMENT, EXISTING REINFORCEMENT CONFIGURATION, PORTHOLES, MOUNTS, STEP PEGS, SAFETY CLIMBS AND ANY OTHER MISCELLANEOUS ITEMS WHICH MAY AFFECT SUCCESSFUL INSTALLATION OF MODIFICATIONS ON THE TOWER. THESE DRAWINGS SHALL BE SUBMITTED TO THE EOR FOR APPROVAL. APPROVED ASSEMBLY/SHOP DRAWINGS SHALL BE SUBMITTED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	FABRICATION INSPECTION	CED-SOW-10007	A LETTER FROM THE FABRICATOR, STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS, SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR CERTIFIED WELD INSPECTION	CED-SOW-10007 CED-STD-10069	A CWI SHALL INSPECT ALL WELDING PERFORMED ON STRUCTURAL MEMBERS DURING FABRICATION. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL TEST REPORTS (MTR)	CED-SOW-10007	MATERIAL TEST REPORTS SHALL BE PROVIDED FOR MATERIAL USED AS REQUIRED PER SECTION 9.2.5 OF CED-SOW-10007. MTRS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR NDE INSPECTION REPORT	CED-SOW-10066 CED-STD-10069	CRITICAL SHOP WELDS THAT REQUIRE TESTING ARE NOTED ON THESE CONTRACT DRAWINGS. A CERTIFIED NDT INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	NDE OF MONOPOLE BASE PLATE	ENG-SOW-10033	A NDE OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	CED-SOW-10007	THE MATERIAL SHIPPING LIST SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
CONSTRUCTION			
X	FOUNDATION INSPECTIONS	CED-SOW-10144	A VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A VISUAL OBSERVATION OF THE REBAR SHALL BE PERFORMED BEFORE PLACING THE EPOXY. A SEALED WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	CONCRETE COMP. STRENGTH AND SLUMP TEST	CED-SOW-10144	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED AS PART OF THE FOUNDATION REPORT.
X	EARTHWORK	CED-SOW-10144	FOUNDATION SUB-GRADES SHALL BE INSPECTED AND APPROVED BY A GEOTECHNICAL ENGINEER AND RESULTS INCLUDED AS PART OF THE FOUNDATION REPORT.
X	MICROPILE/ROCK ANCHOR	CED-SOW-10144	MICROPILES/ROCK ANCHORS SHALL BE INSPECTED BY THE FOUNDATION INSPECTION VENDOR AND SHALL BE INCLUDED AS PART OF THE FOUNDATION INSPECTION REPORT, ADDITIONAL TESTING AND/OR INSPECTION REQUIREMENTS ARE NOTED IN THESE CONTRACT DOCUMENTS.
N/A	POST-INSTALLED ANCHOR ROD VERIFICATION	CED-SOW-10007	POST INSTALLED ANCHOR ROD VERIFICATION SHALL BE PERFORMED IN ACCORDANCE WITH CROWN REQUIREMENTS AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	BASE PLATE GROUT VERIFICATION	ENG-STD-10323	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR THAT CERTIFIES THAT THE GROUT WAS REMOVED AND/OR INSTALLED IN ACCORDANCE WITH CROWN REQUIREMENTS FOR INCLUSION IN THE MI REPORT.
X	FIELD CERTIFIED WELD INSPECTION	CED-SOW-10066 CED-STD-10069	A CROWN APPROVED CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST FIELD WELDS, FOLLOWING ALL PROCEDURES SPECIFIED IN CROWN STANDARD DOCUMENTS APPLICABLE TO WELD INSPECTIONS. A REPORT SHALL BE PROVIDED. NDE OF FIELD WELDS SHALL BE PERFORMED AS REQUIRED BY CROWN STANDARDS AND CONTRACT DOCUMENTS. THE NDE REPORT SHALL BE INCLUDED IN THE CWI REPORT.
X	ON-SITE COLD GALVANIZING VERIFICATION	ENG-STD-10149 ENG-BUL-10149	THE GENERAL CONTRACTOR SHALL PROVIDE WRITTEN AND PHOTOGRAPHIC DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED PER MANUFACTURER SPECIFICATIONS AND APPLICABLE STANDARDS.
N/A	TENSION TWIST AND PLUMB	CED-PRC-10182 CED-STD-10261	THE GENERAL CONTRACTOR SHALL PROVIDE A REPORT IN ACCORDANCE WITH APPLICABLE STANDARDS DOCUMENTING TENSION TWIST AND PLUMB.
X	GC AS-BUILT DRAWINGS	CED-SOW-10007	THE GENERAL CONTRACTOR SHALL SUBMIT A LEGIBLE COPY OF THE ORIGINAL DESIGN DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD. EOR/RFI FORMS APPROVING ALL CHANGES SHALL BE SUBMITTED WHEN THE EOR IS SPECIFYING ADDITIONAL INSPECTIONS DESCRIPTION AND APPLICABLE STANDARDS SHALL BE APPLIED.
POST-CONSTRUCTION			
X	CONSTRUCTION COMPLIANCE LETTER	CED-SOW-10007	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE CONTRACT DRAWINGS, INCLUDING LISTING ADDITIONAL PARTIES TO THE MODIFICATION PROCESS.
N/A	POST-INSTALLED ANCHOR ROD PULL TESTS	CED-PRC-10119	POST-INSTALLED ANCHOR RODS SHALL BE TESTED BY A CROWN APPROVED PULL TEST INSPECTOR AND A REPORT SHALL BE PROVIDED INDICATING TESTING RESULTS.
X	PHOTOGRAPHS	CED-SOW-10007	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI. PHOTOS SHALL DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
N/A	BOLT INSTALLATION VERIFICATION REPORT	CED-SOW-10007	THE MI INSPECTOR SHALL VERIFY THE INSTALLATION AND TIGHTNESS 10% OF ALL NON PRE-TENSIONED BOLTS INSTALLED AS PART OF THE MODIFICATION. THE MI INSPECTOR SHALL LOOSEN THE NUT AND VERIFY THE BOLT HOLE SIZE AND CONDITION. THE MI REPORT SHALL CONTAIN THE COMPLETED BOLT INSTALLATION VERIFICATION REPORT, INCLUDING THE SUPPORTING PHOTOGRAPHS.
X	PUNCHLIST DEVELOPMENT AND CORRECTION DOCUMENTATION	CED-PRC-10283 CED-FRM-10285	FINAL PUNCHLIST INDICATING ALL NONCONFORMANCE(S) IDENTIFIED AND THE FINAL RESOLUTION AND APPROVAL.
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)	CED-SOW-10007	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTOR'S REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.

GENERAL:

THE MI IS AN ON-SITE VISUAL AND HANDS-ON INSPECTION OF TOWER MODIFICATIONS INCLUDING A REVIEW OF CONSTRUCTION REPORTS AND ADDITIONAL PERTINENT DOCUMENTATION PROVIDED BY THE GENERAL CONTRACTOR (GC), AS WELL AS ANY INSPECTION DOCUMENTS PROVIDED BY 3RD PARTY INSPECTORS. THE MI IS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS; IN ACCORDANCE WITH APPLICABLE CROWN STANDARDS; AND AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

NO DOCUMENT, CODE OR POLICY CAN ANTICIPATE EVERY SITUATION THAT MAY ARISE. ACCORDINGLY, THIS CHECKLIST IS INTENDED TO SERVE AS A SOURCE OF GUIDING PRINCIPLES IN ESTABLISHING GUIDELINES FOR MODIFICATION INSPECTION.

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, AND THE MI INSPECTOR DOES NOT TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES. THE MI INSPECTOR SHALL INSPECT AND NOTE CONFORMANCE/NONCONFORMANCE AND PROVIDE TO THE CROWN POINT OF CONTACT (CROWN POC) FOR EVALUATION.

ALL MI'S SHALL BE CONDUCTED BY A CROWN APPROVED MI INSPECTOR, WORKING FOR A CROWN APPROVED MI VENDOR. SEE CROWN CED-LST-10173, "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 PURCHASE ORDER (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 THE GC AND/OR INSPECTOR SHALL CONTACT THE CROWN POINT OF CONTACT (POC).

REFER TO CROWN CED-SOW-10007, "MODIFICATION INSPECTION SOW", FOR FURTHER DETAILS AND REQUIREMENTS.

SERVICE LEVEL COMMITMENT:

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

- THE GC SHALL 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.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY MINOR 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.

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
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
  - FINAL INFIELD CONDITION

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

THIS IS NOT A COMPLETE LIST OF REQUIRED PHOTOS, PLEASE REFER TO CROWN DOCUMENT # CED-SOW-10007.

PREPARED BY:

FDH INFRASTRUCTURE SERVICES
ENGINEERING INNOVATION
FDH INFRASTRUCTURE SERVICES, LLC
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

09/18/18

DENNIS D. ABEL, P.E.
CONNECTICUT LIC. NO. 23247

DRAWN BY:	JS
CHECKED BY:	NMC
ENG APPV'D:	DDA

SUBMITTALS

DATE	DESCRIPTION	REV
09/18/18	CONSTRUCTION	0

FDH PROJECT NUMBER:

18SWZL1400

SITE NAME:

NEWTOWN DINGLEBROOK

SITE NUMBER:

857525

SITE ADDRESS:

24 DINGLEBROOK LANE NEWTOWN, CT 06470

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 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 PRIOR TO ANY REMEDIAL OR CORRECTIVE ACTION. ALL ACTIONS SHALL REQUIRE FDH 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.

6. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN STANDARD CED-STD-10253 INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH THE ANSI/TIA-322 (LATEST EDITION).

7. THE CLIMBING FACILITIES, SAFETY CLIMB AND ALL PARTS THEREOF SHALL NOT BE IMPEDED, MODIFIED OR ALTERED WITHOUT THE EXPRESS WRITTEN APPROVAL OF YOUR CROWN POC. ALL ALTERATIONS TO A SAFETY CLIMB'S ORIGINAL MANUFACTURER'S CONFIGURATION MUST BE DESIGNED BY THE ENGINEER OF RECORD. IF THE GENERAL CONTRACTOR FINDS THAT THE CLIMBING FACILITIES ARE IMPEDED, EITHER DURING BIDDING, DURING PRE-FABRICATION MAPPING, OR WHILE ON-SITE, THE GENERAL CONTRACTOR SHALL CONTRACT THE CROWN POC TO DETERMINE A METHOD OF RESOLUTION.

8. ANY WORK PERFORMED WITHOUT A PREFABRICATION MAPPING IS DONE AT THE RISK OF THE GC AND/OR FABRICATOR.

CONTRACTOR QUALIFICATION NOTES:

1. ALL INSTALLATIONS SHALL BE PERFORMED BY A TOWER CONTRACTOR WITH A MINIMUM 5 YEARS EXPERIENCE IN TOWER ERECTION AND RETROFIT AND WITH WORKING KNOWLEDGE OF THE ANSI/TIA-222-G "STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS".

2. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. SHOULD THE CONTRACTOR REQUIRE DIRECT CONSULTATION, FDH IS WILLING TO OFFER SERVICES BASED UPON AN AGREED FEE FOR THE WORK REQUIRED.

3. ALL SUBMITTAL INFORMATION MUST BE SENT TO FDH 6521 MERIDIEN DRIVE, RALEIGH, NC 27616, TEL. (919) 755-1012, FAX. (919) 755-1031, E-MAIL STRUCTURAL@FDH-IS.COM. ANY VARIATION OF THESE SPECIFICATIONS OR DRAWINGS WITHOUT CONSENT FROM FDH WILL VOID ANY RESPONSIBILITY OR LIABILITY FOR DAMAGE (MATERIAL OR PHYSICAL) TOWARDS FDH.

4. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE ANSI/ASSE A10.48 AND ANSI/TIA-322 STANDARDS.

JOB SITE SAFETY & NOTES:

1. NEITHER THE PROFESSIONAL ACTIVITIES OF FDH NOR THE PRESENCE OF FDH 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 NOTED IN THE STEEL GRADE SCHEDULE OR SPECIFIED HIGH STRENGTH BOLTS TO BE ASTM A325N, THREAD INCLUDED WITH SHEAR PLANE (UNLESS NOTED OTHERWISE).

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 NOTED OTHERWISE.

4. ALL STEEL, AFTER FABRICATION, SHALL BE HOT DIPPED GALVANIZED PER ASTM A-123, UNLESS NOTED OTHERWISE. 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. A490 OR 354-GR. BD BOLTS SHALL NOT BE HOT DIPPED GALVANIZED, MECHANICALLY OR ELECTROPLATED.

6. ALL A490 OR 354-GR. BD BOLTS SHALL BE COATED WITH A ZINC/ALUMINUM COATING (MAGNI 565 OR APPROVED EQUAL) PER ASTM F2833, BY THE BOLT MANUFACTURER.

7. CONTRACTOR TO PROVIDE FULL DOCUMENTATION ON A490 OR 354-GR. BOLTS PRIOR TO INSTALLATION.

8. 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 WITH A PASSING CERTIFIED WELDING INSPECTION FOR ALL WELDS.

9. 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 SHEETS S-4 THROUGH S-6.

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. 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.

9. 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 PROJECT MANAGER PRIOR TO PROCEEDING WITH PROPOSED MODIFICATION OR FABRICATION.

STIFFENER PLATE NOTES:

1. INSIDE POLE SHAFT TO BE SPRAYED WITH (2) COATS COLD GALVANIZATION PAINT WHERE ALL WELDED CONNECTIONS ARE PERFORMED.

2. AFTER STIFFENER INSTALLATION CONTRACTOR TO BRUSH PAINT (2) COATS OF COLD GALVANIZATION PAINT THEN FINISH WITH (1) COAT OF COLD GALVANIZATION SPRAY.

SURFACE PREPARATION:

1. PREPARE SURFACE TO BE WELDED BY REMOVING PAINT OR GALVANIZATION TO BARE METAL USING POWER WIRE BRUSHING IN ACCORDANCE WITH SSPC-SP11, (STEEL STRUCTURES PAINTING COUNCIL). FOLLOWING POWER WIRE BRUSHING CONTRACTOR SHALL POLISH METAL SURFACE WITH HIGH SPEED GRINDER WITH 400+ GRIT SANDPAPER.

2. AFTER NEW STEEL INSTALLATION CONTRACTOR TO BRUSH PAINT (2) COATS OF ZRC OR ZINGA COLD GALVANIZATION COMPOUND PER MANUFACTURER'S SPECIFICATIONS.

WELDING NOTES:

1. ALL WELDING TO THE EXISTING TOWER SHALL BE PERFORMED BY CERTIFIED WELDERS UTILIZING PROCEDURES QUALIFIED IN ACCORDANCE WITH AWS D1.1 AND AWS C5.4.

2. CONTRACTOR SHALL COMPLY WITH AWS D1.1 FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". CONTRACTOR SHALL SUBMIT CERTIFICATION OF WELDERS TO THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORK.

3. CONTRACTOR RESPONSIBLE FOR TEMPORARY HEAT SHIELDING AS REQUIRED DURING WELDING.

4. ALL WELDS TO BE VISUALLY INSPECTED BY A CERTIFIED WELD INSPECTOR PER AWS D1.1.

5. CONTRACTOR RESPONSIBLE FOR VIEWING EXISTING TOWER FOR LOOSE AND FLAMMABLE MATERIAL PRIOR TO WELDING.

6. CONTRACTOR TO VERIFY LOCATION OF POTENTIAL INTERFERENCES PRIOR TO INSTALLATION.

EPOXY NOTES:

1. EPOXY AGENTS SHOULD BE ALLOWED TO CURE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

2. ALL HARDWARE ASSEMBLY AND MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED; ANY CONTRADICTION BETWEEN THE MANUFACTURER'S RECOMMENDATIONS AND THESE DRAWINGS ARE TO BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER AND OWNER.

3. ANY CONTRACTOR INSTALLING ADHESIVE ANCHORING SYSTEMS SHALL BE TRAINED, IN PERSON BY A MANUFACTURER'S REPRESENTATIVE, ON THE PROPER INSTALLATION TECHNIQUES. THIS TRAINING SHALL INCLUDE PROPER DRILLING, HOLE CLEANING, AND INSTALLATION METHODS FOR THE ADHESIVE ANCHORING SYSTEM AND CONSTRUCTION CONDITIONS ON THIS PROJECT. ALL TRAINING TO BE CONDUCTED PRIOR TO CREWS STEPPING ON SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT MANUFACTURER REPRESENTATIVE TO SET UP TRAINING. FDH IS NOT RESPONSIBLE FOR ANY COST OCCURRED FOR OR DURING ADHESIVE ANCHORING SYSTEM TRAINING.

NDE INSPECTION:

1. ALL NDE SHALL BE IN ACCORDANCE WITH AWS D1.1.

2. FOR NEW BASE STIFFENERS (INCLUSIVE OF TRANSITION STIFFENERS) AND ANCHOR ROD BRACKETS, COMPLETE JOINT PENETRATION WELDS SHALL BE 100% INSPECTED BY UT. ALL PARTIAL JOINT PENETRATION AND FILLET WELDS SHALL BE 100% INSPECTED BY MT.

3. FOR NEW FLAT PLATE REINFORCEMENT AT THE BASE OF THE TOWER, COMPLETE JOINT PENETRATION WELDS SHALL BE 100% INSPECTED BY UT. ALL PARTIAL JOINT PENETRATION AND FILLET WELDS SHALL BE 100% INSPECTED BY MT, BUT MAY BE LIMITED TO A HEIGHT OF 10'-0".

4. FOR NDE OF THE EXISTING BASE PLATE CIRCUMFERENTIAL WELD, GC SHALL REFERENCE THE MI CHECKLIST FOR APPLICABILITY. PLEASE SEE ENG-SOW-10033: *TOWER BASE PLATE NDE*, AND ENG-BUL-10051: *NDE REQUIREMENTS FOR MONOPOLE BASEPLATE TO PREVENT CONNECTION FAILURE*. NOTIFY THE EOR AND CROWN ENGINEERING IMMEDIATELY IF ANY CRACKS ARE SUSPECTED OR HAVE BEEN IDENTIFIED. THE NDE SHALL INCLUDE ALL EXISTING MODIFICATIONS THAT HAVE BEEN WELDED TO THE BASE PLATE.

5. ALL TESTING LIMITATIONS SHALL BE DETAILED IN THE NDE REPORT.

STEEL GRADE SCHEDULE

SCOPE	SHAPE	GRADE	YIELD STRENGTH (F_y)	ULTIMATE STRENGTH (F_u)
ALL	PLATE	A572-65	65 KSI	80 KSI
ALL	THREADED ROD	WILLIAMS A722	120 KSI	150 KSI
ALL	WELD ELECTRODE	E-80XX	-	80 KSI

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PREPARED FOR:

CROWN CASTLE

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

09/18/18

DENNIS D. ABEL, P.E.
CONNECTICUT LIC. NO. 23247

DRAWN BY:	JS
CHECKED BY:	NMC
ENG APPV'D:	DDA

SUBMITTALS

DATE	DESCRIPTION	REV
09/18/18	CONSTRUCTION	0

FDH PROJECT NUMBER:

18SWZL1400

SITE NAME:

NEWTOWN DINGLEBROOK

SITE NUMBER:

857525

SITE ADDRESS:

24 DINGLEBROOK LANE NEWTOWN, CT 06470

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

S-3

FOUNDATION NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL CODES AND ORDINANCES.
2. PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.
3. ALL WORK PRESENTED ON THESE DRAWINGS IS TO BE COMPLETED BY THE CONTRACTOR UNLESS OTHERWISE NOTED AND/OR AGREED TO WITH FDH VELOCITEL.
4. THE CONTRACTOR MUST HAVE EXPERIENCE IN PERFORMANCE OF WORK DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT THEY HAVE SUFFICIENT EXPERIENCE, ABILITY, AND KNOWLEDGE OF WORK TO BE PERFORMED AND THAT THEY ARE PROPERLY LICENSED, REGISTERED, AND/OR ENSURED TO PERFORM THIS WORK.
5. CONTRACTOR IS REQUIRED TO HAVE ALL NECESSARY INSPECTIONS PERFORMED BY THE LOCAL BUILDING CODE OFFICIAL OR AN APPROVED AGENCY.
6. FOUNDATION DESIGN ASSUMES FIELD INSPECTIONS WILL BE PERFORMED TO VERIFY THAT CONSTRUCTION MATERIALS, INSTALLATION METHODS AND ANY ASSUMED DESIGN PARAMETERS ARE ACCEPTABLE BASED UPON CONDITIONS EXISTING AT THE SITE.
7. ALL HARDWARE ASSEMBLY AND MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED; ANY CONTRADICTION BETWEEN THE MANUFACTURER'S RECOMMENDATIONS AND THESE DRAWINGS ARE TO BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER AND OWNER.
8. ANY CONTRACTOR INSTALLING ADHESIVE ANCHORING SYSTEMS SHALL BE TRAINED, IN PERSON BY A MANUFACTURER'S REPRESENTATIVE, ON THE PROPER INSTALLATION TECHNIQUES. THIS TRAINING SHALL INCLUDE PROPER DRILLING, HOLE CLEANING, AND INSTALLATION METHODS FOR THE ADHESIVE ANCHORING SYSTEM AND CONSTRUCTION CONDITIONS ON THIS PROJECT. ALL TRAINING TO BE CONDUCTED PRIOR TO CREWS STEPPING ON SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT MANUFACTURER REPRESENTATIVE TO SET UP TRAINING. FDH VELOCITEL IS NOT RESPONSIBLE FOR ANY COST OCCURRED FOR OR DURING ADHESIVE ANCHORING SYSTEM TRAINING.
9. CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO, INITIATING, MAINTAINING, LAYOUT, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THE WORK COMPLIES WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS.
10. ALL DIMENSIONS AND/OR ELEVATIONS, OR SIMILAR EXISTING CONDITIONS SHOWN ON THE DRAWING ARE TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIAL ORDERING, FABRICATION, OR CONSTRUCTION WORK. ANY DISCREPANCIES ARE TO BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER/OWNER. DISCREPANCIES MUST BE RESOLVED BEFORE CONTRACTOR IS TO PROCEED WITH THE WORK.
11. FOUNDATION DESIGN HAS BEEN DEVELOPED IN ACCORDANCE WITH THE LIMITS OF THE SUBSURFACE DATA PROVIDED. APPLICABLE CODES ARE ACI-318. SHOULD SUBSURFACE CONDITIONS VARY FROM THOSE VALUES USED IN THE DESIGN, THEN FDH VELOCITEL SHOULD BE NOTIFIED IMMEDIATELY.
12. FOUNDATION BACKFILL SHALL BE PLACED IN 8-INCH MAXIMUM LAYERS AND COMPACTED TO 95% OF MAXIMUM DRY DENSITY AND WITHIN ±2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR). ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 100 LBS PER CUBIC FOOT.
13. ANY EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" X 3/4" MINIMUM.
14. CONTRACTOR TO PROVIDE A "SAFE WORKING" SOIL SLOPE FOR EXCAVATIONS DEEPER THAN 4 FT. (I.E. FOR EVERY FOOT OF DEPTH, TRENCH MUST BE EXCAVATED BACK 1-1/2FT). IF "SAFE WORKING" SLOPE CANNOT BE ATTAINED, CONTRACTOR SHALL PROVIDE TEMPORARY SOIL SHORING PER ALL APPLICABLE SAFETY CODES & REGULATIONS DURING CONSTRUCTION.

FOUNDATION CONCRETE:

1. WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF ACI 318 - BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
2. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR RESISTANCE TO LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. AS A MINIMUM, CONCRETE SHALL DEVELOP A COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS.
3. CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS, INFILTRATION OF WATER OR SOIL, AND OTHER OCCURRENCES THAT MAY DECREASE THE STRENGTH OR DURABILITY OF THE CONCRETE.
4. LOOSE MATERIAL SHALL BE REMOVED FROM BOTTOM OF EXCAVATION PRIOR TO CONCRETE PLACEMENT. CONCRETE SHALL BE PLACED ON UNDISTURBED SOIL, AND LOOSE CUTTINGS SHALL BE REMOVED FROM SIDES OF EXCAVATION PRIOR TO CONCRETE PLACEMENT. UNDER NO CIRCUMSTANCES SHALL CONCRETE FALL THROUGH WATER.
5. IN COLD WEATHER CONDITIONS, WORK SHALL BE IN ACCORDANCE WITH ACI 306.1-90 (REAPPROVED 2002). SEE ACI 306 FOR DESCRIPTION OF COLD WEATHER CONDITIONS.
6. SULFATE RESISTANT CEMENT SHALL BE USED IN AREAS WHICH ARE KNOWN TO HAVE HIGH SULFATES IN SOIL AND GROUND WATER.

CONCRETE TESTING:

1. SLUMP TEST SHALL BE PERFORMED ON-SITE TO ENSURE WORKABILITY OF CONCRETE.
2. ALL TEST CYLINDERS SHALL BE MADE AND CURED IN ACCORDANCE WITH ASTM C31. COMPRESSION TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM C39.
3. CYLINDERS TO BE BROKEN ON DAYS 7 AND 28. (2) ADDITIONAL CYLINDERS SHOULD BE AVAILABLE FOR ANY ADDITIONAL TESTING.
4. A SUFFICIENT SAMPLING OF CONCRETE SHALL BE TAKEN TO ENSURE A FAIR REPRESENTATION OF THE CONCRETE USED FOR ALL SLUMP AND COMPRESSION TESTS. NON-COMFORMING MATERIAL SHALL NOT BE ACCEPTED BY CONTRACTOR.

FOUNDATION REINFORCEMENT:

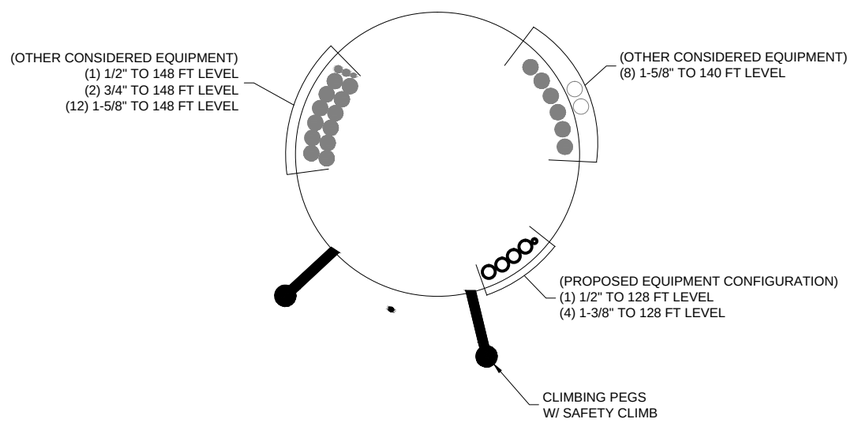
1. REINFORCEMENT SHALL BE DEFORMED AND CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60 UNLESS OTHERWISE NOTED. SPLICES IN REINFORCEMENT SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED.
2. REINFORCEMENT SHALL BE PROPERLY PLACED PRIOR TO ANY CONCRETE PLACEMENT. REINFORCING SHALL BE BRACED TO RETAIN PROPER DIMENSIONS DURING HANDLING AND THROUGHOUT PLACEMENT OF CONCRETE.
3. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.
4. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES. REBAR CHAIRS MUST BE USED TO ENSURE THE 3 INCH MINIMUM COVER. CONCRETE BLOCKS ARE NOT TO BE USED TO OBTAIN MINIMUM COVER.
5. ALL STIRRUPS SHALL HAVE MINIMUM 135° HOOKS PLUS 6*Db EXTENSIONS AT FREE ENDS AROUND CORNER LONGITUDINAL BAR UNLESS OTHERWISE NOTED.

ROCK ANCHOR INSTALLATION NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT THE ANCHORS HAVE A DESIGN CAPACITY OF 122.4K (TENSION). THIS WILL REQUIRE CONTRACTOR TO RECORD INSTALLATION PARAMETERS (I.E. INSTALLATION DEPTH AND DIAMETER).
2. GROUT CUBES SHOULD BE MADE AND TESTED TO CONFIRM THAT THE 28 DAY COMPRESSIVE STRENGTH OF 5,000 PSI IS ACHIEVED.

FOUNDATION GROUT:

1. WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF ACI 318 - "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
2. PROPORTIONS OF GROUT MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED SHALL MEET THE REQUIREMENTS OF ACI 318, CHAPTER 18, AND SHALL RESULT IN DURABLE GROUT FOR RESISTANCE TO LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. AS A MINIMUM, GROUT SHALL DEVELOP A COMPRESSIVE STRENGTH OF 5000 PSI MIN. IN 28 DAYS.
3. GROUT SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF GROUT MATERIALS.
4. LOOSE MATERIAL SHALL BE REMOVED PRIOR TO GROUT PLACEMENT.



BASE LEVEL LAYOUT
SCALE: NTS

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ENG APPV'D:	DDA

SUBMITTALS

DATE	DESCRIPTION	REV
09/18/18	CONSTRUCTION	0

FDH PROJECT NUMBER:

18SWZL1400

SITE NAME:

NEWTOWN DINGLEBROOK

SITE NUMBER:

857525

SITE ADDRESS:

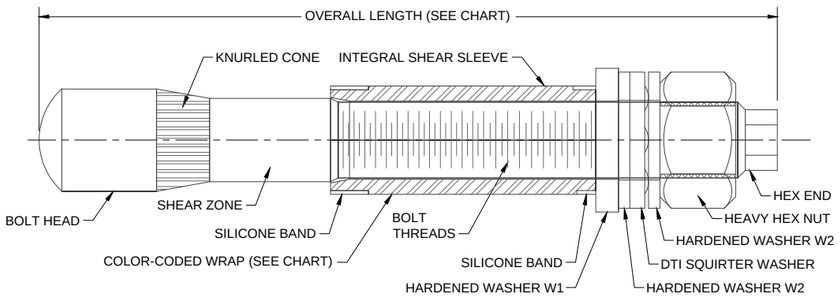
24 DINGLEBROOK LANE NEWTOWN, CT 06470

SHEET TITLE

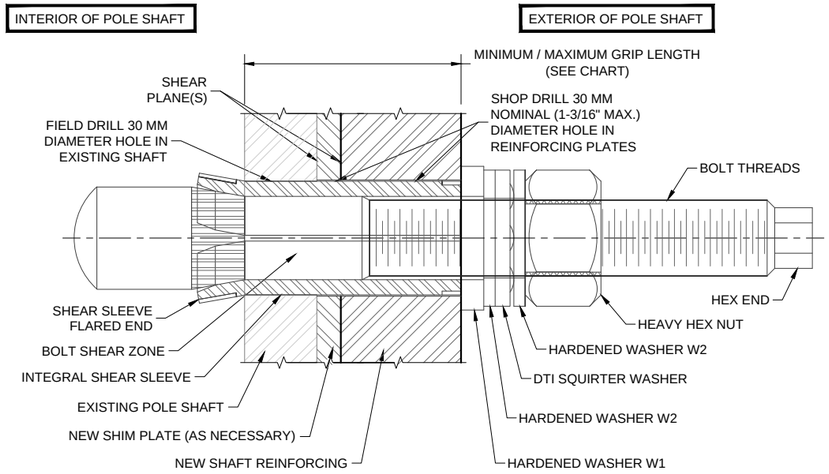
FOUNDATION NOTES & BASE LEVEL LAYOUT

SHEET NUMBER

S-4



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" to 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.					

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.

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PREPARED FOR:
CROWN CASTLE

STATE OF CONNECTICUT
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09/18/18
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DRAWN BY:	JS
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ENG APPV'D:	DDA

SUBMITTALS

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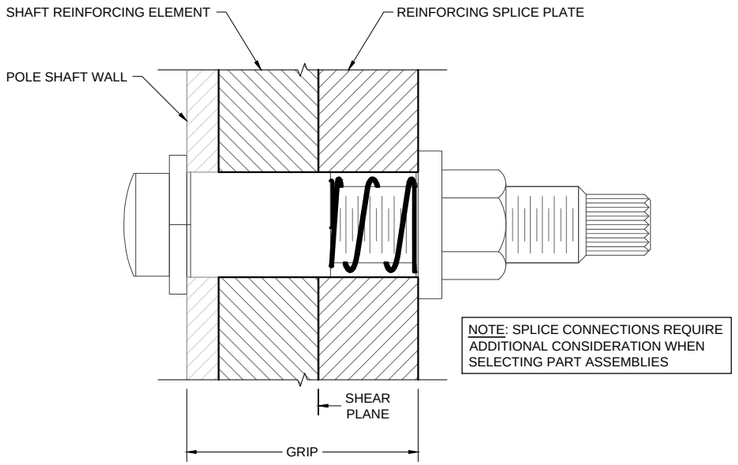
NEWTOWN DINGLEBROOK

SITE NUMBER:
857525

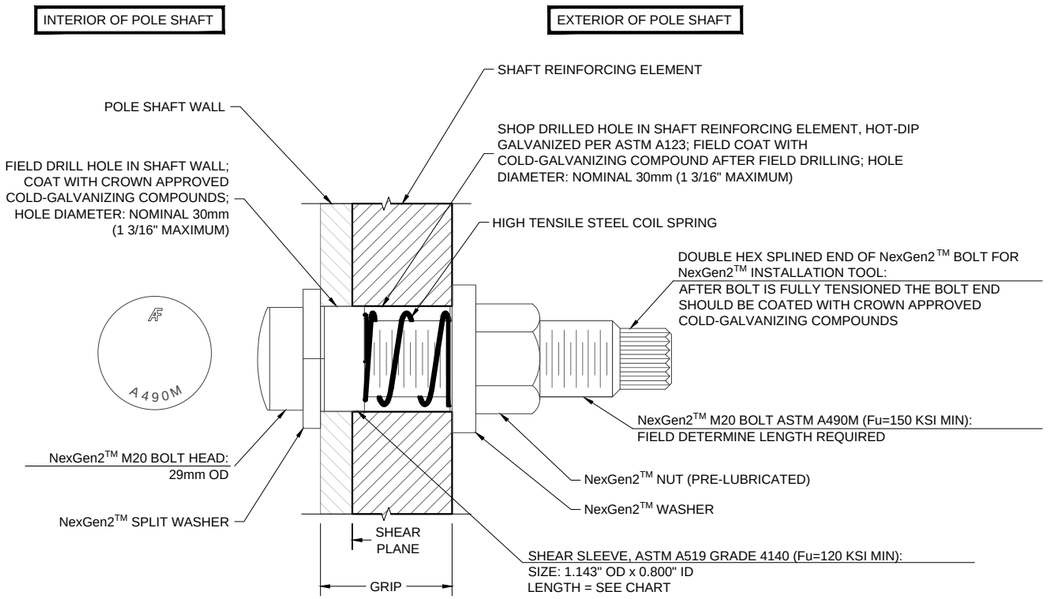
SITE ADDRESS:
24 DINGLEBROOK LANE NEWTOWN, CT 06470

SHEET TITLE
FORGBOLT SPECIFICATIONS AND TIGHTENING PROCEDURE

SHEET NUMBER
S-5



NexGen2™ BOLT ASSEMBLY
SCALE: NTS



NexGen2™ BOLT ASSEMBLY
SCALE: NTS

PART NUMBER	BOLT LENGTH	SLEEVE LENGTH	MIN. GRIP RANGE	MAX. GRIP RANGE
2NG2032	M20x75	1/2"	5/8"	1-3/8"
2NG2036	M20x95	11/16"	15/16"	1-7/16"
2NG2048	M20x95	1-3/16"	1-7/16"	1-7/8"
2NG2057	M20x95	1-5/8"	1-7/8"	2-1/4"
2NG2068	M20x135	2"	2-1/4"	2-11/16"
2NG2096	M20x135	2-7/16"	2-11/16"	3-3/4"
2NG2127	M20x175	3"	3-3/4"	5"
2NG2212	M20x250	4"	5"	8-15/16"

MANUFACTURER:
ALLFASTENERS
959 LAKE ROAD
MEDINA, OHIO, USA 44256
PHONE: **440-232-6060**
WEBSITES: WWW.ALLFASTENERS.COM
WWW.AFTOWER.COM

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.

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ENGINEERING INNOVATION
FDH INFRASTRUCTURE SERVICES, LLC
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

09/18/18
DENNIS D. ABEL, P.E.
CONNECTICUT LIC. NO. 23247

DRAWN BY:	JS
CHECKED BY:	NMC
ENG APPV'D:	DDA

SUBMITTALS

DATE	DESCRIPTION	REV
09/18/18	CONSTRUCTION	0

FDH PROJECT NUMBER:
18SWZL1400

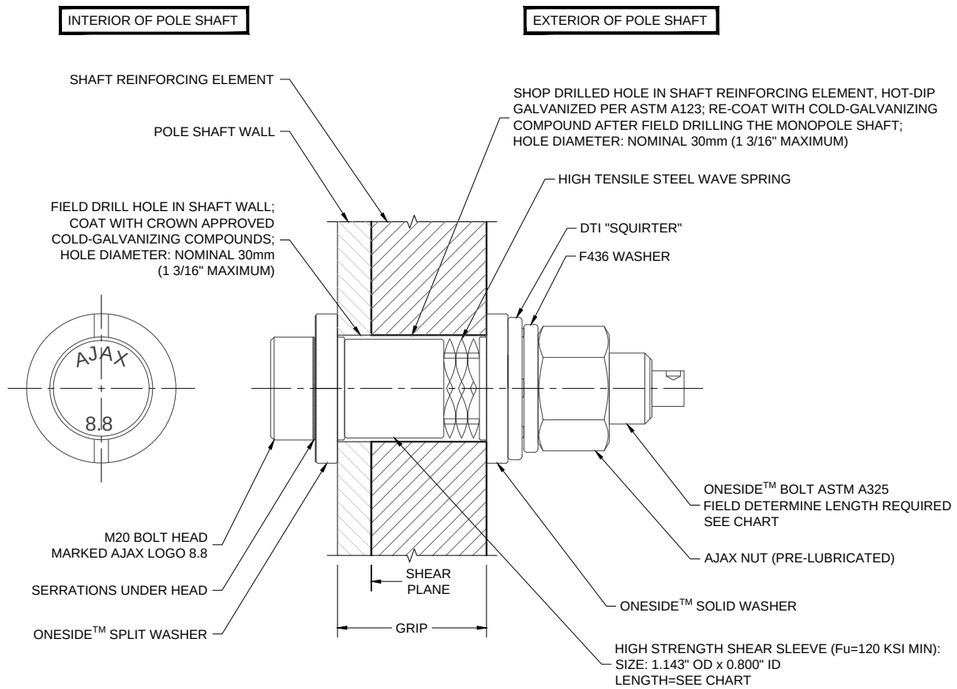
SITE NAME:
NEWTOWN DINGLEBROOK

SITE NUMBER:
857525

SITE ADDRESS:
24 DINGLEBROOK LANE NEWTOWN, CT 06470

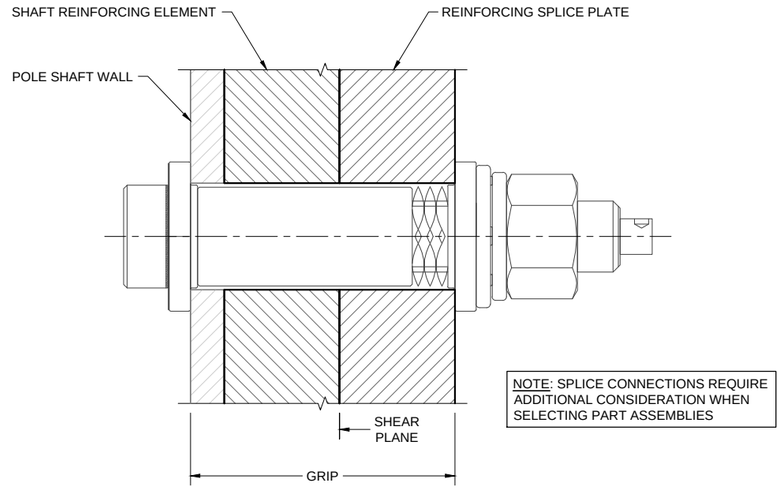
SHEET TITLE
NEXGEN2 BOLT SPECIFICATIONS AND TIGHTENING PROCEDURE

SHEET NUMBER
S-6



AJAX ONESIDE™ BOLT DETAIL

SCALE: NTS



NOTE: SPLICE CONNECTIONS REQUIRE ADDITIONAL CONSIDERATION WHEN SELECTING PART ASSEMBLIES

MANUFACTURER:
AJAX FASTENERS
SALES + TECH: ONESIDE@AJAXFAST.COM.AU

DISTRIBUTOR CONTACT:
IRA SVENSGAARD AND ASSOCIATES
PETER SVENSGAARD - PETERS@IRASVENS.COM
JOHN KILLAM - JOHN@IRASVENS.COM
PHONE: (530) 647-8225
FAX: (530) 647-8229

BOLT ASSEMBLY AND INSTALLATION:

1. BOLT MUST BE PURCHASED PRE-ASSEMBLED.
2. FOLLOW BOLT AND DTI MANUFACTURERS INSTRUCTIONS FOR INSTALLATION.

BOLT ASSEMBLY AND INSTALLATION:

1. A MINIMUM OF 4 OUT OF 5 SQUIRTER® DTI PROTRUSIONS SHALL BE ENGAGED IN ANY AJAX/DTI BOLT ASSEMBLY IN THE REINFORCING MEMBERS. A FEELER GAGE MAY BE USED TO VERIFYPROTRUSION COMPRESSION
2. INSPECTIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS AND CROWN DOCUMENT ENG-SOW-10007: *MODIFICATION INSPECTION SOW* .

CODE	SIZE	COLOR	SLEEVE LENGTH	GRIP	GRIP IMP
OSBA20.65-6	M20 x 65	ORANGE	6.0 (0.236")	12.5 / 20.0	0.500" / 0.787"
OSBA20.95-14	M20 x 95	BLACK	14.0 (0.551")	20.0 / 32.0	0.787" / 1.259"
OSBA20.95-22	M20 x 95	GREEN	22.0 (0.866")	30.0 / 50.0	1.181" / 1.968"
OSBA20.95-30	M20 x 95	YELLOW	30.0 (1.181")	40.5 / 50.0	1.595" / 1.968"
OSBA20.135-39	M20 x 135	BLUE	39.0 (1.535")	49.0 / 77.0	1.929" / 3.031"
OSBA20.135-48	M20 x 135	BROWN	48.0 (1.889")	60.5 / 77.0	2.375" / 3.031"
OSBA20.135-57	M20 x 135	PURPLE	57.0 (2.244")	67.0 / 90.0	2.637" / 3.543"
OSBA20.165-76	M20 x 165	RED	76.0 (3.000")	87.0 / 120.0	3.425" / 4.724"
OSBA20.250	M20 x 250	SILVER	MTO	121.0 / 211.0	4.724" / 8.310"

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PREPARED FOR:

CROWN CASTLE

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

09/18/18

DENNIS D. ABEL, P.E.
CONNECTICUT LIC. NO. 23247

DRAWN BY:	JS
CHECKED BY:	NMC
ENG APPV'D:	DDA

SUBMITTALS

DATE	DESCRIPTION	REV
09/18/18	CONSTRUCTION	0

FDH PROJECT NUMBER:

18SWZL1400

SITE NAME:

NEWTOWN DINGLEBROOK

SITE NUMBER:

857525

SITE ADDRESS:

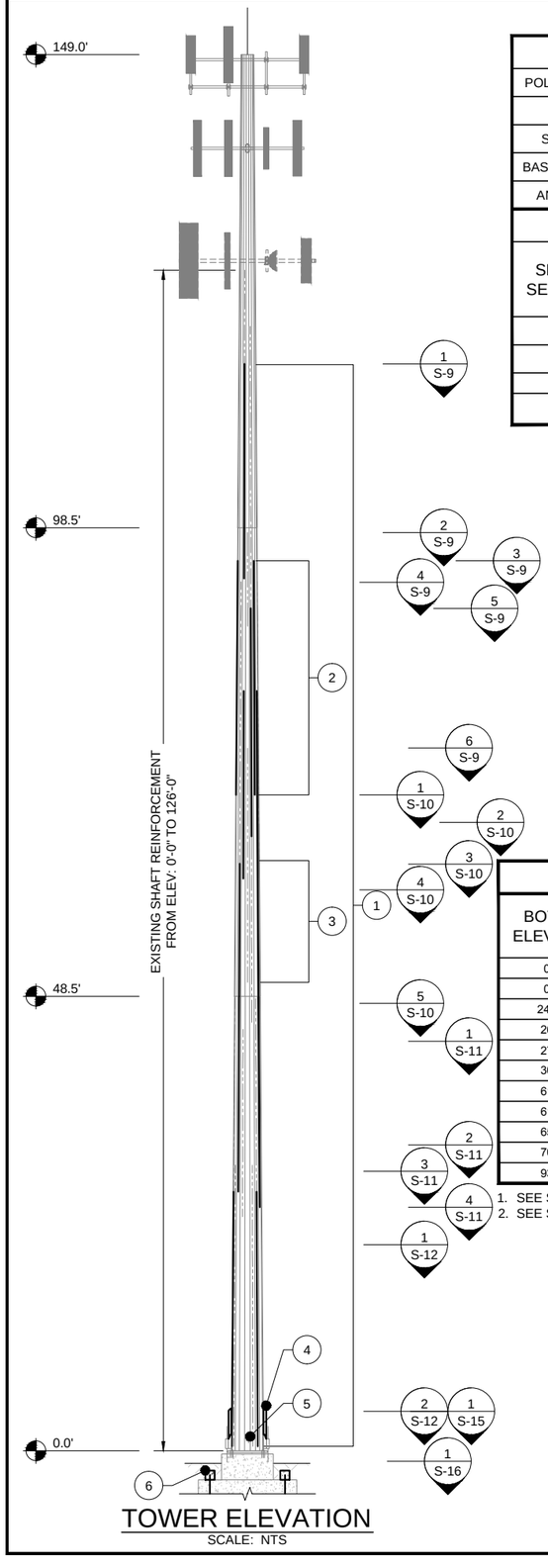
24 DINGLEBROOK LANE NEWTOWN, CT 06470

SHEET TITLE

AJAX ONESIDE BOLT SPECIFICATIONS AND TIGHTENING PROCEDURE

SHEET NUMBER

S-7



TOWER ELEVATION
SCALE: NTS

MANUFACTURER POLE SPECIFICATIONS

POLE SHAPE TYPE:	18-SIDED POLYGON
TAPER:	0.166946 IN/FT
SHAFT STEEL:	ASTM A572 GRADE 65
BASE PLATE STEEL:	ASTM A572 GRADE 50 (50 KSI)
ANCHOR RODS:	2 1/4"Ø #18J ASTM A615 GRADE 75

MANUFACTURER SHAFT SECTION DATA

SHAFT SECTION	SECTION LENGTH (FT)	PLATE THICKNESS (IN)	LAP SPLICE (IN)	DIAMETER ACROSS FLATS (IN)	
				@TOP	@BOTTOM
1	50.50	0.1875	42	16.000	24.735
2	53.50	0.25	57	23.755	33.013
3	53.25	0.3125		31.691	40.875

NOTE: DIMENSIONS SHOWN DO NOT INCLUDE GALVANIZING TOLERANCES

TOWER MODIFICATION SCHEDULE

NO.	TYPE OF MODIFICATION	BTM. ELEV.	TOP ELEV.	SHEET
1	INSTALLATION OF NEW MONOPOLE REINFORCEMENT.	0.5'±	115.9'±	S-8 TO S-14
2	REMOVAL AND REPLACEMENT OF EXISTING WELDED STEP BOLT BRACKETS AS NEEDED. PLEASE SEE CED-CAT-10300: MONOPOLE STANDARD DRAWINGS AND APPROVED REINFORCEMENT COMPONENTS.	70.0'±	95.0'±	S-9
3	REMOVAL AND REPLACEMENT OF EXISTING WELDED STEP BOLT BRACKETS AS NEEDED. PLEASE SEE CED-CAT-10300: MONOPOLE STANDARD DRAWINGS AND APPROVED REINFORCEMENT COMPONENTS.	50.0'±	63.0'±	S-10
4	INSTALLATION OF NEW ANCHOR ROD BRACKET EXTENSION.	1.3'±	4.5'±	S-15
5	REMOVAL OF EXISTING WELDMENT ANGLE AND GRIND SMOOTH.	-	1.0'±	-
6	INSTALLATION OF NEW ROCK ANCHORS & CONCRETE CAPS.	-23.5'±	-2.0'±	S-16 TO S-18
7	INSTALLATION OF SIGNAGE INDICATING SAFETY CLIMB FACILITY OBSTRUCTIONS. PLEASE SEE CED-CAT-10300: MONOPOLE STANDARD DRAWINGS AND APPROVED REINFORCEMENT COMPONENTS.	-	-	-

- 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.
- 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 THICKNESSES SHALL BE NO LESS THAN 1/16". STACKING OF SHIMS IS PERMITTED. FINGER SHIMS AND HORSESHOE SHIMS ARE PERMITTED. STACKED SHIMS SHALL BE NO GREATER THAN 1/4" WITHOUT EOR APPROVAL.
- FOR PLATES STARTING AT 6", THE BOTTOM OF THE FLAT PLATE SHALL BEGIN AT 6" ± 1". FOR SINGLE PLATES OR MULTIPLE PLATES SPLICED TOGETHER, THE BOTTOM OF THE FLAT PLATE RUN SHALL BEGIN AT THE PROPOSED ELEVATION ± 3". FOR MULTIPLE PLATES SPLICED TOGETHER, THE TOP OF THE FLAT PLATE IS TO BE PLACED SUCH THAT THERE IS NO MORE THAN 3" DIFFERENCE BETWEEN THE ACTUAL OVERALL LENGTH OF THE SPAN AND THE PROPOSED OVERALL LENGTH OF THE SPAN, FROM THE BOTTOM OF THE BOTTOM PLATE TO THE TOP OF THE TOP PLATE.
- PRIOR TO FABRICATION AND INSTALLATION, CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND QUANTITIES GIVEN. LENGTH AND QUANTITIES PROVIDED ARE FOR QUOTING PURPOSES ONLY, AND SHALL NOT BE USED FOR FABRICATION.

CROWN CASTLE SHAFT REINFORCEMENT INSTALLATION SCHEDULE [1]

BOTTOM ELEVATION	TOP ELEVATION	FLAT / DEGREES (°)	CCI PART NUMBER	PART NUMBER[2]	TERMINATION BOLTS (BOTTOM)	TERMINATION BOLTS (TOP)	MAX INTERMEDIATE BOLT SPACING	BOLT QUANTITY PER PLATE	STEEL WEIGHT PER PLATE (BLACK, LBS)	TOTAL BOLT QUANTITY	TOTAL STEEL WEIGHT (BLACK, LBS)
0'-6"±	24'-11"±	6, 12	CCI-CFP-06512524.42	FP-1	11	11	1'-7"	33	675.1	66	1350.1
0'-6"±	27'-8"±	3, 15	CCI-CFP-06512527.17	FP-2	11	11	1'-7"	35	751.1	70	1502.2
24'-11"±	49'-11"±	13	CCI-SFP-06010025	-	8	8	1'-4"	31	510.0	31	510.0
26'-0"±	61'-0"±	4, 10	CCI-SFP-06010035	-	8	8	1'-4"	39	714.0	78	1428.0
27'-8"±	62'-8"±	17	CCI-SFP-06010035	-	8	8	1'-4"	39	714.0	39	714.0
30'-7"±	49'-11"±	7	CCI-CFP-06010019.33	FP-3	8	8	1'-4"	27	394.7	27	394.7
61'-1"±	81'-1"±	4, 10	CCI-SFP-04007520	-	4	4	1'-4"	21	204.0	42	408.0
61'-1"±	81'-1"±	6, 12, 18	CCI-SFP-04007520	-	4	4	1'-4"	21	204.0	63	612.0
65'-7"±	89'-11"±	2, 8, 14	CCI-CFP-04007524.33	FP-4	4	4	1'-4"	24	248.4	72	745.2
70'-0"±	95'-0"±	3, 9, 15	CCI-SFP-04007525	-	4	4	1'-4"	25	255.0	75	765.0
93'-1"±	115'-11"±	6, 12, 18	CCI-CFP-04007522.83	FP-5	4	4	1'-4"	23	233.1	69	699.3
									TOTAL	632	9131.0

1. SEE SHEET S-14 FOR SPLICE PLATE INFORMATION.
2. SEE SHEET S-13 FOR FLAT PLATE INFORMATION.

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PREPARED FOR:

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STATE OF CONNECTICUT
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No. 23247
LICENSED PROFESSIONAL ENGINEER

09/18/18

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ENG APPV'D:	DDA

SUBMITTALS

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09/18/18	CONSTRUCTION	0

FDH PROJECT NUMBER:

18SWZL1400

SITE NAME:

NEWTOWN DINGLEBROOK

SITE NUMBER:

857525

SITE ADDRESS:

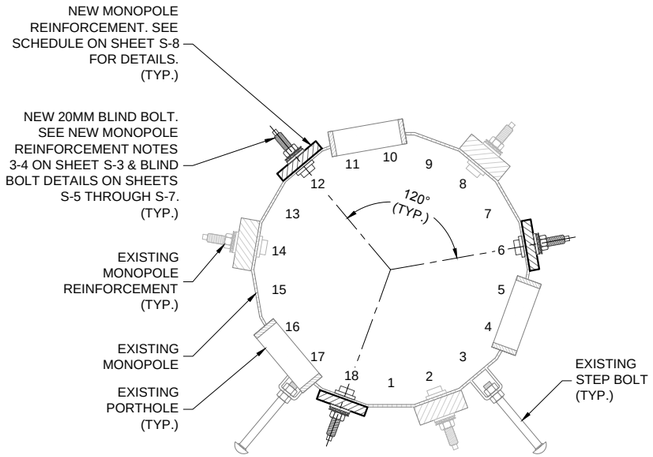
24 DINGLEBROOK LANE NEWTOWN, CT 06470

SHEET TITLE

MODIFICATION SCHEDULE & FLAT PLATE INSTALLATION DETAILS I

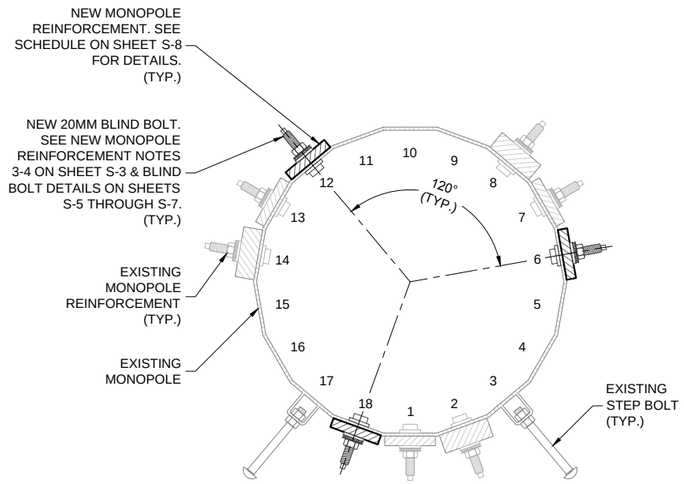
SHEET NUMBER

S-8



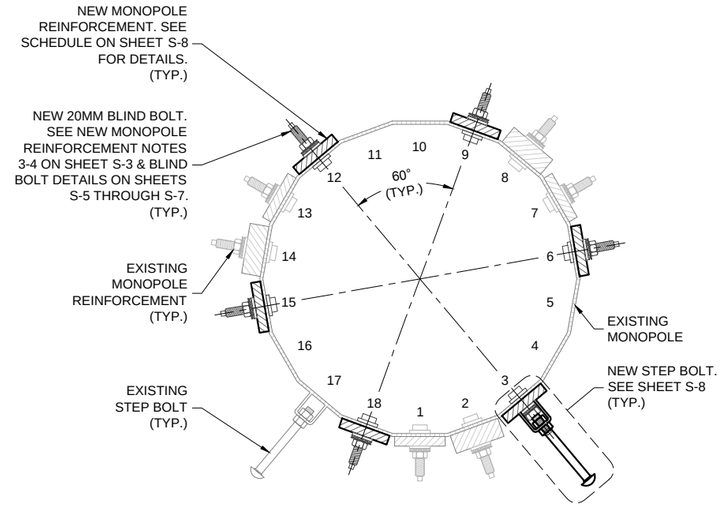
MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

1 / S-9 SECTION NTS



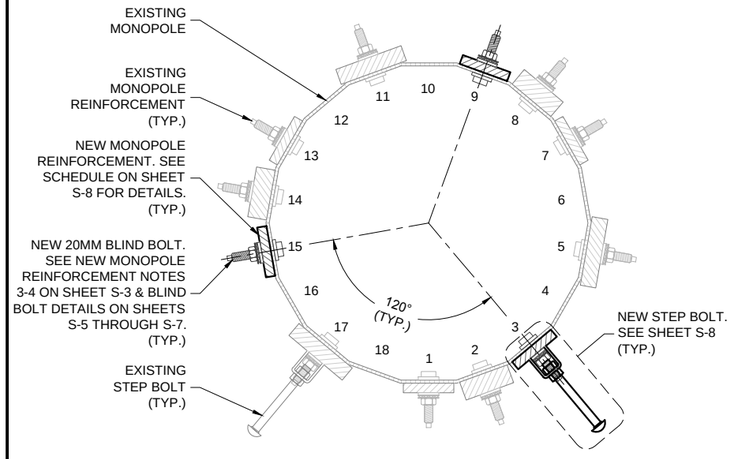
MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

2 / S-9 SECTION NTS



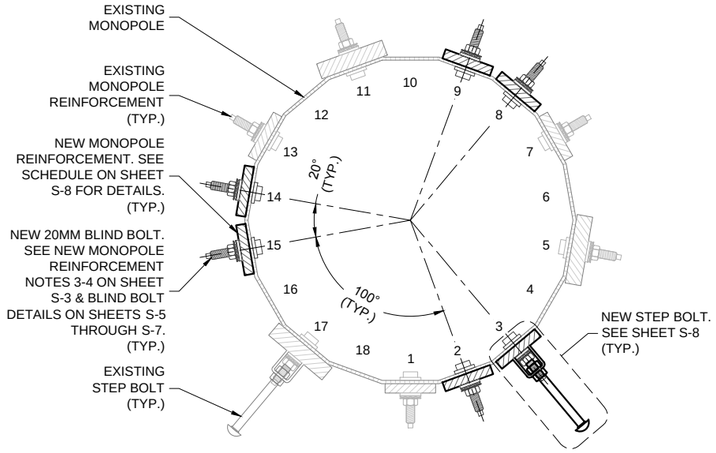
MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

3 / S-9 SECTION NTS



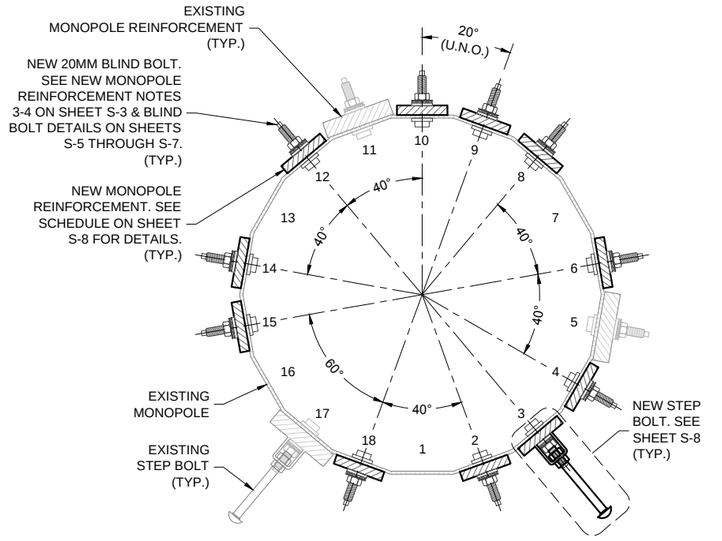
MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

4 / S-9 SECTION NTS



MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

5 / S-9 SECTION NTS



MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

6 / S-9 SECTION NTS

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SUBMITTALS

DATE	DESCRIPTION	REV
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FDH PROJECT NUMBER:

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SITE NUMBER:

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SITE ADDRESS:

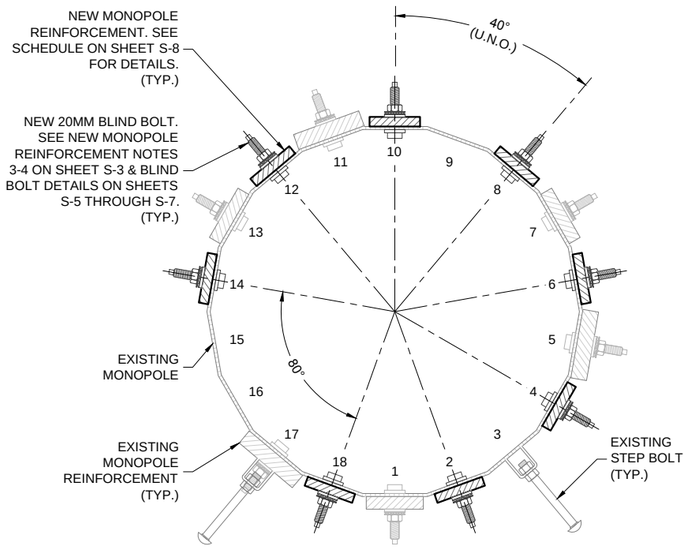
24 DINGLEBROOK LANE NEWTOWN, CT 06470

SHEET TITLE

FLAT PLATE
INSTALLATION DETAILS II

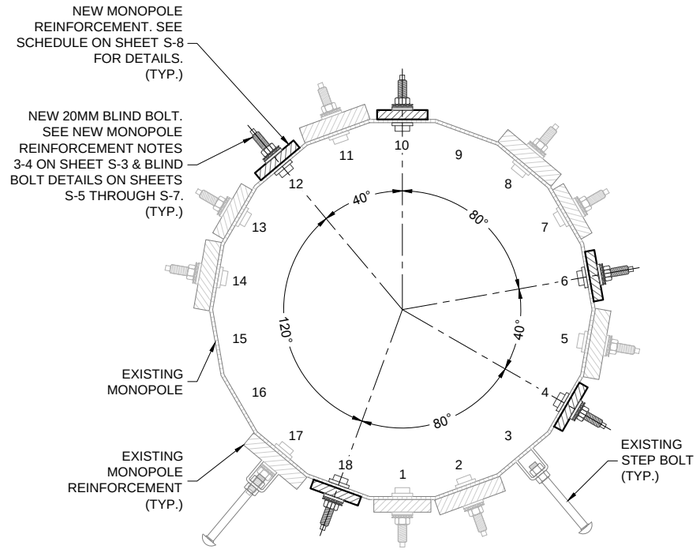
SHEET NUMBER

S-9



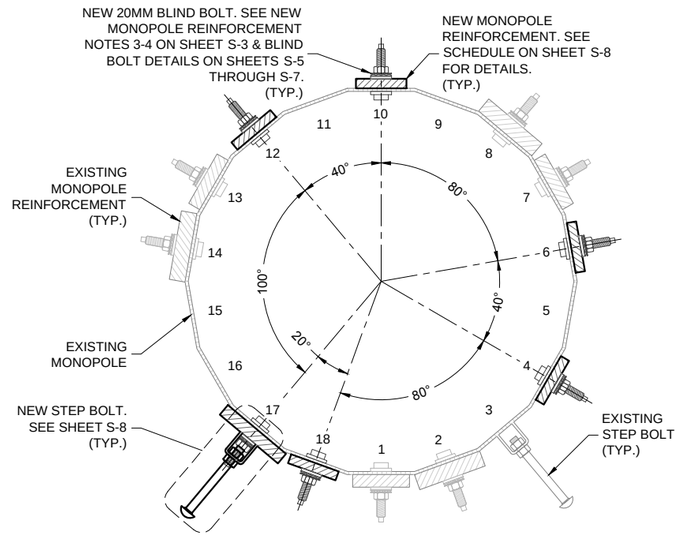
MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

1 / S-10 SECTION NTS



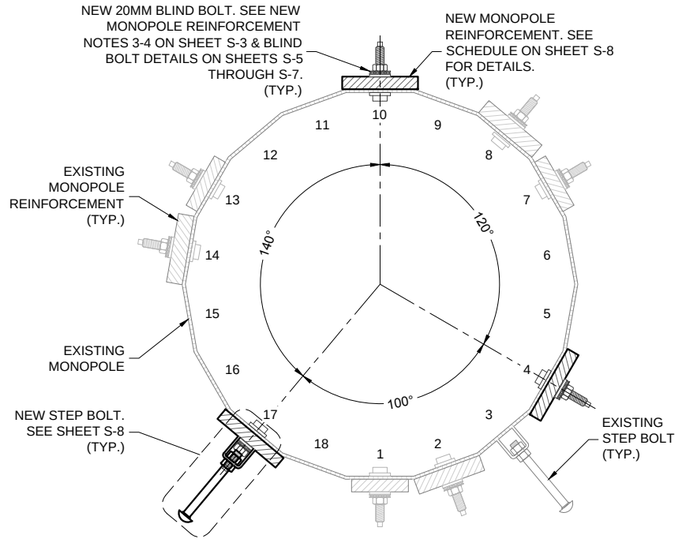
MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

2 / S-10 SECTION NTS



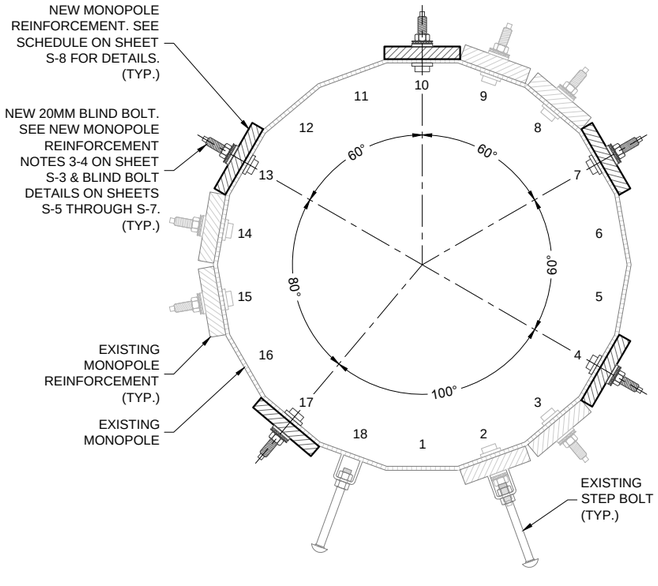
MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

3 / S-10 SECTION NTS



MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

4 / S-10 SECTION NTS



MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

5 / S-10 SECTION NTS

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SITE NUMBER:

857525

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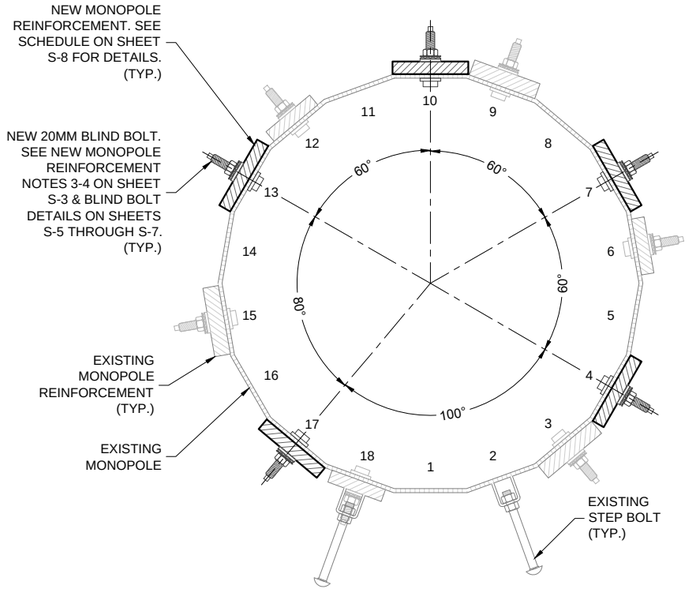
24 DINGLEBROOK LANE NEWTOWN, CT 06470

SHEET TITLE

FLAT PLATE
INSTALLATION DETAILS III

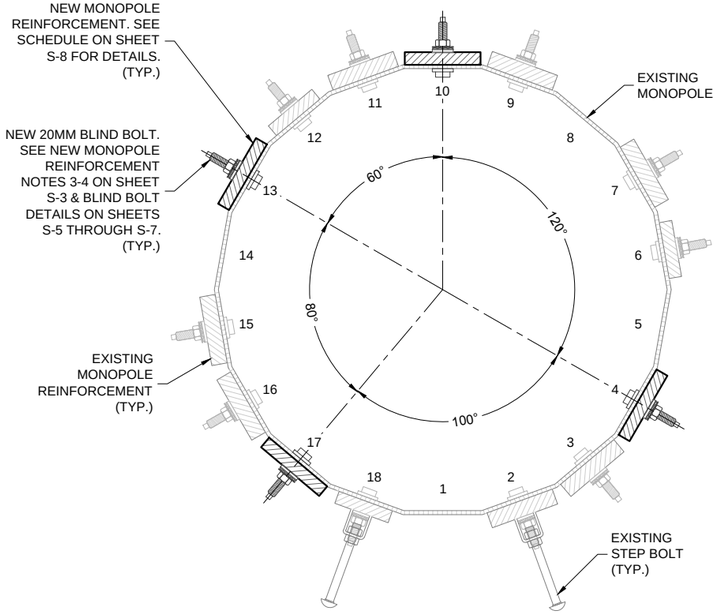
SHEET NUMBER

S-10



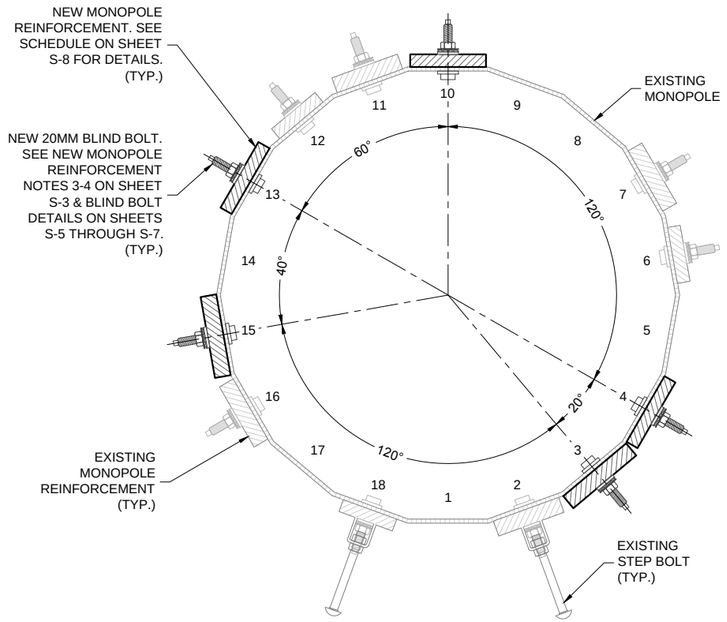
MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

1 / S-11 SECTION
NTS



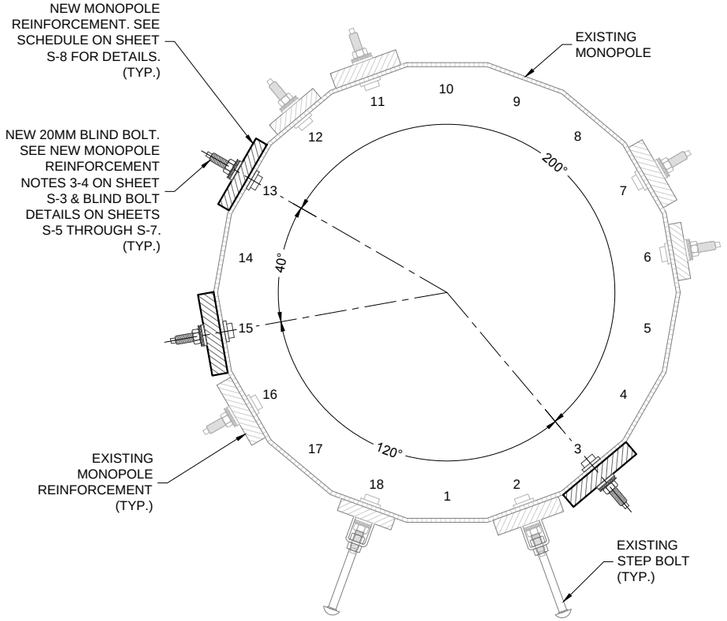
MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

2 / S-11 SECTION
NTS



MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

3 / S-11 SECTION
NTS



MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

4 / S-11 SECTION
NTS

PREPARED BY:

FDH INFRASTRUCTURE SERVICES
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PHONE: 919-755-1012 FAX: 919-755-1031

PREPARED FOR:

CROWN CASTLE

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

09/18/18

DENNIS D. ABEL, P.E.
CONNECTICUT LIC. NO. 23247

DRAWN BY:	JS
CHECKED BY:	NMC
ENG APPV'D:	DDA

SUBMITTALS		
DATE	DESCRIPTION	REV
09/18/18	CONSTRUCTION	0

FDH PROJECT NUMBER:

18SWZL1400

SITE NAME:

NEWTOWN DINGLEBROOK

SITE NUMBER:

857525

SITE ADDRESS:

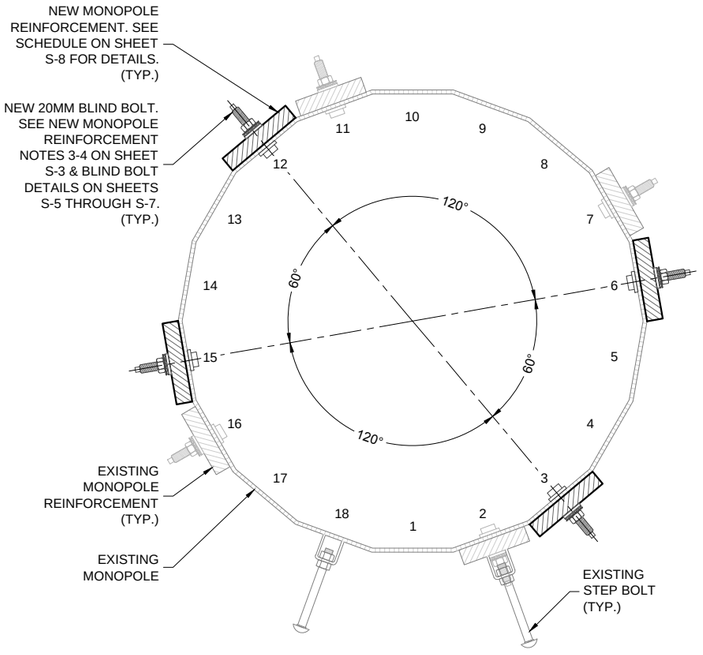
24 DINGLEBROOK LANE NEWTOWN, CT 06470

SHEET TITLE

FLAT PLATE INSTALLATION DETAILS IV

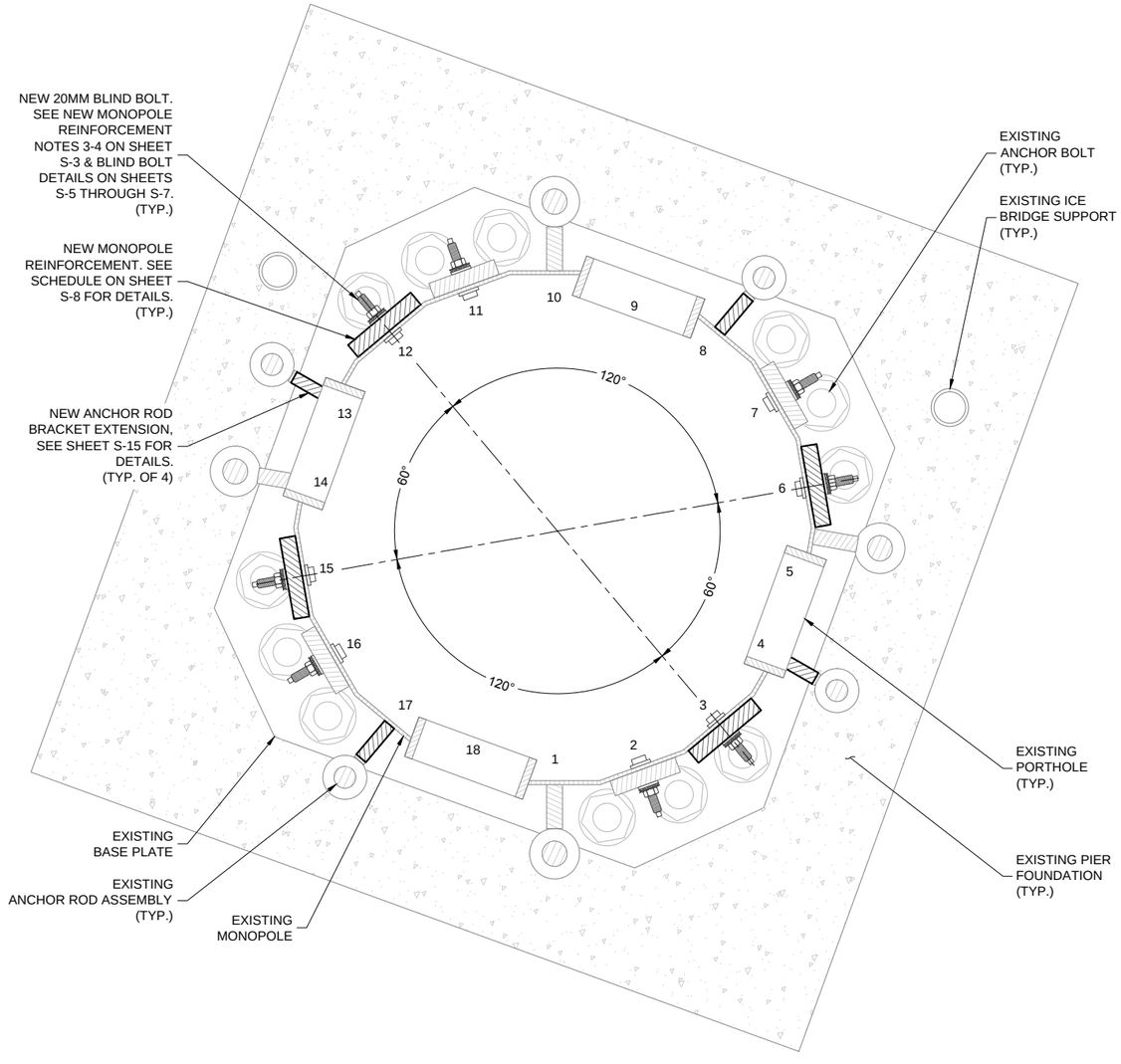
SHEET NUMBER

S-11



MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

1 / S-12 SECTION
NTS



MONOPOLE REINFORCEMENT LAYOUT
SECTION VIEW

2 / S-12 SECTION
NTS

PREPARED BY:

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SITE ADDRESS:

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SHEET TITLE

FLAT PLATE
INSTALLATION DETAILS V

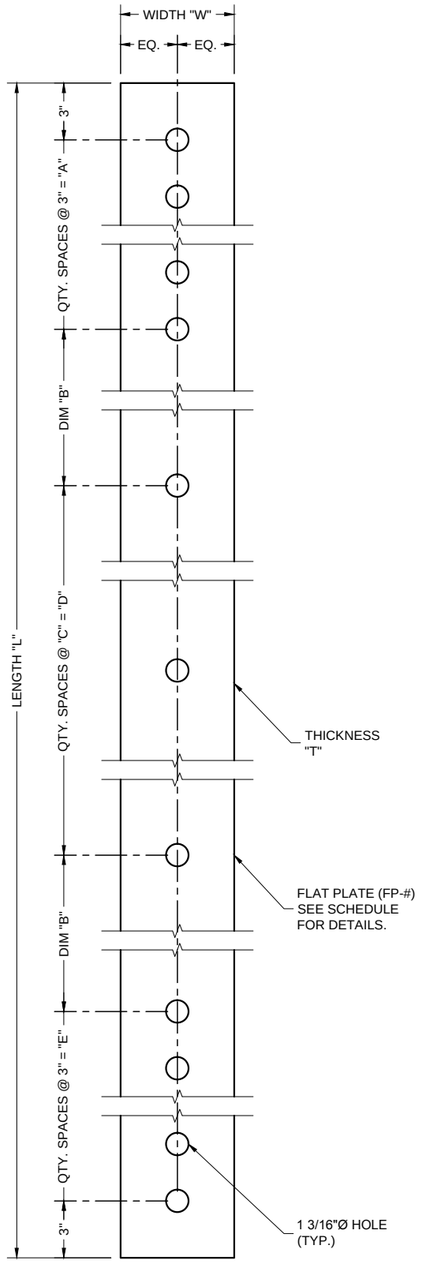
SHEET NUMBER

S-12

FLAT PLATE FABRICATION DETAILS

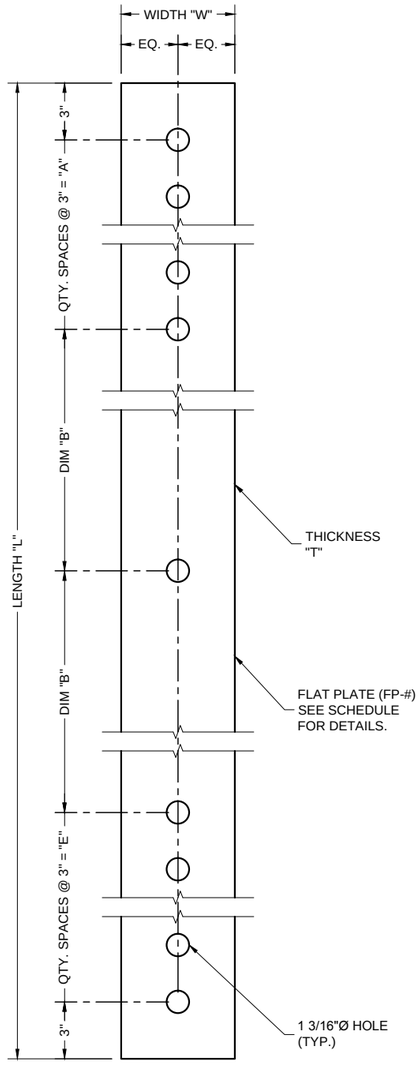
PART NO.	QTY.	TYPE	LENGTH "L"	WIDTH "W"	THICKNESS "T"	QTY. SPACES @ 3" = "A"	DIM "B"	QTY. SPACES @ "C" = "D"	QTY. SPACES @ 3" = "E"
FP-1	2	1	24'-5"	6 1/2"	1 1/4"	10 SPACES @ 3" = 2'-6"	1'-6 1/2"	10 SPACES @ 19" = 15'-10"	10 SPACES @ 3" = 2'-6"
FP-2	2	1	27'-2"	6 1/2"	1 1/4"	10 SPACES @ 3" = 2'-6"	1'-4"	12 SPACES @ 19" = 19'-0"	10 SPACES @ 3" = 2'-6"
FP-3	1	1	19'-4"	6"	1"	7 SPACES @ 3" = 1'-9"	1'-0"	10 SPACES @ 16" = 13'-4"	7 SPACES @ 3" = 1'-9"
FP-4	3	1	24'-4"	4"	3/4"	3 SPACES @ 3" = 9"	1'-2"	15 SPACES @ 16" = 20'-0"	3 SPACES @ 3" = 9"
FP-5	3	1	22'-10"	4"	3/4"	3 SPACES @ 3" = 9"	1'-1"	14 SPACES @ 16" = 18'-8"	3 SPACES @ 3" = 9"

CONTRACTOR SHOULD FIELD VERIFY LENGTH OF FP-3 & FP-4 PLATE AND FIELD DRILL TERM BOLT HOLES AS NECESSARY TO ENSURE PROPER FIT-UP WITH SPLICE PLATES.



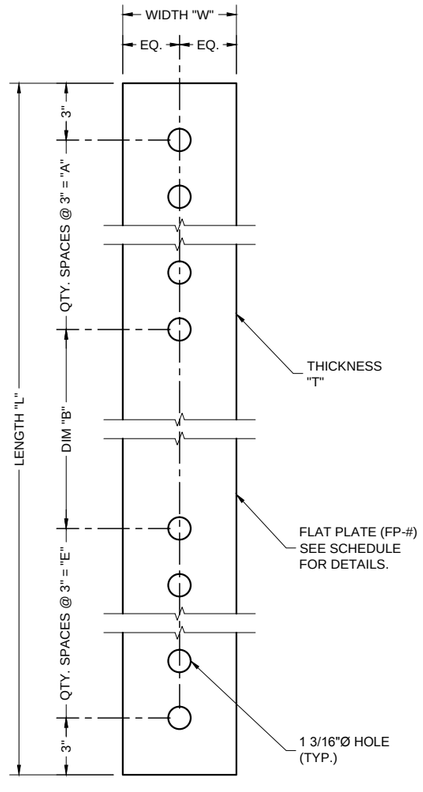
FLAT PLATE (TYPE 1)
FRONT VIEW

1 / S-13 DETAIL NTS



FLAT PLATE (TYPE 2)
FRONT VIEW

2 / S-13 DETAIL NTS



FLAT PLATE (TYPE 3)
FRONT VIEW

3 / S-13 DETAIL NTS

PREPARED BY:

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SUBMITTALS

DATE	DESCRIPTION	REV
09/18/18	CONSTRUCTION	0

FDH PROJECT NUMBER:

18SWZL1400

SITE NAME:

NEWTOWN DINGLEBROOK

SITE NUMBER:

857525

SITE ADDRESS:

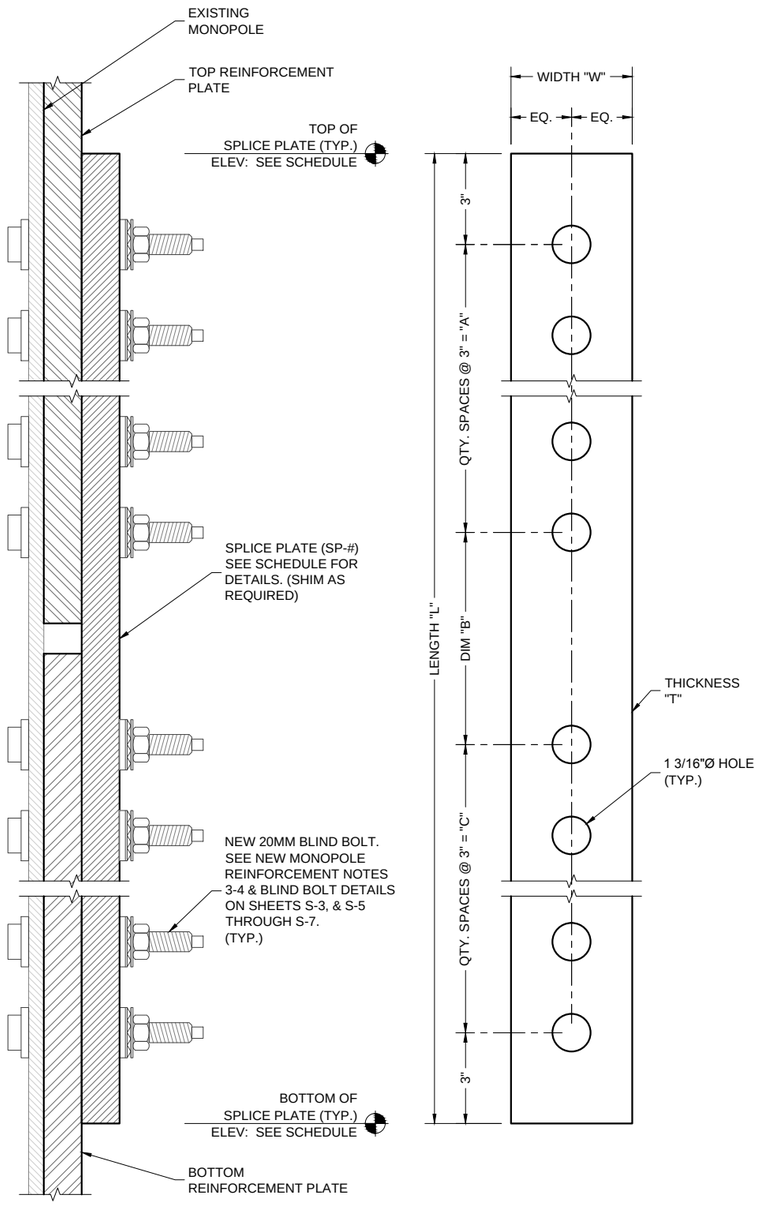
24 DINGLEBROOK LANE NEWTOWN, CT 06470

SHEET TITLE

FLAT PLATE FABRICATION DETAILS

SHEET NUMBER

S-13



SPLICE PLATE ASSEMBLY
FRONT AND SIDE VIEW

1 / S-14 DETAIL NTS

SPLICE PLATE SCHEDULE

BOTTOM ELEVATION	TOP ELEVATION	CCI PART NO. / DIMENSIONS[1]	QTY.	TOP/BTM REINF. PLATE	QTY. OF BOLT HOLES PER PLATE	TOTAL BOLT HOLE QTY.	ADDITIONAL BOLTS[2]
21'-11"±	26'-9"±	CCI-SP-045100-6-11	2	EXISTING / CCI-CFP-06512524.42	17	34	12
24'-8"±	30'-6"±	SP-1 (5.5" x 1.25" x 70")	2	EXISTING / CCI-CFP-06512527.17	21	42	20
27'-9"±	32'-10"±	SP-2 (5.5" x 1.25" x 61")	1	CCI-CFP-06010019.33 / EXISTING	18	18	10
47'-8"±	51'-9"±	CCI-SP-045100-6-8	1	EXISTING / CCI-CFP-06010019.33	14	14	6
47'-8"±	51'-9"±	CCI-SP-045100-6-8	1	EXISTING / CCI-SFP-06010025	14	14	6
58'-9"±	62'-4"±	CCI-SP-040075-4-8	2	CCI-SFP-04007520 / CCI-SFP-06010035	12	24	-
60'-5"±	65'-6"±	SP-3 (5.5" x 1.25" x 61")	1	EXISTING / CCI-SFP-06010035	18	18	10
62'-9"±	66'-10"±	CCI-SP-040075-4-10	3	CCI-CFP-04007524.33 / EXISTING	14	42	30
88'-8"±	91'-9"±	CCI-SP-040075-4-6	3	EXISTING / CCI-CFP-04007524.33	10	30	18
114'-8"±	117'-9"±	CCI-SP-040075-4-6	3	EXISTING / CCI-CFP-04007522.83	10	30	18
					TOTAL	266	130

1. SEE FABRICATION SCHEDULE ON THIS SHEET FOR CUSTOM SPLICE PLATE (SP-#) FABRICATION DETAILS.
2. QUANTITY OF ADDITIONAL BLIND BOLTS REQUIRED WHEN SPLICING INTO EXISTING FLAT PLATE.

SPLICE PLATE FABRICATION SCHEDULE

PART NO.	QTY.	LENGTH "L"	WIDTH "W"	THICKNESS "T"	QTY. SPACES @ 3" = "A"	DIM "B"	QTY. SPACES @ 3" = "C"
SP-1	2	5'-10"	5 1/2"	1 1/4"	9 SPACES @ 3" = 2'-3"	7"	10 SPACES @ 3" = 2'-6"
SP-2	1	5'-1"	5 1/2"	1 1/4"	7 SPACES @ 3" = 1'-9"	7"	9 SPACES @ 3" = 2'-3"
SP-3	1	5'-1"	5 1/2"	1 1/4"	9 SPACES @ 3" = 2'-3"	7"	7 SPACES @ 3" = 1'-9"

CONTRACTOR SHOULD FIELD VERIFY LENGTH OF FP-3 & FP-4 PLATE AND FIELD DRILL TERM BOLT HOLES AS NECESSARY TO ENSURE PROPER FIT-UP WITH SPLICE PLATES.

NOTES:

1. ALL HOLES ARE TO BE DRILLED. DO NOT BURN OR PUNCH.
2. FABRICATION TOLERANCES: FRACTIONS ± 1/16"
   ANGLES ± 1/2 DEGREE
   DECIMALS ± .010"
   BOLT HOLES ± 1/32"
3. THE 65 KSI MATERIAL SHALL CONFORM TO THE FOLLOWING:
   A. THE MATERIAL SHALL BE ASTM A572 HAVING A MINIMUM TENSILE STRENGTH (F_u) OF 80 KSI AND A MINIMUM YIELD STRENGTH (F_y) OF 65 KSI.
   B. THE FINISH SHALL BE HOT-DIP GALVANIZED PER ASTM A123.

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PREPARED FOR:

CROWN CASTLE

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

09/18/18

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SUBMITTALS

DATE	DESCRIPTION	REV
09/18/18	CONSTRUCTION	0

FDH PROJECT NUMBER:

18SWZL1400

SITE NAME:

NEWTOWN DINGLEBROOK

SITE NUMBER:

857525

SITE ADDRESS:

24 DINGLEBROOK LANE NEWTOWN, CT 06470

SHEET TITLE

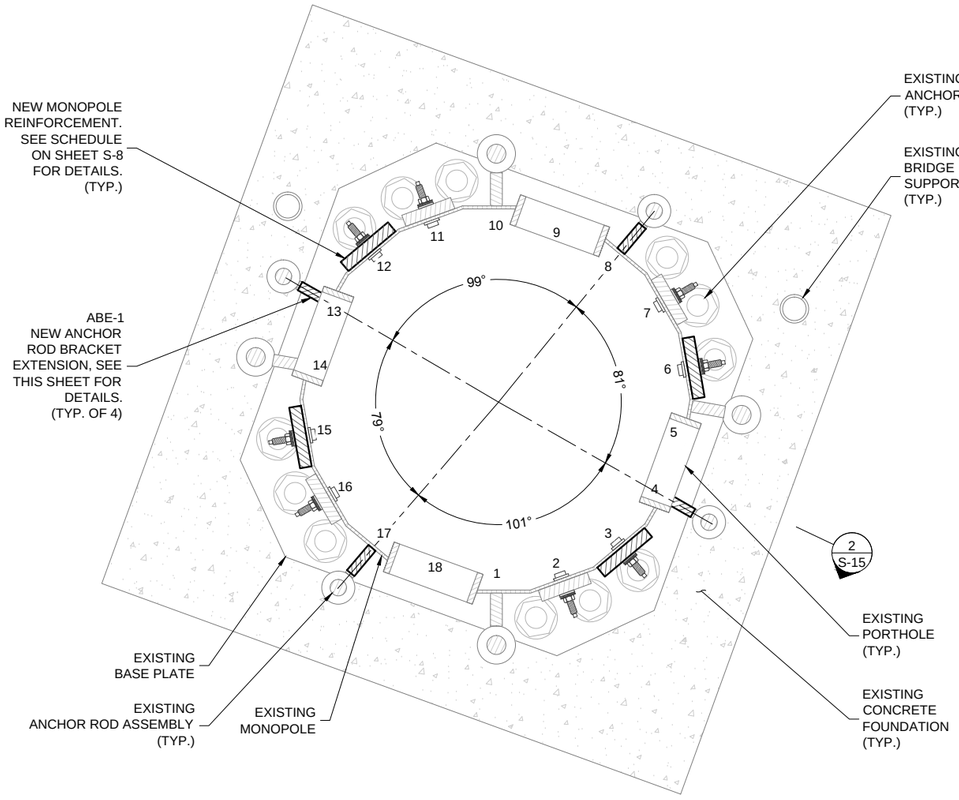
SPLICE PLATE FABRICATION DETAILS

SHEET NUMBER

S-14

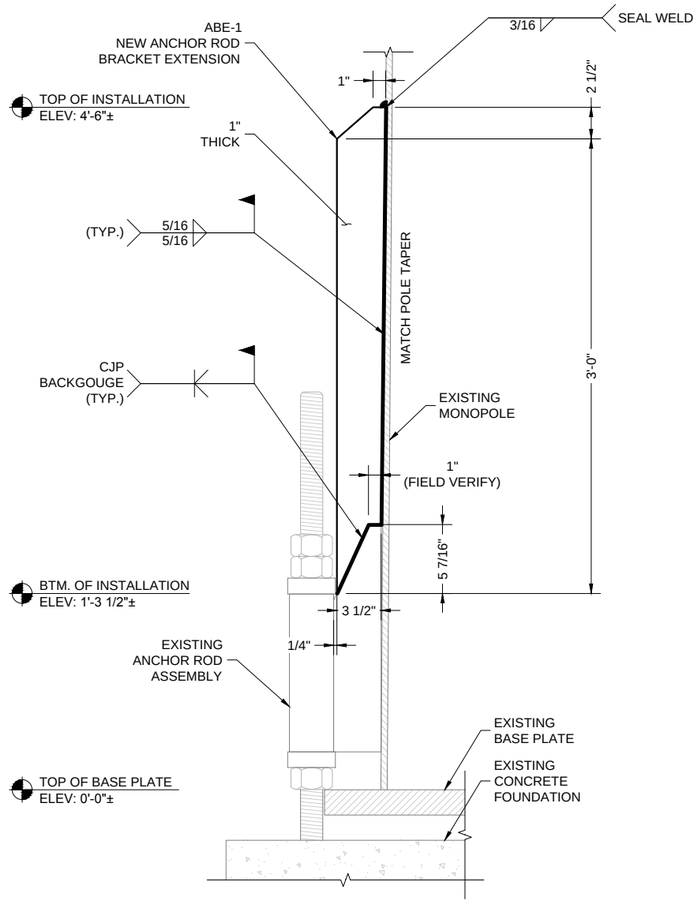
ANCHOR ROD BRACKET EXTENSION MATERIAL SCHEDULE

PART NO.	DESCRIPTION
(4) ABE-1	ANCHOR ROD BRACKET EXTENSION



ANCHOR ROD LAYOUT
PLAN VIEW

1 / S-15 SECTION NTS



ANCHOR ROD BRACKET EXTENSION DETAIL
ELEVATION VIEW

2 / S-15 SECTION NTS

PREPARED BY:

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SITE NAME:

NEWTOWN DINGLEBROOK

SITE NUMBER:

857525

SITE ADDRESS:

24 DINGLEBROOK LANE NEWTOWN, CT 06470

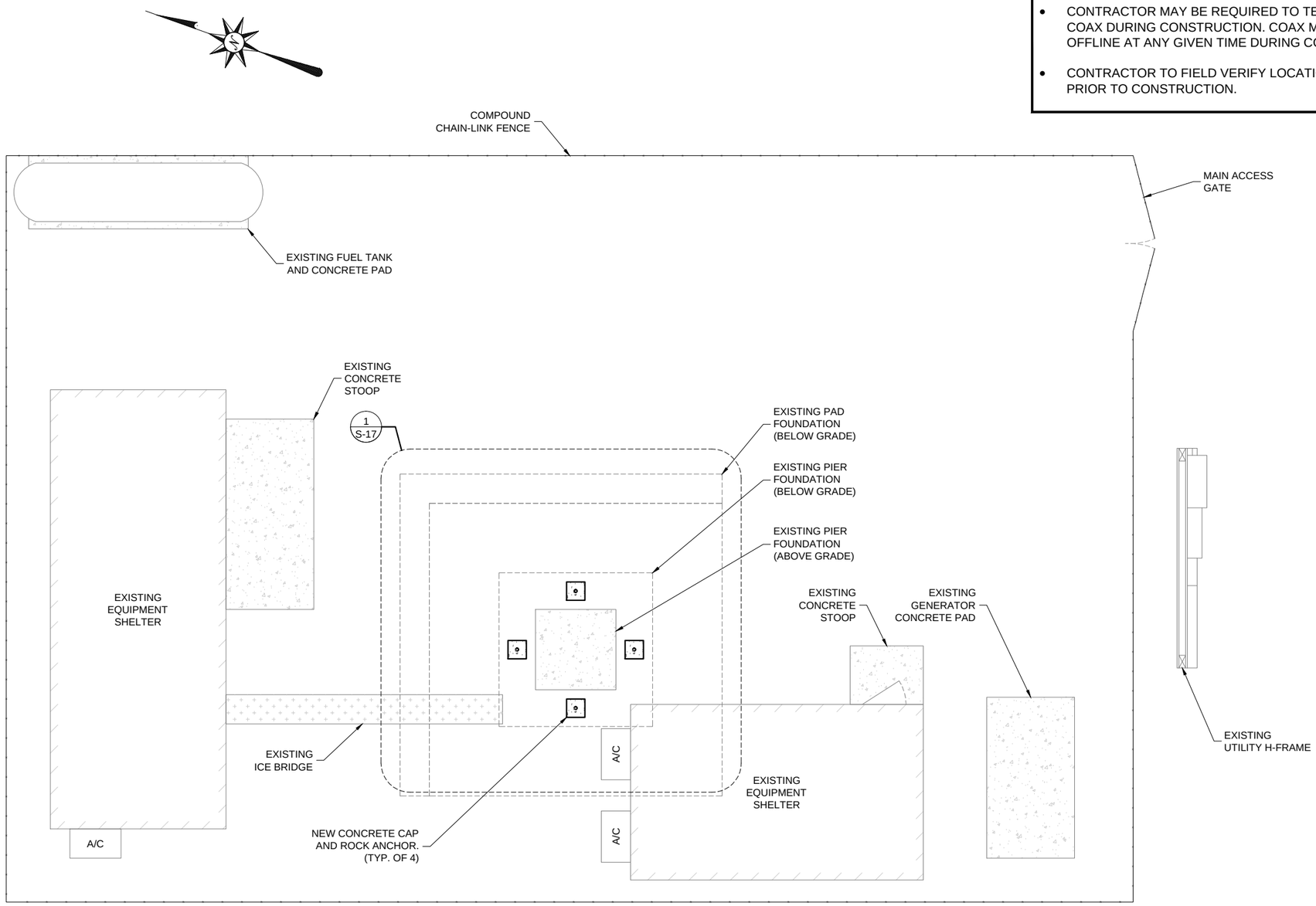
SHEET TITLE

ANCHOR ROD BRACKET EXTENSION INSTALLATION DETAILS

SHEET NUMBER

S-15

- CONTRACTOR RESPONSIBLE TO FIELD VERIFY EXISTING COMPOUND LAYOUT.
- CONTRACTOR TO PERFORM SITE VISIT TO DETERMINE INTERFERENCES PRIOR TO CONSTRUCTION.
- CONTRACTOR RESPONSIBLE FOR REPLACING ANY GROUNDING MATERIAL THAT MAY NEED TO BE REPLACED OR REMOVED DUE TO PROPOSED INSTALLATION.
- CONTRACTOR MAY BE REQUIRED TO TEMPORARILY RELOCATE ICE BRIDGES & COAX DURING CONSTRUCTION. COAX MUST NOT BE DAMAGED OR TAKEN OFFLINE AT ANY GIVEN TIME DURING CONSTRUCTION.
- CONTRACTOR TO FIELD VERIFY LOCATION OF ALL UTILITY LINES BELOW GRADE PRIOR TO CONSTRUCTION.



SITE PLAN
PLAN VIEW

1
S-16
PLAN
NTS

PREPARED BY:

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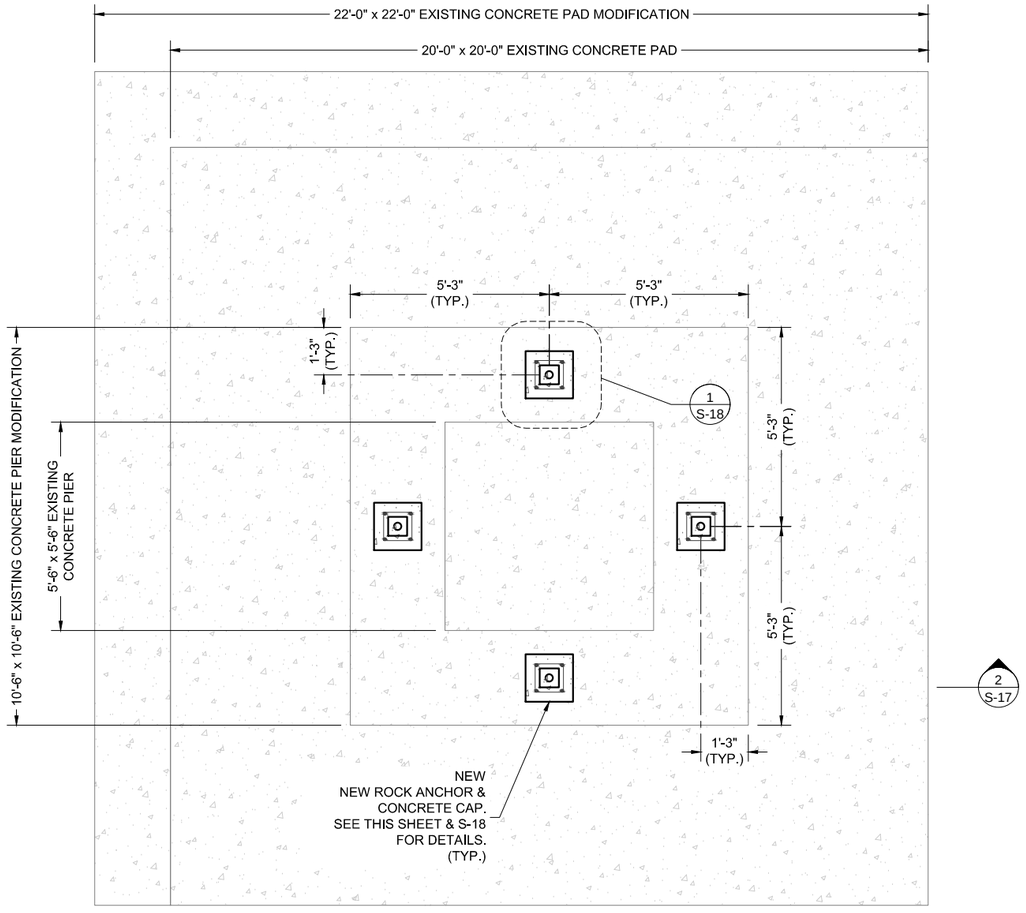
SHEET TITLE

SITE PLAN

SHEET NUMBER

S-16



ROCK ANCHOR AND CONCRETE CAP LAYOUT
PLAN VIEW

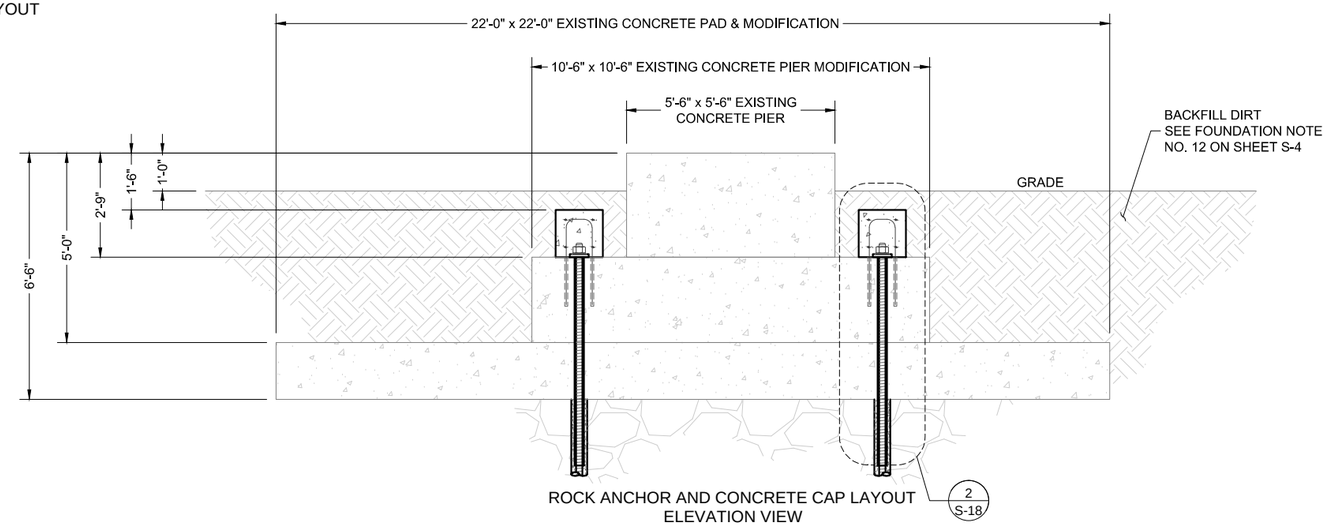
1 S-17 DETAIL
SCALE: NTS

ROCK ANCHOR AND CONCRETE CAP MATERIAL LIST

PART NO.	SHAPE	QTY [1]	LENGTH	DESCRIPTION
R-1 [2]		8	5'-0"±	#7 REBAR WITH A 90° HOOK AT BOTH ENDS
R-2 [2]		8	4'-0"±	#3 STIRRUPS W/ A 135° HOOK ON BOTH ENDS
P-1	-	4	-	BEARING PLATE, 6"X6"X1" W/ 2 7/8"Ø HOLE IN CENTER (Fy = 65 KSI)
R71-18	-	4	20'-3"±	NEW 2 1/2"Ø (2.75" O.D.) WILLIAMS THREADED BAR (Fu = 150 KSI)
R73-20	-	4	-	R73 HEX NUT
R9F-22-436	-	4	-	R9F HARDENED WASHER
-	-	AS REQ'D	-	PVC CENTRALIZER
-	-	4	6'-9"	GREASE FILLED, SMOOTH PVC SLEEVE
-		1	0.3± CU. YD.	4,000 PSI CONCRETE
-		1	0.3± CU. YD.	5,000 PSI GROUT

1. QUANTITIES REFLECT INFORMATION FOR (1) ENTIRE TOWER FOUNDATION .
2. MINIMUM BEND DIAMETER OF REBAR SHOULD BE UTILIZED. USE 6* Db UNLESS OTHERWISE NOTED.

- PISTON PLUGS SHOULD BE USED IN ALL APPLICATIONS WHERE INJECTION ADHESIVE IS REQUIRED.



ROCK ANCHOR AND CONCRETE CAP LAYOUT
ELEVATION VIEW

2 S-17 DETAIL
SCALE: NTS

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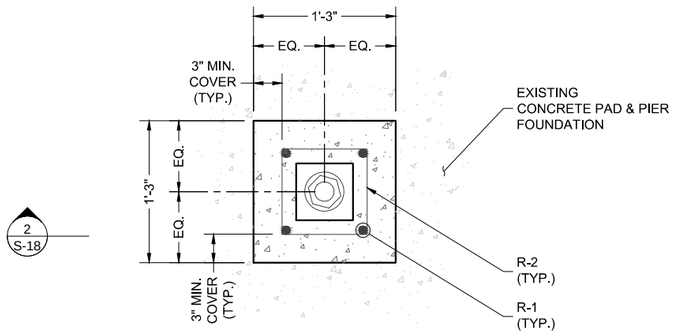
SHEET TITLE

ROCK ANCHOR AND CONCRETE CAP INSTALLATION DETAILS I

SHEET NUMBER

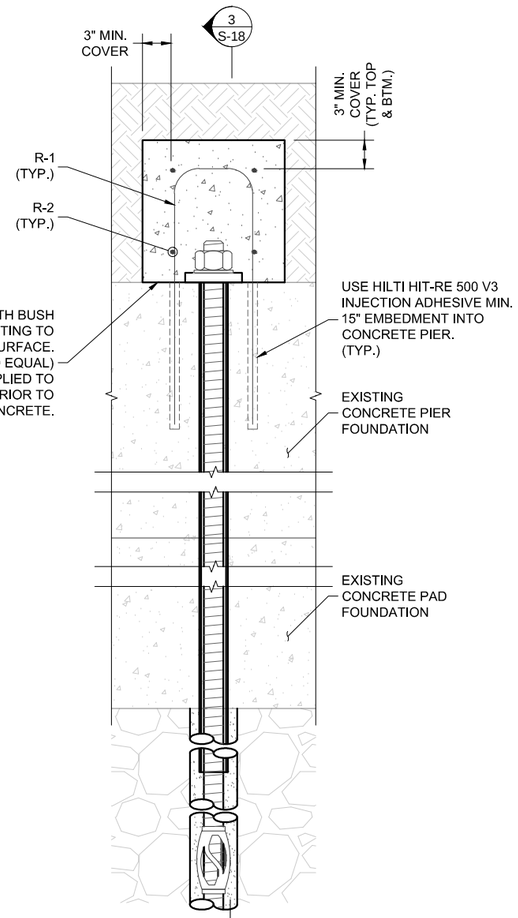
S-17



2 S-18

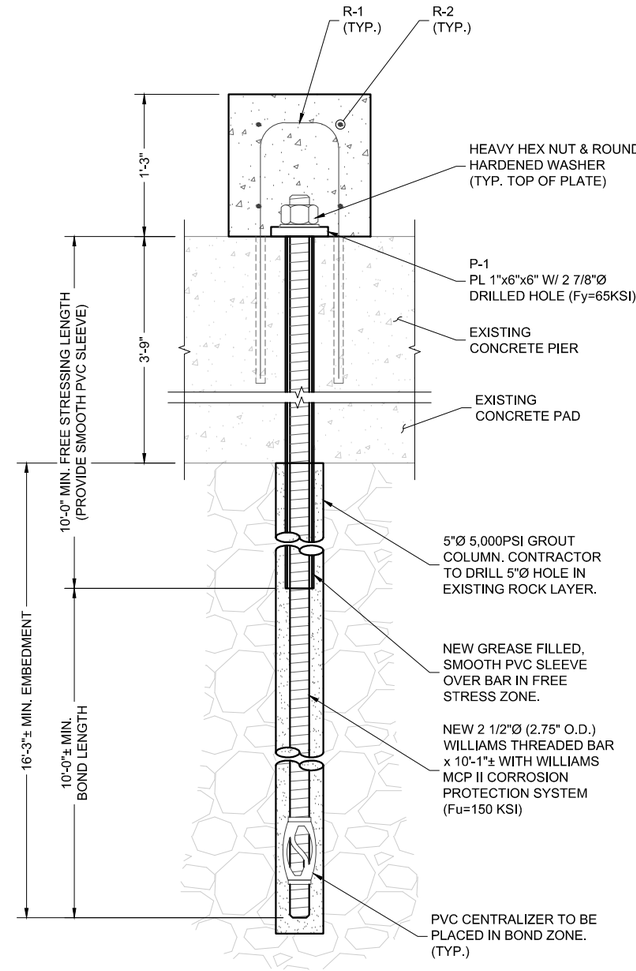
ROCK ANCHOR AND CONCRETE CAP LAYOUT
PLAN VIEW

1 S-18 DETAIL
SCALE: NTS



ROCK ANCHOR AND CONCRETE CAP LAYOUT
SECTION VIEW

2 S-18 DETAIL
SCALE: NTS



ROCK ANCHOR AND CONCRETE CAP LAYOUT
ELEVATION VIEW

3 S-18 DETAIL
SCALE: NTS

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SHEET TITLE

ROCK ANCHOR AND CONCRETE CAP INSTALLATION DETAILS II

SHEET NUMBER

S-18

EBI Consulting
environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTFF013A

Crown Newtown Dinglebrook
24 Dinglebrook Lane
Newtown, CT 06470

November 7, 2018

EBI Project Number: 6218007048

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	7.58 %

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

EBI Consulting
environmental | engineering | due diligence

November 7, 2018

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

Emissions Analysis for Site: **CTFF013A – Crown Newtown Dinglebrook**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **24 Dinglebrook Lane, Newtown, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 MHz frequency band is approximately 467 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency 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 **24 Dinglebrook Lane, Newtown, 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 for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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) 1 UMTS channel (AWS Band – 2100 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

2) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 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) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

5) 1 microwave backhaul channel (11 GHz) was considered for sector A of the proposed facility. This channel has a transmit power of 1 Watt.

6) 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.

7) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

8) The antennas used in this modeling are the **Ericsson AIR32 B2A/B66AA** & **RFS APXVAA24-43-U-A20** for 1900 MHz (PCS), 2100 MHz (AWS) 700 MHz channels as well as the **Commscope SC2-W100AB** for the proposed 11 GHz microwave backhaul. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

9) The antenna mounting height centerline of the proposed antennas (both panel antennas and microwave dish) is **128 feet** above ground level (AGL).

10) 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.

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

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C	Sector:	D
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR32 B2A/B66AA	Make / Model:	Ericsson AIR32 B2A/B66AA	Make / Model:	Ericsson AIR32 B2A/B66AA	Make / Model:	Ericsson AIR32 B2A/B66AA
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	128 feet	Height (AGL):	128 feet	Height (AGL):	128 feet	Height (AGL):	128 feet
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	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	5	Channel Count	5	Channel Count	5	Channel Count	5
Total TX Power(W):	160	Total TX Power(W):	160	Total TX Power(W):	160	Total TX Power(W):	160
ERP (W):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72
Antenna A1 MPE%	**1.50**	Antenna B1 MPE%	**1.50**	Antenna C1 MPE%	**1.50**	Antenna D1 MPE%	**1.50**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAA24-43-U-A20	Make / Model:	RFS APXVAA24-43-U-A20	Make / Model:	RFS APXVAA24-43-U-A20	Make / Model:	RFS APXVAA24-43-U-A20
Gain:	13.35 dBd	Gain:	13.35 dBd	Gain:	13.35 dBd	Gain:	13.35 dBd
Height (AGL):	128 feet	Height (AGL):	128 feet	Height (AGL):	128 feet	Height (AGL):	128 feet
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	4	Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	40	Total TX Power(W):	40	Total TX Power(W):	40	Total TX Power(W):	40
ERP (W):	865.09	ERP (W):	865.09	ERP (W):	865.09	ERP (W):	865.09
Antenna A2 MPE%	**0.45**	Antenna B2 MPE%	**0.45**	Antenna C2 MPE%	**0.45**	Antenna D2 MPE%	**0.45**

Microwave Backhaul Data

Make / Model:	Gain	Height (AGL):	Frequency Bands	Channel Count	Total TX Power(W)	ERP (W)	MPE %	Sector
Commscope SC2-100AB	32.35 dBd	128	11 GHz	1	1	1717.91	**0.04**	A

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Sector A)	**1.99 %**
AT&T	**1.55** %
Verizon Wireless	**4.04** %
Site Total MPE %:	**7.58 %**

T-Mobile Sector A Total:	1.99 %
T-Mobile Sector B Total:	1.95 %
T-Mobile Sector C Total:	1.95 %
T-Mobile Sector C Total:	1.95 %
Site Total:	7.58 %

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile _Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile PCS - 1900 MHz LTE	2	1,556.18	128	7.52	PCS - 1900 MHz	1000.00	0.74%
T-Mobile AWS - 2100 MHz LTE	2	778.09	128	3.76	AWS - 2100 MHz	1000.00	0.38%
T-Mobile AWS - 2100 MHz UMTS	1	1,556.18	128	3.76	AWS - 2100 MHz	1000.00	0.38%
T-Mobile 700 MHz LTE	2	432.54	128	2.09	700 MHz	467.00	0.45%
T-Mobile 11 GHz Microwave	1	1,717.91	128	0.41	11 GHz	1000.00	0.04%
						Total:	**1.99%**

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	1.99 %
Sector B:	1.95%
Sector C:	1.95%
Sector D:	1.95%
T-Mobile Maximum MPE % (Sector A):	1.99 %
Site Total:	7.58 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.58%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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