brownrudnick

THOMAS J. REGAN

September 2, 2022

VIA E-MAIL (SITING.COUNCIL@CT.GOV) & (MELANIE.BACHMAN@CT.GOV)
& OVERNIGHT MAIL

Connecticut Siting Council
Attn: Melanie A. Bachman, Esq., Executive Director
Ten Franklin Square
New Britain, CT 06051

RE: Sub-Petition for Declaratory Ruling – Olcott Street, Manchester

Dear Executive Director Bachman:

Please find enclosed for filing an original and 15 copies of New Cingular Wireless PCS LLC d/b/a AT&T's ("AT&T") sub-petition for a declaratory ruling for the approval of an eligible facilities request for collocation and modification of an existing wireless telecommunications facility without substantial physical change to the existing tower at 324 Olcott Street (also known as 250 Olcott Street), Manchester, Connecticut.

Sincerely,

BROWN RUDNICK LLP

Thomas Regan

THOMAS J. REGAN

cc: Mayor Jay Moran
Town of Manchester
P.O. Box 191
41 Center Street
Manchester, CT 06040

Gary Anderson, Director of Planning
Town of Manchester
P.O. Box 191
41 Center Street
Manchester, CT 06040

David Laiuppa, Wetlands Agent
Town of Manchester
P.O. Box 191
41 Center Street
Manchester, CT 06040

Darryl E. Thames, Sr., City Clerk
Town of Manchester
P.O. Box 191
41 Center Street
Manchester, CT 06040

Steven Florio, Eversource via e-mail (steven florio@eversource.com)

64827313

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

NEW CINGULAR WIRELESS PCS, LLC (AT&T)
SUB-PETITION FOR A DECLARATORY RULING
FOR COLLOCATION AND MODIFICATION
TO THE EXISTING TELECOMMUNICATIONS
FACILITY ON PROPERTY LOCATED AT
324 OLCOTT STREET (ALSO KNOWN AS
250 OLCOTT STREET), MANCHESTER,
CONNECTICUT.

SUB-PETITION NO. _____

September 2, 2022

SUB-PETITION FOR A DECLARATORY RULING

I. INTRODUCTION

On behalf of New Cingular Wireless PCS LLC d/b/a AT&T ("AT&T"), we respectfully submit this sub-petition (the "Sub-Petition") to the Connecticut Siting Council (the "Council") for an administrative approval of a modification to an existing wireless telecommunications facility qualifying as an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation Act of 2012 (the "Spectrum Act", codified at 47 U.S.C. §1455) and the Council's ruling in Petition 1133 (the "Ruling") by collocating nine (9) panel antennas at the 124' above ground level ("AGL") antenna centerline height on the existing 180' lattice tower (the "Tower") with antennas extending to a top height of 186.8', located on property with an address of 324 Olcott Street (also known as 250 Olcott Street), Manchester, Connecticut (the "Site"). The Site is located within the IND (Industrial) zoning district. The surrounding area is a mix of industrial, commercial and residential uses. **Attachment 1** contains a letter from Eversource Energy, the owner of the tower, authorizing AT&T to file this Sub-Petition. The modification and collocation will allow AT&T to provide wireless voice and data service to AT&T's customers.

II. HISTORY OF EXISTING TELECOMMUNICATIONS FACILITY

The existing Tower is owned by Eversource and was approved by the Council on July 20, 2018 in Docket No. 1346 (please see a copy of the decision at **Attachment 2**).

III. PROPOSED MODIFICATION

AT&T is licensed by the Federal Communications Commission ("FCC") to provide wireless services in this area of the State of Connecticut. AT&T proposes to collocate nine (9) panel antennas at the 124' AGL antenna centerline height, together with related amplifiers, cables, fiber and other associated antenna equipment, including, without limitation, remote radio heads, surge arrestors, and a global positioning system antenna with associated electronic equipment in a walk-in-cabinet, an emergency backup power propane-fueled generator, and other appurtenances on a proposed equipment pad and a 500-gallon propane tank all located within an existing compound enclosed by a chain link fence (the "Facility") as depicted on the plans submitted with this application as **Attachment 3**. The specifications for the emergency backup power generator are submitted as **Attachment 4**. This Facility will provide voice and data service to AT&T's customers. These services will be provided via 4G and 5G technologies. The 850 MHz and 3500 MHz frequency bands will be used to provide 5G services. This modification may include B2,

B5, B17, B14, B29, B30, B66 and n77 hardware that is 4G (LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

Attachment 5 contains a copy of the structural reports for the Tower and mounting system evidencing that the proposed modification can be supported in accordance with applicable codes. Notice to the FAA is not required for the proposed modification as the antennas will not exceed the height of the existing tower.

Once AT&T receives all required approvals, the installation of the Facility will take approximately three (3) to four (4) weeks and will be constructed during normal business hours. Construction is scheduled to commence in 2022.

IV. SECTION 6409 OF THE SPECTRUM ACT

Section 6409(a) of the Spectrum Act mandates that state and local governments "may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station."[1] An eligible facilities request is defined in the Spectrum Act as any request to modify a Tower or Base Station that involves collocation, removal or replacement of Transmission Equipment.[2]

The modification proposed by AT&T in this Sub-Petition do not substantially change the physical dimensions of the Tower in accordance with the Spectrum Act and as interpreted and implemented by regulations (the "Regulations") [3] promulgated by the FCC. The equipment identified in this eligible facilities request to be collocated at the Site qualifies as transmission equipment pursuant to the FCC definition. The FCC has defined transmission equipment as "any equipment that facilitates transmission for any Commission-licensed or authorized wireless communication service, including, but not limited to, radio transceivers, antennas and other relevant equipment associated with and necessary to their operation, including coaxial or fiber-optic cable, and regular and back-up power supply. This definition includes equipment used in any technological configuration associated with any Commission-authorized wireless transmission, licensed or unlicensed, terrestrial or satellite, including commercial mobile, private mobile, broadcast and public safety services, as well as fixed wireless services such as microwave backhaul or fixed broadband." [4]

Pursuant to the Regulations, the FCC determined that any modification to an existing telecommunications tower that meets six (6) specified criteria does not substantially change the physical dimensions of the existing tower and, therefore, is an eligible facilities request, approval of which must be granted.[5] These six criteria and analysis of how this eligible facilities request satisfies each of the six (6) review criteria identified by the FCC are discussed below.

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[1] 47 U.S.C. §1455(a)(1).
[2] 47 U.S.C. §1455(a)(2).
[3] 47 C.F.R. §1.6100(b).
[4] 47 C.F.R. §1.6100(b)(8).
[5] 47 C.F.R. §1.6100(b)(7).

1. **For towers not in the public rights-of-way, the modification increases the height of the Tower by more than 10% or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet (20'), whichever is greater**;

   As depicted on the Plans, AT&T's proposed modification does not increase the height of the Tower at all.

2. **For towers not in the public rights-of-way, the modification involves adding an appurtenance to the body of the Tower that would protrude from the edge of the tower by twenty feet (20') or more than the width of the Tower at the level of the appurtenance, whichever is greater;**

   As depicted on the Plans, AT&T's antennas and appurtenances will not protrude from the edge of the Tower by more than twenty feet (20'). The outside face of the antenna is approximately six feet (6') from the edge of the Tower and consistent with the existing antenna installation on the Tower.

3. **For any eligible support structure, in this case the Tower, the modification involves installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets;**

   AT&T proposes only one walk-in equipment cabinet.

4. **The modification entails any excavation or deployment outside the current Site;**

   AT&T does not propose any excavation or deployment outside the current Site.

5. **The modification would defeat the concealment elements of the eligible support structure; or**

   The Tower does not incorporate concealment elements. The new panel antennas will be mounted in a similar fashion to the existing panel antennas.

6. **The modification does not comply with conditions associated with the siting approval of the construction or modification of the eligible support structure or base station equipment, provided however that this limitation does not apply to any modification that is non-compliant only in a manner that would not exceed the thresholds identified in § 1.40001(b)(7)(i) through (iv).**

   The modification is consistent with all applicable terms and conditions of the Council's decision of approval in Docket 1346.

IV. MAXIMUM PERMISSIBLE EXPOSURE COMPLIANCE

The power density levels for AT&T's proposed Facility will not exceed 21.47% of the FCC emission standards for the public. Please refer to the calculated radio frequency emissions analysis submitted as **Attachment 6**. The total radio frequency power density will comply with the standards adopted by the Connecticut Department of Environmental Protection and the Maximum Permissible Exposure limits adopted by the FCC.

VI. NOTICE TO MUNICIPAL OFFICIALS AND ABUTTING PROPERTY OWNERS

Pursuant to the Ruling, AT&T sent notice of its filing of this Sub-Petition to the Town of Manchester and to each abutting property owner as listed in the Town of Manchester's Assessor records. The notice indicates that comments or concerns should be submitted to the Council within thirty (30) days of the date the notice was sent. A certification of such notice, a copy of the notice, the list of Town officials and abutting property owners, and a map produced from the Town of Manchester's GIS mapping data are submitted herewith as **Attachment 7**.

V. CONCLUSION

AT&T respectfully asserts that its proposed modification does not substantially change the physical dimensions of the Tower at the Site as enumerated in the Spectrum Act and the Regulations, and therefore qualifies as an eligible facilities request. For the foregoing reasons, AT&T respectfully requests that the Council issue an order approving AT&T's proposed wireless telecommunications facility.

Respectfully submitted,

/s/ Thomas J. Regan
Thomas J. Regan, Esq.

64809767-024519/1681

ATTACHMENT 1

Steven Florio
Telecom Engineering
Construction Manager

107 Selden St
Berlin, CT 06037
Office: (860) 728-5611
Steven Florio@Eversource.com

Mr. Tim Burks
Agent for AT&T
SAI Communications
12 Industrial Way
Salem, New Hampshire, 03079

August 10, 2022

RE: Letter of Authorization

Project: AT&T Wireless Site Ref.# CT1425S
250 Olcott Street
Manchester, CT. 06040
Owner: Eversource Energy

Dear Mr. Burks,

Eversource Energy, owner of the tower facility located at the address identified above, do hereby authorize AT&T Wireless, and/ or it's agent to use this authorization letter for the sole purpose of filing and consummating any land-use or building permit application(s) as may be required by the applicable permitting authorities for the Licensee's telecommunication's installation.

Sincerely,

Steven Florio

Steven J. Florio
Eversource Energy

REF: All Points Technology Corp.
CD's Dated 11/25/2020, Rev8. Dated 06/15/2022
Structural Analysis File # CT1931643, Dated 04/01/2021, Rev2. Dated 06/15/2022

ATTACHMENT 2

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

July 20, 2018

Kathleen M. Shanley
Manager-Transmission Siting
Eversource Energy
P.O. Box 270
Hartford, CT 06141-0270

RE: **PETITION NO. 1346** - The Connecticut Light and Power Company d/b/a Eversource Energy petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed replacement and relocation of an existing telecommunications facility and an existing relay and control enclosure located at Manchester Substation, 250 Olcott Street, Manchester, Connecticut, and related substation improvements.

Dear Ms. Shanley:

At a public meeting held on July 19, 2018, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need, with the following conditions:

1. Approval of any minor project changes be delegated to Council staff;

2. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility 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 decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;

3. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Town of Manchester;

4. Unless otherwise approved by the Council, the existing tower shall be removed within 180 days of the installation of the new self-supporting lattice tower;

5. The Council shall be notified in writing within 45 days of when the existing tower is removed and the new self-supporting lattice tower is operational unless a written request for an extension is submitted to the Council within that timeframe;

6. Within 45 days after completion of construction of the control enclosure, the Council shall be notified in writing that construction has been completed;

7. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;

8. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and

9. If the facility owner/operator is a wholly owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated June 1, 2018 and additional information received on June 7, 2018, July 9, 2018 and July 10, 2018.

Enclosed for your information is a copy of the staff report on this project.

Sincerely,

Robert Stein MAB

Robert Stein
Chairman

RS/MP/lm

Enclosure: Staff Report dated July 19, 2018

c: The Honorable Jay Moran, Mayor, Town of Manchester
Scott A. Shanley, General Manager, Town of Manchester
James Davis, Zoning Enforcement Officer, Town of Manchester

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

Petition No. 1346
Eversource
Manchester Substation, Manchester, Connecticut
Staff Report
July 19, 2018

Introduction

On June 1, 2018, The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) submitted a petition to the Connecticut Siting Council (Council) for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k for the proposed replacement and relocation of an existing telecommunications facility and an existing relay and control enclosure and related substation improvements at Manchester Substation, 250 Olcott Street, Manchester, Connecticut.

Council member Daniel P. Lynch, Jr. and Council staff member Michael Perrone conducted a field review of the proposed project on June 19, 2018. Paul Melzen, Substation Engineer, Eversource; Steven Florio, Construction Manager, Eversource; Ryan Ericson, Telecom Engineer, Eversource; Matthew LeClair, Substation Engineer, Eversource; Shodan Patel, Project Manager, Eversource; Susan Bellion, Project Siting Specialist, Eversource; Ian Cole, Environmental, Eversource; and Kyle Shiel, Senior Planner, Town of Manchester Planning Department also attended the field review.

Eversource met with the Town of Manchester officials in February 2018. Notice of the Petition was provided to the Town of Manchester and abutting property owners on or about May 30, 2018. To date, the Council has not received any comments regarding the Petition filing.

The Council issued interrogatories to Eversource on June 22, 2018 and July 2, 2018. Eversource submitted responses to Council interrogatories on July 9, 2018 and July 10, 2018, respectively.

On June 21, 2018, pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act (UAPA), which requires an administrative agency to take action on a petition within 60 days of receipt, the Council voted to set the date by which to render a decision on the above-referenced petition by November 28, 2018. November 28, 2018, is the statutorily-mandated 180-day decision deadline for this petition under CGS §4-176(i).

Proposed Project

Manchester Substation is located on a 30.4-acre parcel surrounded by a mix of municipal, commercial and industrial facilities including the Town of Manchester Landfill, Transfer Station, and Sewage Treatment Plant located north of the subject property and residential areas located to the east and southwest. The nearest residence is located off of Olcott Street West, approximately 540 feet southwest of the proposed replacement tower compound.

Eversource would remove an existing communications tower and existing 345-kV relay and control enclosure from the center of the substation and replace them with a new communications tower and new 115-kV/345-kV relay and control enclosure to the west of the current positions. The proposed replacement tower would be located outside of the substation fence line, and the replacement enclosure would be located within an expanded area of the substation.

The replacement tower and replacement control enclosure project is being proposed to allow for future upgrades and newer telecommunications technologies to be installed at the site. It would provide future capacity for Eversource, municipal and emergency communications and commercial wireless service providers. The control enclosure portion of the project is identified in Eversource's 2018 Forecast of Loads and Resources dated March 1, 2018 and in the June 2018 ISO-New England Regional System Plan Asset Condition Update as the proposed "Manchester Control House Expansion" with an estimated in-service date of 2019.

Tower Replacement

The existing tower is an approximately 200-foot self-supporting lattice tower located inside the fenced substation. It is 30 feet wide at the base, and it tapers to 8-feet 6-inches wide at the top. The existing tower contains antennas of multiple entities including, but not limited to, Eversource, Hartford Ops/Meter & Service, Talcott Microwave, DSCADA, EDACS/Voice Radio, Bolton Microwave, Sprint[1], Yankee Gas, and Hartford Underground.

The proposed replacement tower would be a 180-foot self-supporting lattice tower. It would be 23 feet wide at the base and tapering to 5-feet wide at the top. It would be located approximately 435 feet to the west of the existing tower location (and outside of the fenced substation). The proposed (and future) antenna inventory is listed below.

Antenna Type[1]	Antenna Make/Model or Capacity[2]	Antenna Center Line Elevation (ft. AGL)	Comments	Frequency (MHz)
14-ft. Omni	(1) Kreco CO-41-AN	±187.0	Hartford Ops / Meter & Service	RX: 49.02
19.2-ft. Dual Omni w/TTA	(1) dbSpectra DS9A09F36D-N (1) Bird 430-94C-09168-M-110_48	±189.4	DSCADA	TX: 936.95 & 938.95 RX: 897.95 & 899.95
23.3-ft. Dual Omni	(1) Sinclair SC351D-HF2LDF(D00-G6)	±187.3	EDACS / Voice Radio	TX: 451.675 RX: 456.675
8' Dish w/ Radome	(1) RFS PADX8-W59AC	±175.0	Bolton Microwave	TX: 6093.45 RX: 6345.49
8' Dish w/ Radome	(1) RFS PADX8-W59AC	±175.0	Talcott Microwave	TX: 6004.50 RX: 6256.54
8' Dish w/ Radome	(1) RFS PADX8-W59AC	±175.0	Future Eversource	NA - Future Dish
8' Dish w/ Radome	(1) RFS PADX8-W59AC	±164.0	Future Eversource	NA - Future Dish
23.3-ft. Dual Omni	(1) Sinclair SC351D-HF2LDF(D00-G6)	±156.4	Future Eversource	NA - Future Antenna
10-ft Dipole	(1) Sinclair SD212-SF2P2SNF(D00)	±163.0	Yankee Gas	TX & RX: 173.39625
15.75-ft Dipole	(1) Comprod 531-70HD*8	±158.1	Hartford Underground	TX & RX: 47.90
Wireless Carrier	(12) Panel Antennas (8'x1'), (12) RRHs, (3) MDB	±135.0	Future Carrier	TBD
Wireless Carrier	(12) Panel Antennas (8'x1'), (12) RRHs, (3) MDB	±125.0	Future Carrier	TBD
Wireless Carrier	(12) Panel Antennas (8'x1'), (12) RRHs, (3) MDB	±115.0	Future Carrier	TBD
Wireless Carrier	(12) Panel Antennas (8'x1'), (12) RRHs, (3) MDB	±105.0	Future Carrier	TBD

[1] Sprint PCS is the only commercial wireless telecommunications carrier on the existing tower. The relocation of Sprint onto the replacement tower would require a separate filing with the Council for review and approval. Thus, it is not yet known which height Sprint would co-locate at on the replacement tower in the future.

The total height with appurtenances would be approximately 199 feet, i.e. the tops of the 19.2-foot and 23.3-foot omni antennas would reach a maximum height of approximately 199 feet.

A Professional Engineer duly licensed in the State of Connecticut has certified that the proposed replacement tower is structurally adequate to support the proposed (and future) loading as identified above. Specifically, the proposed replacement tower is designed support all existing entities and a total of four future wireless carriers (i.e. Sprint plus three other carriers).

Once the replacement tower is constructed and operational, the existing tower would be removed.

The proposed replacement tower radius would remain within the boundaries of the subject property.

An existing fenced laydown area located to the west of the substation (but still on the subject property) would be removed to accommodate the proposed approximately 69-foot 9-inch by 94-foot 4-inch tower compound. The proposed compound fence would be eight feet tall anti-climb mesh fence with three strands of barbed wire on top that would add approximately one foot of additional height. Eversource would install a 10-foot by 20-foot equipment shelter inside the proposed tower compound.

A new electrical power supply for the proposed replacement tower would be trenched underground from an existing Eversource utility pole (#3343), located approximately 217 feet to the west on Olcott Road to a new electrical service panel located just outside of the proposed compound. For backup power, Eversource's proposed 20-kW propane-fueled generator would be located on a 4-foot by 6-foot concrete pad within the proposed tower compound. Eversource's generator is sized for its needs only. Eversource's proposed 1,000-gallon propane tank would be located within the tower compound and would provide approximately five days of run time at 100-percent load.

Substation Modifications/Expansion

The proposed substation modifications would require the removal of the existing 11-foot by 16-foot control enclosure from the interior of the substation and the removal of approximately 400 feet of existing substation security fencing from the western side of the substation. These modifications would allow for an approximately 21,470 square foot expansion of the substation to the west to accommodate the new 150-foot by 32-foot replacement control enclosure.

New water and sewer lines would be run to the new control enclosure. The existing water and sewer lines that currently supply the 345-kV control enclosure would be removed from the substation and capped at a location just inside the substation fence line.

Additional substation modifications would include the replacement of three existing 115-kV oil-filled circuit breakers with new gas-insulated circuit breakers and the installation of two new station service transformers to feed the replacement enclosure.

The base of the substation expansion area would match the existing ground surface with gravel, and the final fence design of the proposed substation expansion area would match the fence design of the existing substation.

Environmental Effects and Mitigation Measures

The substation expansion area for the new control enclosure and new tower compound would require minimal grading. However, the proposed project would require soil removal for the new tower foundation excavation and fill to remediate below grade facilities and foundations. Approximately 460 cubic yards of material would be removed for the construction of the tower and compound. Approximately 5,200 cubic yards of material would be removed for the construction of the new control enclosure, below-grade facilities and the new security fence. The removal of the obsolete 345-kV control enclosure and existing below-grade facilities would require approximately 3,500 cubic yards of fill.

If the quality of the excavated material is acceptable, it would be reused on site. If soil cannot be reused on-site, it would be field sampled for characterization and disposed of at a pre-approved soil disposal facility in accordance with Eversource polices and state and federal regulations.

Approximately 12 conifers greater than six inches diameter and several small deciduous saplings would be removed for the expansion of the substation and replacement control enclosure. No additional tree removal is anticipated for construction, but if needed, areas to the north and south of the proposed substation modifications would be cleared and re-graded to allow for additional work/laydown areas. Specifically, a small scrub/shrub habitat block exists in the southwest corner of the site. This habitat block totals approximately 4.1 acres. If needed, a portion of this habitat block would be cleared and converted to additional work zone and gravel laydown areas to provide additional space for work zones. Due to the relatively small size of this area and the minor clearing proposed, the removal of portions of scrub/shrub habitat block would not be expected to result in a significant negative impact on any dependent wildlife populations.

The foundation design for the proposed station service transformers do not include measures for insulating oil containment because the oil volumes are not significant and do not trigger such requirement under 40 Code of Federal Regulations (CFR) 112. However, in accordance with Federal Spill Prevention Containment & Countermeasure (SPCC) rules under 40 CFR 112, there would be above-ground oil volume triggers that require spill plans and either engineered secondary containment or a strong response plan. Eversource notes that all of its substations are covered under a SPCC Multi Plan, which includes a strong contingency in the event of oil release.

The proposed replacement 115-kV circuit breakers would be gas-insulated using sulfur hexafluoride (SF_6); therefore, oil containment measures are not required.

The project would be located in an upland area and would not be expected to have a significant adverse impact on wetland resources or watercourses because such project area would be limited to areas within or immediately west of the substation footprint. Such wetland/watercourse resources are located east of the substation. An inspection to field delineate wetlands was conducted on February 14, 2018. One wetland area, consisting of a contributing unnamed intermittent watercourse and backwater wetlands/floodplains to the South Fork Hockanum River is located approximately 160 feet north of the existing control enclosure and approximately 356 feet east of the proposed substation fence expansion.

The proposed project is located within the Federal Emergency Management Agency (FEMA) unshaded Zone X, an area outside of the 100-year and 500-year flood zones.

The proposed project is not located with a Connecticut Department of Energy and Environmental Protection (DEEP) Aquifer Protection Area.

Eversource developed and submitted a Stormwater Pollution Control Plan (SWPCP) to DEEP to register under a *General Permit for the Discharge of Stormwater and Remediation Wastewaters from Construction Activities.*

Eversource would conform to its Best Management Practices Manual for Massachusetts and Connecticut, *2002 Connecticut Guidelines for Soil Erosion and Sediment Control,* and the *2004 Connecticut Stormwater Manual,* as applicable. No soil remediation would be required for this proposed project.

The proposed project is located about 0.4 mile outside of the shaded area of the DEEP Natural Diversity Database (NDDB) Map. Because such distance is greater than 0.25 mile, no consultation with DEEP regarding the NDDB is required.

Connecticut is within the range of the northern long-eared bat (NLEB), a federally-listed Threatened species and state-listed Endangered species. There are no known NLEB hibernacula within 0.25 mile of the project or known maternity roost trees within 150 feet of the proposed project area. The existing white pines slated for removal, originally planted as landscape evergreens, do not provide optimal NLEB roosting habitat. Thus, the proposed project is not likely to adversely affect the NLEB.

The proposed replacement tower would not be located near an Important Bird Area (IBA), as designated by the National Audubon Society. The nearest IBA to the proposed replacement tower site is Meshomasic State Forest Block in Manchester, located approximately 2.6 miles to the southeast. The proposed replacement tower would not be expected to adversely impact this IBA because of the distance.

The proposed replacement tower would comply with the United States Fish and Wildlife Service guidelines for minimizing the potential for telecommunications towers to impact bird species.

By letter dated March 26, 2018, the State Historic Preservation Office (SHPO) notes that the area possesses a low potential to contain intact archaeological resources[2]. SHPO also indicated that no historic properties would be affected by the proposed project.

The final fence design of the proposed substation expansion area would be visually consistent with the existing fence design of the substation. While the proposed replacement tower would be located closer to the nearest residence versus the existing tower, it would be 20 feet shorter than the existing tower, and it would be narrower in width.

Construction-related noise is exempt per DEEP noise regulations. Post-construction noise levels would not increase beyond the property boundaries. Therefore, noise emissions would be consistent with present day levels.

Aviation Safety

According to Eversource's TOWAIR analysis, notification to the Federal Aviation Administration is not required.

Magnetic Fields and Radio Frequency Power Density

Magnetic field levels at the property boundaries would not be materially affected by the proposed substation expansion.

The proposed replacement telecommunications facility would have a cumulative worst-case power density of 3.29 percent of the applicable limit using a -10 dB off-beam adjustment.

[2] SHPO incorrectly refers to the replacement tower height as 280 feet.

Construction Schedule

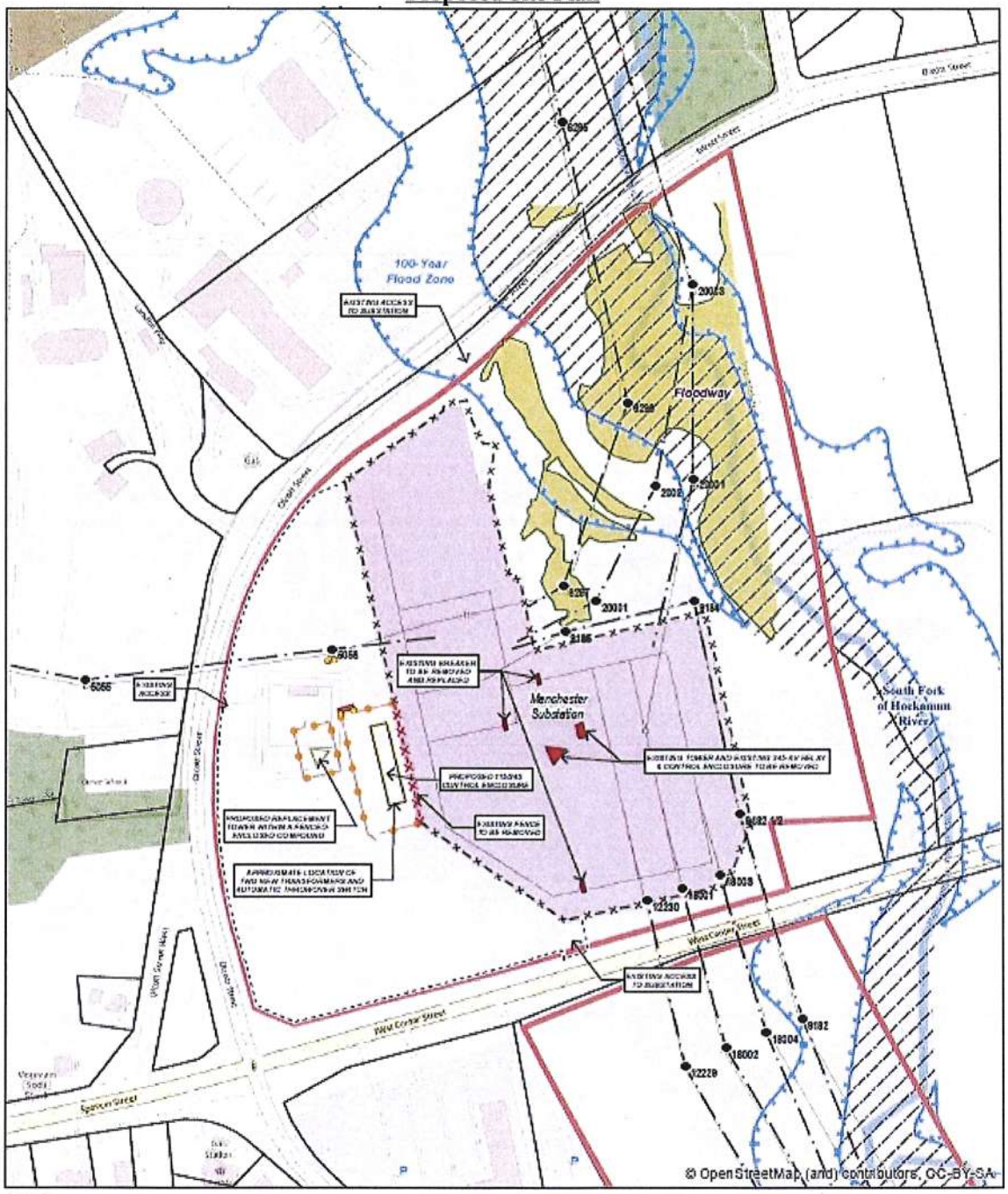
Eversource intends to begin construction in August 2018 and complete construction and restoration by the end of 2020. Removal of the existing tower and existing enclosure would be completed following the installation of the replacement facilities. In general, work hours would be from 7 AM to 7 PM Monday through Saturday. Eversource would submit a request to the Council in advance of the need for any non-standard work hours.

Staff Recommendations

Staff recommends the following:

1. Approval of any minor project changes be delegated to Council staff.

Proposed Site Plan



Legend

- Proposed Control Enclosure
- Replacement Tower
- Existing Fence
- Existing Fence to be Removed
- Proposed Fence
- Proposed Pedestrian Gate
- Strongarm Gate
- Limit of Work/Laydown Area
- Structures to be removed
- Bollard
- Transmission Tower
- Transmission Line
- Eversource Owned Property
- Approximate Parcel Boundary
- Watercourse (CTDEEP)
- Wetland Boundary
- Wetland Area
- FEMA 100-Year Flood Zone
- FEMA Floodway

Map Notes:
Base Map Source: ESRI Open Street Map
Map Scale: 1 inch = 250 feet
Map Date: May 2018

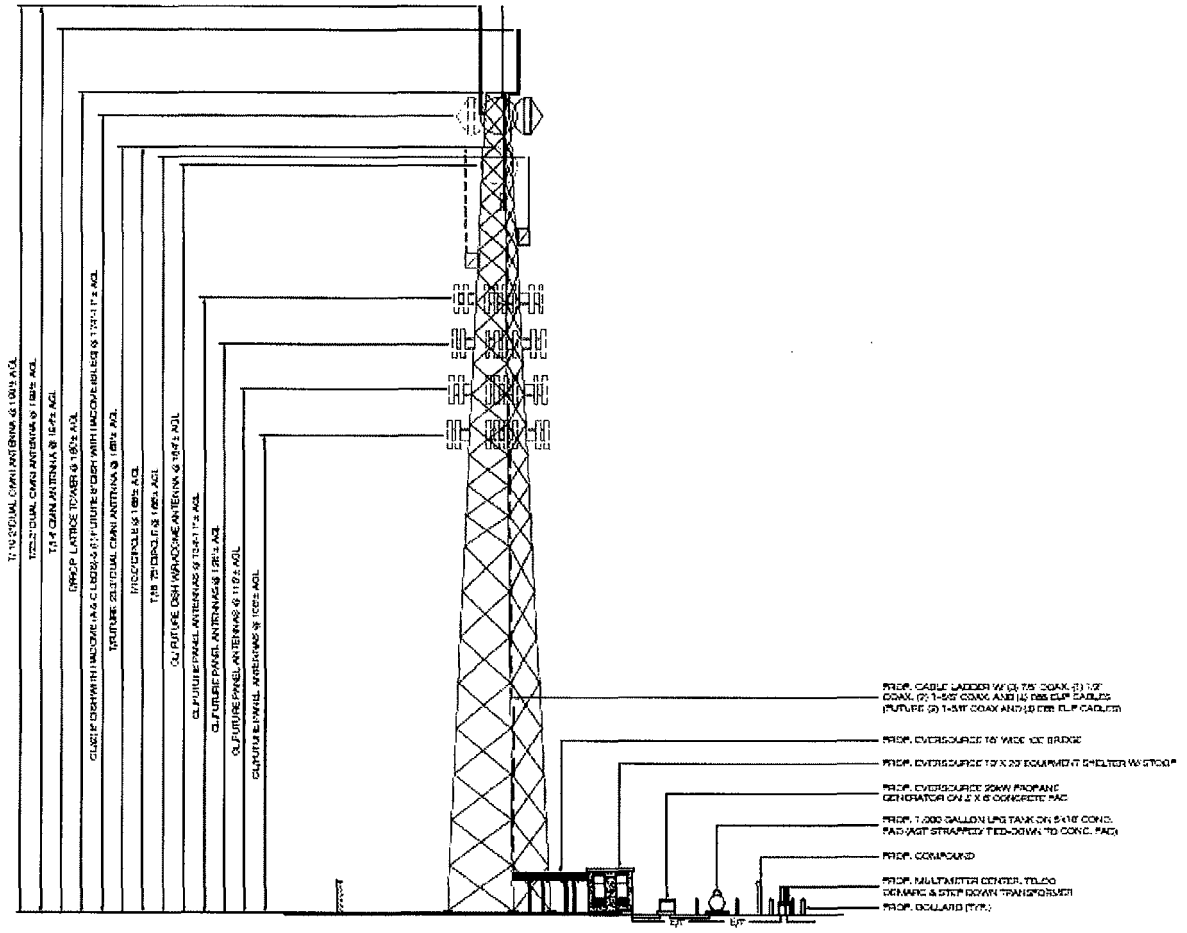
250 125 0 250 Feet

Figure 2
Site Schematic Map
Manchester 3A Substation Expansion and Replacement Communications Facility Project
250 Olcott Street
Manchester, Connecticut

EVERSOURCE ENERGY

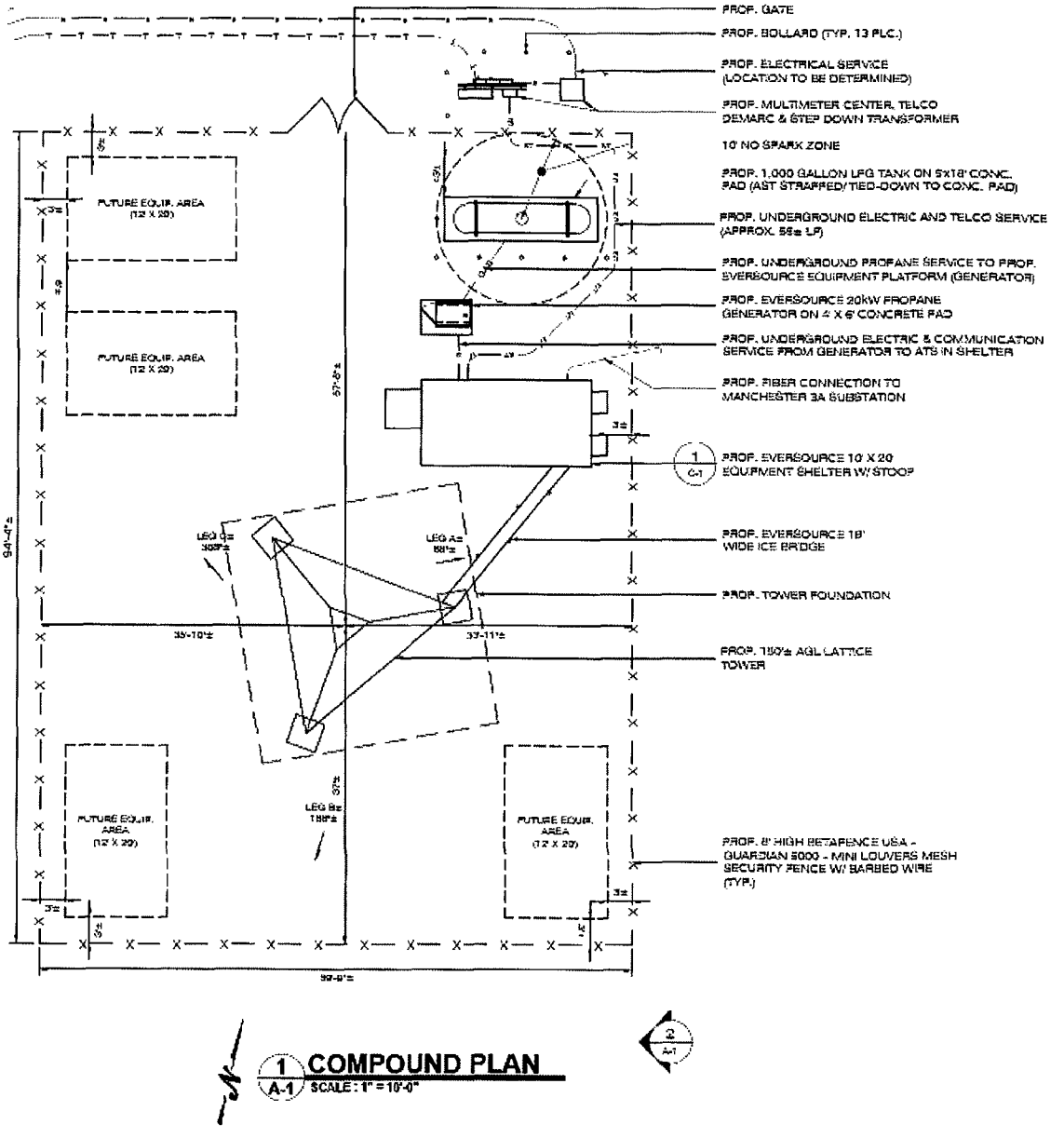
ALL POINTS

Proposed Replacement Tower



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

Proposed Tower Compound



ATTACHMENT 3

SITE NUMBER: CT1425 (NSB)
SITE NAME: MANCHESTER CT OLCOTT STREET
SITE ADDRESS: 250 OLCOTT STREET, MANCHESTER, CT, 06040
FA CODE: 15353155
PACE ID: MRCTB048917
PT NUMBER: 2051A0WKPD
PROJECT: NSB

DRAWING INDEX

811 "CALL BEFORE YOU DIG"

CALL US TOLL FREE 1-800-922-4455 OR 811

EMERGENCY

CALL 911

GOVERNING CODES/STANDARDS:

2015 IBC AS AMENDED BY THE
2018 CONNECTICUT STATE BUILDING CODE/ASCE 7-10
NATIONAL ELECTRIC CODE
ANSI TIA-222H (PER NU SUB-090)

SITE DIRECTIONS

START: 550 COCHITUATE ROAD
FRAMINGHAM, MASSACHUSETTS, 01701

END: 250 OLCOTT STREET
MANCHESTER, CT, 06040

1.	HEAD NORTHWEST TOWARD LEGGATT MCCALL CONN.	276 FT
2.	TURN LEFT ONTO LEGGATT MCCALL CONN.	0.1 MI
3.	CONTINUE ONTO BURR STREET	449 FT
4.	TURN LEFT ONTO COCHITUATE ROAD	331 FT
5.	USE RIGHT LANE TO MERGE ONTO I-90 W TOWARD SPRINGFIELD	1.1 MI
6.	MERGE ONTO I-90 W	37.8 MI
7.	TAKE EXIT 9 FOR I-84 W TOWARD HARTFORD, CT / NEW YORK CITY	0.7 MI
8.	CONTINUE ONTO I-84 W	30.2 MI
9.	KEEP LEFT TO STAY ON I-84	5.1 MI
10.	TAKE EXIT 60-62 FOR US-44	1.4 MI
11.	KEEP LEFT AT FORK, FOLLOW SIGNS FOR I-84 W / HARTFORD	0.4 MI
12.	KEEP RIGHT TO EXIT 60, FOLLOW SIGNS FOR US-44 / MIDDLE TPKE.	0.5 MI
13.	TURN LEFT ONTO US-44 E	0.6 MI
14.	TURN RIGHT ONTO US-44 E / US-6 E	0.2 MI
15.	TURN RIGHT ONTO LOVE LANE	0.5 MI
16.	TURN RIGHT ONTO OLCOTT STREET (DESTINATION ON THE LEFT)	0.3 MI

LOCATION MAP
SCALE : 1" = 1000'-0"

PROJECT INFORMATION

AT&T SITE NUMBER: CT1425 (NSB)
AT&T SITE NAME: MANCHESTER CT OLCOTT STREET
FA CODE: 15353155
PACE I.D.: MRCTB048917
PT NUMBER: 2051A0WKPD
PROJECT: NSB

PROJECT SCOPE BASED ON:
- RFDS ID #4147561
- VERSION 4.00
- LAST UPDATED 06/07/22.

LOCATION: 250 OLCOTT STREET
MANCHESTER, CT, 06040

PROJECT SCOPE:
- INSTALL (9) NEW ANTENNAS, (3) PER SECTOR.
- INSTALL (3) NEW B5/12 RRHs, (1) PER SECTOR.
- INSTALL (3) NEW B2/66A RRHs, (1) PER SECTOR.
- INSTALL (3) NEW B14 RRHs, (1) PER SECTOR.
- INSTALL (3) NEW B30 RRHs, (1) PER SECTOR.
- INSTALL (3) NEW B29 RRHs, (1) PER SECTOR.
- INSTALL (2) NEW DC SURGE SUPPRESSOR DOMES.
- INSTALL (2) NEW FIBER CABLES.
- INSTALL (5) NEW DC CABLES.
- INSTALL W.I.C. ON NEW CONCRETE PAD.
- INSTALL PROPANE DC GENERATOR ON NEW CONCRETE PAD.
- INSTALL PROPANE TANK ON NEW CONCRETE PAD.

MAP/BLOCK/LOT: 33-4300-0250

ZONING DISTRICT: IND (INDUSTRIAL)

LATITUDE: 41° 46' 11.78847" N (41.7699402° N)

LONGITUDE: 72° 33' 32.7228" W (72.5590897° W)

COORDINATES & GROUND ELEVATION INDICATED HEREIN WERE ESTABLISHED FROM AN FAA 1-A SURVEY CERTIFICATION, AS PREPARED BY MARTIN SURVEYING ASSOCIATES, LLC., DATED JUNE 28, 2021.

GROUND ELEVATION: 112.8± AMSL

PROPERTY OWNER: EVERSOURCE
PO BOX 270
HARTFORD, CT 06151-0000

SITE OWNER: THE CONNECTICUT LIGHT & POWER COMPANY
PO BOX 270
HARTFORD, CT 06141

APPLICANT: AT&T
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

SITE TYPE: SSV LATTICE TOWER / WALKIN CABINET

EXIST. STRUCTURE HEIGHT: 180.6'± AGL

RAD CENTER: 124.0'± AGL

ENGINEER CONTACT: ALL-POINTS TECHNOLOGY CORP., P.C.
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385
860 663-1697

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

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STATE OF CONNECTICUT
MICHAEL TRODDEN
33313
LICENSED
PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: SAI COMMUNICATIONS
ADDRESS: 12 INDUSTRIAL WAY SALEM, NH 03079

AT&T CT1425
MANCHESTER CT
OLCOTT STREET

SITE ADDRESS: 250 OLCOTT STREET MANCHESTER, CT, 06040

APT FILING NUMBER: APT_1931640

AT&T FA NUMBER: 15353155

AT&T SITE NUMBER: CT1425 (NSB)

DATE: 11/25/20 **DRAWN BY: THK**

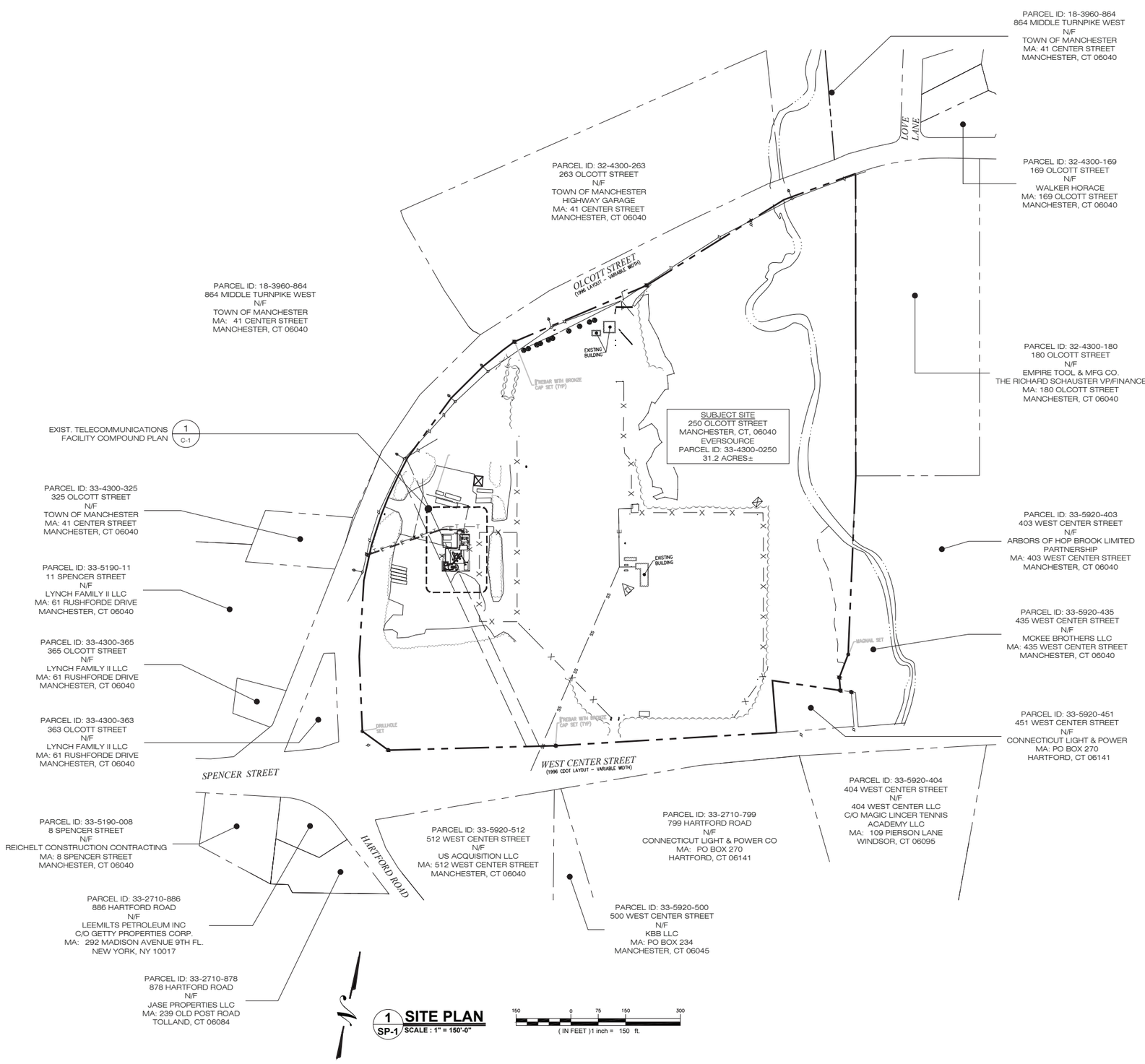
CHECKED BY: JRM

SHEET TITLE:

TITLE SHEET & INDEX

SHEET NUMBER:

T-1



SITE PLAN REFERENCE:

1. "CITY OF MANCHESTER, CT PUBLIC PARCEL VIEWER 3.0 GIS MAPPING," CITY OF MANCHESTER, 250 OLCOTT STEET, MANCHESTER, CT 06040-5096; PARCEL ID: 33-4300-0250
2. CONSTRUCTIONS DRAWINGS PREPARED FOR EVERSOURCE ENERGY PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION, P.C. MARKED REV4, DATED 07/24/18
3. FIELD MEASUREMENTS TAKEN BY ALL-POINTS TECHNOLOGY CORPORATION, P.C. ON 10/29/20.

ABBREVIATION LIST:
AGL = ABOVE GROUND LEVEL;
AMSL = ABOVE MEAN SEA LEVEL;
ARL = ABOVE ROOF LEVEL;
AWS = ADVANCED WIRELESS SERVICE;
OVP = OVER VOLTAGE PROTECTION;
RRH = REMOTE RADIO HEAD;

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
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WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

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33313
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DEVELOPER: SAI COMMUNICATIONS
ADDRESS: 12 INDUSTRIAL WAY SALEM, NH 03079

AT&T CT1425
MANCHESTER CT
OLCOTT STREET

SITE ADDRESS: 250 OLCOTT STREET MANCHESTER, CT, 06040

APT FILING NUMBER: APT_1931640

AT&T FA NUMBER: 15353155

AT&T SITE NUMBER: CT1425 (NSB)

DATE: 11/25/20 DRAWN BY: THK

CHECKED BY: JRM

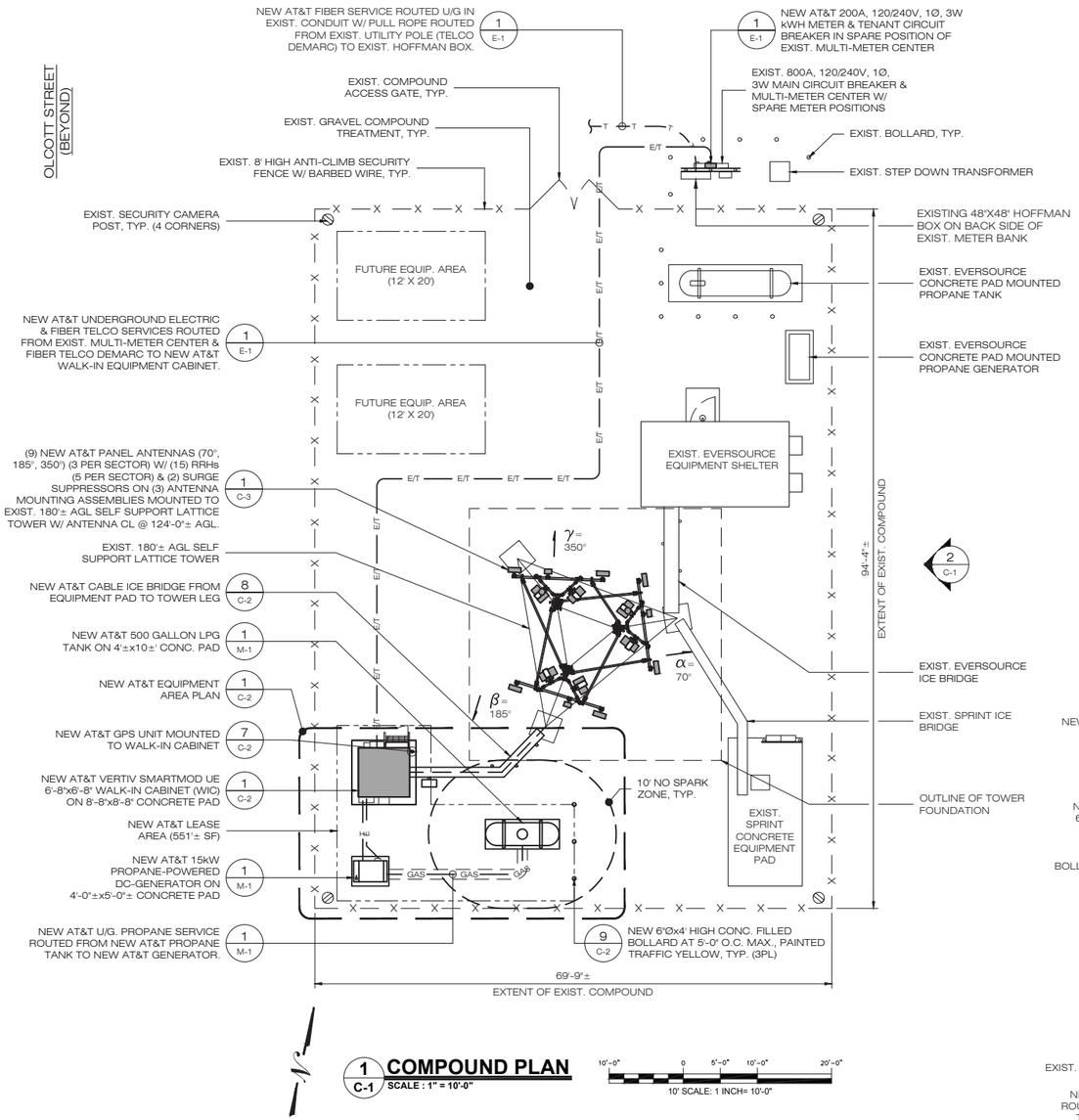
SHEET TITLE:

PARTIAL SITE PLAN

SHEET NUMBER:

SP-1

EXCAVATION & TRENCHING NOTES:
1. CONTRACTOR SHALL ENGAGE THE SERVICES OF AN UNDERGROUND UTILITY LOCATING COMPANY TO LOCATE ALL UNDERGROUND UTILITIES, GROUNDING & EQUIPMENT IN THE TRENCHING AREA TO AVOID ANY DAMAGE.
2. HAND EXCAVATE WITHIN 5' OF EXIST. UNDERGROUND UTILITIES (V.I.F.) MAINTAIN 18" MIN. CLEARANCE.
3. CONTRACTOR TO COORDINATE TRENCHING OPERATIONS w/ OWNER AND/OR MANAGEMENT COMPANY SO AS TO MINIMIZE DISRUPTIONS TO THE EXIST. PROPERTY OPERATIONS.

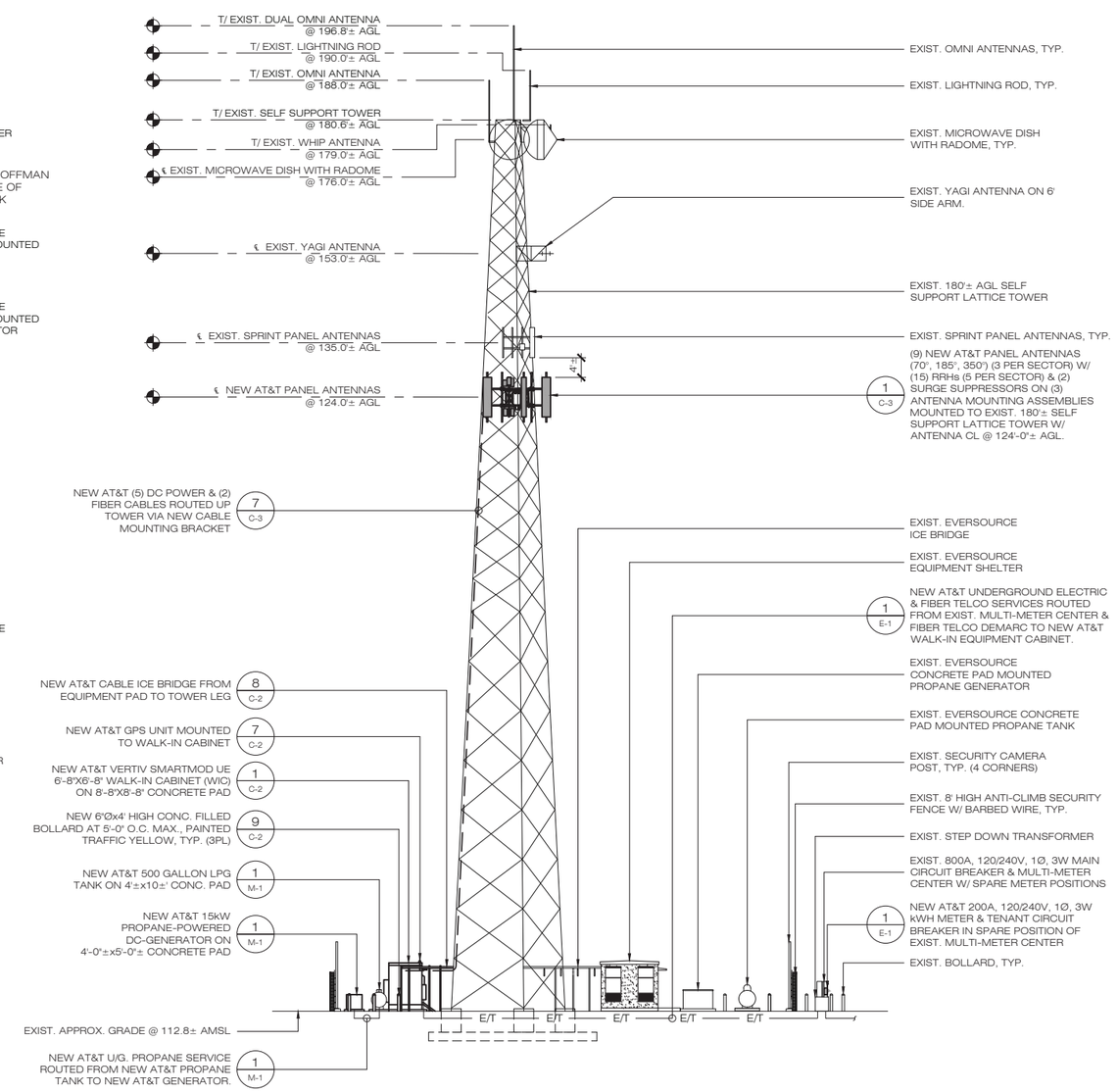


1 C-1 COMPOUND PLAN
SCALE : 1" = 10'-0"

10'-0" 0 5'-0" 10'-0" 20'-0"
10' SCALE: 1 INCH= 10'-0"

TOWER ANALYSIS NOTE:
REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION, P.C. MARKED REV2 DATED JUNE 15, 2022 AVAILABLE UNDER SEPARATE COVER.

MOUNT ANALYSIS NOTE:
REFER TO MOUNT ANALYSIS REPORT PREPARED BY HUDSON DESIGN GROUP, LLC DATED MARCH 30, 2022 AVAILABLE UNDER SEPARATE COVER.



2 C-1 EAST ELEVATION
SCALE : 1" = 15'-0"

15'-0" 0 7'-6" 15'-0" 30'-0"
15' SCALE: 1 INCH= 15'-0"

NOTE:
EXIST. SPRINT CONCRETE EQUIPMENT PAD & CABLE ICE BRIDGE LOCATED AT GRADE NOT SHOWN FOR CLARITY.

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
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STATE OF CONNECTICUT · MICHAEL TRODDEN · 33313 · LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONAL OF RECORD

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COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: SAI COMMUNICATIONS
ADDRESS: 12 INDUSTRIAL WAY SALEM, NH 03079

AT&T CT1425
MANCHESTER CT
OLCOTT STREET

SITE ADDRESS: 250 OLCOTT STREET MANCHESTER, CT, 06040

APT FILING NUMBER: APT_1931640

AT&T FA NUMBER: 15353155

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DATE: 11/25/20 DRAWN BY: THK

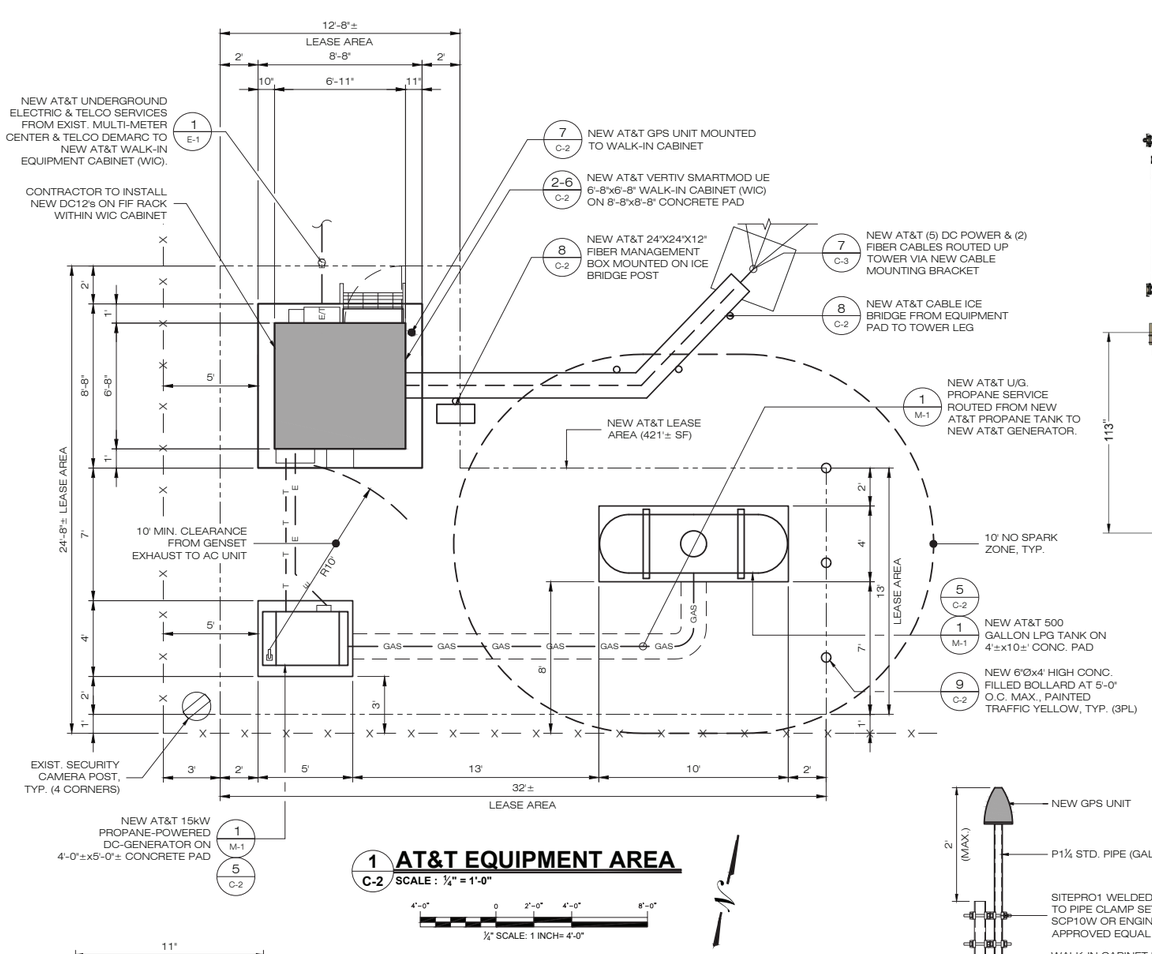
CHECKED BY: JRM

SHEET TITLE:

COMPOUND PLAN & ELEVATION

SHEET NUMBER:

C-1

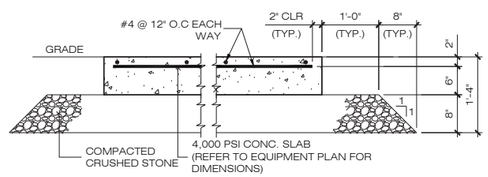


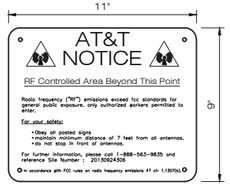
1 C-2 AT&T EQUIPMENT AREA

SCALE : ¼" = 1'-0"

4'-0" 0 2'-0" 4'-0" 8'-0"

¼" SCALE: 1 INCH= 4'-0"





(WHITE METAL SIGN W/ BLACK LETTERING)

RF NOTICE SIGN

(WHITE METAL SIGN W/ BLUE LETTERING)

EMERGENCY SIGN

NOTES:
1. CONTRACTOR SHALL COORDINATE ALL SLAB DIMENSIONS, CONDUIT STUB-UP LOCATIONS & HOLD DOWN REQUIREMENTS W/ EQUIPMENT MANUFACTURER.
2. CONCRETE SLAB DESIGN IS BASED ON A MINIMUM ALLOWABLE SOIL BEARING PRESSURE (Q_B) OF 3,000 PSF.
3. TOPS OF CONCRETE FOUNDATION MUST BE WITHIN 0.02" PER FOOT OF ELEVATION SPECIFIED BY THE CUSTOMER.
4. CONCRETE COMPRESSIVE STRENGTH SHALL BE MIN. 4000 PSI @ 28 DAYS. REFER TO CONCRETE NOTES ON SHEET N-1 FOR MORE INFORMATION.
5. REFER TO NOTES ON DWG N-1 FOR ADDITIONAL REQUIREMENTS.

4 C-2 TYPICAL SIGNAGE

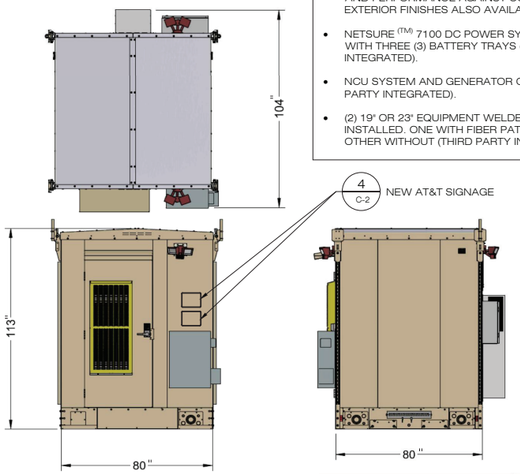
SCALE : N.T.S.

5 C-2 CONCRETE PAD DETAIL

SCALE : N.T.S.

WALK-IN CABINET SPECIFICATIONS:

- COLOR - PEBBLE GRAY, RAL7032
- FINISH - STANDARD FINISH IS MULTI-STAGE DRY POWER POLYESTER PAINT FOR MAXIMUM DURABILITY AND PERFORMANCE AGAINST CORROSION. OPTIONAL EXTERIOR FINISHES ALSO AVAILABLE UPON REQUEST.
- NETSURE (TM) 7100 DC POWER SYSTEM IN 23" RACK WITH THREE (3) BATTERY TRAYS (THIRD PARTY INTEGRATED).
- NCU SYSTEM AND GENERATOR CONTROL (THIRD PARTY INTEGRATED).
- (2) 19" OR 23" EQUIPMENT WELDED FRAMES INSTALLED. ONE WITH FIBER PATCH PANEL AND THE OTHER WITHOUT (THIRD PARTY INTEGRATED).

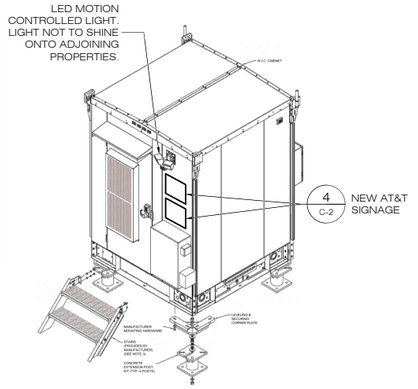


2 C-2 AT&T SMARTMOD WALK-IN CABINET (WIC) DETAILS

SCALE : ¼" = 1'-0"

4' 0 2' 4' 8'

1/4" = 1'-0"

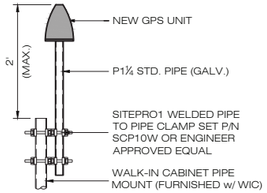


WALK-IN CABINET NOTES:

1. WALK-IN CABINET(WIC) TO BE INSTALLED ACCORDING TO MANUFACTURER RECOMMENDATIONS & SPECIFICATIONS.
2. CONTRACTOR TO CONFIRM PARTS & HARDWARE PRIOR TO CONSTRUCTION & COORDINATE w/ AT&T CM.
3. FOUNDATION TO BE FLUSH w/ EXISTING GRADE. CONTRACTOR SHALL MAINTAIN A MAXIMUM OF 18" CLEARANCE FROM GRADE TO BOTTOM OF WIC TO ACCOMMODATE STAIRS. VERIFY IN FIELD PRIOR TO INSTALLATION.
4. COORDINATE POWER & TELCO CONDUIT STUB UP PLACEMENT WITH ELECTRICAL TRADES. SEE E-1 FOR ADDITIONAL INFORMATION.
5. PROVIDE HVAC & ELECTRICAL WORKING SPACE CLEARANCES PER MANUFACTURER RECOMMENDATIONS & NEC REQUIREMENTS.
6. WIC DIMENSIONS: 6'-8"(W) x 6'-8"(L) x 9'-6"(H) (NO BASE). WIC WEIGHT: 5500lbs (EMPTY); 7500lbs (FULLY INTEGRATED).
7. CONTRACTOR SHALL PROVIDE & INSTALL SPECIFIED CONCRETE ANCHORS.

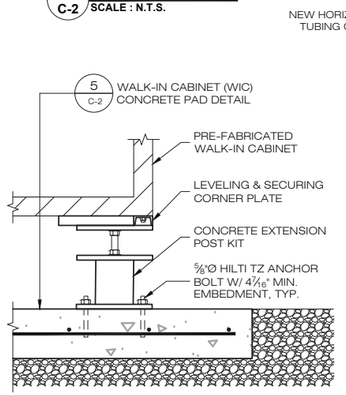
3 C-3 AT&T SMARTMOD WALK-IN CABINET (WIC)

SCALE : N.T.S.



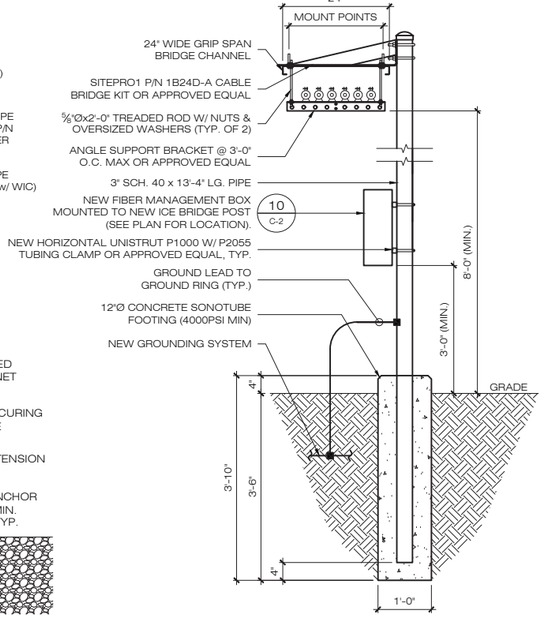
7 C-2 GPS MOUNT

SCALE : N.T.S.



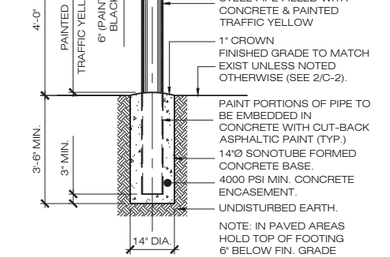
6 C-2 TYPICAL WIC CONNECTION DETAIL

SCALE : N.T.S.



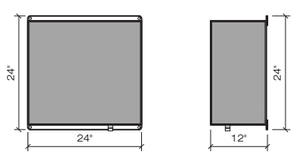
8 C-2 CABLE BRIDGE DETAIL

SCALE : N.T.S.



9 C-2 BOLLARD DETAIL

SCALE : ½" = 1'-0"



NOTE:
DIMENSIONS SHOWN ARE APPROXIMATE. VERIFY W/ CM PRIOR TO CONSTRUCTION

10 C-2 FIBER MANAGEMENT BOX

SCALE : ¾" = 1'-0"

12 INDUSTRIAL WAY
SALEM, NH 03079

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

ALL-POINTS TECHNOLOGY CORPORATION
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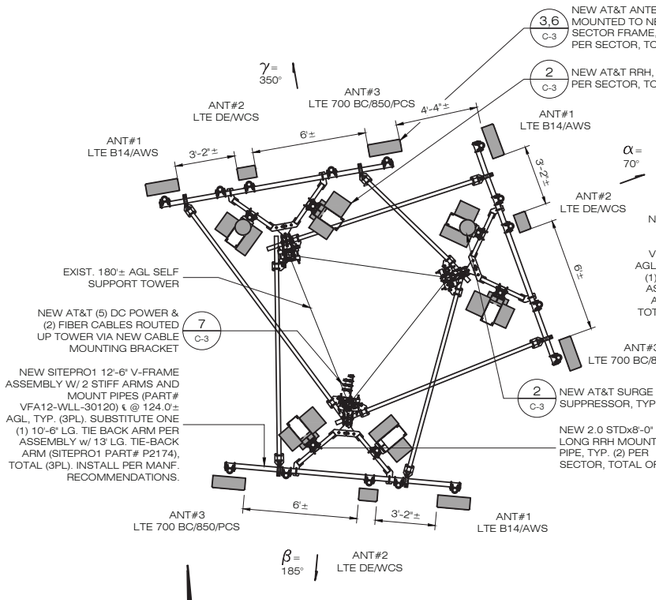
SHEET TITLE:

EQUIPMENT PLAN & SITE DETAILS

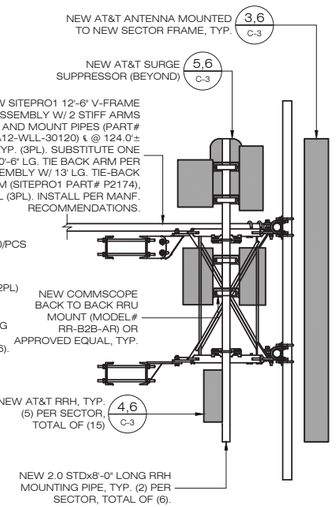
SHEET NUMBER:

C-2



1 C-3 ANTENNA PLAN
SCALE : ¾" = 1'-0"

NOTES:
- 3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS IN POSITION 1 & 2.
- 6 FEET MINIMUM SEPARATION BETWEEN LTE BC ANTENNAS AND LTE DE ANTENNAS
- 3 FEET MINIMUM SEPARATION BETWEEN BACK OF PANEL ANTENNA AND EXISTING/PROPOSED EQUIPMENT.

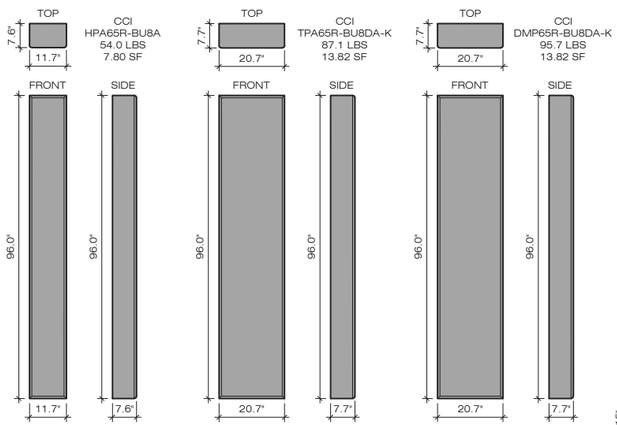


2 C-3 RRU MOUNTING DETAIL
SCALE : ½" = 1'-0"

ANTENNA SPECIFICATIONS

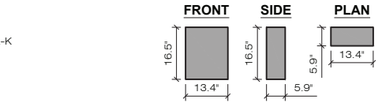
ANTENNA MODELS, DOWNTILTS & AZIMUTHS PER RFDS DATED 06/07/22

SECTOR	MODEL	QTY	M-D - TILT	E-D - TILT	TECHNOLOGY	ANTENNA STATUS	ANTENNA ℄ ELEV. (FT)	AZIMUTH	REMOTE RADIO/TMA CONFIGURATION	CABLE STATUS	CABLE LENGTH	SQUIDS
ALPHA	A1: CCI TPA65R-BU8DA-K A2: CCI HPA65R-BU8A A3: CCI DMP65R-BU8DA-K	1 1 1	0° 0° 0°	2° 2° 2°	LTE B14 / AWS LTE DE / WCS LTE 700 BC / 850 / PCS	NEW NEW NEW	124' 124' 124'	70°	B14 4478 B29 RRUS-E2 / B30 4415 B5/B12 4449 / B2/B66A 8843	ADD (2) FIBER CABLES & (5) DC POWER CABLES	190'±	(2) NEW SQUIDS
BETA	B1: CCI TPA65R-BU8DA-K B2: CCI HPA65R-BU8A B3: CCI DMP65R-BU8DA-K	1 1 1	0° 0° 0°	2° 2° 2°	LTE B14 / AWS LTE DE / WCS LTE 700 BC / 850 / PCS	NEW NEW NEW	124' 124' 124'	185°	B14 4478 B29 RRUS-E2 / B30 4415 B5/B12 4449 / B2/B66A 8843			
GAMMA	G1: CCI TPA65R-BU8DA-K G2: CCI HPA65R-BU8A G3: CCI DMP65R-BU8DA-K	1 1 1	0° 0° 0°	2° 2° 2°	LTE B14 / AWS LTE DE / WCS LTE 700 BC / 850 / PCS	NEW NEW NEW	124' 124' 124'	350°	B14 4478 B29 RRUS-E2 / B30 4415 B5/B12 4449 / B2/B66A 8843			
GPS		(1) NEW						N/A		(1) ½"	20'±	

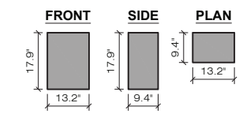


PANEL ANTENNAS

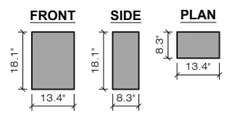
3 C-3 ANTENNA DETAIL
SCALE : ½" = 1'-0"



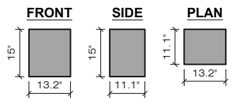
ERICSSON RRUS 4415 B30 (OR EQUAL)
REMOTE RADIO HEAD (RRH)
WxDxH=13.4"x5.9"x16.5" (47.4 Lbs)



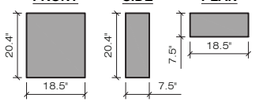
ERICSSON RRUS 4449 B5/B12 (OR EQUAL)
REMOTE RADIO HEAD (RRH)
WxDxH=13.2"x9.4"x17.9" (71.0 Lbs)



ERICSSON RRUS 4478 B14 (OR EQUAL)
REMOTE RADIO HEAD (RRH)
WxDxH=13.4"x8.3"x18.1" (59.4 Lbs)



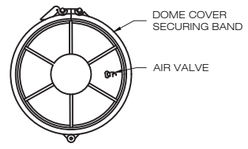
ERICSSON RRUS 8843 B2/B66A (OR EQUAL)
REMOTE RADIO HEAD (RRH)
WxDxH=13.2"x11.1"x15.0" (75.0 Lbs)



ERICSSON RRUS E2 B29 (OR EQUAL)
REMOTE RADIO HEAD (RRH)
WxDxH=18.5"x7.5"x20.4" (60.0 Lbs)

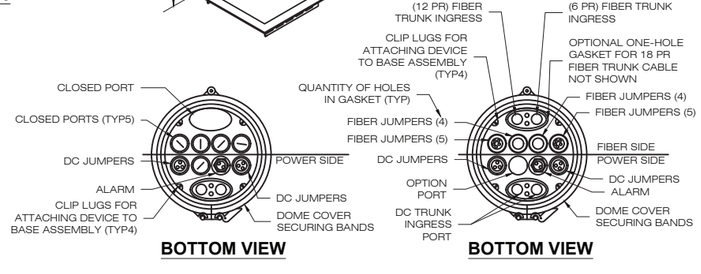
NOTES:
1. DIMENSIONS SUBJECT TO CHANGE BASED UPON AVAILABILITY AT TIME OF CONSTRUCTION.
2. MANUFACTURERS RECOMMENDED RRH CLEARANCES: FRONT: 36"; SIDES: 12"; BOTTOM: 24"
3. SFPs ARE PROTOCOL SPECIFIC. THE CONNECTIONS BETWEEN RRHs AND BBUs ARE CPRI CONNECTIONS, AND REQUIRE CPRI SFP (ON BOTH ENDS). THE CONNECTIONS BETWEEN BBUs AND 7705 ARE ETHERNET AND REQUIRE ETHERNET SFP (ON BOTH ENDS.)

4 C-3 RRH EQUIPMENT
SCALE : ½" = 1'-0"



TOP VIEW

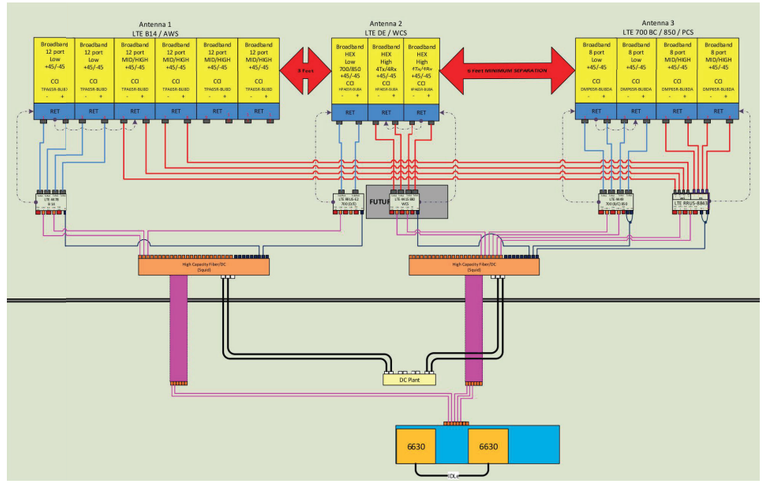
NOTES:
1. MOUNT PER MANUFACTURER'S SPECIFICATIONS.
2. REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC TO 1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP



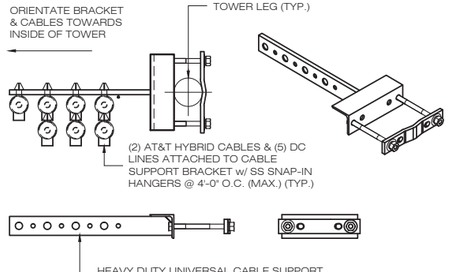
BOTTOM VIEW BOTTOM VIEW

RAYCAP DC9-48-60-24-8C-EV (SURGE SUPPRESSOR)
HxDia. = 31.41"x10.24"Ø (26.2 Lbs)
(OR EQUAL)
COLOR: GRAY

5 C-3 TYPICAL SURGE SUPPRESSOR
SCALE : N.T.S.



6 C-3 ANTENNA CABLING DIAGRAM
SCALE : N.T.S.



7 C-3 CABLE MOUNTING BRACKET DETAIL
SCALE : N.T.S.

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

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STATE OF CONNECTICUT
MICHAEL TRODDEN
33313
LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: SAI COMMUNICATIONS
ADDRESS: 12 INDUSTRIAL WAY SALEM, NH 03079

AT&T CT1425
MANCHESTER CT
OLCOTT STREET

SITE ADDRESS: 250 OLCOTT STREET MANCHESTER, CT, 06040

APT FILING NUMBER: APT_1931640

AT&T FA NUMBER: 15353155

AT&T SITE NUMBER: CT1425 (NSB)

DATE: 11/25/20 | DRAWN BY: THK

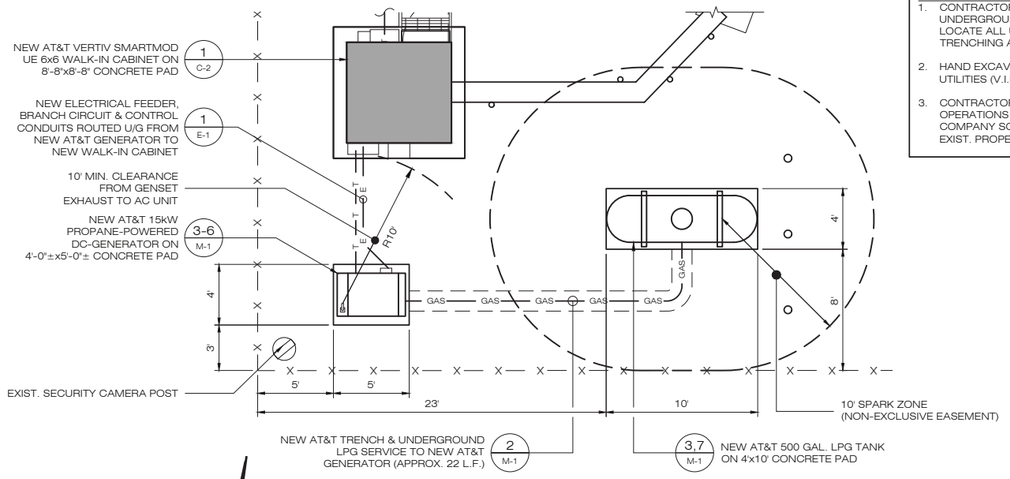
CHECKED BY: JRM

SHEET TITLE:

ANTENNA PLAN & EQUIPMENT DETAILS

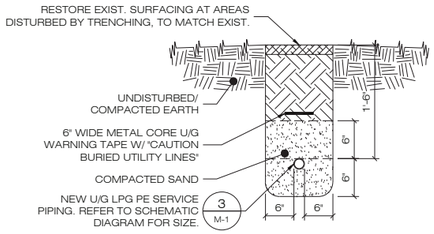
SHEET NUMBER:

C-3



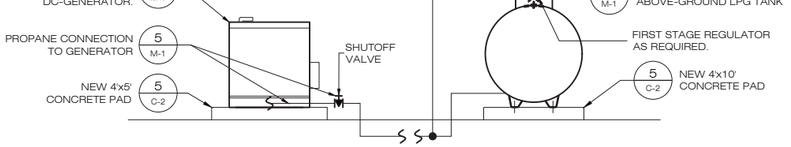
1 M-1 PARTIAL COMPOUND PLAN
SCALE : 1" = 5'-0"

SITE UTILITY NOTES:
1. CONTRACTOR SHALL ENGAGE THE SERVICES OF AN UNDERGROUND UTILITY LOCATING COMPANY TO LOCATE ALL UNDERGROUND EQUIPMENT IN THE TRENCHING AREA TO AVOID ANY DAMAGE.
2. HAND EXCAVATE WITHIN 5' OF EXIST. UNDERGROUND UTILITIES (V.I.F.) MAINTAIN 18" MIN. CLEARANCE.
3. CONTRACTOR TO COORDINATE TRENCHING OPERATIONS w/ OWNER AND/OR MANAGEMENT COMPANY SO AS TO MINIMIZE DISRUPTIONS TO THE EXIST. PROPERTY OPERATIONS.



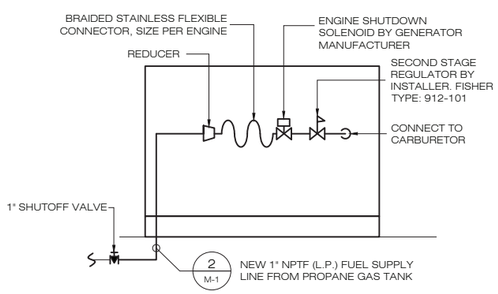
2 M-1 PROPANE GAS TRENCH
SCALE : NTS

POLAR POWER INC.
15kW PROPANE DC POWER GENERATOR
MODEL #8220-100-LPG-15-TP, 120/240V, 1Ø, 60Hz
AL ENCLOSURE - TOYOTA 1KS-CHP
DRY WEIGHT = 698lbs
CONFORMS TO UL STD 2200
CERTIFIED TO CSA STD C22.2 No. 100



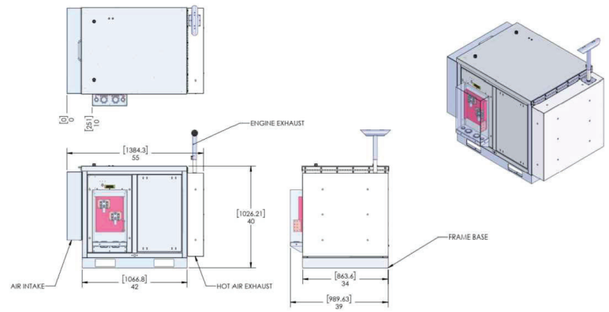
NOTE: ALL VALVES USED IN METALLIC PIPING SYSTEMS MUST HAVE PRESSURE CONTAINING PARTS OF STEEL, DUCTILE (NODULAR) IRON, MALLEABLE IRON OR BRASS. ALL MATERIALS USED, INCLUDING VALVE SEAT DISCS, PACKING, SEALS AND DIAPHRAGMS MUST BE RESISTANT TO THE ACTION OF LP GAS UNDER SERVICE CONDITIONS. MANY VALVES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

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

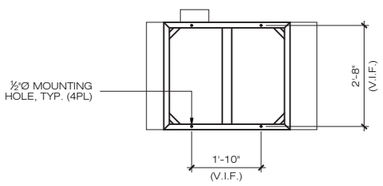


NOTE: INSTALL COMPONENTS IN ACCORDANCE W/ GENERATOR MANUFACTURERS INSTRUCTIONS.

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

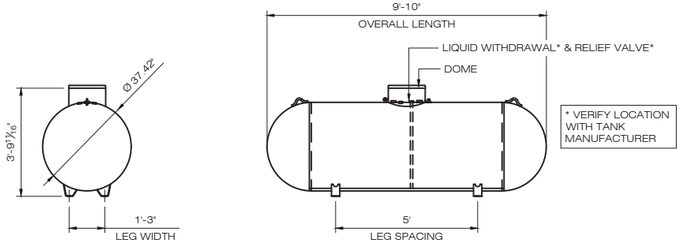


4 M-1 GENERATOR SCHEMATICS
SCALE : ½" = 1'-0"



NOTES:
1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH GENERATOR MANUFACTURER.
2. SECURE GENERATOR TO CONCRETE SLAB PER MANUFACTURER'S RECOMMENDATIONS.

6 M-1 GENERATOR BOLTING PATTERN
SCALE : ½" = 1'-0"



1. 500 USWG AMSE VIII, DIV. 1 ABOVE GROUND LPG TANK AS MANUFACTURED BY ARCOSA TANK, LLC:-
- WWW.ARCOSATANK.COM
- PH: 1-888-558-8265
- WEIGHT (EMPTY) = 871 lbs

NOTE:
PROVIDE TANK MANUFACTURER SHOP DRAWING FOR REVIEW BY ENGINEER OF RECORD PRIOR TO PURCHASE

7 M-1 ABOVE GROUND PROPANE TANK DETAIL
SCALE : N.T.S.

GENERATOR MECHANICAL NOTES:

1. THE MECHANICAL SUBCONTRACTOR SHALL COORDINATE ALL WORK TO BE PERFORMED WITH THE GENERAL AND ELECTRICAL CONTRACTORS. ANY WORK DONE BY THIS CONTRACTOR WHICH INTERFERES WITH WORK BY OTHERS AND WHICH WAS NOT FIRST COORDINATED SHALL BE REMOVED AND RELOCATED AT CONTRACTOR'S EXPENSE.
2. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL UTILITIES AND THE PLACEMENT OF ALL EQUIPMENT PRIOR TO THE START OF HIS WORK. NO EXTRAS WILL BE ALLOWED DUE TO EQUIPMENT LOCATION CHANGE FROM THAT ON THE DRAWING.
3. IT IS THE INTENT THAT THE WORK SHALL BE COMPLETE IN EVERY RESPECT AND THAT ANY MATERIAL OR WORK NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, BUT NECESSARY TO FULLY COMPLETE THE WORK, SHALL BE PROVIDED.
4. THE LOCATION OF SOME ITEMS SHOWN ON THE DRAWINGS MAY BE APPROXIMATE AND THE OWNER SHALL HAVE THE RIGHT TO MAKE MINOR REVISIONS BEFORE THE WORK IS INSTALLED WITHOUT ADDITIONAL COST.
5. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY VALVES, AND ALL CONTROL DEVICES REQUIRED FOR PROPER COMPLETION OF UTILITY PIPING.
6. ALL WORK SHALL BE IN ACCORDANCE WITH 2015 INTERNATIONAL MECHANICAL CODE AND PLUMBING CODE AS AMENDED BY THE 2018 CONNECTICUT STATE BUILDING CODE AND NFPA 54, NATIONAL FUEL GAS CODE & NFPA58, LIQUIFIED PETROLEUM GAS CODE (WHERE APPLICABLE), AS INCORPORATED IN THE CONNECTICUT STATE FIRE SAFETY AND CONNECTICUT FIRE PREVENTION CODES.
7. GAS DEMAND IS 240 CFH AT 4 TO 14 INCHES W.C.
8. ALL BELOW GROUND GAS PIPING SHALL BE POLYETHYLENE (PE) PLASTIC PIPE OR TUBING PE 2406 (MEDIUM DENSITY YELLOW) OR PE 3408 (HIGH DENSITY BLACK) CONFORMING TO ASTM D2513. SPECIFICATIONS FOR THERMOPLASTIC GAS PRESSURE PIPE SYSTEMS SHALL BE USED.
9. PE PLASTIC PIPING MAY NOT BE USED FOR GAS PIPING INSIDE OR BENEATH BUILDINGS, OR FOR VENTING GAS PRESSURE REGULATORS.
10. THE FOLLOWING SPECIFICATIONS SHALL BE USED FOR PE FITTINGS (WHERE APPLICABLE):
- ASTM D2683 SPECIFICATION FOR SOCKET TYPE POLYETHYLENE FITTINGS FOR OUTSIDE DIAMETER CONTROLLED PE PIPE AND TUBING.
- ASTM D3261 SPECIFICATION FOR BUTT FUSION POLYETHYLENE (PE) PLASTIC FITTINGS FOR POLYETHYLENE (PE) PIPE AND TUBING.
- ASTM F1055 STANDARD SPECIFICATION FOR ELECTROFUSION TYPE PE FITTINGS FOR OUTSIDE DIAMETER CONTROLLED PE PIPE AND TUBING.
11. PROVIDE ESCUTCHEONS WHERE PIPES PENETRATE FLOORS, WALLS OR CEILINGS.
12. ALL GAS PIPING OTHER THAN THAT NOTED ABOVE SHALL BE SCHEDULE 40 BLACK IRON PIPE, WITH THREADED FITTINGS.
13. FIELD PAINT EXPOSED VERTICAL GAS PIPE RISER AT BUILDING EXTERIOR TO MATCH EXISTING BUILDING FACADE. ALL OTHER PIPE TO BE PAINTED YELLOW.
14. FOR OTHER THAN BLACK IRON PIPE, LABEL ALL EXPOSED PIPING PER CODE AND UTILITY COMPANY REQUIREMENTS.
15. ALL VALVES USED IN METALLIC PIPING SYSTEMS MUST HAVE PRESSURE CONTAINING PARTS OF STEEL, DUCTILE (NODULAR) IRON, MALLEABLE IRON OR BRASS.
16. ALL MATERIALS USED, INCLUDING VALVE SEAT DISCS, PACKING, SEALS AND DIAPHRAGMS MUST BE RESISTANT TO THE ACTION OF LP GAS UNDER SERVICE CONDITIONS. MANY VALVES ARE LISTED BY INDEPENDENT TESTING LABORATORIES FOR USE IN LP GAS SERVICE. THESE CAN BE USED AS RECOMMENDED BY THE MANUFACTURER. OTHER VALVES CAN BE USED, BUT MUST COMPLY WITH THE REQUIREMENTS OF NFPA 58 AND SHOULD BE RECOMMENDED BY THE MANUFACTURER FOR LP GAS SERVICE TO BE SURE THAT ALL THE COMPONENT PARTS OF THE VALVE ARE APPROVED FOR LP GAS SERVICE.
17. VALVES USED WITH POLYETHYLENE PIPE AND TUBING MUST MEET THE REQUIREMENTS OF ASTM D2513 AND BE SO MARKED.

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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567 VAUXHALL STREET EXTENSION - SUITE 311
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MICHAEL TRODDEN
33313
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DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: SAI COMMUNICATIONS
ADDRESS: 12 INDUSTRIAL WAY SALEM, NH 03079

AT&T CT1425
MANCHESTER CT
OLCOTT STREET

SITE ADDRESS: 250 OLCOTT STREET MANCHESTER, CT, 06040

APT FILING NUMBER: APT_1931640

AT&T FA NUMBER: 15353155

AT&T SITE NUMBER: CT1425 (NSB)

DATE: 11/25/20 | DRAWN BY: THK

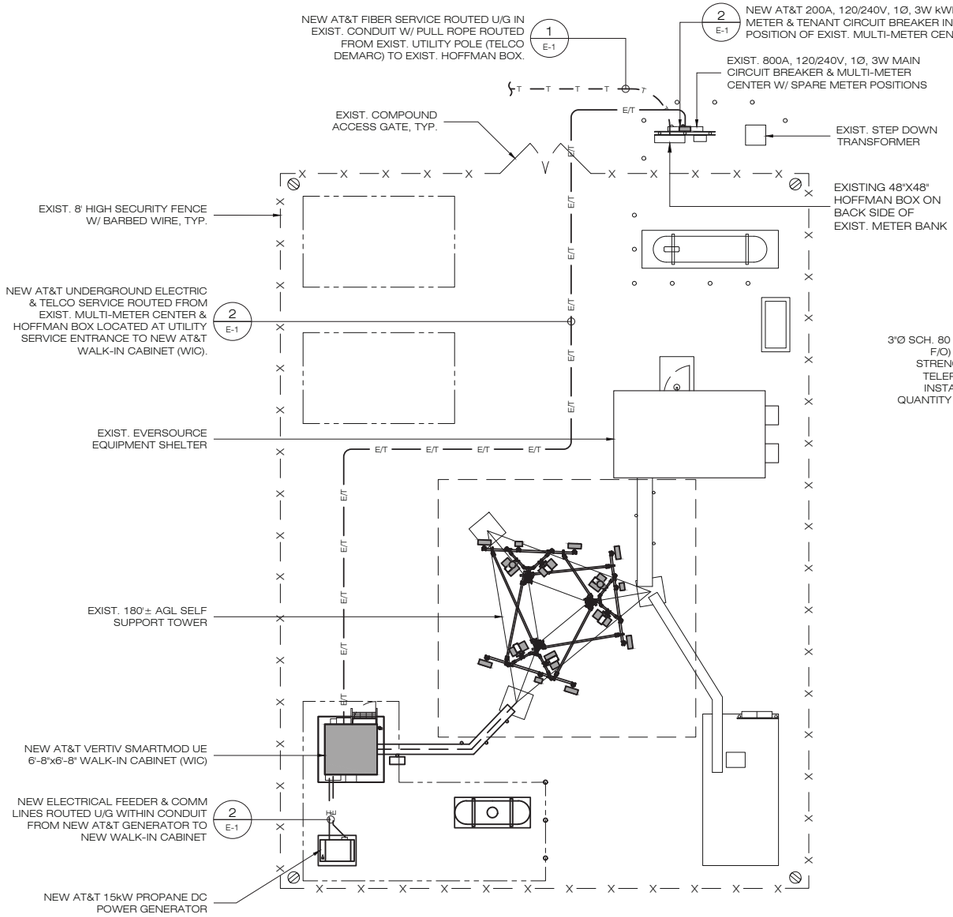
CHECKED BY: JRM

SHEET TITLE:

MECHANICAL PLAN, DETAILS & NOTES

SHEET NUMBER:

M-1

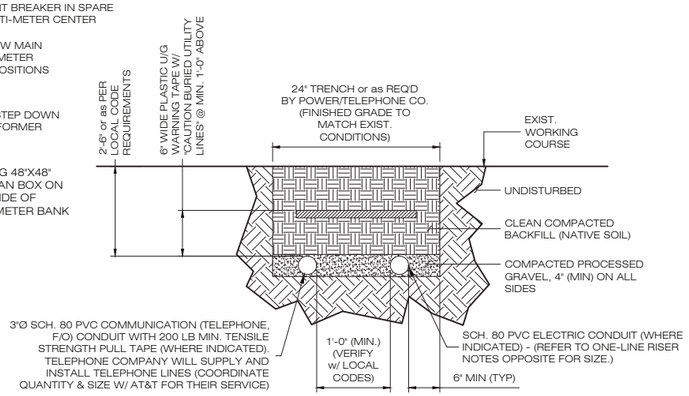


1 SITE UTILITY PLAN
E-1 SCALE : 1" = 10'-0"

10'-0" 0 5'-0" 10'-0" 20'-0"

10' SCALE: 1 INCH= 10'-0"

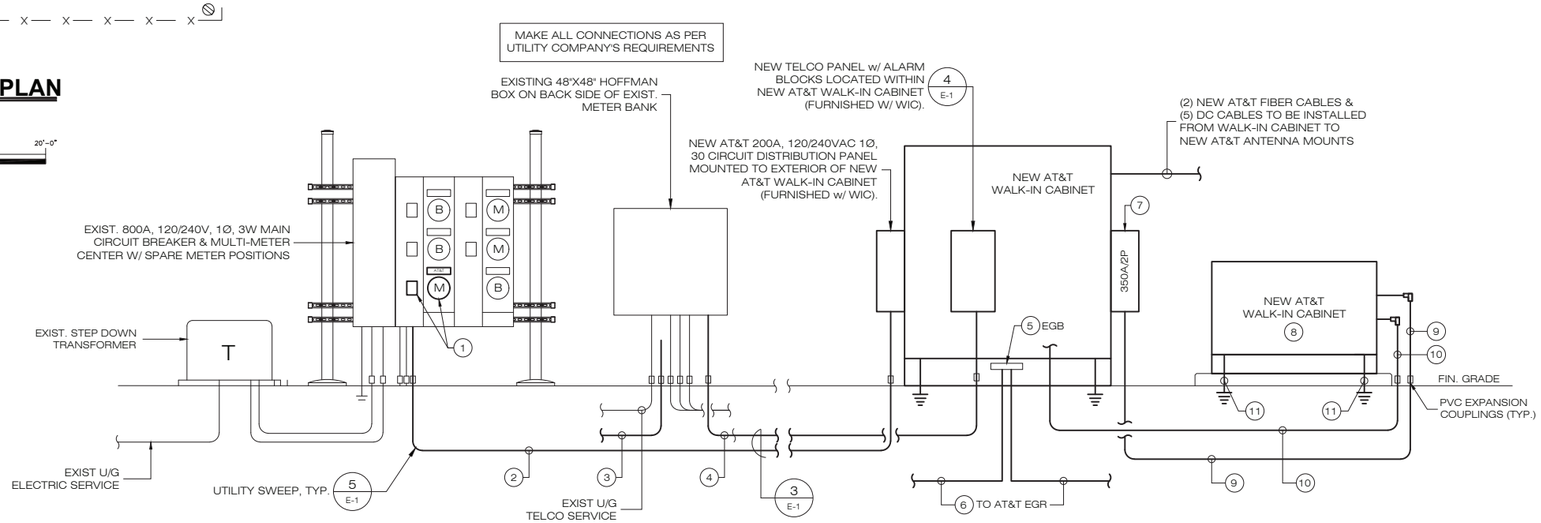
SITE UTILITY NOTES:
1. CONTRACTOR SHALL ENGAGE THE SERVICES OF AN UNDERGROUND UTILITY LOCATING COMPANY TO LOCATE ALL UNDERGROUND EQUIPMENT IN THE TRENCHING AREA TO AVOID ANY DAMAGE.
2. HAND EXCAVATE WITHIN 5' OF EXIST. UNDERGROUND UTILITIES (V.I.F.) MAINTAIN 18" MIN. CLEARANCE.
3. CONTRACTOR TO COORDINATE TRENCHING OPERATIONS w/ OWNER AND/OR MANAGEMENT COMPANY SO AS TO MINIMIZE DISRUPTIONS TO THE EXIST. PROPERTY OPERATIONS.



3 SECONDARY TRENCH DETAIL
E-1 SCALE : N.T.S.

ALARM BLOCK TERMINAL #	GENERATOR ALARM DESCRIPTION
12	RBS GENERATOR RUNNING
13	RBS GENERATOR FUEL LOW
14	RBS GENERATOR SHUT DOWN
15	RBS GENERATOR MJ
16	RBS GENERATOR FUEL LEAK

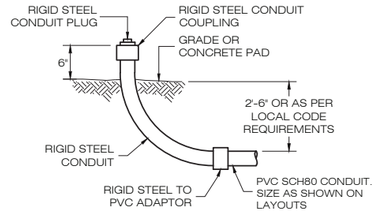
4 ALARM SCHEDULE
E-1 SCALE : N.T.S.



2 ONE-LINE DIAGRAM
E-1 SCALE : N.T.S.

ELECTRICAL ONE-LINE RISER KEY NOTES:

1. NEW 120/240V, 1Ø, 3W KWH MANUAL BY-PASS METER SQUARE 'D' (OR EQUAL) W/200A, 2P TENANT CIRCUIT BREAKER. COORDINATE INSTALLATION AND ACTIVATION OF METER WITH UTILITY COMPANY. REFER TO 1/E-1 FOR LOCATION. VERIFY LOCATION OF METER WITH UTILITY COMPANY AND LOCAL ELECTRICAL INSPECTOR. METER SOCKET SHALL BE CLEARLY LABELED "AT&T" SERVICE ENTRANCE, 200A, 120/240V, 1Ø, 3W."
2. (3) #3/0 AWG & (1)#4G IN 2"Ø SCH. 80 PVC
3. NEW AT&T FIBER SERVICE ROUTED U/G IN EXIST. CONDUIT W/ PULL ROPE ROUTED FROM EXIST. UTILITY POLE (TELCO DEMARC) TO EXIST. HOFFMAN BOX.
4. NEW AT&T FIBER SERVICE IN 3"C WITH ¾" NYLON PULL ROPE ROUTED UNDERGROUND FROM TELCO DEMARC TO NEW NEW TELCO PANEL LOCATED WITHIN NEW AT&T WALK-IN CABINET. PROVIDE JUNCTION BOX(ES) AND EXPANSION COUPLINGS AS REQUIRED. FINAL TERMINATION BY OTHERS. COORDINATE INSTALLATION WITH LOCAL UTILITY COMPANY AND AUTHORITY HAVING JURISDICTION (AHJ).
5. EQUIPMENT GROUND BAR (EGB) MOUNTED TO BASE OF WIC. (FURNISHED W/ WIC).
6. PROVIDE #3/0 AWG GREEN INSULATED STRANDED COPPER WIRE IN 1" C TO EXTERNAL GROUND RING (EGR) (TYP 2PL) . BOND METALLIC CONDUIT WITH #6 AWG GREEN INSULATED STRANDED COPPER WIRE AT BOTH ENDS. REFER TO 1/E-2 LOCATION.
7. 350A DC GENERATOR DISCONNECT SWITCH MOUNTED TO EXTERIOR OF WALK-IN CABINET. (FURNISHED WITH WIC)
8. NEW AT&T POLAR POWER INC. 15kW PROPANE POWERED EMERGENCY STANDBY POWER GENERATOR - POLAR MODEL#8340-100-LP-15-03, 120/240V, 1Ø, 3W, 60 Hz W/ ENCLOSURE. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION. PROVIDE RODENT SCREEN AT UNDERSIDE OF GENERATOR. COORDINATE WITH GENERATOR MANF.
9. (2) 500MCM GENERATOR DC FEEDER CABLES IN 2½"C. TERMINATE PER MANUFACTURERS SPECIFICATIONS.
10. (1) ETHERNET (CAT5) & (1) #4 G w/ PULL STRING IN 1"C. TERMINATE PER MANUFACTURERS SPECIFICATIONS.
11. GROUND GENERATOR PER NEC REQUIREMENTS.



5 UTILITY SWEEP
E-1 SCALE : N.T.S.

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

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NO	DATE	REVISION
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STATE OF CONNECTICUT · MICHAEL TRODDEN · 33313 · LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: SAI COMMUNICATIONS
ADDRESS: 12 INDUSTRIAL WAY SALEM, NH 03079

AT&T CT1425
MANCHESTER CT
OLCOTT STREET

SITE ADDRESS: 250 OLCOTT STREET MANCHESTER, CT, 06040

APT FILING NUMBER: APT_1931640

AT&T FA NUMBER: 15353155

AT&T SITE NUMBER: CT1425 (NSB)

DATE: 11/25/20 | DRAWN BY: THK | CHECKED BY: JRM

SHEET TITLE:
SCHEMATIC ONE-LINE RISER DIAGRAM, SITE UTILITY PLAN, DETAILS & NOTES

SHEET NUMBER:
E-1

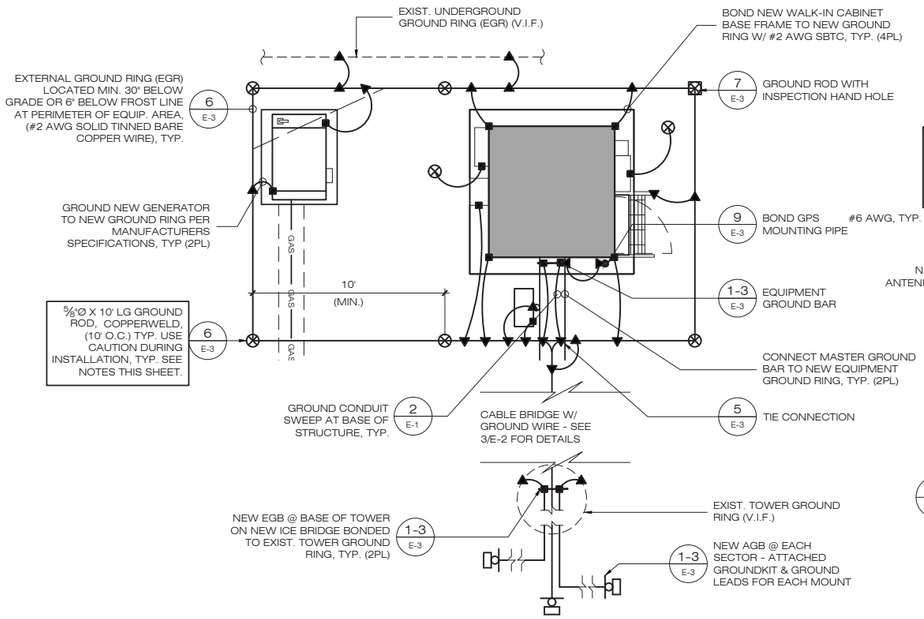
GENERAL GROUNDING NOTES

1. ALL SURGE SUPPRESSION DEVICES (WHERE APPLICABLE) SHALL BE BONDED TO EQUIPMENT GROUND BAR (EGB) PER MANUFACTURERS SPECIFICATIONS.
2. ALL GROUND BARS SHALL HAVE A CONTIGUOUS GROUND PATH.
3. REFER TO GROUNDING NOTES & SPECIFICATIONS ON SHEET N-1 FOR MORE INFORMATION.
4. ALL IN-GROUND RINGS, RADIALS, AND BONDING CONDUCTORS SHALL BE #2 AWG SOLID BARE TINNED COPPER (SBTC) ALL AT SAME 30 IN. DEPTH OR 6 IN. BELOW FROST LINE, WHICHEVER IS GREATER.
5. ALL GROUND RINGS SHALL BE MIN 2 FT FROM FOUNDATION BEING ENCIRCLED.
6. COMBINE IN-GROUND RINGS, RADIALS, AND BONDING CONDUCTORS INTO SINGLE CONDUCTOR FOR ALL PORTIONS PARALLEL 2 FT APART OR CLOSER.
7. UNLESS NOTED OTHERWISE, ALL ABOVE GROUND CONDUCTORS SHALL BE MIN #6 AWG INSULATED STRANDED COPPER.
8. CONDUCTORS BONDING ABOVE-GROUND CONNECTIONS TO IN-GROUND CONNECTIONS SHALL BE MIN #2 AWG SBTC UNLESS NOTED OTHERWISE AND SHALL BE PROTECTED BY LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR ALL PORTIONS ABOVE GROUND.
9. ALL GROUND CONDUCTORS LOCATED WITHIN BUILDINGS SHALL BE PLENUM RATED (WHERE APPLICABLE).

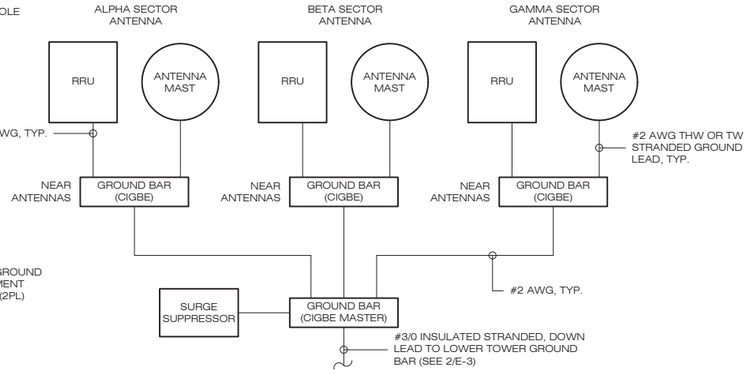
GROUNDING LEGEND

SYMBOL	DESCRIPTION
►	EXOTHERMIC WELD
■	MECHANICAL CONNECTION
⊗	GROUND ROD
— — —	GROUND CONDUCTOR
— ⊠ —	GROUND ROD w/ INSPECTION HAND HOLE

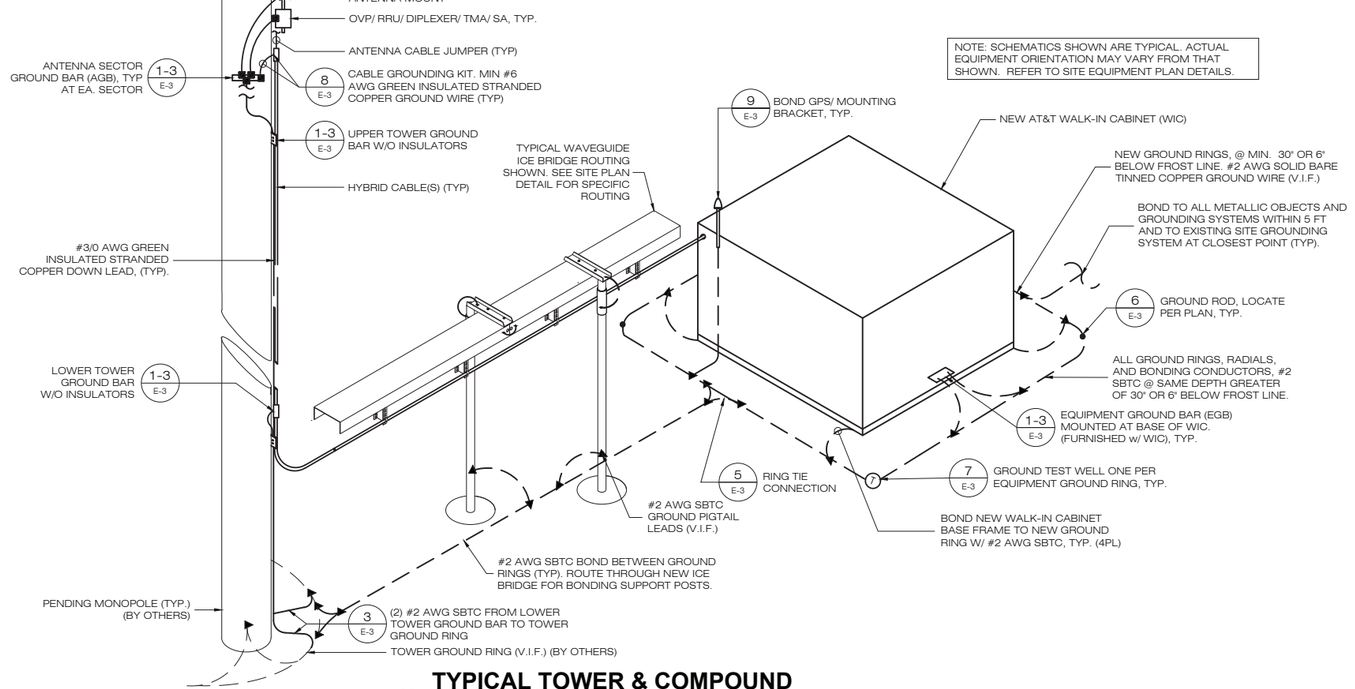
SITE UTILITY NOTES:
1. CONTRACTOR SHALL ENGAGE THE SERVICES OF AN UNDERGROUND UTILITY LOCATING COMPANY TO LOCATE ALL UNDERGROUND EQUIPMENT IN THE TRENCHING AREA TO AVOID ANY DAMAGE.
2. HAND EXCAVATE WITHIN 5' OF EXIST. UNDERGROUND UTILITIES (V.I.F.) MAINTAIN 18" MIN. CLEARANCE.
3. CONTRACTOR TO COORDINATE TRENCHING OPERATIONS w/ OWNER AND/OR MANAGEMENT COMPANY SO AS TO MINIMIZE DISRUPTIONS TO THE EXIST. PROPERTY OPERATIONS.



1 E-2 TYPICAL EQUIPMENT GROUNDING PLAN
SCALE : N.T.S.



2 E-2 SCHEMATIC DIAGRAM GROUNDING SYSTEM
SCALE : N.T.S.



3 E-2 TYPICAL TOWER & COMPOUND GROUNDING SCHEMATIC
SCALE : N.T.S.

12 INDUSTRIAL WAY
SALEM, NH 03079

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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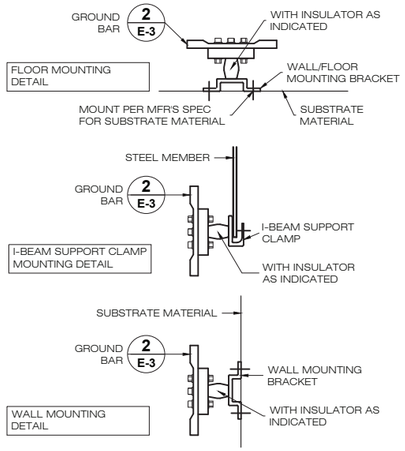
SHEET TITLE:

GROUNDING PLAN & DETAILS

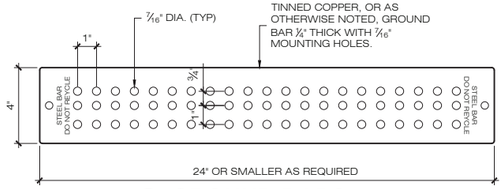
SHEET NUMBER:

E-2



1 E-3 GROUND BAR MOUNTING DETAILS

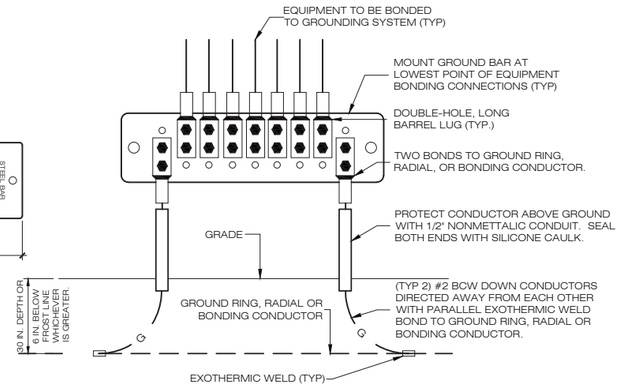
SCALE : NTS



2 E-3 GROUND BARS

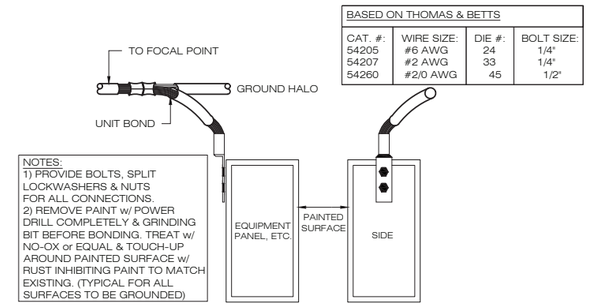
SCALE : N.T.S.

NOTES:
1. NO EXOTHERMIC WELDS TO GROUND BAR. ATTACH CONDUCTORS WITH (2) HOLE COPPER COMPRESSION TERMINATIONS AND ALL STAINLESS STEEL HARDWARE
2. DOUBLE UP CONNECTIONS ON BACKSIDE OF GROUND BAR ONLY AS NECESSARY.
3. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
4. ALL STAINLESS STEEL MOUNTING HARDWARE.



3 E-3 GROUND BAR CONNECTION DETAIL

SCALE : NTS



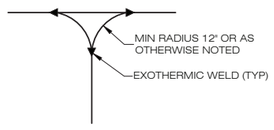
BASED ON THOMAS & BETTS

CAT. #:	WIRE SIZE:	DIE #:	BOLT SIZE:
54205	#6 AWG	24	1/4"
54207	#2 AWG	33	1/4"
54260	#2/0 AWG	45	1/2"

NOTES:
1) PROVIDE BOLTS, SPLIT LOCKWASHERS & NUTS FOR ALL CONNECTIONS.
2) REMOVE PAINT w/ POWER DRILL COMPLETELY & GRINDING BIT BEFORE BONDING. TREAT w/ NO-OX or EQUAL & TOUCH-UP AROUND PAINTED SURFACE w/ RUST INHIBITING PAINT TO MATCH EXISTING. (TYPICAL FOR ALL SURFACES TO BE GROUNDED)

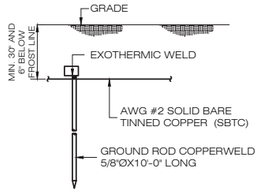
4 E-3 (2) HOLE LUG BONDS

SCALE : N.T.S.



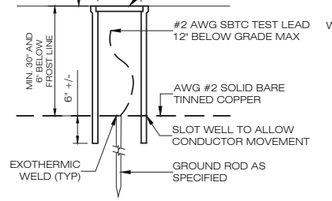
5 E-3 TIE CONNECTION DETAIL

SCALE : NTS



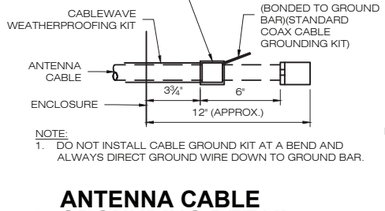
6 E-3 GROUND ROD DETAIL

SCALE : N.T.S.



7 E-3 TEST WELL DETAIL

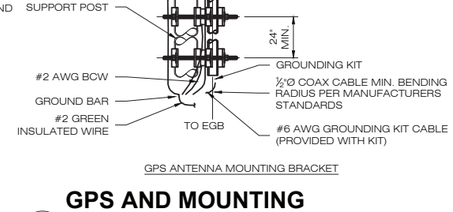
SCALE : NTS



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

8 E-3 ANTENNA CABLE GROUNDING DETAIL

SCALE : N.T.S.



GPS ANTENNA MOUNTING BRACKET

9 E-3 GPS AND MOUNTING BRACKET GROUNDING DETAIL

SCALE : N.T.S.

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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SHEET TITLE:

GROUNDING DETAILS

SHEET NUMBER:

E-3

DESIGN BASIS:

GOVERNING CODES/DESIGN STANDARDS:
- 2015 IBC W/2017 NYS UNIFORM CODE SUPPLEMENT/ASCE 7-10
- TIA-222-H
- NU-SUB-090

DESIGN CRITERIA:

RISK CATEGORY/ : STRUCTURAL. OCCUPANCY	III	(2015 IBC TABLE 1604.5)

DEAD LOAD:

CABINET	5,500 LBS (EMPTY) 7,500 LBS (FULLY INTEGRATED)	

LIVE LOAD:

FLOOR	PER WIC MANUFACTURER	

SNOW LOAD:

GROUND, P_g:	30 PSF	(2018 CSBC APPENDIX N)
ROOF, P_f:	30 PSF	(MIN. PER 2018 CSBC ADD 1608.1.1) (ASCE 7-10 SEC. 7.3, EQ. 7.3-1)
EXPOSURE FACTOR, C_e:	1.0	(ASCE 7-10 TABLE 7-2)
THERMAL FACTOR, C_t:	1.1	(ASCE 7-10 TABLE 7-3)
SNOW IMPORTANCE FACTOR, I_s:	1.1	(ASCE 7-10TABLE 1.5-2)

WIND LOADS:

ULTIMATE BASIC WIND SPEED, V_{ULT}: (3-SECOND GUST)	135 MPH	(2018 CSBC APPENDIX N)
NOMINAL BASIC WIND SPEED, V_{3S}: (3-SECOND GUST)	105 MPH	(2018 CSBC APPENDIX N)
EXPOSURE CATEGORY	C	(2015 IBC SEC. 1609.4.3)

SEISMIC LOAD:

SITE CLASS:	D	(2015 IBC SEC. 1613.2)
MCE GROUND MOTION (PERIOD = 0.2S), S_1 :	0.178	(2015 IBC FIG. 1613.3.1(1))
MCE GROUND MOTION (PERIOD = 1.0S) S_S :	0.064	(2015 IBC FIG. 1613.3.1(2))
SEISMIC DESIGN CATEGORY:	B	(2015 IBC SEC. 1613.3.5)

01 GENERAL:

ABBREVIATIONS USED IN THESE SPECIFICATIONS INCLUDE THE FOLLOWING:

ACI	AMERICAN CONCRETE INSTITUTE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AWS	AMERICAN WELDING SOCIETY
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN STANDARDS AND TESTING METHODS
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
ICC-ES	INTERNATIONAL CODE COUNCIL EVALUATION SERVICE
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
UL	UNDERWRITERS LABORATORIES
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

EVERY INDIVIDUAL TRADE, DISCIPLINE, AND CONTRACTOR SHALL INCLUDE THESE GENERAL SPECIFICATIONS.

THE ENGINEER IS NOT RESPONSIBLE FOR NOR A GUARANTOR OF THE INSTALLING CONTRACTORS WORK, ADEQUACY OF ANY SITE COMPONENT, SUPERVISION OF ANY WORK, AND SAFETY IN, ON, OR ABOUT THE WORK SITE.

ANY REFERENCE HEREIN TO AN OR EQUAL ITEM, THAT EQUAL ITEM SHALL BE PRE-APPROVED BY THE CONSTRUCTION MANAGER BEFORE INSTALLATION

ALL TRADES SHALL COORDINATE THEIR WORK WITH ALL OTHER TRADES AND OTHER WORK AND CONDITIONS AS APPROPRIATE OR REQUIRED TO AVOID CONFLICTS. RESOLVE AND COORDINATE ALL CONFLICTS WITH ALL AFFECTED WORK AND SITE OPERATIONS. COORDINATION WITH THE SITE SHALL BE WITH THE OWNER, OR OWNER'S SPECIFIED REPRESENTATIVE, FOR EVERYTHING RELATED TO THE INSTALLATION OF THIS PROJECT.

ALL WORK SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE EDITIONS OF ALL APPLICABLE CODES AND SHALL BE ACCEPTABLE TO ALL AUTHORITIES HAVING JURISDICTION (AHJ). WHERE A CONFLICT EXISTS BETWEEN CODES, PLANS, SPECIFICATIONS, AND/OR AHJ, THE MORE STRINGENT AUTHORITY SHALL APPLY. WHERE CONFLICT EXISTS BETWEEN PLANS AND SPECIFICATIONS, PLAN SHALL APPLY. WHERE CONFLICT EXISTS BETWEEN PLAN SHEETS, CONSTRUCTION MANAGER SHALL BE CONSULTED PRIOR TO COMMENCING ANY WORK.

CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE AND USABLE SYSTEM THROUGHOUT AND AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN AND/OR OTHERWISE REQUIRED.

CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, INSTALLATIONS, AND EQUIPMENT IN THE FIELD PRIOR TO BID, FABRICATION, AND INSTALLATION OF ANY WORK.

CONTRACTORS SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. THE ENGINEER SHALL BE NOTIFIED FOR INSPECTIONS PRIOR TO CLOSING PENETRATIONS AND OF ANY CONDITIONS WHICH PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

CONTRACTOR SHALL VISIT THE SITE TO MANAGE AND GAIN APPROVAL FOR ALL TENANT DISRUPTIONS, POWER OUTAGES, WORK SCHEDULES, DEFINITION OF WORK AREA AND WORK STORAGE, PROPER BUILDING/SITE ACCESS, NOISE AND CLEANLINESS REQUIREMENTS WITH THE BUILDING/SITE MANAGEMENT PRIOR TO ALL WORK. ANY DISRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE IMPLEMENTED ONLY UPON WRITTEN APPROVAL OF THE OWNER.

THE CONTRACTOR SHALL SAFEGUARD AGAINST CREATING ANY HAZARD AFFECTING TENANT EGRESS OR COMPROMISING SITE SECURITY MEASURES.

PRIOR TO ALL BELOW-GRADE WORK AND ANY SURFACE WORK IN A NEW AREA FOR STRUCTURES OR VEHICLES, CONTRACTOR SHALL ENGAGE A MARKOUT SERVICE TO IDENTIFY ANY UNDERGROUND STRUCTURES, CONDUITS, AND PIPELINES IN THE AREA. ALL EXISTING SEWER, WATER, GAS, ELECTRIC, FIBER OPTIC, AND OTHER UNDERGROUND UTILITIES IDENTIFIED OR ENCOUNTERED, SHALL BE PROTECTED AT ALL TIMES. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN DIGGING OR EXCAVATING IN ANY MANNER AROUND OR NEAR SUCH UTILITIES. CONTRACTOR IS RESPONSIBLE FOR REPAIRS, REPLACEMENT, AND ALL DAMAGES DUE TO DAMAGE OF UTILITIES BY HIS OPERATIONS.

ALL EXISTING AND NEW EQUIPMENT AND MATERIAL LOCATIONS, ROUTING, ORIENTATION, MOUNTING, SPECIFICATIONS AND GENERAL INSTALLED CHARACTERISTICS SHALL BE CONSIDERED DIAGRAMMATIC ON THE PLANS. EXACT CONDITIONS SHALL BE DETERMINED IN THE FIELD PRIOR TO ANY INSTALLATION. ANY DIFFERENCES THAT MAY CAUSE SCHEDULE, COST, OR QUALITY SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER OR ENGINEER PRIOR TO ANY WORK.

ALL REFERENCES HEREIN TO VERIFICATION OF ANY CONDITION OF SITE, FIELD, PLANS, OR SPECIFICATIONS PRIOR TO ANY WORK SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR. ANY AND ALL ADDITIONS, MODIFICATIONS, CHANGES, REPAIR, OR DEMOLITION AS A RESULT OF FAILURE TO BRING ANY EXISTING CONDITION PROPERLY TO THE ATTENTION OF THE OWNER OR ENGINEER SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR WITHOUT DELAY, COST, OR CHANGES IN QUALITY.

ALL NOTES THIS SHEET SHALL APPLY UNLESS SPECIFICALLY NOTED OTHERWISE ON THE INCLUDED DRAWINGS OR IN SEPARATE PROJECT SPECIFICATIONS AS APPLICABLE. ALL SPECIFICATIONS SHALL BE CONSIDERED REQUIRED UNLESS APPROVED EQUAL BY THE OWNER, CONSTRUCTION MANAGER, OR ENGINEER AS APPLICABLE.

THE WORDS "PROVIDE" OR "INSTALL" SHALL MEAN FURNISH AND INSTALL.

CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF HIS WORK. ANY PATCHING SHALL MATCH EXISTING SURROUNDING AREA IN ALL RESPECTS. ALL REMOVED MATERIAL SHALL BE REMOVED FROM THE PREMISES DAILY IN AN APPROVED SAFE MANNER.

ALL SURPLUS MATERIAL SHALL BE REMOVED FROM THE SITE PROMPTLY WHEN DEEMED TO BE SURPLUS.

EVERY CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF HIS WORK AND NEWLY INSTALLED OR EXISTING WORK, INCLUDING PROTECTION OF THE SITE, ALL STRUCTURES, AND ALL OCCUPANTS. FURNISH, INSTALL, MAINTAIN, AND REMOVE AS APPROPRIATE, ALL APPROPRIATE BARRIERS, SAFETY GUARDS, SIGNAGE, AND SECURITY AS REQUIRED.

EVERY CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR RESPECTIVE FEES, PERMITS, INSPECTIONS, TESTING, CERTIFICATES, AND ALL MANAGEMENT OF SAME REQUIRED FOR COMPLETION OF AND LEGAL OCCUPANCY OF THE FINISHED PROJECT.

ALL CONTRACTORS SHALL PROVIDE ALL NECESSARY TOOLS, FIXTURES, SERVICES, MATERIALS, JOB AIDS, AND PERSONNEL REQUIRED FOR THE EXECUTION OF THEIR WORK.

EACH CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP BY THEM TO BE FREE OF DEFECTS AND MAINTAINED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF THE INSTALLATION BY THE OWNER AND ENGINEER.

ALL WORK SHALL BE PERFORMED BY LICENSED CONTRACTORS IN THE TRADE HAVING JURISDICTION.

ANY DEVIATION, MODIFICATION, ADDITION, OR CHANGE IN DESIGN SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE OWNER OR ENGINEER.

ALL CONTRACTORS SHALL SUBMIT SHOP DRAWINGS OF ALL EQUIPMENT AND MATERIALS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION, AND SHALL NOT PROCEED UNTIL ENGINEER APPROVAL IN WRITING IS RETURNED. EACH CONTRACTOR SHALL MAINTAIN ON JOB SITE A COMPLETE SET OF SHOP DRAWINGS WITH ANY DEVIATIONS FROM THE ORIGINAL DESIGN SHALL BE NOTED.

ALL MATERIALS AND EQUIPMENT SHALL BE NEW, WITHOUT BLEMISH OR DEFECT, AND SUITABLE AND LISTED FOR THE INSTALLATION AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS OR SPECIFICATIONS. ALL ITEMS OF EQUIPMENT OR MATERIAL THAT ARE OF ONE GENERIC TYPE SHALL BE ONE MANUFACTURER THROUGHOUT.

ALL MATERIALS, EQUIPMENT, TOOLS, AND ITEMS UNDER THE CONTRACTOR'S RESPONSIBILITY ON THE JOBSITE SHALL BE ADEQUATELY SECURED, MAINTAINED, AND PROTECTED, SO AS NOT TO BECOME DAMAGED OR CREATE ANY HAZARD TO PERSONNEL OR PROPERTY.

THE CONTRACTORS HOURS OF WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND ORDINANCES AND BE APPROVED BY THE OWNER.

CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR ALL OF HIS CREW AND INSURE THAT EVERY CREW MEMBER FOLLOWS SAVE WORK PRACTICES. SAFETY TRAINING SHALL INCLUDE, BUT NOT BE LIMITED TO, FALL PROTECTION, CONFINED SPACE ENTRY, ELECTRICAL SAFETY, AND TRENCHING/EXCAVATION SAFETY WHERE SUCH WORK IS EXECUTED OR ENCOUNTERED.

ALL TEMPORARY WORK REQUIRED OR SPECIFIED AS A PART OF THIS WORK, SHALL MEET ALL OF THE SAME REQUIREMENTS AS PERMANENT INSTALLATIONS, SHALL MEET ALL APPLICABLE CODE REQUIREMENTS, AND SHALL BE COMPLETELY REMOVED AFTER ITS PURPOSES HAVE BEEN SERVED.

ANY EXISTING UTILITY, SERVICE, STRUCTURE, EQUIPMENT, OR FIXTURE OBSTRUCTING THE WORK SHALL BE REMOVED AND/OR RELOCATED AS DIRECTED BY THE CONSTRUCTION MANAGER.

IF ASBESTOS IS ENCOUNTERED DURING WORK EXECUTION, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER AND CEASE ALL ACTIVITIES IN AFFECTED AREAS UNTIL NOTIFIED BY THE CONSTRUCTION TO RESUME OPERATIONS.

EXIST. ELECTRICAL AND MECHANICAL FIXTURES, PIPING, WIRING AND EQUIPMENT OBSTRUCTING THE WORK SHALL BE REMOVED AND/OR RELOCATED AS DIRECTED BY THE CONSTRUCTION MANAGER. TEMPORARY SERVICE INTERRUPTIONS MUST BE COORDINATED WITH OWNER.

02 DEMOLITION:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

REMOVE AND LEGALLY DISPOSE OF ITEMS EXCEPT THOSE INDICATED TO BE REINSTALLED, SALVAGED, OR TO REMAIN THE OWNER'S PROPERTY.

PROTECT CONSTRUCTION INDICATED TO REMAIN AGAINST DAMAGE AND SOILING DURING DEMOLITION. WHEN PERMITTED, ITEMS MAY BE REMOVED TO A SUITABLE, PROTECTED STORAGE AREA DURING DEMOLITION AND THEN CLEANED AND REINSTALLED IN THEIR ORIGINAL LOCATIONS.

DEMOLISHED MATERIALS SHALL BECOME THE CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM THE SITE WITH FURTHER DISPOSITION AT THE CONTRACTOR'S OPTION.

COMPLY WITH GOVERNING LOCAL, STATE AND FEDERAL NOTIFICATION REGULATIONS BEFORE STARTING DEMOLITION.

COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION

BUILDING COMPONENTS TO BE DEMOLISHED SHALL BE VACATED AND THEIR USE DISCONTINUED BEFORE START OF DEMOLITION.

STORAGE OR SALE OF REMOVED ITEMS OR MATERIALS ON-SITE WILL NOT BE PERMITTED.

ARRANGE DEMOLITION ACTIVITIES SO AS NOT TO INTERFERE WITH THE OWNER'S ON-SITE OPERATIONS.

VERIFY THAT ALL UTILITIES HAVE BEEN DISCONNECTED AND CAPPED.

PERFORM INSPECTIONS AS THE DEMOLITION PROGRESSES TO DETECT HAZARDS RESULTING FROM SAID ACTIVITIES.

MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING DEMOLITION OPERATIONS.

DO NOT INTERRUPT EXISTING UTILITIES SERVING OCCUPIED OR OPERATING FACILITIES EXCEPT WHEN AUTHORIZED IN WRITING BY THE OWNER. PROVIDE TEMPORARY SERVICES DURING INTERRUPTIONS TO EXISTING UTILITIES, AS ACCEPTABLE TO THE OWNER.

PROVIDE NOT LESS THAN 72 HOURS NOTICE TO OWNER IF SHUTDOWN OF SERVICE IS REQUIRED DURING CHANGEOVER.

LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF INDICATED UTILITIES SERVICES SERVING STRUCTURES TO BE DEMOLISHED.

ARRANGE TO SHUT OFF INDICATED UTILITIES WITH THE OWNER AND UTILITY COMPANIES.

DO NOT START DEMOLITION WORK UNTIL UTILITY DISCONNECTING AND SEALING HAVE BEEN COMPLETED.

CONDUCT DEMOLITION OPERATIONS AND REMOVE DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH ADJACENT AREAS, OTHER OCCUPIED AREAS, COMMON AREAS THROUGHOUT BUILDING, WALKWAYS, PARKING LOTS, AND ROADWAYS.

DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER ADJACENT OCCUPIED OR USED AREAS WITHOUT PERMISSION FROM OWNER. IF REQUIRED, PROVIDE FOR ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS.

CONDUCT DEMOLITION OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT AREAS, BUILDINGS, AND/OR FACILITIES TO REMAIN. ENSURE SAFE PASSAGE OF PEOPLE AROUND DEMOLITION AREAS.

PROVIDE AND MAINTAIN INTERIOR AND EXTERIOR SHORING, BRACING, OR STRUCTURAL SUPPORT TO PRESERVE STABILITY AND PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF PERIPHERAL STRUCTURES AND/OR AREAS.

USE WATER MIST, TEMPORARY ENCLOSURES, AND OTHER SUITABLE METHODS TO LIMIT THE SPREAD OF DUST AND DIRT. COMPLY WITH GOVERNING ENVIRONMENTAL PROTECTION REGULATIONS.

DO NOT CREATE HAZARDOUS OR OBJECTIONABLE CONDITIONS, SUCH AS ICE, FLOODING, AND POLLUTION, WHEN USING WATER.

REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.

CLEAN ADJACENT AREAS AND IMPROVEMENTS OF DUST, DIRT AND DEBRIS CAUSED BY DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE START OF DEMOLITION.

USE METHODS REQUIRED TO COMPLETE DEMOLITION WITHIN LIMITATIONS OF GOVERNING REGULATIONS.

LOCATE DEMOLITION EQUIPMENT THROUGHOUT THE BUILDING AND REMOVE DEBRIS & MATERIALS SO AS NOT TO IMPOSE EXCESSIVE LOADS ON SUPPORTING WALLS, FLOORS, OR FRAMING.

DISPOSE OF DEMOLISHED ITEMS AND MATERIALS PROMPTLY. ON-SITE STORAGE OR SALE OF REMOVED ITEMS IS PROHIBITED.

DEMOLISH CONCRETE AND MASONRY IN SMALL SECTIONS.

REMOVE AIR-CONDITIONING EQUIPMENT WITHOUT RELEASING REFRIGERANTS.

BREAKUP AND REMOVE CONCRETE SLABS ON GRADE.

REMOVE BELOW-GRADE CONSTRUCTION, INCLUDING FOUNDATION WALLS, TO AT LEAST 24 INCHES BELOW GRADE.

BREAK UP BELOW-GRADE CONCRETE SLABS IN SECTIONS NO LARGER THAN 24 INCHES SQUARE.

PROMPTLY REPAIR DAMAGES TO ADJACENT FACILITIES CAUSED BY DEMOLITION.

PATCH TO PRODUCE SUITABLE SURFACES FOR NEW MATERIALS WHEN REPAIRING EXISTING SURFACES.

EXTEND RESTORED, EXPOSED FINISHES OF PATCH SURFACES INTO ADJOINING CONSTRUCTION IN A MANNER THAT ELIMINATES EVIDENCE OF PATCHING AND RESURFACING.

DO NOT BURN DEMOLISHED MATERIALS.

TRANSPORT DEMOLISHED MATERIALS OFF OWNER'S PROPERTY AND LEGALLY DISPOSE OF THEM.

PROMPTLY SUBMIT A WRITTEN REPORT TO THE ENGINEER SHOULD UNANTICIPATED STRUCTURAL, ELECTRICAL, OR MECHANICAL CONDITIONS ARE ENCOUNTERED. THE SUBMITTED REPORT SHALL INCLUDE SUFFICIENT DETAIL REGARDING THE EXTENT AND NATURE OF THE CONDITION.

DEMOLITION/CONSTRUCTION WORK SHALL BE LIMITED TO THE NORMAL HOURS OF 8AM TO 6PM.

MAINTAIN BUILDING SECURITY TO ADJACENT AND COMMON AREAS DURING DEMOLITION ACTIVITIES TO PREVENT UNAUTHORIZED PERSONS FROM ENTERING THE SITE.

DUE CARE SHALL BE TAKEN SO THAT THE EQUIPMENT AND ITS INSTALLATION ARE HANDLED IN A MANNER THAT WILL NOT AFFECT FIRE SAFETY OR CREATE A FIRE HAZARD.

04 CONCRETE:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

ALL CONCRETE CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI) CODES 301 & 318, LATEST REVISION.

ALL CONCRETE USED SHALL BE 4000 PSI (28 DAY COMP STRENGTH). THE CONCRETE MIX SHALL BE BASED ON USING THE FOLLOWING MATERIALS AND PARAMETERS:

PORTLAND CEMENT:	ASTM C150, T1
AGGREGATE:	ASTM C33, 1 INCH MAX
WATER:	POTABLE
ADMIXTURE:	NON-CHLORIDE
AIR:	6%*
SLUMP:	4 INCH

*ALL CONCRETE EXPOSED TO FREEZING WEATHER SHALL CONTAIN ENTRAINED AIR PER ACI 211 TABLE 4.2.1 OF ACI 318-05.

ALL REINFORCING STEEL SHALL BE ASTM A615, GR 60 (DEFORMED). WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC. SPLICES SHALL BE CLASS 'B' AND ALL HOOKS SHALL BE ACI STANDARD UNO. REINFORCING BARS SHALL BE COLD BENT WHERE REQUIRED AND TIED (NOT WELDED).

THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL:
- CONCRETE CAST AGAINST EARTH = 3 IN.
- CONCRETE EXPOSED TO EARTH OR WEATHER:
  - #6 AND LARGER = 2 IN.
  - #5 AND SMALLER = 1 1/2 IN.
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
  - SLAB AND WALL = 3/4 IN.
  - BEAMS AND COLUMNS = 1 1/2 IN.

A 3/4 IN. CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

CONCRETE SHALL BE PLACED IN A UNIFORM MANNER AND CONSOLIDATED IN PLACE.

CONCRETE FOOTINGS SHALL BE CAST AGAINST LEVEL, COMPACTED, NON-FROZEN BASE SOIL FREE OF STANDING WATER.

05 POST INSTALLED ANCHORS:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY THE ANCHOR MANUFACTURERS' SPECIFICATIONS OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT INCLUDING AN ICC-ES REPORT SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE, SEISMIC USE, LOAD RESISTANCE, INSTALLATION CATEGORY, IN-SERVICE TEMPERATURE, INSTALLATION TEMPERATURE, ETC.

EXCEPT WHERE INDICATED ON THE DRAWINGS, EXPANSION ANCHORS SHALL BE USED WHERE ATTACHING TO CONCRETE AND MASONRY MOUNTING SHALL UTILIZE INJECTION ADHESIVE ANCHORING.

EXPANSION BOLTS SHALL BE HILTI KWIK BOLT 3 OR EQUAL. MINIMUM EMBEDMENT 4 INCHES.

ANCHORING IN SOLID BRICK MASONRY SHALL BE HILTI HIT HY-70 OR EQUAL WITH THREADED ROD, SHALL HAVE ANCHORS SPACED 2 COMPLETE BRICKS APART OR 16", AND SHALL MAINTAIN 12" FROM ALL FREE EDGES.

ANCHORING IN BRICKS WITH VOIDS SHALL BE HILTI HIY HY-70 OR EQUAL WITH THREADED ROD AND SCREEN TUBES, SHALL LIMIT ONE ANCHOR MAXIMUM PER CELL, SHALL MAINTAIN 12" FROM FREE EDGES, AND SHALL BE EMBEDDED 3-1/2 INCHES MINIMUM.

ANCHORING IN HOLLOW CONCRETE BLOCK SHALL USE 50% MORE ANCHORS THAN SHOWN IN DETAIL, SHALL LIMIT ONE ANCHOR MAXIMUM PER BLOCK CELL, SHALL MAINTAIN 12" SPACING FROM FREE EDGES, AND SHALL BE EMBEDDED THROUGH FACE.

ANCHORING IN GROUT FILLED BLOCK SHALL BE HILTI HIT HY-200 OR EQUAL WITH THREADED ROD, SHALL LIMIT ONE ANCHOR PER BLOCK, AND MAINTAIN 12 INCHES BETWEEN ANCHORS AND ALL FREE EDGES.

INJECTION ADHESIVE FOR REBAR DOWELING IN CONCRETE SHALL BE HILTI RE 500v3 ADHESIVE WITH SAFE SET (HDB) SYSTEM OR EQUAL.

ADHESIVE ANCHORS INSTALLED IN A HORIZONTALLY OR UPWARDLY INCLINED ORIENTATION INTO CONCRETE AND SUPPORTING A SUSTAINED TENSION LOAD SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER, PER SECTION 9.2.2 OF ACI-318-14. INSTALLER SHALL BE CERTIFIED THROUGH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM.

AS PER OSHA 29 CFR 1926.1153 SILICA DUST CONTROL REGULATIONS, DRILLED HOLES FOR POST INSTALLED ANCHORS IN CONCRETE AND MASONRY SHALL BE INSTALLED USING HILTI SAFE SET INSTALLATION SYSTEM WHICH COMPRISES OF A CODE APPROVED HILTI HOLLOW DRILL BIT AND VACUUM. ALTERNATE INSTALLATION METHODS ARE ALSO ALLOWED WITH AN APPROVED DUSTLESS SYSTEM THAT MAINTAINS SILICA DUST EMISSION BELOW THE PERMISSIBLE LEVELS.

ANCHORS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND SHALL NOT TO BE INSTALLED IN MORTAR JOINTS.

ANY DEVIATION TO THE ANCHOR LOCATIONS, SPACING, EDGE DISTANCES, ETC. FROM WHAT IS SHOWN ON THE DRAWINGS REQUIRE THE APPROVAL OF THE ENGINEER ON RECORD.

CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ON-SITE ANCHOR INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. CONTRACTOR SHALL SUBMIT DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL INSTALLING ANCHORS HAVE RECEIVED THE REQUIRED TRAINING PRIOR TO THE COMMENCEMENT OF WORK.

CONTINUOUS OR PERIODIC SPECIAL INSPECTION FOR POST INSTALLED ANCHORS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 4.3/4.4 OF THE ICC-ES REPORT FOR THE INDIVIDUAL ANCHOR. SPECIAL INSPECTOR SHALL BE NOTIFIED PRIOR TO COMMENCEMENT OF WORK TO COORDINATE INSPECTION EFFORTS.

05 STEEL:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

MATERIALS:

WIDE FLANGE	ASTM A992, GR 50
TUBING	ASTM A500, GR B
PIPE	ASTM A53, GR B
BOLTS	ASTM A325
GRATING	TYPE GW-2 (1-1/4"x3/16" BARS)
EXISTING METALS	ASTM A36

PROVIDE CERTIFICATION THAT WELDERS TO BE USED IN WORK ARE LICENSED AND HAVE SATISFACTORILY PASSED AWS QUALIFICATION TEST UNDER THE PROVISIONS OF APPENDIX D, PARTS II AND III OF THE AWS CODE FOR WELDING IN BUILDING CONSTRUCTION.

ALL BUILDING CONNECTION POINTS TO BE CENTERED ON EXISTING STRUCTURAL BEARING POINTS AND THE LOCATIONS ARE TO BE VERIFIED IN FIELD PRIOR TO THE FABRICATION OF STEEL.

DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF AISC SPECIFICATION FOR *"THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS"*.

NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIAMETER GALVANIZED ASTM A 307 BOLTS UNLESS OTHERWISE NOTED.

ALL STEEL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIPPED GALVANIZED) COATINGS" ON IRON AND STEEL PRODUCTS WITH A COATING WEIGHT OF 2 OZ/SF.

ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE EXPOSED TO WEATHER SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE."

DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY TOUCHING UP ALL DAMAGED GALVANIZED STEEL WITH COLD ZINC, "GALVANOX", "DRY GALV", OR "ZINC IT", IN ACCORDANCE WITH MANUFACTURERS GUIDELINES. TOUCH UP DAMAGED NON-GALVANIZED STEEL WITH SAME PAINT APPLIED IN SHOP OR FIELD.

THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW. FIELD CUTTING OF STRUCTURAL STEEL IS NOT PERMITTED EXCEPT WITH THE PRIOR APPROVAL OF THE ENGINEER.

CONTRACTOR TO REMOVE AND RE-INSTALL ALL FIRE PROOFING AS REQUIRED DURING CONSTRUCTION.

THE STEEL STRUCTURE SHALL BE DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER COMPLETION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION.

ALL STEEL ELEMENTS SHALL BE INSTALLED PLUMB AND LEVEL.

TOWER MANUFACTURER'S DESIGNS SHALL PREVAIL FOR TOWER.

CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC *"MANUAL OF STEEL CONSTRUCTION"*. CONNECTIONS SHALL BE PROVIDED TO CONFORM TO THE REQUIREMENTS OF TYPE 2 CONSTRUCTION.

STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE MINIMUM 3/4" DIAMETER AND EACH CONNECTION SHALL HAVE MINIMUM TWO BOLTS. LOCK WASHERS ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES. IF TENSION CONTROL BOLTS ARE USED, CONNECTIONS SHALL BE DESIGNED FOR SLIP CRITICAL BOLT ALLOWABLE LOAD VALUES.

DESIGN CONNECTIONS AT BEAM ENDS FOR 10 KIPS (MIN).

ALL U-BOLTED CONNECTIONS SHALL BE COMPLETED WITH DOUBLE NUTS OR A LOCK WASHER.

CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS *"STANDARD QUALIFICATION PROCEDURES"*. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND SHALL CONFORM TO AISC AND D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE LARGER OF 1/4" FILLET OR MINIMUM SIZE PER TABLE J2.4 IN THE AISC *"MANUAL OF STEEL CONSTRUCTION"*. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED. SEE NOTE REGARDING DAMAGED GALVANIZED SURFACES.

ALL ARC AND GAS WELDING SHALL BE DONE BY A LICENSED AND CERTIFIED WELDER IN ACCORDANCE WITH AWS.

SEAL ALL PENETRATIONS AND SEAMS BETWEEN MASONRY AND STEEL WITH DOW CORNING 790 SILICONE BUILDING SEALANT OR EQUAL.

07 THERMAL & MOISTURE PROTECTION:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

FIRE-STOP ALL PENETRATIONS THROUGH BUILDING WALLS, FLOORS, AND CEILINGS, WITH LISTED AND ACCEPTED MATERIALS TO MAINTAIN THE FIRE RATING OF THE EXISTING ASSEMBLY. ALL FILL MATERIAL SHALL BE SHAPED, FITTED, AND PERMANENTLY SECURED IN PLACE. FIRESTOPPING SHALL BE INSTALLED IN ACCORD WITH ASTM E814.

HILTI CP620 FIRE FOAM OR 3M FIRE BARRIER PRODUCTS, OR EQUAL, SHALL BE USED TO FILL ALL VOIDS AND CAVITIES AND SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND ASSOCIATED UL SYSTEM NUMBER.

FIRESTOPPING SHALL BE APPLIED AS SOON AS PRACTICABLE AFTER PENETRATIONS ARE MADE AND EQUIPMENT INSTALLED.

FIRESTOPPED PENETRATIONS SHALL BE LEFT EXPOSED AND MADE AVAILABLE FOR INSPECTION BEFORE APPLYING FINISHES THAT MAY CONCEAL SUCH PENETRATION. FIRESTOPPING MATERIAL CERTIFICATES SHALL BE MADE AVAILABLE AT THE TIME OF INSPECTION.

ANY BUILDING ROOF PENETRATION OR RESTORATION SHALL BE PERFORMED SO THAT ROOF WARRANTY IN PLACE IS NOT COMPROMISED. CONTRACTOR SHALL ARRANGE FOR OWNER'S ROOFING CONTRACTOR TO PERFORM ANY AND ALL ROOFING WORK IF SO REQUIRED BY EXISTING ROOF WARRANTY. OTHERWISE, ROOF SHALL BE MADE WATERTIGHT WITH LIKE CONSTRUCTION AS SOON AS PRACTICABLE AND AT COMPLETION OF CONSTRUCTION.

ALL PENETRATIONS INTO OR THROUGH BUILDING, SHELTER, EQUIPMENT, CABINET, AND SIMILAR ENCLOSURE EXTERIOR WALLS, SHALL BE SEALED WITH SILICONE SEALER.

26 ELECTRICAL:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

ALL ELECTRICAL CONDUCTORS:
- INSULATION SHALL BE MINIMUM 600V TYPE THHN, THWN-2, OR XHHW.
- BRANCH CIRCUIT CONDUCTORS SHALL BE SOFT DRAWN 98% MINIMUM CONDUCTIVITY PROPERLY REFINED COPPER.
- FEEDER CIRCUIT CONDUCTORS SHALL BE EITHER COPPER OR ALUMINUM OF THE APPROPRIATE SIZE FOR THE APPLICATION, OR AS SPECIFICALLY NOTED.
- PERMANENTLY LABEL OR TAG ALL CONDUCTORS WITH THEIR CIRCUIT DESIGNATION AT ALL TERMINATION ENDS, SPLICES, AND VISIBLE AS PASS-THROUGH IN ALL ENCLOSURES.

ALL CONDUIT, RACEWAY, WIREWAYS, DUCTS, ETC. SHALL BE LISTED AND SUITABLE FOR THE APPLICATION. ONLY THE FOLLOWING CONDUITS AS APPROVED AND LISTED FOR THE APPLICATION SHALL BE ACCEPTABLE:
- ELECTRICAL METALLIC TUBING (EMT).
- COMPRESSION COUPLINGS AND CONNECTORS ONLY MADE UP WRENCH TIGHT.
- FLEXIBLE METAL CONDUIT (FMC) AND LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC).
- FINAL CONNECTIONS TO VIBRATING OR ADJUSTABLE EQUIPMENT INCLUDING, BUT NOT LIMITED TO, LIGHT FIXTURES, HVAC UNITS, TRANSFORMERS, MOTORS, ETC. OR WHERE EQUIPMENT IS PLACED UPON SLAB ON-GRADE.
- RIGID GALVANIZED STEEL (RGS).
- ALL FITTINGS, CONNECTORS, AND COUPLINGS SHALL BE THREADED MADE UP WRENCH TIGHT.
- RIGID POLYVINYL CHLORIDE (PVC) SCHEDULE 40 OR SCHEDULE 80.
- MAY BE USED FOR SERVICES, EXTERIOR, BELOW GRADE, AND WET LOCATIONS.
- SHALL NOT BE USED IN CONCRETE SLABS NOR EXPOSED WITHIN A BUILDING OR STRUCTURE.
- METAL-CLAD CABLE (MC)
- CONCEALED INSTALLATIONS ONLY.
- WITHIN A DUCT WITH SMOOTH OR CORRUGATED METAL JACKET AND NO OUTER COVERING OVER THE METAL JACKET.

IN FINISHED SPACES, ALL CONDUITS SHALL BE CONCEALED EXCEPT TO MAKE A FINAL CONNECTION TO EQUIPMENT NOT MOUNTED IN OR AGAINST FINISH MATERIAL.

ALL FEEDER AND BRANCH CIRCUITS SHALL HAVE A SEPARATE PROPERLY SIZED AND MARKED GROUNDING CONDUCTOR, PER APPLICABLE CODES, THAT BONDS ALL ENCLOSURES, BOXES, ETC. CONDUIT SHALL NOT BE USED AS A GROUNDING OR BONDING CONDUCTOR.

IF EXISTING ELECTRIC SERVICE IS TO REMAIN, CONTRACTOR SHALL BE VERIFY THAT IT MEETS PROJECT REQUIREMENTS WITHOUT MODIFICATION. IF IT IS TO BE ADDED OR REPLACED AS A PART OF THIS WORK, CONTRACTOR SHALL ORDER FROM, COORDINATE WITH, AND GAIN APPROVAL FROM THE ELECTRICAL UTILITY. ALL ELECTRICAL EQUIPMENT SHALL BE AS SPECIFIED AND AS APPROVED BY THE LOCAL UTILITY WHERE APPLICABLE.

ALL EQUIPMENT, ENCLOSURES, ETC. SHALL BE SUITABLE FOR THE INSTALLED ENVIRONMENT, MINIMUM NEMA 3R FOR ALL EXTERIOR INSTALLATIONS.

WIRING DEVICES SHALL BE SPECIFICATION GRADE AND WIRING DEVICE COVER PLATES SHALL BE PLASTIC WITH ENGRAVING AS SPECIFIED. COLOR SHALL BE IVORY. ALL DEVICES AND COVER PLATES SHALL BE OF THE SAME MANUFACTURER.

ALL FIRE-RATED PENETRATIONS SHALL BE SEALED USING A SUITABLE AND LISTED FIRE SEALING DEVICE OR GROUT THAT WILL MAINTAIN THE FIRE RATING OF THE STRUCTURE PENETRATED.

PROVIDE PERMANENTLY AFFIXED ENGRAVED NAMEPLATES FOR ALL CODE REQUIRED LABELING AND ON ALL PANELS, METERING, DISCONNECTS, AND ELECTRICAL EQUIPMENT THAT IDENTIFIES EQUIPMENT SERVED, ELECTRICAL SOURCE WITH CIRCUIT IDENTIFICATION, AND VOLTAGES WITHIN.

ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL FINAL TERMINATIONS TO ALL EQUIPMENT.

ALL ELECTRICAL APPURTENANCES THAT ARE DISCONNECTED SHALL BE COMPLETELY REMOVED WITH EXISTING STRUCTURES TO REMAIN, REPAIRED, FINISHED, FILLED, PAINTED, ETC. ALL PANEL SCHEDULES, EQUIPMENT LABELING, AND CODE-REQUIRED LABELING, SHALL BE VERIFIED AND PROPERLY COMPLETED TO MATCH THE INSTALLATION.

26 GROUNDING:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

GROUND ALL SYSTEMS AND EQUIPMENT IN ACCORDANCE WITH BEST INDUSTRY PRACTICE, THE REQUIREMENTS OF THE NFPA 70 NATIONAL ELECTRICAL CODE (NEC), AND ALL OTHER APPLICABLE CODES AND REGULATIONS.

ALL GROUNDING ELECTRODES PRESENT AT EACH SERVICE LOCATION SHALL BE BONDED TOGETHER TO FORM THE GROUNDING ELECTRODE SYSTEM.

ALL EQUIPMENT ENCLOSURES, DEVICES, AND CONDUITS SHALL BE GROUNDED BY THE INSTALLATION OF A SEPARATE GROUNDING CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS THAT IS SIZED PER CODE OR IS OF THE SIZE INDICATED ON THE DRAWINGS, SHALL BE CONTINUOUS IN LENGTH, AND SHALL BE BONDED TO EACH ENCLOSURE PASSED THROUGH. CONDUIT SHALL NOT BE USED AS A GROUNDING OR BONDING WIRE OR CIRCUIT.

BOND ALL METALLIC CONDUITS TOGETHER THAT ARE CONNECTED TO NON-METALLIC ENCLOSURES, IN-GROUND BOXES, AND TO AN ENCLOSURE WHERE A GROUND BUS IS SPECIFIED OR SUPPLIED. ACCOMPLISH THIS BOND WITH GROUNDING CONDUCTORS MINIMUM SIZED TO THE LARGEST GROUNDING CONDUCTOR PRESENT IN THE ENCLOSURE CONNECTED TO A GROUNDING TYPE BUSHING EQUALLY SIZED OR MAXIMUM GROUND WIRE ACCOMMODATION AVAILABLE IN STANDARD MANUFACTURE FOR THE CONDUIT SIZE, WHICHEVER IS LESS.

EQUIPMENT GROUNDING AND LOAD SIDE BONDING CONDUCTORS SHALL BE SIZED PER THE CIRCUIT'S OVER-CURRENT PROTECTIVE DEVICE (OCPD) SIZE. WHERE THE UNGROUNDED CONDUCTORS ARE INCREASED IN SIZE ABOVE THE STANDARD FOR THE CIRCUIT'S OCPD, INCREASE THE GROUNDING CONDUCTOR PROPORTIONATELY TO THE CROSS-SECTIONAL AREA OF THE UNGROUNDED CONDUCTORS.

SERVICE MAIN BONDING JUMPERS AND GROUNDING ELECTRODE CONDUCTORS SHALL BE SIZED AND INSTALLED PER THE MINIMUM OF ALL APPLICABLE CODES AND REGULATIONS.

26 LIGHTNING PROTECTION:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS AND THE GROUNDING SPECIFICATIONS HEREIN.

THE LIGHTNING PROTECTION GROUNDING SYSTEM (LPGS) SHALL CONSIST OF BONDING ALL EQUIPMENT AND CONDUCTIVE STRUCTURES TO LOCALIZED SINGLE-POINT GROUNDING CONNECTIONS (TYPICALLY GROUND BARS) WHICH ARE BONDED TOGETHER AND TO AN IN-GROUND SYSTEM. IF THE LPGS IS ON A BUILDING, IT SHALL BE EFFECTIVELY BONDED TO THE ELECTRICAL SERVICE MAIN BONDING JUMPER AND TO ADDITIONAL IN-GROUND ELECTRODES AS MAY BE REQUIRED OR INDICATED. IF THE LPGS IS ON A DEDICATED COMMUNICATION SITE, ALL EQUIPMENT AREAS AND TOWERS SHALL EACH HAVE THEIR OWN IN-GROUND RING WITH EVERY RING BONDED TOGETHER, AND ALL CONDUCTIVE STRUCTURES IN CLOSE PROXIMITY (FENCES, ICE BRIDGES, ISOLATED EQUIPMENT, ETC.) ALSO BONDED TO PROVIDE A COMMON ELECTRICAL EQUIPOTENTIAL SYSTEM FOR ALL CONDUCTIVE ELEMENTS AND STRUCTURES.

CONDUCTORS:
- MIN #2 AWG SOLID BARE TINNED COPPER (SBTC) FOR ALL IN-GROUND CONDUCTORS.
- MIN #2 AWG COPPER GREEN STRANDED FOR BONDING STRUCTURES, AND FOR INTER-SYSTEM BONDING OF INDIVIDUAL ELEMENTS SUCH AS GROUND BAR TO GROUND BAR.
- MIN #6 AWG COPPER GREEN STRANDED OR ALL EQUIPMENT BONDING.
- INSTALL ALL IN-GROUND CONDUCTORS IN THE SAME HORIZONTAL PLANE OR IN A DOWNWARD DIRECTION AWAY FROM THE TOWER AND EQUIPMENT AREAS.
- AVOID LONG RUNS. MAKE DIRECT RUNS AS MUCH AS POSSIBLE.
- PLACE THROUGH NON-METALLIC SLEEVES WHEN PASSING THROUGH FLOORS, WALLS, CEILINGS, AND SIMILAR STRUCTURES.
- MAKE ALL CONNECTIONS IN CONTACT WITH EARTH WITH EXOTHERMIC WELDING. MAKE ALL OTHER CONNECTIONS WITH EXOTHERMIC WELDING, IRREVERSIBLE COMPRESSION CONNECTORS, OR LISTED COMPRESSION TWO-HOLE LUGS.
- INSTALL ALL CONDUCTORS WITH A MINIMUM 18 INCH BEND RADIUS AND NO BEND LONGER THAN A 90 DEGREE ARC. ALL BENDS SHALL BE HORIZONTAL, OR DOWNWARD TOWARDS EARTH.
- ALL CONDUCTORS PASSING FROM ABOVE-GROUND TO IN-GROUND CONNECTIONS, WHERE EXPOSED, SHALL BE COVERED AND PROTECTED WITH A NON-METALLIC CONDUIT SEALED AT BOTH ENDS.
- IF 2 OR MORE IN-GROUND CONDUCTORS ARE IN THE SAME PATH (2 RINGS OVERLAPPING, BONDING FOLLOWING ANOTHER RING OR RADIAL, OR SIMILAR), COMBINE WITH A SHARED SINGLE CONDUCTOR.

EQUIPMENT AND TOWER GROUND RINGS SHALL BE:
- BONDED TO ANY CONDUCTIVE OBJECT OR STRUCTURE WITHIN 5 FEET OF EQUIPMENT GROUND RINGS AND WITHIN 20 FEET OF TOWER GROUND RINGS.
- INSTALLED MINIMUM 18 INCHES FROM FOUNDATIONS, FOOTINGS, AND SIMILAR.

INSTALL ALL IN-GROUND RINGS, RADIALS, BONDS CONNECTING THEM, AND ALL SIMILAR GROUNDING:
- MIN 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE, WHICHEVER IS GREATER DEPTH.
- MIN 2 FEET FROM FOUNDATIONS, FOOTINGS, OTHER GROUNDING SYSTEMS, AND SIMILAR STRUCTURES, EXCEPT WHEN MAKING A BOND TO ANY OF THESE STRUCTURES. DO NOT BOND TO FOUNDATION INTERNAL REINFORCEMENT.

ALL EQUIPMENT GROUPED IN A COMMON AREA, COMPOUND, STRUCTURE, OR SIMILAR SHALL BE BONDED TO A SINGLE-POINT GROUND, PREFERABLY AN ISOLATED GROUND BAR. BOND THE GROUND BAR TO THE SYSTEM WITH MINIMUM SINGLE BONDING CONDUCTOR. IF BONDING TO AN IN-GROUND RING, INSTALL 2 BONDING CONDUCTORS MINIMUM WITH EACH CONDUCTOR INSTALLED DIRECTIONALLY AWAY FROM EACH OTHER AND PARALLEL TO THE IN-GROUND CONDUCTOR, WITH NO TEE CONNECTIONS.

TOWER GROUNDING:
- EACH TOWER LEG SHALL BE BONDED TO ITS RING. SINGLE-LEGGED TOWERS, OR MONOPOLES, SHALL HAVE 2 BONDS ON OPPOSITE SIDES.
- BOND TO TOWER BASE, NOT TO VERTICAL TOWER STRUCTURE, AWAY FROM TOWER MOUNTING HARDWARE.
- EACH BOND SHALL HAVE A CORRESPONDING GROUND ROD ON THE RING.
- EACH BOND SHALL CONSIST OF 2 CONDUCTORS FROM THE TOWER TO ITS RING WITH EACH CONDUCTOR DIRECTED IN OPPOSITE DIRECTIONS WITH A PARALLEL CONNECTION ON THE RING ON OPPOSITE SIDES OF THE GROUND ROD.

EQUIPMENT AREA GROUNDING:
- COMMUNICATION AREAS ON EARTH SHALL HAVE A GROUND RING.
- BOND ALL EQUIPMENT TO A SINGLE-POINT GROUND (GROUND BAR).
- BOND THE EQUIPMENT SINGLE-POINT GROUND TO THE EQUIPMENT GROUND RING WITH MINIMUM 2 CONDUCTORS DIRECTED IN OPPOSITE DIRECTIONS WITH PARALLEL CONNECTIONS ON THE RING.
- IF EQUIPMENT IS ENCLOSED IN A SHELTER:
- IF THE SHELTER IS CONSIDERED TO BE EXPOSED TO A DIRECT LIGHTNING STRIKE, INSTALL A BUILDING LIGHTNING PROTECTION SYSTEM PER APPLICABLE VERSION OF NFPA 780.
- BOND ALL FIXED CONDUCTIVE BUILDING COMPONENTS TOGETHER AND TO THE BUILDING RING GROUND AT THE CORNERS. THIS IS TYPICALLY CALLED THE HALO GROUND. DO NOT BOND EQUIPMENT TO THE HALO GROUND.
- BOND ALL EQUIPMENT TOGETHER TO A SINGLE-POINT OR INTERIOR EQUIPMENT RING GROUND (IEGR). BOND THE SINGLE-POINT OR IEGR TO THE EXTERNAL EQUIPMENT RING GROUND.
- PLACE GROUND RODS AT THE EQUIPMENT GROUND RING CORNERS.

GROUND RODS:
- SEPARATION SPACE BETWEEN ANY 2 GROUND RODS SHALL BE NO CLOSER THAN THEIR DEPTH. THIS APPLIES TO ALL RODS IN THE COMPLETE SYSTEM.
- DRIVE VERTICALLY IN UNDISTURBED SOIL WITH THE TOP AT SAME DEPTH AS THE IN-GROUND CONDUCTOR. IF NOT POSSIBLE TO INSTALL VERTICALLY, PLACE AS CLOSE TO VERTICAL AS POSSIBLE AND IN A DIRECTION AWAY FROM THE NEAREST ABOVE-GROUND CONDUCTIVE ELEMENT (TOWER, EQUIPMENT, ETC.).

RADIALS (TYP. NEW DEDICATED COMMUNICATION SITES):
- WHERE FEASIBLE WITH ENOUGH SPACE AVAILABLE, INSTALL A MINIMUM OF 4, MAXIMUM 10 RING RADIALS.
- EACH RADIAL'S LENGTH SHALL BE MIN 20 FT, MAX 80 FT.
- EXTEND RADIALS PERPENDICULAR FROM RINGS IN AS STRAIGHT LINE AS POSSIBLE, AWAY FROM OTHER RING GROUNDS, RADIALS, BONDS, AND SIMILAR.
- A COMMON PRACTICE IS TO PLACE 4 RADIALS FROM THE TOWER RING TO THE 4 CORNERS OF THE AVAILABLE AREA.

AT A MINIMUM, BOND ALL COMPOUND CONDUCTIVE FENCE CORNER POSTS AND GATE POSTS TO THE LPGS. PREFERABLY, INSTALL A GROUND RING THAT FOLLOWS THE FENCE LINE, BONDING ALL POSTS TO THE RING.

27 ANTENNAS & CABLES:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TRANSMISSION CABLES, JUMPERS, CONNECTORS, GROUNDING STRAPS, ANTENNAS, MOUNT AND HARDWARE. ALL MATERIALS SHALL BE INSPECTED BY THE CONTRACTOR FOR DAMAGE UPON DELIVERY. JUMPERS SHALL BE SUPPLIED AT ANTENNAS AND EQUIPMENT INSIDE SHELTER. COORDINATE LENGTH OF JUMPER CABLES WITH OWNER. COORDINATE AND VERIFY ALL OF THE MATERIALS TO BE PROVIDED WITH OWNER PRIOR TO SUBMITTING BID AND ORDERING MATERIALS.

AFTER INSTALLATION, THE TRANSMISSION LINE SYSTEM SHALL BE PIM / SWEEP TESTED FOR PROPER INSTALLATION AND DAMAGE WITH ANTENNAS CONNECTED. CONTRACTOR SHALL OBTAIN AND USE LATEST TESTING PROCEDURES FROM OWNER OR MANUFACTURER PRIOR TO BIDDING.

ANTENNA CABLES SHALL BE UNIQUELY COLOR-CODED AT THE ANTENNAS, BOTH SIDES OF EQUIPMENT SHELTER WALL, AND JUMPER CABLES AT THE EQUIPMENT.

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CONNECTORS, ASSOCIATED CABLE MOUNTING AND GROUNDING HARDWARE, WALL MOUNTS, STANDOFFS, AND ALL ASSOCIATED HARDWARE TO INSTALL ALL CABLES AND ANTENNAS TO THE MANUFACTURER'S AND OWNER'S SPECIFICATIONS.

ANTENNA CABLES SHALL BE FOAM DIELECTRIC COAX, FIBER, OR HYBRID AS SPECIFIED.

UNLESS OTHERWISE NOTED, FOAM DIELECTRIC COAX CABLES SHALL BE:
- 7/8" DIAMETER AT OR LESS THAN 100 FT IN LENGTH.
- 1 5/8" DIAMETER GREATER THAN 100 FT IN LENGTH.

HYBRID CABLES THAT INCLUDE METALLIC POWER CONDUCTORS SHALL BE OF A LENGTH AND SIZE FOR A MAXIMUM VOLTAGE DROP OF 3% FOR THE APPLICATION.

MINIMUM BENDING RADIUS FOR CABLES SHALL BE:
- COAX: 15 FT FOR 7/8" COAX AND 25 FT FOR 1 5/8" COAX.
- ALL OTHERS: MIN 20 TIMES THE OUTSIDE DIAMETER OR MFR SPECS WHICHEVER IS GREATER.

ALL EXTERIOR CABLE CONNECTIONS SHALL BE COVERED WITH A WATERPROOF SPLICING KIT.

CONTRACTOR SHALL VERIFY EXACT LENGTH AND DIRECTION OF TRAVEL IN FIELD PRIOR TO CONSTRUCTION.

CABLE SHALL BE FURNISHED AND INSTALLED WITHOUT SPLICES AND WITH CONNECTORS AT EACH END.

27 CABLE TRAY:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

CABLE TRAY SHALL BE MADE OF EITHER CORROSION RESISTANT METAL OR WITH A CORROSION RESISTANT FINISH.

CABLE TRAY SHALL BE OF LADDER TRAY TYPE WITH FLAT COVER CLAMPED TO SIDE RAILS.

CABLE LADDER SHALL BE SIZED TO FIT ALL CABLES IN ACCORDANCE WITH NEC AND NEMA 11-15-84.

CABLE LADDER TRAYS SHALL BE NEMA CLASS 12A BY PW INDUSTRIES, INC. OR EQUAL.

CABLE LADDER TRAY SHALL BE SUPPORTED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

ALL WORKMANSHIP SHALL CONFORM TO THESE REQUIREMENTS AND ALL LOCAL CODES AND STANDARDS TO ENSURE SAFE AND ADEQUATE GROUNDING SYSTEM.

31 EXCAVATION & FILL:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

CONTRACTOR SHALL GRADE ONLY AREAS SHOWN TO BE MODIFIED AS A PART OF THIS WORK AND ONLY TO THE EXTENT REQUIRED TO SHED OVERLAND WATER FLOW AWAY FROM SITE. ALL MADE SLOPES SHALL NOT BE STEEPER THAN 3:1 (HORIZONTAL:VERTICAL). SEDIMENTATION AND EROSION CONTROLS SHOWN AND SPECIFIED SHALL BE ESTABLISHED BEFORE STRIPPING EXISTING VEGETATION.

ORGANIC MATERIAL AND DEBRIS SHALL BE STRIPPED AND STOCKPILED BEFORE ADDING FILL MATERIAL.

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.

ALL FILL SHALL BE PLACED IN ONE FOOT LIFTS AND COMPACTED IN PLACE. STRUCTURAL FILL SHALL BE COMPACTED TO 95% OF ITS MAXIMUM DRY UNIT WEIGHT TESTED IN ACCORDANCE WITH ASTM D1557.

EXCAVATIONS FOR FOOTINGS SHALL BE CUT LEVEL TO THE REQUIRED DEPTH AND TO UNDISTURBED SOIL. REPORT UNSUITABLE SOIL CONDITIONS TO THE CONSTRUCTION MANAGER.

TRENCH EXCAVATIONS SHALL BE BACKFILLED AT THE END OF EACH DAY.

TOWER FOUNDATION EXCAVATION, BACKFILL AND COMPACTION SHALL BE IN ACCORDANCE WITH TOWER MANUFACTURER'S DESIGNS AND SPECIFICATIONS.

NATIVE GRAVEL MATERIAL MAY BE USED FOR TRENCH BACKFILL WHERE SELECT MATERIAL IS NOT SPECIFIED. GRAVEL MATERIAL FOR CONDUIT TRENCH BACKFILL SHALL NOT CONTAIN ROCK GREATER THAN 2 INCHES IN DIAMETER.

BANK OR CRUSHED GRAVEL SHALL CONSIST OF TOUGH, DURABLE PARTICLES OF CRUSHED OR UNCRUSHED GRAVEL FREE OF SOFT, THIN, ELONGATED OR LAMINATED PIECES AND MEET THE SPECIFIED GRADATION.

PROCESSED AGGREGATE BASE SHALL CONSIST OF COURSE AND FINE AGGREGATES COMBINED AND MIXED SO THAT THE RESULTING MATERIAL CONFORMS TO THE GRADATION. COURSE AGGREGATE SHALL BE EITHER GRAVEL OR BROKEN STONE AND FINE AGGREGATE SHALL CONSIST OF SAND.

BANK GRAVEL FILL SHALL PASS WITH THE FOLLOWING SIZE SQUARE MESH SIEVES:

25-60% WITH PASS 1/4"
15-45% WITH PASS #10
2-25% WITH PASS #40
0-10% WITH PASS #100
0-5% WITH PASS #200

BANK GRAVEL BASE SHALL PASS WITH THE FOLLOWING SIZE SQUARE MESH SIEVES:

100%	WITH PASS 5"
100%	WITH PASS 3-1/2"
100%	WITH PASS 2-1/4"
95-100%	WITH PASS 2"
55-100%	WITH PASS 1-1/2"
25-60%	WITH PASS 1/4"
15-45%	WITH PASS #10
5-25%	WITH PASS #40
0-10%	WITH PASS #100
0-5%	WITH PASS #200

PROCESSED AGG BASE SHALL PASS WITH THE FOLLOWING SIZE SQUARE MESH SIEVES:

90-100%	WITH PASS 3-1/2"
55-95%	WITH PASS 1-1/2"
50-75%	WITH PASS 3/4"
25-45%	WITH PASS 1/4"
5-20%	WITH PASS #40
2-12%	WITH PASS #100

FILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, ICE, TRASH AND DEBRIS. REFER TO GEOTECHNICAL ENGINEERING AS APPLICABLE FOR ALL FILL MATERIAL REQUIREMENTS.

31 SEDIMENTATION & EROSION CONTROL:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXIST. SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENTATION CONTROL.

LIMITS OF CLEARING AND GRUBBING SHALL BE CLEARLY MARKED BEFORE COMMENCING WITH SUCH WORK.

SEDIMENTATION AND EROSION CONTROL (SEC) MEASURES SHOWN SHALL BE INSTALLED PRIOR TO LAND CLEARING, EXCAVATION OR GRADING OPERATIONS. REQUIREMENTS OF LOCAL WETLAND AGENCY SHALL BE MET PRIOR TO EARTHWORK OPERATIONS.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN SEC MEASURES THROUGHOUT DURATION OF PROJECT UNTIL DISTURBED LAND IS THOROUGHLY VEGETATED.

FAILURE OF THE SEC SYSTEMS SHALL BE CORRECTED IMMEDIATELY AND SUPPLEMENTED WITH ADDITIONAL MEASURES AS NEEDED.

TOPSOIL SHALL BE SPREAD TO FINISH GRADES AND SEEDED AS SOON AS FINISHED GRADES ARE ESTABLISHED. STRAW MULCH, JUTE NETTING OR MATS SHALL BE USED WHERE THE NEW SEED IS PLACED.

VEGETATIVE SEEDING:
- AREA TO BE SEEDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF 3". TOPSOIL SHALL BE LOOSENED BY RAKING OR DISKING BEFORE SEEDING. APPLY 50 Lbs. OF DOLOMITIC LIMESTONE AND 25 Lbs. OF 10-10-10 FERTILIZER PER 1000 SF. HARROW LIME AND FERTILIZER INTO LOOSE SOIL.
- APPLY COMMON BERMUDA AND RYE GRASS AT 50 LBS PER ACRE. USE CYCLONE SEED DRILL CULTIPACKER SEEDER OR HYDROSEEDER (SEED & FERTILIZER SLURRY) FOR STEEP SLOPES. IRRIGATE UNTIL VEGETATION IS COMPLETELY ESTABLISHED.

12 INDUSTRIAL WAY
SALEM, NH 03079

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

ALL-POINTS
TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CONSTRUCTION DOCUMENTS

NO	DATE	REVISION
0	11/25/20	FOR REVIEW: JRM
1	11/30/20	FOR REVIEW: JRM
2	12/08/20	FOR CONSTRUCTION: JRM
3	12/09/20	ADDED DIMS TO YAGI ANTENNA: JRM
4	07/02/21	REV. PER FAA-1A: JRM
5	07/09/21	PER CLIENT COMMENTS: JRM
6	09/01/21	PER CLIENT COMMENTS: JRM
7	04/26/22	FOR REVIEW: JRM
8	06/15/22	PER CLIENT COMMENTS: JRM

STATE OF CONNECTICUT
MICHAEL TRODDEN
33313
LICENSED
PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: SAI COMMUNICATIONS
ADDRESS: 12 INDUSTRIAL WAY SALEM, NH 03079

AT&T CT1425
MANCHESTER CT
OLCOTT STREET

SITE ADDRESS: 250 OLCOTT STREET MANCHESTER, CT, 06040

APT FILING NUMBER: APT_1931640

AT&T FA NUMBER: 15353155

AT&T SITE NUMBER: CT1425 (NSB)

DATE: 11/25/20	DRAWN BY: THK
	CHECKED BY: JRM

SHEET TITLE:

NOTES & SPECIFICATIONS

SHEET NUMBER:

N-1

ATTACHMENT 4

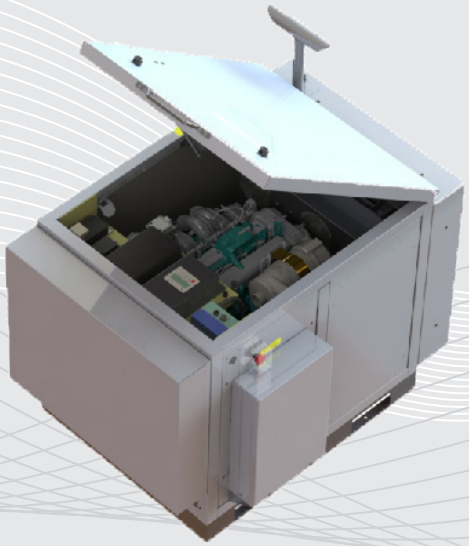
POLAR POWER INC.

PRELIMINARY

15 KW GASEOUS DC GENERATOR
PART NUMBER 8220-100-LPG-15-TP

All APUs include:
- Powder coated aluminum enclosure
- Electric radiator fans

Options available:
- 8-alarm relay board
- Oil refining kit
- Web-based monitoring and control



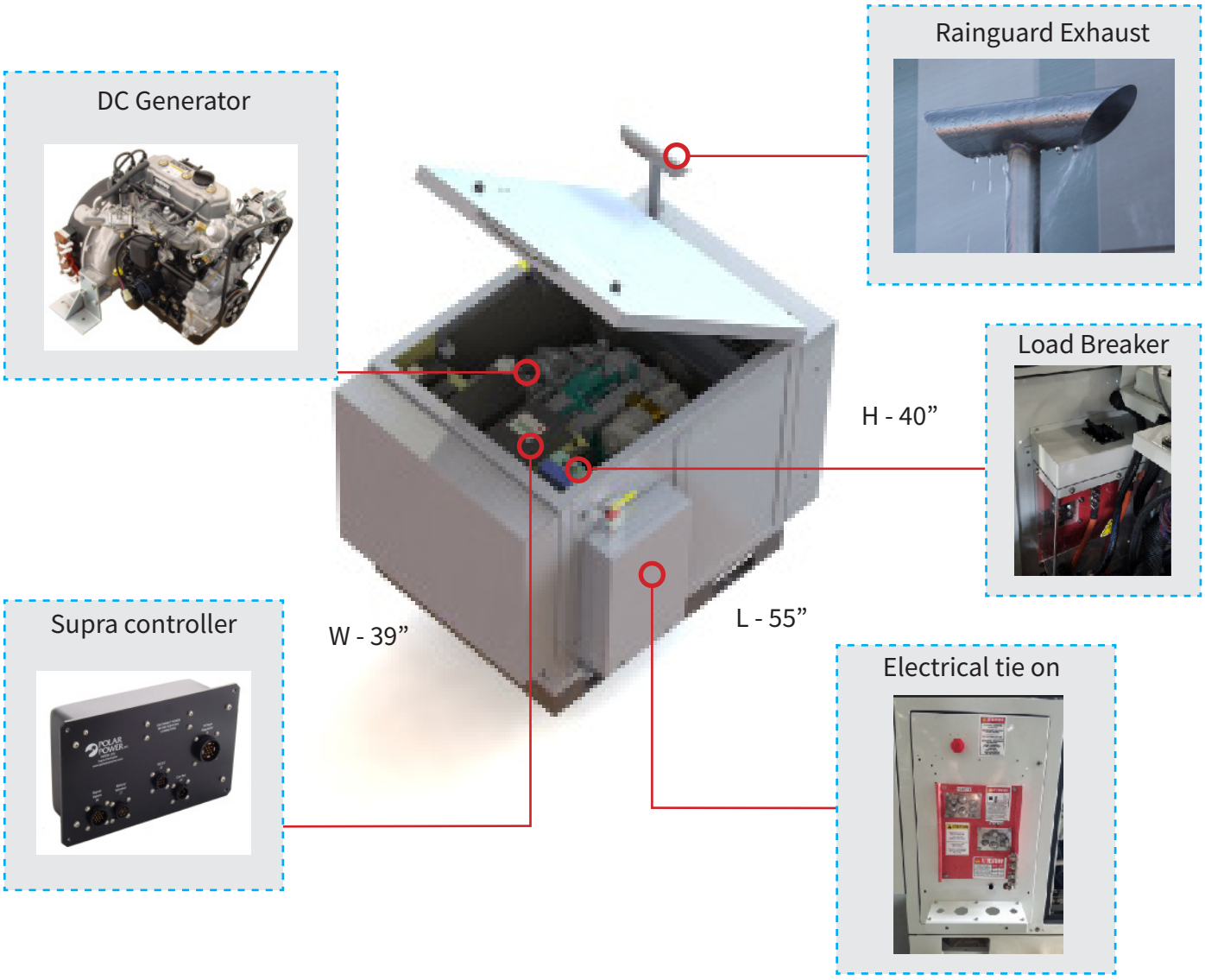
Standards:
- *UL STD 2200*
- *EPA Compliant*

Made in USA

Founded in 1979 Polar Power specialized in solar photovoltaic systems, solar air conditioning and refrigeration. We developed and provided photovoltaic charging controls for telecommunications in the 1980s along with DC generators for the military. In 1994 we were first to provide DC generators with remote control and monitoring to the telecommunications industry.

Polar's success is based on engineering generators to meet the very specific needs of each application. Telecom site optimization is best met with the DC generator technology as the loads and batteries are DC. It makes no sense to install an AC generator and convert the output to DC. The AC generators are designed for a wide range of applications and they are not specifically produced for telecom applications so there are issues with reliability, space, and fuel efficiency.

Polar can save you considerable time and cost in permitting, installing, purchasing, and maintaining a backup generator. We reduce CAPEX and OPEX costs while improving backup reliability.



SMALL FOOTPRINT.
Polar’s DC generator is considerably smaller in size than an AC generator. You can now backup sites that could not accommodate an AC generator. Smaller also means less cost for space leasing.

LOW MAINTENANCE.

LOW ACOUSTIC NOISE. <67 dBA @ 7 meters, and low vibration so as not to disturb the local residents or building landlords.

CORROSION RESISTANT. All-aluminum enclosure with stainless hardware for low maintenance, and long service life.

FUEL EFFICIENT. Up to 85% fuel savings due to smaller engine displacement, high efficiency alternator, and variable speed operation.

ADVANCED MONITORING. Remote diagnostics, control, and monitoring. Ethernet and RS232 standard, with SNMP.

RODENT RESISTANT. Small animals can quickly destroy a generator set by gnawing on wires, fuel lines, radiator hoses, etc. Cooling air inlets and outlets have perforated aluminum screens to keep small rodents and large insects out. Stainless steel wire braid is placed over fuel and radiator lines to prevent damage.

LONG LIFE. Controls and wire harnesses are designed to exceed a 20 year life. Higher grade, longer life electrical wire (UL 3173), weather tight connectors, gold plated connector pins on signal circuits. No transfer switches are required.

SPECIFICATIONS PN 8220-100-LPG-15-TP

Engine

Engine Model	Toyota 1KS-CHP
Cylinders	3 In-Line
Displacement (cc)	0.952
Bore (in./mm)	2.834/72
Stroke (in./mm)	3.070/78
Intake Air System	Naturally Aspirated
Engine Max HP	28.2HP at 3000RPM
Emissions	U.S. EPA Tier 4 Interim
Emissions Compliance	EPA Certified

Engine lubrication system

Oil Filter Type	Full flow spin-on canister
Oil Capacity (L)	3.3
Oil Pressure Switch	Yes
Oil Pressure Transducer	Optional

Exhaust

Exhaust flow at rated output (cfm/cmm)	135.2/3.82
Exhaust temperature at rated output (°C/°F)	726.8/1340

Fuel Consumption LPG

[*Note: Calculated Values]

RPM/Output (kW)	Gal/hr	Kg/hr
2800RPM/ 16kW	2.44	4.69
2400RPM/ 14.5kW	2.16	4.16
2000RPM/ 12.5kW	1.77	3.47
1800RPM/ 11.08 kW	1.567	3.01
1600RPM/ 9.67kW	1.36	2.62

Engine cooling system

Type	Pressurized Aluminum Radiator
Water Pump	Belt-driven
Fan Type	Electric Fans
Airflow CFM	1300
Fan Mode	Pusher
Temperature Sensor	Yes

Environmental

Operating Temperature (°C/°F)	-23 to 50/-10 to 122
Operating Humidity %	100
Cold Start Aids	Spark Plugs

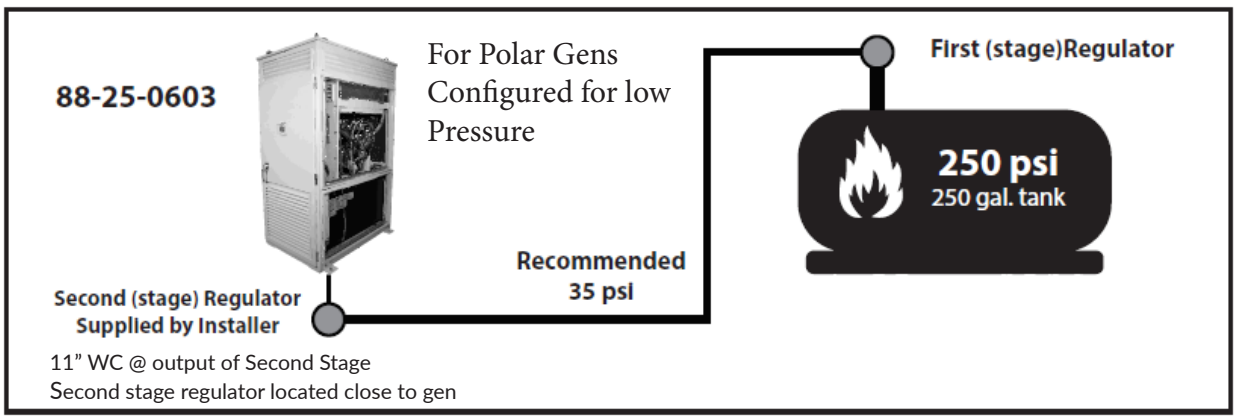
Power adjustment for conditions

Temperature Deration	1% derate for every 5.6 ºC (10 ºF) above 25 ºC (77 ºF)
Altitude Deration	3% derate for every 300m (1000 ft) above 91 m (91 ft)

Fuel system

Type	LPG or Natural Gas
Fuel Pump Type	Fuel Solenoid Replacement
Fuel Tank/Line	Supplied by customer
Max fuel flow rate (BTU/hr)	240,000

Minimum (At Max Load)	Recommended	Maximum
0.14 psi	0.39 psi	0.5 psi
4 in H2O	**11 in H2O**	13.9 in H2O



Engine cooling

System coolant capacity (gal/L)	2.2/8.3
Maximum operation air temperature on radiator (°C/°F)	54/129
Maximum ambient temperature (°C/°F)	49/120

Alternator

Alternator Model	8220
Type	Permanent Magnets, NdFeB
Weight (lb/kg)	46.5/21
Regulation Type	Variable engine speed
Stator	3 phase/32 poles
Overcurrent Protection (A)	15kW - 350A
Disconnect Means	Pull fuse block or Circuit breaker
Voltage Range (VDC)	44 to 60
Alternator Exhaust Flow (cfm/cmm)	130 to 180 / 3.68 to 5.1
MTBF (hr)	100,000+

Enclosure

Model	88-25-0100
Type	Weather Protective
Materials	Powder coated aluminum
Door Hardware	Three Point with Padlock Hasp, and Removable Side Panels
Mounting	Secure Mounting Tabs
Dims.	L 55” x W 39” x H 40” *(Height 54” including Exhaust)*

Optional: L2 option

Weight

Dry Weight (lb/kg)	698/317

Starter Supercapacitor

Model	20-16-0001
Storage Rating (Ah)	500
Voltage (VDC)	13-14.4
Weight (lb/kg)	12.1/5.5
Operating Temperature (°C/°F)	-40 to 65 / -40 to 149
Service Life (year)	10 to 15

Charger

Model	00-10-0015
Input Voltage (VDC)	37 to 62
Output Voltage (VDC)	14 to 14.4
Recharge time from 0 VDC (min)	10
Recharge time from 8 VDC (min)	2
Weight (lb/kg)	2.2/1

Standards

Certification	Intertek 400376
UL Listing	UL STD 2200
Standards	CSA STD C22.2 No. 100

Controller features

Controller Type.....Supra Model 250
4-Line Plain Text OLED Display.....Simple user interface for ease of operation
Engine Run Hours Indication.....Standard
Programmable Start Delay.....Standard
Run/Alarm/Maintenance Logs.....Standard
Engine Start Sequence.....Cyclic cranking: 5 sec on, 45 sec rest (3 attempts maximum)
Starter Supercapacitor Charger.....Standard
Automatic Voltage Regulation with Over and Under Voltage Protection.....Standard
Automatic Low Oil Pressure/High Oil Temperature Shutdown.....Standard
Overcrank/Overspeed.....Standard
Automatic High Engine Temperature Shutdown.....Standard
Field Upgradeable Firmware.....Standard
Glow Plug Delay .....Automatic With Temperature
Engine Start Delay.....Adjustable, Set at 60 sec
Return to Utility Delay.....Adjustable, Set at 60 sec
Engine Cool-down.....Adjustable, Set at 60 sec
Exerciser.....Programmable

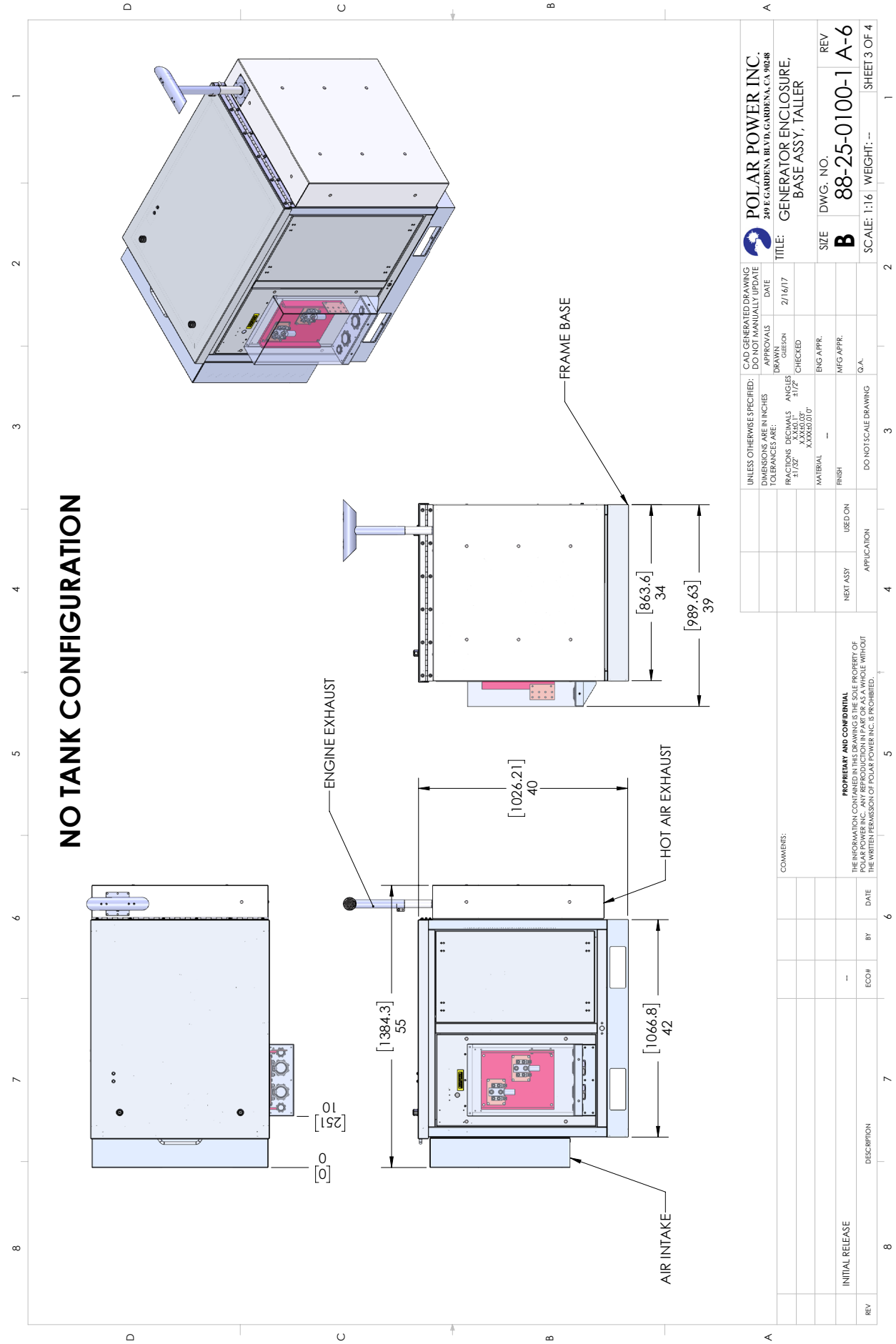
Monitoring

Alarm monitoring and remote control through Ethernet.

Contact closure alarm board

Shutdown Alarm.....Standard
Warning Alarm.....Standard
Engine Run.....Standard
E-Stop Depressed.....Standard

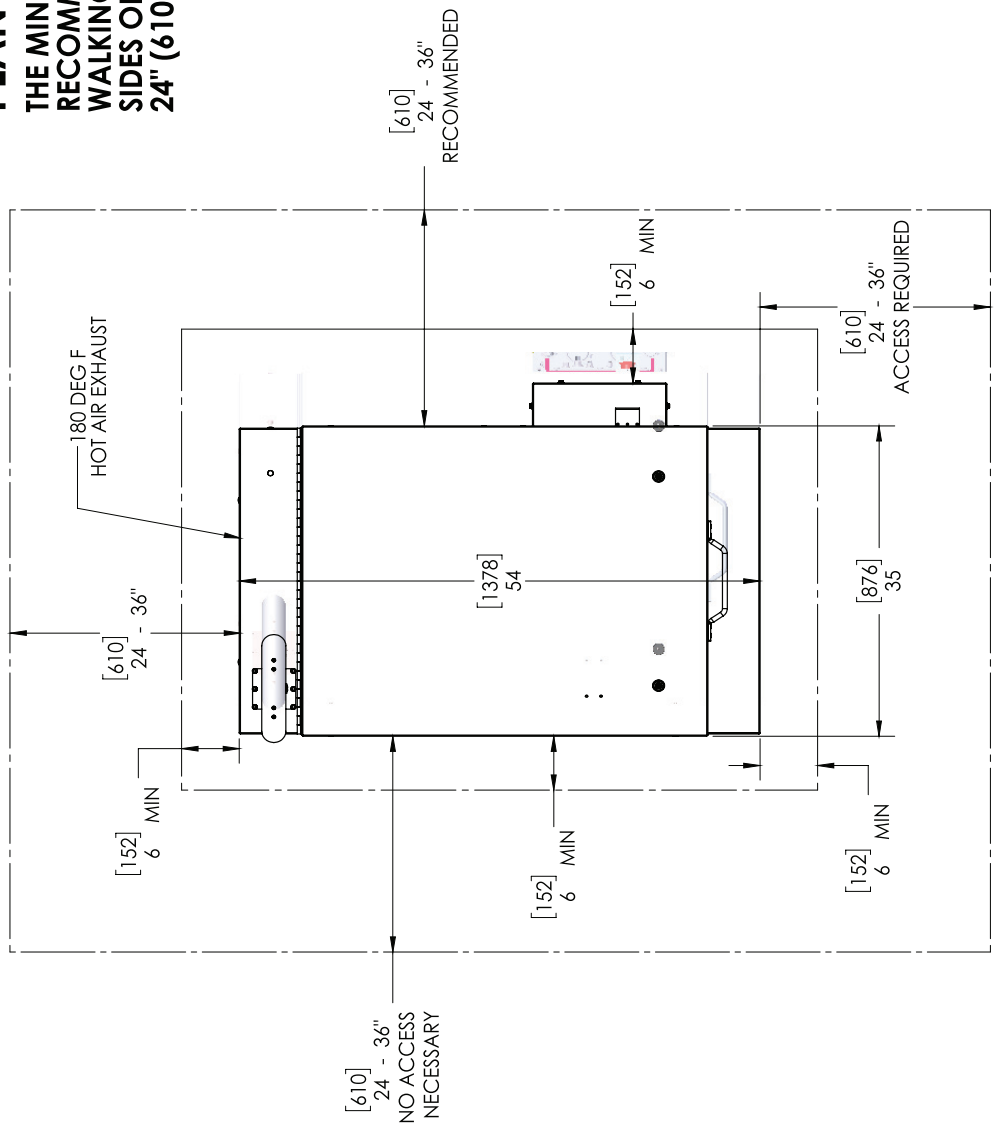
DRAWING FOR PN 8220-100-LPG-15-TP



PLANNING FOR PN 8220-100-LPG-15-TP

PLAN VIEW SPACE REQUIREMENTS

THE MINIMUM REQUIREMENTS ARE NOT RECOMMENDED FOR SERVICE CONVENIENCE. WALKING SPACE IS RECOMMENDED ON ALL SIDES OF THE GENERATOR. 24" (610 MM) SHOWN



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ±1/32" DECIMALS X.X±0.1" X.XX±0.03" X.XXX±0.010" ANGLES ±1/2°
MATERIAL
FINISH
DO NOT SCALE DRAWING
CAD GENERATED DRAWING DO NOT MANUALLY UPDATE
APPROVALS DATE
DRAWN GLEBON 2/16/17
CHECKED
ENG APPR.
MFG APPR.
Q.A.
NEXT ASSY
USED ON
APPLICATION

POLAR POWER INC.
249 E GARDENA BLVD, GARDENA, CA 90248

TITLE: GENERATOR ENCLOSURE BASE ASSY, TALLER

SIZE B | DWG. NO. 88-25-0100-1 | REV A-6

SCALE: 1:12 | WEIGHT: | SHEET 4 OF 4

COMMENTS:

PROPRIETARY AND CONFIDENTIAL
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	INITIAL RELEASE	--		

249 E. Gardena Blvd., Gardena, CA 90248
Tel.: +1(310)8309153 • Fax: +1(310)7192385
info@polarpowerinc.com • www.polarpower.com

ATTACHMENT 5

STRUCTURAL ANALYSIS REPORT
FOR PROPOSED ANTENNA & APPURTENANCE
INSTALLATION ON AN EXISTING 180-ft SELF-SUPPORTING TOWER
MANCHESTER, CONNECTICUT

Prepared for
SAI Communications, Inc.

AT&T Site Ref:
CT1425S; Manchester

Site Address: 250 Olcott Street, Manchester, Connecticut 06040
APT Filing No. CT1931643

April 1, 2021
Rev. 1: May 26, 2021
Rev. 2: June 15, 2022

ALL-POINTS TECHNOLOGY CORPORATION, P.C.
567 VAUXHALL STREET EXTENSION · SUITE 311 · WATERFORD, CT 06385 · PHONE 860-663-1697

Structural Analysis Report
180-ft Self-Supporting Tower
Manchester, Connecticut
prepared for
SAI Communications, Inc.

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a structural evaluation of an existing 180-ft self-supporting lattice tower structure to support a proposed AT&T equipment installation, utilizing an industry recognized FEA tower modeling software. The subject tower is owned and operated by Northeast Utilities (Eversource Energy).

In coordination with Eversource, it was decided that APT should include the reserve wireless communication carrier's equipment that was part of the original tower design. Additionally, APT incorporated a Service Wind Speed of 105-mph to evaluate the twist and sway based on Eversource's SUB 090 requirements and per TIA-222-H Annex D.

Our analysis indicates that the subject tower structure meets the requirements of the 2018 Connecticut State Building Code, International Building Code 2015 (IBC 2015) and the TIA-222-H standard with the existing, proposed, and reserved equipment loading.

INTRODUCTION:

A structural analysis was performed on the above-mentioned communications tower by APT for SAI Communications, Inc. The subject tower is located at 250 Olcott Street, in Manchester, Connecticut.

The following information was utilized in the preparation of this analysis:

- Field observations by APT on numerous occasions, including most recently October 15, 2020. APT climbed the structure in its entirety and recorded information regarding physical and dimensional properties of the structure and its appurtenances.
- Mount Analysis prepared by Hudson Design Group, LLC dated October 14, 2020.
- Tower Mapping Report prepared by APT; project CT1931640 dated October 20, 2020.
- Structural Analysis Report prepared by APT; project CT1931643 dated April 1, 2021.
- RFDS provided by AT&T, dated September 9, 2020 and updated February 2, 2021.

The analysis was conducted using the following equipment inventory (proposed equipment shown in **bold** text):

Carrier	Antenna and Appurtenance Make/Model	Elevation (AGL)	Status	Mount Type	Coax/Feed-Line
N/A	Lightning Rod	179'	E	18' x 2-3/8" pipe	N/A
Eversource	Kreco CO-41AN omnidirectional whip	178'	E	Leg	7/8"
Eversource	4' x 2" omnidirectional whip (SO9627), Bird Technologies 430-946-09168-T TTA, db Spectra DS9A09F36D-N omnidirectional whip, Sinclair SC351D-HF2LDF	177'	E E E R	6' sidearm Leg Leg Leg	1-5/8" 1/2" (2) 1-5/8" 7/8"
Eversource	(2) 8' dish w/ radome (PAD8X)	176'	E	(2) 8' x 4-1/2" pipe	(2) EW63
Eversource	8' dish w/ radome	164'	R	8' x 4-1/2" pipe	(2) EW65
Eversource	Sinclair SD212-SF2P2SNF 2-bay dipole, Comprod 531-7071D dipole,	158'	R	Sidearm below	(2) 7/8"
Eversource	Sinclair SC351D-HP2LDF omnidirectional whip	156'	R	Sidearm below	7/8"
Eversource	3' yagi	153'	E	8' x 4-1/2" pipe, 6' sidearm	7/8"
Sprint	(3) 6' x 6" x 18" panel antennas, (3) RRH1900-4x45 RRHs, (6) RRH2x50-800 RRHs	135'	E	(3) 14' sector mounts	(3) 1-1/4"
AT&T	**(3) cci TPA65R-BU8DA-K, (3) cci HPA-65R-BU8A & (3) cci DMP65R-BU8DA-K panels, (3) 4478 RRHs, (3) RRUS-E2 RRHs (3) 4415 RRHs, (3) 4449 RRHs, (3) 8843 RRHs, (2) "squid" D-boxes**	**124**	**P**	**(3) 12' sector mounts (SitePro VFA12-WLL-30120**	**(5) DC power, (2) fiber**
Reserved	(12) 8' x 1' x 6: panels, (12) Ericsson RRUS 11 RRHs, (3) Raycap RCMDC-3315-PF-48 D-Boxes	115'	R	(3) 14' sector mounts	(21) 1-5/8"
Reserved	(12) 8' x 1' x 6: panels, (12) Ericsson RRUS 11 RRHs, (3) Raycap RCMDC-3315-PF-48 D-Boxes	105'	R	(3) 14' sector mounts	(21) 1-5/8"

Notes:

1. E = Existing; P = Proposed; R = Reserve/Future.

RIGOROUS STRUCTURAL ANALYSIS:

Methodology:

This structural analysis has been prepared in accordance with the ANSI TIA-222-H standard entitled "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures," the American Institute of Steel Construction (AISC) Manual of Steel Construction, 2018 Connecticut State Building Code, and IBC 2015.

Antenna, appurtenance and mount assembly loads were evaluated utilizing the ANSI TIA-222-H standard.

- Load Case 1: 135 mph (3-second gust), 0" ice
- Load Case 2: 50mph (3-second gust) w/ 1.5in ice thickness
- Load Case 3: 105mph (3-second gust) (Service Load)
- Structure Class III (essential communications facility)
- Exposure Category C
- Topographic Category 1.

Note:
Based upon IBC 2015/2018 Connecticut State Building Code maximum ultimate wind speed for site location of 135 mph (3-sec gust), equivalent to a nominal design speed of 105 mph (3-sec gust) per exception #5, Section 1609.1.1.

ANALYSIS RESULTS:

The analysis was conducted in accordance with the criteria outlined above with the aforementioned existing and proposed equipment loading. The following table summarizes the results of the analysis:

Elevation	Legs [1]	Bracing [2,]
160'-180'	25%	45%
140'-160'	43%	53%
120'-140'	27%	53%
100'-120'	44%	53%
80'-100'	65%	73%
60'-80'	51%	62%
40'-60'	62%	66%
20'-40'	73%	65%
0'-20'	64%	47%

Notes:
1. Based on ASTM A572 Gr. 50 pipes. Pipe diameter and thickness vary.
2. Based on ASTM A572 Gr. 50 angles. Angle dimensions and thickness vary.

Bracing, Splice and Anchor Bolts:

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

Foundation:

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

Load Effect	Calculated Reactions [(3)]
Compression	439.4 k
Uplift	-385.1 k
Base Shear	52.6 k
Overturning Moment	8294 ft-k

Notes:
3. 1 kip = 1,000 lbs

Deflection:

Combined twist and sway was evaluated per Northeast Utilities Substation Standard SUB 090, Section 7 under service wind as well as design wind speeds. Results are summarized as follows:

Load Case	Tilt	Twist	Combined Max.[4]	Eversource Allowable
Service Wind – 105-mph	0.4106°	0.1751°	**0.4464°**	0.500°

Notes:
4. Twist and sway was evaluated at the highest dish elevation at 176'.

APT also evaluated the allowable twist and sway based on the provisions included within TIA-222-H Annex D. Results are summarized as follows:

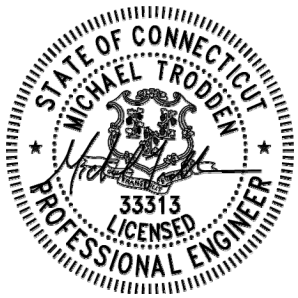
Dish Model	Allowable Radio Frequency	Dish Diameter (ft)	Dish Frequency	TIA-222-H Allowable
8' dish w/ radome (PAD8X)	3 dB	8-ft	5.925-6.875 GHz	**0.5636°-0.6540°**

CONCLUSIONS AND RECOMMENDATIONS:

In conclusion, we find that the existing 180-ft tall self-supporting lattice tower structure, located at 250 Olcott Street, in Manchester, Connecticut meets the requirements of the 2018 Connecticut State Building Code, IBC 2015, and the TIA-222-H standard with the existing, proposed, and reserved equipment loading.

Sincerely,
All-Points Technology

Michael S. Trodden, P.E.
Senior Structural Engineer



Prepared By:
All-Points Technology

Ali M. Adair
Project Scientist

LIMITATIONS:

This report is based on the following:

1. Tower/structure is properly installed and maintained.
2. All members and components are in a non-deteriorated condition.
3. All required members are in place.
4. All bolts are in place and are properly tightened.
5. Tower/structure is in plumb condition.
6. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.

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

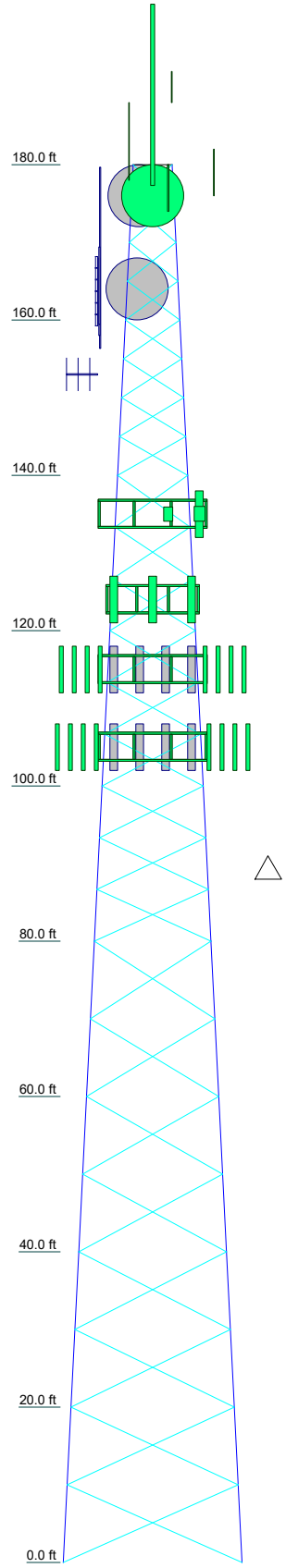
1. Replacing or reinforcing bracing members.
2. Reinforcing members in any manner.
3. Installing antenna mounts or waveguide cables.
4. Adding or relocating antennas.
5. Extending tower/structure.

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

Appendix A

Tower Schematic

Section		T1	T2	T3	T4	T5	T6	T7	T8	T9		
Legs		P2.875x.276	P3.5x.3	P5.5625x.500				P8.625x.5		P10.75x.5		
Leg Grade		A572-50										
Diagonals		L2x2x1/8	L2x2x3/16	L2 1/2x2 1/2x1/4	L3x3 1/2x1/4		L3 1/2x4x5/16	L3 1/2x4x3/8	L4x4x3/8	L5x5x5/16		
Diagonal Grade		A572-50										
Top Girts		L2x2x1/8		N.A.								
Face Width (ft)	23	5	7	9	11	13	15	17	19	21		
# Panels @ (ft)		8 @ 5		9 @ 6.66667				8 @ 10				
Weight (lb)	31216.2	794.9	1168.0	2502.7	2938.3	3108.2	4343.9	4855.4	5221.8	6283.0		



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Generic Lightning Rod 4' copper	180	HPA-65R-BU8A (ATI)	124
Sinclair SC351D-HF2LDF (Reserved)	180 - 156	HPA-65R-BU8A (ATI)	124
18'x2 3/8" Pipe Mount	179	DMP65R-BU8DA-K (ATI)	124
Kreco CO-41AN	178	DMP65R-BU8DA-K (ATI)	124
6' sidearm	177	DMP65R-BU8DA-K (ATI)	124
db Spectra DS9A09F36D-N	177	Radio 4478 (ATI)	124
Bird Technologies 430-496-09168 TTA	177	Radio 4478 (ATI)	124
Sinclair SC351D-HF2LDF (Reserved)	177	Radio 4478 (ATI)	124
4' x 2" omni whip	177	Ericsson RRUS-E2 (ATI)	124
8'x4 1/2" Pipe Mount	176	Ericsson RRUS-E2 (ATI)	124
8'x4 1/2" Pipe Mount	176	Ericsson RRUS-E2 (ATI)	124
8' dish with radome	176	Radio 4415 (ATI)	124
8' dish with radome	176	Radio 4415 (ATI)	124
Comprod 531-7071D (Reserved)	170.83 - 158	Radio 4415 (ATI)	124
SD212 2-bay dipole (Reserved)	168 - 158	TPA65R-BU8DA-K (ATI)	124
8'x4 1/2" Pipe Mount	164	TPA65R-BU8DA-K (ATI)	124
8' dish with radome	164	TPA65R-BU8DA-K (ATI)	124
8'x4 1/2" Pipe Mount	153	(4) Ericsson RRUS-11 (Reserve)	115
3' Yagi	153	(4) Ericsson RRUS-11 (Reserve)	115
6' sidearm	153	(4) Ericsson RRUS-11 (Reserve)	115
6' x 18" x 6" panel (Sprint)	135	Raycap RDC-3315-PF-48 J-box (Reserve)	115
6' x 18" x 6" panel (Sprint)	135	Raycap RDC-3315-PF-48 J-box (Reserve)	115
6' x 18" x 6" panel (Sprint)	135	Raycap RDC-3315-PF-48 J-box (Reserve)	115
1900 MHz RRH (Sprint)	135	14' sector mount (Reserve)	115
1900 MHz RRH (Sprint)	135	14' sector mount (Reserve)	115
1900 MHz RRH (Sprint)	135	14' sector mount (Reserve)	115
800 MHz RRH (Sprint)	135	(4) 8' x 1' x 6" panel (Reserve)	115
800 MHz RRH (Sprint)	135	(4) 8' x 1' x 6" panel (Reserve)	115
800 MHz RRH (Sprint)	135	(4) 8' x 1' x 6" panel (Reserve)	115
800 MHz RRH (Sprint)	135	(4) Ericsson RRUS-11 (Reserve)	105
800 MHz RRH (Sprint)	135	(4) Ericsson RRUS-11 (Reserve)	105
800 MHz RRH (Sprint)	135	(4) Ericsson RRUS-11 (Reserve)	105
14' sector mount (Sprint)	135	Raycap RDC-3315-PF-48 J-box (Reserve)	105
14' sector mount (Sprint)	135	Raycap RDC-3315-PF-48 J-box (Reserve)	105
14' sector mount (Sprint)	135	Raycap RDC-3315-PF-48 J-box (Reserve)	105
Radio 4449 (ATI)	124	14' sector mount (Reserve)	105
Radio 4449 (ATI)	124	14' sector mount (Reserve)	105
Radio 4449 (ATI)	124	14' sector mount (Reserve)	105
Radio 8843 (ATI)	124	(4) 8' x 1' x 6" panel (Reserve)	105
Radio 8843 (ATI)	124	(4) 8' x 1' x 6" panel (Reserve)	105
Radio 8843 (ATI)	124	(4) 8' x 1' x 6" panel (Reserve)	105
DC9-48-60-24-8C-EV (ATI)	124		
DC9-48-60-24-8C-EV (ATI)	124		
SitePro VFA12-WLL-30120 (ATI)	124		
SitePro VFA12-WLL-30120 (ATI)	124		
SitePro VFA12-WLL-30120 (ATI)	124		
HPA-65R-BU8A (ATI)	124		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 135 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 105 mph wind.
5. Tower Risk Category III.
6. Topographic Category 1 with Crest Height of 0.00 ft

All-Points Technology Corp.
567 Vauxhall St. Ext. Suite 311
Waterford, CT 06385
Phone: (860) 663-1697
FAX: (860) 663-0935

Job: ***180' Self-Supporting Tower***			
Project: ***CT1931644 Manchester***			
Client: SAI; AT&T Site #CT1425S	Drawn by: M. Larson	App'd:	
Code: TIA-222-H	Date: 05/26/21	Scale: NTS	
Path: C:\Users\APT User\Desktop\Work\Jobs\AT&T\CT1931644 Manchester CT Revised\CT1931644 Manchester.eri		Dwg No. E-1	

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

TOWER DESIGN NOTES

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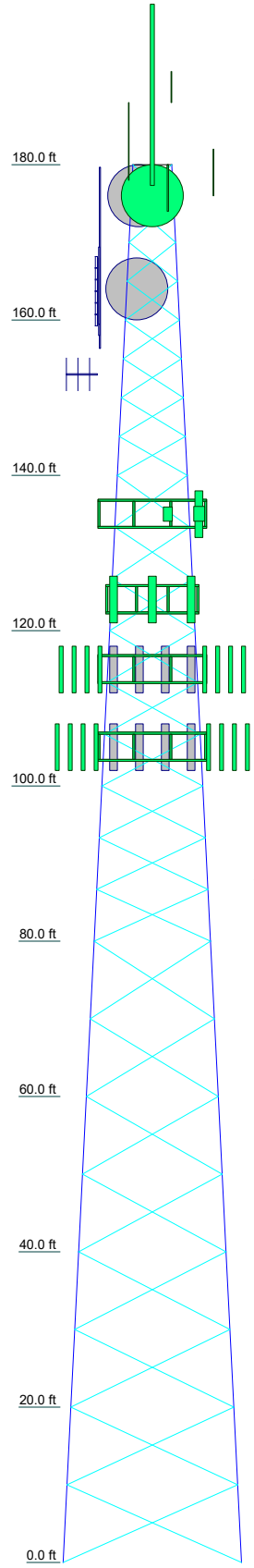
4. Deflections are based upon a 105 mph wind.
5. Tower Risk Category III.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 94.3%



Section		T1	T2	T3	T4	T5	T6	T7	T8	T9			
Legs		P2.875x.276	P3.5x.3	L2 1/2x2 1/2x1/4	P5.5625x.500	L3x3 1/2x1/4	L3 1/2x4x5/16	P8.625x.5	L4x4x3/8	P10.75x.5			
Leg Grade		A572-50											
Diagonals		L2x2x1/8	L2x2x3/16				L3 1/2x4x3/8		L5x5x5/16				
Diagonal Grade		A572-50											
Top Girts		L2x2x1/8				N.A.							
Face Width (ft)	5		7	9	11	13	15	17	19	21	23		
# Panels @ (ft)		8 @ 5		9 @ 6.66667					8 @ 10				
Weight (lb)	31216.2	794.9	1168.0	2502.7	2938.3	3108.2	4343.9	4855.4	5221.8	6283.0			

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 439405 lb
SHEAR: 52572 lb

UPLIFT: -385051 lb
SHEAR: 47242 lb

AXIAL
186536 lb

SHEAR
20928 lb

MOMENT
2210791 lb-ft

TORQUE 28393 lb-ft
50 mph WIND - 1.5000 in ICE

AXIAL
69863 lb

SHEAR
86213 lb

MOMENT
8294479 lb-ft

TORQUE 88750 lb-ft
REACTIONS - 135 mph WIND

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Code: TIA-222-H	Date: 05/26/21	Scale: NTS	
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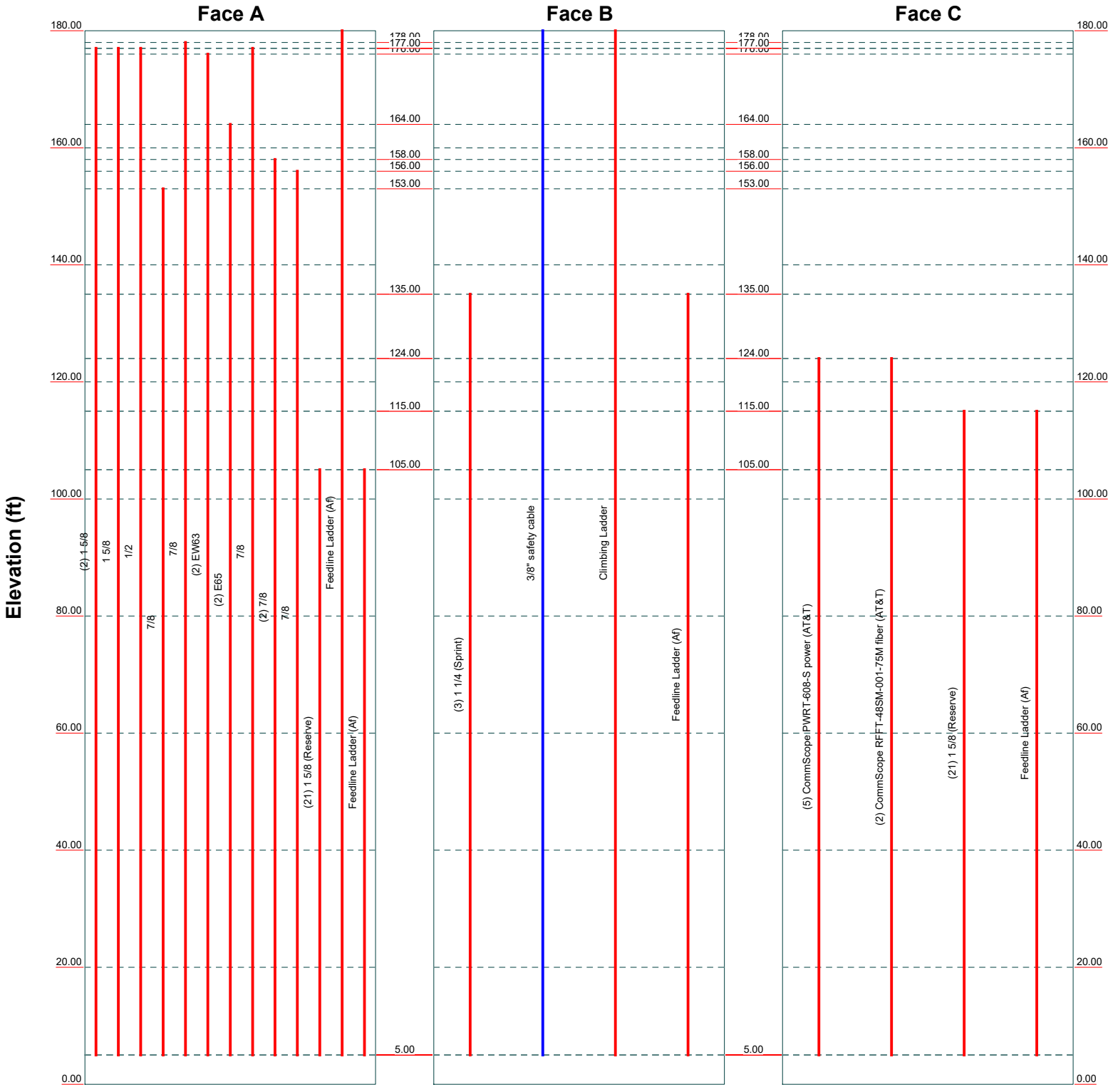
Appendix B

Calculations

Feed Line Distribution Chart
0' - 180'

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



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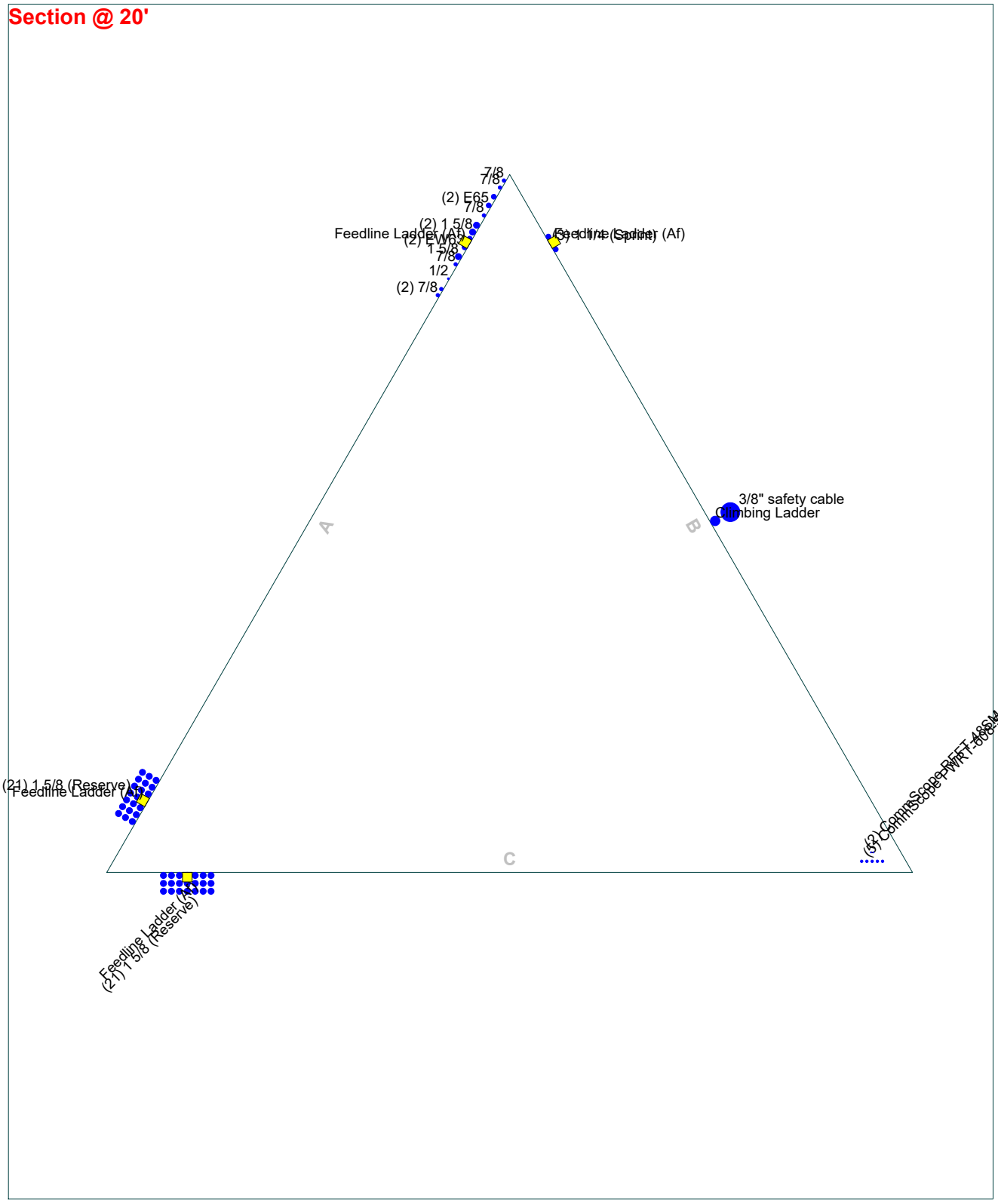
Feed Line Plan
20'

Round | Flat | App In Face | App Out Face



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Path: C:\Users\APT User\Desktop\Work\Jobs\AT&T\CT1931644 Manchester CT Revised\CT1931644 Manchester.eri		Dwg No. E-7	

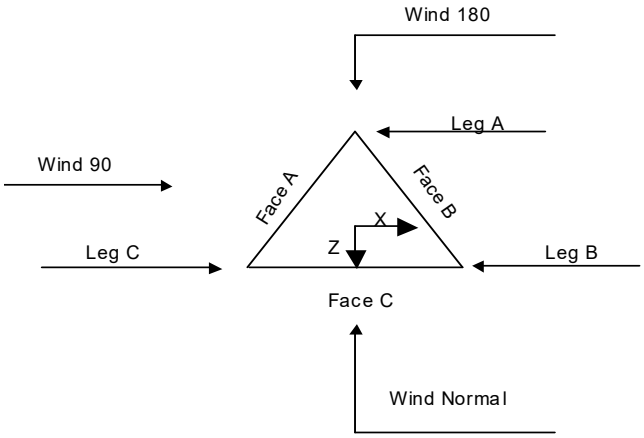
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 180.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 5.00 ft at the top and 23.00 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower base elevation above sea level: 0.00 ft.
Basic wind speed of 135 mph.
Risk Category III.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.5000 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 105 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	180.00-160.00			5.00	1	20.00
T2	160.00-140.00			7.00	1	20.00
T3	140.00-120.00			9.00	1	20.00
T4	120.00-100.00			11.00	1	20.00
T5	100.00-80.00			13.00	1	20.00
T6	80.00-60.00			15.00	1	20.00
T7	60.00-40.00			17.00	1	20.00
T8	40.00-20.00			19.00	1	20.00
T9	20.00-0.00			21.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	180.00-160.00	5.00	X Brace	No	No	0.0000	0.0000
T2	160.00-140.00	5.00	X Brace	No	No	0.0000	0.0000
T3	140.00-120.00	6.67	X Brace	No	No	0.0000	0.0000
T4	120.00-100.00	6.67	X Brace	No	No	0.0000	0.0000
T5	100.00-80.00	6.67	X Brace	No	No	0.0000	0.0000
T6	80.00-60.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T7	60.00-40.00	10.00	X Brace	No	No	0.0000	0.0000
T8	40.00-20.00	10.00	X Brace	No	No	0.0000	0.0000
T9	20.00-0.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 180.00-160.00	Pipe	P2.875x.276	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A572-50 (50 ksi)
T2 160.00-140.00	Pipe	P3.5x.3	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A572-50 (50 ksi)
T3 140.00-120.00	Pipe	P5.5625x.500	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A572-50 (50 ksi)
T4 120.00-100.00	Pipe	P5.5625x.500	A572-50 (50 ksi)	Single Angle	L3x3 1/2x1/4	A572-50 (50 ksi)
T5 100.00-80.00	Pipe	P5.5625x.500	A572-50 (50 ksi)	Single Angle	L3x3 1/2x1/4	A572-50 (50 ksi)
T6 80.00-60.00	Pipe	P8.625x.5	A572-50 (50 ksi)	Single Angle	L3 1/2x4x5/16	A572-50 (50 ksi)
T7 60.00-40.00	Pipe	P8.625x.5	A572-50 (50 ksi)	Single Angle	L3 1/2x4x3/8	A572-50 (50 ksi)
T8 40.00-20.00	Pipe	P8.625x.5	A572-50 (50 ksi)	Equal Angle	L4x4x3/8	A572-50 (50 ksi)
T9 20.00-0.00	Pipe	P10.75x.5	A572-50 (50 ksi)	Equal Angle	L5x5x5/16	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 180.00-160.00	Equal Angle	L2x2x1/8	A572-50 (50 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T3 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 180.00-160.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 160.00-140.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 140.00-120.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 120.00-100.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 100.00-80.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 80.00-60.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 60.00-40.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 40.00-20.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 20.00-0.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 160.00-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 180.00-160.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 160.00-140.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 140.00-120.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 120.00-100.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 100.00-80.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 80.00-60.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 60.00-40.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 40.00-20.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 20.00-0.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 180.00-160.00	Flange	0.7500 A325N	6	0.6250 A325X	1	0.6250 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 160.00-140.00	Flange	1.0000 A325N	6	0.6250 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 140.00-120.00	Flange	1.0000 A325N	6	0.6250 A325X	1	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T4 120.00-100.00	Flange	1.0000 A325N	6	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 100.00-80.00	Flange	1.2500 A325N	6	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 80.00-60.00	Flange	1.2500 A325N	6	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 60.00-40.00	Flange	1.2500 A325N	6	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 40.00-20.00	Flange	1.5000 A325N	8	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 20.00-0.00	Flange	1.5000 F1554-105	6	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 1/4 (Sprint)	B	No	No	Ar (CaAa)	135.00 - 5.00	0.0000	-0.4	3	3	0.7500	1.5500		0.66
1 5/8	A	No	No	Ar (CaAa)	177.00 - 5.00	0.0000	0.42	2	2	0.5000	1.9800		1.04
1 5/8	A	No	No	Ar (CaAa)	177.00 - 5.00	0.0000	0.38	1	1	0.5000	1.9800		1.04
1/2	A	No	No	Ar (CaAa)	177.00 - 5.00	0.0000	0.35	1	1	0.5800	0.5800		0.25
7/8	A	No	No	Ar (CaAa)	153.00 - 5.00	0.0000	0.37	1	1	1.1100	1.1100		0.54
7/8	A	No	No	Ar (CaAa)	178.00 - 5.00	0.0000	0.44	1	1	1.1100	1.1100		0.54
EW63	A	No	No	Ar (CaAa)	176.00 - 5.00	0.0000	0.4	2	2	1.5742	1.5742		0.51
E65	A	No	No	Ar (CaAa)	164.00 - 5.00	0.0000	0.46	2	2	1.5742	1.5742		0.51
7/8	A	No	No	Ar (CaAa)	177.00 - 5.00	0.0000	0.49	1	1	1.1100	1.1100		0.54
7/8	A	No	No	Ar (CaAa)	158.00 - 5.00	0.0000	0.33	2	2	1.1100	1.1100		0.54
7/8	A	No	No	Ar (CaAa)	156.00 - 5.00	0.0000	0.48	1	1	1.1100	1.1100		0.54
CommScope PWRT-608-S power (AT&T)	C	No	No	Ar (CaAa)	124.00 - 5.00	-3.0000	-0.45	5	5	0.8200	0.8200		0.62
CommScope RFFT-48SM-001-75M fiber (AT&T)	C	No	No	Ar (CaAa)	124.00 - 5.00	-6.0000	-0.45	2	2	0.4000	0.4000		0.06
1 5/8 (Reserve)	C	No	No	Ar (CaAa)	115.00 - 5.00	0.0000	0.4	21	7	0.5000	1.9800		1.04
1 5/8 (Reserve)	A	No	No	Ar (CaAa)	105.00 - 5.00	0.0000	-0.4	21	7	0.5000	1.9800		1.04
Climbing	B	No	No	Ar (CaAa)	180.00 -	0.0000	0	1	1	3.0000	3.0000		7.90

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Ladder					5.00								
Feedline Ladder (Af)	A	No	No	Af (CaAa)	180.00 - 5.00	0.0000	0.4	1	1	3.0000	3.0000		8.40
Feedline Ladder (Af)	B	No	No	Af (CaAa)	135.00 - 5.00	0.0000	-0.4	1	1	3.0000	3.0000		8.40
Feedline Ladder (Af)	C	No	No	Af (CaAa)	115.00 - 5.00	0.0000	0.4	1	1	3.0000	3.0000		8.40
Feedline Ladder (Af)	A	No	No	Af (CaAa)	105.00 - 5.00	0.0000	-0.4	1	1	3.0000	3.0000		8.40

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight plf
3/8" safety cable	B	No	No	CaAa (In Face)	180.00 - 5.00	4.0000	0	1	No Ice	0.04	0.22
									1/2" Ice	0.14	0.83
									1" Ice	0.24	1.98
									2" Ice	0.44	6.10

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	180.00-160.00	A	0.000	0.000	31.266	0.000	264.59
		B	0.000	0.000	6.578	0.000	162.40
		C	0.000	0.000	0.000	0.000	0.00
T2	160.00-140.00	A	0.000	0.000	47.289	0.000	332.90
		B	0.000	0.000	6.655	0.000	162.40
		C	0.000	0.000	0.000	0.000	0.00
T3	140.00-120.00	A	0.000	0.000	48.954	0.000	341.00
		B	0.000	0.000	21.220	0.000	318.10
		C	0.000	0.000	1.960	0.000	12.88
T4	120.00-100.00	A	0.000	0.000	72.244	0.000	492.20
		B	0.000	0.000	26.050	0.000	370.00
		C	0.000	0.000	79.670	0.000	518.00
T5	100.00-80.00	A	0.000	0.000	142.114	0.000	945.80
		B	0.000	0.000	26.050	0.000	370.00
		C	0.000	0.000	102.960	0.000	669.20
T6	80.00-60.00	A	0.000	0.000	142.114	0.000	945.80
		B	0.000	0.000	26.050	0.000	370.00
		C	0.000	0.000	102.960	0.000	669.20
T7	60.00-40.00	A	0.000	0.000	142.114	0.000	945.80
		B	0.000	0.000	26.050	0.000	370.00
		C	0.000	0.000	102.960	0.000	669.20
T8	40.00-20.00	A	0.000	0.000	142.114	0.000	945.80
		B	0.000	0.000	26.050	0.000	370.00
		C	0.000	0.000	102.960	0.000	669.20
T9	20.00-0.00	A	0.000	0.000	106.585	0.000	709.35

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
		B	0.000	0.000	19.538	0.000	277.50
		C	0.000	0.000	77.220	0.000	501.90

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	180.00-160.00	A	2.032	0.000	0.000	102.720	0.000	1678.69
		B		0.000	0.000	23.008	0.000	534.98
		C		0.000	0.000	0.000	0.000	0.00
T2	160.00-140.00	A	2.007	0.000	0.000	172.512	0.000	2580.84
		B		0.000	0.000	22.806	0.000	526.70
		C		0.000	0.000	0.000	0.000	0.00
T3	140.00-120.00	A	1.978	0.000	0.000	178.797	0.000	2648.51
		B		0.000	0.000	57.594	0.000	1153.29
		C		0.000	0.000	9.527	0.000	113.62
T4	120.00-100.00	A	1.946	0.000	0.000	196.047	0.000	3115.42
		B		0.000	0.000	68.651	0.000	1342.90
		C		0.000	0.000	104.415	0.000	2121.28
T5	100.00-80.00	A	1.907	0.000	0.000	250.705	0.000	4590.69
		B		0.000	0.000	67.925	0.000	1317.38
		C		0.000	0.000	122.551	0.000	2604.39
T6	80.00-60.00	A	1.860	0.000	0.000	247.560	0.000	4483.13
		B		0.000	0.000	67.037	0.000	1286.45
		C		0.000	0.000	121.400	0.000	2557.93
T7	60.00-40.00	A	1.798	0.000	0.000	243.473	0.000	4345.50
		B		0.000	0.000	65.882	0.000	1246.76
		C		0.000	0.000	119.905	0.000	2498.22
T8	40.00-20.00	A	1.709	0.000	0.000	237.528	0.000	4149.63
		B		0.000	0.000	64.203	0.000	1190.06
		C		0.000	0.000	117.732	0.000	2412.70
T9	20.00-0.00	A	1.531	0.000	0.000	169.303	0.000	2832.28
		B		0.000	0.000	45.656	0.000	810.92
		C		0.000	0.000	85.071	0.000	1685.87

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	180.00-160.00	0.7890	-11.8844	1.0409	-14.7536
T2	160.00-140.00	0.3824	-18.1420	0.2449	-23.6844
T3	140.00-120.00	1.5454	-23.8432	1.9004	-29.8963
T4	120.00-100.00	-9.4796	-15.1811	-2.6433	-23.2315
T5	100.00-80.00	-20.0680	-6.9630	-11.2831	-17.7196
T6	80.00-60.00	-22.2485	-7.6555	-12.6984	-19.6809
T7	60.00-40.00	-24.1826	-8.3284	-13.9620	-21.3291
T8	40.00-20.00	-24.9101	-8.6212	-14.9282	-22.3507
T9	20.00-0.00	-19.8206	-6.9301	-13.0540	-18.7460

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	2	1 5/8	160.00 - 177.00	0.6000	0.5750
T1	3	1 5/8	160.00 - 177.00	0.6000	0.5750
T1	4	1/2	160.00 - 177.00	0.6000	0.5750
T1	6	7/8	160.00 - 178.00	0.6000	0.5750
T1	7	EW63	160.00 - 176.00	0.6000	0.5750
T1	8	E65	160.00 - 164.00	0.6000	0.5750
T1	9	7/8	160.00 - 177.00	0.6000	0.5750
T1	16	3/8" safety cable	160.00 - 180.00	1.0000	1.0000
T1	17	Climbing Ladder	160.00 - 180.00	1.0000	0.5750
T1	18	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.5750
T2	2	1 5/8	140.00 - 160.00	0.6000	0.6000
T2	3	1 5/8	140.00 - 160.00	0.6000	0.6000
T2	4	1/2	140.00 - 160.00	0.6000	0.6000
T2	5	7/8	140.00 - 153.00	0.6000	0.6000
T2	6	7/8	140.00 - 160.00	0.6000	0.6000
T2	7	EW63	140.00 - 160.00	0.6000	0.6000
T2	8	E65	140.00 - 160.00	0.6000	0.6000
T2	9	7/8	140.00 - 160.00	0.6000	0.6000
T2	10	7/8	140.00 - 158.00	0.6000	0.6000
T2	11	7/8	140.00 - 156.00	0.6000	0.6000
T2	16	3/8" safety cable	140.00 - 160.00	1.0000	1.0000
T2	17	Climbing Ladder	140.00 - 160.00	1.0000	0.6000
T2	18	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	1	1 1/4	120.00 - 135.00	0.6000	0.6000
T3	2	1 5/8	120.00 - 140.00	0.6000	0.6000
T3	3	1 5/8	120.00 - 140.00	0.6000	0.6000
T3	4	1/2	120.00 - 140.00	0.6000	0.6000
T3	5	7/8	120.00 - 140.00	0.6000	0.6000
T3	6	7/8	120.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	7	EW63	120.00 - 140.00	0.6000	0.6000
T3	8	E65	120.00 - 140.00	0.6000	0.6000
T3	9	7/8	120.00 - 140.00	0.6000	0.6000
T3	10	7/8	120.00 - 140.00	0.6000	0.6000
T3	11	7/8	120.00 - 140.00	0.6000	0.6000
T3	12	CommScope PWRT-608-S power	120.00 - 124.00	0.6000	0.6000
T3	13	CommScope RFFT-48SM-001-75M fiber	120.00 - 124.00	0.6000	0.6000
T3	16	3/8" safety cable	120.00 - 140.00	1.0000	1.0000
T3	17	Climbing Ladder	120.00 - 140.00	1.0000	0.6000
T3	18	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T3	19	Feedline Ladder (Af)	120.00 - 135.00	0.6000	0.6000
T4	1	1 1/4	100.00 - 120.00	0.6000	0.6000
T4	2	1 5/8	100.00 - 120.00	0.6000	0.6000
T4	3	1 5/8	100.00 - 120.00	0.6000	0.6000
T4	4	1/2	100.00 - 120.00	0.6000	0.6000
T4	5	7/8	100.00 - 120.00	0.6000	0.6000
T4	6	7/8	100.00 - 120.00	0.6000	0.6000
T4	7	EW63	100.00 - 120.00	0.6000	0.6000
T4	8	E65	100.00 - 120.00	0.6000	0.6000
T4	9	7/8	100.00 - 120.00	0.6000	0.6000
T4	10	7/8	100.00 - 120.00	0.6000	0.6000
T4	11	7/8	100.00 - 120.00	0.6000	0.6000
T4	12	CommScope PWRT-608-S power	100.00 - 120.00	0.6000	0.6000
T4	13	CommScope RFFT-48SM-001-75M fiber	100.00 - 120.00	0.6000	0.6000
T4	14	1 5/8	100.00 - 115.00	0.6000	0.6000
T4	15	1 5/8	100.00 - 105.00	1.0000	1.0000
T4	16	3/8" safety cable	100.00 - 120.00	1.0000	1.0000
T4	17	Climbing Ladder	100.00 - 120.00	0.6000	0.6000
T4	18	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T4	19	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T4	20	Feedline Ladder (Af)	100.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			115.00		
T4	21	Feedline Ladder (Af)	100.00 - 105.00	0.6000	0.6000
T5	1	1 1/4	80.00 - 100.00	0.6000	0.6000
T5	2	1 5/8	80.00 - 100.00	0.6000	0.6000
T5	3	1 5/8	80.00 - 100.00	0.6000	0.6000
T5	4	1/2	80.00 - 100.00	0.6000	0.6000
T5	5	7/8	80.00 - 100.00	0.6000	0.6000
T5	6	7/8	80.00 - 100.00	0.6000	0.6000
T5	7	EW63	80.00 - 100.00	0.6000	0.6000
T5	8	E65	80.00 - 100.00	0.6000	0.6000
T5	9	7/8	80.00 - 100.00	0.6000	0.6000
T5	10	7/8	80.00 - 100.00	0.6000	0.6000
T5	11	7/8	80.00 - 100.00	0.6000	0.6000
T5	12	CommScope PWRT-608-S power	80.00 - 100.00	0.6000	0.6000
T5	13	CommScope RFFT-48SM-001-75M fiber	80.00 - 100.00	0.6000	0.6000
T5	14	1 5/8	80.00 - 100.00	0.6000	0.6000
T5	15	1 5/8	80.00 - 100.00	1.0000	1.0000
T5	16	3/8" safety cable	80.00 - 100.00	1.0000	1.0000
T5	17	Climbing Ladder	80.00 - 100.00	0.6000	0.6000
T5	18	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T5	19	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T5	20	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T5	21	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	1	1 1/4	60.00 - 80.00	0.6000	0.6000
T6	2	1 5/8	60.00 - 80.00	0.6000	0.6000
T6	3	1 5/8	60.00 - 80.00	0.6000	0.6000
T6	4	1/2	60.00 - 80.00	0.6000	0.6000
T6	5	7/8	60.00 - 80.00	0.6000	0.6000
T6	6	7/8	60.00 - 80.00	0.6000	0.6000
T6	7	EW63	60.00 - 80.00	0.6000	0.6000
T6	8	E65	60.00 - 80.00	0.6000	0.6000
T6	9	7/8	60.00 - 80.00	0.6000	0.6000
T6	10	7/8	60.00 - 80.00	0.6000	0.6000
T6	11	7/8	60.00 - 80.00	0.6000	0.6000
T6	12	CommScope PWRT-608-S power	60.00 - 80.00	0.6000	0.6000
T6	13	CommScope RFFT-48SM-001-75M fiber	60.00 - 80.00	0.6000	0.6000
T6	14	1 5/8	60.00 - 80.00	0.6000	0.6000
T6	15	1 5/8	60.00 - 80.00	1.0000	1.0000
T6	16	3/8" safety cable	60.00 - 80.00	1.0000	1.0000
T6	17	Climbing Ladder	60.00 - 80.00	0.6000	0.6000
T6	18	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T6	19	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T6	20	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T6	21	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	1	1 1/4	40.00 - 60.00	0.6000	0.6000
T7	2	1 5/8	40.00 - 60.00	0.6000	0.6000
T7	3	1 5/8	40.00 - 60.00	0.6000	0.6000
T7	4	1/2	40.00 - 60.00	0.6000	0.6000
T7	5	7/8	40.00 - 60.00	0.6000	0.6000
T7	6	7/8	40.00 - 60.00	0.6000	0.6000
T7	7	EW63	40.00 - 60.00	0.6000	0.6000
T7	8	E65	40.00 - 60.00	0.6000	0.6000
T7	9	7/8	40.00 - 60.00	0.6000	0.6000
T7	10	7/8	40.00 - 60.00	0.6000	0.6000
T7	11	7/8	40.00 - 60.00	0.6000	0.6000
T7	12	CommScope PWRT-608-S power	40.00 - 60.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	13	CommScope RFFT-48SM-001-75M fiber	40.00 - 60.00	0.6000	0.6000
T7	14	1 5/8	40.00 - 60.00	0.6000	0.6000
T7	15	1 5/8	40.00 - 60.00	1.0000	1.0000
T7	16	3/8" safety cable	40.00 - 60.00	1.0000	1.0000
T7	17	Climbing Ladder	40.00 - 60.00	0.6000	0.6000
T7	18	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T7	19	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T7	20	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T7	21	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	1	1 1/4	20.00 - 40.00	0.6000	0.6000
T8	2	1 5/8	20.00 - 40.00	0.6000	0.6000
T8	3	1 5/8	20.00 - 40.00	0.6000	0.6000
T8	4	1/2	20.00 - 40.00	0.6000	0.6000
T8	5	7/8	20.00 - 40.00	0.6000	0.6000
T8	6	7/8	20.00 - 40.00	0.6000	0.6000
T8	7	EW63	20.00 - 40.00	0.6000	0.6000
T8	8	E65	20.00 - 40.00	0.6000	0.6000
T8	9	7/8	20.00 - 40.00	0.6000	0.6000
T8	10	7/8	20.00 - 40.00	0.6000	0.6000
T8	11	7/8	20.00 - 40.00	0.6000	0.6000
T8	12	CommScope PWRT-608-S power	20.00 - 40.00	0.6000	0.6000
T8	13	CommScope RFFT-48SM-001-75M fiber	20.00 - 40.00	0.6000	0.6000
T8	14	1 5/8	20.00 - 40.00	0.6000	0.6000
T8	15	1 5/8	20.00 - 40.00	1.0000	1.0000
T8	16	3/8" safety cable	20.00 - 40.00	1.0000	1.0000
T8	17	Climbing Ladder	20.00 - 40.00	0.6000	0.6000
T8	18	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T8	19	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T8	20	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T8	21	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	1	1 1/4	5.00 - 20.00	0.6000	0.6000
T9	2	1 5/8	5.00 - 20.00	0.6000	0.6000
T9	3	1 5/8	5.00 - 20.00	0.6000	0.6000
T9	4	1/2	5.00 - 20.00	0.6000	0.6000
T9	5	7/8	5.00 - 20.00	0.6000	0.6000
T9	6	7/8	5.00 - 20.00	0.6000	0.6000
T9	7	EW63	5.00 - 20.00	0.6000	0.6000
T9	8	E65	5.00 - 20.00	0.6000	0.6000
T9	9	7/8	5.00 - 20.00	0.6000	0.6000
T9	10	7/8	5.00 - 20.00	0.6000	0.6000
T9	11	7/8	5.00 - 20.00	0.6000	0.6000
T9	12	CommScope PWRT-608-S power	5.00 - 20.00	0.6000	0.6000
T9	13	CommScope RFFT-48SM-001-75M fiber	5.00 - 20.00	0.6000	0.6000
T9	14	1 5/8	5.00 - 20.00	0.6000	0.6000
T9	15	1 5/8	5.00 - 20.00	1.0000	1.0000
T9	16	3/8" safety cable	5.00 - 20.00	1.0000	1.0000
T9	17	Climbing Ladder	5.00 - 20.00	0.6000	0.6000
T9	18	Feedline Ladder (Af)	5.00 - 20.00	0.6000	0.6000
T9	19	Feedline Ladder (Af)	5.00 - 20.00	0.6000	0.6000
T9	20	Feedline Ladder (Af)	5.00 - 20.00	0.6000	0.6000
T9	21	Feedline Ladder (Af)	5.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Generic Lightning Rod 4' copper	B	From Leg	0.00 0.00 10.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.50 1.00 1.50 2.50	0.50 1.00 1.50 2.50	0.00 0.00 0.00 0.00
18'x2 3/8" Pipe Mount	B	From Leg	0.00 0.00 9.00	0.0000	179.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.75 6.78 8.82 12.96	4.75 6.78 8.82 12.96	100.00 135.41 183.44 317.94
Kreco CO-41AN	C	From Leg	0.50 0.00 5.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.03 3.34 4.66 7.35	2.03 3.34 4.66 7.35	14.00 30.52 55.18 129.59
4' x 2" omni whip	B	From Leg	6.00 0.00 2.00	0.0000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.79 1.03 1.28 1.81	0.79 1.03 1.28 1.81	20.00 26.34 35.48 62.76
6' sidearm	B	None		0.0000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.17 6.17 8.17 12.17	2.09 3.09 4.09 6.09	75.00 125.00 200.00 275.00
db Spectra DS9A09F36D-N	A	From Leg	0.00 0.00 10.00	0.0000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.57 7.71 9.68 13.67	5.57 7.71 9.68 13.67	55.00 96.46 150.10 294.56
Bird Technologies 430-496-09168 TTA	A	None		0.0000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.67 2.87 3.08 3.53	1.18 1.33 1.48 1.83	25.00 44.96 67.91 123.52
8'x4 1/2" Pipe Mount	A	None		0.0000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.26 3.84 4.33 5.35	2.26 3.84 4.33 5.35	86.30 111.50 142.21 220.72
8'x4 1/2" Pipe Mount	C	None		0.0000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.26 3.84 4.33 5.35	2.26 3.84 4.33 5.35	86.30 111.50 142.21 220.72
Sinclair SC351D-HF2LDF (Reserved)	C	From Face	0.00 0.00 12.00	0.0000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.77 14.05 16.45 21.30	6.77 14.05 16.45 21.30	95.00 174.31 268.54 502.35
8'x4 1/2" Pipe Mount	A	None		0.0000	164.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.27 3.84 4.33 5.35	2.27 3.84 4.33 5.35	86.30 111.50 142.21 220.72
Sinclair SC351D-HF2LDF (Reserved)	A	From Face	6.00 0.00 0.00	0.0000	180.00 - 156.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.81 14.05 16.45 21.30	6.81 14.05 16.45 21.30	95.00 174.31 268.54 502.35
SD212 2-bay dipole (Reserved)	A	From Face	6.00 0.00 0.00	0.0000	168.00 - 158.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.93 4.54 5.30 6.53	2.93 4.54 5.30 6.53	30.00 54.95 86.52 170.12

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 lb
Comprod 531-7071D	A	From Face	6.00	0.0000	170.83 - 158.00	No Ice	3.80	3.80	40.00
(Reserved)			0.00			1/2" Ice	5.40	5.40	68.29
			0.00			1" Ice	7.02	7.02	106.61
						2" Ice	10.31	10.31	213.90
3' Yagi	A	From Face	6.00	0.0000	153.00	No Ice	2.08	2.08	30.95
			0.00			1/2" Ice	3.79	3.79	52.87
			0.00			1" Ice	5.52	5.52	85.27
						2" Ice	9.05	9.05	183.57
8'x4 1/2" Pipe Mount	A	From Leg	6.00	0.0000	153.00	No Ice	2.29	2.29	86.30
			0.00			1/2" Ice	3.84	3.84	111.50
			0.00			1" Ice	4.33	4.33	142.21
						2" Ice	5.35	5.35	220.72
6' sidearm	A	From Leg	3.00	0.0000	153.00	No Ice	4.17	2.09	75.00
			0.00			1/2" Ice	6.17	3.09	125.00
			0.00			1" Ice	8.17	4.09	200.00
						2" Ice	12.17	6.09	275.00
TPA65R-BU8DA-K	A	From Face	4.00	0.0000	124.00	No Ice	18.09	8.20	90.00
(AT&T)			0.00			1/2" Ice	18.72	8.79	188.99
			0.00			1" Ice	19.36	9.40	296.25
						2" Ice	20.66	10.62	536.42
TPA65R-BU8DA-K	B	From Face	4.00	0.0000	124.00	No Ice	18.09	8.20	90.00
(AT&T)			0.00			1/2" Ice	18.72	8.79	188.99
			0.00			1" Ice	19.36	9.40	296.25
						2" Ice	20.66	10.62	536.42
TPA65R-BU8DA-K	C	From Face	4.00	0.0000	124.00	No Ice	18.09	8.20	90.00
(AT&T)			0.00			1/2" Ice	18.72	8.79	188.99
			0.00			1" Ice	19.36	9.40	296.25
						2" Ice	20.66	10.62	536.42
HPA-65R-BU8A	A	From Face	4.00	0.0000	124.00	No Ice	11.23	7.89	58.00
(AT&T)			0.00			1/2" Ice	11.85	8.48	123.99
			0.00			1" Ice	12.47	9.08	197.64
						2" Ice	13.72	10.30	368.67
HPA-65R-BU8A	B	From Face	4.00	0.0000	124.00	No Ice	11.23	7.89	58.00
(AT&T)			0.00			1/2" Ice	11.85	8.48	123.99
			0.00			1" Ice	12.47	9.08	197.64
						2" Ice	13.72	10.30	368.67
HPA-65R-BU8A	C	From Face	4.00	0.0000	124.00	No Ice	11.23	7.89	58.00
(AT&T)			0.00			1/2" Ice	11.85	8.48	123.99
			0.00			1" Ice	12.47	9.08	197.64
						2" Ice	13.72	10.30	368.67
DMP65R-BU8DA-K	A	From Face	4.00	0.0000	124.00	No Ice	17.87	8.12	103.00
(AT&T)			0.00			1/2" Ice	18.50	8.72	200.58
			0.00			1" Ice	19.14	9.32	306.43
						2" Ice	20.44	10.54	543.66
DMP65R-BU8DA-K	B	From Face	4.00	0.0000	124.00	No Ice	17.87	8.12	103.00
(AT&T)			0.00			1/2" Ice	18.50	8.72	200.58
			0.00			1" Ice	19.14	9.32	306.43
						2" Ice	20.44	10.54	543.66
DMP65R-BU8DA-K	C	From Face	4.00	0.0000	124.00	No Ice	17.87	8.12	103.00
(AT&T)			0.00			1/2" Ice	18.50	8.72	200.58
			0.00			1" Ice	19.14	9.32	306.43
						2" Ice	20.44	10.54	543.66
Radio 4478	A	From Face	3.50	0.0000	124.00	No Ice	1.86	1.06	65.00
(AT&T)			0.00			1/2" Ice	2.03	1.20	80.96
			0.00			1" Ice	2.20	1.34	99.56
						2" Ice	2.58	1.66	145.44
Radio 4478	B	From Face	3.50	0.0000	124.00	No Ice	1.86	1.06	65.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(AT&T)			0.00			1/2" Ice	2.03	1.20	80.96
			0.00			1" Ice	2.20	1.34	99.56
						2" Ice	2.58	1.66	145.44
Radio 4478	C	From Face	3.50	0.0000	124.00	No Ice	1.86	1.06	65.00
(AT&T)			0.00			1/2" Ice	2.03	1.20	80.96
			0.00			1" Ice	2.20	1.34	99.56
						2" Ice	2.58	1.66	145.44
Ericsson RRUS-E2	A	From Face	3.50	0.0000	124.00	No Ice	3.15	1.29	60.00
(AT&T)			0.00			1/2" Ice	3.36	1.44	83.22
			0.00			1" Ice	3.59	1.60	109.64
						2" Ice	4.07	1.95	172.88
Ericsson RRUS-E2	B	From Face	3.50	0.0000	124.00	No Ice	3.15	1.29	60.00
(AT&T)			0.00			1/2" Ice	3.36	1.44	83.22
			0.00			1" Ice	3.59	1.60	109.64
						2" Ice	4.07	1.95	172.88
Ericsson RRUS-E2	C	From Face	3.50	0.0000	124.00	No Ice	3.15	1.29	60.00
(AT&T)			0.00			1/2" Ice	3.36	1.44	83.22
			0.00			1" Ice	3.59	1.60	109.64
						2" Ice	4.07	1.95	172.88
Radio 4415	A	From Face	3.50	0.0000	124.00	No Ice	1.84	0.82	50.00
(AT&T)			0.00			1/2" Ice	2.01	0.94	64.07
			0.00			1" Ice	2.19	1.07	80.66
						2" Ice	2.57	1.37	122.17
Radio 4415	B	From Face	3.50	0.0000	124.00	No Ice	1.84	0.82	50.00
(AT&T)			0.00			1/2" Ice	2.01	0.94	64.07
			0.00			1" Ice	2.19	1.07	80.66
						2" Ice	2.57	1.37	122.17
Radio 4415	C	From Face	3.50	0.0000	124.00	No Ice	1.84	0.82	50.00
(AT&T)			0.00			1/2" Ice	2.01	0.94	64.07
			0.00			1" Ice	2.19	1.07	80.66
						2" Ice	2.57	1.37	122.17
Radio 4449	A	From Face	3.50	0.0000	124.00	No Ice	1.65	0.93	60.00
(AT&T)			0.00			1/2" Ice	1.81	1.05	74.37
			0.00			1" Ice	1.98	1.19	91.23
						2" Ice	2.34	1.48	133.25
Radio 4449	B	From Face	3.50	0.0000	124.00	No Ice	1.65	0.93	60.00
(AT&T)			0.00			1/2" Ice	1.81	1.05	74.37
			0.00			1" Ice	1.98	1.19	91.23
						2" Ice	2.34	1.48	133.25
Radio 4449	C	From Face	3.50	0.0000	124.00	No Ice	1.65	0.93	60.00
(AT&T)			0.00			1/2" Ice	1.81	1.05	74.37
			0.00			1" Ice	1.98	1.19	91.23
						2" Ice	2.34	1.48	133.25
Radio 8843	A	From Face	3.50	0.0000	124.00	No Ice	1.64	1.36	71.87
(AT&T)			0.00			1/2" Ice	1.80	1.51	89.45
			0.00			1" Ice	1.96	1.66	109.74
						2" Ice	2.32	1.99	159.28
Radio 8843	B	From Face	3.50	0.0000	124.00	No Ice	1.64	1.36	71.87
(AT&T)			0.00			1/2" Ice	1.80	1.51	89.45
			0.00			1" Ice	1.96	1.66	109.74
						2" Ice	2.32	1.99	159.28
Radio 8843	C	From Face	3.50	0.0000	124.00	No Ice	1.64	1.36	71.87
(AT&T)			0.00			1/2" Ice	1.80	1.51	89.45
			0.00			1" Ice	1.96	1.66	109.74
						2" Ice	2.32	1.99	159.28
DC9-48-60-24-8C-EV	A	None		0.0000	124.00	No Ice	1.14	1.14	33.00
(AT&T)						1/2" Ice	1.79	1.79	53.39

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 lb
						1" Ice	2.00	2.00	76.57
						2" Ice	2.45	2.45	131.93
DC9-48-60-24-8C-EV (AT&T)	C	None		0.0000	124.00	No Ice	1.14	1.14	33.00
						1/2" Ice	1.79	1.79	53.39
						1" Ice	2.00	2.00	76.57
						2" Ice	2.45	2.45	131.93
SitePro VFA12-WLL-30120 (AT&T)	A	None		0.0000	124.00	No Ice	13.20	9.20	650.00
						1/2" Ice	19.50	14.60	800.00
						1" Ice	25.80	19.50	950.00
						2" Ice	38.40	30.80	1250.00
SitePro VFA12-WLL-30120 (AT&T)	B	None		0.0000	124.00	No Ice	13.20	9.20	650.00
						1/2" Ice	19.50	14.60	800.00
						1" Ice	25.80	19.50	950.00
						2" Ice	38.40	30.80	1250.00
SitePro VFA12-WLL-30120 (AT&T)	C	None		0.0000	124.00	No Ice	13.20	9.20	650.00
						1/2" Ice	19.50	14.60	800.00
						1" Ice	25.80	19.50	950.00
						2" Ice	38.40	30.80	1250.00
6' x 18" x 6" panel (Sprint)	A	From Face	4.00 -6.00 0.00	0.0000	135.00	No Ice	11.40	4.70	100.00
						1/2" Ice	11.89	5.15	162.64
						1" Ice	12.38	5.60	231.70
						2" Ice	13.39	6.53	389.85
6' x 18" x 6" panel (Sprint)	B	From Face	4.00 -6.00 0.00	0.0000	135.00	No Ice	11.40	4.70	100.00
						1/2" Ice	11.89	5.15	162.64
						1" Ice	12.38	5.60	231.70
						2" Ice	13.39	6.53	389.85
6' x 18" x 6" panel (Sprint)	C	From Face	4.00 -6.00 0.00	0.0000	135.00	No Ice	11.40	4.70	100.00
						1/2" Ice	11.89	5.15	162.64
						1" Ice	12.38	5.60	231.70
						2" Ice	13.39	6.53	389.85
1900 MHz RRH (Sprint)	A	From Face	3.50 -6.00 0.00	0.0000	135.00	No Ice	3.26	2.49	144.00
						1/2" Ice	3.48	2.70	175.27
						1" Ice	3.72	2.91	210.18
						2" Ice	4.21	3.35	291.65
1900 MHz RRH (Sprint)	B	From Face	3.50 -6.00 0.00	0.0000	135.00	No Ice	3.26	2.49	144.00
						1/2" Ice	3.48	2.70	175.27
						1" Ice	3.72	2.91	210.18
						2" Ice	4.21	3.35	291.65
1900 MHz RRH (Sprint)	C	From Face	3.50 -6.00 0.00	0.0000	135.00	No Ice	3.26	2.49	144.00
						1/2" Ice	3.48	2.70	175.27
						1" Ice	3.72	2.91	210.18
						2" Ice	4.21	3.35	291.65
800 MHz RRH (Sprint)	A	From Face	3.50 -2.00 0.00	0.0000	135.00	No Ice	2.43	2.95	82.00
						1/2" Ice	2.62	3.17	112.15
						1" Ice	2.83	3.39	145.84
						2" Ice	3.26	3.86	224.63
800 MHz RRH (Sprint)	B	From Face	3.50 -2.00 0.00	0.0000	135.00	No Ice	2.43	2.95	82.00
						1/2" Ice	2.62	3.17	112.15
						1" Ice	2.83	3.39	145.84
						2" Ice	3.26	3.86	224.63
800 MHz RRH (Sprint)	C	From Face	3.50 -2.00 0.00	0.0000	135.00	No Ice	2.43	2.95	82.00
						1/2" Ice	2.62	3.17	112.15
						1" Ice	2.83	3.39	145.84
						2" Ice	3.26	3.86	224.63
800 MHz RRH (Sprint)	A	From Face	3.00 -2.00 0.00	0.0000	135.00	No Ice	2.43	2.95	82.00
						1/2" Ice	2.62	3.17	112.15
						1" Ice	2.83	3.39	145.84

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 lb
						2" Ice	3.26	3.86	224.63
800 MHz RRH (Sprint)	B	From Face	3.00 -2.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.43 2.62 2.83 3.26	2.95 3.17 3.39 3.86	82.00 112.15 145.84 224.63
800 MHz RRH (Sprint)	C	From Face	3.00 -2.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.43 2.62 2.83 3.26	2.95 3.17 3.39 3.86	82.00 112.15 145.84 224.63
14' sector mount (Sprint)	A	None		0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	10.80 12.38 13.88 20.40	5.40 6.19 6.94 10.20	475.00 700.00 950.00 1375.00
14' sector mount (Sprint)	B	None		0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	10.80 12.38 13.88 20.40	5.40 6.19 6.94 10.20	475.00 700.00 950.00 1375.00
14' sector mount (Sprint)	C	None		0.0000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice	10.80 12.38 13.88 20.40	5.40 6.19 6.94 10.20	475.00 700.00 950.00 1375.00
(4) 8' x 1' x 6" panel (Reserve)	A	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.47 12.08 12.71 13.95	6.80 7.38 7.98 9.18	65.00 127.06 196.70 359.52
(4) 8' x 1' x 6" panel (Reserve)	B	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.47 12.08 12.71 13.95	6.80 7.38 7.98 9.18	65.00 127.06 196.70 359.52
(4) 8' x 1' x 6" panel (Reserve)	C	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.47 12.08 12.71 13.95	6.80 7.38 7.98 9.18	65.00 127.06 196.70 359.52
(4) Ericsson RRUS-11 (Reserve)	A	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.79 3.00 3.21 3.66	1.02 1.16 1.30 1.62	55.00 75.86 99.77 157.47
(4) Ericsson RRUS-11 (Reserve)	B	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.79 3.00 3.21 3.66	1.02 1.16 1.30 1.62	55.00 75.86 99.77 157.47
(4) Ericsson RRUS-11 (Reserve)	C	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.79 3.00 3.21 3.66	1.02 1.16 1.30 1.62	55.00 75.86 99.77 157.47
Raycap RDC-3315-PF-48 J-box (Reserve)	A	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.51 2.71 2.91 3.35	1.64 1.81 1.98 2.35	30.00 52.86 78.84 140.93
Raycap RDC-3315-PF-48 J-box (Reserve)	B	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.51 2.71 2.91 3.35	1.64 1.81 1.98 2.35	30.00 52.86 78.84 140.93
Raycap RDC-3315-PF-48 J-box (Reserve)	C	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.51 2.71 2.91 3.35	1.64 1.81 1.98 2.35	30.00 52.86 78.84 140.93

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
14' sector mount	A	None		0.0000	115.00	No Ice	10.80	5.40	475.00
(Reserve)						1/2" Ice	12.38	6.19	700.00
						1" Ice	13.88	6.94	950.00
						2" Ice	20.40	10.20	1375.00
14' sector mount	B	None		0.0000	115.00	No Ice	10.80	5.40	475.00
(Reserve)						1/2" Ice	12.38	6.19	700.00
						1" Ice	13.88	6.94	950.00
						2" Ice	20.40	10.20	1375.00
14' sector mount	C	None		0.0000	115.00	No Ice	10.80	5.40	475.00
(Reserve)						1/2" Ice	12.38	6.19	700.00
						1" Ice	13.88	6.94	950.00
						2" Ice	20.40	10.20	1375.00
(4) 8' x 1' x 6" panel	A	From Leg	4.00	0.0000	105.00	No Ice	11.47	6.80	65.00
(Reserve)			0.00			1/2" Ice	12.08	7.38	127.06
			0.00			1" Ice	12.71	7.98	196.70
						2" Ice	13.95	9.18	359.52
(4) 8' x 1' x 6" panel	B	From Leg	4.00	0.0000	105.00	No Ice	11.47	6.80	65.00
(Reserve)			0.00			1/2" Ice	12.08	7.38	127.06
			0.00			1" Ice	12.71	7.98	196.70
						2" Ice	13.95	9.18	359.52
(4) 8' x 1' x 6" panel	C	From Leg	4.00	0.0000	105.00	No Ice	11.47	6.80	65.00
(Reserve)			0.00			1/2" Ice	12.08	7.38	127.06
			0.00			1" Ice	12.71	7.98	196.70
						2" Ice	13.95	9.18	359.52
(4) Ericsson RRUS-11	A	From Leg	3.00	0.0000	105.00	No Ice	2.79	1.02	55.00
(Reserve)			0.00			1/2" Ice	3.00	1.16	75.86
			0.00			1" Ice	3.21	1.30	99.77
						2" Ice	3.66	1.62	157.47
(4) Ericsson RRUS-11	B	From Leg	3.00	0.0000	105.00	No Ice	2.79	1.02	55.00
(Reserve)			0.00			1/2" Ice	3.00	1.16	75.86
			0.00			1" Ice	3.21	1.30	99.77
						2" Ice	3.66	1.62	157.47
(4) Ericsson RRUS-11	C	From Leg	3.00	0.0000	105.00	No Ice	2.79	1.02	55.00
(Reserve)			0.00			1/2" Ice	3.00	1.16	75.86
			0.00			1" Ice	3.21	1.30	99.77
						2" Ice	3.66	1.62	157.47
Raycap RDC-3315-PF-48	A	From Leg	3.00	0.0000	105.00	No Ice	2.51	1.64	30.00
J-box			0.00			1/2" Ice	2.71	1.81	52.86
(Reserve)			0.00			1" Ice	2.91	1.98	78.84
						2" Ice	3.35	2.35	140.93
Raycap RDC-3315-PF-48	B	From Leg	3.00	0.0000	105.00	No Ice	2.51	1.64	30.00
J-box			0.00			1/2" Ice	2.71	1.81	52.86
(Reserve)			0.00			1" Ice	2.91	1.98	78.84
						2" Ice	3.35	2.35	140.93
Raycap RDC-3315-PF-48	C	From Leg	3.00	0.0000	105.00	No Ice	2.51	1.64	30.00
J-box			0.00			1/2" Ice	2.71	1.81	52.86
(Reserve)			0.00			1" Ice	2.91	1.98	78.84
						2" Ice	3.35	2.35	140.93
14' sector mount	A	None		0.0000	105.00	No Ice	10.80	5.40	475.00
(Reserve)						1/2" Ice	12.38	6.19	700.00
						1" Ice	13.88	6.94	950.00
						2" Ice	20.40	10.20	1375.00
14' sector mount	B	None		0.0000	105.00	No Ice	10.80	5.40	475.00
(Reserve)						1/2" Ice	12.38	6.19	700.00
						1" Ice	13.88	6.94	950.00
						2" Ice	20.40	10.20	1375.00
14' sector mount	C	None		0.0000	105.00	No Ice	10.80	5.40	475.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(Reserve)						1/2" Ice	12.38	6.19	700.00
						1" Ice	13.88	6.94	950.00
						2" Ice	20.40	10.20	1375.00

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
8' dish with radome	A	Paraboloid w/Radome	From Face	0.50 0.00 0.00	0.0000		176.00	8.00	No Ice 1/2" Ice 1" Ice 2" Ice	50.27 51.32 52.37 54.48	450.00 713.43 976.86 1503.72
8' dish with radome	C	Paraboloid w/Radome	From Face	0.50 0.00 0.00	0.0000		176.00	8.00	No Ice 1/2" Ice 1" Ice 2" Ice	50.27 51.32 52.37 54.48	450.00 713.43 976.86 1503.72
8' dish with radome	A	Paraboloid w/Radome	From Face	0.50 0.00 0.00	0.0000		164.00	8.00	No Ice 1/2" Ice 1" Ice 2" Ice	50.27 51.32 52.37 54.48	450.00 713.43 976.86 1503.72

222-H Verification Constants

Constant	Value
K_d	0.85
Ice Thickness Importance Factor	1.15
Z_g	900
α	9.5
K_{zmin}	0.85
K_c	n/a
K_t	1
f	1
K_e	1

222-H Section Verification ArRr By Element

Section Elevation ft	Elem. Num.	Size	C	C w/Ice	Face	e	e w/Ice	A_r ft^2	A_r w/Ice ft^2	A_rR_r ft^2	A_rR_r w/Ice ft^2
T1 180.00-160.00	1	P2.875x.276	38.477	34.398	C	0.163	0.425	4.800	11.585	2.731	7.501

Section Elevation ft	Elem. Num.	Size	C	C w/Ice	Face	e	e w/Ice	A_r ft²	A_r w/Ice ft²	A_rR_r ft²	A_rR_r w/Ice ft²
	1	P2.875x.276	38.477	34.398	A	0.163	0.425	4.800	11.585	2.731	7.501
	2	P2.875x.276	38.477	34.398	C	0.163	0.425	4.800	11.585	2.731	7.501
	2	P2.875x.276	38.477	34.398	B	0.163	0.425	4.800	11.585	2.731	7.501
	3	P2.875x.276	38.477	34.398	B	0.163	0.425	4.800	11.585	2.731	7.501
	3	P2.875x.276	38.477	34.398	A	0.163	0.425	4.800	11.585	2.731	7.501
					A		Sum:	9.599	23.170	5.462	15.001
					B			9.599	23.170	5.462	15.001
					C			9.599	23.170	5.462	15.001
T2	31	P3.5x.3	46.228	36.758	C	0.144	0.357	5.843	12.544	3.149	7.760
160.00-140.00											
	31	P3.5x.3	46.228	36.758	A	0.144	0.357	5.843	12.544	3.149	7.760
	32	P3.5x.3	46.228	36.758	C	0.144	0.357	5.843	12.544	3.149	7.760
	32	P3.5x.3	46.228	36.758	B	0.144	0.357	5.843	12.544	3.149	7.760
	33	P3.5x.3	46.228	36.758	B	0.144	0.357	5.843	12.544	3.149	7.760
	33	P3.5x.3	46.228	36.758	A	0.144	0.357	5.843	12.544	3.149	7.760
					A		Sum:	11.686	25.088	6.297	15.520
					B			11.686	25.088	6.297	15.520
					C			11.686	25.088	6.297	15.520
T3	58	P5.5625x.500	72.372	45.872	C	0.157	0.319	9.286	15.892	4.118	9.614
140.00-120.00											
	58	P5.5625x.500	72.372	45.872	A	0.157	0.319	9.286	15.892	4.118	9.614
	59	P5.5625x.500	72.372	45.872	C	0.157	0.319	9.286	15.892	4.118	9.614
	59	P5.5625x.500	72.372	45.872	B	0.157	0.319	9.286	15.892	4.118	9.614
	60	P5.5625x.500	72.372	45.872	B	0.157	0.319	9.286	15.892	4.118	9.614
	60	P5.5625x.500	72.372	45.872	A	0.157	0.319	9.286	15.892	4.118	9.614
					A		Sum:	18.573	31.784	8.236	19.228
					B			18.573	31.784	8.236	19.228
					C			18.573	31.784	8.236	19.228
T4	79	P5.5625x.500	71.11	44.762	C	0.154	0.301	9.286	15.783	4.148	9.459
120.00-100.00											
	79	P5.5625x.500	71.11	44.762	A	0.154	0.301	9.286	15.783	4.148	9.459
	80	P5.5625x.500	71.11	44.762	C	0.154	0.301	9.286	15.783	4.148	9.459
	80	P5.5625x.500	71.11	44.762	B	0.154	0.301	9.286	15.783	4.148	9.459
	81	P5.5625x.500	71.11	44.762	B	0.154	0.301	9.286	15.783	4.148	9.459
	81	P5.5625x.500	71.11	44.762	A	0.154	0.301	9.286	15.783	4.148	9.459
					A		Sum:	18.573	31.566	8.297	18.917
					B			18.573	31.566	8.297	18.917
					C			18.573	31.566	8.297	18.917
T5 100.00-80.00	100	P5.5625x.500	69.624	43.468	C	0.142	0.279	9.286	15.654	4.154	9.276
	100	P5.5625x.500	69.624	43.468	A	0.142	0.279	9.286	15.654	4.154	9.276
	101	P5.5625x.500	69.624	43.468	C	0.142	0.279	9.286	15.654	4.154	9.276
	101	P5.5625x.500	69.624	43.468	B	0.142	0.279	9.286	15.654	4.154	9.276
	102	P5.5625x.500	69.624	43.468	B	0.142	0.279	9.286	15.654	4.154	9.276
	102	P5.5625x.500	69.624	43.468	A	0.142	0.279	9.286	15.654	4.154	9.276
					A		Sum:	18.573	31.307	8.308	18.552
					B			18.573	31.307	8.308	18.552
					C			18.573	31.307	8.308	18.552
T6 80.00-60.00	121	P8.625x.5	105.137	55.732	C	0.149	0.248	14.399	20.608	6.022	12.048
	121	P8.625x.5	105.137	55.732	A	0.149	0.248	14.399	20.608	6.022	12.048
	122	P8.625x.5	105.137	55.732	C	0.149	0.248	14.399	20.608	6.022	12.048
	122	P8.625x.5	105.137	55.732	B	0.149	0.248	14.399	20.608	6.022	12.048
	123	P8.625x.5	105.137	55.732	B	0.149	0.248	14.399	20.608	6.022	12.048
	123	P8.625x.5	105.137	55.732	A	0.149	0.248	14.399	20.608	6.022	12.048
					A		Sum:	28.798	41.217	12.043	24.095
					B			28.798	41.217	12.043	24.095
					C			28.798	41.217	12.043	24.095
T7 60.00-40.00	136	P8.625x.5	101.479	53.257	C	0.139	0.23	14.399	20.403	5.946	11.842
	136	P8.625x.5	101.479	53.257	A	0.139	0.23	14.399	20.403	5.946	11.842
	137	P8.625x.5	101.479	53.257	C	0.139	0.23	14.399	20.403	5.946	11.842
	137	P8.625x.5	101.479	53.257	B	0.139	0.23	14.399	20.403	5.946	11.842

Section Elevation ft	Elem. Num.	Size	C	C w/Ice	Face	e	e w/Ice	A_r ft²	A_r w/Ice ft²	A_rR_r ft²	A_rR_r w/Ice ft²
	138	P8.625x.5	101.479	53.257	B	0.139	0.23	14.399	20.403	5.946	11.842
	138	P8.625x.5	101.479	53.257	A	0.139	0.23	14.399	20.403	5.946	11.842
					A		Sum:	28.798	40.806	11.892	23.685
					B			28.798	40.806	11.892	23.685
					C			28.798	40.806	11.892	23.685
T8 40.00-20.00	151	P8.625x.5	96.166	49.729	C	0.139	0.223	14.399	20.104	5.949	11.636
	151	P8.625x.5	96.166	49.729	A	0.139	0.223	14.399	20.104	5.949	11.636
	152	P8.625x.5	96.166	49.729	C	0.139	0.223	14.399	20.104	5.949	11.636
	152	P8.625x.5	96.166	49.729	B	0.139	0.223	14.399	20.104	5.949	11.636
	153	P8.625x.5	96.166	49.729	B	0.139	0.223	14.399	20.104	5.949	11.636
	153	P8.625x.5	96.166	49.729	A	0.139	0.223	14.399	20.104	5.949	11.636
					A		Sum:	28.798	40.208	11.897	23.272
					B			28.798	40.208	11.897	23.272
					C			28.798	40.208	11.897	23.272
T9 20.00-0.00	166	P10.75x.5	111.499	53.057	C	0.163	0.234	17.947	23.058	7.633	13.403
	166	P10.75x.5	111.499	53.057	A	0.163	0.234	17.947	23.058	7.633	13.403
	167	P10.75x.5	111.499	53.057	C	0.163	0.234	17.947	23.058	7.633	13.403
	167	P10.75x.5	111.499	53.057	B	0.163	0.234	17.947	23.058	7.633	13.403
	168	P10.75x.5	111.499	53.057	B	0.163	0.234	17.947	23.058	7.633	13.403
	168	P10.75x.5	111.499	53.057	A	0.163	0.234	17.947	23.058	7.633	13.403
					A		Sum:	35.893	46.116	15.265	26.806
					B			35.893	46.116	15.265	26.806
					C			35.893	46.116	15.265	26.806

222-H Section Verification Tables - No Ice

Section Elevation ft	z_{wind} ft	z_{ice} ft	K_z	K_h	K_{zt}	t_z in	q_z psf	Face	e	A_rR_r ft²
T1 180.00-160.00	170.00		1.415	1	1		56	A	0.163	5.462
								B	0.163	5.462
								C	0.163	5.462
T2 160.00-140.00	150.00		1.378	1	1		55	A	0.144	6.297
								B	0.144	6.297
								C	0.144	6.297
T3 140.00-120.00	130.00		1.337	1	1		53	A	0.157	8.236
								B	0.157	8.236
								C	0.157	8.236
T4 120.00-100.00	110.00		1.291	1	1		51	A	0.154	8.297
								B	0.154	8.297
								C	0.154	8.297
T5 100.00-80.00	90.00		1.238	1	1		49	A	0.142	8.308
								B	0.142	8.308
								C	0.142	8.308
T6 80.00-60.00	70.00		1.174	1	1		47	A	0.149	12.043
								B	0.149	12.043
								C	0.149	12.043
T7 60.00-40.00	50.00		1.094	1	1		43	A	0.139	11.892
								B	0.139	11.892
								C	0.139	11.892
T8 40.00-20.00	30.00		0.982	1	1		39	A	0.139	11.897
								B	0.139	11.897

Section Elevation ft	z_{wind} ft	z_{ice} ft	K_z	K_h	K_{zt}	t_z in	q_z psf	Face	e	A_rR_r ft²
								C	0.139	11.897
T9 20.00-0.00	10.00		0.85	1	1		34	A	0.163	15.265
								B	0.163	15.265
								C	0.163	15.265

222-H Section Verification Tables - Ice

Section Elevation ft	z_{wind} ft	z_{ice} ft	K_z	K_h	K_{zt}	t_z in	q_z psf	Face	e	A_rR_r ft²
T1 180.00-160.00	170.00	170.00	1.415	1	1	2.0323	8	A	0.425	29.214
								B	0.425	29.214
								C	0.425	29.214
T2 160.00-140.00	150.00	150.00	1.378	1	1	2.0070	7	A	0.357	30.576
								B	0.357	30.576
								C	0.357	30.576
T3 140.00-120.00	130.00	130.00	1.337	1	1	1.9785	7	A	0.319	32.952
								B	0.319	32.952
								C	0.319	32.952
T4 120.00-100.00	110.00	110.00	1.291	1	1	1.9457	7	A	0.301	34.311
								B	0.301	34.311
								C	0.301	34.311
T5 100.00-80.00	90.00	90.00	1.238	1	1	1.9070	7	A	0.279	35.499
								B	0.279	35.499
								C	0.279	35.499
T6 80.00-60.00	70.00	70.00	1.174	1	1	1.8597	6	A	0.248	37.159
								B	0.248	37.159
								C	0.248	37.159
T7 60.00-40.00	50.00	50.00	1.094	1	1	1.7982	6	A	0.23	37.442
								B	0.23	37.442
								C	0.23	37.442
T8 40.00-20.00	30.00	30.00	0.982	1	1	1.7086	5	A	0.223	37.487
								B	0.223	37.487
								C	0.223	37.487
T9 20.00-0.00	10.00	10.00	0.85	1	1	1.5309	5	A	0.234	40.561
								B	0.234	40.561
								C	0.234	40.561

222-H Section Verification Tables - Service

Section Elevation ft	z_{wind} ft	z_{ice} ft	K_z	K_h	K_{zt}	t_z in	q_z psf	Face	e	A_rR_r ft²
T1 180.00-160.00	170.00		1.415	1	1		34	A	0.163	5.462
								B	0.163	5.462
								C	0.163	5.462
T2 160.00-140.00	150.00		1.378	1	1		33	A	0.144	6.625
								B	0.144	6.625
								C	0.144	6.625
T3 140.00-120.00	130.00		1.337	1	1		32	A	0.157	9.354
								B	0.157	9.354
								C	0.157	9.354

Section Elevation ft	z_{wind} ft	z_{ice} ft	K_z	K_h	K_{zt}	t_z in	q_z psf	Face	e	A_rR_r ft²
T4 120.00-100.00	110.00		1.291	1	1		31	A	0.154	9.405
								B	0.154	9.405
								C	0.154	9.405
T5 100.00-80.00	90.00		1.238	1	1		30	A	0.142	9.429
								B	0.142	9.429
								C	0.142	9.429
T6 80.00-60.00	70.00		1.174	1	1		28	A	0.149	12.043
								B	0.149	12.043
								C	0.149	12.043
T7 60.00-40.00	50.00		1.094	1	1		26	A	0.139	11.892
								B	0.139	11.892
								C	0.139	11.892
T8 40.00-20.00	30.00		0.982	1	1		24	A	0.139	12.260
								B	0.139	12.260
								C	0.139	12.260
T9 20.00-0.00	10.00		0.85	1	1		20	A	0.163	15.265
								B	0.163	15.265
								C	0.163	15.265

Tower Pressures - No Ice

$G_H = 0.850$

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
T1	170.00	1.415	56	124.798	A	10.802	9.599	9.599	47.05	31.266	0.000
180.00-160.00					B	10.802	9.599		47.05	6.578	0.000
					C	10.802	9.599		47.05	0.000	0.000
T2	150.00	1.378	55	165.841	A	12.127	11.686	11.686	49.07	47.289	0.000
160.00-140.00					B	12.127	11.686		49.07	6.655	0.000
					C	12.127	11.686		49.07	0.000	0.000
T3	130.00	1.337	53	209.282	A	14.333	18.573	18.573	56.44	48.954	0.000
140.00-120.00					B	14.333	18.573		56.44	21.220	0.000
					C	14.333	18.573		56.44	1.960	0.000
T4	110.00	1.291	51	249.282	A	19.801	18.573	18.573	48.40	72.244	0.000
120.00-100.00					B	19.801	18.573		48.40	26.050	0.000
					C	19.801	18.573		48.40	79.670	0.000
T5	90.00	1.238	49	289.282	A	22.493	18.573	18.573	45.23	142.114	0.000
100.00-80.00					B	22.493	18.573		45.23	26.050	0.000
					C	22.493	18.573		45.23	102.960	0.000
T6 80.00-60.00	70.00	1.174	47	334.393	A	21.028	28.798	28.798	57.80	142.114	0.000
					B	21.028	28.798		57.80	26.050	0.000
					C	21.028	28.798		57.80	102.960	0.000
T7 60.00-40.00	50.00	1.094	43	374.393	A	23.068	28.798	28.798	55.52	142.114	0.000
					B	23.068	28.798		55.52	26.050	0.000
					C	23.068	28.798		55.52	102.960	0.000
T8 40.00-20.00	30.00	0.982	39	414.393	A	28.747	28.798	28.798	50.04	142.114	0.000
					B	28.747	28.798		50.04	26.050	0.000
					C	28.747	28.798		50.04	102.960	0.000
T9 20.00-0.00	10.00	0.85	34	457.939	A	38.641	35.893	35.893	48.16	106.585	0.000
					B	38.641	35.893		48.16	19.538	0.000
					C	38.641	35.893		48.16	77.220	0.000

Tower Pressure - With Ice

$G_H = 0.850$

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
T1	170.00	1.415	8	2.0323	131.580	A	10.802	45.123	23.170	41.43	102.720	0.000
180.00-160.00						B	10.802	45.123		41.43	23.008	0.000
						C	10.802	45.123		41.43	0.000	0.000
T2	150.00	1.378	7	2.0070	172.539	A	12.127	49.427	25.088	40.76	172.512	0.000
160.00-140.00						B	12.127	49.427		40.76	22.806	0.000
						C	12.127	49.427		40.76	0.000	0.000
T3	130.00	1.337	7	1.9785	215.886	A	14.333	54.470	31.784	46.20	178.797	0.000
140.00-120.00						B	14.333	54.470		46.20	57.594	0.000
						C	14.333	54.470		46.20	9.527	0.000
T4	110.00	1.291	7	1.9457	255.776	A	19.801	57.250	31.566	40.97	196.047	0.000
120.00-100.00						B	19.801	57.250		40.97	68.651	0.000
						C	19.801	57.250		40.97	104.415	0.000
T5 100.00-80.00	90.00	1.238	7	1.9070	295.647	A	22.493	59.905	31.307	38.00	250.705	0.000
						B	22.493	59.905		38.00	67.925	0.000
						C	22.493	59.905		38.00	122.551	0.000
T6 80.00-60.00	70.00	1.174	6	1.8597	340.600	A	21.028	63.563	41.217	48.72	247.560	0.000
						B	21.028	63.563		48.72	67.037	0.000
						C	21.028	63.563		48.72	121.400	0.000
T7 60.00-40.00	50.00	1.094	6	1.7982	380.394	A	23.068	64.509	40.806	46.59	243.473	0.000
						B	23.068	64.509		46.59	65.882	0.000
						C	23.068	64.509		46.59	119.905	0.000
T8 40.00-20.00	30.00	0.982	5	1.7086	420.096	A	28.747	64.767	40.208	43.00	237.528	0.000
						B	28.747	64.767		43.00	64.203	0.000
						C	28.747	64.767		43.00	117.732	0.000
T9 20.00-0.00	10.00	0.85	5	1.5309	463.048	A	38.641	69.777	46.116	42.54	169.303	0.000
						B	38.641	69.777		42.54	45.656	0.000
						C	38.641	69.777		42.54	85.071	0.000

Tower Pressure - Service

$G_H = 0.850$

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
T1	170.00	1.415	34	124.798	A	10.802	9.599	9.599	47.05	31.266	0.000
180.00-160.00					B	10.802	9.599		47.05	6.578	0.000
					C	10.802	9.599		47.05	0.000	0.000
T2	150.00	1.378	33	165.841	A	12.127	11.686	11.686	49.07	47.289	0.000
160.00-140.00					B	12.127	11.686		49.07	6.655	0.000
					C	12.127	11.686		49.07	0.000	0.000
T3	130.00	1.337	32	209.282	A	14.333	18.573	18.573	56.44	48.954	0.000
140.00-120.00					B	14.333	18.573		56.44	21.220	0.000
					C	14.333	18.573		56.44	1.960	0.000
T4	110.00	1.291	31	249.282	A	19.801	18.573	18.573	48.40	72.244	0.000
120.00-100.00					B	19.801	18.573		48.40	26.050	0.000
					C	19.801	18.573		48.40	79.670	0.000
T5	90.00	1.238	30	289.282	A	22.493	18.573	18.573	45.23	142.114	0.000
100.00-80.00					B	22.493	18.573		45.23	26.050	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	22.493	18.573		45.23	102.960	0.000
T6 80.00-60.00	70.00	1.174	28	334.393	A	21.028	28.798	28.798	57.80	142.114	0.000
					B	21.028	28.798		57.80	26.050	0.000
					C	21.028	28.798		57.80	102.960	0.000
T7 60.00-40.00	50.00	1.094	26	374.393	A	23.068	28.798	28.798	55.52	142.114	0.000
					B	23.068	28.798		55.52	26.050	0.000
					C	23.068	28.798		55.52	102.960	0.000
T8 40.00-20.00	30.00	0.982	24	414.393	A	28.747	28.798	28.798	50.04	142.114	0.000
					B	28.747	28.798		50.04	26.050	0.000
					C	28.747	28.798		50.04	102.960	0.000
T9 20.00-0.00	10.00	0.85	20	457.939	A	38.641	35.893	35.893	48.16	106.585	0.000
					B	38.641	35.893		48.16	19.538	0.000
					C	38.641	35.893		48.16	77.220	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	426.99	794.92	A	0.163	2.723	56	1	1	16.265	3321.14	166.06	A
180.00-160.00			B	0.163	2.723		1	1	16.265			
			C	0.163	2.723		1	1	16.265			
T2	495.30	1167.99	A	0.144	2.795	55	1	1	18.424	4020.46	201.02	A
160.00-140.00			B	0.144	2.795		1	1	18.424			
			C	0.144	2.795		1	1	18.424			
T3	671.98	2502.67	A	0.157	2.745	53	1	1	22.569	4802.78	240.14	A
140.00-120.00			B	0.157	2.745		1	1	22.569			
			C	0.157	2.745		1	1	22.569			
T4	1380.20	2938.32	A	0.154	2.757	51	1	1	28.098	6811.36	340.57	C
120.00-100.00			B	0.154	2.757		1	1	28.098			
			C	0.154	2.757		1	1	28.098			
T5	1985.00	3108.19	A	0.142	2.801	49	1	1	30.801	8467.48	423.37	A
100.00-80.00			B	0.142	2.801		1	1	30.801			
			C	0.142	2.801		1	1	30.801			
T6	1985.00	4343.95	A	0.149	2.775	47	1	1	33.071	8248.55	412.43	A
80.00-60.00			B	0.149	2.775		1	1	33.071			
			C	0.149	2.775		1	1	33.071			
T7	1985.00	4855.42	A	0.139	2.814	43	1	1	34.960	7927.98	396.40	A
60.00-40.00			B	0.139	2.814		1	1	34.960			
			C	0.139	2.814		1	1	34.960			
T8	1985.00	5221.78	A	0.139	2.813	39	1	1	40.644	7647.54	382.38	A
40.00-20.00			B	0.139	2.813		1	1	40.644			
			C	0.139	2.813		1	1	40.644			
T9 20.00-0.00	1488.75	6282.99	A	0.163	2.725	34	1	1	53.906	6715.63	335.78	A
			B	0.163	2.725		1	1	53.906			
			C	0.163	2.725		1	1	53.906			
Sum Weight:	12403.22	31216.22						OTM	4573727.72 lb-ft	57962.93		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	426.99	794.92	A	0.163	2.723	56	0.8	1	14.104	3040.55	152.03	B
180.00-160.00			B	0.163	2.723		0.8	1	14.104			
			C	0.163	2.723		0.8	1	14.104			
T2	495.30	1167.99	A	0.144	2.795	55	0.8	1	15.999	3705.46	185.27	B
160.00-140.00			B	0.144	2.795		0.8	1	15.999			
			C	0.144	2.795		0.8	1	15.999			
T3	671.98	2502.67	A	0.157	2.745	53	0.8	1	19.702	4448.01	222.40	B
140.00-120.00			B	0.157	2.745		0.8	1	19.702			
			C	0.157	2.745		0.8	1	19.702			
T4	1380.20	2938.32	A	0.154	2.757	51	0.8	1	24.138	6336.10	316.80	A
120.00-100.00			B	0.154	2.757		0.8	1	24.138			
			C	0.154	2.757		0.8	1	24.138			
T5	1985.00	3108.19	A	0.142	2.801	49	0.8	1	26.303	7941.63	397.08	B
100.00-80.00			B	0.142	2.801		0.8	1	26.303			
			C	0.142	2.801		0.8	1	26.303			
T6	1985.00	4343.95	A	0.149	2.775	47	0.8	1	28.866	7786.64	389.33	B
80.00-60.00			B	0.149	2.775		0.8	1	28.866			
			C	0.149	2.775		0.8	1	28.866			
T7	1985.00	4855.42	A	0.139	2.814	43	0.8	1	30.347	7449.29	372.46	B
60.00-40.00			B	0.139	2.814		0.8	1	30.347			
			C	0.139	2.814		0.8	1	30.347			
T8	1985.00	5221.78	A	0.139	2.813	39	0.8	1	34.894	7112.06	355.60	B
40.00-20.00			B	0.139	2.813		0.8	1	34.894			
			C	0.139	2.813		0.8	1	34.894			
T9 20.00-0.00	1488.75	6282.99	A	0.163	2.725	34	0.8	1	46.178	6112.21	305.61	B
			B	0.163	2.725		0.8	1	46.178			
			C	0.163	2.725		0.8	1	46.178			
Sum Weight:	12403.22	31216.22						OTM	4254684.45 lb-ft	53931.95		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	426.99	794.92	A	0.163	2.723	56	0.85	1	14.644	3110.70	155.54	C
180.00-160.00			B	0.163	2.723		0.85	1	14.644			
			C	0.163	2.723		0.85	1	14.644			
T2	495.30	1167.99	A	0.144	2.795	55	0.85	1	16.605	3784.21	189.21	C
160.00-140.00			B	0.144	2.795		0.85	1	16.605			
			C	0.144	2.795		0.85	1	16.605			
T3	671.98	2502.67	A	0.157	2.745	53	0.85	1	20.419	4563.55	228.18	C
140.00-120.00			B	0.157	2.745		0.85	1	20.419			
			C	0.157	2.745		0.85	1	20.419			
T4	1380.20	2938.32	A	0.154	2.757	51	0.85	1	25.128	6458.21	322.91	B
120.00-100.00			B	0.154	2.757		0.85	1	25.128			
			C	0.154	2.757		0.85	1	25.128			
T5	1985.00	3108.19	A	0.142	2.801	49	0.85	1	27.427	8106.68	405.33	B
100.00-80.00			B	0.142	2.801		0.85	1	27.427			
			C	0.142	2.801		0.85	1	27.427			
T6	1985.00	4343.95	A	0.149	2.775	47	0.85	1	29.917	7933.98	396.70	B
80.00-60.00			B	0.149	2.775		0.85	1	29.917			
			C	0.149	2.775		0.85	1	29.917			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T7	1985.00	4855.42	A	0.139	2.814	43	0.85	1	31.500	7598.64	379.93	B
60.00-40.00			B	0.139	2.814		0.85	1	31.500			
			C	0.139	2.814		0.85	1	31.500			
T8	1985.00	5221.78	A	0.139	2.813	39	0.85	1	36.332	7272.59	363.63	B
40.00-20.00			B	0.139	2.813		0.85	1	36.332			
			C	0.139	2.813		0.85	1	36.332			
T9 20.00-0.00	1488.75	6282.99	A	0.163	2.725	34	0.85	1	48.110	6280.36	314.02	B
			B	0.163	2.725		0.85	1	48.110			
			C	0.163	2.725		0.85	1	48.110			
Sum Weight:	12403.22	31216.22						OTM	4346008.18 lb-ft	55108.92		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	2213.67	3973.21	A	0.425	2.017	8	1	1	40.016	994.87	49.74	A
180.00-160.00			B	0.425	2.017		1	1	40.016			
			C	0.425	2.017		1	1	40.016			
T2	3107.54	4665.67	A	0.357	2.156	7	1	1	42.703	1292.80	64.64	A
160.00-140.00			B	0.357	2.156		1	1	42.703			
			C	0.357	2.156		1	1	42.703			
T3	3915.42	6482.80	A	0.319	2.247	7	1	1	47.285	1480.33	74.02	A
140.00-120.00			B	0.319	2.247		1	1	47.285			
			C	0.319	2.247		1	1	47.285			
T4	6579.61	7862.60	A	0.301	2.293	7	1	1	54.112	1866.42	93.32	A
120.00-100.00			B	0.301	2.293		1	1	54.112			
			C	0.301	2.293		1	1	54.112			
T5	8512.46	8392.86	A	0.279	2.354	7	1	1	57.992	2159.76	107.99	A
100.00-80.00			B	0.279	2.354		1	1	57.992			
			C	0.279	2.354		1	1	57.992			
T6	8327.51	9467.40	A	0.248	2.442	6	1	1	58.187	2063.56	103.18	A
80.00-60.00			B	0.248	2.442		1	1	58.187			
			C	0.248	2.442		1	1	58.187			
T7	8090.47	10093.66	A	0.23	2.498	6	1	1	60.510	1949.70	97.49	A
60.00-40.00			B	0.23	2.498		1	1	60.510			
			C	0.23	2.498		1	1	60.510			
T8	7752.39	10644.43	A	0.223	2.522	5	1	1	66.234	1798.94	89.95	A
40.00-20.00			B	0.223	2.522		1	1	66.234			
			C	0.223	2.522		1	1	66.234			
T9 20.00-0.00	5329.07	12329.42	A	0.234	2.486	5	1	1	79.202	1417.82	70.89	A
			B	0.234	2.486		1	1	79.202			
			C	0.234	2.486		1	1	79.202			
Sum Weight:	53828.14	73912.04						OTM	1265254.26 lb-ft	15024.19		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	2213.67	3973.21	A	0.425	2.017	8	0.8	1	37.856	966.36	48.32	B
180.00-160.00			B	0.425	2.017		0.8	1	37.856			
			C	0.425	2.017		0.8	1	37.856			
T2	3107.54	4665.67	A	0.357	2.156	7	0.8	1	40.278	1259.47	62.97	B
160.00-140.00			B	0.357	2.156		0.8	1	40.278			
			C	0.357	2.156		0.8	1	40.278			
T3	3915.42	6482.80	A	0.319	2.247	7	0.8	1	44.418	1440.48	72.02	B
140.00-120.00			B	0.319	2.247		0.8	1	44.418			
			C	0.319	2.247		0.8	1	44.418			
T4	6579.61	7862.60	A	0.301	2.293	7	0.8	1	50.152	1812.20	90.61	B
120.00-100.00			B	0.301	2.293		0.8	1	50.152			
			C	0.301	2.293		0.8	1	50.152			
T5	8512.46	8392.86	A	0.279	2.354	7	0.8	1	53.494	2099.14	104.96	B
100.00-80.00			B	0.279	2.354		0.8	1	53.494			
			C	0.279	2.354		0.8	1	53.494			
T6	8327.51	9467.40	A	0.248	2.442	6	0.8	1	53.982	2007.80	100.39	B
80.00-60.00			B	0.248	2.442		0.8	1	53.982			
			C	0.248	2.442		0.8	1	53.982			
T7	8090.47	10093.66	A	0.23	2.498	6	0.8	1	55.896	1891.41	94.57	B
60.00-40.00			B	0.23	2.498		0.8	1	55.896			
			C	0.23	2.498		0.8	1	55.896			
T8	7752.39	10644.43	A	0.223	2.522	5	0.8	1	60.484	1733.08	86.65	B
40.00-20.00			B	0.223	2.522		0.8	1	60.484			
			C	0.223	2.522		0.8	1	60.484			
T9 20.00-0.00	5329.07	12329.42	A	0.234	2.486	5	0.8	1	71.473	1342.31	67.12	B
			B	0.234	2.486		0.8	1	71.473			
			C	0.234	2.486		0.8	1	71.473			
Sum Weight:	53828.14	73912.04						OTM	1229260.42 lb-ft	14552.25		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	2213.67	3973.21	A	0.425	2.017	8	0.85	1	38.396	961.12	48.06	C
180.00-160.00			B	0.425	2.017		0.85	1	38.396			
			C	0.425	2.017		0.85	1	38.396			
T2	3107.54	4665.67	A	0.357	2.156	7	0.85	1	40.884	1242.05	62.10	C
160.00-140.00			B	0.357	2.156		0.85	1	40.884			
			C	0.357	2.156		0.85	1	40.884			
T3	3915.42	6482.80	A	0.319	2.247	7	0.85	1	45.135	1437.53	71.88	C
140.00-120.00			B	0.319	2.247		0.85	1	45.135			
			C	0.319	2.247		0.85	1	45.135			
T4	6579.61	7862.60	A	0.301	2.293	7	0.85	1	51.142	1847.86	92.39	B
120.00-100.00			B	0.301	2.293		0.85	1	51.142			
			C	0.301	2.293		0.85	1	51.142			
T5	8512.46	8392.86	A	0.279	2.354	7	0.85	1	54.618	2119.51	105.98	B
100.00-80.00			B	0.279	2.354		0.85	1	54.618			
			C	0.279	2.354		0.85	1	54.618			
T6	8327.51	9467.40	A	0.248	2.442	6	0.85	1	55.033	2026.68	101.33	B
80.00-60.00			B	0.248	2.442		0.85	1	55.033			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
			C	0.248	2.442		0.85	1	55.033			
T7	8090.47	10093.66	A	0.23	2.498	6	0.85	1	57.050	1910.59	95.53	B
60.00-40.00			B	0.23	2.498		0.85	1	57.050			
			C	0.23	2.498		0.85	1	57.050			
T8	7752.39	10644.43	A	0.223	2.522	5	0.85	1	61.922	1753.68	87.68	B
40.00-20.00			B	0.223	2.522		0.85	1	61.922			
			C	0.223	2.522		0.85	1	61.922			
T9 20.00-0.00	5329.07	12329.42	A	0.234	2.486	5	0.85	1	73.405	1363.88	68.19	B
			B	0.234	2.486		0.85	1	73.405			
			C	0.234	2.486		0.85	1	73.405			
Sum Weight:	53828.14	73912.04						OTM	1234243.5 1 lb-ft	14662.90		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	426.99	794.92	A	0.163	2.723	34	1	1	16.265	2009.09	100.45	A
180.00-160.00			B	0.163	2.723		1	1	16.265			
			C	0.163	2.723		1	1	16.265			
T2	495.30	1167.99	A	0.144	2.795	33	1	1	18.752	2457.90	122.90	A
160.00-140.00			B	0.144	2.795		1	1	18.752			
			C	0.144	2.795		1	1	18.752			
T3	671.98	2502.67	A	0.157	2.745	32	1	1	23.686	2989.05	149.45	A
140.00-120.00			B	0.157	2.745		1	1	23.686			
			C	0.157	2.745		1	1	23.686			
T4	1380.20	2938.32	A	0.154	2.757	31	1	1	29.206	4200.89	210.04	C
120.00-100.00			B	0.154	2.757		1	1	29.206			
			C	0.154	2.757		1	1	29.206			
T5	1985.00	3108.19	A	0.142	2.801	30	1	1	31.922	5201.55	260.08	A
100.00-80.00			B	0.142	2.801		1	1	31.922			
			C	0.142	2.801		1	1	31.922			
T6	1985.00	4343.95	A	0.149	2.775	28	1	1	33.071	4989.87	249.49	A
80.00-60.00			B	0.149	2.775		1	1	33.071			
			C	0.149	2.775		1	1	33.071			
T7	1985.00	4855.42	A	0.139	2.814	26	1	1	34.960	4795.94	239.80	A
60.00-40.00			B	0.139	2.814		1	1	34.960			
			C	0.139	2.814		1	1	34.960			
T8	1985.00	5221.78	A	0.139	2.813	24	1	1	41.007	4646.73	232.34	A
40.00-20.00			B	0.139	2.813		1	1	41.007			
			C	0.139	2.813		1	1	41.007			
T9 20.00-0.00	1488.75	6282.99	A	0.163	2.725	20	1	1	53.906	4062.54	203.13	A
			B	0.163	2.725		1	1	53.906			
			C	0.163	2.725		1	1	53.906			
Sum Weight:	12403.22	31216.22						OTM	2798159.6 3 lb-ft	35353.57		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	426.99	794.92	A	0.163	2.723	34	0.8	1	14.104	1839.35	91.97	B
180.00-160.00			B	0.163	2.723		0.8	1	14.104			
			C	0.163	2.723		0.8	1	14.104			
T2	495.30	1167.99	A	0.144	2.795	33	0.8	1	16.327	2267.35	113.37	B
160.00-140.00			B	0.144	2.795		0.8	1	16.327			
			C	0.144	2.795		0.8	1	16.327			
T3	671.98	2502.67	A	0.157	2.745	32	0.8	1	20.820	2774.44	138.72	B
140.00-120.00			B	0.157	2.745		0.8	1	20.820			
			C	0.157	2.745		0.8	1	20.820			
T4	1380.20	2938.32	A	0.154	2.757	31	0.8	1	25.246	3913.39	195.67	A
120.00-100.00			B	0.154	2.757		0.8	1	25.246			
			C	0.154	2.757		0.8	1	25.246			
T5	1985.00	3108.19	A	0.142	2.801	30	0.8	1	27.424	4883.45	244.17	B
100.00-80.00			B	0.142	2.801		0.8	1	27.424			
			C	0.142	2.801		0.8	1	27.424			
T6	1985.00	4343.95	A	0.149	2.775	28	0.8	1	28.866	4710.44	235.52	B
80.00-60.00			B	0.149	2.775		0.8	1	28.866			
			C	0.149	2.775		0.8	1	28.866			
T7	1985.00	4855.42	A	0.139	2.814	26	0.8	1	30.347	4506.36	225.32	B
60.00-40.00			B	0.139	2.814		0.8	1	30.347			
			C	0.139	2.814		0.8	1	30.347			
T8	1985.00	5221.78	A	0.139	2.813	24	0.8	1	35.257	4322.80	216.14	B
40.00-20.00			B	0.139	2.813		0.8	1	35.257			
			C	0.139	2.813		0.8	1	35.257			
T9 20.00-0.00	1488.75	6282.99	A	0.163	2.725	20	0.8	1	46.178	3697.51	184.88	B
			B	0.163	2.725		0.8	1	46.178			
			C	0.163	2.725		0.8	1	46.178			
Sum Weight:	12403.22	31216.22						OTM	2605158.1 4 lb-ft	32915.07		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	426.99	794.92	A	0.163	2.723	34	0.85	1	14.644	1881.78	94.09	C
180.00-160.00			B	0.163	2.723		0.85	1	14.644			
			C	0.163	2.723		0.85	1	14.644			
T2	495.30	1167.99	A	0.144	2.795	33	0.85	1	16.933	2314.98	115.75	C
160.00-140.00			B	0.144	2.795		0.85	1	16.933			
			C	0.144	2.795		0.85	1	16.933			
T3	671.98	2502.67	A	0.157	2.745	32	0.85	1	21.536	2844.33	142.22	C
140.00-120.00			B	0.157	2.745		0.85	1	21.536			
			C	0.157	2.745		0.85	1	21.536			
T4	1380.20	2938.32	A	0.154	2.757	31	0.85	1	26.236	3987.26	199.36	B
120.00-100.00			B	0.154	2.757		0.85	1	26.236			
			C	0.154	2.757		0.85	1	26.236			
T5	1985.00	3108.19	A	0.142	2.801	30	0.85	1	28.548	4983.29	249.16	B
100.00-80.00			B	0.142	2.801		0.85	1	28.548			
			C	0.142	2.801		0.85	1	28.548			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T6	1985.00	4343.95	A	0.149	2.775	28	0.85	1	29.917	4799.57	239.98	B
80.00-60.00			B	0.149	2.775		0.85	1	29.917			
			C	0.149	2.775		0.85	1	29.917			
T7	1985.00	4855.42	A	0.139	2.814	26	0.85	1	31.500	4596.71	229.84	B
60.00-40.00			B	0.139	2.814		0.85	1	31.500			
			C	0.139	2.814		0.85	1	31.500			
T8	1985.00	5221.78	A	0.139	2.813	24	0.85	1	36.695	4419.91	221.00	B
40.00-20.00			B	0.139	2.813		0.85	1	36.695			
			C	0.139	2.813		0.85	1	36.695			
T9 20.00-0.00	1488.75	6282.99	A	0.163	2.725	20	0.85	1	48.110	3799.23	189.96	B
			B	0.163	2.725		0.85	1	48.110			
			C	0.163	2.725		0.85	1	48.110			
Sum Weight:	12403.22	31216.22						OTM	2660403.3 7 lb-ft	33627.07		

Mast Vectors - No Ice

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
T1	180.00-160.00	0	Wind Normal	3275.33	0.00	-3275.33	-557767.84	-162.74	215.37
		30	Wind 90	2970.85	1485.43	-2572.84	-438343.41	-252685.35	-1104.60
		60	Wind 60	2994.74	2593.52	-1497.37	-255514.35	-441061.38	-2434.32
		90	Wind 90	3110.70	3110.70	0.00	-961.40	-528981.91	-3080.73
		120	Wind Normal	3321.14	2876.20	1660.57	281335.89	-489115.99	-2768.32
		150	Wind 90	3110.70	1555.35	2693.95	457009.44	-264572.33	-1714.14
		180	Wind 60	2994.74	0.00	2994.74	508144.50	-162.74	-215.37
		210	Wind 90	2970.85	-1485.43	2572.84	436420.61	252359.88	1104.60
		240	Wind Normal	3275.33	-2836.52	1637.67	277441.82	482045.79	2434.32
		270	Wind 90	3110.70	-3110.70	0.00	-961.40	528656.44	3080.73
		300	Wind 60	3040.55	-2633.20	-1520.28	-259408.42	447480.64	2768.32
		330	Wind 90	3110.70	-1555.35	-2693.95	-458932.24	264246.85	1714.14
T2	160.00-140.00	0	Wind Normal	3951.97	0.00	-3951.97	-594332.20	-189.99	125.93
		30	Wind 90	3527.97	1763.99	-3055.31	-459833.99	-264787.83	-2165.34
		60	Wind 60	3636.96	3149.70	-1818.48	-274309.26	-472645.26	-4650.55
		90	Wind 90	3784.21	3784.21	0.00	-1537.08	-567821.10	-5721.08
		120	Wind Normal	4020.46	3481.82	2010.23	299997.51	-522463.22	-5003.59
		150	Wind 90	3784.21	1892.10	3277.22	490045.89	-284005.55	-2945.39
		180	Wind 60	3636.96	0.00	3636.96	544007.28	-189.99	-125.93
		210	Wind 90	3527.97	-1763.99	3055.31	456759.83	264407.86	2165.34
		240	Wind Normal	3951.97	-3422.50	1975.98	294860.48	513185.65	4650.55
		270	Wind 90	3784.21	-3784.21	0.00	-1537.08	567441.13	5721.08
		300	Wind 60	3705.46	-3209.02	-1852.73	-279446.29	481162.89	5003.59
		330	Wind 90	3784.21	-1892.10	-3277.22	-493120.05	283625.57	2945.39
T3	140.00-120.00	0	Wind Normal	4747.20	0.00	-4747.20	-619842.05	-393.02	611.37
		30	Wind 90	4346.94	2173.47	-3764.56	-492098.27	-282943.85	-3208.59
		60	Wind 60	4432.54	3838.69	-2216.27	-290820.68	-499422.53	-7205.64
		90	Wind 90	4563.55	4563.55	0.00	-2705.86	-593654.85	-9067.49
		120	Wind Normal	4802.78	4159.33	2401.39	309474.92	-541105.98	-7826.02
		150	Wind 90	4490.01	2245.00	3888.46	502793.95	-292243.47	-4675.56
		180	Wind 60	4392.43	0.00	4392.43	568310.33	-393.02	-611.37
		210	Wind 90	4346.94	-2173.47	3764.56	486686.55	282157.82	3208.59
		240	Wind Normal	4787.30	-4145.93	2393.65	308468.96	538577.59	7205.64
		270	Wind 90	4563.55	-4563.55	0.00	-2705.86	592868.82	9067.49

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		300	Wind 60	4448.01	-3852.09	-2224.01	-291826.63	500378.85	7826.02
		330	Wind 90	4490.01	-2245.00	-3888.46	-508205.67	291457.44	4675.56
T4	120.00-100.00	0	Wind Normal	6811.36	0.00	-6811.36	-750528.56	2345.08	-5380.74
		30	Wind 90	6153.10	3076.55	-5328.74	-587440.95	-336075.47	-6030.14
		60	Wind 60	5982.22	5180.75	-2991.11	-330301.42	-567537.84	-7779.07
		90	Wind 90	6059.28	6059.28	0.00	-1279.36	-664175.84	-7665.53
		120	Wind Normal	6658.17	5766.15	3329.09	364920.16	-631931.11	-2850.07
		150	Wind 90	6458.21	3229.10	5592.97	613947.72	-352856.44	2481.78
		180	Wind 60	6336.10	0.00	6336.10	695691.29	2345.08	5380.74
		210	Wind 90	6153.10	-3076.55	5328.74	584882.22	340765.63	6030.14
		240	Wind Normal	6457.48	-5592.34	3228.74	353881.97	617502.55	7779.07
		270	Wind 90	6059.28	-6059.28	0.00	-1279.36	668866.00	7665.53
		300	Wind 60	6182.91	-5354.56	-3091.46	-341339.62	591346.71	2850.07
		330	Wind 90	6458.21	-3229.10	-5592.97	-616506.45	357546.60	-2481.78
T5	100.00-80.00	0	Wind Normal	8148.65	0.00	-8148.65	-733066.32	6420.09	-13627.27
		30	Wind 90	7232.10	3616.05	-6263.19	-563374.19	-319024.62	-10537.79
		60	Wind 60	7167.15	6206.93	-3583.57	-322209.03	-552203.71	-9346.04
		90	Wind 90	7607.84	7607.84	0.00	312.57	-678285.23	-4414.43
		120	Wind Normal	8467.48	7333.05	4233.74	381349.12	-653554.58	6356.60
		150	Wind 90	8106.68	4053.34	7020.59	632165.80	-358380.55	13652.87
		180	Wind 60	7622.80	0.00	7622.80	686364.86	6420.09	13627.27
		210	Wind 90	7232.10	-3616.05	6263.19	563999.33	331864.79	10537.79
		240	Wind Normal	7693.00	-6662.33	3846.50	346497.47	606029.91	9346.04
		270	Wind 90	7607.84	-7607.84	0.00	312.57	691125.40	4414.43
		300	Wind 60	7941.63	-6877.65	-3970.81	-357060.68	625408.72	-6356.60
		330	Wind 90	8106.68	-4053.34	-7020.59	-631540.66	371220.72	-13652.87
T6	80.00-60.00	0	Wind Normal	7946.16	0.00	-7946.16	-555876.24	7320.60	-14732.48
		30	Wind 90	7104.47	3552.24	-6152.65	-430330.87	-241335.93	-11399.07
		60	Wind 60	7052.07	6107.27	-3526.04	-246467.65	-420188.56	-10099.67
		90	Wind 90	7460.84	7460.84	0.00	354.88	-514938.34	-4759.71
		120	Wind Normal	8248.55	7143.46	4124.28	289054.24	-492721.37	6882.42
		150	Wind 90	7933.98	3966.99	6871.03	481326.79	-270368.66	14756.06
		180	Wind 60	7484.25	0.00	7484.25	524252.21	7320.60	14732.48
		210	Wind 90	7104.47	-3552.24	6152.65	431040.62	255977.14	11399.07
		240	Wind Normal	7513.98	-6507.30	3756.99	263344.30	462831.64	10099.67
		270	Wind 90	7460.84	-7460.84	0.00	354.88	529579.55	4759.71
		300	Wind 60	7786.64	-6743.43	-3893.32	-272177.60	479360.70	-6882.42
		330	Wind 90	7933.98	-3966.99	-6871.03	-480617.04	285009.87	-14756.06
T7	60.00-40.00	0	Wind Normal	7646.26	0.00	-7646.26	-381915.88	8221.12	-15408.84
		30	Wind 90	6825.86	3412.93	-5911.37	-295171.16	-162425.34	-11927.82
		60	Wind 60	6764.95	5858.62	-3382.48	-168726.57	-284709.81	-10559.78
		90	Wind 90	7157.86	7157.86	0.00	397.18	-349671.76	-4967.81
		120	Wind Normal	7927.98	6865.83	3963.99	198596.59	-335070.32	7206.81
		150	Wind 90	7598.64	3799.32	6580.61	329427.90	-181744.85	15430.16
		180	Wind 60	7167.57	0.00	7167.57	358775.72	8221.12	15408.84
		210	Wind 90	6825.86	-3412.93	5911.37	295965.53	178867.59	11927.82
		240	Wind Normal	7243.64	-6273.18	3621.82	181488.19	321879.95	10559.78
		270	Wind 90	7157.86	-7157.86	0.00	397.18	366114.01	4967.81
		300	Wind 60	7449.29	-6451.27	-3724.64	-185834.97	330784.67	-7206.81
		330	Wind 90	7598.64	-3799.32	-6580.61	-328633.54	198187.09	-15430.16
T8	40.00-20.00	0	Wind Normal	7394.55	0.00	-7394.55	-221396.98	9121.64	-15349.90
		30	Wind 90	6578.60	3289.30	-5697.24	-170477.59	-89557.38	-11886.54
		60	Wind 60	6497.50	5627.00	-3248.75	-97023.09	-159688.49	-10516.54
		90	Wind 90	6876.75	6876.75	0.00	439.49	-197180.84	-4940.47
		120	Wind Normal	7647.54	6622.96	3823.77	115152.59	-189567.28	7185.97
		150	Wind 90	7272.59	3636.29	6298.25	189386.86	-99967.18	15368.47
		180	Wind 60	6859.07	0.00	6859.07	206211.70	9121.64	15349.90
		210	Wind 90	6578.60	-3289.30	5697.24	171356.56	107800.66	11886.54
		240	Wind Normal	7032.98	-6090.74	3516.49	105934.18	191843.82	10516.54
		270	Wind 90	6876.75	-6876.75	0.00	439.49	215424.12	4940.47
		300	Wind 60	7112.06	-6159.23	-3556.03	-106241.49	193898.51	-7185.97

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		330	Wind 90	7272.59	-3636.29	-6298.25	-188507.89	118210.46	-15368.47
T9	20.00-0.00	0	Wind Normal	6551.44	0.00	-6551.44	-65157.00	7432.19	-10821.12
		30	Wind 90	5829.95	2914.98	-5048.89	-50131.49	-21717.57	-8381.79
		60	Wind 60	5713.35	4947.90	-2856.67	-28209.36	-42046.84	-7412.32
		90	Wind 90	6023.46	6023.46	0.00	357.38	-52802.37	-3478.58
		120	Wind Normal	6715.63	5815.91	3357.82	33935.54	-50726.89	5069.29
		150	Wind 90	6280.36	3140.18	5438.95	54746.91	-23969.62	10832.83
		180	Wind 60	5948.01	0.00	5948.01	59837.49	7432.19	10821.12
		210	Wind 90	5829.95	-2914.98	5048.89	50846.25	36581.96	8381.79
		240	Wind Normal	6316.77	-5470.49	3158.39	31941.24	62137.05	7412.32
		270	Wind 90	6023.46	-6023.46	0.00	357.38	67666.76	3478.58
		300	Wind 60	6112.21	-5293.33	-3056.10	-30203.66	60365.46	-5069.29
		330	Wind 90	6280.36	-3140.18	-5438.95	-54032.16	38834.01	-10832.83

Mast Totals - No Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	-56472.92	-4479883.07	40114.98	-74367.68
30	25284.93	-43794.78	-3487201.92	-1970553.35	-66641.68
60	43510.40	-25120.74	-2013581.40	-3439504.40	-70003.93
90	52644.48	0.00	-4622.21	-4147512.25	-48095.83
120	50064.71	28904.87	2273816.57	-3906256.76	14253.08
150	27517.69	47662.03	3750851.27	-2128108.64	63187.07
180	0.00	52441.94	4151595.37	40114.98	74367.68
210	-25284.93	43794.78	3477957.49	2050783.31	66641.68
240	-47001.33	27136.23	2163858.61	3796033.95	70003.93
270	-52644.48	0.00	-4622.21	4227742.22	48095.83
300	-46573.77	-26889.38	-2123539.36	3710187.14	-14253.08
330	-27517.69	-47662.03	-3760095.70	2208338.61	-63187.07

Mast Vectors - With Ice

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
T1	180.00-160.00	0	Wind Normal	957.78	0.00	-957.78	-168557.95	-309.49	83.08
		30	Wind 90	924.04	462.02	-800.24	-141775.97	-78852.95	-456.26
		60	Wind 60	929.27	804.78	-464.64	-84723.02	-137121.27	-913.53
		90	Wind 90	961.12	961.12	0.00	-5734.71	-163700.51	-1181.67
		120	Wind Normal	994.87	861.58	497.43	78828.96	-146778.07	-1092.99
		150	Wind 90	961.12	480.56	832.36	135766.07	-82005.00	-655.80
		180	Wind 60	929.27	0.00	929.27	152241.92	-309.49	-83.08
		210	Wind 90	924.04	-462.02	800.24	130306.55	78233.97	456.26
		240	Wind Normal	957.78	-829.47	478.89	75676.91	140699.57	913.53
		270	Wind 90	961.12	-961.12	0.00	-5734.71	163081.53	1181.67
		300	Wind 60	966.36	-836.89	-483.18	-87875.08	141961.80	1092.99
		330	Wind 90	961.12	-480.56	-832.36	-147235.48	81386.02	655.80
T2	160.00-140.00	0	Wind Normal	1215.54	0.00	-1215.54	-193440.19	-43.48	24.81
		30	Wind 90	1164.79	582.39	-1008.74	-162419.88	-87402.65	-1039.12
		60	Wind 60	1182.21	1023.82	-591.11	-99775.13	-153617.08	-1930.82

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		90	Wind 90	1242.05	1242.05	0.00	-11109.37	-186350.85	-2451.43
		120	Wind Normal	1292.80	1119.60	646.40	85850.55	-167983.01	-2208.99
		150	Wind 90	1242.05	621.02	1075.65	150237.54	-93197.17	-1228.38
		180	Wind 60	1182.21	0.00	1182.21	166222.14	-43.48	-24.81
		210	Wind 90	1164.79	-582.39	1008.74	140201.14	87315.68	1039.12
		240	Wind Normal	1215.54	-1052.69	607.77	80056.04	157859.64	1930.82
		270	Wind 90	1242.05	-1242.05	0.00	-11109.37	186263.88	2451.43
		300	Wind 60	1259.47	-1090.73	-629.74	-105569.65	163566.51	2208.99
		330	Wind 90	1242.05	-621.02	-1075.65	-172456.28	93110.20	1228.38
T3	140.00-120.00	0	Wind Normal	1414.05	0.00	-1414.05	-200842.61	-948.35	223.94
		30	Wind 90	1371.26	685.63	-1187.54	-171396.14	-90080.05	-1385.91
		60	Wind 60	1387.97	1202.02	-693.99	-107233.79	-157211.01	-2813.33
		90	Wind 90	1437.53	1437.53	0.00	-17015.50	-187826.90	-3581.40
		120	Wind Normal	1480.33	1282.00	740.16	79205.62	-167608.23	-3200.91
		150	Wind 90	1423.77	711.88	1233.02	143276.68	-93493.08	-1868.27
		180	Wind 60	1374.21	0.00	1374.21	161631.99	-948.35	-223.94
		210	Wind 90	1371.26	-685.63	1187.54	137365.14	88183.35	1385.91
		240	Wind Normal	1427.82	-1236.53	713.91	75792.59	159799.99	2813.33
		270	Wind 90	1437.53	-1437.53	0.00	-17015.50	185930.20	3581.40
		300	Wind 60	1440.48	-1247.49	-720.24	-110646.82	161225.85	3200.91
		330	Wind 90	1423.77	-711.88	-1233.02	-177307.68	91596.38	1868.27
T4	120.00-100.00	0	Wind Normal	1864.20	0.00	-1864.20	-217619.31	7148.07	-410.64
		30	Wind 90	1777.12	888.56	-1539.03	-181851.15	-90593.73	-1650.21
		60	Wind 60	1741.47	1508.16	-870.74	-108338.31	-158749.35	-2925.15
		90	Wind 90	1779.34	1779.34	0.00	-12557.39	-188579.49	-3444.74
		120	Wind Normal	1866.42	1616.36	933.21	90095.56	-170652.05	-2563.77
		150	Wind 90	1847.86	923.93	1600.29	163474.61	-94484.05	-967.41
		180	Wind 60	1809.99	0.00	1809.99	186541.13	7148.07	410.64
		210	Wind 90	1777.12	-888.56	1539.03	156736.37	104889.86	1650.21
		240	Wind Normal	1795.68	-1555.11	897.84	86205.23	178209.94	2925.15
		270	Wind 90	1779.34	-1779.34	0.00	-12557.39	202875.62	3444.74
		300	Wind 60	1812.20	-1569.42	-906.10	-112228.63	179783.72	2563.77
		330	Wind 90	1847.86	-923.93	-1600.29	-188589.39	108780.19	967.41
T5	100.00-80.00	0	Wind Normal	2093.75	0.00	-2093.75	-196487.38	20824.83	-1968.66
		30	Wind 90	1971.85	985.93	-1707.67	-161740.36	-67908.47	-2632.27
		60	Wind 60	1951.48	1690.03	-975.74	-95866.41	-131278.04	-3356.71
		90	Wind 90	2037.86	2037.86	0.00	-8049.78	-162582.15	-3009.16
		120	Wind Normal	2159.76	1870.40	1079.88	89139.21	-147511.44	-1089.16
		150	Wind 90	2119.51	1059.75	1835.55	157149.36	-74552.94	950.12
		180	Wind 60	2033.13	0.00	2033.13	174932.04	20824.83	1968.66
		210	Wind 90	1971.85	-985.93	1707.67	145640.80	109558.13	2632.27
		240	Wind Normal	2012.10	-1742.53	1006.05	82494.74	177652.54	3356.71
		270	Wind 90	2037.86	-2037.86	0.00	-8049.78	204231.80	3009.16
		300	Wind 60	2099.14	-1817.90	-1049.57	-102510.88	184436.24	1089.16
		330	Wind 90	2119.51	-1059.75	-1835.55	-173248.92	116202.59	-950.12
T6	80.00-60.00	0	Wind Normal	2000.96	0.00	-2000.96	-148770.01	23425.18	-2117.41
		30	Wind 90	1886.64	943.32	-1633.88	-123074.29	-42607.16	-2809.28
		60	Wind 60	1867.75	1617.52	-933.88	-74074.18	-89801.16	-3575.67
		90	Wind 90	1949.24	1949.24	0.00	-8702.93	-113021.69	-3196.90
		120	Wind Normal	2063.56	1787.10	1031.78	63521.71	-101671.56	-1134.27
		150	Wind 90	2026.68	1013.34	1755.16	114158.25	-47508.76	1045.23
		180	Wind 60	1945.19	0.00	1945.19	127460.59	23425.18	2117.41
		210	Wind 90	1886.64	-943.32	1633.88	105668.43	89457.52	2809.28
		240	Wind Normal	1923.52	-1665.81	961.76	58620.11	140032.11	3575.67
		270	Wind 90	1949.24	-1949.24	0.00	-8702.93	159872.05	3196.90
		300	Wind 60	2007.80	-1738.80	-1003.90	-78975.78	145141.34	1134.27
		330	Wind 90	2026.68	-1013.34	-1755.16	-131564.11	94359.12	-1045.23
T7	60.00-40.00	0	Wind Normal	1891.38	0.00	-1891.38	-103658.83	25849.76	-2200.63
		30	Wind 90	1780.13	890.06	-1541.63	-86171.42	-18653.37	-2889.09
		60	Wind 60	1760.94	1525.02	-880.47	-53113.34	-50401.36	-3667.81
		90	Wind 90	1838.45	1838.45	0.00	-9089.73	-66072.58	-3267.70

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		120	Wind Normal	1949.70	1688.49	974.85	39652.85	-58574.87	-1127.62
		150	Wind 90	1910.59	955.30	1654.62	73641.41	-21915.08	1118.56
		180	Wind 60	1833.09	0.00	1833.09	82564.82	25849.76	2200.63
		210	Wind 90	1780.13	-890.06	1541.63	67991.95	70352.89	2889.09
		240	Wind Normal	1819.23	-1575.50	909.62	36391.14	104624.95	3667.81
		270	Wind 90	1838.45	-1838.45	0.00	-9089.73	117772.11	3267.70
		300	Wind 60	1891.41	-1638.01	-945.71	-56375.05	107750.34	1127.62
		330	Wind 90	1910.59	-955.30	-1654.62	-91820.88	73614.61	-1118.56
T8	40.00-20.00	0	Wind Normal	1746.57	0.00	-1746.57	-61408.33	27959.33	-2172.76
		30	Wind 90	1636.52	818.26	-1417.27	-51529.28	3411.58	-2807.16
		60	Wind 60	1615.91	1399.42	-807.96	-33250.01	-14023.31	-3549.81
		90	Wind 90	1688.89	1688.89	0.00	-9011.32	-22707.43	-3145.66
		120	Wind Normal	1798.94	1557.93	899.47	17972.81	-18778.56	-1038.23
		150	Wind 90	1753.68	876.84	1518.73	36550.70	1654.09	1151.78
		180	Wind 60	1680.70	0.00	1680.70	41409.78	27959.33	2172.76
		210	Wind 90	1636.52	-818.26	1417.27	33506.64	52507.09	2807.16
		240	Wind Normal	1681.78	-1456.46	840.89	16215.33	71653.16	3549.81
		270	Wind 90	1688.89	-1688.89	0.00	-9011.32	78626.10	3145.66
		300	Wind 60	1733.08	-1500.89	-866.54	-35007.49	72986.03	1038.23
		330	Wind 90	1753.68	-876.84	-1518.73	-54573.34	54264.58	-1151.78
T9	20.00-0.00	0	Wind Normal	1383.83	0.00	-1383.83	-19536.68	21644.90	-1505.38
		30	Wind 90	1287.83	643.92	-1115.30	-16851.34	15205.73	-1880.19
		60	Wind 60	1266.27	1096.62	-633.13	-12029.73	10678.68	-2357.42
		90	Wind 90	1321.83	1321.83	0.00	-5698.38	8426.64	-2064.91
		120	Wind Normal	1417.82	1227.87	708.91	1390.73	9366.20	-612.90
		150	Wind 90	1363.88	681.94	1181.15	6113.13	14825.52	865.27
		180	Wind 60	1308.32	0.00	1308.32	7384.82	21644.90	1505.38
		210	Wind 90	1287.83	-643.92	1115.30	5454.58	28084.06	1880.19
		240	Wind Normal	1341.78	-1162.02	670.89	1010.52	33265.05	2357.42
		270	Wind 90	1321.83	-1321.83	0.00	-5698.38	34863.15	2064.91
		300	Wind 60	1342.31	-1162.48	-671.16	-12409.94	33269.66	612.90
		330	Wind 90	1363.88	-681.94	-1181.15	-17509.89	28464.28	-865.27

Mast Totals - With Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	-14568.06	-1310321.29	125550.74	-10043.64
30	6900.09	-11951.30	-1096809.83	-457481.07	-17549.49
60	11867.39	-6851.64	-668403.92	-881523.88	-25090.24
90	14256.30	0.00	-86969.11	-1082414.96	-25343.57
120	13011.33	7512.10	545658.02	-970191.59	-14068.84
150	7324.57	12686.52	980367.73	-490676.47	411.11
180	0.00	14096.12	1100389.23	125550.74	10043.64
210	-6900.09	11951.30	922871.60	708582.55	17549.49
240	-12276.11	7087.62	512462.61	1163796.94	25090.24
270	-14256.30	0.00	-86969.11	1333516.44	25343.57
300	-12602.62	-7276.12	-701599.32	1190121.50	14068.84
330	-7324.57	-12686.52	-1154305.96	741777.95	-411.11

Mast Vectors - Service

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
T1	180.00-160.00	0	Wind Normal	1981.37	0.00	-1981.37	-337794.93	-162.74	130.28
		30	Wind 90	1797.18	898.59	-1556.41	-265550.51	-152923.33	-668.22
		60	Wind 60	1811.63	1568.92	-905.82	-154950.22	-266879.20	-1472.61
		90	Wind 90	1881.78	1881.78	0.00	-961.40	-320065.70	-1863.65
		120	Wind Normal	2009.09	1739.92	1004.54	169811.04	-295949.27	-1674.66
		150	Wind 90	1881.78	940.89	1629.67	276082.69	-160114.22	-1036.95
		180	Wind 60	1811.63	0.00	1811.63	307016.24	-162.74	-130.28
		210	Wind 90	1797.18	-898.59	1556.41	263627.72	152597.86	668.22
		240	Wind Normal	1981.37	-1715.92	990.69	167455.36	291543.66	1472.61
		270	Wind 90	1881.78	-1881.78	0.00	-961.40	319740.23	1863.65
		300	Wind 60	1839.35	-1592.92	-919.67	-157305.89	270633.87	1674.66
		330	Wind 90	1881.78	-940.89	-1629.67	-278005.49	159788.74	1036.95
T2	160.00-140.00	0	Wind Normal	2416.47	0.00	-2416.47	-364007.45	-189.99	76.18
		30	Wind 90	2159.98	1079.99	-1870.60	-282126.40	-162188.31	-1309.90
		60	Wind 60	2225.91	1927.70	-1112.96	-168480.37	-289344.25	-2813.29
		90	Wind 90	2314.98	2314.98	0.00	-1537.08	-347437.69	-3460.90
		120	Wind Normal	2457.90	2128.61	1228.95	182805.69	-319481.04	-3026.86
		150	Wind 90	2314.98	1157.49	2004.84	299188.25	-173813.84	-1781.78
		180	Wind 60	2225.91	0.00	2225.91	332349.50	-189.99	-76.18
		210	Wind 90	2159.98	-1079.99	1870.60	279052.24	161808.33	1309.90
		240	Wind Normal	2416.47	-2092.72	1208.23	179698.11	313718.56	2813.29
		270	Wind 90	2314.98	-2314.98	0.00	-1537.08	347057.71	3460.90
		300	Wind 60	2267.35	-1963.58	-1133.67	-171587.96	294346.77	3026.86
		330	Wind 90	2314.98	-1157.49	-2004.84	-302262.41	173433.86	1781.78
T3	140.00-120.00	0	Wind Normal	2955.43	0.00	-2955.43	-386911.39	-393.02	369.84
		30	Wind 90	2713.29	1356.65	-2349.78	-308177.15	-176756.95	-1941.00
		60	Wind 60	2765.07	2394.62	-1382.54	-182435.66	-311694.15	-4358.97
		90	Wind 90	2844.33	2844.33	0.00	-2705.86	-370156.03	-5485.27
		120	Wind Normal	2989.05	2588.59	1494.52	191582.35	-336910.07	-4734.26
		150	Wind 90	2799.84	1399.92	2424.73	312509.41	-182382.64	-2828.42
		180	Wind 60	2740.81	0.00	2740.81	353599.92	-393.02	-369.84
		210	Wind 90	2713.29	-1356.65	2349.78	302765.43	175970.91	1941.00
		240	Wind Normal	2979.69	-2580.48	1489.84	190973.82	335070.02	4358.97
		270	Wind 90	2844.33	-2844.33	0.00	-2705.86	369370.00	5485.27
		300	Wind 60	2774.44	-2402.73	-1387.22	-183044.19	311962.14	4734.26
		330	Wind 90	2799.84	-1399.92	-2424.73	-317921.13	181596.61	2828.42
T4	120.00-100.00	0	Wind Normal	4200.89	0.00	-4200.89	-463377.35	2345.08	-3255.02
		30	Wind 90	3802.69	1901.34	-3293.22	-363533.94	-206802.70	-3647.86
		60	Wind 60	3699.31	3203.70	-1849.66	-204741.64	-350061.91	-4705.86
		90	Wind 90	3745.93	3745.93	0.00	-1279.36	-409707.41	-4637.17
		120	Wind Normal	4108.22	3557.83	2054.11	224672.98	-389015.87	-1724.12
		150	Wind 90	3987.26	1993.63	3453.07	378558.05	-216954.15	1501.32
		180	Wind 60	3913.39	0.00	3913.39	429193.33	2345.08	3255.02
		210	Wind 90	3802.69	-1901.34	3293.22	360975.21	211492.86	3647.86
		240	Wind Normal	3986.82	-3452.68	1993.41	217995.56	382140.38	4705.86
		270	Wind 90	3745.93	-3745.93	0.00	-1279.36	414397.56	4637.17
		300	Wind 60	3820.72	-3308.84	-1910.36	-211419.06	366317.71	1724.12
		330	Wind 90	3987.26	-1993.63	-3453.07	-381116.77	221644.31	-1501.32
T5	100.00-80.00	0	Wind Normal	5008.69	0.00	-5008.69	-450469.13	6420.09	-8243.66
		30	Wind 90	4454.23	2227.11	-3857.48	-346860.25	-194020.24	-6374.71
		60	Wind 60	4414.93	3823.44	-2207.47	-198359.45	-337689.96	-5653.78
		90	Wind 90	4681.52	4681.52	0.00	312.57	-414917.10	-2670.46
		120	Wind Normal	5201.55	4504.68	2600.78	234382.53	-399000.98	3845.35
		150	Wind 90	4983.29	2491.65	4315.66	388721.90	-217828.15	8259.14
		180	Wind 60	4690.58	0.00	4690.58	422464.60	6420.09	8243.66
		210	Wind 90	4454.23	-2227.11	3857.48	347485.40	206860.41	6374.71
		240	Wind Normal	4733.04	-4098.93	2366.52	213299.43	375324.15	5653.78
		270	Wind 90	4681.52	-4681.52	0.00	312.57	427757.27	2670.46
		300	Wind 60	4883.45	-4229.19	-2441.72	-219442.56	387047.13	-3845.35
		330	Wind 90	4983.29	-2491.65	-4315.66	-388096.76	230668.32	-8259.14
T6	80.00-60.00	0	Wind Normal	4806.94	0.00	-4806.94	-336130.61	7320.60	-8912.24

Section No.	Section Elevation ft	Wind Azimuth °	Directionality	F lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
		30	Wind 90	4297.77	2148.88	-3721.98	-260183.42	-143101.25	-6895.73
		60	Wind 60	4266.07	3694.52	-2133.03	-148957.52	-251296.05	-6109.68
		90	Wind 90	4513.35	4513.35	0.00	354.88	-308613.82	-2879.33
		120	Wind Normal	4989.87	4321.35	2494.93	175000.17	-295173.92	4163.44
		150	Wind 90	4799.57	2399.78	4156.55	291313.20	-160664.26	8926.50
		180	Wind 60	4527.51	0.00	4527.51	317280.42	7320.60	8912.24
		210	Wind 90	4297.77	-2148.88	3721.98	260893.17	157742.46	6895.73
		240	Wind Normal	4545.50	-3936.52	2272.75	159447.24	282876.66	6109.68
		270	Wind 90	4513.35	-4513.35	0.00	354.88	323255.03	2879.33
		300	Wind 60	4710.44	-4079.36	-2355.22	-164510.45	292875.72	-4163.44
		330	Wind 90	4799.57	-2399.78	-4156.55	-290603.45	175305.47	-8926.50
T7	60.00-40.00	0	Wind Normal	4625.52	0.00	-4625.52	-230878.62	8221.12	-9321.40
		30	Wind 90	4129.22	2064.61	-3576.01	-178403.42	-95009.46	-7215.60
		60	Wind 60	4092.38	3544.10	-2046.19	-101912.25	-168984.01	-6388.02
		90	Wind 90	4330.06	4330.06	0.00	397.18	-208281.98	-3005.22
		120	Wind Normal	4795.94	4153.40	2397.97	120295.59	-199449.01	4359.67
		150	Wind 90	4596.71	2298.35	3980.87	199440.45	-106696.57	9334.30
		180	Wind 60	4335.94	0.00	4335.94	217194.07	8221.12	9321.40
		210	Wind 90	4129.22	-2064.61	3576.01	179197.78	111451.70	7215.60
		240	Wind Normal	4381.96	-3794.88	2190.98	109946.06	197965.35	6388.02
		270	Wind 90	4330.06	-4330.06	0.00	397.18	224724.22	3005.22
		300	Wind 60	4506.36	-3902.62	-2253.18	-112261.77	203352.15	-4359.67
		330	Wind 90	4596.71	-2298.35	-3980.87	-198646.09	123138.81	-9334.30
T8	40.00-20.00	0	Wind Normal	4493.69	0.00	-4493.69	-134371.22	9121.64	-9285.74
		30	Wind 90	4000.09	2000.05	-3464.18	-103485.96	-50879.74	-7190.62
		60	Wind 60	3951.03	3421.70	-1975.52	-58826.02	-93529.23	-6361.86
		90	Wind 90	4180.45	4180.45	0.00	439.49	-116291.96	-2988.68
		120	Wind Normal	4646.73	4024.19	2323.37	70140.50	-111604.05	4347.07
		150	Wind 90	4419.91	2209.96	3827.76	115272.14	-57177.03	9296.97
		180	Wind 60	4169.76	0.00	4169.76	125532.31	9121.64	9285.74
		210	Wind 90	4000.09	-2000.05	3464.18	104364.93	69123.02	7190.62
		240	Wind Normal	4274.96	-3702.23	2137.48	64563.93	120188.44	6361.86
		270	Wind 90	4180.45	-4180.45	0.00	439.49	134535.24	2988.68
		300	Wind 60	4322.80	-3743.66	-2161.40	-64402.58	121431.40	-4347.07
		330	Wind 90	4419.91	-2209.96	-3827.76	-114393.17	75420.31	-9296.97
T9	20.00-0.00	0	Wind Normal	3963.22	0.00	-3963.22	-39274.77	7432.19	-6546.11
		30	Wind 90	3526.76	1763.38	-3054.26	-30185.27	-10201.61	-5070.47
		60	Wind 60	3456.22	2993.18	-1728.11	-16923.73	-22499.56	-4483.99
		90	Wind 90	3643.82	3643.82	0.00	357.38	-29006.00	-2104.33
		120	Wind Normal	4062.54	3518.27	2031.27	20670.09	-27750.46	3066.61
		150	Wind 90	3799.23	1899.62	3290.23	33259.69	-11563.96	6553.20
		180	Wind 60	3598.18	0.00	3598.18	36339.17	7432.19	6546.11
		210	Wind 90	3526.76	-1763.38	3054.26	30900.03	25066.00	5070.47
		240	Wind Normal	3821.26	-3309.31	1910.63	19463.66	40525.25	4483.99
		270	Wind 90	3643.82	-3643.82	0.00	357.38	43870.39	2104.33
		300	Wind 60	3697.51	-3202.14	-1848.75	-18130.16	39453.55	-3066.61
		330	Wind 90	3799.23	-1899.62	-3290.23	-32544.94	26428.35	-6553.20

Mast Totals - Service

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	-34452.20	-2743215.47	40114.98	-44987.86
30	15440.61	-26743.91	-2138506.33	-1191883.59	-40314.10
60	26571.88	-15341.28	-1235586.86	-2091978.32	-42348.06
90	32136.24	0.00	-4622.21	-2524477.69	-29095.01

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
120	30536.83	17630.45	1389360.95	-2374334.68	8622.24
150	16791.29	29083.37	2294345.79	-1287194.81	38224.28
180	0.00	32013.71	2540969.56	40114.98	44987.86
210	-15440.61	26743.91	2129261.90	1272113.55	40314.10
240	-28683.68	16560.53	1322843.17	2339352.48	42348.06
270	-32136.24	0.00	-4622.21	2604707.65	29095.01
300	-28425.04	-16411.20	-1302104.63	2287420.46	-8622.24
330	-16791.29	-29083.37	-2303590.22	1367424.78	-38224.28

Discrete Appurtenance Pressures - No Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Generic Lightning Rod 4' copper	120.0000	0.00	2.50	1.44	190.00	1.449	57	0.50	0.50
18'x2 3/8" Pipe Mount	120.0000	100.00	2.55	1.47	188.00	1.446	57	4.75	4.75
Kreco CO-41AN	240.0000	14.00	-3.03	1.75	183.00	1.437	57	2.03	2.03
4' x 2" omni whip	120.0000	20.00	7.85	4.53	179.00	1.431	57	0.79	0.79
6' sidearm	0.0000	75.00	0.00	0.00	177.00	1.427	57	4.17	2.09
db Spectra DS9A09F36D-N	0.0000	55.00	0.00	-3.06	187.00	1.444	57	5.57	5.57
Bird Technologies 430-496-09168 TTA	0.0000	25.00	0.00	0.00	177.00	1.427	57	2.67	1.18
8'x4 1/2" Pipe Mount	0.0000	86.30	0.00	0.00	176.00	1.426	57	2.26	2.26
8'x4 1/2" Pipe Mount	0.0000	86.30	0.00	0.00	176.00	1.426	57	2.26	2.26
Sinclair SC351D-HF2LDF	180.0000	95.00	0.00	1.53	189.00	1.447	57	6.77	6.77
8'x4 1/2" Pipe Mount	0.0000	86.30	0.00	0.00	164.00	1.405	56	2.27	2.27
Sinclair SC351D-HF2LDF	300.0000	95.00	-6.75	-3.89	168.00	1.412	56	6.81	6.81
SD212 2-bay dipole	300.0000	30.00	-6.87	-3.97	163.00	1.403	56	2.93	2.93
Comprod 531-7071D	300.0000	40.00	-6.84	-3.95	164.42	1.405	56	3.80	3.80
3' Yagi	300.0000	30.95	-7.12	-4.11	153.00	1.384	55	2.08	2.08
8'x4 1/2" Pipe Mount	0.0000	86.30	0.00	-10.45	153.00	1.384	55	2.29	2.29
6' sidearm	0.0000	75.00	0.00	-7.45	153.00	1.384	55	4.17	2.09
TPA65R-BU8DA-K	300.0000	90.00	-6.11	-3.53	124.00	1.324	53	18.09	8.20
TPA65R-BU8DA-K	60.0000	90.00	6.11	-3.53	124.00	1.324	53	18.09	8.20
TPA65R-BU8DA-K	180.0000	90.00	0.00	7.06	124.00	1.324	53	18.09	8.20
HPA-65R-BU8A	300.0000	58.00	-6.11	-3.53	124.00	1.324	53	11.23	7.89
HPA-65R-BU8A	60.0000	58.00	6.11	-3.53	124.00	1.324	53	11.23	7.89
HPA-65R-BU8A	180.0000	58.00	0.00	7.06	124.00	1.324	53	11.23	7.89
DMP65R-BU8DA-K	300.0000	103.00	-6.11	-3.53	124.00	1.324	53	17.87	8.12
DMP65R-BU8DA-K	60.0000	103.00	6.11	-3.53	124.00	1.324	53	17.87	8.12
DMP65R-BU8DA-K	180.0000	103.00	0.00	7.06	124.00	1.324	53	17.87	8.12
Radio 4478	300.0000	65.00	-5.68	-3.28	124.00	1.324	53	1.86	1.06
Radio 4478	60.0000	65.00	5.68	-3.28	124.00	1.324	53	1.86	1.06
Radio 4478	180.0000	65.00	0.00	6.56	124.00	1.324	53	1.86	1.06
Ericsson RRUS-E2	300.0000	60.00	-5.68	-3.28	124.00	1.324	53	3.15	1.29
Ericsson RRUS-E2	60.0000	60.00	5.68	-3.28	124.00	1.324	53	3.15	1.29
Ericsson RRUS-E2	180.0000	60.00	0.00	6.56	124.00	1.324	53	3.15	1.29
Radio 4415	300.0000	50.00	-5.68	-3.28	124.00	1.324	53	1.84	0.82
Radio 4415	60.0000	50.00	5.68	-3.28	124.00	1.324	53	1.84	0.82
Radio 4415	180.0000	50.00	0.00	6.56	124.00	1.324	53	1.84	0.82
Radio 4449	300.0000	60.00	-5.68	-3.28	124.00	1.324	53	1.65	0.93
Radio 4449	60.0000	60.00	5.68	-3.28	124.00	1.324	53	1.65	0.93
Radio 4449	180.0000	60.00	0.00	6.56	124.00	1.324	53	1.65	0.93

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Radio 8843	300.0000	71.87	-5.68	-3.28	124.00	1.324	53	1.64	1.36
Radio 8843	60.0000	71.87	5.68	-3.28	124.00	1.324	53	1.64	1.36
Radio 8843	180.0000	71.87	0.00	6.56	124.00	1.324	53	1.64	1.36
DC9-48-60-24-8C-EV	0.0000	33.00	0.00	0.00	124.00	1.324	53	1.14	1.14
DC9-48-60-24-8C-EV	0.0000	33.00	0.00	0.00	124.00	1.324	53	1.14	1.14
SitePro VFA12-WLL-30120	0.0000	650.00	0.00	0.00	124.00	1.324	53	13.20	9.20
SitePro VFA12-WLL-30120	0.0000	650.00	0.00	0.00	124.00	1.324	53	13.20	9.20
6' x 18" x 6" panel	300.0000	100.00	-8.84	1.82	135.00	1.348	53	11.40	4.70
6' x 18" x 6" panel	60.0000	100.00	2.84	-8.57	135.00	1.348	53	11.40	4.70
6' x 18" x 6" panel	180.0000	100.00	6.00	6.74	135.00	1.348	53	11.40	4.70
1900 MHz RRH	300.0000	144.00	-8.41	2.07	135.00	1.348	53	3.26	2.49
1900 MHz RRH	60.0000	144.00	2.41	-8.32	135.00	1.348	53	3.26	2.49
1900 MHz RRH	180.0000	144.00	6.00	6.24	135.00	1.348	53	3.26	2.49
800 MHz RRH	300.0000	82.00	-6.41	-1.39	135.00	1.348	53	2.43	2.95
800 MHz RRH	60.0000	82.00	4.41	-4.85	135.00	1.348	53	2.43	2.95
800 MHz RRH	180.0000	82.00	2.00	6.24	135.00	1.348	53	2.43	2.95
800 MHz RRH	300.0000	82.00	-5.97	-1.14	135.00	1.348	53	2.43	2.95
800 MHz RRH	60.0000	82.00	3.97	-4.60	135.00	1.348	53	2.43	2.95
800 MHz RRH	180.0000	82.00	2.00	5.74	135.00	1.348	53	2.43	2.95
14' sector mount	0.0000	475.00	0.00	0.00	135.00	1.348	53	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	135.00	1.348	53	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	135.00	1.348	53	10.80	5.40
8' x 1' x 6" panel	0.0000	260.00	0.00	-10.64	115.00	1.303	52	45.87	27.20
8' x 1' x 6" panel	120.0000	260.00	9.21	5.32	115.00	1.303	52	45.87	27.20
8' x 1' x 6" panel	240.0000	260.00	-9.21	5.32	115.00	1.303	52	45.87	27.20
Ericsson RRUS-11	0.0000	220.00	0.00	-9.64	115.00	1.303	52	11.16	4.08
Ericsson RRUS-11	120.0000	220.00	8.35	4.82	115.00	1.303	52	11.16	4.08
Ericsson RRUS-11	240.0000	220.00	-8.35	4.82	115.00	1.303	52	11.16	4.08
Raycap RDC-3315-PF-48 J-box	0.0000	30.00	0.00	-9.64	115.00	1.303	52	2.51	1.64
Raycap RDC-3315-PF-48 J-box	120.0000	30.00	8.35	4.82	115.00	1.303	52	2.51	1.64
Raycap RDC-3315-PF-48 J-box	240.0000	30.00	-8.35	4.82	115.00	1.303	52	2.51	1.64
14' sector mount	0.0000	475.00	0.00	0.00	115.00	1.303	52	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	115.00	1.303	52	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	115.00	1.303	52	10.80	5.40
8' x 1' x 6" panel	0.0000	260.00	0.00	-11.22	105.00	1.279	51	45.87	27.20
8' x 1' x 6" panel	120.0000	260.00	9.71	5.61	105.00	1.279	51	45.87	27.20
8' x 1' x 6" panel	240.0000	260.00	-9.71	5.61	105.00	1.279	51	45.87	27.20
Ericsson RRUS-11	0.0000	220.00	0.00	-10.22	105.00	1.279	51	11.16	4.08
Ericsson RRUS-11	120.0000	220.00	8.85	5.11	105.00	1.279	51	11.16	4.08
Ericsson RRUS-11	240.0000	220.00	-8.85	5.11	105.00	1.279	51	11.16	4.08
Raycap RDC-3315-PF-48 J-box	0.0000	30.00	0.00	-10.22	105.00	1.279	51	2.51	1.64
Raycap RDC-3315-PF-48 J-box	120.0000	30.00	8.85	5.11	105.00	1.279	51	2.51	1.64
Raycap RDC-3315-PF-48 J-box	240.0000	30.00	-8.85	5.11	105.00	1.279	51	2.51	1.64
14' sector mount	0.0000	475.00	0.00	0.00	105.00	1.279	51	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	105.00	1.279	51	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	105.00	1.279	51	10.80	5.40
	Sum Weight:	13248.76							

Discrete Appurtenance Vectors - No Ice

Generic Lightning Rod 4' copper - Elevation 190 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	12.21	21.15	0.00	-24.42	-4639.35	0.00	61.04
30	0.00	24.42	12.21	-21.15	-4017.79	-2319.67	70.49
60	12.21	21.15	21.15	-12.21	-2319.67	-4017.79	61.04
90	21.15	12.21	24.42	0.00	0.00	-4639.35	35.24
120	24.42	0.00	21.15	12.21	2319.67	-4017.79	0.00
150	21.15	12.21	12.21	21.15	4017.79	-2319.67	-35.24
180	12.21	21.15	0.00	24.42	4639.35	0.00	-61.04
210	0.00	24.42	-12.21	21.15	4017.79	2319.67	-70.49
240	12.21	21.15	-21.15	12.21	2319.67	4017.79	-61.04
270	21.15	12.21	-24.42	0.00	0.00	4639.35	-35.24
300	24.42	0.00	-21.15	-12.21	-2319.67	4017.79	0.00
330	21.15	12.21	-12.21	-21.15	-4017.79	2319.67	35.24

18'x2 3/8" Pipe Mount - Elevation 188 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	115.73	200.44	0.00	-231.45	-43365.59	-255.00	590.20
30	0.00	231.45	115.73	-200.44	-37535.98	-22011.41	681.50
60	115.73	200.44	200.44	-115.73	-21609.18	-37938.20	590.20
90	200.44	115.73	231.45	0.00	147.22	-43767.81	340.75
120	231.45	0.00	200.44	115.73	21903.63	-37938.20	0.00
150	200.44	115.73	115.73	200.44	37830.43	-22011.41	-340.75
180	115.73	200.44	0.00	231.45	43660.04	-255.00	-590.20
210	0.00	231.45	-115.73	200.44	37830.43	21501.41	-681.50
240	115.73	200.44	-200.44	115.73	21903.63	37428.20	-590.20
270	200.44	115.73	-231.45	0.00	147.22	43257.81	-340.75
300	231.45	0.00	-200.44	-115.73	-21609.18	37428.20	0.00
330	200.44	115.73	-115.73	-200.44	-37535.98	21501.41	340.75

Kreco CO-41AN - Elevation 183 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	49.28	85.35	0.00	-98.55	-18010.68	42.46	-298.91
30	85.35	49.28	49.28	-85.35	-15594.43	-8975.14	-172.58
60	98.55	0.00	85.35	-49.28	-8993.08	-15576.48	0.00
90	85.35	49.28	98.55	0.00	24.52	-17992.74	172.58
120	49.28	85.35	85.35	49.28	9042.12	-15576.48	298.91
150	0.00	98.55	49.28	85.35	15643.46	-8975.14	345.15
180	49.28	85.35	0.00	98.55	18059.71	42.46	298.91
210	85.35	49.28	-49.28	85.35	15643.46	9060.06	172.58
240	98.55	0.00	-85.35	49.28	9042.12	15661.40	0.00
270	85.35	49.28	-98.55	0.00	24.52	18077.66	-172.58
300	49.28	85.35	-85.35	-49.28	-8993.08	15661.40	-298.91
330	0.00	98.55	-49.28	-85.35	-15594.43	9060.06	-345.15

4' x 2" omni whip - Elevation 179 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft

4' x 2" omni whip - Elevation 179 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	18.93	32.79	0.00	-37.87	-6687.46	-156.92	297.10
30	0.00	37.87	18.93	-32.79	-5779.38	-3545.95	343.07
60	18.93	32.79	32.79	-18.93	-3298.43	-6026.90	297.10
90	32.79	18.93	37.87	0.00	90.60	-6934.99	171.53
120	37.87	0.00	32.79	18.93	3479.63	-6026.90	0.00
150	32.79	18.93	18.93	32.79	5960.57	-3545.95	-171.53
180	18.93	32.79	0.00	37.87	6868.66	-156.92	-297.10
210	0.00	37.87	-18.93	32.79	5960.57	3232.11	-343.07
240	18.93	32.79	-32.79	18.93	3479.63	5713.05	-297.10
270	32.79	18.93	-37.87	0.00	90.60	6621.14	-171.53
300	37.87	0.00	-32.79	-18.93	-3298.43	5713.05	0.00
330	32.79	18.93	-18.93	-32.79	-5779.38	3232.11	171.53

6' sidearm - Elevation 177 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	200.63	0.00	0.00	-200.63	-35510.96	0.00	0.00
30	200.63	0.00	100.31	-173.75	-30753.40	-17755.48	0.00
60	200.63	0.00	173.75	-100.31	-17755.48	-30753.40	0.00
90	200.63	0.00	200.63	0.00	0.00	-35510.96	0.00
120	200.63	0.00	173.75	100.31	17755.48	-30753.40	0.00
150	200.63	0.00	100.31	173.75	30753.40	-17755.48	0.00
180	200.63	0.00	0.00	200.63	35510.96	0.00	0.00
210	200.63	0.00	-100.31	173.75	30753.40	17755.48	0.00
240	200.63	0.00	-173.75	100.31	17755.48	30753.40	0.00
270	200.63	0.00	-200.63	0.00	0.00	35510.96	0.00
300	200.63	0.00	-173.75	-100.31	-17755.48	30753.40	0.00
330	200.63	0.00	-100.31	-173.75	-30753.40	17755.48	0.00

db Spectra DS9A09F36D-N - Elevation 187 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	271.17	0.00	0.00	-271.17	-50876.60	0.00	0.00
30	234.84	135.58	135.58	-234.84	-44082.98	-25354.15	-414.88
60	135.58	234.84	234.84	-135.58	-25522.45	-43914.68	-718.59
90	0.00	271.17	271.17	0.00	-168.30	-50708.30	-829.76
120	135.58	234.84	234.84	135.58	25185.85	-43914.68	-718.59
150	234.84	135.58	135.58	234.84	43746.38	-25354.15	-414.88
180	271.17	0.00	0.00	271.17	50540.01	0.00	0.00
210	234.84	135.58	-135.58	234.84	43746.38	25354.15	414.88
240	135.58	234.84	-234.84	135.58	25185.85	43914.68	718.59
270	0.00	271.17	-271.17	0.00	-168.30	50708.30	829.76
300	135.58	234.84	-234.84	-135.58	-25522.45	43914.68	718.59
330	234.84	135.58	-135.58	-234.84	-44082.98	25354.15	414.88

Bird Technologies 430-496-09168 TTA - Elevation 177 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	128.30	0.00	0.00	-128.30	-22708.85	0.00	0.00
30	128.30	0.00	64.15	-111.11	-19666.44	-11354.43	0.00
60	128.30	0.00	111.11	-64.15	-11354.43	-19666.44	0.00

Bird Technologies 430-496-09168 TTA - Elevation 177 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
90	128.30	0.00	128.30	0.00	0.00	-22708.85	0.00
120	128.30	0.00	111.11	64.15	11354.43	-19666.44	0.00
150	128.30	0.00	64.15	111.11	19666.44	-11354.43	0.00
180	128.30	0.00	0.00	128.30	22708.85	0.00	0.00
210	128.30	0.00	-64.15	111.11	19666.44	11354.43	0.00
240	128.30	0.00	-111.11	64.15	11354.43	19666.44	0.00
270	128.30	0.00	-128.30	0.00	0.00	22708.85	0.00
300	128.30	0.00	-111.11	-64.15	-11354.43	19666.44	0.00
330	128.30	0.00	-64.15	-111.11	-19666.44	11354.43	0.00

8'x4 1/2" Pipe Mount - Elevation 176 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	72.68	0.00	0.00	-72.68	-12791.30	0.00	0.00
30	72.68	0.00	36.34	-62.94	-11077.59	-6395.65	0.00
60	72.68	0.00	62.94	-36.34	-6395.65	-11077.59	0.00
90	72.68	0.00	72.68	0.00	0.00	-12791.30	0.00
120	72.68	0.00	62.94	36.34	6395.65	-11077.59	0.00
150	72.68	0.00	36.34	62.94	11077.59	-6395.65	0.00
180	72.68	0.00	0.00	72.68	12791.30	0.00	0.00
210	72.68	0.00	-36.34	62.94	11077.59	6395.65	0.00
240	72.68	0.00	-62.94	36.34	6395.65	11077.59	0.00
270	72.68	0.00	-72.68	0.00	0.00	12791.30	0.00
300	72.68	0.00	-62.94	-36.34	-6395.65	11077.59	0.00
330	72.68	0.00	-36.34	-62.94	-11077.59	6395.65	0.00

8'x4 1/2" Pipe Mount - Elevation 176 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	72.68	0.00	0.00	-72.68	-12791.30	0.00	0.00
30	72.68	0.00	36.34	-62.94	-11077.59	-6395.65	0.00
60	72.68	0.00	62.94	-36.34	-6395.65	-11077.59	0.00
90	72.68	0.00	72.68	0.00	0.00	-12791.30	0.00
120	72.68	0.00	62.94	36.34	6395.65	-11077.59	0.00
150	72.68	0.00	36.34	62.94	11077.59	-6395.65	0.00
180	72.68	0.00	0.00	72.68	12791.30	0.00	0.00
210	72.68	0.00	-36.34	62.94	11077.59	6395.65	0.00
240	72.68	0.00	-62.94	36.34	6395.65	11077.59	0.00
270	72.68	0.00	-72.68	0.00	0.00	12791.30	0.00
300	72.68	0.00	-62.94	-36.34	-6395.65	11077.59	0.00
330	72.68	0.00	-36.34	-62.94	-11077.59	6395.65	0.00

Sinclair SC351D-HF2LDF - Elevation 189 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	330.28	0.00	0.00	-330.28	-62278.07	0.00	0.00
30	286.03	165.14	165.14	-286.03	-53914.91	-31211.71	252.66
60	165.14	286.03	286.03	-165.14	-31066.36	-54060.26	437.62
90	0.00	330.28	330.28	0.00	145.35	-62423.41	505.33
120	165.14	286.03	286.03	165.14	31357.05	-54060.26	437.62
150	286.03	165.14	165.14	286.03	54205.61	-31211.71	252.66

Sinclair SC351D-HF2LDF - Elevation 189 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
180	330.28	0.00	0.00	330.28	62568.76	0.00	0.00
210	286.03	165.14	-165.14	286.03	54205.61	31211.71	-252.66
240	165.14	286.03	-286.03	165.14	31357.05	54060.26	-437.62
270	0.00	330.28	-330.28	0.00	145.35	62423.41	-505.33
300	165.14	286.03	-286.03	-165.14	-31066.36	54060.26	-437.62
330	286.03	165.14	-165.14	-286.03	-53914.91	31211.71	-252.66

8'x4 1/2" Pipe Mount - Elevation 164 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	107.59	0.00	0.00	-107.59	-17644.21	0.00	0.00
30	107.59	0.00	53.79	-93.17	-15280.33	-8822.10	0.00
60	107.59	0.00	93.17	-53.79	-8822.10	-15280.33	0.00
90	107.59	0.00	107.59	0.00	0.00	-17644.21	0.00
120	107.59	0.00	93.17	53.79	8822.10	-15280.33	0.00
150	107.59	0.00	53.79	93.17	15280.33	-8822.10	0.00
180	107.59	0.00	0.00	107.59	17644.21	0.00	0.00
210	107.59	0.00	-53.79	93.17	15280.33	8822.10	0.00
240	107.59	0.00	-93.17	53.79	8822.10	15280.33	0.00
270	107.59	0.00	-107.59	0.00	0.00	17644.21	0.00
300	107.59	0.00	-93.17	-53.79	-8822.10	15280.33	0.00
330	107.59	0.00	-53.79	-93.17	-15280.33	8822.10	0.00

Sinclair SC351D-HF2LDF - Elevation 156.00-180.00 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	161.98	280.56	0.00	-323.97	-54796.68	640.88	-2185.54
30	0.00	323.97	161.98	-280.56	-47504.89	-26572.45	-2523.64
60	161.98	280.56	280.56	-161.98	-27583.35	-46493.99	-2185.54
90	280.56	161.98	323.97	0.00	-370.01	-53785.78	-1261.82
120	323.97	0.00	280.56	161.98	26843.32	-46493.99	0.00
150	280.56	161.98	161.98	280.56	46764.86	-26572.45	1261.82
180	161.98	280.56	0.00	323.97	54056.65	640.88	2185.54
210	0.00	323.97	-161.98	280.56	46764.86	27854.22	2523.64
240	161.98	280.56	-280.56	161.98	26843.32	47775.76	2185.54
270	280.56	161.98	-323.97	0.00	-370.01	55067.55	1261.82
300	323.97	0.00	-280.56	-161.98	-27583.35	47775.76	0.00
330	280.56	161.98	-161.98	-280.56	-47504.89	27854.22	-1261.82

SD212 2-bay dipole - Elevation 158.00-168.00 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	69.20	119.86	0.00	-138.40	-22678.64	206.13	-950.99
30	0.00	138.40	69.20	-119.86	-19656.23	-11073.68	-1098.10
60	69.20	119.86	119.86	-69.20	-11398.83	-19331.08	-950.99
90	119.86	69.20	138.40	0.00	-119.01	-22353.50	-549.05
120	138.40	0.00	119.86	69.20	11160.80	-19331.08	0.00
150	119.86	69.20	69.20	119.86	19418.20	-11073.68	549.05
180	69.20	119.86	0.00	138.40	22440.62	206.13	950.99
210	0.00	138.40	-69.20	119.86	19418.20	11485.95	1098.10
240	69.20	119.86	-119.86	69.20	11160.80	19743.35	950.99

SD212 2-bay dipole - Elevation 158.00-168.00 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
270	119.86	69.20	-138.40	0.00	-119.01	22765.77	549.05
300	138.40	0.00	-119.86	-69.20	-11398.83	19743.35	0.00
330	119.86	69.20	-69.20	-119.86	-19656.23	11485.95	-549.05

Comprod 531-7071D - Elevation 158.00-170.83 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	89.90	155.72	0.00	-179.81	-29720.88	273.43	-1229.12
30	0.00	179.81	89.90	-155.72	-25760.18	-14508.07	-1419.27
60	89.90	155.72	155.72	-89.90	-14939.37	-25328.89	-1229.12
90	155.72	89.90	179.81	0.00	-157.87	-29289.58	-709.63
120	179.81	0.00	155.72	89.90	14623.64	-25328.89	0.00
150	155.72	89.90	89.90	155.72	25444.45	-14508.07	709.63
180	89.90	155.72	0.00	179.81	29405.14	273.43	1229.12
210	0.00	179.81	-89.90	155.72	25444.45	15054.94	1419.27
240	89.90	155.72	-155.72	89.90	14623.64	25875.75	1229.12
270	155.72	89.90	-179.81	0.00	-157.87	29836.44	709.63
300	179.81	0.00	-155.72	-89.90	-14939.37	25875.75	0.00
330	155.72	89.90	-89.90	-155.72	-25760.18	15054.94	-709.63

3' Yagi - Elevation 153 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	48.59	84.15	0.00	-97.17	-14994.68	220.40	-691.98
30	0.00	97.17	48.59	-84.15	-13002.82	-7213.32	-799.03
60	48.59	84.15	84.15	-48.59	-7560.97	-12655.18	-691.98
90	84.15	48.59	97.17	0.00	-127.25	-14647.04	-399.52
120	97.17	0.00	84.15	48.59	7306.47	-12655.18	0.00
150	84.15	48.59	48.59	84.15	12748.33	-7213.32	399.52
180	48.59	84.15	0.00	97.17	14740.19	220.40	691.98
210	0.00	97.17	-48.59	84.15	12748.33	7654.12	799.03
240	48.59	84.15	-84.15	48.59	7306.47	13095.98	691.98
270	84.15	48.59	-97.17	0.00	-127.25	15087.84	399.52
300	97.17	0.00	-84.15	-48.59	-7560.97	13095.98	0.00
330	84.15	48.59	-48.59	-84.15	-13002.82	7654.12	-399.52

8'x4 1/2" Pipe Mount - Elevation 153 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	106.72	0.00	0.00	-106.72	-17229.80	0.00	0.00
30	92.42	53.36	53.36	-92.42	-15042.22	-8164.17	-557.38
60	53.36	92.42	92.42	-53.36	-9065.63	-14140.76	-965.42
90	0.00	106.72	106.72	0.00	-901.45	-16328.35	-1114.77
120	53.36	92.42	92.42	53.36	7262.72	-14140.76	-965.42
150	92.42	53.36	53.36	92.42	13239.31	-8164.17	-557.38
180	106.72	0.00	0.00	106.72	15426.89	0.00	0.00
210	92.42	53.36	-53.36	92.42	13239.31	8164.17	557.38
240	53.36	92.42	-92.42	53.36	7262.72	14140.76	965.42
270	0.00	106.72	-106.72	0.00	-901.45	16328.35	1114.77
300	53.36	92.42	-92.42	-53.36	-9065.63	14140.76	965.42
330	92.42	53.36	-53.36	-92.42	-15042.22	8164.17	557.38

6' sidearm - Elevation 153 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	194.57	0.00	0.00	-194.57	-30327.00	0.00	0.00
30	168.50	48.76	48.76	-168.50	-26338.77	-7459.99	-363.03
60	97.28	84.45	84.45	-97.28	-15442.71	-12921.09	-628.79
90	0.00	97.52	97.52	0.00	-558.42	-14919.98	-726.07
120	97.28	84.45	84.45	97.28	14325.87	-12921.09	-628.79
150	168.50	48.76	48.76	168.50	25221.93	-7459.99	-363.03
180	194.57	0.00	0.00	194.57	29210.16	0.00	0.00
210	168.50	48.76	-48.76	168.50	25221.93	7459.99	363.03
240	97.28	84.45	-84.45	97.28	14325.87	12921.09	628.79
270	0.00	97.52	-97.52	0.00	-558.42	14919.98	726.07
300	97.28	84.45	-84.45	-97.28	-15442.71	12921.09	628.79
330	168.50	48.76	-48.76	-168.50	-26338.77	7459.99	363.03

TPA65R-BU8DA-K - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	322.99	253.60	-152.92	-381.12	-47576.48	19511.90	-1790.41
30	0.00	292.83	146.42	-253.60	-31764.18	-17605.37	-2067.39
60	322.99	253.60	406.52	-58.13	-7525.83	-49857.85	-1790.41
90	559.43	146.42	557.69	152.92	18643.94	-68603.52	-1033.69
120	645.98	0.00	559.43	322.99	39732.95	-68819.49	0.00
150	559.43	146.42	411.28	406.52	50090.42	-50447.88	1033.69
180	322.99	253.60	152.92	381.12	46941.08	-18411.37	1790.41
210	0.00	292.83	-146.42	253.60	31128.79	18705.91	2067.39
240	322.99	253.60	-406.52	58.13	6890.43	50958.39	1790.41
270	559.43	146.42	-557.69	-152.92	-19279.33	69704.06	1033.69
300	645.98	0.00	-559.43	-322.99	-40368.35	69920.03	0.00
330	559.43	146.42	-411.28	-406.52	-50725.82	51548.42	-1033.69

TPA65R-BU8DA-K - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	322.99	253.60	152.92	-381.12	-47576.48	-19511.90	1790.41
30	559.43	146.42	411.28	-406.52	-50725.82	-51548.42	1033.69
60	645.98	0.00	559.43	-322.99	-40368.35	-69920.03	0.00
90	559.43	146.42	557.69	-152.92	-19279.33	-69704.06	-1033.69
120	322.99	253.60	406.52	58.13	6890.43	-50958.39	-1790.41
150	0.00	292.83	146.42	253.60	31128.79	-18705.91	-2067.39
180	322.99	253.60	-152.92	381.12	46941.08	18411.37	-1790.41
210	559.43	146.42	-411.28	406.52	50090.42	50447.88	-1033.69
240	645.98	0.00	-559.43	322.99	39732.95	68819.49	0.00
270	559.43	146.42	-557.69	152.92	18643.94	68603.52	1033.69
300	322.99	253.60	-406.52	-58.13	-7525.83	49857.85	1790.41
330	0.00	292.83	-146.42	-253.60	-31764.18	17605.37	2067.39

TPA65R-BU8DA-K - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	645.98	0.00	0.00	-645.98	-79465.90	0.00	0.00

TPA65R-BU8DA-K - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
30	559.43	146.42	146.42	-559.43	-68734.36	-18155.64	1033.69
60	322.99	253.60	253.60	-322.99	-39415.25	-31446.49	1790.41
90	0.00	292.83	292.83	0.00	635.40	-36311.28	2067.39
120	322.99	253.60	253.60	322.99	40686.04	-31446.49	1790.41
150	559.43	146.42	146.42	559.43	70005.15	-18155.64	1033.69
180	645.98	0.00	0.00	645.98	80736.69	0.00	0.00
210	559.43	146.42	-146.42	559.43	70005.15	18155.64	-1033.69
240	322.99	253.60	-253.60	322.99	40686.04	31446.49	-1790.41
270	0.00	292.83	-292.83	0.00	635.40	36311.28	-2067.39
300	322.99	253.60	-253.60	-322.99	-39415.25	31446.49	-1790.41
330	559.43	146.42	-146.42	-559.43	-68734.36	18155.64	-1033.69

HPA-65R-BU8A - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	200.58	243.98	-51.72	-311.58	-38840.82	6767.48	-1722.48
30	0.00	281.72	140.86	-243.98	-30458.13	-17112.19	-1988.95
60	200.58	243.98	295.70	-111.00	-13969.07	-36311.64	-1722.48
90	347.41	140.86	371.30	51.72	6208.13	-45686.41	-994.47
120	401.16	0.00	347.41	200.58	24667.01	-42724.51	0.00
150	347.41	140.86	230.44	295.70	36461.52	-28219.60	994.47
180	200.58	243.98	51.72	311.58	38431.34	-6058.25	1722.48
210	0.00	281.72	-140.86	243.98	30048.66	17821.42	1988.95
240	200.58	243.98	-295.70	111.00	13559.60	37020.88	1722.48
270	347.41	140.86	-371.30	-51.72	-6617.61	46395.64	994.47
300	401.16	0.00	-347.41	-200.58	-25076.49	43433.75	0.00
330	347.41	140.86	-230.44	-295.70	-36871.00	28928.83	-994.47

HPA-65R-BU8A - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	200.58	243.98	51.72	-311.58	-38840.82	-6767.48	1722.48
30	347.41	140.86	230.44	-295.70	-36871.00	-28928.83	994.47
60	401.16	0.00	347.41	-200.58	-25076.49	-43433.75	0.00
90	347.41	140.86	371.30	-51.72	-6617.61	-46395.64	-994.47
120	200.58	243.98	295.70	111.00	13559.60	-37020.88	-1722.48
150	0.00	281.72	140.86	243.98	30048.66	-17821.42	-1988.95
180	200.58	243.98	-51.72	311.58	38431.34	6058.25	-1722.48
210	347.41	140.86	-230.44	295.70	36461.52	28219.60	-994.47
240	401.16	0.00	-347.41	200.58	24667.01	42724.51	0.00
270	347.41	140.86	-371.30	51.72	6208.13	45686.41	994.47
300	200.58	243.98	-295.70	-111.00	-13969.07	36311.64	1722.48
330	0.00	281.72	-140.86	-243.98	-30458.13	17112.19	1988.95

HPA-65R-BU8A - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	401.16	0.00	0.00	-401.16	-49334.02	0.00	0.00
30	347.41	140.86	140.86	-347.41	-42669.65	-17466.81	994.47
60	200.58	243.98	243.98	-200.58	-24462.27	-30253.40	1722.48
90	0.00	281.72	281.72	0.00	409.48	-34933.61	1988.95

HPA-65R-BU8A - Elevation 124 - From Face C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
120	200.58	243.98	243.98	200.58	25281.22	-30253.40	1722.48
150	347.41	140.86	140.86	347.41	43488.61	-17466.81	994.47
180	401.16	0.00	0.00	401.16	50152.97	0.00	0.00
210	347.41	140.86	-140.86	347.41	43488.61	17466.81	-994.47
240	200.58	243.98	-243.98	200.58	25281.22	30253.40	-1722.48
270	0.00	281.72	-281.72	0.00	409.48	34933.61	-1988.95
300	200.58	243.98	-243.98	-200.58	-24462.27	30253.40	-1722.48
330	347.41	140.86	-140.86	-347.41	-42669.65	17466.81	-994.47

DMP65R-BU8DA-K - Elevation 124 - From Face A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	319.10	251.20	-150.75	-377.09	-47122.96	19322.94	-1773.43
30	0.00	290.06	145.03	-251.20	-31511.80	-17353.68	-2047.78
60	319.10	251.20	401.95	-57.99	-7554.50	-49211.65	-1773.43
90	552.70	145.03	551.16	150.75	18329.60	-67714.66	-1023.89
120	638.20	0.00	552.70	319.10	39204.88	-67904.84	0.00
150	552.70	145.03	406.14	401.95	49477.81	-49731.23	1023.89
180	319.10	251.20	150.75	377.09	46395.79	-18063.44	1773.43
210	0.00	290.06	-145.03	251.20	30784.63	18613.18	2047.78
240	319.10	251.20	-401.95	57.99	6827.32	50471.15	1773.43
270	552.70	145.03	-551.16	-150.75	-19056.78	68974.16	1023.89
300	638.20	0.00	-552.70	-319.10	-39932.05	69164.34	0.00
330	552.70	145.03	-406.14	-401.95	-50204.99	50990.74	-1023.89

DMP65R-BU8DA-K - Elevation 124 - From Face B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	319.10	251.20	150.75	-377.09	-47122.96	-19322.94	1773.43
30	552.70	145.03	406.14	-401.95	-50204.99	-50990.74	1023.89
60	638.20	0.00	552.70	-319.10	-39932.05	-69164.34	0.00
90	552.70	145.03	551.16	-150.75	-19056.78	-68974.16	-1023.89
120	319.10	251.20	401.95	57.99	6827.32	-50471.15	-1773.43
150	0.00	290.06	145.03	251.20	30784.63	-18613.18	-2047.78
180	319.10	251.20	-150.75	377.09	46395.79	18063.44	-1773.43
210	552.70	145.03	-406.14	401.95	49477.81	49731.23	-1023.89
240	638.20	0.00	-552.70	319.10	39204.88	67904.84	0.00
270	552.70	145.03	-551.16	150.75	18329.60	67714.66	1023.89
300	319.10	251.20	-401.95	-57.99	-7554.50	49211.65	1773.43
330	0.00	290.06	-145.03	-251.20	-31511.80	17353.68	2047.78

DMP65R-BU8DA-K - Elevation 124 - From Face C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	638.20	0.00	0.00	-638.20	-78409.75	0.00	0.00
30	552.70	145.03	145.03	-552.70	-67807.42	-17983.43	1023.89
60	319.10	251.20	251.20	-319.10	-38841.29	-31148.21	1773.43
90	0.00	290.06	290.06	0.00	727.18	-35966.86	2047.78
120	319.10	251.20	251.20	319.10	40295.64	-31148.21	1773.43
150	552.70	145.03	145.03	552.70	69261.77	-17983.43	1023.89
180	638.20	0.00	0.00	638.20	79864.11	0.00	0.00

DMP65R-BU8DA-K - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
210	552.70	145.03	-145.03	552.70	69261.77	17983.43	-1023.89
240	319.10	251.20	-251.20	319.10	40295.64	31148.21	-1773.43
270	0.00	290.06	-290.06	0.00	727.18	35966.86	-2047.78
300	319.10	251.20	-251.20	-319.10	-38841.29	31148.21	-1773.43
330	552.70	145.03	-145.03	-552.70	-67807.42	17983.43	-1023.89

Radio 4478 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	33.14	32.74	-12.33	-44.93	-5784.43	1898.45	-214.80
30	0.00	37.81	18.90	-32.74	-4273.44	-1974.91	-248.03
60	33.14	32.74	45.08	-11.78	-1674.51	-5220.15	-214.80
90	57.41	18.90	59.17	12.33	1315.98	-6967.71	-124.01
120	66.29	0.00	57.41	33.14	3896.73	-6749.33	0.00
150	57.41	18.90	40.26	45.08	5376.22	-4623.53	124.01
180	33.14	32.74	12.33	44.93	5358.04	-1159.91	214.80
210	0.00	37.81	-18.90	32.74	3847.04	2713.45	248.03
240	33.14	32.74	-45.08	11.78	1248.11	5958.69	214.80
270	57.41	18.90	-59.17	-12.33	-1742.38	7706.25	124.01
300	66.29	0.00	-57.41	-33.14	-4323.13	7487.87	0.00
330	57.41	18.90	-40.26	-45.08	-5802.62	5362.07	-124.01

Radio 4478 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	33.14	32.74	12.33	-44.93	-5784.43	-1898.45	214.80
30	57.41	18.90	40.26	-45.08	-5802.62	-5362.07	124.01
60	66.29	0.00	57.41	-33.14	-4323.13	-7487.87	0.00
90	57.41	18.90	59.17	-12.33	-1742.38	-7706.25	-124.01
120	33.14	32.74	45.08	11.78	1248.11	-5958.69	-214.80
150	0.00	37.81	18.90	32.74	3847.04	-2713.45	-248.03
180	33.14	32.74	-12.33	44.93	5358.04	1159.91	-214.80
210	57.41	18.90	-40.26	45.08	5376.22	4623.53	-124.01
240	66.29	0.00	-57.41	33.14	3896.73	6749.33	0.00
270	57.41	18.90	-59.17	12.33	1315.98	6967.71	124.01
300	33.14	32.74	-45.08	-11.78	-1674.51	5220.15	214.80
330	0.00	37.81	-18.90	-32.74	-4273.44	1974.91	248.03

Radio 4478 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	66.29	0.00	0.00	-66.29	-7793.46	0.00	0.00
30	57.41	18.90	18.90	-57.41	-6692.21	-2344.18	124.01
60	33.14	32.74	32.74	-33.14	-3683.53	-4060.24	214.80
90	0.00	37.81	37.81	0.00	426.40	-4688.36	248.03
120	33.14	32.74	32.74	33.14	4536.32	-4060.24	214.80
150	57.41	18.90	18.90	57.41	7545.00	-2344.18	124.01
180	66.29	0.00	0.00	66.29	8646.25	0.00	0.00
210	57.41	18.90	-18.90	57.41	7545.00	2344.18	-124.01
240	33.14	32.74	-32.74	33.14	4536.32	4060.24	-214.80
270	0.00	37.81	-37.81	0.00	426.40	4688.36	-248.03

Radio 4478 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
300	33.14	32.74	-32.74	-33.14	-3683.53	4060.24	-214.80
330	57.41	18.90	-18.90	-57.41	-6692.21	2344.18	-124.01

Ericsson RRUS-E2 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	56.16	39.75	-28.76	-62.51	-7947.45	3906.61	-260.78
30	0.00	45.90	22.95	-39.75	-5126.19	-2505.12	-301.12
60	56.16	39.75	68.51	-6.35	-984.10	-8154.27	-260.78
90	97.27	22.95	95.71	28.76	3368.95	-11527.15	-150.56
120	112.31	0.00	97.27	56.16	6766.55	-11720.01	0.00
150	97.27	22.95	72.76	68.51	8298.33	-8681.17	150.56
180	56.16	39.75	28.76	62.51	7553.85	-3224.88	260.78
210	0.00	45.90	-22.95	39.75	4732.59	3186.85	301.12
240	56.16	39.75	-68.51	6.35	590.50	8836.00	260.78
270	97.27	22.95	-95.71	-28.76	-3762.54	12208.88	150.56
300	112.31	0.00	-97.27	-56.16	-7160.15	12401.74	0.00
330	97.27	22.95	-72.76	-68.51	-8691.93	9362.90	-150.56

Ericsson RRUS-E2 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	56.16	39.75	28.76	-62.51	-7947.45	-3906.61	260.78
30	97.27	22.95	72.76	-68.51	-8691.93	-9362.90	150.56
60	112.31	0.00	97.27	-56.16	-7160.15	-12401.74	0.00
90	97.27	22.95	95.71	-28.76	-3762.54	-12208.88	-150.56
120	56.16	39.75	68.51	6.35	590.50	-8836.00	-260.78
150	0.00	45.90	22.95	39.75	4732.59	-3186.85	-301.12
180	56.16	39.75	-28.76	62.51	7553.85	3224.88	-260.78
210	97.27	22.95	-72.76	68.51	8298.33	8681.17	-150.56
240	112.31	0.00	-97.27	56.16	6766.55	11720.01	0.00
270	97.27	22.95	-95.71	28.76	3368.95	11527.15	150.56
300	56.16	39.75	-68.51	-6.35	-984.10	8154.27	260.78
330	0.00	45.90	-22.95	-39.75	-5126.19	2505.12	301.12

Ericsson RRUS-E2 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	112.31	0.00	0.00	-112.31	-13533.11	0.00	0.00
30	97.27	22.95	22.95	-97.27	-11667.28	-2845.98	150.56
60	56.16	39.75	39.75	-56.16	-6569.75	-4929.39	260.78
90	0.00	45.90	45.90	0.00	393.60	-5691.97	301.12
120	56.16	39.75	39.75	56.16	7356.95	-4929.39	260.78
150	97.27	22.95	22.95	97.27	12454.48	-2845.98	150.56
180	112.31	0.00	0.00	112.31	14320.30	0.00	0.00
210	97.27	22.95	-22.95	97.27	12454.48	2845.98	-150.56
240	56.16	39.75	-39.75	56.16	7356.95	4929.39	-260.78
270	0.00	45.90	-45.90	0.00	393.60	5691.97	-301.12
300	56.16	39.75	-39.75	-56.16	-6569.75	4929.39	-260.78
330	97.27	22.95	-22.95	-97.27	-11667.28	2845.98	-150.56

Radio 4415 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	32.90	25.37	-15.81	-38.42	-4927.62	2244.36	-166.39
30	0.00	29.29	14.64	-25.37	-3309.27	-1531.87	-192.14
60	32.90	25.37	41.17	-5.52	-848.14	-4821.52	-166.39
90	56.98	14.64	56.67	15.81	1796.30	-6743.13	-96.07
120	65.80	0.00	56.98	32.90	3915.48	-6781.82	0.00
150	56.98	14.64	42.03	41.17	4941.57	-4927.21	96.07
180	32.90	25.37	15.81	38.42	4599.63	-1676.25	166.39
210	0.00	29.29	-14.64	25.37	2981.27	2099.98	192.14
240	32.90	25.37	-41.17	5.52	520.14	5389.63	166.39
270	56.98	14.64	-56.67	-15.81	-2124.30	7311.24	96.07
300	65.80	0.00	-56.98	-32.90	-4243.48	7349.93	0.00
330	56.98	14.64	-42.03	-41.17	-5269.57	5495.32	-96.07

Radio 4415 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	32.90	25.37	15.81	-38.42	-4927.62	-2244.36	166.39
30	56.98	14.64	42.03	-41.17	-5269.57	-5495.32	96.07
60	65.80	0.00	56.98	-32.90	-4243.48	-7349.93	0.00
90	56.98	14.64	56.67	-15.81	-2124.30	-7311.24	-96.07
120	32.90	25.37	41.17	5.52	520.14	-5389.63	-166.39
150	0.00	29.29	14.64	25.37	2981.27	-2099.98	-192.14
180	32.90	25.37	-15.81	38.42	4599.63	1676.25	-166.39
210	56.98	14.64	-42.03	41.17	4941.57	4927.21	-96.07
240	65.80	0.00	-56.98	32.90	3915.48	6781.82	0.00
270	56.98	14.64	-56.67	15.81	1796.30	6743.13	96.07
300	32.90	25.37	-41.17	-5.52	-848.14	4821.52	166.39
330	0.00	29.29	-14.64	-25.37	-3309.27	1531.87	192.14

Radio 4415 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	65.80	0.00	0.00	-65.80	-7830.97	0.00	0.00
30	56.98	14.64	14.64	-56.98	-6737.87	-1815.92	96.07
60	32.90	25.37	25.37	-32.90	-3751.49	-3145.27	166.39
90	0.00	29.29	29.29	0.00	328.00	-3631.84	192.14
120	32.90	25.37	25.37	32.90	4407.48	-3145.27	166.39
150	56.98	14.64	14.64	56.98	7393.87	-1815.92	96.07
180	65.80	0.00	0.00	65.80	8486.96	0.00	0.00
210	56.98	14.64	-14.64	56.98	7393.87	1815.92	-96.07
240	32.90	25.37	-25.37	32.90	4407.48	3145.27	-166.39
270	0.00	29.29	-29.29	0.00	328.00	3631.84	-192.14
300	32.90	25.37	-25.37	-32.90	-3751.49	3145.27	-166.39
330	56.98	14.64	-14.64	-56.98	-6737.87	1815.92	-96.07

Radio 4449 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	29.46	28.61	-11.21	-39.51	-5095.50	1731.03	-187.66
30	0.00	33.03	16.52	-28.61	-3744.12	-1707.18	-216.69

Radio 4449 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	29.46	28.61	39.82	-10.04	-1442.23	-4596.62	-187.66
90	51.03	16.52	52.45	11.21	1193.37	-6163.06	-108.35
120	58.92	0.00	51.03	29.46	3456.47	-5986.78	0.00
150	51.03	16.52	35.93	39.82	4740.68	-4115.02	108.35
180	29.46	28.61	11.21	39.51	4701.90	-1049.30	187.66
210	0.00	33.03	-16.52	28.61	3350.52	2388.91	216.69
240	29.46	28.61	-39.82	10.04	1048.63	5278.35	187.66
270	51.03	16.52	-52.45	-11.21	-1586.96	6844.79	108.35
300	58.92	0.00	-51.03	-29.46	-3850.07	6668.51	0.00
330	51.03	16.52	-35.93	-39.82	-5134.28	4796.75	-108.35

Radio 4449 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	29.46	28.61	11.21	-39.51	-5095.50	-1731.03	187.66
30	51.03	16.52	35.93	-39.82	-5134.28	-4796.75	108.35
60	58.92	0.00	51.03	-29.46	-3850.07	-6668.51	0.00
90	51.03	16.52	52.45	-11.21	-1586.96	-6844.79	-108.35
120	29.46	28.61	39.82	10.04	1048.63	-5278.35	-187.66
150	0.00	33.03	16.52	28.61	3350.52	-2388.91	-216.69
180	29.46	28.61	-11.21	39.51	4701.90	1049.30	-187.66
210	51.03	16.52	-35.93	39.82	4740.68	4115.02	-108.35
240	58.92	0.00	-51.03	29.46	3456.47	5986.78	0.00
270	51.03	16.52	-52.45	11.21	1193.37	6163.06	108.35
300	29.46	28.61	-39.82	-10.04	-1442.23	4596.62	187.66
330	0.00	33.03	-16.52	-28.61	-3744.12	1707.18	216.69

Radio 4449 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	58.92	0.00	0.00	-58.92	-6912.94	0.00	0.00
30	51.03	16.52	16.52	-51.03	-5934.05	-2048.04	108.35
60	29.46	28.61	28.61	-29.46	-3259.67	-3547.32	187.66
90	0.00	33.03	33.03	0.00	393.60	-4096.09	216.69
120	29.46	28.61	28.61	29.46	4046.87	-3547.32	187.66
150	51.03	16.52	16.52	51.03	6721.24	-2048.04	108.35
180	58.92	0.00	0.00	58.92	7700.13	0.00	0.00
210	51.03	16.52	-16.52	51.03	6721.24	2048.04	-108.35
240	29.46	28.61	-28.61	29.46	4046.87	3547.32	-187.66
270	0.00	33.03	-33.03	0.00	393.60	4096.09	-216.69
300	29.46	28.61	-28.61	-29.46	-3259.67	3547.32	-187.66
330	51.03	16.52	-16.52	-51.03	-5934.05	2048.04	-108.35

Radio 8843 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	29.21	42.03	-4.28	-51.00	-6559.46	938.98	-275.69
30	0.00	48.53	24.26	-42.03	-5446.90	-2600.37	-318.33
60	29.21	42.03	46.31	-21.79	-2938.01	-5333.55	-275.69
90	50.58	24.26	55.94	4.28	294.95	-6528.20	-159.17
120	58.41	0.00	50.58	29.21	3385.71	-5864.23	0.00

Radio 8843 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	50.58	24.26	31.68	46.31	5506.12	-3519.53	159.17
180	29.21	42.03	4.28	51.00	6088.00	-122.38	275.69
210	0.00	48.53	-24.26	42.03	4975.44	3416.97	318.33
240	29.21	42.03	-46.31	21.79	2466.55	6150.15	275.69
270	50.58	24.26	-55.94	-4.28	-766.41	7344.80	159.17
300	58.41	0.00	-50.58	-29.21	-3857.18	6680.83	0.00
330	50.58	24.26	-31.68	-46.31	-5977.58	4336.13	-159.17

Radio 8843 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	29.21	42.03	4.28	-51.00	-6559.46	-938.98	275.69
30	50.58	24.26	31.68	-46.31	-5977.58	-4336.13	159.17
60	58.41	0.00	50.58	-29.21	-3857.18	-6680.83	0.00
90	50.58	24.26	55.94	-4.28	-766.41	-7344.80	-159.17
120	29.21	42.03	46.31	21.79	2466.55	-6150.15	-275.69
150	0.00	48.53	24.26	42.03	4975.44	-3416.97	-318.33
180	29.21	42.03	-4.28	51.00	6088.00	122.38	-275.69
210	50.58	24.26	-31.68	46.31	5506.12	3519.53	-159.17
240	58.41	0.00	-50.58	29.21	3385.71	5864.23	0.00
270	50.58	24.26	-55.94	4.28	294.95	6528.20	159.17
300	29.21	42.03	-46.31	-21.79	-2938.01	5333.55	275.69
330	0.00	48.53	-24.26	-42.03	-5446.90	2600.37	318.33

Radio 8843 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	58.41	0.00	0.00	-58.41	-6771.43	0.00	0.00
30	50.58	24.26	24.26	-50.58	-5801.06	-3008.67	159.17
60	29.21	42.03	42.03	-29.21	-3149.98	-5211.17	275.69
90	0.00	48.53	48.53	0.00	471.46	-6017.34	318.33
120	29.21	42.03	42.03	29.21	4092.91	-5211.17	275.69
150	50.58	24.26	24.26	50.58	6743.99	-3008.67	159.17
180	58.41	0.00	0.00	58.41	7714.35	0.00	0.00
210	50.58	24.26	-24.26	50.58	6743.99	3008.67	-159.17
240	29.21	42.03	-42.03	29.21	4092.91	5211.17	-275.69
270	0.00	48.53	-48.53	0.00	471.46	6017.34	-318.33
300	29.21	42.03	-42.03	-29.21	-3149.98	5211.17	-275.69
330	50.58	24.26	-24.26	-50.58	-5801.06	3008.67	-159.17

DC9-48-60-24-8C-EV - Elevation 124 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	40.89	0.00	0.00	-40.89	-5070.13	0.00	0.00
30	40.89	0.00	20.44	-35.41	-4390.86	-2535.06	0.00
60	40.89	0.00	35.41	-20.44	-2535.06	-4390.86	0.00
90	40.89	0.00	40.89	0.00	0.00	-5070.13	0.00
120	40.89	0.00	35.41	20.44	2535.06	-4390.86	0.00
150	40.89	0.00	20.44	35.41	4390.86	-2535.06	0.00
180	40.89	0.00	0.00	40.89	5070.13	0.00	0.00
210	40.89	0.00	-20.44	35.41	4390.86	2535.06	0.00

DC9-48-60-24-8C-EV - Elevation 124 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	40.89	0.00	-35.41	20.44	2535.06	4390.86	0.00
270	40.89	0.00	-40.89	0.00	0.00	5070.13	0.00
300	40.89	0.00	-35.41	-20.44	-2535.06	4390.86	0.00
330	40.89	0.00	-20.44	-35.41	-4390.86	2535.06	0.00

DC9-48-60-24-8C-EV - Elevation 124 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	40.89	0.00	0.00	-40.89	-5070.13	0.00	0.00
30	40.89	0.00	20.44	-35.41	-4390.86	-2535.06	0.00
60	40.89	0.00	35.41	-20.44	-2535.06	-4390.86	0.00
90	40.89	0.00	40.89	0.00	0.00	-5070.13	0.00
120	40.89	0.00	35.41	20.44	2535.06	-4390.86	0.00
150	40.89	0.00	20.44	35.41	4390.86	-2535.06	0.00
180	40.89	0.00	0.00	40.89	5070.13	0.00	0.00
210	40.89	0.00	-20.44	35.41	4390.86	2535.06	0.00
240	40.89	0.00	-35.41	20.44	2535.06	4390.86	0.00
270	40.89	0.00	-40.89	0.00	0.00	5070.13	0.00
300	40.89	0.00	-35.41	-20.44	-2535.06	4390.86	0.00
330	40.89	0.00	-20.44	-35.41	-4390.86	2535.06	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	394.79	0.00	0.00	-394.79	-48953.80	0.00	0.00
30	394.79	0.00	197.39	-341.90	-42395.23	-24476.90	0.00
60	394.79	0.00	341.90	-197.39	-24476.90	-42395.23	0.00
90	394.79	0.00	394.79	0.00	0.00	-48953.80	0.00
120	394.79	0.00	341.90	197.39	24476.90	-42395.23	0.00
150	394.79	0.00	197.39	341.90	42395.23	-24476.90	0.00
180	394.79	0.00	0.00	394.79	48953.80	0.00	0.00
210	394.79	0.00	-197.39	341.90	42395.23	24476.90	0.00
240	394.79	0.00	-341.90	197.39	24476.90	42395.23	0.00
270	394.79	0.00	-394.79	0.00	0.00	48953.80	0.00
300	394.79	0.00	-341.90	-197.39	-24476.90	42395.23	0.00
330	394.79	0.00	-197.39	-341.90	-42395.23	24476.90	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	394.79	0.00	0.00	-394.79	-48953.80	0.00	0.00
30	394.79	0.00	197.39	-341.90	-42395.23	-24476.90	0.00
60	394.79	0.00	341.90	-197.39	-24476.90	-42395.23	0.00
90	394.79	0.00	394.79	0.00	0.00	-48953.80	0.00
120	394.79	0.00	341.90	197.39	24476.90	-42395.23	0.00
150	394.79	0.00	197.39	341.90	42395.23	-24476.90	0.00
180	394.79	0.00	0.00	394.79	48953.80	0.00	0.00
210	394.79	0.00	-197.39	341.90	42395.23	24476.90	0.00
240	394.79	0.00	-341.90	197.39	24476.90	42395.23	0.00
270	394.79	0.00	-394.79	0.00	0.00	48953.80	0.00
300	394.79	0.00	-341.90	-197.39	-24476.90	42395.23	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	394.79	0.00	-197.39	-341.90	-42395.23	24476.90	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	394.79	0.00	0.00	-394.79	-48953.80	0.00	0.00
30	394.79	0.00	197.39	-341.90	-42395.23	-24476.90	0.00
60	394.79	0.00	341.90	-197.39	-24476.90	-42395.23	0.00
90	394.79	0.00	394.79	0.00	0.00	-48953.80	0.00
120	394.79	0.00	341.90	197.39	24476.90	-42395.23	0.00
150	394.79	0.00	197.39	341.90	42395.23	-24476.90	0.00
180	394.79	0.00	0.00	394.79	48953.80	0.00	0.00
210	394.79	0.00	-197.39	341.90	42395.23	24476.90	0.00
240	394.79	0.00	-341.90	197.39	24476.90	42395.23	0.00
270	394.79	0.00	-394.79	0.00	0.00	48953.80	0.00
300	394.79	0.00	-341.90	-197.39	-24476.90	42395.23	0.00
330	394.79	0.00	-197.39	-341.90	-42395.23	24476.90	0.00

6' x 18" x 6" panel - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	207.23	147.98	-105.48	-231.77	-31106.45	15123.13	-2241.13
30	0.00	170.87	85.44	-147.98	-19794.92	-10650.05	-1152.10
60	207.23	147.98	253.46	-24.54	-3130.45	-33332.72	245.63
90	358.93	85.44	353.56	105.48	14421.71	-46847.06	1577.54
120	414.46	0.00	358.93	207.23	28158.49	-47571.94	2486.76
150	358.93	85.44	268.13	253.46	34399.12	-35313.10	2729.64
180	207.23	147.98	105.48	231.77	31471.44	-13355.31	2241.13
210	0.00	170.87	-85.44	147.98	20159.90	12417.87	1152.10
240	207.23	147.98	-253.46	24.54	3495.44	35100.54	-245.63
270	358.93	85.44	-353.56	-105.48	-14056.72	48614.89	-1577.54
300	414.46	0.00	-358.93	-207.23	-27793.50	49339.76	-2486.76
330	358.93	85.44	-268.13	-253.46	-34034.13	37080.92	-2729.64

6' x 18" x 6" panel - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	207.23	147.98	105.48	-231.77	-32145.68	-14523.13	-245.63
30	358.93	85.44	268.13	-253.46	-35073.36	-36480.92	-1577.54
60	414.46	0.00	358.93	-207.23	-28832.73	-48739.76	-2486.76
90	358.93	85.44	353.56	-105.48	-15095.95	-48014.89	-2729.64
120	207.23	147.98	253.46	24.54	2456.21	-34500.54	-2241.13
150	0.00	170.87	85.44	147.98	19120.67	-11817.87	-1152.10
180	207.23	147.98	-105.48	231.77	30432.21	13955.31	245.63
210	358.93	85.44	-268.13	253.46	33359.89	35913.10	1577.54
240	414.46	0.00	-358.93	207.23	27119.26	48171.94	2486.76
270	358.93	85.44	-353.56	105.48	13382.48	47447.06	2729.64
300	207.23	147.98	-253.46	-24.54	-4169.68	33932.72	2241.13
330	0.00	170.87	-85.44	-147.98	-20834.15	11250.05	1152.10

6' x 18" x 6" panel - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	414.46	0.00	0.00	-414.46	-55277.75	-600.00	2486.76
30	358.93	85.44	85.44	-358.93	-47781.60	-12133.96	2729.64
60	207.23	147.98	147.98	-207.23	-27301.75	-20577.41	2241.13
90	0.00	170.87	170.87	0.00	674.24	-23667.93	1152.10
120	207.23	147.98	147.98	207.23	28650.24	-20577.41	-245.63
150	358.93	85.44	85.44	358.93	49130.09	-12133.96	-1577.54
180	414.46	0.00	0.00	414.46	56626.23	-600.00	-2486.76
210	358.93	85.44	-85.44	358.93	49130.09	10933.96	-2729.64
240	207.23	147.98	-147.98	207.23	28650.24	19377.41	-2241.13
270	0.00	170.87	-170.87	0.00	674.24	22467.93	-1152.10
300	207.23	147.98	-147.98	-207.23	-27301.75	19377.41	245.63
330	358.93	85.44	-85.44	-358.93	-47781.60	10933.96	1577.54

1900 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	59.23	78.45	-12.07	-97.56	-12871.19	2839.84	-845.10
30	0.00	90.59	45.29	-78.45	-10292.07	-4904.16	-565.48
60	59.23	78.45	90.52	-38.33	-4875.13	-11009.75	-134.34
90	102.59	45.29	111.49	12.07	1928.16	-13840.94	332.80
120	118.46	0.00	102.59	59.23	8294.86	-12639.11	710.76
150	102.59	45.29	66.20	90.52	12519.02	-7726.30	898.28
180	59.23	78.45	12.07	97.56	13468.78	-418.89	845.10
210	0.00	90.59	-45.29	78.45	10889.65	7325.11	565.48
240	59.23	78.45	-90.52	38.33	5472.72	13430.70	134.34
270	102.59	45.29	-111.49	-12.07	-1330.57	16261.89	-332.80
300	118.46	0.00	-102.59	-59.23	-7697.27	15060.06	-710.76
330	102.59	45.29	-66.20	-90.52	-11921.43	10147.25	-898.28

1900 MHz RRH - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	59.23	78.45	12.07	-97.56	-14367.69	-1975.84	134.34
30	102.59	45.29	66.20	-90.52	-13417.92	-9283.25	-332.80
60	118.46	0.00	102.59	-59.23	-9193.76	-14196.06	-710.76
90	102.59	45.29	111.49	-12.07	-2827.06	-15397.89	-898.28
120	59.23	78.45	90.52	38.33	3976.22	-12566.70	-845.10
150	0.00	90.59	45.29	78.45	9393.16	-6461.11	-565.48
180	59.23	78.45	-12.07	97.56	11972.29	1282.89	-134.34
210	102.59	45.29	-66.20	90.52	11022.52	8590.30	332.80
240	118.46	0.00	-102.59	59.23	6798.36	13503.11	710.76
270	102.59	45.29	-111.49	12.07	431.66	14704.94	898.28
300	59.23	78.45	-90.52	-38.33	-6371.62	11873.75	845.10
330	0.00	90.59	-45.29	-78.45	-11788.56	5768.16	565.48

1900 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	118.46	0.00	0.00	-118.46	-15093.22	-864.00	710.76
30	102.59	45.29	45.29	-102.59	-12950.68	-6978.64	898.28

1900 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	59.23	78.45	78.45	-59.23	-7097.16	-11454.86	845.10
90	0.00	90.59	90.59	0.00	898.91	-13093.27	565.48
120	59.23	78.45	78.45	59.23	8894.97	-11454.86	134.34
150	102.59	45.29	45.29	102.59	14748.50	-6978.64	-332.80
180	118.46	0.00	0.00	118.46	16891.03	-864.00	-710.76
210	102.59	45.29	-45.29	102.59	14748.50	5250.64	-898.28
240	59.23	78.45	-78.45	59.23	8894.97	9726.86	-845.10
270	0.00	90.59	-90.59	0.00	898.91	11365.27	-565.48
300	59.23	78.45	-78.45	-59.23	-7097.16	9726.86	-134.34
330	102.59	45.29	-45.29	-102.59	-12950.68	5250.64	332.80

800 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	44.11	93.01	8.30	-102.60	-13965.10	-595.77	-668.81
30	0.00	107.40	53.70	-93.01	-12669.93	-6723.92	-670.41
60	44.11	93.01	84.70	-58.49	-8010.38	-10909.64	-492.37
90	76.40	53.70	93.01	-8.30	-1234.98	-12031.38	-182.41
120	88.22	0.00	76.40	44.11	5840.80	-9788.57	176.44
150	76.40	53.70	39.31	84.70	11321.03	-4782.16	488.00
180	44.11	93.01	-8.30	102.60	13737.27	1646.37	668.81
210	0.00	107.40	-53.70	93.01	12442.10	7774.52	670.41
240	44.11	93.01	-84.70	58.49	7782.56	11960.24	492.37
270	76.40	53.70	-93.01	8.30	1007.16	13081.98	182.41
300	88.22	0.00	-76.40	-44.11	-6068.63	10839.17	-176.44
330	76.40	53.70	-39.31	-84.70	-11548.85	5832.76	-488.00

800 MHz RRH - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	44.11	93.01	-8.30	-102.60	-14249.15	759.77	492.37
30	76.40	53.70	39.31	-84.70	-11832.91	-5668.76	182.41
60	88.22	0.00	76.40	-44.11	-6352.68	-10675.17	-176.44
90	76.40	53.70	93.01	8.30	723.11	-12917.98	-488.00
120	44.11	93.01	84.70	58.49	7498.50	-11796.24	-668.81
150	0.00	107.40	53.70	93.01	12158.05	-7610.52	-670.41
180	44.11	93.01	8.30	102.60	13453.22	-1482.37	-492.37
210	76.40	53.70	-39.31	84.70	11036.97	4946.16	-182.41
240	88.22	0.00	-76.40	44.11	5556.75	9952.57	176.44
270	76.40	53.70	-93.01	-8.30	-1519.04	12195.38	488.00
300	44.11	93.01	-84.70	-58.49	-8294.44	11073.64	668.81
330	0.00	107.40	-53.70	-93.01	-12953.98	6887.92	670.41

800 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	88.22	0.00	0.00	-88.22	-11397.55	-164.00	176.44
30	76.40	53.70	53.70	-76.40	-9801.99	-7413.22	488.00
60	44.11	93.01	93.01	-44.11	-5442.84	-12720.01	668.81
90	0.00	107.40	107.40	0.00	511.88	-14662.44	670.41
120	44.11	93.01	93.01	44.11	6466.59	-12720.01	492.37

800 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	76.40	53.70	53.70	76.40	10825.75	-7413.22	182.41
180	88.22	0.00	0.00	88.22	12421.31	-164.00	-176.44
210	76.40	53.70	-53.70	76.40	10825.75	7085.22	-488.00
240	44.11	93.01	-93.01	44.11	6466.59	12392.01	-668.81
270	0.00	107.40	-107.40	0.00	511.88	14334.44	-670.41
300	44.11	93.01	-93.01	-44.11	-5442.84	12392.01	-492.37
330	76.40	53.70	-53.70	-76.40	-9801.99	7085.22	-182.41

800 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	44.11	93.01	8.30	-102.60	-13944.60	-631.28	-622.31
30	0.00	107.40	53.70	-93.01	-12649.43	-6759.43	-616.71
60	44.11	93.01	84.70	-58.49	-7989.88	-10945.15	-445.87
90	76.40	53.70	93.01	-8.30	-1214.48	-12066.89	-155.56
120	88.22	0.00	76.40	44.11	5861.30	-9824.08	176.44
150	76.40	53.70	39.31	84.70	11341.53	-4817.67	461.15
180	44.11	93.01	-8.30	102.60	13757.77	1610.86	622.31
210	0.00	107.40	-53.70	93.01	12462.60	7739.01	616.71
240	44.11	93.01	-84.70	58.49	7803.06	11924.73	445.87
270	76.40	53.70	-93.01	8.30	1027.66	13046.47	155.56
300	88.22	0.00	-76.40	-44.11	-6048.13	10803.66	-176.44
330	76.40	53.70	-39.31	-84.70	-11528.35	5797.26	-461.15

800 MHz RRH - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	44.11	93.01	-8.30	-102.60	-14228.65	795.28	445.87
30	76.40	53.70	39.31	-84.70	-11812.41	-5633.26	155.56
60	88.22	0.00	76.40	-44.11	-6332.18	-10639.66	-176.44
90	76.40	53.70	93.01	8.30	743.61	-12882.47	-461.15
120	44.11	93.01	84.70	58.49	7519.00	-11760.73	-622.31
150	0.00	107.40	53.70	93.01	12178.55	-7575.01	-616.71
180	44.11	93.01	8.30	102.60	13473.72	-1446.86	-445.87
210	76.40	53.70	-39.31	84.70	11057.47	4981.67	-155.56
240	88.22	0.00	-76.40	44.11	5577.25	9988.08	176.44
270	76.40	53.70	-93.01	-8.30	-1498.54	12230.89	461.15
300	44.11	93.01	-84.70	-58.49	-8273.94	11109.15	622.31
330	0.00	107.40	-53.70	-93.01	-12933.48	6923.43	616.71

800 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	88.22	0.00	0.00	-88.22	-11438.55	-164.00	176.44
30	76.40	53.70	53.70	-76.40	-9842.99	-7413.22	461.15
60	44.11	93.01	93.01	-44.11	-5483.84	-12720.01	622.31
90	0.00	107.40	107.40	0.00	470.88	-14662.44	616.71
120	44.11	93.01	93.01	44.11	6425.59	-12720.01	445.87
150	76.40	53.70	53.70	76.40	10784.75	-7413.22	155.56
180	88.22	0.00	0.00	88.22	12380.31	-164.00	-176.44
210	76.40	53.70	-53.70	76.40	10784.75	7085.22	-461.15

800 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	44.11	93.01	-93.01	44.11	6425.59	12392.01	-622.31
270	0.00	107.40	-107.40	0.00	470.88	14334.44	-616.71
300	44.11	93.01	-93.01	-44.11	-5483.84	12392.01	-445.87
330	76.40	53.70	-53.70	-76.40	-9842.99	7085.22	-155.56

14' sector mount - Elevation 135 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	392.65	0.00	0.00	-392.65	-53007.15	0.00	0.00
30	392.65	0.00	196.32	-340.04	-45905.54	-26503.57	0.00
60	392.65	0.00	340.04	-196.32	-26503.57	-45905.54	0.00
90	392.65	0.00	392.65	0.00	0.00	-53007.15	0.00
120	392.65	0.00	340.04	196.32	26503.57	-45905.54	0.00
150	392.65	0.00	196.32	340.04	45905.54	-26503.57	0.00
180	392.65	0.00	0.00	392.65	53007.15	0.00	0.00
210	392.65	0.00	-196.32	340.04	45905.54	26503.57	0.00
240	392.65	0.00	-340.04	196.32	26503.57	45905.54	0.00
270	392.65	0.00	-392.65	0.00	0.00	53007.15	0.00
300	392.65	0.00	-340.04	-196.32	-26503.57	45905.54	0.00
330	392.65	0.00	-196.32	-340.04	-45905.54	26503.57	0.00

14' sector mount - Elevation 135 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	392.65	0.00	0.00	-392.65	-53007.15	0.00	0.00
30	392.65	0.00	196.32	-340.04	-45905.54	-26503.57	0.00
60	392.65	0.00	340.04	-196.32	-26503.57	-45905.54	0.00
90	392.65	0.00	392.65	0.00	0.00	-53007.15	0.00
120	392.65	0.00	340.04	196.32	26503.57	-45905.54	0.00
150	392.65	0.00	196.32	340.04	45905.54	-26503.57	0.00
180	392.65	0.00	0.00	392.65	53007.15	0.00	0.00
210	392.65	0.00	-196.32	340.04	45905.54	26503.57	0.00
240	392.65	0.00	-340.04	196.32	26503.57	45905.54	0.00
270	392.65	0.00	-392.65	0.00	0.00	53007.15	0.00
300	392.65	0.00	-340.04	-196.32	-26503.57	45905.54	0.00
330	392.65	0.00	-196.32	-340.04	-45905.54	26503.57	0.00

14' sector mount - Elevation 135 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	392.65	0.00	0.00	-392.65	-53007.15	0.00	0.00
30	392.65	0.00	196.32	-340.04	-45905.54	-26503.57	0.00
60	392.65	0.00	340.04	-196.32	-26503.57	-45905.54	0.00
90	392.65	0.00	392.65	0.00	0.00	-53007.15	0.00
120	392.65	0.00	340.04	196.32	26503.57	-45905.54	0.00
150	392.65	0.00	196.32	340.04	45905.54	-26503.57	0.00
180	392.65	0.00	0.00	392.65	53007.15	0.00	0.00
210	392.65	0.00	-196.32	340.04	45905.54	26503.57	0.00
240	392.65	0.00	-340.04	196.32	26503.57	45905.54	0.00
270	392.65	0.00	-392.65	0.00	0.00	53007.15	0.00
300	392.65	0.00	-340.04	-196.32	-26503.57	45905.54	0.00

14' sector mount - Elevation 135 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	392.65	0.00	-196.32	-340.04	-45905.54	26503.57	0.00

8' x 1' x 6" panel - Elevation 115 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	1612.18	0.00	0.00	-1612.18	-188167.14	0.00	0.00
30	1396.19	478.03	478.03	-1396.19	-163328.13	-54973.51	-5086.02
60	806.09	827.97	827.97	-806.09	-95466.71	-95216.92	-8809.24
90	0.00	956.06	956.06	0.00	-2766.28	-109947.02	-10172.04
120	806.09	827.97	827.97	806.09	89934.15	-95216.92	-8809.24
150	1396.19	478.03	478.03	1396.19	157795.58	-54973.51	-5086.02
180	1612.18	0.00	0.00	1612.18	182634.59	0.00	0.00
210	1396.19	478.03	-478.03	1396.19	157795.58	54973.51	5086.02
240	806.09	827.97	-827.97	806.09	89934.15	95216.92	8809.24
270	0.00	956.06	-956.06	0.00	-2766.28	109947.02	10172.04
300	806.09	827.97	-827.97	-806.09	-95466.71	95216.92	8809.24
330	1396.19	478.03	-478.03	-1396.19	-163328.13	54973.51	5086.02

8' x 1' x 6" panel - Elevation 115 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	806.09	827.97	-284.11	-1120.09	-127427.34	30276.80	8809.24
30	0.00	956.06	478.03	-827.97	-93833.78	-57369.18	10172.04
60	806.09	827.97	1112.08	-314.00	-34726.91	-130285.05	8809.24
90	1396.19	478.03	1448.15	284.11	34055.61	-168933.07	5086.02
120	1612.18	0.00	1396.19	806.09	94083.57	-162957.52	0.00
150	1396.19	478.03	970.12	1112.08	129272.52	-113959.56	-5086.02
180	806.09	827.97	284.11	1120.09	130193.62	-35068.14	-8809.24
210	0.00	956.06	-478.03	827.97	96600.05	52577.85	-10172.04
240	806.09	827.97	-1112.08	314.00	37493.19	125493.72	-8809.24
270	1396.19	478.03	-1448.15	-284.11	-31289.33	164141.74	-5086.02
300	1612.18	0.00	-1396.19	-806.09	-91317.29	158166.19	0.00
330	1396.19	478.03	-970.12	-1112.08	-126506.25	109168.22	5086.02

8' x 1' x 6" panel - Elevation 115 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	806.09	827.97	284.11	-1120.09	-127427.34	-30276.80	-8809.24
30	1396.19	478.03	970.12	-1112.08	-126506.25	-109168.22	-5086.02
60	1612.18	0.00	1396.19	-806.09	-91317.29	-158166.19	0.00
90	1396.19	478.03	1448.15	-284.11	-31289.33	-164141.74	5086.02
120	806.09	827.97	1112.08	314.00	37493.19	-125493.72	8809.24
150	0.00	956.06	478.03	827.97	96600.05	-52577.85	10172.04
180	806.09	827.97	-284.11	1120.09	130193.62	35068.14	8809.24
210	1396.19	478.03	-970.12	1112.08	129272.52	113959.56	5086.02
240	1612.18	0.00	-1396.19	806.09	94083.57	162957.52	0.00
270	1396.19	478.03	-1448.15	284.11	34055.61	168933.07	-5086.02
300	806.09	827.97	-1112.08	-314.00	-34726.91	130285.05	-8809.24
330	0.00	956.06	-478.03	-827.97	-93833.78	57369.18	-10172.04

Ericsson RRUS-11 - Elevation 115 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	392.18	0.00	0.00	-392.18	-47221.88	0.00	0.00
30	339.64	71.70	71.70	-339.64	-41179.47	-8246.03	-691.20
60	196.09	124.20	124.20	-196.09	-24671.29	-14282.54	-1197.19
90	0.00	143.41	143.41	0.00	-2120.70	-16492.05	-1382.40
120	196.09	124.20	124.20	196.09	20429.90	-14282.54	-1197.19
150	339.64	71.70	71.70	339.64	36938.08	-8246.03	-691.20
180	392.18	0.00	0.00	392.18	42980.49	0.00	0.00
210	339.64	71.70	-71.70	339.64	36938.08	8246.03	691.20
240	196.09	124.20	-124.20	196.09	20429.90	14282.54	1197.19
270	0.00	143.41	-143.41	0.00	-2120.70	16492.05	1382.40
300	196.09	124.20	-124.20	-196.09	-24671.29	14282.54	1197.19
330	339.64	71.70	-71.70	-339.64	-41179.47	8246.03	691.20

Ericsson RRUS-11 - Elevation 115 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	196.09	124.20	-107.72	-205.60	-22583.99	10551.54	1197.19
30	0.00	143.41	71.70	-124.20	-13222.19	-10082.60	1382.40
60	196.09	124.20	231.92	-9.51	-33.40	-28507.23	1197.19
90	339.64	71.70	329.99	107.72	13448.47	-39785.48	691.20
120	392.18	0.00	339.64	196.09	23610.94	-40895.35	0.00
150	339.64	71.70	258.29	231.92	27731.00	-31539.45	-691.20
180	196.09	124.20	107.72	205.60	24704.68	-14224.69	-1197.19
210	0.00	143.41	-71.70	124.20	15342.89	6409.45	-1382.40
240	196.09	124.20	-231.92	9.51	2154.09	24834.08	-1197.19
270	339.64	71.70	-329.99	-107.72	-11327.77	36112.33	-691.20
300	392.18	0.00	-339.64	-196.09	-21490.24	37222.20	0.00
330	339.64	71.70	-258.29	-231.92	-25610.31	27866.30	691.20

Ericsson RRUS-11 - Elevation 115 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	196.09	124.20	107.72	-205.60	-22583.99	-10551.54	-1197.19
30	339.64	71.70	258.29	-231.92	-25610.31	-27866.30	-691.20
60	392.18	0.00	339.64	-196.09	-21490.24	-37222.20	0.00
90	339.64	71.70	329.99	-107.72	-11327.77	-36112.33	691.20
120	196.09	124.20	231.92	9.51	2154.09	-24834.08	1197.19
150	0.00	143.41	71.70	124.20	15342.89	-6409.45	1382.40
180	196.09	124.20	-107.72	205.60	24704.68	14224.69	1197.19
210	339.64	71.70	-258.29	231.92	27731.00	31539.45	691.20
240	392.18	0.00	-339.64	196.09	23610.94	40895.35	0.00
270	339.64	71.70	-329.99	107.72	13448.47	39785.48	-691.20
300	196.09	124.20	-231.92	-9.51	-33.40	28507.23	-1197.19
330	0.00	143.41	-71.70	-124.20	-13222.19	10082.60	-1382.40

Raycap RDC-3315-PF-48 J-box - Elevation 115 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	88.30	0.00	0.00	-88.30	-10443.12	0.00	0.00
30	76.47	28.82	28.82	-76.47	-9082.75	-3314.58	-277.83

Raycap RDC-3315-PF-48 J-box - Elevation 115 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	44.15	49.92	49.92	-44.15	-5366.15	-5741.02	-481.22
90	0.00	57.64	57.64	0.00	-289.19	-6629.16	-555.67
120	44.15	49.92	49.92	44.15	4787.78	-5741.02	-481.22
150	76.47	28.82	28.82	76.47	8504.38	-3314.58	-277.83
180	88.30	0.00	0.00	88.30	9864.75	0.00	0.00
210	76.47	28.82	-28.82	76.47	8504.38	3314.58	277.83
240	44.15	49.92	-49.92	44.15	4787.78	5741.02	481.22
270	0.00	57.64	-57.64	0.00	-289.19	6629.16	555.67
300	44.15	49.92	-49.92	-44.15	-5366.15	5741.02	481.22
330	76.47	28.82	-28.82	-76.47	-9082.75	3314.58	277.83

Raycap RDC-3315-PF-48 J-box - Elevation 115 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	44.15	49.92	-13.27	-65.31	-7365.76	1275.83	481.22
30	0.00	57.64	28.82	-49.92	-5596.43	-3565.02	555.67
60	44.15	49.92	63.19	-21.16	-2288.79	-7517.73	481.22
90	76.47	28.82	80.63	13.27	1670.86	-9523.18	277.83
120	88.30	0.00	76.47	44.15	5221.56	-9044.00	0.00
150	76.47	28.82	51.81	63.19	7411.88	-6208.60	-277.83
180	44.15	49.92	13.27	65.31	7654.94	-1776.71	-481.22
210	0.00	57.64	-28.82	49.92	5885.61	3064.14	-555.67
240	44.15	49.92	-63.19	21.16	2577.98	7016.85	-481.22
270	76.47	28.82	-80.63	-13.27	-1381.68	9022.30	-277.83
300	88.30	0.00	-76.47	-44.15	-4932.37	8543.12	0.00
330	76.47	28.82	-51.81	-63.19	-7122.70	5707.72	277.83

Raycap RDC-3315-PF-48 J-box - Elevation 115 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	44.15	49.92	13.27	-65.31	-7365.76	-1275.83	-481.22
30	76.47	28.82	51.81	-63.19	-7122.70	-5707.72	-277.83
60	88.30	0.00	76.47	-44.15	-4932.37	-8543.12	0.00
90	76.47	28.82	80.63	-13.27	-1381.68	-9022.30	277.83
120	44.15	49.92	63.19	21.16	2577.98	-7016.85	481.22
150	0.00	57.64	28.82	49.92	5885.61	-3064.14	555.67
180	44.15	49.92	-13.27	65.31	7654.94	1776.71	481.22
210	76.47	28.82	-51.81	63.19	7411.88	6208.60	277.83
240	88.30	0.00	-76.47	44.15	5221.56	9044.00	0.00
270	76.47	28.82	-80.63	13.27	1670.86	9523.18	-277.83
300	44.15	49.92	-63.19	-21.16	-2288.79	7517.73	-481.22
330	0.00	57.64	-28.82	-49.92	-5596.43	3565.02	-555.67

14' sector mount - Elevation 115 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	379.61	0.00	0.00	-379.61	-43655.44	0.00	0.00
30	379.61	0.00	189.81	-328.75	-37806.72	-21827.72	0.00
60	379.61	0.00	328.75	-189.81	-21827.72	-37806.72	0.00
90	379.61	0.00	379.61	0.00	0.00	-43655.44	0.00
120	379.61	0.00	328.75	189.81	21827.72	-37806.72	0.00

14' sector mount - Elevation 115 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	379.61	0.00	189.81	328.75	37806.72	-21827.72	0.00
180	379.61	0.00	0.00	379.61	43655.44	0.00	0.00
210	379.61	0.00	-189.81	328.75	37806.72	21827.72	0.00
240	379.61	0.00	-328.75	189.81	21827.72	37806.72	0.00
270	379.61	0.00	-379.61	0.00	0.00	43655.44	0.00
300	379.61	0.00	-328.75	-189.81	-21827.72	37806.72	0.00
330	379.61	0.00	-189.81	-328.75	-37806.72	21827.72	0.00

14' sector mount - Elevation 115 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	379.61	0.00	0.00	-379.61	-43655.44	0.00	0.00
30	379.61	0.00	189.81	-328.75	-37806.72	-21827.72	0.00
60	379.61	0.00	328.75	-189.81	-21827.72	-37806.72	0.00
90	379.61	0.00	379.61	0.00	0.00	-43655.44	0.00
120	379.61	0.00	328.75	189.81	21827.72	-37806.72	0.00
150	379.61	0.00	189.81	328.75	37806.72	-21827.72	0.00
180	379.61	0.00	0.00	379.61	43655.44	0.00	0.00
210	379.61	0.00	-189.81	328.75	37806.72	21827.72	0.00
240	379.61	0.00	-328.75	189.81	21827.72	37806.72	0.00
270	379.61	0.00	-379.61	0.00	0.00	43655.44	0.00
300	379.61	0.00	-328.75	-189.81	-21827.72	37806.72	0.00
330	379.61	0.00	-189.81	-328.75	-37806.72	21827.72	0.00

14' sector mount - Elevation 115 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	379.61	0.00	0.00	-379.61	-43655.44	0.00	0.00
30	379.61	0.00	189.81	-328.75	-37806.72	-21827.72	0.00
60	379.61	0.00	328.75	-189.81	-21827.72	-37806.72	0.00
90	379.61	0.00	379.61	0.00	0.00	-43655.44	0.00
120	379.61	0.00	328.75	189.81	21827.72	-37806.72	0.00
150	379.61	0.00	189.81	328.75	37806.72	-21827.72	0.00
180	379.61	0.00	0.00	379.61	43655.44	0.00	0.00
210	379.61	0.00	-189.81	328.75	37806.72	21827.72	0.00
240	379.61	0.00	-328.75	189.81	21827.72	37806.72	0.00
270	379.61	0.00	-379.61	0.00	0.00	43655.44	0.00
300	379.61	0.00	-328.75	-189.81	-21827.72	37806.72	0.00
330	379.61	0.00	-189.81	-328.75	-37806.72	21827.72	0.00

8' x 1' x 6" panel - Elevation 105 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	1581.60	0.00	0.00	-1581.60	-168984.26	0.00	0.00
30	1369.70	468.96	468.96	-1369.70	-146735.38	-49241.06	-5260.29
60	790.80	812.27	812.27	-790.80	-85950.32	-85288.01	-9111.10
90	0.00	937.92	937.92	0.00	-2916.39	-98482.11	-10520.59
120	790.80	812.27	812.27	790.80	80117.55	-85288.01	-9111.10
150	1369.70	468.96	468.96	1369.70	140902.61	-49241.06	-5260.29
180	1581.60	0.00	0.00	1581.60	163151.48	0.00	0.00
210	1369.70	468.96	-468.96	1369.70	140902.61	49241.06	5260.29

8' x 1' x 6" panel - Elevation 105 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	790.80	812.27	-812.27	790.80	80117.55	85288.01	9111.10
270	0.00	937.92	-937.92	0.00	-2916.39	98482.11	10520.59
300	790.80	812.27	-812.27	-790.80	-85950.32	85288.01	9111.10
330	1369.70	468.96	-468.96	-1369.70	-146735.38	49241.06	5260.29

8' x 1' x 6" panel - Elevation 105 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	790.80	812.27	-278.72	-1098.84	-113920.36	26739.83	9111.10
30	0.00	937.92	468.96	-812.27	-83829.82	-51766.72	10520.59
60	790.80	812.27	1090.99	-308.04	-30886.42	-117079.17	9111.10
90	1369.70	468.96	1420.68	278.72	30723.69	-151697.10	5260.29
120	1581.60	0.00	1369.70	790.80	84492.13	-146344.66	0.00
150	1369.70	468.96	951.72	1090.99	116011.70	-102456.04	-5260.29
180	790.80	812.27	278.72	1098.84	116836.74	-31791.16	-9111.10
210	0.00	937.92	-468.96	812.27	86746.20	46715.39	-10520.59
240	790.80	812.27	-1090.99	308.04	33802.81	112027.84	-9111.10
270	1369.70	468.96	-1420.68	-278.72	-27807.30	146645.77	-5260.29
300	1581.60	0.00	-1369.70	-790.80	-81575.74	141293.33	0.00
330	1369.70	468.96	-951.72	-1090.99	-113095.31	97404.71	5260.29

8' x 1' x 6" panel - Elevation 105 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	790.80	812.27	278.72	-1098.84	-113920.36	-26739.83	-9111.10
30	1369.70	468.96	951.72	-1090.99	-113095.31	-97404.71	-5260.29
60	1581.60	0.00	1369.70	-790.80	-81575.74	-141293.33	0.00
90	1369.70	468.96	1420.68	-278.72	-27807.30	-146645.77	5260.29
120	790.80	812.27	1090.99	308.04	33802.81	-112027.84	9111.10
150	0.00	937.92	468.96	812.27	86746.20	-46715.39	10520.59
180	790.80	812.27	-278.72	1098.84	116836.74	31791.16	9111.10
210	1369.70	468.96	-951.72	1090.99	116011.70	102456.04	5260.29
240	1581.60	0.00	-1369.70	790.80	84492.13	146344.66	0.00
270	1369.70	468.96	-1420.68	278.72	30723.69	151697.10	-5260.29
300	790.80	812.27	-1090.99	-308.04	-30886.42	117079.17	-9111.10
330	0.00	937.92	-468.96	-812.27	-83829.82	51766.72	-10520.59

Ericsson RRUS-11 - Elevation 105 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	384.74	0.00	0.00	-384.74	-42645.90	0.00	0.00
30	333.20	70.34	70.34	-333.20	-37233.57	-7386.16	-718.70
60	192.37	121.84	121.84	-192.37	-22446.80	-12793.20	-1244.82
90	0.00	140.69	140.69	0.00	-2247.71	-14772.32	-1437.40
120	192.37	121.84	121.84	192.37	17951.38	-12793.20	-1244.82
150	333.20	70.34	70.34	333.20	32738.14	-7386.16	-718.70
180	384.74	0.00	0.00	384.74	38150.47	0.00	0.00
210	333.20	70.34	-70.34	333.20	32738.14	7386.16	718.70
240	192.37	121.84	-121.84	192.37	17951.38	12793.20	1244.82
270	0.00	140.69	-140.69	0.00	-2247.71	14772.32	1437.40
300	192.37	121.84	-121.84	-192.37	-22446.80	12793.20	1244.82

Ericsson RRUS-11 - Elevation 105 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	333.20	70.34	-70.34	-333.20	-37233.57	7386.16	718.70

Ericsson RRUS-11 - Elevation 105 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	192.37	121.84	-105.68	-201.70	-20054.93	9149.75	1244.82
30	0.00	140.69	70.34	-121.84	-11669.34	-9332.73	1437.40
60	192.37	121.84	227.52	-9.33	144.16	-25836.10	1244.82
90	333.20	70.34	323.73	105.68	12220.18	-35938.29	718.70
120	384.74	0.00	333.20	192.37	21322.95	-36932.43	0.00
150	333.20	70.34	253.39	227.52	25013.38	-28552.13	-718.70
180	192.37	121.84	105.68	201.70	22302.64	-13042.90	-1244.82
210	0.00	140.69	-70.34	121.84	13917.06	5439.58	-1437.40
240	192.37	121.84	-227.52	9.33	2103.55	21942.95	-1244.82
270	333.20	70.34	-323.73	-105.68	-9972.47	32045.14	-718.70
300	384.74	0.00	-333.20	-192.37	-19075.23	33039.28	0.00
330	333.20	70.34	-253.39	-227.52	-22765.67	24658.98	718.70

Ericsson RRUS-11 - Elevation 105 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	192.37	121.84	105.68	-201.70	-20054.93	-9149.75	-1244.82
30	333.20	70.34	253.39	-227.52	-22765.67	-24658.98	-718.70
60	384.74	0.00	333.20	-192.37	-19075.23	-33039.28	0.00
90	333.20	70.34	323.73	-105.68	-9972.47	-32045.14	718.70
120	192.37	121.84	227.52	9.33	2103.55	-21942.95	1244.82
150	0.00	140.69	70.34	121.84	13917.06	-5439.58	1437.40
180	192.37	121.84	-105.68	201.70	22302.64	13042.90	1244.82
210	333.20	70.34	-253.39	227.52	25013.38	28552.13	718.70
240	384.74	0.00	-333.20	192.37	21322.95	36932.43	0.00
270	333.20	70.34	-323.73	105.68	12220.18	35938.29	-718.70
300	192.37	121.84	-227.52	-9.33	144.16	25836.10	-1244.82
330	0.00	140.69	-70.34	-121.84	-11669.34	9332.73	-1437.40

Raycap RDC-3315-PF-48 J-box - Elevation 105 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	86.62	0.00	0.00	-86.62	-9401.62	0.00	0.00
30	75.02	28.28	28.28	-75.02	-8183.10	-2968.95	-288.89
60	43.31	48.97	48.97	-43.31	-4854.06	-5142.37	-500.37
90	0.00	56.55	56.55	0.00	-306.51	-5937.89	-577.78
120	43.31	48.97	48.97	43.31	4241.05	-5142.37	-500.37
150	75.02	28.28	28.28	75.02	7570.09	-2968.95	-288.89
180	86.62	0.00	0.00	86.62	8788.61	0.00	0.00
210	75.02	28.28	-28.28	75.02	7570.09	2968.95	288.89
240	43.31	48.97	-48.97	43.31	4241.05	5142.37	500.37
270	0.00	56.55	-56.55	0.00	-306.51	5937.89	577.78
300	43.31	48.97	-48.97	-43.31	-4854.06	5142.37	500.37
330	75.02	28.28	-28.28	-75.02	-8183.10	2968.95	288.89

Raycap RDC-3315-PF-48 J-box - Elevation 105 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	43.31	48.97	-13.02	-64.07	-6573.94	1101.67	500.37
30	0.00	56.55	28.28	-48.97	-4989.11	-3234.39	577.78
60	43.31	48.97	62.00	-20.76	-2026.39	-6774.92	500.37
90	75.02	28.28	79.10	13.02	1520.37	-8571.25	288.89
120	86.62	0.00	75.02	43.31	4700.81	-8142.04	0.00
150	75.02	28.28	50.83	62.00	6662.74	-5602.30	-288.89
180	43.31	48.97	13.02	64.07	6880.45	-1632.56	-500.37
210	0.00	56.55	-28.28	48.97	5295.62	2703.50	-577.78
240	43.31	48.97	-62.00	20.76	2332.89	6244.04	-500.37
270	75.02	28.28	-79.10	-13.02	-1213.86	8040.37	-288.89
300	86.62	0.00	-75.02	-43.31	-4394.30	7611.16	0.00
330	75.02	28.28	-50.83	-62.00	-6356.23	5071.42	288.89

Raycap RDC-3315-PF-48 J-box - Elevation 105 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	43.31	48.97	13.02	-64.07	-6573.94	-1101.67	-500.37
30	75.02	28.28	50.83	-62.00	-6356.23	-5071.42	-288.89
60	86.62	0.00	75.02	-43.31	-4394.30	-7611.16	0.00
90	75.02	28.28	79.10	-13.02	-1213.86	-8040.37	288.89
120	43.31	48.97	62.00	20.76	2332.89	-6244.04	500.37
150	0.00	56.55	28.28	48.97	5295.62	-2703.50	577.78
180	43.31	48.97	-13.02	64.07	6880.45	1632.56	500.37
210	75.02	28.28	-50.83	62.00	6662.74	5602.30	288.89
240	86.62	0.00	-75.02	43.31	4700.81	8142.04	0.00
270	75.02	28.28	-79.10	13.02	1520.37	8571.25	-288.89
300	43.31	48.97	-62.00	-20.76	-2026.39	6774.92	-500.37
330	0.00	56.55	-28.28	-48.97	-4989.11	3234.39	-577.78

14' sector mount - Elevation 105 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	372.41	0.00	0.00	-372.41	-39103.19	0.00	0.00
30	372.41	0.00	186.21	-322.52	-33864.36	-19551.60	0.00
60	372.41	0.00	322.52	-186.21	-19551.60	-33864.36	0.00
90	372.41	0.00	372.41	0.00	0.00	-39103.19	0.00
120	372.41	0.00	322.52	186.21	19551.60	-33864.36	0.00
150	372.41	0.00	186.21	322.52	33864.36	-19551.60	0.00
180	372.41	0.00	0.00	372.41	39103.19	0.00	0.00
210	372.41	0.00	-186.21	322.52	33864.36	19551.60	0.00
240	372.41	0.00	-322.52	186.21	19551.60	33864.36	0.00
270	372.41	0.00	-372.41	0.00	0.00	39103.19	0.00
300	372.41	0.00	-322.52	-186.21	-19551.60	33864.36	0.00
330	372.41	0.00	-186.21	-322.52	-33864.36	19551.60	0.00

14' sector mount - Elevation 105 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	372.41	0.00	0.00	-372.41	-39103.19	0.00	0.00
30	372.41	0.00	186.21	-322.52	-33864.36	-19551.60	0.00

14' sector mount - Elevation 105 - None B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	372.41	0.00	322.52	-186.21	-19551.60	-33864.36	0.00
90	372.41	0.00	372.41	0.00	0.00	-39103.19	0.00
120	372.41	0.00	322.52	186.21	19551.60	-33864.36	0.00
150	372.41	0.00	186.21	322.52	33864.36	-19551.60	0.00
180	372.41	0.00	0.00	372.41	39103.19	0.00	0.00
210	372.41	0.00	-186.21	322.52	33864.36	19551.60	0.00
240	372.41	0.00	-322.52	186.21	19551.60	33864.36	0.00
270	372.41	0.00	-372.41	0.00	0.00	39103.19	0.00
300	372.41	0.00	-322.52	-186.21	-19551.60	33864.36	0.00
330	372.41	0.00	-186.21	-322.52	-33864.36	19551.60	0.00

14' sector mount - Elevation 105 - None C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	372.41	0.00	0.00	-372.41	-39103.19	0.00	0.00
30	372.41	0.00	186.21	-322.52	-33864.36	-19551.60	0.00
60	372.41	0.00	322.52	-186.21	-19551.60	-33864.36	0.00
90	372.41	0.00	372.41	0.00	0.00	-39103.19	0.00
120	372.41	0.00	322.52	186.21	19551.60	-33864.36	0.00
150	372.41	0.00	186.21	322.52	33864.36	-19551.60	0.00
180	372.41	0.00	0.00	372.41	39103.19	0.00	0.00
210	372.41	0.00	-186.21	322.52	33864.36	19551.60	0.00
240	372.41	0.00	-322.52	186.21	19551.60	33864.36	0.00
270	372.41	0.00	-372.41	0.00	0.00	39103.19	0.00
300	372.41	0.00	-322.52	-186.21	-19551.60	33864.36	0.00
330	372.41	0.00	-186.21	-322.52	-33864.36	19551.60	0.00

Discrete Appurtenance Totals - No Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	-23411.03	-2901914.17	971.39	-4408.19
30	11656.99	-20274.54	-2513398.62	-1441564.09	-6000.20
60	20190.50	-11705.51	-1451954.40	-2497573.34	-5984.46
90	23313.98	0.00	-1994.62	-2884099.56	-4365.19
120	20190.50	11705.51	1447965.15	-2497573.34	-1576.27
150	11656.99	20274.54	2509409.37	-1441564.09	1635.01
180	0.00	23411.03	2897924.92	971.39	4408.19
210	-11656.99	20274.54	2509409.37	1443506.86	6000.20
240	-20190.50	11705.51	1447965.15	2499516.12	5984.46
270	-23313.98	0.00	-1994.62	2886042.34	4365.19
300	-20190.50	-11705.51	-1451954.40	2499516.12	1576.27
330	-11656.99	-20274.54	-2513398.62	1443506.86	-1635.01

Discrete Appurtenance Pressures - With Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ 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
Generic Lightning Rod 4' copper	120.0000	0.00	2.50	1.44	190.00	1.449	8	2.56	2.56	2.0550
18'x2 3/8" Pipe Mount	120.0000	329.22	2.55	1.47	188.00	1.446	8	13.17	13.17	2.0528
Kreco CO-41AN	240.0000	135.59	-3.03	1.75	183.00	1.437	8	7.44	7.44	2.0473
4' x 2" omni whip	120.0000	64.79	7.85	4.53	179.00	1.431	8	1.84	1.84	2.0428
6' sidearm	0.0000	279.05	0.00	0.00	177.00	1.427	8	12.33	6.17	2.0405
db Spectra DS9A09F36D-N	0.0000	305.99	0.00	-3.06	187.00	1.444	8	13.85	13.85	2.0517
Bird Technologies 430-496-09168 TTA	0.0000	126.67	0.00	0.00	177.00	1.427	8	3.55	1.84	2.0405
8'x4 1/2" Pipe Mount	0.0000	225.23	0.00	0.00	176.00	1.426	8	5.39	5.39	2.0393
8'x4 1/2" Pipe Mount	0.0000	225.23	0.00	0.00	176.00	1.426	8	5.39	5.39	2.0393
Sinclair SC351D-HF2LDF	180.0000	519.96	0.00	1.53	189.00	1.447	8	21.52	21.52	2.0539
8'x4 1/2" Pipe Mount	0.0000	223.59	0.00	0.00	164.00	1.405	8	5.37	5.37	2.0250
Sinclair SC351D-HF2LDF	300.0000	512.10	-6.75	-3.89	168.00	1.412	8	21.42	21.42	2.0299
SD212 2-bay dipole	300.0000	173.13	-6.87	-3.97	163.00	1.403	8	6.57	6.57	2.0237
Comprod 531-7071D	300.0000	218.25	-6.84	-3.95	164.42	1.405	8	10.37	10.37	2.0255
3' Yagi	300.0000	185.49	-7.12	-4.11	153.00	1.384	8	9.09	9.09	2.0110
8'x4 1/2" Pipe Mount	0.0000	221.98	0.00	-10.45	153.00	1.384	8	5.36	5.36	2.0110
6' sidearm	0.0000	276.10	0.00	-7.45	153.00	1.384	8	12.21	6.11	2.0110
TPA65R-BU8DA-K	300.0000	529.01	-6.11	-3.53	124.00	1.324	7	20.62	10.58	1.9692
TPA65R-BU8DA-K	60.0000	529.01	6.11	-3.53	124.00	1.324	7	20.62	10.58	1.9692
TPA65R-BU8DA-K	180.0000	529.01	0.00	7.06	124.00	1.324	7	20.62	10.58	1.9692
HPA-65R-BU8A	300.0000	363.39	-6.11	-3.53	124.00	1.324	7	13.68	10.26	1.9692
HPA-65R-BU8A	60.0000	363.39	6.11	-3.53	124.00	1.324	7	13.68	10.26	1.9692
HPA-65R-BU8A	180.0000	363.39	0.00	7.06	124.00	1.324	7	13.68	10.26	1.9692
DMP65R-BU8DA-K	300.0000	536.34	-6.11	-3.53	124.00	1.324	7	20.40	10.50	1.9692
DMP65R-BU8DA-K	60.0000	536.34	6.11	-3.53	124.00	1.324	7	20.40	10.50	1.9692
DMP65R-BU8DA-K	180.0000	536.34	0.00	7.06	124.00	1.324	7	20.40	10.50	1.9692
Radio 4478	300.0000	144.03	-5.68	-3.28	124.00	1.324	7	2.57	1.65	1.9692
Radio 4478	60.0000	144.03	5.68	-3.28	124.00	1.324	7	2.57	1.65	1.9692
Radio 4478	180.0000	144.03	0.00	6.56	124.00	1.324	7	2.57	1.65	1.9692
Ericsson RRUS-E2	300.0000	170.92	-5.68	-3.28	124.00	1.324	7	4.05	1.94	1.9692
Ericsson RRUS-E2	60.0000	170.92	5.68	-3.28	124.00	1.324	7	4.05	1.94	1.9692
Ericsson RRUS-E2	180.0000	170.92	0.00	6.56	124.00	1.324	7	4.05	1.94	1.9692
Radio 4415	300.0000	120.89	-5.68	-3.28	124.00	1.324	7	2.55	1.36	1.9692
Radio 4415	60.0000	120.89	5.68	-3.28	124.00	1.324	7	2.55	1.36	1.9692
Radio 4415	180.0000	120.89	0.00	6.56	124.00	1.324	7	2.55	1.36	1.9692
Radio 4449	300.0000	131.96	-5.68	-3.28	124.00	1.324	7	2.32	1.47	1.9692
Radio 4449	60.0000	131.96	5.68	-3.28	124.00	1.324	7	2.32	1.47	1.9692
Radio 4449	180.0000	131.96	0.00	6.56	124.00	1.324	7	2.32	1.47	1.9692
Radio 8843	300.0000	157.75	-5.68	-3.28	124.00	1.324	7	2.31	1.98	1.9692
Radio 8843	60.0000	157.75	5.68	-3.28	124.00	1.324	7	2.31	1.98	1.9692
Radio 8843	180.0000	157.75	0.00	6.56	124.00	1.324	7	2.31	1.98	1.9692
DC9-48-60-24-8C-EV	0.0000	130.22	0.00	0.00	124.00	1.324	7	2.44	2.44	1.9692
DC9-48-60-24-8C-EV	0.0000	130.22	0.00	0.00	124.00	1.324	7	2.44	2.44	1.9692
SitePro VFA12-WLL-30120	0.0000	1240.75	0.00	0.00	124.00	1.324	7	38.01	30.45	1.9692
SitePro VFA12-WLL-30120	0.0000	1240.75	0.00	0.00	124.00	1.324	7	38.01	30.45	1.9692
SitePro VFA12-WLL-30120	0.0000	1240.75	0.00	0.00	124.00	1.324	7	38.01	30.45	1.9692
6' x 18" x 6" panel	300.0000	387.63	-8.84	1.82	135.00	1.348	7	13.38	6.52	1.9860
6' x 18" x 6" panel	60.0000	387.63	2.84	-8.57	135.00	1.348	7	13.38	6.52	1.9860
6' x 18" x 6" panel	180.0000	387.63	6.00	6.74	135.00	1.348	7	13.38	6.52	1.9860
1900 MHz RRH	300.0000	290.50	-8.41	2.07	135.00	1.348	7	4.20	3.34	1.9860
1900 MHz RRH	60.0000	290.50	2.41	-8.32	135.00	1.348	7	4.20	3.34	1.9860
1900 MHz RRH	180.0000	290.50	6.00	6.24	135.00	1.348	7	4.20	3.34	1.9860
800 MHz RRH	300.0000	223.53	-6.41	-1.39	135.00	1.348	7	3.26	3.85	1.9860

Description	Aiming Azimuth °	Weight lb	$Offset_x$ 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
800 MHz RRH	60.0000	223.53	4.41	-4.85	135.00	1.348	7	3.26	3.85	1.9860
800 MHz RRH	180.0000	223.53	2.00	6.24	135.00	1.348	7	3.26	3.85	1.9860
800 MHz RRH	300.0000	223.53	-5.97	-1.14	135.00	1.348	7	3.26	3.85	1.9860
800 MHz RRH	60.0000	223.53	3.97	-4.60	135.00	1.348	7	3.26	3.85	1.9860
800 MHz RRH	180.0000	223.53	2.00	5.74	135.00	1.348	7	3.26	3.85	1.9860
14' sector mount	0.0000	1369.03	0.00	0.00	135.00	1.348	7	20.31	10.15	1.9860
14' sector mount	0.0000	1369.03	0.00	0.00	135.00	1.348	7	20.31	10.15	1.9860
14' sector mount	0.0000	1369.03	0.00	0.00	135.00	1.348	7	20.31	10.15	1.9860
8' x 1' x 6" panel	0.0000	1408.36	0.00	-10.64	115.00	1.303	7	55.56	36.51	1.9544
8' x 1' x 6" panel	120.0000	1408.36	9.21	5.32	115.00	1.303	7	55.56	36.51	1.9544
8' x 1' x 6" panel	240.0000	1408.36	-9.21	5.32	115.00	1.303	7	55.56	36.51	1.9544
Ericsson RRUS-11	0.0000	619.34	0.00	-9.64	115.00	1.303	7	14.57	6.41	1.9544
Ericsson RRUS-11	120.0000	619.34	8.35	4.82	115.00	1.303	7	14.57	6.41	1.9544
Ericsson RRUS-11	240.0000	619.34	-8.35	4.82	115.00	1.303	7	14.57	6.41	1.9544
Raycap RDC-3315-PF-48 J-box	0.0000	138.10	0.00	-9.64	115.00	1.303	7	3.33	2.34	1.9544
Raycap RDC-3315-PF-48 J-box	120.0000	138.10	8.35	4.82	115.00	1.303	7	3.33	2.34	1.9544
Raycap RDC-3315-PF-48 J-box	240.0000	138.10	-8.35	4.82	115.00	1.303	7	3.33	2.34	1.9544
14' sector mount	0.0000	1355.61	0.00	0.00	115.00	1.303	7	20.10	10.05	1.9544
14' sector mount	0.0000	1355.61	0.00	0.00	115.00	1.303	7	20.10	10.05	1.9544
14' sector mount	0.0000	1355.61	0.00	0.00	115.00	1.303	7	20.10	10.05	1.9544
8' x 1' x 6" panel	0.0000	1396.83	0.00	-11.22	105.00	1.279	7	55.48	36.42	1.9367
8' x 1' x 6" panel	120.0000	1396.83	9.71	5.61	105.00	1.279	7	55.48	36.42	1.9367
8' x 1' x 6" panel	240.0000	1396.83	-9.71	5.61	105.00	1.279	7	55.48	36.42	1.9367
Ericsson RRUS-11	0.0000	615.25	0.00	-10.22	105.00	1.279	7	14.54	6.39	1.9367
Ericsson RRUS-11	120.0000	615.25	8.85	5.11	105.00	1.279	7	14.54	6.39	1.9367
Ericsson RRUS-11	240.0000	615.25	-8.85	5.11	105.00	1.279	7	14.54	6.39	1.9367
Raycap RDC-3315-PF-48 J-box	0.0000	137.00	0.00	-10.22	105.00	1.279	7	3.32	2.33	1.9367
Raycap RDC-3315-PF-48 J-box	120.0000	137.00	8.85	5.11	105.00	1.279	7	3.32	2.33	1.9367
Raycap RDC-3315-PF-48 J-box	240.0000	137.00	-8.85	5.11	105.00	1.279	7	3.32	2.33	1.9367
14' sector mount	0.0000	1348.09	0.00	0.00	105.00	1.279	7	19.99	9.99	1.9367
14' sector mount	0.0000	1348.09	0.00	0.00	105.00	1.279	7	19.99	9.99	1.9367
14' sector mount	0.0000	1348.09	0.00	0.00	105.00	1.279	7	19.99	9.99	1.9367
	Sum Weight:	43006.30								

Discrete Appurtenance Vectors - With Ice

Generic Lightning Rod 4' copper - Elevation 190 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	8.56	14.82	0.00	-17.12	-3252.00	0.00	42.79
30	0.00	17.12	8.56	-14.82	-2816.32	-1626.00	49.41
60	8.56	14.82	14.82	-8.56	-1626.00	-2816.32	42.79
90	14.82	8.56	17.12	0.00	0.00	-3252.00	24.70
120	17.12	0.00	14.82	8.56	1626.00	-2816.32	0.00
150	14.82	8.56	8.56	14.82	2816.32	-1626.00	-24.70
180	8.56	14.82	0.00	17.12	3252.00	0.00	-42.79
210	0.00	17.12	-8.56	14.82	2816.32	1626.00	-49.41
240	8.56	14.82	-14.82	8.56	1626.00	2816.32	-42.79
270	14.82	8.56	-17.12	0.00	0.00	3252.00	-24.70
300	17.12	0.00	-14.82	-8.56	-1626.00	2816.32	0.00

Generic Lightning Rod 4' copper - Elevation 190 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	14.82	8.56	-8.56	-14.82	-2816.32	1626.00	24.70

18'x2 3/8" Pipe Mount - Elevation 188 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	44.03	76.26	0.00	-88.06	-16070.95	-839.52	224.56
30	0.00	88.06	44.03	-76.26	-13852.92	-9117.34	259.30
60	44.03	76.26	76.26	-44.03	-7793.13	-15177.13	224.56
90	76.26	44.03	88.06	0.00	484.69	-17395.16	129.65
120	88.06	0.00	76.26	44.03	8762.52	-15177.13	0.00
150	76.26	44.03	44.03	76.26	14822.31	-9117.34	-129.65
180	44.03	76.26	0.00	88.06	17040.34	-839.52	-224.56
210	0.00	88.06	-44.03	76.26	14822.31	7438.31	-259.30
240	44.03	76.26	-76.26	44.03	8762.52	13498.10	-224.56
270	76.26	44.03	-88.06	0.00	484.69	15716.13	-129.65
300	88.06	0.00	-76.26	-44.03	-7793.13	13498.10	0.00
330	76.26	44.03	-44.03	-76.26	-13852.92	7438.31	129.65

Kreco CO-41AN - Elevation 183 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	24.72	42.82	0.00	-49.45	-8811.28	411.24	-149.97
30	42.82	24.72	24.72	-42.82	-7598.99	-4113.12	-86.59
60	49.45	0.00	42.82	-24.72	-4286.93	-7425.18	0.00
90	42.82	24.72	49.45	0.00	237.43	-8637.47	86.59
120	24.72	42.82	42.82	24.72	4761.78	-7425.18	149.97
150	0.00	49.45	24.72	42.82	8073.84	-4113.12	173.17
180	24.72	42.82	0.00	49.45	9286.14	411.24	149.97
210	42.82	24.72	-24.72	42.82	8073.84	4935.59	86.59
240	49.45	0.00	-42.82	24.72	4761.78	8247.65	0.00
270	42.82	24.72	-49.45	0.00	237.43	9459.94	-86.59
300	24.72	42.82	-42.82	-24.72	-4286.93	8247.65	-149.97
330	0.00	49.45	-24.72	-42.82	-7598.99	4935.59	-173.17

4' x 2" omni whip - Elevation 179 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	6.08	10.53	0.00	-12.16	-1883.85	-508.36	95.44
30	0.00	12.16	6.08	-10.53	-1592.14	-1597.03	110.21
60	6.08	10.53	10.53	-6.08	-795.18	-2394.00	95.44
90	10.53	6.08	12.16	0.00	293.50	-2685.71	55.10
120	12.16	0.00	10.53	6.08	1382.18	-2394.00	0.00
150	10.53	6.08	6.08	10.53	2179.14	-1597.03	-55.10
180	6.08	10.53	0.00	12.16	2470.85	-508.36	-95.44
210	0.00	12.16	-6.08	10.53	2179.14	580.32	-110.21
240	6.08	10.53	-10.53	6.08	1382.18	1377.29	-95.44
270	10.53	6.08	-12.16	0.00	293.50	1669.00	-55.10
300	12.16	0.00	-10.53	-6.08	-795.18	1377.29	0.00
330	10.53	6.08	-6.08	-10.53	-1592.14	580.32	55.10

6' sidearm - Elevation 177 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	81.39	0.00	0.00	-81.39	-14405.60	0.00	0.00
30	81.39	0.00	40.69	-70.48	-12475.62	-7202.80	0.00
60	81.39	0.00	70.48	-40.69	-7202.80	-12475.62	0.00
90	81.39	0.00	81.39	0.00	0.00	-14405.60	0.00
120	81.39	0.00	70.48	40.69	7202.80	-12475.62	0.00
150	81.39	0.00	40.69	70.48	12475.62	-7202.80	0.00
180	81.39	0.00	0.00	81.39	14405.60	0.00	0.00
210	81.39	0.00	-40.69	70.48	12475.62	7202.80	0.00
240	81.39	0.00	-70.48	40.69	7202.80	12475.62	0.00
270	81.39	0.00	-81.39	0.00	0.00	14405.60	0.00
300	81.39	0.00	-70.48	-40.69	-7202.80	12475.62	0.00
330	81.39	0.00	-40.69	-70.48	-12475.62	7202.80	0.00

db Spectra DS9A09F36D-N - Elevation 187 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	92.47	0.00	0.00	-92.47	-18228.32	0.00	0.00
30	80.08	46.24	46.24	-80.08	-15911.64	-8646.00	-141.48
60	46.24	80.08	80.08	-46.24	-9582.32	-14975.31	-245.05
90	0.00	92.47	92.47	0.00	-936.32	-17292.00	-282.96
120	46.24	80.08	80.08	46.24	7709.68	-14975.31	-245.05
150	80.08	46.24	46.24	80.08	14038.99	-8646.00	-141.48
180	92.47	0.00	0.00	92.47	16355.68	0.00	0.00
210	80.08	46.24	-46.24	80.08	14038.99	8646.00	141.48
240	46.24	80.08	-80.08	46.24	7709.68	14975.31	245.05
270	0.00	92.47	-92.47	0.00	-936.32	17292.00	282.96
300	46.24	80.08	-80.08	-46.24	-9582.32	14975.31	245.05
330	80.08	46.24	-46.24	-80.08	-15911.64	8646.00	141.48

Bird Technologies 430-496-09168 TTA - Elevation 177 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	23.40	0.00	0.00	-23.40	-4141.94	0.00	0.00
30	23.40	0.00	11.70	-20.27	-3587.02	-2070.97	0.00
60	23.40	0.00	20.27	-11.70	-2070.97	-3587.02	0.00
90	23.40	0.00	23.40	0.00	0.00	-4141.94	0.00
120	23.40	0.00	20.27	11.70	2070.97	-3587.02	0.00
150	23.40	0.00	11.70	20.27	3587.02	-2070.97	0.00
180	23.40	0.00	0.00	23.40	4141.94	0.00	0.00
210	23.40	0.00	-11.70	20.27	3587.02	2070.97	0.00
240	23.40	0.00	-20.27	11.70	2070.97	3587.02	0.00
270	23.40	0.00	-23.40	0.00	0.00	4141.94	0.00
300	23.40	0.00	-20.27	-11.70	-2070.97	3587.02	0.00
330	23.40	0.00	-11.70	-20.27	-3587.02	2070.97	0.00

8'x4 1/2" Pipe Mount - Elevation 176 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	23.80	0.00	0.00	-23.80	-4189.17	0.00	0.00
30	23.80	0.00	11.90	-20.61	-3627.93	-2094.59	0.00

8'x4 1/2" Pipe Mount - Elevation 176 - None A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	23.80	0.00	20.61	-11.90	-2094.59	-3627.93	0.00
90	23.80	0.00	23.80	0.00	0.00	-4189.17	0.00
120	23.80	0.00	20.61	11.90	2094.59	-3627.93	0.00
150	23.80	0.00	11.90	20.61	3627.93	-2094.59	0.00
180	23.80	0.00	0.00	23.80	4189.17	0.00	0.00
210	23.80	0.00	-11.90	20.61	3627.93	2094.59	0.00
240	23.80	0.00	-20.61	11.90	2094.59	3627.93	0.00
270	23.80	0.00	-23.80	0.00	0.00	4189.17	0.00
300	23.80	0.00	-20.61	-11.90	-2094.59	3627.93	0.00
330	23.80	0.00	-11.90	-20.61	-3627.93	2094.59	0.00

8'x4 1/2" Pipe Mount - Elevation 176 - None C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	23.80	0.00	0.00	-23.80	-4189.17	0.00	0.00
30	23.80	0.00	11.90	-20.61	-3627.93	-2094.59	0.00
60	23.80	0.00	20.61	-11.90	-2094.59	-3627.93	0.00
90	23.80	0.00	23.80	0.00	0.00	-4189.17	0.00
120	23.80	0.00	20.61	11.90	2094.59	-3627.93	0.00
150	23.80	0.00	11.90	20.61	3627.93	-2094.59	0.00
180	23.80	0.00	0.00	23.80	4189.17	0.00	0.00
210	23.80	0.00	-11.90	20.61	3627.93	2094.59	0.00
240	23.80	0.00	-20.61	11.90	2094.59	3627.93	0.00
270	23.80	0.00	-23.80	0.00	0.00	4189.17	0.00
300	23.80	0.00	-20.61	-11.90	-2094.59	3627.93	0.00
330	23.80	0.00	-11.90	-20.61	-3627.93	2094.59	0.00

Sinclair SC351D-HF2LDF - Elevation 189 - From Face C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	144.02	0.00	0.00	-144.02	-26423.92	0.00	0.00
30	124.72	72.01	72.01	-124.72	-22777.21	-13609.72	110.17
60	72.01	124.72	124.72	-72.01	-12814.20	-23572.73	190.82
90	0.00	144.02	144.02	0.00	795.53	-27219.45	220.34
120	72.01	124.72	124.72	72.01	14405.25	-23572.73	190.82
150	124.72	72.01	72.01	124.72	24368.26	-13609.72	110.17
180	144.02	0.00	0.00	144.02	28014.97	0.00	0.00
210	124.72	72.01	-72.01	124.72	24368.26	13609.72	-110.17
240	72.01	124.72	-124.72	72.01	14405.25	23572.73	-190.82
270	0.00	144.02	-144.02	0.00	795.53	27219.45	-220.34
300	72.01	124.72	-124.72	-72.01	-12814.20	23572.73	-190.82
330	124.72	72.01	-72.01	-124.72	-22777.21	13609.72	-110.17

8'x4 1/2" Pipe Mount - Elevation 164 - None A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	34.90	0.00	0.00	-34.90	-5723.86	0.00	0.00
30	34.90	0.00	17.45	-30.23	-4957.01	-2861.93	0.00
60	34.90	0.00	30.23	-17.45	-2861.93	-4957.01	0.00
90	34.90	0.00	34.90	0.00	0.00	-5723.86	0.00
120	34.90	0.00	30.23	17.45	2861.93	-4957.01	0.00

8'x4 1/2" Pipe Mount - Elevation 164 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	34.90	0.00	17.45	30.23	4957.01	-2861.93	0.00
180	34.90	0.00	0.00	34.90	5723.86	0.00	0.00
210	34.90	0.00	-17.45	30.23	4957.01	2861.93	0.00
240	34.90	0.00	-30.23	17.45	2861.93	4957.01	0.00
270	34.90	0.00	-34.90	0.00	0.00	5723.86	0.00
300	34.90	0.00	-30.23	-17.45	-2861.93	4957.01	0.00
330	34.90	0.00	-17.45	-30.23	-4957.01	2861.93	0.00

Sinclair SC351D-HF2LDF - Elevation 156.00-180.00 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	69.92	121.11	0.00	-139.84	-25488.21	3454.73	-943.40
30	0.00	139.84	69.92	-121.11	-22340.66	-8292.08	-1089.35
60	69.92	121.11	121.11	-69.92	-13741.40	-16891.35	-943.40
90	121.11	69.92	139.84	0.00	-1994.59	-20038.90	-544.67
120	139.84	0.00	121.11	69.92	9752.22	-16891.35	0.00
150	121.11	69.92	69.92	121.11	18351.49	-8292.08	544.67
180	69.92	121.11	0.00	139.84	21499.04	3454.73	943.40
210	0.00	139.84	-69.92	121.11	18351.49	15201.54	1089.35
240	69.92	121.11	-121.11	69.92	9752.22	23800.80	943.40
270	121.11	69.92	-139.84	0.00	-1994.59	26948.35	544.67
300	139.84	0.00	-121.11	-69.92	-13741.40	23800.80	0.00
330	121.11	69.92	-69.92	-121.11	-22340.66	15201.54	-544.67

SD212 2-bay dipole - Elevation 158.00-168.00 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	21.29	36.88	0.00	-42.59	-7628.23	1189.57	-292.61
30	0.00	42.59	21.29	-36.88	-6698.25	-2281.14	-337.88
60	21.29	36.88	36.88	-21.29	-4157.51	-4821.88	-292.61
90	36.88	21.29	42.59	0.00	-686.80	-5751.86	-168.94
120	42.59	0.00	36.88	21.29	2783.92	-4821.88	0.00
150	36.88	21.29	21.29	36.88	5324.66	-2281.14	168.94
180	21.29	36.88	0.00	42.59	6254.63	1189.57	292.61
210	0.00	42.59	-21.29	36.88	5324.66	4660.28	337.88
240	21.29	36.88	-36.88	21.29	2783.92	7201.02	292.61
270	36.88	21.29	-42.59	0.00	-686.80	8131.00	168.94
300	42.59	0.00	-36.88	-21.29	-4157.51	7201.02	0.00
330	36.88	21.29	-21.29	-36.88	-6698.25	4660.28	-168.94

Comprod 531-7071D - Elevation 158.00-170.83 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	33.70	58.36	0.00	-67.39	-11941.85	1491.94	-460.69
30	0.00	67.39	33.70	-58.36	-10457.35	-4048.30	-531.95
60	33.70	58.36	58.36	-33.70	-6401.61	-8104.04	-460.69
90	58.36	33.70	67.39	0.00	-861.37	-9588.54	-265.98
120	67.39	0.00	58.36	33.70	4678.87	-8104.04	0.00
150	58.36	33.70	33.70	58.36	8734.61	-4048.30	265.98
180	33.70	58.36	0.00	67.39	10219.11	1491.94	460.69
210	0.00	67.39	-33.70	58.36	8734.61	7032.18	531.95

Comprod 531-7071D - Elevation 158.00-170.83 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	33.70	58.36	-58.36	33.70	4678.87	11087.91	460.69
270	58.36	33.70	-67.39	0.00	-861.37	12572.42	265.98
300	67.39	0.00	-58.36	-33.70	-6401.61	11087.91	0.00
330	58.36	33.70	-33.70	-58.36	-10457.35	7032.18	-265.98

3' Yagi - Elevation 153 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	29.09	50.38	0.00	-58.18	-9663.48	1320.92	-414.28
30	0.00	58.18	29.09	-50.38	-8470.99	-3129.50	-478.37
60	29.09	50.38	50.38	-29.09	-5213.06	-6387.44	-414.28
90	50.38	29.09	58.18	0.00	-762.64	-7579.92	-239.18
120	58.18	0.00	50.38	29.09	3687.79	-6387.44	0.00
150	50.38	29.09	29.09	50.38	6945.72	-3129.50	239.18
180	29.09	50.38	0.00	58.18	8138.21	1320.92	414.28
210	0.00	58.18	-29.09	50.38	6945.72	5771.35	478.37
240	29.09	50.38	-50.38	29.09	3687.79	9029.28	414.28
270	50.38	29.09	-58.18	0.00	-762.64	10221.77	239.18
300	58.18	0.00	-50.38	-29.09	-5213.06	9029.28	0.00
330	50.38	29.09	-29.09	-50.38	-8470.99	5771.35	-239.18

8'x4 1/2" Pipe Mount - Elevation 153 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	34.30	0.00	0.00	-34.30	-7566.45	0.00	0.00
30	29.70	17.15	17.15	-29.70	-6863.39	-2623.89	-179.14
60	17.15	29.70	29.70	-17.15	-4942.57	-4544.71	-310.28
90	0.00	34.30	34.30	0.00	-2318.68	-5247.78	-358.28
120	17.15	29.70	29.70	17.15	305.21	-4544.71	-310.28
150	29.70	17.15	17.15	29.70	2226.03	-2623.89	-179.14
180	34.30	0.00	0.00	34.30	2929.10	0.00	0.00
210	29.70	17.15	-17.15	29.70	2226.03	2623.89	179.14
240	17.15	29.70	-29.70	17.15	305.21	4544.71	310.28
270	0.00	34.30	-34.30	0.00	-2318.68	5247.78	358.28
300	17.15	29.70	-29.70	-17.15	-4942.57	4544.71	310.28
330	29.70	17.15	-17.15	-29.70	-6863.39	2623.89	179.14

6' sidearm - Elevation 153 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	78.17	0.00	0.00	-78.17	-14016.20	0.00	0.00
30	67.70	19.56	19.56	-67.70	-12413.80	-2992.57	-145.63
60	39.09	33.88	33.88	-39.09	-8035.96	-5183.29	-252.24
90	0.00	39.12	39.12	0.00	-2055.71	-5985.14	-291.26
120	39.09	33.88	33.88	39.09	3924.53	-5183.29	-252.24
150	67.70	19.56	19.56	67.70	8302.38	-2992.57	-145.63
180	78.17	0.00	0.00	78.17	9904.78	0.00	0.00
210	67.70	19.56	-19.56	67.70	8302.38	2992.57	145.63
240	39.09	33.88	-33.88	39.09	3924.53	5183.29	252.24
270	0.00	39.12	-39.12	0.00	-2055.71	5985.14	291.26
300	39.09	33.88	-33.88	-39.09	-8035.96	5183.29	252.24

6' sidearm - Elevation 153 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	67.70	19.56	-19.56	-67.70	-12413.80	2992.57	145.63

TPA65R-BU8DA-K - Elevation 124 - From Face A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	50.51	44.90	-21.30	-64.14	-9820.21	5875.07	-316.96
30	0.00	51.84	25.92	-44.90	-7434.41	20.31	-365.99
60	50.51	44.90	66.19	-13.63	-3556.94	-4973.24	-316.96
90	87.49	25.92	88.73	21.30	773.25	-7767.54	-183.00
120	101.02	0.00	87.49	50.51	4395.88	-7613.88	0.00
150	87.49	25.92	62.81	66.19	6340.27	-4553.43	183.00
180	50.51	44.90	21.30	64.14	6085.42	593.78	316.96
210	0.00	51.84	-25.92	44.90	3699.62	6448.54	365.99
240	50.51	44.90	-66.19	13.63	-177.85	11442.09	316.96
270	87.49	25.92	-88.73	-21.30	-4508.04	14236.39	183.00
300	101.02	0.00	-87.49	-50.51	-8130.67	14082.73	0.00
330	87.49	25.92	-62.81	-66.19	-10075.06	11022.28	-183.00

TPA65R-BU8DA-K - Elevation 124 - From Face B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	50.51	44.90	21.30	-64.14	-9820.21	-5875.07	316.96
30	87.49	25.92	62.81	-66.19	-10075.06	-11022.28	183.00
60	101.02	0.00	87.49	-50.51	-8130.67	-14082.73	0.00
90	87.49	25.92	88.73	-21.30	-4508.04	-14236.39	-183.00
120	50.51	44.90	66.19	13.63	-177.85	-11442.09	-316.96
150	0.00	51.84	25.92	44.90	3699.62	-6448.54	-365.99
180	50.51	44.90	-21.30	64.14	6085.42	-593.78	-316.96
210	87.49	25.92	-62.81	66.19	6340.27	4553.43	-183.00
240	101.02	0.00	-87.49	50.51	4395.88	7613.88	0.00
270	87.49	25.92	-88.73	21.30	773.25	7767.54	183.00
300	50.51	44.90	-66.19	-13.63	-3556.94	4973.24	316.96
330	0.00	51.84	-25.92	-44.90	-7434.41	-20.31	365.99

TPA65R-BU8DA-K - Elevation 124 - From Face C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	101.02	0.00	0.00	-101.02	-8791.76	0.00	0.00
30	87.49	25.92	25.92	-87.49	-7113.52	-3214.12	183.00
60	50.51	44.90	44.90	-50.51	-2528.48	-5567.02	316.96
90	0.00	51.84	51.84	0.00	3734.79	-6428.24	365.99
120	50.51	44.90	44.90	50.51	9998.07	-5567.02	316.96
150	87.49	25.92	25.92	87.49	14583.10	-3214.12	183.00
180	101.02	0.00	0.00	101.02	16261.34	0.00	0.00
210	87.49	25.92	-25.92	87.49	14583.10	3214.12	-183.00
240	50.51	44.90	-44.90	50.51	9998.07	5567.02	-316.96
270	0.00	51.84	-51.84	0.00	3734.79	6428.24	-365.99
300	50.51	44.90	-44.90	-50.51	-2528.48	5567.02	-316.96
330	87.49	25.92	-25.92	-87.49	-7113.52	3214.12	-183.00

HPA-65R-BU8A - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	33.52	43.54	-7.26	-54.47	-8036.50	3121.87	-307.39
30	0.00	50.27	25.14	-43.54	-6681.65	-895.23	-354.94
60	33.52	43.54	50.80	-20.95	-3880.17	-4077.11	-307.39
90	58.06	25.14	62.85	7.26	-382.72	-5571.21	-177.47
120	67.04	0.00	58.06	33.52	2873.57	-4977.16	0.00
150	58.06	25.14	37.71	50.80	5016.16	-2454.16	177.47
180	33.52	43.54	7.26	54.47	5470.97	1321.77	307.39
210	0.00	50.27	-25.14	43.54	4116.11	5338.86	354.94
240	33.52	43.54	-50.80	20.95	1314.63	8520.75	307.39
270	58.06	25.14	-62.85	-7.26	-2182.82	10014.84	177.47
300	67.04	0.00	-58.06	-33.52	-5439.10	9420.80	0.00
330	58.06	25.14	-37.71	-50.80	-7581.70	6897.80	-177.47

HPA-65R-BU8A - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	33.52	43.54	7.26	-54.47	-8036.50	-3121.87	307.39
30	58.06	25.14	37.71	-50.80	-7581.70	-6897.80	177.47
60	67.04	0.00	58.06	-33.52	-5439.10	-9420.80	0.00
90	58.06	25.14	62.85	-7.26	-2182.82	-10014.84	-177.47
120	33.52	43.54	50.80	20.95	1314.63	-8520.75	-307.39
150	0.00	50.27	25.14	43.54	4116.11	-5338.86	-354.94
180	33.52	43.54	-7.26	54.47	5470.97	-1321.77	-307.39
210	58.06	25.14	-37.71	50.80	5016.16	2454.16	-177.47
240	67.04	0.00	-58.06	33.52	2873.57	4977.16	0.00
270	58.06	25.14	-62.85	7.26	-382.72	5571.21	177.47
300	33.52	43.54	-50.80	-20.95	-3880.17	4077.11	307.39
330	0.00	50.27	-25.14	-43.54	-6681.65	895.23	354.94

HPA-65R-BU8A - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	67.04	0.00	0.00	-67.04	-5747.13	0.00	0.00
30	58.06	25.14	25.14	-58.06	-4633.45	-3117.04	177.47
60	33.52	43.54	43.54	-33.52	-1590.80	-5398.88	307.39
90	0.00	50.27	50.27	0.00	2565.53	-6234.09	354.94
120	33.52	43.54	43.54	33.52	6721.87	-5398.88	307.39
150	58.06	25.14	25.14	58.06	9764.52	-3117.04	177.47
180	67.04	0.00	0.00	67.04	10878.20	0.00	0.00
210	58.06	25.14	-25.14	58.06	9764.52	3117.04	-177.47
240	33.52	43.54	-43.54	33.52	6721.87	5398.88	-307.39
270	0.00	50.27	-50.27	0.00	2565.53	6234.09	-354.94
300	33.52	43.54	-43.54	-33.52	-1590.80	5398.88	-307.39
330	58.06	25.14	-25.14	-58.06	-4633.45	3117.04	-177.47

DMP65R-BU8DA-K - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	49.96	44.56	-20.99	-63.57	-9775.72	5882.08	-314.57
30	0.00	51.45	25.72	-44.56	-7418.27	89.41	-363.23

DMP65R-BU8DA-K - Elevation 124 - From Face A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	49.96	44.56	65.55	-13.61	-3580.40	-4848.53	-314.57
90	86.54	25.72	87.81	20.99	709.53	-7608.64	-181.61
120	99.92	0.00	86.54	49.96	4302.04	-7451.35	0.00
150	86.54	25.72	62.08	65.55	6234.51	-4418.79	181.61
180	49.96	44.56	20.99	63.57	5989.15	676.45	314.57
210	0.00	51.45	-25.72	44.56	3631.70	6469.11	363.23
240	49.96	44.56	-65.55	13.61	-206.17	11407.06	314.57
270	86.54	25.72	-87.81	-20.99	-4496.10	14167.17	181.61
300	99.92	0.00	-86.54	-49.96	-8088.60	14009.87	0.00
330	86.54	25.72	-62.08	-65.55	-10021.08	10977.32	-181.61

DMP65R-BU8DA-K - Elevation 124 - From Face B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	49.96	44.56	20.99	-63.57	-9775.72	-5882.08	314.57
30	86.54	25.72	62.08	-65.55	-10021.08	-10977.32	181.61
60	99.92	0.00	86.54	-49.96	-8088.60	-14009.87	0.00
90	86.54	25.72	87.81	-20.99	-4496.10	-14167.17	-181.61
120	49.96	44.56	65.55	13.61	-206.17	-11407.06	-314.57
150	0.00	51.45	25.72	44.56	3631.70	-6469.11	-363.23
180	49.96	44.56	-20.99	63.57	5989.15	-676.45	-314.57
210	86.54	25.72	-62.08	65.55	6234.51	4418.79	-181.61
240	99.92	0.00	-86.54	49.96	4302.04	7451.35	0.00
270	86.54	25.72	-87.81	20.99	709.53	7608.64	181.61
300	49.96	44.56	-65.55	-13.61	-3580.40	4848.53	314.57
330	0.00	51.45	-25.72	-44.56	-7418.27	-89.41	363.23

DMP65R-BU8DA-K - Elevation 124 - From Face C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	99.92	0.00	0.00	-99.92	-8604.08	0.00	0.00
30	86.54	25.72	25.72	-86.54	-6944.05	-3189.85	181.61
60	49.96	44.56	44.56	-49.96	-2408.76	-5524.98	314.57
90	0.00	51.45	51.45	0.00	3786.57	-6379.70	363.23
120	49.96	44.56	44.56	49.96	9981.89	-5524.98	314.57
150	86.54	25.72	25.72	86.54	14517.18	-3189.85	181.61
180	99.92	0.00	0.00	99.92	16177.21	0.00	0.00
210	86.54	25.72	-25.72	86.54	14517.18	3189.85	-181.61
240	49.96	44.56	-44.56	49.96	9981.89	5524.98	-314.57
270	0.00	51.45	-51.45	0.00	3786.57	6379.70	-363.23
300	49.96	44.56	-44.56	-49.96	-2408.76	5524.98	-314.57
330	86.54	25.72	-25.72	-86.54	-6944.05	3189.85	-181.61

Radio 4478 - Elevation 124 - From Face A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	6.30	6.98	-1.96	-9.20	-1612.69	1061.37	-45.81
30	0.00	8.06	4.03	-6.98	-1338.35	318.27	-52.90
60	6.30	6.98	8.94	-2.90	-831.98	-290.87	-45.81
90	10.91	4.03	11.46	1.96	-229.26	-602.82	-26.45
120	12.59	0.00	10.91	6.30	308.31	-534.01	0.00

Radio 4478 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	10.91	4.03	7.43	8.94	636.69	-102.87	26.45
180	6.30	6.98	1.96	9.20	667.89	575.08	45.81
210	0.00	8.06	-4.03	6.98	393.55	1318.18	52.90
240	6.30	6.98	-8.94	2.90	-112.83	1927.32	45.81
270	10.91	4.03	-11.46	-1.96	-715.55	2239.27	26.45
300	12.59	0.00	-10.91	-6.30	-1253.12	2170.46	0.00
330	10.91	4.03	-7.43	-8.94	-1581.50	1739.32	-26.45

Radio 4478 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	6.30	6.98	1.96	-9.20	-1612.69	-1061.37	45.81
30	10.91	4.03	7.43	-8.94	-1581.50	-1739.32	26.45
60	12.59	0.00	10.91	-6.30	-1253.12	-2170.46	0.00
90	10.91	4.03	11.46	-1.96	-715.55	-2239.27	-26.45
120	6.30	6.98	8.94	2.90	-112.83	-1927.32	-45.81
150	0.00	8.06	4.03	6.98	393.55	-1318.18	-52.90
180	6.30	6.98	-1.96	9.20	667.89	-575.08	-45.81
210	10.91	4.03	-7.43	8.94	636.69	102.87	-26.45
240	12.59	0.00	-10.91	6.30	308.31	534.01	0.00
270	10.91	4.03	-11.46	1.96	-229.26	602.82	26.45
300	6.30	6.98	-8.94	-2.90	-831.98	290.87	45.81
330	0.00	8.06	-4.03	-6.98	-1338.35	-318.27	52.90

Radio 4478 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	12.59	0.00	0.00	-12.59	-616.62	0.00	0.00
30	10.91	4.03	4.03	-10.91	-407.43	-499.96	26.45
60	6.30	6.98	6.98	-6.30	164.09	-865.95	45.81
90	0.00	8.06	8.06	0.00	944.81	-999.91	52.90
120	6.30	6.98	6.98	6.30	1725.52	-865.95	45.81
150	10.91	4.03	4.03	10.91	2297.04	-499.96	26.45
180	12.59	0.00	0.00	12.59	2506.23	0.00	0.00
210	10.91	4.03	-4.03	10.91	2297.04	499.96	-26.45
240	6.30	6.98	-6.98	6.30	1725.52	865.95	-45.81
270	0.00	8.06	-8.06	0.00	944.81	999.91	-52.90
300	6.30	6.98	-6.98	-6.30	164.09	865.95	-45.81
330	10.91	4.03	-4.03	-10.91	-407.43	499.96	-26.45

Ericsson RRUS-E2 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	9.93	8.24	-4.48	-12.10	-2061.60	1526.20	-54.08
30	0.00	9.52	4.76	-8.24	-1582.92	380.82	-62.45
60	9.93	8.24	12.72	-2.17	-830.33	-606.42	-54.08
90	17.20	4.76	17.27	4.48	-5.46	-1170.98	-31.22
120	19.86	0.00	17.20	9.93	670.64	-1161.59	0.00
150	17.20	4.76	12.51	12.72	1016.83	-580.76	31.22
180	9.93	8.24	4.48	12.10	940.34	415.87	54.08
210	0.00	9.52	-4.76	8.24	461.67	1561.26	62.45

Ericsson RRUS-E2 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	9.93	8.24	-12.72	2.17	-290.93	2548.50	54.08
270	17.20	4.76	-17.27	-4.48	-1115.79	3113.06	31.22
300	19.86	0.00	-17.20	-9.93	-1791.90	3103.66	0.00
330	17.20	4.76	-12.51	-12.72	-2138.09	2522.83	-31.22

Ericsson RRUS-E2 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	9.93	8.24	4.48	-12.10	-2061.60	-1526.20	54.08
30	17.20	4.76	12.51	-12.72	-2138.09	-2522.83	31.22
60	19.86	0.00	17.20	-9.93	-1791.90	-3103.66	0.00
90	17.20	4.76	17.27	-4.48	-1115.79	-3113.06	-31.22
120	9.93	8.24	12.72	2.17	-290.93	-2548.50	-54.08
150	0.00	9.52	4.76	8.24	461.67	-1561.26	-62.45
180	9.93	8.24	-4.48	12.10	940.34	-415.87	-54.08
210	17.20	4.76	-12.51	12.72	1016.83	580.76	-31.22
240	19.86	0.00	-17.20	9.93	670.64	1161.59	0.00
270	17.20	4.76	-17.27	4.48	-5.46	1170.98	31.22
300	9.93	8.24	-12.72	-2.17	-830.33	606.42	54.08
330	0.00	9.52	-4.76	-8.24	-1582.92	-380.82	62.45

Ericsson RRUS-E2 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	19.86	0.00	0.00	-19.86	-1341.29	0.00	0.00
30	17.20	4.76	4.76	-17.20	-1011.37	-590.22	31.22
60	9.93	8.24	8.24	-9.93	-110.01	-1022.30	54.08
90	0.00	9.52	9.52	0.00	1121.26	-1180.45	62.45
120	9.93	8.24	8.24	9.93	2352.53	-1022.30	54.08
150	17.20	4.76	4.76	17.20	3253.88	-590.22	31.22
180	19.86	0.00	0.00	19.86	3583.80	0.00	0.00
210	17.20	4.76	-4.76	17.20	3253.88	590.22	-31.22
240	9.93	8.24	-8.24	9.93	2352.53	1022.30	-54.08
270	0.00	9.52	-9.52	0.00	1121.26	1180.45	-62.45
300	9.93	8.24	-8.24	-9.93	-110.01	1022.30	-54.08
330	17.20	4.76	-4.76	-17.20	-1011.37	590.22	-31.22

Radio 4415 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	6.26	5.77	-2.54	-8.12	-1403.68	1001.17	-37.83
30	0.00	6.66	3.33	-5.77	-1111.54	273.94	-43.68
60	6.26	5.77	8.30	-1.87	-627.80	-342.68	-37.83
90	10.84	3.33	11.05	2.54	-82.09	-683.46	-21.84
120	12.51	0.00	10.84	6.26	379.37	-657.09	0.00
150	10.84	3.33	7.72	8.30	632.94	-270.63	21.84
180	6.26	5.77	2.54	8.12	610.67	372.36	37.83
210	0.00	6.66	-3.33	5.77	318.53	1099.59	43.68
240	6.26	5.77	-8.30	1.87	-165.20	1716.21	37.83
270	10.84	3.33	-11.05	-2.54	-710.91	2056.99	21.84
300	12.51	0.00	-10.84	-6.26	-1172.38	2030.62	0.00

Radio 4415 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	10.84	3.33	-7.72	-8.30	-1425.95	1644.16	-21.84

Radio 4415 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	6.26	5.77	2.54	-8.12	-1403.68	-1001.17	37.83
30	10.84	3.33	7.72	-8.30	-1425.95	-1644.16	21.84
60	12.51	0.00	10.84	-6.26	-1172.38	-2030.62	0.00
90	10.84	3.33	11.05	-2.54	-710.91	-2056.99	-21.84
120	6.26	5.77	8.30	1.87	-165.20	-1716.21	-37.83
150	0.00	6.66	3.33	5.77	318.53	-1099.59	-43.68
180	6.26	5.77	-2.54	8.12	610.67	-372.36	-37.83
210	10.84	3.33	-7.72	8.30	632.94	270.63	-21.84
240	12.51	0.00	-10.84	6.26	379.37	657.09	0.00
270	10.84	3.33	-11.05	2.54	-82.09	683.46	21.84
300	6.26	5.77	-8.30	-1.87	-627.80	342.68	37.83
330	0.00	6.66	-3.33	-5.77	-1111.54	-273.94	43.68

Radio 4415 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	12.51	0.00	0.00	-12.51	-758.74	0.00	0.00
30	10.84	3.33	3.33	-10.84	-550.84	-412.82	21.84
60	6.26	5.77	5.77	-6.26	17.13	-715.03	37.83
90	0.00	6.66	6.66	0.00	793.01	-825.65	43.68
120	6.26	5.77	5.77	6.26	1568.88	-715.03	37.83
150	10.84	3.33	3.33	10.84	2136.86	-412.82	21.84
180	12.51	0.00	0.00	12.51	2344.75	0.00	0.00
210	10.84	3.33	-3.33	10.84	2136.86	412.82	-21.84
240	6.26	5.77	-5.77	6.26	1568.88	715.03	-37.83
270	0.00	6.66	-6.66	0.00	793.01	825.65	-43.68
300	6.26	5.77	-5.77	-6.26	17.13	715.03	-37.83
330	10.84	3.33	-3.33	-10.84	-550.84	412.82	-21.84

Radio 4449 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	5.69	6.25	-1.81	-8.26	-1456.92	973.72	-40.99
30	0.00	7.22	3.61	-6.25	-1207.68	302.28	-47.33
60	5.69	6.25	8.06	-2.56	-750.81	-249.30	-40.99
90	9.86	3.61	10.35	1.81	-208.74	-533.20	-23.67
120	11.39	0.00	9.86	5.69	273.30	-473.37	0.00
150	9.86	3.61	6.74	8.06	566.14	-85.83	23.67
180	5.69	6.25	1.81	8.26	591.30	525.58	40.99
210	0.00	7.22	-3.61	6.25	342.06	1197.02	47.33
240	5.69	6.25	-8.06	2.56	-114.81	1748.59	40.99
270	9.86	3.61	-10.35	-1.81	-656.88	2032.50	23.67
300	11.39	0.00	-9.86	-5.69	-1138.92	1972.67	0.00
330	9.86	3.61	-6.74	-8.06	-1431.76	1585.13	-23.67

Radio 4449 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	5.69	6.25	1.81	-8.26	-1456.92	-973.72	40.99
30	9.86	3.61	6.74	-8.06	-1431.76	-1585.13	23.67
60	11.39	0.00	9.86	-5.69	-1138.92	-1972.67	0.00
90	9.86	3.61	10.35	-1.81	-656.88	-2032.50	-23.67
120	5.69	6.25	8.06	2.56	-114.81	-1748.59	-40.99
150	0.00	7.22	3.61	6.25	342.06	-1197.02	-47.33
180	5.69	6.25	-1.81	8.26	591.30	-525.58	-40.99
210	9.86	3.61	-6.74	8.06	566.14	85.83	-23.67
240	11.39	0.00	-9.86	5.69	273.30	473.37	0.00
270	9.86	3.61	-10.35	1.81	-208.74	533.20	23.67
300	5.69	6.25	-8.06	-2.56	-750.81	249.30	40.99
330	0.00	7.22	-3.61	-6.25	-1207.68	-302.28	47.33

Radio 4449 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	11.39	0.00	0.00	-11.39	-546.60	0.00	0.00
30	9.86	3.61	3.61	-9.86	-357.40	-447.37	23.67
60	5.69	6.25	6.25	-5.69	159.51	-774.87	40.99
90	0.00	7.22	7.22	0.00	865.62	-894.75	47.33
120	5.69	6.25	6.25	5.69	1571.73	-774.87	40.99
150	9.86	3.61	3.61	9.86	2088.64	-447.37	23.67
180	11.39	0.00	0.00	11.39	2277.84	0.00	0.00
210	9.86	3.61	-3.61	9.86	2088.64	447.37	-23.67
240	5.69	6.25	-6.25	5.69	1571.73	774.87	-40.99
270	0.00	7.22	-7.22	0.00	865.62	894.75	-47.33
300	5.69	6.25	-6.25	-5.69	159.51	774.87	-40.99
330	9.86	3.61	-3.61	-9.86	-357.40	447.37	-23.67

Radio 8843 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	5.65	8.41	-0.69	-10.11	-1771.09	981.75	-55.17
30	0.00	9.71	4.86	-8.41	-1560.34	294.04	-63.71
60	5.65	8.41	9.10	-4.46	-1070.14	-232.33	-55.17
90	9.79	4.86	10.91	0.69	-431.84	-456.31	-31.85
120	11.31	0.00	9.79	5.65	183.54	-317.90	0.00
150	9.79	4.86	6.05	9.10	611.10	145.82	31.85
180	5.65	8.41	0.69	10.11	736.27	810.60	55.17
210	0.00	9.71	-4.86	8.41	525.53	1498.31	63.71
240	5.65	8.41	-9.10	4.46	35.33	2024.68	55.17
270	9.79	4.86	-10.91	-0.69	-602.98	2248.67	31.85
300	11.31	0.00	-9.79	-5.65	-1218.35	2110.25	0.00
330	9.79	4.86	-6.05	-9.10	-1645.91	1646.53	-31.85

Radio 8843 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	5.65	8.41	0.69	-10.11	-1771.09	-981.75	55.17
30	9.79	4.86	6.05	-9.10	-1645.91	-1646.53	31.85

Radio 8843 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	11.31	0.00	9.79	-5.65	-1218.35	-2110.25	0.00
90	9.79	4.86	10.91	-0.69	-602.98	-2248.67	-31.85
120	5.65	8.41	9.10	4.46	35.33	-2024.68	-55.17
150	0.00	9.71	4.86	8.41	525.53	-1498.31	-63.71
180	5.65	8.41	-0.69	10.11	736.27	-810.60	-55.17
210	9.79	4.86	-6.05	9.10	611.10	-145.82	-31.85
240	11.31	0.00	-9.79	5.65	183.54	317.90	0.00
270	9.79	4.86	-10.91	0.69	-431.84	456.31	31.85
300	5.65	8.41	-9.10	-4.46	-1070.14	232.33	55.17
330	0.00	9.71	-4.86	-8.41	-1560.34	-294.04	63.71

Radio 8843 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	11.31	0.00	0.00	-11.31	-367.08	0.00	0.00
30	9.79	4.86	4.86	-9.79	-179.26	-602.14	31.85
60	5.65	8.41	8.41	-5.65	333.87	-1042.93	55.17
90	0.00	9.71	9.71	0.00	1034.81	-1204.28	63.71
120	5.65	8.41	8.41	5.65	1735.76	-1042.93	55.17
150	9.79	4.86	4.86	9.79	2248.89	-602.14	31.85
180	11.31	0.00	0.00	11.31	2436.71	0.00	0.00
210	9.79	4.86	-4.86	9.79	2248.89	602.14	-31.85
240	5.65	8.41	-8.41	5.65	1735.76	1042.93	-55.17
270	0.00	9.71	-9.71	0.00	1034.81	1204.28	-63.71
300	5.65	8.41	-8.41	-5.65	333.87	1042.93	-55.17
330	9.79	4.86	-4.86	-9.79	-179.26	602.14	-31.85

DC9-48-60-24-8C-EV - Elevation 124 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	11.94	0.00	0.00	-11.94	-1480.51	0.00	0.00
30	11.94	0.00	5.97	-10.34	-1282.16	-740.26	0.00
60	11.94	0.00	10.34	-5.97	-740.26	-1282.16	0.00
90	11.94	0.00	11.94	0.00	0.00	-1480.51	0.00
120	11.94	0.00	10.34	5.97	740.26	-1282.16	0.00
150	11.94	0.00	5.97	10.34	1282.16	-740.26	0.00
180	11.94	0.00	0.00	11.94	1480.51	0.00	0.00
210	11.94	0.00	-5.97	10.34	1282.16	740.26	0.00
240	11.94	0.00	-10.34	5.97	740.26	1282.16	0.00
270	11.94	0.00	-11.94	0.00	0.00	1480.51	0.00
300	11.94	0.00	-10.34	-5.97	-740.26	1282.16	0.00
330	11.94	0.00	-5.97	-10.34	-1282.16	740.26	0.00

DC9-48-60-24-8C-EV - Elevation 124 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	11.94	0.00	0.00	-11.94	-1480.51	0.00	0.00
30	11.94	0.00	5.97	-10.34	-1282.16	-740.26	0.00
60	11.94	0.00	10.34	-5.97	-740.26	-1282.16	0.00
90	11.94	0.00	11.94	0.00	0.00	-1480.51	0.00
120	11.94	0.00	10.34	5.97	740.26	-1282.16	0.00

DC9-48-60-24-8C-EV - Elevation 124 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	11.94	0.00	5.97	10.34	1282.16	-740.26	0.00
180	11.94	0.00	0.00	11.94	1480.51	0.00	0.00
210	11.94	0.00	-5.97	10.34	1282.16	740.26	0.00
240	11.94	0.00	-10.34	5.97	740.26	1282.16	0.00
270	11.94	0.00	-11.94	0.00	0.00	1480.51	0.00
300	11.94	0.00	-10.34	-5.97	-740.26	1282.16	0.00
330	11.94	0.00	-5.97	-10.34	-1282.16	740.26	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	155.95	0.00	0.00	-155.95	-19337.41	0.00	0.00
30	155.95	0.00	77.97	-135.05	-16746.69	-9668.70	0.00
60	155.95	0.00	135.05	-77.97	-9668.70	-16746.69	0.00
90	155.95	0.00	155.95	0.00	0.00	-19337.41	0.00
120	155.95	0.00	135.05	77.97	9668.70	-16746.69	0.00
150	155.95	0.00	77.97	135.05	16746.69	-9668.70	0.00
180	155.95	0.00	0.00	155.95	19337.41	0.00	0.00
210	155.95	0.00	-77.97	135.05	16746.69	9668.70	0.00
240	155.95	0.00	-135.05	77.97	9668.70	16746.69	0.00
270	155.95	0.00	-155.95	0.00	0.00	19337.41	0.00
300	155.95	0.00	-135.05	-77.97	-9668.70	16746.69	0.00
330	155.95	0.00	-77.97	-135.05	-16746.69	9668.70	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	155.95	0.00	0.00	-155.95	-19337.41	0.00	0.00
30	155.95	0.00	77.97	-135.05	-16746.69	-9668.70	0.00
60	155.95	0.00	135.05	-77.97	-9668.70	-16746.69	0.00
90	155.95	0.00	155.95	0.00	0.00	-19337.41	0.00
120	155.95	0.00	135.05	77.97	9668.70	-16746.69	0.00
150	155.95	0.00	77.97	135.05	16746.69	-9668.70	0.00
180	155.95	0.00	0.00	155.95	19337.41	0.00	0.00
210	155.95	0.00	-77.97	135.05	16746.69	9668.70	0.00
240	155.95	0.00	-135.05	77.97	9668.70	16746.69	0.00
270	155.95	0.00	-155.95	0.00	0.00	19337.41	0.00
300	155.95	0.00	-135.05	-77.97	-9668.70	16746.69	0.00
330	155.95	0.00	-77.97	-135.05	-16746.69	9668.70	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	155.95	0.00	0.00	-155.95	-19337.41	0.00	0.00
30	155.95	0.00	77.97	-135.05	-16746.69	-9668.70	0.00
60	155.95	0.00	135.05	-77.97	-9668.70	-16746.69	0.00
90	155.95	0.00	155.95	0.00	0.00	-19337.41	0.00
120	155.95	0.00	135.05	77.97	9668.70	-16746.69	0.00
150	155.95	0.00	77.97	135.05	16746.69	-9668.70	0.00
180	155.95	0.00	0.00	155.95	19337.41	0.00	0.00
210	155.95	0.00	-77.97	135.05	16746.69	9668.70	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	155.95	0.00	-135.05	77.97	9668.70	16746.69	0.00
270	155.95	0.00	-155.95	0.00	0.00	19337.41	0.00
300	155.95	0.00	-135.05	-77.97	-9668.70	16746.69	0.00
330	155.95	0.00	-77.97	-135.05	-16746.69	9668.70	0.00

6' x 18" x 6" panel - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	33.35	28.16	-14.80	-41.06	-4836.21	5424.72	-389.98
30	0.00	32.52	16.26	-28.16	-3094.30	1231.40	-219.24
60	33.35	28.16	42.96	-7.71	-333.73	-2373.80	10.24
90	57.77	16.26	58.16	14.80	2705.81	-4424.86	236.98
120	66.70	0.00	57.77	33.35	5209.88	-4372.20	400.22
150	57.77	16.26	41.90	42.96	6507.52	-2229.94	456.22
180	33.35	28.16	14.80	41.06	6251.02	1427.91	389.98
210	0.00	32.52	-16.26	28.16	4509.11	5621.23	219.24
240	33.35	28.16	-42.96	7.71	1748.54	9226.43	-10.24
270	57.77	16.26	-58.16	-14.80	-1291.00	11277.49	-236.98
300	66.70	0.00	-57.77	-33.35	-3795.07	11224.84	-400.22
330	57.77	16.26	-41.90	-42.96	-5092.71	9082.58	-456.22

6' x 18" x 6" panel - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	33.35	28.16	14.80	-41.06	-8864.59	-3098.93	-10.24
30	57.77	16.26	41.90	-42.96	-9121.09	-6756.78	-236.98
60	66.70	0.00	57.77	-33.35	-7823.46	-8899.05	-400.22
90	57.77	16.26	58.16	-14.80	-5319.39	-8951.70	-456.22
120	33.35	28.16	42.96	7.71	-2279.85	-6900.64	-389.98
150	0.00	32.52	16.26	28.16	480.72	-3295.44	-219.24
180	33.35	28.16	-14.80	41.06	2222.63	897.88	10.24
210	57.77	16.26	-41.90	42.96	2479.13	4555.73	236.98
240	66.70	0.00	-57.77	33.35	1181.50	6697.99	400.22
270	57.77	16.26	-58.16	14.80	-1322.57	6750.65	456.22
300	33.35	28.16	-42.96	-7.71	-4362.12	4699.59	389.98
330	0.00	32.52	-16.26	-28.16	-7122.69	1094.39	219.24

6' x 18" x 6" panel - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	66.70	0.00	0.00	-66.70	-6391.38	-2325.79	400.22
30	57.77	16.26	16.26	-57.77	-5184.95	-4520.71	456.22
60	33.35	28.16	28.16	-33.35	-1888.90	-6127.50	389.98
90	0.00	32.52	32.52	0.00	2613.57	-6715.62	219.24
120	33.35	28.16	28.16	33.35	7116.05	-6127.50	-10.24
150	57.77	16.26	16.26	57.77	10412.09	-4520.71	-236.98
180	66.70	0.00	0.00	66.70	11618.53	-2325.79	-400.22
210	57.77	16.26	-16.26	57.77	10412.09	-130.88	-456.22
240	33.35	28.16	-28.16	33.35	7116.05	1475.91	-389.98
270	0.00	32.52	-32.52	0.00	2613.57	2064.04	-219.24
300	33.35	28.16	-28.16	-33.35	-1888.90	1475.91	10.24

6' x 18" x 6" panel - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	57.77	16.26	-16.26	-57.77	-5184.95	-130.88	236.98

1900 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	10.47	14.45	-1.85	-17.75	-1792.96	2691.25	-153.01
30	0.00	16.68	8.34	-14.45	-1347.37	1316.08	-104.13
60	10.47	14.45	16.29	-7.27	-379.24	242.61	-27.34
90	18.14	8.34	19.88	1.85	852.02	-241.53	56.77
120	20.94	0.00	18.14	10.47	2016.50	-6.63	125.66
150	18.14	8.34	11.54	16.29	2802.18	884.39	160.89
180	10.47	14.45	1.85	17.75	2998.52	2192.77	153.01
210	0.00	16.68	-8.34	14.45	2552.94	3567.93	104.13
240	10.47	14.45	-16.29	7.27	1584.81	4641.40	27.34
270	18.14	8.34	-19.88	-1.85	353.54	5125.55	-56.77
300	20.94	0.00	-18.14	-10.47	-810.94	4890.64	-125.66
330	18.14	8.34	-11.54	-16.29	-1596.61	3999.62	-160.89

1900 MHz RRH - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	10.47	14.45	1.85	-17.75	-4811.97	-948.22	27.34
30	18.14	8.34	11.54	-16.29	-4615.62	-2256.60	-56.77
60	20.94	0.00	18.14	-10.47	-3829.95	-3147.61	-125.66
90	18.14	8.34	19.88	-1.85	-2665.47	-3382.52	-160.89
120	10.47	14.45	16.29	7.27	-1434.21	-2898.37	-153.01
150	0.00	16.68	8.34	14.45	-466.07	-1824.90	-104.13
180	10.47	14.45	-1.85	17.75	-20.49	-449.74	-27.34
210	18.14	8.34	-11.54	16.29	-216.84	858.64	56.77
240	20.94	0.00	-18.14	10.47	-1002.51	1749.65	125.66
270	18.14	8.34	-19.88	1.85	-2166.99	1984.56	160.89
300	10.47	14.45	-16.29	-7.27	-3398.26	1500.41	153.01
330	0.00	16.68	-8.34	-14.45	-4366.39	426.94	104.13

1900 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	20.94	0.00	0.00	-20.94	-1013.99	-1743.03	125.66
30	18.14	8.34	8.34	-18.14	-635.18	-2868.95	160.89
60	10.47	14.45	14.45	-10.47	399.73	-3693.18	153.01
90	0.00	16.68	16.68	0.00	1813.45	-3994.87	104.13
120	10.47	14.45	14.45	10.47	3227.17	-3693.18	27.34
150	18.14	8.34	8.34	18.14	4262.08	-2868.95	-56.77
180	20.94	0.00	0.00	20.94	4640.89	-1743.03	-125.66
210	18.14	8.34	-8.34	18.14	4262.08	-617.10	-160.89
240	10.47	14.45	-14.45	10.47	3227.17	207.13	-153.01
270	0.00	16.68	-16.68	0.00	1813.45	508.82	-104.13
300	10.47	14.45	-14.45	-10.47	399.73	207.13	-27.34
330	18.14	8.34	-8.34	-18.14	-635.18	-617.10	56.77

800 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	8.12	16.62	1.28	-18.45	-2801.93	1258.84	-120.00
30	0.00	19.20	9.60	-16.62	-2554.68	136.25	-119.82
60	8.12	16.62	15.34	-10.34	-1706.11	-639.16	-87.54
90	14.06	9.60	16.97	-1.28	-483.59	-859.63	-31.79
120	16.23	0.00	14.06	8.12	785.30	-466.08	32.47
150	14.06	9.60	7.38	15.34	1760.58	436.04	88.03
180	8.12	16.62	-1.28	18.45	2180.90	1605.00	120.00
210	0.00	19.20	-9.60	16.62	1933.66	2727.60	119.82
240	8.12	16.62	-15.34	10.34	1085.09	3503.01	87.54
270	14.06	9.60	-16.97	1.28	-137.43	3723.48	31.79
300	16.23	0.00	-14.06	-8.12	-1406.33	3329.93	-32.47
330	14.06	9.60	-7.38	-15.34	-2381.60	2427.81	-88.03

800 MHz RRH - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	8.12	16.62	-1.28	-18.45	-3576.24	-811.79	87.54
30	14.06	9.60	7.38	-15.34	-3155.91	-1980.76	31.79
60	16.23	0.00	14.06	-8.12	-2180.64	-2882.88	-32.47
90	14.06	9.60	16.97	1.28	-911.75	-3276.43	-88.03
120	8.12	16.62	15.34	10.34	310.77	-3055.96	-120.00
150	0.00	19.20	9.60	16.62	1159.34	-2280.54	-119.82
180	8.12	16.62	1.28	18.45	1406.59	-1157.95	-87.54
210	14.06	9.60	-7.38	15.34	986.26	11.01	-31.79
240	16.23	0.00	-14.06	8.12	10.99	913.13	32.47
270	14.06	9.60	-16.97	-1.28	-1257.91	1306.69	88.03
300	8.12	16.62	-15.34	-10.34	-2480.43	1086.22	120.00
330	0.00	19.20	-9.60	-16.62	-3329.00	310.80	119.82

800 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	16.23	0.00	0.00	-16.23	-796.29	-447.05	32.47
30	14.06	9.60	9.60	-14.06	-502.67	-1742.72	88.03
60	8.12	16.62	16.62	-8.12	299.52	-2691.22	120.00
90	0.00	19.20	19.20	0.00	1395.34	-3038.39	119.82
120	8.12	16.62	16.62	8.12	2491.15	-2691.22	87.54
150	14.06	9.60	9.60	14.06	3293.35	-1742.72	31.79
180	16.23	0.00	0.00	16.23	3586.97	-447.05	-32.47
210	14.06	9.60	-9.60	14.06	3293.35	848.62	-88.03
240	8.12	16.62	-16.62	8.12	2491.15	1797.12	-120.00
270	0.00	19.20	-19.20	0.00	1395.34	2144.29	-119.82
300	8.12	16.62	-16.62	-8.12	299.52	1797.12	-87.54
330	14.06	9.60	-9.60	-14.06	-502.67	848.62	-31.79

800 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	8.12	16.62	1.28	-18.45	-2746.05	1162.05	-111.69
30	0.00	19.20	9.60	-16.62	-2498.80	39.46	-110.23

800 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	8.12	16.62	15.34	-10.34	-1650.23	-735.95	-79.22
90	14.06	9.60	16.97	-1.28	-427.71	-956.42	-26.99
120	16.23	0.00	14.06	8.12	841.18	-562.87	32.47
150	14.06	9.60	7.38	15.34	1816.46	339.25	83.23
180	8.12	16.62	-1.28	18.45	2236.78	1508.22	111.69
210	0.00	19.20	-9.60	16.62	1989.54	2630.81	110.23
240	8.12	16.62	-15.34	10.34	1140.97	3406.22	79.22
270	14.06	9.60	-16.97	1.28	-81.55	3626.69	26.99
300	16.23	0.00	-14.06	-8.12	-1350.45	3233.14	-32.47
330	14.06	9.60	-7.38	-15.34	-2325.72	2331.02	-83.23

800 MHz RRH - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	8.12	16.62	-1.28	-18.45	-3520.36	-715.00	79.22
30	14.06	9.60	7.38	-15.34	-3100.03	-1883.97	26.99
60	16.23	0.00	14.06	-8.12	-2124.76	-2786.09	-32.47
90	14.06	9.60	16.97	1.28	-855.86	-3179.64	-83.23
120	8.12	16.62	15.34	10.34	366.66	-2959.17	-111.69
150	0.00	19.20	9.60	16.62	1215.22	-2183.76	-110.23
180	8.12	16.62	1.28	18.45	1462.47	-1061.16	-79.22
210	14.06	9.60	-7.38	15.34	1042.14	107.80	-26.99
240	16.23	0.00	-14.06	8.12	66.87	1009.92	32.47
270	14.06	9.60	-16.97	-1.28	-1202.03	1403.47	83.23
300	8.12	16.62	-15.34	-10.34	-2424.55	1183.00	111.69
330	0.00	19.20	-9.60	-16.62	-3273.11	407.59	110.23

800 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	16.23	0.00	0.00	-16.23	-908.05	-447.05	32.47
30	14.06	9.60	9.60	-14.06	-614.43	-1742.72	83.23
60	8.12	16.62	16.62	-8.12	187.76	-2691.22	111.69
90	0.00	19.20	19.20	0.00	1283.58	-3038.39	110.23
120	8.12	16.62	16.62	8.12	2379.39	-2691.22	79.22
150	14.06	9.60	9.60	14.06	3181.58	-1742.72	26.99
180	16.23	0.00	0.00	16.23	3475.21	-447.05	-32.47
210	14.06	9.60	-9.60	14.06	3181.58	848.62	-83.23
240	8.12	16.62	-16.62	8.12	2379.39	1797.12	-111.69
270	0.00	19.20	-19.20	0.00	1283.58	2144.29	-110.23
300	8.12	16.62	-16.62	-8.12	187.76	1797.12	-79.22
330	14.06	9.60	-9.60	-14.06	-614.43	848.62	-26.99

14' sector mount - Elevation 135 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	101.28	0.00	0.00	-101.28	-13672.85	0.00	0.00
30	101.28	0.00	50.64	-87.71	-11841.03	-6836.42	0.00
60	101.28	0.00	87.71	-50.64	-6836.42	-11841.03	0.00
90	101.28	0.00	101.28	0.00	0.00	-13672.85	0.00
120	101.28	0.00	87.71	50.64	6836.42	-11841.03	0.00

14' sector mount - Elevation 135 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	101.28	0.00	50.64	87.71	11841.03	-6836.42	0.00
180	101.28	0.00	0.00	101.28	13672.85	0.00	0.00
210	101.28	0.00	-50.64	87.71	11841.03	6836.42	0.00
240	101.28	0.00	-87.71	50.64	6836.42	11841.03	0.00
270	101.28	0.00	-101.28	0.00	0.00	13672.85	0.00
300	101.28	0.00	-87.71	-50.64	-6836.42	11841.03	0.00
330	101.28	0.00	-50.64	-87.71	-11841.03	6836.42	0.00

14' sector mount - Elevation 135 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	101.28	0.00	0.00	-101.28	-13672.85	0.00	0.00
30	101.28	0.00	50.64	-87.71	-11841.03	-6836.42	0.00
60	101.28	0.00	87.71	-50.64	-6836.42	-11841.03	0.00
90	101.28	0.00	101.28	0.00	0.00	-13672.85	0.00
120	101.28	0.00	87.71	50.64	6836.42	-11841.03	0.00
150	101.28	0.00	50.64	87.71	11841.03	-6836.42	0.00
180	101.28	0.00	0.00	101.28	13672.85	0.00	0.00
210	101.28	0.00	-50.64	87.71	11841.03	6836.42	0.00
240	101.28	0.00	-87.71	50.64	6836.42	11841.03	0.00
270	101.28	0.00	-101.28	0.00	0.00	13672.85	0.00
300	101.28	0.00	-87.71	-50.64	-6836.42	11841.03	0.00
330	101.28	0.00	-50.64	-87.71	-11841.03	6836.42	0.00

14' sector mount - Elevation 135 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	101.28	0.00	0.00	-101.28	-13672.85	0.00	0.00
30	101.28	0.00	50.64	-87.71	-11841.03	-6836.42	0.00
60	101.28	0.00	87.71	-50.64	-6836.42	-11841.03	0.00
90	101.28	0.00	101.28	0.00	0.00	-13672.85	0.00
120	101.28	0.00	87.71	50.64	6836.42	-11841.03	0.00
150	101.28	0.00	50.64	87.71	11841.03	-6836.42	0.00
180	101.28	0.00	0.00	101.28	13672.85	0.00	0.00
210	101.28	0.00	-50.64	87.71	11841.03	6836.42	0.00
240	101.28	0.00	-87.71	50.64	6836.42	11841.03	0.00
270	101.28	0.00	-101.28	0.00	0.00	13672.85	0.00
300	101.28	0.00	-87.71	-50.64	-6836.42	11841.03	0.00
330	101.28	0.00	-50.64	-87.71	-11841.03	6836.42	0.00

8' x 1' x 6" panel - Elevation 115 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	267.90	0.00	0.00	-267.90	-45792.93	0.00	0.00
30	232.01	88.01	88.01	-232.01	-41665.36	-10120.92	-936.36
60	133.95	152.43	152.43	-133.95	-30388.61	-17529.95	-1621.83
90	0.00	176.02	176.02	0.00	-14984.28	-20241.85	-1872.73
120	133.95	152.43	152.43	133.95	420.05	-17529.95	-1621.83
150	232.01	88.01	88.01	232.01	11696.80	-10120.92	-936.36
180	267.90	0.00	0.00	267.90	15824.38	0.00	0.00
210	232.01	88.01	-88.01	232.01	11696.80	10120.92	936.36

8' x 1' x 6" panel - Elevation 115 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	133.95	152.43	-152.43	133.95	420.05	17529.95	1621.83
270	0.00	176.02	-176.02	0.00	-14984.28	20241.85	1872.73
300	133.95	152.43	-152.43	-133.95	-30388.61	17529.95	1621.83
330	232.01	88.01	-88.01	-232.01	-41665.36	10120.92	936.36

8' x 1' x 6" panel - Elevation 115 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	133.95	152.43	-39.79	-198.99	-15391.41	-8401.20	1621.83
30	0.00	176.02	88.01	-152.43	-10037.82	-23097.69	1872.73
60	133.95	152.43	192.22	-65.04	12.92	-35082.28	1621.83
90	232.01	88.01	244.93	39.79	12067.70	-41143.72	936.36
120	267.90	0.00	232.01	133.95	22896.47	-39657.84	0.00
150	232.01	88.01	156.92	192.22	29597.66	-31022.80	-936.36
180	133.95	152.43	39.79	198.99	30375.69	-17552.33	-1621.83
210	0.00	176.02	-88.01	152.43	25022.09	-2855.84	-1872.73
240	133.95	152.43	-192.22	65.04	14971.36	9128.75	-1621.83
270	232.01	88.01	-244.93	-39.79	2916.57	15190.19	-936.36
300	267.90	0.00	-232.01	-133.95	-7912.19	13704.32	0.00
330	232.01	88.01	-156.92	-192.22	-14613.38	5069.27	936.36

8' x 1' x 6" panel - Elevation 115 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	133.95	152.43	39.79	-198.99	-15391.41	8401.20	-1621.83
30	232.01	88.01	156.92	-192.22	-14613.38	-5069.27	-936.36
60	267.90	0.00	232.01	-133.95	-7912.19	-13704.32	0.00
90	232.01	88.01	244.93	-39.79	2916.57	-15190.19	936.36
120	133.95	152.43	192.22	65.04	14971.36	-9128.75	1621.83
150	0.00	176.02	88.01	152.43	25022.09	2855.84	1872.73
180	133.95	152.43	-39.79	198.99	30375.69	17552.33	1621.83
210	232.01	88.01	-156.92	192.22	29597.66	31022.80	936.36
240	267.90	0.00	-232.01	133.95	22896.47	39657.84	0.00
270	232.01	88.01	-244.93	39.79	12067.70	41143.72	-936.36
300	133.95	152.43	-192.22	-65.04	12.92	35082.28	-1621.83
330	0.00	176.02	-88.01	-152.43	-10037.82	23097.69	-1872.73

Ericsson RRUS-11 - Elevation 115 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	70.27	0.00	0.00	-70.27	-14050.86	0.00	0.00
30	60.85	15.46	15.46	-60.85	-12968.24	-1777.38	-148.98
60	35.13	26.77	26.77	-35.13	-10010.48	-3078.51	-258.05
90	0.00	30.91	30.91	0.00	-5970.11	-3554.76	-297.97
120	35.13	26.77	26.77	35.13	-1929.74	-3078.51	-258.05
150	60.85	15.46	15.46	60.85	1028.02	-1777.38	-148.98
180	70.27	0.00	0.00	70.27	2110.64	0.00	0.00
210	60.85	15.46	-15.46	60.85	1028.02	1777.38	148.98
240	35.13	26.77	-26.77	35.13	-1929.74	3078.51	258.05
270	0.00	30.91	-30.91	0.00	-5970.11	3554.76	297.97
300	35.13	26.77	-26.77	-35.13	-10010.48	3078.51	258.05

Ericsson RRUS-11 - Elevation 115 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	60.85	15.46	-15.46	-60.85	-12968.24	1777.38	148.98

Ericsson RRUS-11 - Elevation 115 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	35.13	26.77	-17.04	-40.75	-1701.20	-3210.46	258.05
30	0.00	30.91	15.46	-26.77	-93.46	-6947.65	297.97
60	35.13	26.77	43.81	-5.62	2339.17	-10208.59	258.05
90	60.85	15.46	60.43	17.04	4944.87	-12119.52	148.98
120	70.27	0.00	60.85	35.13	7025.43	-12168.40	0.00
150	60.85	15.46	44.97	43.81	8023.38	-10342.14	-148.98
180	35.13	26.77	17.04	40.75	7671.31	-7130.08	-258.05
210	0.00	30.91	-15.46	26.77	6063.57	-3392.89	-297.97
240	35.13	26.77	-43.81	5.62	3630.94	-131.94	-258.05
270	60.85	15.46	-60.43	-17.04	1025.24	1778.99	-148.98
300	70.27	0.00	-60.85	-35.13	-1055.32	1827.87	0.00
330	60.85	15.46	-44.97	-43.81	-2053.27	1.61	148.98

Ericsson RRUS-11 - Elevation 115 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	35.13	26.77	17.04	-40.75	-1701.20	3210.46	-258.05
30	60.85	15.46	44.97	-43.81	-2053.27	-1.61	-148.98
60	70.27	0.00	60.85	-35.13	-1055.32	-1827.87	0.00
90	60.85	15.46	60.43	-17.04	1025.24	-1778.99	148.98
120	35.13	26.77	43.81	5.62	3630.94	131.94	258.05
150	0.00	30.91	15.46	26.77	6063.57	3392.89	297.97
180	35.13	26.77	-17.04	40.75	7671.31	7130.08	258.05
210	60.85	15.46	-44.97	43.81	8023.38	10342.14	148.98
240	70.27	0.00	-60.85	35.13	7025.43	12168.40	0.00
270	60.85	15.46	-60.43	17.04	4944.87	12119.52	-148.98
300	35.13	26.77	-43.81	-5.62	2339.17	10208.59	-258.05
330	0.00	30.91	-15.46	-26.77	-93.46	6947.65	-297.97

Raycap RDC-3315-PF-48 J-box - Elevation 115 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	16.04	0.00	0.00	-16.04	-3176.02	0.00	0.00
30	13.89	5.63	5.63	-13.89	-2928.87	-647.84	-54.30
60	8.02	9.76	9.76	-8.02	-2253.62	-1122.09	-94.06
90	0.00	11.27	11.27	0.00	-1331.21	-1295.68	-108.61
120	8.02	9.76	9.76	8.02	-408.81	-1122.09	-94.06
150	13.89	5.63	5.63	13.89	266.44	-647.84	-54.30
180	16.04	0.00	0.00	16.04	513.60	0.00	0.00
210	13.89	5.63	-5.63	13.89	266.44	647.84	54.30
240	8.02	9.76	-9.76	8.02	-408.81	1122.09	94.06
270	0.00	11.27	-11.27	0.00	-1331.21	1295.68	108.61
300	8.02	9.76	-9.76	-8.02	-2253.62	1122.09	94.06
330	13.89	5.63	-5.63	-13.89	-2928.87	647.84	54.30

Raycap RDC-3315-PF-48 J-box - Elevation 115 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	8.02	9.76	-2.07	-12.46	-767.36	-915.08	94.06
30	0.00	11.27	5.63	-9.76	-456.49	-1800.70	108.61
60	8.02	9.76	11.82	-4.44	155.05	-2512.74	94.06
90	13.89	5.63	14.85	2.07	903.39	-2860.39	54.30
120	16.04	0.00	13.89	8.02	1588.01	-2750.52	0.00
150	13.89	5.63	9.21	11.82	2025.48	-2212.55	-54.30
180	8.02	9.76	2.07	12.46	2098.57	-1390.64	-94.06
210	0.00	11.27	-5.63	9.76	1787.70	-505.02	-108.61
240	8.02	9.76	-11.82	4.44	1176.16	207.01	-94.06
270	13.89	5.63	-14.85	-2.07	427.83	554.67	-54.30
300	16.04	0.00	-13.89	-8.02	-256.80	444.79	0.00
330	13.89	5.63	-9.21	-11.82	-694.27	-93.17	54.30

Raycap RDC-3315-PF-48 J-box - Elevation 115 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	8.02	9.76	2.07	-12.46	-767.36	915.08	-94.06
30	13.89	5.63	9.21	-11.82	-694.27	93.17	-54.30
60	16.04	0.00	13.89	-8.02	-256.80	-444.79	0.00
90	13.89	5.63	14.85	-2.07	427.83	-554.67	54.30
120	8.02	9.76	11.82	4.44	1176.16	-207.01	94.06
150	0.00	11.27	5.63	9.76	1787.70	505.02	108.61
180	8.02	9.76	-2.07	12.46	2098.57	1390.64	94.06
210	13.89	5.63	-9.21	11.82	2025.48	2212.55	54.30
240	16.04	0.00	-13.89	8.02	1588.01	2750.52	0.00
270	13.89	5.63	-14.85	2.07	903.39	2860.39	-54.30
300	8.02	9.76	-11.82	-4.44	155.05	2512.74	-94.06
330	0.00	11.27	-5.63	-9.76	-456.49	1800.70	-108.61

14' sector mount - Elevation 115 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	96.92	0.00	0.00	-96.92	-11146.34	0.00	0.00
30	96.92	0.00	48.46	-83.94	-9653.02	-5573.17	0.00
60	96.92	0.00	83.94	-48.46	-5573.17	-9653.02	0.00
90	96.92	0.00	96.92	0.00	0.00	-11146.34	0.00
120	96.92	0.00	83.94	48.46	5573.17	-9653.02	0.00
150	96.92	0.00	48.46	83.94	9653.02	-5573.17	0.00
180	96.92	0.00	0.00	96.92	11146.34	0.00	0.00
210	96.92	0.00	-48.46	83.94	9653.02	5573.17	0.00
240	96.92	0.00	-83.94	48.46	5573.17	9653.02	0.00
270	96.92	0.00	-96.92	0.00	0.00	11146.34	0.00
300	96.92	0.00	-83.94	-48.46	-5573.17	9653.02	0.00
330	96.92	0.00	-48.46	-83.94	-9653.02	5573.17	0.00

14' sector mount - Elevation 115 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	96.92	0.00	0.00	-96.92	-11146.34	0.00	0.00
30	96.92	0.00	48.46	-83.94	-9653.02	-5573.17	0.00

14' sector mount - Elevation 115 - None B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	96.92	0.00	83.94	-48.46	-5573.17	-9653.02	0.00
90	96.92	0.00	96.92	0.00	0.00	-11146.34	0.00
120	96.92	0.00	83.94	48.46	5573.17	-9653.02	0.00
150	96.92	0.00	48.46	83.94	9653.02	-5573.17	0.00
180	96.92	0.00	0.00	96.92	11146.34	0.00	0.00
210	96.92	0.00	-48.46	83.94	9653.02	5573.17	0.00
240	96.92	0.00	-83.94	48.46	5573.17	9653.02	0.00
270	96.92	0.00	-96.92	0.00	0.00	11146.34	0.00
300	96.92	0.00	-83.94	-48.46	-5573.17	9653.02	0.00
330	96.92	0.00	-48.46	-83.94	-9653.02	5573.17	0.00

14' sector mount - Elevation 115 - None C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	96.92	0.00	0.00	-96.92	-11146.34	0.00	0.00
30	96.92	0.00	48.46	-83.94	-9653.02	-5573.17	0.00
60	96.92	0.00	83.94	-48.46	-5573.17	-9653.02	0.00
90	96.92	0.00	96.92	0.00	0.00	-11146.34	0.00
120	96.92	0.00	83.94	48.46	5573.17	-9653.02	0.00
150	96.92	0.00	48.46	83.94	9653.02	-5573.17	0.00
180	96.92	0.00	0.00	96.92	11146.34	0.00	0.00
210	96.92	0.00	-48.46	83.94	9653.02	5573.17	0.00
240	96.92	0.00	-83.94	48.46	5573.17	9653.02	0.00
270	96.92	0.00	-96.92	0.00	0.00	11146.34	0.00
300	96.92	0.00	-83.94	-48.46	-5573.17	9653.02	0.00
330	96.92	0.00	-48.46	-83.94	-9653.02	5573.17	0.00

8' x 1' x 6" panel - Elevation 105 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	262.40	0.00	0.00	-262.40	-43220.54	0.00	0.00
30	227.25	86.14	86.14	-227.25	-39529.21	-9044.35	-966.18
60	131.20	149.19	149.19	-131.20	-29444.32	-15665.28	-1673.48
90	0.00	172.27	172.27	0.00	-15668.10	-18088.71	-1932.37
120	131.20	149.19	149.19	131.20	-1891.88	-15665.28	-1673.48
150	227.25	86.14	86.14	227.25	8193.01	-9044.35	-966.18
180	262.40	0.00	0.00	262.40	11884.33	0.00	0.00
210	227.25	86.14	-86.14	227.25	8193.01	9044.35	966.18
240	131.20	149.19	-149.19	131.20	-1891.88	15665.28	1673.48
270	0.00	172.27	-172.27	0.00	-15668.10	18088.71	1932.37
300	131.20	149.19	-149.19	-131.20	-29444.32	15665.28	1673.48
330	227.25	86.14	-86.14	-227.25	-39529.21	9044.35	966.18

8' x 1' x 6" panel - Elevation 105 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	131.20	149.19	-39.03	-194.81	-12620.59	-9471.06	1673.48
30	0.00	172.27	86.14	-149.19	-7831.23	-22613.33	1932.37
60	131.20	149.19	188.22	-63.60	1155.63	-33332.17	1673.48
90	227.25	86.14	239.87	39.03	11931.97	-38755.48	966.18
120	262.40	0.00	227.25	131.20	21610.27	-37430.08	0.00

8' x 1' x 6" panel - Elevation 105 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	227.25	86.14	153.73	188.22	27597.25	-29711.13	-966.18
180	131.20	149.19	39.03	194.81	28288.69	-17666.89	-1673.48
210	0.00	172.27	-86.14	149.19	23499.33	-4524.62	-1932.37
240	131.20	149.19	-188.22	63.60	14512.47	6194.22	-1673.48
270	227.25	86.14	-239.87	-39.03	3736.14	11617.53	-966.18
300	262.40	0.00	-227.25	-131.20	-5942.17	10292.13	0.00
330	227.25	86.14	-153.73	-188.22	-11929.14	2573.18	966.18

8' x 1' x 6" panel - Elevation 105 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	131.20	149.19	39.03	-194.81	-12620.59	9471.06	-1673.48
30	227.25	86.14	153.73	-188.22	-11929.14	-2573.18	-966.18
60	262.40	0.00	227.25	-131.20	-5942.17	-10292.13	0.00
90	227.25	86.14	239.87	-39.03	3736.14	-11617.53	966.18
120	131.20	149.19	188.22	63.60	14512.47	-6194.22	1673.48
150	0.00	172.27	86.14	149.19	23499.33	4524.62	1932.37
180	131.20	149.19	-39.03	194.81	28288.69	17666.89	1673.48
210	227.25	86.14	-153.73	188.22	27597.25	29711.13	966.18
240	262.40	0.00	-227.25	131.20	21610.27	37430.08	0.00
270	227.25	86.14	-239.87	39.03	11931.97	38755.48	-966.18
300	131.20	149.19	-188.22	-63.60	1155.63	33332.17	-1673.48
330	0.00	172.27	-86.14	-149.19	-7831.23	22613.33	-1932.37

Ericsson RRUS-11 - Elevation 105 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	68.78	0.00	0.00	-68.78	-13508.17	0.00	0.00
30	59.57	15.11	15.11	-59.57	-12540.57	-1586.53	-154.38
60	34.39	26.17	26.17	-34.39	-9897.06	-2747.95	-267.39
90	0.00	30.22	30.22	0.00	-6285.95	-3173.06	-308.75
120	34.39	26.17	26.17	34.39	-2674.84	-2747.95	-267.39
150	59.57	15.11	15.11	59.57	-31.32	-1586.53	-154.38
180	68.78	0.00	0.00	68.78	936.27	0.00	0.00
210	59.57	15.11	-15.11	59.57	-31.32	1586.53	154.38
240	34.39	26.17	-26.17	34.39	-2674.84	2747.95	267.39
270	0.00	30.22	-30.22	0.00	-6285.95	3173.06	308.75
300	34.39	26.17	-26.17	-34.39	-9897.06	2747.95	267.39
330	59.57	15.11	-15.11	-59.57	-12540.57	1586.53	154.38

Ericsson RRUS-11 - Elevation 105 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	34.39	26.17	-16.70	-39.86	-1042.38	-3690.46	267.39
30	0.00	30.22	15.11	-26.17	395.02	-7030.32	308.75
60	34.39	26.17	42.87	-5.47	2568.73	-9945.08	267.39
90	59.57	15.11	59.14	16.70	4896.31	-11653.72	154.38
120	68.78	0.00	59.57	34.39	6754.08	-11698.42	0.00
150	59.57	15.11	44.03	42.87	7644.26	-10067.19	-154.38
180	34.39	26.17	16.70	39.86	7328.33	-7197.13	-267.39
210	0.00	30.22	-15.11	26.17	5890.93	-3857.26	-308.75

Ericsson RRUS-11 - Elevation 105 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	34.39	26.17	-42.87	5.47	3717.22	-942.50	-267.39
270	59.57	15.11	-59.14	-16.70	1389.64	766.14	-154.38
300	68.78	0.00	-59.57	-34.39	-468.13	810.83	0.00
330	59.57	15.11	-44.03	-42.87	-1358.32	-820.39	154.38

Ericsson RRUS-11 - Elevation 105 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	34.39	26.17	16.70	-39.86	-1042.38	3690.46	-267.39
30	59.57	15.11	44.03	-42.87	-1358.32	820.39	-154.38
60	68.78	0.00	59.57	-34.39	-468.13	-810.83	0.00
90	59.57	15.11	59.14	-16.70	1389.64	-766.14	154.38
120	34.39	26.17	42.87	5.47	3717.22	942.50	267.39
150	0.00	30.22	15.11	26.17	5890.93	3857.26	308.75
180	34.39	26.17	-16.70	39.86	7328.33	7197.13	267.39
210	59.57	15.11	-44.03	42.87	7644.26	10067.19	154.38
240	68.78	0.00	-59.57	34.39	6754.08	11698.42	0.00
270	59.57	15.11	-59.14	16.70	4896.31	11653.72	-154.38
300	34.39	26.17	-42.87	-5.47	2568.73	9945.08	-267.39
330	0.00	30.22	-15.11	-26.17	395.02	7030.32	-308.75

Raycap RDC-3315-PF-48 J-box - Elevation 105 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	15.70	0.00	0.00	-15.70	-3048.36	0.00	0.00
30	13.60	5.51	5.51	-13.60	-2827.48	-578.65	-56.31
60	7.85	9.55	9.55	-7.85	-2224.04	-1002.26	-97.52
90	0.00	11.02	11.02	0.00	-1399.71	-1157.31	-112.61
120	7.85	9.55	9.55	7.85	-575.39	-1002.26	-97.52
150	13.60	5.51	5.51	13.60	28.05	-578.65	-56.31
180	15.70	0.00	0.00	15.70	248.93	0.00	0.00
210	13.60	5.51	-5.51	13.60	28.05	578.65	56.31
240	7.85	9.55	-9.55	7.85	-575.39	1002.26	97.52
270	0.00	11.02	-11.02	0.00	-1399.71	1157.31	112.61
300	7.85	9.55	-9.55	-7.85	-2224.04	1002.26	97.52
330	13.60	5.51	-5.51	-13.60	-2827.48	578.65	56.31

Raycap RDC-3315-PF-48 J-box - Elevation 105 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	7.85	9.55	-2.03	-12.19	-580.28	-999.43	97.52
30	0.00	11.02	5.51	-9.55	-302.40	-1790.84	112.61
60	7.85	9.55	11.57	-4.34	244.04	-2427.20	97.52
90	13.60	5.51	14.53	2.03	912.61	-2738.00	56.31
120	15.70	0.00	13.60	7.85	1524.18	-2639.95	0.00
150	13.60	5.51	9.02	11.57	1914.87	-2159.34	-56.31
180	7.85	9.55	2.03	12.19	1980.00	-1424.94	-97.52
210	0.00	11.02	-5.51	9.55	1702.11	-633.54	-112.61
240	7.85	9.55	-11.57	4.34	1155.68	2.82	-97.52
270	13.60	5.51	-14.53	-2.03	487.10	313.62	-56.31
300	15.70	0.00	-13.60	-7.85	-124.46	215.58	0.00

Raycap RDC-3315-PF-48 J-box - Elevation 105 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	13.60	5.51	-9.02	-11.57	-515.15	-265.03	56.31

Raycap RDC-3315-PF-48 J-box - Elevation 105 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	7.85	9.55	2.03	-12.19	-580.28	999.43	-97.52
30	13.60	5.51	9.02	-11.57	-515.15	265.03	-56.31
60	15.70	0.00	13.60	-7.85	-124.46	-215.58	0.00
90	13.60	5.51	14.53	-2.03	487.10	-313.62	56.31
120	7.85	9.55	11.57	4.34	1155.68	-2.82	97.52
150	0.00	11.02	5.51	9.55	1702.11	633.54	112.61
180	7.85	9.55	-2.03	12.19	1980.00	1424.94	97.52
210	13.60	5.51	-9.02	11.57	1914.87	2159.34	56.31
240	15.70	0.00	-13.60	7.85	1524.18	2639.95	0.00
270	13.60	5.51	-14.53	2.03	912.61	2738.00	-56.31
300	7.85	9.55	-11.57	-4.34	244.04	2427.20	-97.52
330	0.00	11.02	-5.51	-9.55	-302.40	1790.84	-112.61

14' sector mount - Elevation 105 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	94.54	0.00	0.00	-94.54	-9926.68	0.00	0.00
30	94.54	0.00	47.27	-81.87	-8596.76	-4963.34	0.00
60	94.54	0.00	81.87	-47.27	-4963.34	-8596.76	0.00
90	94.54	0.00	94.54	0.00	0.00	-9926.68	0.00
120	94.54	0.00	81.87	47.27	4963.34	-8596.76	0.00
150	94.54	0.00	47.27	81.87	8596.76	-4963.34	0.00
180	94.54	0.00	0.00	94.54	9926.68	0.00	0.00
210	94.54	0.00	-47.27	81.87	8596.76	4963.34	0.00
240	94.54	0.00	-81.87	47.27	4963.34	8596.76	0.00
270	94.54	0.00	-94.54	0.00	0.00	9926.68	0.00
300	94.54	0.00	-81.87	-47.27	-4963.34	8596.76	0.00
330	94.54	0.00	-47.27	-81.87	-8596.76	4963.34	0.00

14' sector mount - Elevation 105 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	94.54	0.00	0.00	-94.54	-9926.68	0.00	0.00
30	94.54	0.00	47.27	-81.87	-8596.76	-4963.34	0.00
60	94.54	0.00	81.87	-47.27	-4963.34	-8596.76	0.00
90	94.54	0.00	94.54	0.00	0.00	-9926.68	0.00
120	94.54	0.00	81.87	47.27	4963.34	-8596.76	0.00
150	94.54	0.00	47.27	81.87	8596.76	-4963.34	0.00
180	94.54	0.00	0.00	94.54	9926.68	0.00	0.00
210	94.54	0.00	-47.27	81.87	8596.76	4963.34	0.00
240	94.54	0.00	-81.87	47.27	4963.34	8596.76	0.00
270	94.54	0.00	-94.54	0.00	0.00	9926.68	0.00
300	94.54	0.00	-81.87	-47.27	-4963.34	8596.76	0.00
330	94.54	0.00	-47.27	-81.87	-8596.76	4963.34	0.00

14' sector mount - Elevation 105 - None C							
Wind Azimuth °	F_a *lb*	F_s *lb*	V_x *lb*	V_z *lb*	OTM_x *lb-ft*	OTM_z *lb-ft*	*Torque lb-ft*
0	94.54	0.00	0.00	-94.54	-9926.68	0.00	0.00
30	94.54	0.00	47.27	-81.87	-8596.76	-4963.34	0.00
60	94.54	0.00	81.87	-47.27	-4963.34	-8596.76	0.00
90	94.54	0.00	94.54	0.00	0.00	-9926.68	0.00
120	94.54	0.00	81.87	47.27	4963.34	-8596.76	0.00
150	94.54	0.00	47.27	81.87	8596.76	-4963.34	0.00
180	94.54	0.00	0.00	94.54	9926.68	0.00	0.00
210	94.54	0.00	-47.27	81.87	8596.76	4963.34	0.00
240	94.54	0.00	-81.87	47.27	4963.34	8596.76	0.00
270	94.54	0.00	-94.54	0.00	0.00	9926.68	0.00
300	94.54	0.00	-81.87	-47.27	-4963.34	8596.76	0.00
330	94.54	0.00	-47.27	-81.87	-8596.76	4963.34	0.00

Discrete Appurtenance Totals - With Ice

Wind Azimuth °	V_x *lb*	V_z *lb*	OTM_x *lb-ft*	OTM_z *lb-ft*	*Torque lb-ft*
0	0.00	-5187.33	-676548.85	6520.52	-1898.16
30	2574.14	-4492.36	-586954.16	-324863.75	-2461.29
60	4458.54	-2593.66	-342176.90	-567453.88	-2364.93
90	5148.27	0.00	-7804.95	-656248.03	-1634.88
120	4458.54	2593.66	326567.00	-567453.88	-466.77
150	2574.14	4492.36	571344.25	-324863.75	826.42
180	0.00	5187.33	660938.95	6520.52	1898.16
210	-2574.14	4492.36	571344.25	337904.80	2461.29
240	-4458.54	2593.66	326567.00	580494.92	2364.93
270	-5148.27	0.00	-7804.95	669289.07	1634.88
300	-4458.54	-2593.66	-342176.90	580494.92	466.77
330	-2574.14	-4492.36	-586954.16	337904.80	-826.42

Discrete Appurtenance Pressures - Service $G_H = 0.850$

Description	*Aiming Azimuth* °	*Weight lb*	$Offset_x$ *ft*	$Offset_z$ *ft*	z *ft*	K_z	q_z *psf*	C_AA_C *Front* ft^2	C_AA_C *Side* ft^2
Generic Lightning Rod 4' copper	120.0000	0.00	2.50	1.44	190.00	1.449	35	0.50	0.50
18'x2 3/8" Pipe Mount	120.0000	100.00	2.55	1.47	188.00	1.446	35	4.75	4.75
Kreco CO-41AN	240.0000	14.00	-3.03	1.75	183.00	1.437	34	2.03	2.03
4' x 2" omni whip	120.0000	20.00	7.85	4.53	179.00	1.431	34	0.79	0.79
6' sidearm	0.0000	75.00	0.00	0.00	177.00	1.427	34	4.17	2.09
db Spectra DS9A09F36D-N	0.0000	55.00	0.00	-3.06	187.00	1.444	35	5.76	5.76
Bird Technologies 430-496-09168 TTA	0.0000	25.00	0.00	0.00	177.00	1.427	34	2.67	1.18
8'x4 1/2" Pipe Mount	0.0000	86.30	0.00	0.00	176.00	1.426	34	2.83	2.83
8'x4 1/2" Pipe Mount	0.0000	86.30	0.00	0.00	176.00	1.426	34	2.83	2.83
Sinclair SC351D-HF2LDF	180.0000	95.00	0.00	1.53	189.00	1.447	35	8.71	8.71

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
8'x4 1/2" Pipe Mount	0.0000	86.30	0.00	0.00	164.00	1.405	34	2.85	2.85
Sinclair SC351D-HF2LDF	300.0000	95.00	-6.75	-3.89	168.00	1.412	34	8.75	8.75
SD212 2-bay dipole	300.0000	30.00	-6.87	-3.97	163.00	1.403	34	3.50	3.50
Comprod 531-7071D	300.0000	40.00	-6.84	-3.95	164.42	1.405	34	3.80	3.80
3' Yagi	300.0000	30.95	-7.12	-4.11	153.00	1.384	33	2.08	2.08
8'x4 1/2" Pipe Mount	0.0000	86.30	0.00	-10.45	153.00	1.384	33	2.87	2.87
6' sidearm	0.0000	75.00	0.00	-7.45	153.00	1.384	33	4.17	2.09
TPA65R-BU8DA-K	300.0000	90.00	-6.11	-3.53	124.00	1.324	32	18.09	8.20
TPA65R-BU8DA-K	60.0000	90.00	6.11	-3.53	124.00	1.324	32	18.09	8.20
TPA65R-BU8DA-K	180.0000	90.00	0.00	7.06	124.00	1.324	32	18.09	8.20
HPA-65R-BU8A	300.0000	58.00	-6.11	-3.53	124.00	1.324	32	11.23	7.89
HPA-65R-BU8A	60.0000	58.00	6.11	-3.53	124.00	1.324	32	11.23	7.89
HPA-65R-BU8A	180.0000	58.00	0.00	7.06	124.00	1.324	32	11.23	7.89
DMP65R-BU8DA-K	300.0000	103.00	-6.11	-3.53	124.00	1.324	32	17.87	8.12
DMP65R-BU8DA-K	60.0000	103.00	6.11	-3.53	124.00	1.324	32	17.87	8.12
DMP65R-BU8DA-K	180.0000	103.00	0.00	7.06	124.00	1.324	32	17.87	8.12
Radio 4478	300.0000	65.00	-5.68	-3.28	124.00	1.324	32	1.86	1.06
Radio 4478	60.0000	65.00	5.68	-3.28	124.00	1.324	32	1.86	1.06
Radio 4478	180.0000	65.00	0.00	6.56	124.00	1.324	32	1.86	1.06
Ericsson RRUS-E2	300.0000	60.00	-5.68	-3.28	124.00	1.324	32	3.15	1.29
Ericsson RRUS-E2	60.0000	60.00	5.68	-3.28	124.00	1.324	32	3.15	1.29
Ericsson RRUS-E2	180.0000	60.00	0.00	6.56	124.00	1.324	32	3.15	1.29
Radio 4415	300.0000	50.00	-5.68	-3.28	124.00	1.324	32	1.84	0.82
Radio 4415	60.0000	50.00	5.68	-3.28	124.00	1.324	32	1.84	0.82
Radio 4415	180.0000	50.00	0.00	6.56	124.00	1.324	32	1.84	0.82
Radio 4449	300.0000	60.00	-5.68	-3.28	124.00	1.324	32	1.65	0.93
Radio 4449	60.0000	60.00	5.68	-3.28	124.00	1.324	32	1.65	0.93
Radio 4449	180.0000	60.00	0.00	6.56	124.00	1.324	32	1.65	0.93
Radio 8843	300.0000	71.87	-5.68	-3.28	124.00	1.324	32	1.64	1.36
Radio 8843	60.0000	71.87	5.68	-3.28	124.00	1.324	32	1.64	1.36
Radio 8843	180.0000	71.87	0.00	6.56	124.00	1.324	32	1.64	1.36
DC9-48-60-24-8C-EV	0.0000	33.00	0.00	0.00	124.00	1.324	32	1.14	1.14
DC9-48-60-24-8C-EV	0.0000	33.00	0.00	0.00	124.00	1.324	32	1.14	1.14
SitePro VFA12-WLL-30120	0.0000	650.00	0.00	0.00	124.00	1.324	32	13.20	9.20
SitePro VFA12-WLL-30120	0.0000	650.00	0.00	0.00	124.00	1.324	32	13.20	9.20
SitePro VFA12-WLL-30120	0.0000	650.00	0.00	0.00	124.00	1.324	32	13.20	9.20
6' x 18" x 6" panel	300.0000	100.00	-8.84	1.82	135.00	1.348	32	11.40	4.70
6' x 18" x 6" panel	60.0000	100.00	2.84	-8.57	135.00	1.348	32	11.40	4.70
6' x 18" x 6" panel	180.0000	100.00	6.00	6.74	135.00	1.348	32	11.40	4.70
1900 MHz RRH	300.0000	144.00	-8.41	2.07	135.00	1.348	32	3.26	2.49
1900 MHz RRH	60.0000	144.00	2.41	-8.32	135.00	1.348	32	3.26	2.49
1900 MHz RRH	180.0000	144.00	6.00	6.24	135.00	1.348	32	3.26	2.49
800 MHz RRH	300.0000	82.00	-6.41	-1.39	135.00	1.348	32	2.43	2.95
800 MHz RRH	60.0000	82.00	4.41	-4.85	135.00	1.348	32	2.43	2.95
800 MHz RRH	180.0000	82.00	2.00	6.24	135.00	1.348	32	2.43	2.95
800 MHz RRH	300.0000	82.00	-5.97	-1.14	135.00	1.348	32	2.43	2.95
800 MHz RRH	60.0000	82.00	3.97	-4.60	135.00	1.348	32	2.43	2.95
800 MHz RRH	180.0000	82.00	2.00	5.74	135.00	1.348	32	2.43	2.95
14' sector mount	0.0000	475.00	0.00	0.00	135.00	1.348	32	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	135.00	1.348	32	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	135.00	1.348	32	10.80	5.40
8' x 1' x 6" panel	0.0000	260.00	0.00	-10.64	115.00	1.303	31	45.87	27.20
8' x 1' x 6" panel	120.0000	260.00	9.21	5.32	115.00	1.303	31	45.87	27.20
8' x 1' x 6" panel	240.0000	260.00	-9.21	5.32	115.00	1.303	31	45.87	27.20
Ericsson RRUS-11	0.0000	220.00	0.00	-9.64	115.00	1.303	31	11.16	4.08
Ericsson RRUS-11	120.0000	220.00	8.35	4.82	115.00	1.303	31	11.16	4.08
Ericsson RRUS-11	240.0000	220.00	-8.35	4.82	115.00	1.303	31	11.16	4.08

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Raycap RDC-3315-PF-48 J-box	0.0000	30.00	0.00	-9.64	115.00	1.303	31	2.51	1.64
Raycap RDC-3315-PF-48 J-box	120.0000	30.00	8.35	4.82	115.00	1.303	31	2.51	1.64
Raycap RDC-3315-PF-48 J-box	240.0000	30.00	-8.35	4.82	115.00	1.303	31	2.51	1.64
14' sector mount	0.0000	475.00	0.00	0.00	115.00	1.303	31	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	115.00	1.303	31	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	115.00	1.303	31	10.80	5.40
8' x 1' x 6" panel	0.0000	260.00	0.00	-11.22	105.00	1.279	31	45.87	27.20
8' x 1' x 6" panel	120.0000	260.00	9.71	5.61	105.00	1.279	31	45.87	27.20
8' x 1' x 6" panel	240.0000	260.00	-9.71	5.61	105.00	1.279	31	45.87	27.20
Ericsson RRUS-11	0.0000	220.00	0.00	-10.22	105.00	1.279	31	11.16	4.08
Ericsson RRUS-11	120.0000	220.00	8.85	5.11	105.00	1.279	31	11.16	4.08
Ericsson RRUS-11	240.0000	220.00	-8.85	5.11	105.00	1.279	31	11.16	4.08
Raycap RDC-3315-PF-48 J-box	0.0000	30.00	0.00	-10.22	105.00	1.279	31	2.51	1.64
Raycap RDC-3315-PF-48 J-box	120.0000	30.00	8.85	5.11	105.00	1.279	31	2.51	1.64
Raycap RDC-3315-PF-48 J-box	240.0000	30.00	-8.85	5.11	105.00	1.279	31	2.51	1.64
14' sector mount	0.0000	475.00	0.00	0.00	105.00	1.279	31	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	105.00	1.279	31	10.80	5.40
14' sector mount	0.0000	475.00	0.00	0.00	105.00	1.279	31	10.80	5.40
	Sum Weight:	13248.76							

Discrete Appurtenance Vectors - Service

Generic Lightning Rod 4' copper - Elevation 190 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	7.39	12.79	0.00	-14.77	-2806.52	0.00	36.93
30	0.00	14.77	7.39	-12.79	-2430.52	-1403.26	42.64
60	7.39	12.79	12.79	-7.39	-1403.26	-2430.52	36.93
90	12.79	7.39	14.77	0.00	0.00	-2806.52	21.32
120	14.77	0.00	12.79	7.39	1403.26	-2430.52	0.00
150	12.79	7.39	7.39	12.79	2430.52	-1403.26	-21.32
180	7.39	12.79	0.00	14.77	2806.52	0.00	-36.93
210	0.00	14.77	-7.39	12.79	2430.52	1403.26	-42.64
240	7.39	12.79	-12.79	7.39	1403.26	2430.52	-36.93
270	12.79	7.39	-14.77	0.00	0.00	2806.52	-21.32
300	14.77	0.00	-12.79	-7.39	-1403.26	2430.52	0.00
330	12.79	7.39	-7.39	-12.79	-2430.52	1403.26	21.32

18'x2 3/8" Pipe Mount - Elevation 188 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	70.01	121.26	0.00	-140.01	-26175.34	-255.00	357.03
30	0.00	140.01	70.01	-121.26	-22648.79	-13416.28	412.27
60	70.01	121.26	121.26	-70.01	-13014.06	-23051.01	357.03
90	121.26	70.01	140.01	0.00	147.22	-26577.57	206.13
120	140.01	0.00	121.26	70.01	13308.51	-23051.01	0.00
150	121.26	70.01	70.01	121.26	22943.23	-13416.28	-206.13

18'x2 3/8" Pipe Mount - Elevation 188 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
180	70.01	121.26	0.00	140.01	26469.79	-255.00	-357.03
210	0.00	140.01	-70.01	121.26	22943.23	12906.28	-412.27
240	70.01	121.26	-121.26	70.01	13308.51	22541.01	-357.03
270	121.26	70.01	-140.01	0.00	147.22	26067.57	-206.13
300	140.01	0.00	-121.26	-70.01	-13014.06	22541.01	0.00
330	121.26	70.01	-70.01	-121.26	-22648.79	12906.28	206.13

Kreco CO-41AN - Elevation 183 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	29.81	51.63	0.00	-59.62	-10885.67	42.46	-180.82
30	51.63	29.81	29.81	-51.63	-9423.98	-5412.63	-104.40
60	59.62	0.00	51.63	-29.81	-5430.58	-9406.03	0.00
90	51.63	29.81	59.62	0.00	24.52	-10867.72	104.40
120	29.81	51.63	51.63	29.81	5479.61	-9406.03	180.82
150	0.00	59.62	29.81	51.63	9473.01	-5412.63	208.80
180	29.81	51.63	0.00	59.62	10934.70	42.46	180.82
210	51.63	29.81	-29.81	51.63	9473.01	5497.55	104.40
240	59.62	0.00	-51.63	29.81	5479.61	9490.96	0.00
270	51.63	29.81	-59.62	0.00	24.52	10952.64	-104.40
300	29.81	51.63	-51.63	-29.81	-5430.58	9490.96	-180.82
330	0.00	59.62	-29.81	-51.63	-9423.98	5497.55	-208.80

4' x 2" omni whip - Elevation 179 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	11.45	19.84	0.00	-22.91	-4009.71	-156.92	179.73
30	0.00	22.91	11.45	-19.84	-3460.37	-2207.08	207.53
60	11.45	19.84	19.84	-11.45	-1959.56	-3707.90	179.73
90	19.84	11.45	22.91	0.00	90.60	-4257.23	103.77
120	22.91	0.00	19.84	11.45	2140.75	-3707.90	0.00
150	19.84	11.45	11.45	19.84	3641.57	-2207.08	-103.77
180	11.45	19.84	0.00	22.91	4190.91	-156.92	-179.73
210	0.00	22.91	-11.45	19.84	3641.57	1893.23	-207.53
240	11.45	19.84	-19.84	11.45	2140.75	3394.05	-179.73
270	19.84	11.45	-22.91	0.00	90.60	3943.39	-103.77
300	22.91	0.00	-19.84	-11.45	-1959.56	3394.05	0.00
330	19.84	11.45	-11.45	-19.84	-3460.37	1893.23	103.77

6' sidearm - Elevation 177 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	121.37	0.00	0.00	-121.37	-21481.94	0.00	0.00
30	121.37	0.00	60.68	-105.11	-18603.91	-10740.97	0.00
60	121.37	0.00	105.11	-60.68	-10740.97	-18603.91	0.00
90	121.37	0.00	121.37	0.00	0.00	-21481.94	0.00
120	121.37	0.00	105.11	60.68	10740.97	-18603.91	0.00
150	121.37	0.00	60.68	105.11	18603.91	-10740.97	0.00
180	121.37	0.00	0.00	121.37	21481.94	0.00	0.00
210	121.37	0.00	-60.68	105.11	18603.91	10740.97	0.00
240	121.37	0.00	-105.11	60.68	10740.97	18603.91	0.00

6' sidearm - Elevation 177 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
270	121.37	0.00	-121.37	0.00	0.00	21481.94	0.00
300	121.37	0.00	-105.11	-60.68	-10740.97	18603.91	0.00
330	121.37	0.00	-60.68	-105.11	-18603.91	10740.97	0.00

db Spectra DS9A09F36D-N - Elevation 187 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	169.59	0.00	0.00	-169.59	-31882.46	0.00	0.00
30	146.87	84.80	84.80	-146.87	-27633.57	-15857.08	-259.48
60	84.80	146.87	146.87	-84.80	-16025.38	-27465.27	-449.43
90	0.00	169.59	169.59	0.00	-168.30	-31714.16	-518.95
120	84.80	146.87	146.87	84.80	15688.78	-27465.27	-449.43
150	146.87	84.80	84.80	146.87	27296.97	-15857.08	-259.48
180	169.59	0.00	0.00	169.59	31545.86	0.00	0.00
210	146.87	84.80	-84.80	146.87	27296.97	15857.08	259.48
240	84.80	146.87	-146.87	84.80	15688.78	27465.27	449.43
270	0.00	169.59	-169.59	0.00	-168.30	31714.16	518.95
300	84.80	146.87	-146.87	-84.80	-16025.38	27465.27	449.43
330	146.87	84.80	-84.80	-146.87	-27633.57	15857.08	259.48

Bird Technologies 430-496-09168 TTA - Elevation 177 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	77.61	0.00	0.00	-77.61	-13737.45	0.00	0.00
30	77.61	0.00	38.81	-67.21	-11896.98	-6868.73	0.00
60	77.61	0.00	67.21	-38.81	-6868.73	-11896.98	0.00
90	77.61	0.00	77.61	0.00	0.00	-13737.45	0.00
120	77.61	0.00	67.21	38.81	6868.73	-11896.98	0.00
150	77.61	0.00	38.81	67.21	11896.98	-6868.73	0.00
180	77.61	0.00	0.00	77.61	13737.45	0.00	0.00
210	77.61	0.00	-38.81	67.21	11896.98	6868.73	0.00
240	77.61	0.00	-67.21	38.81	6868.73	11896.98	0.00
270	77.61	0.00	-77.61	0.00	0.00	13737.45	0.00
300	77.61	0.00	-67.21	-38.81	-6868.73	11896.98	0.00
330	77.61	0.00	-38.81	-67.21	-11896.98	6868.73	0.00

8'x4 1/2" Pipe Mount - Elevation 176 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	55.13	0.00	0.00	-55.13	-9703.11	0.00	0.00
30	55.13	0.00	27.57	-47.75	-8403.14	-4851.56	0.00
60	55.13	0.00	47.75	-27.57	-4851.56	-8403.14	0.00
90	55.13	0.00	55.13	0.00	0.00	-9703.11	0.00
120	55.13	0.00	47.75	27.57	4851.56	-8403.14	0.00
150	55.13	0.00	27.57	47.75	8403.14	-4851.56	0.00
180	55.13	0.00	0.00	55.13	9703.11	0.00	0.00
210	55.13	0.00	-27.57	47.75	8403.14	4851.56	0.00
240	55.13	0.00	-47.75	27.57	4851.56	8403.14	0.00
270	55.13	0.00	-55.13	0.00	0.00	9703.11	0.00
300	55.13	0.00	-47.75	-27.57	-4851.56	8403.14	0.00
330	55.13	0.00	-27.57	-47.75	-8403.14	4851.56	0.00

8'x4 1/2" Pipe Mount - Elevation 176 - None C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	55.13	0.00	0.00	-55.13	-9703.11	0.00	0.00
30	55.13	0.00	27.57	-47.75	-8403.14	-4851.56	0.00
60	55.13	0.00	47.75	-27.57	-4851.56	-8403.14	0.00
90	55.13	0.00	55.13	0.00	0.00	-9703.11	0.00
120	55.13	0.00	47.75	27.57	4851.56	-8403.14	0.00
150	55.13	0.00	27.57	47.75	8403.14	-4851.56	0.00
180	55.13	0.00	0.00	55.13	9703.11	0.00	0.00
210	55.13	0.00	-27.57	47.75	8403.14	4851.56	0.00
240	55.13	0.00	-47.75	27.57	4851.56	8403.14	0.00
270	55.13	0.00	-55.13	0.00	0.00	9703.11	0.00
300	55.13	0.00	-47.75	-27.57	-4851.56	8403.14	0.00
330	55.13	0.00	-27.57	-47.75	-8403.14	4851.56	0.00

Sinclair SC351D-HF2LDF - Elevation 189 - From Face C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	256.89	0.00	0.00	-256.89	-48406.20	0.00	0.00
30	222.47	128.44	128.44	-222.47	-41901.52	-24275.77	196.52
60	128.44	222.47	222.47	-128.44	-24130.42	-42046.87	340.37
90	0.00	256.89	256.89	0.00	145.35	-48551.54	393.03
120	128.44	222.47	222.47	128.44	24421.12	-42046.87	340.37
150	222.47	128.44	128.44	222.47	42192.22	-24275.77	196.52
180	256.89	0.00	0.00	256.89	48696.89	0.00	0.00
210	222.47	128.44	-128.44	222.47	42192.22	24275.77	-196.52
240	128.44	222.47	-222.47	128.44	24421.12	42046.87	-340.37
270	0.00	256.89	-256.89	0.00	145.35	48551.54	-393.03
300	128.44	222.47	-222.47	-128.44	-24130.42	42046.87	-340.37
330	222.47	128.44	-128.44	-222.47	-41901.52	24275.77	-196.52

8'x4 1/2" Pipe Mount - Elevation 164 - None A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	81.62	0.00	0.00	-81.62	-13385.60	0.00	0.00
30	81.62	0.00	40.81	-70.68	-11592.27	-6692.80	0.00
60	81.62	0.00	70.68	-40.81	-6692.80	-11592.27	0.00
90	81.62	0.00	81.62	0.00	0.00	-13385.60	0.00
120	81.62	0.00	70.68	40.81	6692.80	-11592.27	0.00
150	81.62	0.00	40.81	70.68	11592.27	-6692.80	0.00
180	81.62	0.00	0.00	81.62	13385.60	0.00	0.00
210	81.62	0.00	-40.81	70.68	11592.27	6692.80	0.00
240	81.62	0.00	-70.68	40.81	6692.80	11592.27	0.00
270	81.62	0.00	-81.62	0.00	0.00	13385.60	0.00
300	81.62	0.00	-70.68	-40.81	-6692.80	11592.27	0.00
330	81.62	0.00	-40.81	-70.68	-11592.27	6692.80	0.00

Sinclair SC351D-HF2LDF - Elevation 156.00-180.00 - From Face A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	125.99	218.22	0.00	-251.98	-42701.87	640.88	-1699.86

Sinclair SC351D-HF2LDF - Elevation 156.00-180.00 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
30	0.00	251.98	125.99	-218.22	-37030.47	-20525.04	-1962.83
60	125.99	218.22	218.22	-125.99	-21535.94	-36019.57	-1699.86
90	218.22	125.99	251.98	0.00	-370.01	-41690.97	-981.42
120	251.98	0.00	218.22	125.99	20795.91	-36019.57	0.00
150	218.22	125.99	125.99	218.22	36290.44	-20525.04	981.42
180	125.99	218.22	0.00	251.98	41961.84	640.88	1699.86
210	0.00	251.98	-125.99	218.22	36290.44	21806.81	1962.83
240	125.99	218.22	-218.22	125.99	20795.91	37301.34	1699.86
270	218.22	125.99	-251.98	0.00	-370.01	42972.73	981.42
300	251.98	0.00	-218.22	-125.99	-21535.94	37301.34	0.00
330	218.22	125.99	-125.99	-218.22	-37030.47	21806.81	-981.42

SD212 2-bay dipole - Elevation 158.00-168.00 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	50.06	86.70	0.00	-100.11	-16437.73	206.13	-687.90
30	0.00	100.11	50.06	-86.70	-14251.44	-7953.22	-794.32
60	50.06	86.70	86.70	-50.06	-8278.37	-13926.29	-687.90
90	86.70	50.06	100.11	0.00	-119.01	-16112.58	-397.16
120	100.11	0.00	86.70	50.06	8040.35	-13926.29	0.00
150	86.70	50.06	50.06	86.70	14013.41	-7953.22	397.16
180	50.06	86.70	0.00	100.11	16199.71	206.13	687.90
210	0.00	100.11	-50.06	86.70	14013.41	8365.49	794.32
240	50.06	86.70	-86.70	50.06	8040.35	14338.56	687.90
270	86.70	50.06	-100.11	0.00	-119.01	16524.85	397.16
300	100.11	0.00	-86.70	-50.06	-8278.37	14338.56	0.00
330	86.70	50.06	-50.06	-86.70	-14251.44	8365.49	-397.16

Comprod 531-7071D - Elevation 158.00-170.83 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	54.39	94.20	0.00	-108.77	-18041.66	273.43	-743.54
30	0.00	108.77	54.39	-94.20	-15645.69	-8668.47	-858.57
60	54.39	94.20	94.20	-54.39	-9099.76	-15214.39	-743.54
90	94.20	54.39	108.77	0.00	-157.87	-17610.36	-429.28
120	108.77	0.00	94.20	54.39	8784.03	-15214.39	0.00
150	94.20	54.39	54.39	94.20	15329.96	-8668.47	429.28
180	54.39	94.20	0.00	108.77	17725.93	273.43	743.54
210	0.00	108.77	-54.39	94.20	15329.96	9215.33	858.57
240	54.39	94.20	-94.20	54.39	8784.03	15761.25	743.54
270	94.20	54.39	-108.77	0.00	-157.87	18157.23	429.28
300	108.77	0.00	-94.20	-54.39	-9099.76	15761.25	0.00
330	94.20	54.39	-54.39	-94.20	-15645.69	9215.33	-429.28

3' Yagi - Elevation 153 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	29.39	50.91	0.00	-58.78	-9121.13	220.40	-418.61
30	0.00	58.78	29.39	-50.91	-7916.18	-4276.54	-483.37
60	29.39	50.91	50.91	-29.39	-4624.19	-7568.53	-418.61
90	50.91	29.39	58.78	0.00	-127.25	-8773.48	-241.68

3' Yagi - Elevation 153 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
120	58.78	0.00	50.91	29.39	4369.69	-7568.53	0.00
150	50.91	29.39	29.39	50.91	7661.68	-4276.54	241.68
180	29.39	50.91	0.00	58.78	8866.63	220.40	418.61
210	0.00	58.78	-29.39	50.91	7661.68	4717.34	483.37
240	29.39	50.91	-50.91	29.39	4369.69	8009.33	418.61
270	50.91	29.39	-58.78	0.00	-127.25	9214.28	241.68
300	58.78	0.00	-50.91	-29.39	-4624.19	8009.33	0.00
330	50.91	29.39	-29.39	-50.91	-7916.18	4717.34	-241.68

8'x4 1/2" Pipe Mount - Elevation 153 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	80.97	0.00	0.00	-80.97	-13289.88	0.00	0.00
30	70.12	40.49	40.49	-70.12	-11630.15	-6194.21	-422.89
60	40.49	70.12	70.12	-40.49	-7095.67	-10728.69	-732.47
90	0.00	80.97	80.97	0.00	-901.45	-12388.43	-845.78
120	40.49	70.12	70.12	40.49	5292.76	-10728.69	-732.47
150	70.12	40.49	40.49	70.12	9827.24	-6194.21	-422.89
180	80.97	0.00	0.00	80.97	11486.97	0.00	0.00
210	70.12	40.49	-40.49	70.12	9827.24	6194.21	422.89
240	40.49	70.12	-70.12	40.49	5292.76	10728.69	732.47
270	0.00	80.97	-80.97	0.00	-901.45	12388.43	845.78
300	40.49	70.12	-70.12	-40.49	-7095.67	10728.69	732.47
330	70.12	40.49	-40.49	-70.12	-11630.15	6194.21	422.89

6' sidearm - Elevation 153 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	117.70	0.00	0.00	-117.70	-18566.57	0.00	0.00
30	101.93	29.50	29.50	-101.93	-16153.94	-4512.83	-219.61
60	58.85	51.09	51.09	-58.85	-9562.50	-7816.46	-380.38
90	0.00	58.99	58.99	0.00	-558.42	-9025.67	-439.23
120	58.85	51.09	51.09	58.85	8445.66	-7816.46	-380.38
150	101.93	29.50	29.50	101.93	15037.10	-4512.83	-219.61
180	117.70	0.00	0.00	117.70	17449.73	0.00	0.00
210	101.93	29.50	-29.50	101.93	15037.10	4512.83	219.61
240	58.85	51.09	-51.09	58.85	8445.66	7816.46	380.38
270	0.00	58.99	-58.99	0.00	-558.42	9025.67	439.23
300	58.85	51.09	-51.09	-58.85	-9562.50	7816.46	380.38
330	101.93	29.50	-29.50	-101.93	-16153.94	4512.83	219.61

TPA65R-BU8DA-K - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	195.39	153.41	-92.50	-230.55	-28906.34	12020.89	-1083.09
30	0.00	177.15	88.57	-153.41	-19340.88	-10432.77	-1250.64
60	195.39	153.41	245.92	-35.17	-4678.17	-29943.53	-1083.09
90	338.42	88.57	337.37	92.50	11152.92	-41283.51	-625.32
120	390.78	0.00	338.42	195.39	23910.47	-41414.15	0.00
150	338.42	88.57	248.80	245.92	30176.10	-30300.47	625.32
180	195.39	153.41	92.50	230.55	28270.95	-10920.35	1083.09

TPA65R-BU8DA-K - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
210	0.00	177.15	-88.57	153.41	18705.49	11533.31	1250.64
240	195.39	153.41	-245.92	35.17	4042.78	31044.07	1083.09
270	338.42	88.57	-337.37	-92.50	-11788.32	42384.04	625.32
300	390.78	0.00	-338.42	-195.39	-24545.87	42514.69	0.00
330	338.42	88.57	-248.80	-245.92	-30811.50	31401.00	-625.32

TPA65R-BU8DA-K - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	195.39	153.41	92.50	-230.55	-28906.34	-12020.89	1083.09
30	338.42	88.57	248.80	-245.92	-30811.50	-31401.00	625.32
60	390.78	0.00	338.42	-195.39	-24545.87	-42514.69	0.00
90	338.42	88.57	337.37	-92.50	-11788.32	-42384.04	-625.32
120	195.39	153.41	245.92	35.17	4042.78	-31044.07	-1083.09
150	0.00	177.15	88.57	153.41	18705.49	-11533.31	-1250.64
180	195.39	153.41	-92.50	230.55	28270.95	10920.35	-1083.09
210	338.42	88.57	-248.80	245.92	30176.10	30300.47	-625.32
240	390.78	0.00	-338.42	195.39	23910.47	41414.15	0.00
270	338.42	88.57	-337.37	92.50	11152.92	41283.51	625.32
300	195.39	153.41	-245.92	-35.17	-4678.17	29943.53	1083.09
330	0.00	177.15	-88.57	-153.41	-19340.88	10432.77	1250.64

TPA65R-BU8DA-K - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	390.78	0.00	0.00	-390.78	-47820.94	0.00	0.00
30	338.42	88.57	88.57	-338.42	-41329.02	-10983.04	625.32
60	195.39	153.41	153.41	-195.39	-23592.77	-19023.18	1083.09
90	0.00	177.15	177.15	0.00	635.40	-21966.08	1250.64
120	195.39	153.41	153.41	195.39	24863.57	-19023.18	1083.09
150	338.42	88.57	88.57	338.42	42599.82	-10983.04	625.32
180	390.78	0.00	0.00	390.78	49091.74	0.00	0.00
210	338.42	88.57	-88.57	338.42	42599.82	10983.04	-625.32
240	195.39	153.41	-153.41	195.39	24863.57	19023.18	-1083.09
270	0.00	177.15	-177.15	0.00	635.40	21966.08	-1250.64
300	195.39	153.41	-153.41	-195.39	-23592.77	19023.18	-1083.09
330	338.42	88.57	-88.57	-338.42	-41329.02	10983.04	-625.32

HPA-65R-BU8A - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	121.34	147.59	-31.29	-188.49	-23577.18	4234.01	-1041.99
30	0.00	170.42	85.21	-147.59	-18506.18	-10211.72	-1203.19
60	121.34	147.59	178.88	-67.15	-8531.31	-21826.21	-1041.99
90	210.16	85.21	224.61	31.29	3674.65	-27497.36	-601.60
120	242.68	0.00	210.16	121.34	14841.13	-25705.60	0.00
150	210.16	85.21	139.40	178.88	21976.09	-16931.02	601.60
180	121.34	147.59	31.29	188.49	23167.71	-3524.77	1041.99
210	0.00	170.42	-85.21	147.59	18096.70	10920.96	1203.19
240	121.34	147.59	-178.88	67.15	8121.83	22535.44	1041.99
270	210.16	85.21	-224.61	-31.29	-4084.13	28206.59	601.60

HPA-65R-BU8A - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
300	242.68	0.00	-210.16	-121.34	-15250.61	26414.83	0.00
330	210.16	85.21	-139.40	-178.88	-22385.56	17640.26	-601.60

HPA-65R-BU8A - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	121.34	147.59	31.29	-188.49	-23577.18	-4234.01	1041.99
30	210.16	85.21	139.40	-178.88	-22385.56	-17640.26	601.60
60	242.68	0.00	210.16	-121.34	-15250.61	-26414.83	0.00
90	210.16	85.21	224.61	-31.29	-4084.13	-28206.59	-601.60
120	121.34	147.59	178.88	67.15	8121.83	-22535.44	-1041.99
150	0.00	170.42	85.21	147.59	18096.70	-10920.96	-1203.19
180	121.34	147.59	-31.29	188.49	23167.71	3524.77	-1041.99
210	210.16	85.21	-139.40	178.88	21976.09	16931.02	-601.60
240	242.68	0.00	-210.16	121.34	14841.13	25705.60	0.00
270	210.16	85.21	-224.61	31.29	3674.65	27497.36	601.60
300	121.34	147.59	-178.88	-67.15	-8531.31	21826.21	1041.99
330	0.00	170.42	-85.21	-147.59	-18506.18	10211.72	1203.19

HPA-65R-BU8A - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	242.68	0.00	0.00	-242.68	-29682.27	0.00	0.00
30	210.16	85.21	85.21	-210.16	-25650.74	-10566.34	601.60
60	121.34	147.59	147.59	-121.34	-14636.39	-18301.44	1041.99
90	0.00	170.42	170.42	0.00	409.48	-21132.68	1203.19
120	121.34	147.59	147.59	121.34	15455.35	-18301.44	1041.99
150	210.16	85.21	85.21	210.16	26469.69	-10566.34	601.60
180	242.68	0.00	0.00	242.68	30501.22	0.00	0.00
210	210.16	85.21	-85.21	210.16	26469.69	10566.34	-601.60
240	121.34	147.59	-147.59	121.34	15455.35	18301.44	-1041.99
270	0.00	170.42	-170.42	0.00	409.48	21132.68	-1203.19
300	121.34	147.59	-147.59	-121.34	-14636.39	18301.44	-1041.99
330	210.16	85.21	-85.21	-210.16	-25650.74	10566.34	-601.60

DMP65R-BU8DA-K - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	193.04	151.96	-91.20	-228.12	-28650.12	11937.98	-1072.81
30	0.00	175.47	87.73	-151.96	-19206.33	-10249.11	-1238.78
60	193.04	151.96	243.15	-35.08	-4713.65	-29521.22	-1072.81
90	334.35	87.73	333.42	91.20	10944.64	-40714.40	-619.39
120	386.07	0.00	334.35	193.04	23572.89	-40829.45	0.00
150	334.35	87.73	245.69	243.15	29787.38	-29835.53	619.39
180	193.04	151.96	91.20	228.12	27922.95	-10678.47	1072.81
210	0.00	175.47	-87.73	151.96	18479.16	11508.62	1238.78
240	193.04	151.96	-243.15	35.08	3986.47	30780.72	1072.81
270	334.35	87.73	-333.42	-91.20	-11671.81	41973.90	619.39
300	386.07	0.00	-334.35	-193.04	-24300.07	42088.95	0.00
330	334.35	87.73	-245.69	-243.15	-30514.56	31095.04	-619.39

DMP65R-BU8DA-K - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	193.04	151.96	91.20	-228.12	-28650.12	-11937.98	1072.81
30	334.35	87.73	245.69	-243.15	-30514.56	-31095.04	619.39
60	386.07	0.00	334.35	-193.04	-24300.07	-42088.95	0.00
90	334.35	87.73	333.42	-91.20	-11671.81	-41973.90	-619.39
120	193.04	151.96	243.15	35.08	3986.47	-30780.72	-1072.81
150	0.00	175.47	87.73	151.96	18479.16	-11508.62	-1238.78
180	193.04	151.96	-91.20	228.12	27922.95	10678.47	-1072.81
210	334.35	87.73	-245.69	243.15	29787.38	29835.53	-619.39
240	386.07	0.00	-334.35	193.04	23572.89	40829.45	0.00
270	334.35	87.73	-333.42	91.20	10944.64	40714.40	619.39
300	193.04	151.96	-243.15	-35.08	-4713.65	29521.22	1072.81
330	0.00	175.47	-87.73	-151.96	-19206.33	10249.11	1238.78

DMP65R-BU8DA-K - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	386.07	0.00	0.00	-386.07	-47145.78	0.00	0.00
30	334.35	87.73	87.73	-334.35	-40732.02	-10878.86	619.39
60	193.04	151.96	151.96	-193.04	-23209.30	-18842.75	1072.81
90	0.00	175.47	175.47	0.00	727.18	-21757.73	1238.78
120	193.04	151.96	151.96	193.04	24663.65	-18842.75	1072.81
150	334.35	87.73	87.73	334.35	42186.37	-10878.86	619.39
180	386.07	0.00	0.00	386.07	48600.13	0.00	0.00
210	334.35	87.73	-87.73	334.35	42186.37	10878.86	-619.39
240	193.04	151.96	-151.96	193.04	24663.65	18842.75	-1072.81
270	0.00	175.47	-175.47	0.00	727.18	21757.73	-1238.78
300	193.04	151.96	-151.96	-193.04	-23209.30	18842.75	-1072.81
330	334.35	87.73	-87.73	-334.35	-40732.02	10878.86	-619.39

Radio 4478 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	20.05	19.81	-7.46	-27.18	-3583.45	1294.33	-129.94
30	0.00	22.87	11.44	-19.81	-2669.39	-1048.81	-150.04
60	20.05	19.81	27.27	-7.13	-1097.20	-3011.98	-129.94
90	34.73	11.44	35.79	7.46	711.86	-4069.15	-75.02
120	40.10	0.00	34.73	20.05	2273.05	-3937.04	0.00
150	34.73	11.44	24.36	27.27	3168.06	-2651.07	75.02
180	20.05	19.81	7.46	27.18	3157.05	-555.79	129.94
210	0.00	22.87	-11.44	19.81	2243.00	1787.36	150.04
240	20.05	19.81	-27.27	7.13	670.80	3750.53	129.94
270	34.73	11.44	-35.79	-7.46	-1138.26	4807.69	75.02
300	40.10	0.00	-34.73	-20.05	-2699.45	4675.59	0.00
330	34.73	11.44	-24.36	-27.27	-3594.45	3389.61	-75.02

Radio 4478 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	20.05	19.81	7.46	-27.18	-3583.45	-1294.33	129.94
30	34.73	11.44	24.36	-27.27	-3594.45	-3389.61	75.02

Radio 4478 - Elevation 124 - From Face B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	40.10	0.00	34.73	-20.05	-2699.45	-4675.59	0.00
90	34.73	11.44	35.79	-7.46	-1138.26	-4807.69	-75.02
120	20.05	19.81	27.27	7.13	670.80	-3750.53	-129.94
150	0.00	22.87	11.44	19.81	2243.00	-1787.36	-150.04
180	20.05	19.81	-7.46	27.18	3157.05	555.79	-129.94
210	34.73	11.44	-24.36	27.27	3168.06	2651.07	-75.02
240	40.10	0.00	-34.73	20.05	2273.05	3937.04	0.00
270	34.73	11.44	-35.79	7.46	711.86	4069.15	75.02
300	20.05	19.81	-27.27	-7.13	-1097.20	3011.98	129.94
330	0.00	22.87	-11.44	-19.81	-2669.39	1048.81	150.04

Radio 4478 - Elevation 124 - From Face C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	40.10	0.00	0.00	-40.10	-4546.11	0.00	0.00
30	34.73	11.44	11.44	-34.73	-3879.92	-1418.08	75.02
60	20.05	19.81	19.81	-20.05	-2059.86	-2456.19	129.94
90	0.00	22.87	22.87	0.00	426.40	-2836.17	150.04
120	20.05	19.81	19.81	20.05	2912.65	-2456.19	129.94
150	34.73	11.44	11.44	34.73	4732.71	-1418.08	75.02
180	40.10	0.00	0.00	40.10	5398.90	0.00	0.00
210	34.73	11.44	-11.44	34.73	4732.71	1418.08	-75.02
240	20.05	19.81	-19.81	20.05	2912.65	2456.19	-129.94
270	0.00	22.87	-22.87	0.00	426.40	2836.17	-150.04
300	20.05	19.81	-19.81	-20.05	-2059.86	2456.19	-129.94
330	34.73	11.44	-11.44	-34.73	-3879.92	1418.08	-75.02

Ericsson RRUS-E2 - Elevation 124 - From Face A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	33.97	24.05	-17.40	-37.81	-4885.46	2497.92	-157.76
30	0.00	27.77	13.88	-24.05	-3178.77	-1380.78	-182.16
60	33.97	24.05	41.44	-3.84	-673.07	-4798.17	-157.76
90	58.84	13.88	57.90	17.40	1960.26	-6838.55	-91.08
120	67.94	0.00	58.84	33.97	4015.60	-6955.22	0.00
150	58.84	13.88	44.01	41.44	4942.23	-5116.91	91.08
180	33.97	24.05	17.40	37.81	4491.87	-1816.19	157.76
210	0.00	27.77	-13.88	24.05	2785.18	2062.51	182.16
240	33.97	24.05	-41.44	3.84	279.47	5479.90	157.76
270	58.84	13.88	-57.90	-17.40	-2353.85	7520.28	91.08
300	67.94	0.00	-58.84	-33.97	-4409.20	7636.95	0.00
330	58.84	13.88	-44.01	-41.44	-5335.83	5798.64	-91.08

Ericsson RRUS-E2 - Elevation 124 - From Face B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	33.97	24.05	17.40	-37.81	-4885.46	-2497.92	157.76
30	58.84	13.88	44.01	-41.44	-5335.83	-5798.64	91.08
60	67.94	0.00	58.84	-33.97	-4409.20	-7636.95	0.00
90	58.84	13.88	57.90	-17.40	-2353.85	-7520.28	-91.08
120	33.97	24.05	41.44	3.84	279.47	-5479.90	-157.76

Ericsson RRUS-E2 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	0.00	27.77	13.88	24.05	2785.18	-2062.51	-182.16
180	33.97	24.05	-17.40	37.81	4491.87	1816.19	-157.76
210	58.84	13.88	-44.01	41.44	4942.23	5116.91	-91.08
240	67.94	0.00	-58.84	33.97	4015.60	6955.22	0.00
270	58.84	13.88	-57.90	17.40	1960.26	6838.55	91.08
300	33.97	24.05	-41.44	-3.84	-673.07	4798.17	157.76
330	0.00	27.77	-13.88	-24.05	-3178.77	1380.78	182.16

Ericsson RRUS-E2 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	67.94	0.00	0.00	-67.94	-8031.20	0.00	0.00
30	58.84	13.88	13.88	-58.84	-6902.49	-1721.64	91.08
60	33.97	24.05	24.05	-33.97	-3818.80	-2981.97	157.76
90	0.00	27.77	27.77	0.00	393.60	-3443.29	182.16
120	33.97	24.05	24.05	33.97	4606.00	-2981.97	157.76
150	58.84	13.88	13.88	58.84	7689.68	-1721.64	91.08
180	67.94	0.00	0.00	67.94	8818.39	0.00	0.00
210	58.84	13.88	-13.88	58.84	7689.68	1721.64	-91.08
240	33.97	24.05	-24.05	33.97	4606.00	2981.97	-157.76
270	0.00	27.77	-27.77	0.00	393.60	3443.29	-182.16
300	33.97	24.05	-24.05	-33.97	-3818.80	2981.97	-157.76
330	58.84	13.88	-13.88	-58.84	-6902.49	1721.64	-91.08

Radio 4415 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	19.90	15.34	-9.56	-23.24	-3045.70	1469.92	-100.66
30	0.00	17.72	8.86	-15.34	-2066.69	-814.47	-116.23
60	19.90	15.34	24.91	-3.34	-577.86	-2804.50	-100.66
90	34.47	8.86	34.28	9.56	1021.86	-3966.96	-58.11
120	39.80	0.00	34.47	19.90	2303.84	-3990.36	0.00
150	34.47	8.86	25.42	24.91	2924.56	-2868.44	58.11
180	19.90	15.34	9.56	23.24	2717.70	-901.81	100.66
210	0.00	17.72	-8.86	15.34	1738.70	1382.58	116.23
240	19.90	15.34	-24.91	3.34	249.86	3372.61	100.66
270	34.47	8.86	-34.28	-9.56	-1349.86	4535.07	58.11
300	39.80	0.00	-34.47	-19.90	-2631.83	4558.47	0.00
330	34.47	8.86	-25.42	-24.91	-3252.55	3436.55	-58.11

Radio 4415 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	19.90	15.34	9.56	-23.24	-3045.70	-1469.92	100.66
30	34.47	8.86	25.42	-24.91	-3252.55	-3436.55	58.11
60	39.80	0.00	34.47	-19.90	-2631.83	-4558.47	0.00
90	34.47	8.86	34.28	-9.56	-1349.86	-4535.07	-58.11
120	19.90	15.34	24.91	3.34	249.86	-3372.61	-100.66
150	0.00	17.72	8.86	15.34	1738.70	-1382.58	-116.23
180	19.90	15.34	-9.56	23.24	2717.70	901.81	-100.66
210	34.47	8.86	-25.42	24.91	2924.56	2868.44	-58.11

Radio 4415 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	39.80	0.00	-34.47	19.90	2303.84	3990.36	0.00
270	34.47	8.86	-34.28	9.56	1021.86	3966.96	58.11
300	19.90	15.34	-24.91	-3.34	-577.86	2804.50	100.66
330	0.00	17.72	-8.86	-15.34	-2066.69	814.47	116.23

Radio 4415 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	39.80	0.00	0.00	-39.80	-4607.67	0.00	0.00
30	34.47	8.86	8.86	-34.47	-3946.42	-1098.52	58.11
60	19.90	15.34	15.34	-19.90	-2139.84	-1902.69	100.66
90	0.00	17.72	17.72	0.00	328.00	-2197.04	116.23
120	19.90	15.34	15.34	19.90	2795.83	-1902.69	100.66
150	34.47	8.86	8.86	34.47	4602.41	-1098.52	58.11
180	39.80	0.00	0.00	39.80	5263.67	0.00	0.00
210	34.47	8.86	-8.86	34.47	4602.41	1098.52	-58.11
240	19.90	15.34	-15.34	19.90	2795.83	1902.69	-100.66
270	0.00	17.72	-17.72	0.00	328.00	2197.04	-116.23
300	19.90	15.34	-15.34	-19.90	-2139.84	1902.69	-100.66
330	34.47	8.86	-8.86	-34.47	-3946.42	1098.52	-58.11

Radio 4449 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	17.82	17.31	-6.78	-23.90	-3160.21	1181.83	-113.52
30	0.00	19.98	9.99	-17.31	-2342.71	-898.08	-131.09
60	17.82	17.31	24.09	-6.08	-950.21	-2646.01	-113.52
90	30.87	9.99	31.73	6.78	644.17	-3593.61	-65.54
120	35.65	0.00	30.87	17.82	2013.20	-3486.97	0.00
150	30.87	9.99	21.74	24.09	2790.07	-2354.67	65.54
180	17.82	17.31	6.78	23.90	2766.61	-500.10	113.52
210	0.00	19.98	-9.99	17.31	1949.11	1579.81	131.09
240	17.82	17.31	-24.09	6.08	556.61	3327.74	113.52
270	30.87	9.99	-31.73	-6.78	-1037.76	4275.34	65.54
300	35.65	0.00	-30.87	-17.82	-2406.80	4168.70	0.00
330	30.87	9.99	-21.74	-24.09	-3183.67	3036.40	-65.54

Radio 4449 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	17.82	17.31	6.78	-23.90	-3160.21	-1181.83	113.52
30	30.87	9.99	21.74	-24.09	-3183.67	-3036.40	65.54
60	35.65	0.00	30.87	-17.82	-2406.80	-4168.70	0.00
90	30.87	9.99	31.73	-6.78	-1037.76	-4275.34	-65.54
120	17.82	17.31	24.09	6.08	556.61	-3327.74	-113.52
150	0.00	19.98	9.99	17.31	1949.11	-1579.81	-131.09
180	17.82	17.31	-6.78	23.90	2766.61	500.10	-113.52
210	30.87	9.99	-21.74	24.09	2790.07	2354.67	-65.54
240	35.65	0.00	-30.87	17.82	2013.20	3486.97	0.00
270	30.87	9.99	-31.73	6.78	644.17	3593.61	65.54
300	17.82	17.31	-24.09	-6.08	-950.21	2646.01	113.52

Radio 4449 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	0.00	19.98	-9.99	-17.31	-2342.71	898.08	131.09

Radio 4449 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	35.65	0.00	0.00	-35.65	-4026.41	0.00	0.00
30	30.87	9.99	9.99	-30.87	-3434.24	-1238.94	65.54
60	17.82	17.31	17.31	-17.82	-1816.40	-2145.91	113.52
90	0.00	19.98	19.98	0.00	393.60	-2477.88	131.09
120	17.82	17.31	17.31	17.82	2603.60	-2145.91	113.52
150	30.87	9.99	9.99	30.87	4221.43	-1238.94	65.54
180	35.65	0.00	0.00	35.65	4813.60	0.00	0.00
210	30.87	9.99	-9.99	30.87	4221.43	1238.94	-65.54
240	17.82	17.31	-17.31	17.82	2603.60	2145.91	-113.52
270	0.00	19.98	-19.98	0.00	393.60	2477.88	-131.09
300	17.82	17.31	-17.31	-17.82	-1816.40	2145.91	-113.52
330	30.87	9.99	-9.99	-30.87	-3434.24	1238.94	-65.54

Radio 8843 - Elevation 124 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	17.67	25.42	-2.59	-30.85	-4061.20	729.33	-166.77
30	0.00	29.36	14.68	-25.42	-3388.17	-1411.76	-192.57
60	17.67	25.42	28.01	-13.18	-1870.45	-3065.16	-166.77
90	30.60	14.68	33.84	2.59	85.30	-3787.86	-96.29
120	35.33	0.00	30.60	17.67	1955.02	-3386.19	0.00
150	30.60	14.68	19.16	28.01	3237.73	-1967.80	96.29
180	17.67	25.42	2.59	30.85	3589.73	87.27	166.77
210	0.00	29.36	-14.68	25.42	2916.70	2228.36	192.57
240	17.67	25.42	-28.01	13.18	1398.98	3881.76	166.77
270	30.60	14.68	-33.84	-2.59	-556.76	4604.46	96.29
300	35.33	0.00	-30.60	-17.67	-2426.48	4202.79	0.00
330	30.60	14.68	-19.16	-28.01	-3709.20	2784.40	-96.29

Radio 8843 - Elevation 124 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	17.67	25.42	2.59	-30.85	-4061.20	-729.33	166.77
30	30.60	14.68	19.16	-28.01	-3709.20	-2784.40	96.29
60	35.33	0.00	30.60	-17.67	-2426.48	-4202.79	0.00
90	30.60	14.68	33.84	-2.59	-556.76	-4604.46	-96.29
120	17.67	25.42	28.01	13.18	1398.98	-3881.76	-166.77
150	0.00	29.36	14.68	25.42	2916.70	-2228.36	-192.57
180	17.67	25.42	-2.59	30.85	3589.73	-87.27	-166.77
210	30.60	14.68	-19.16	28.01	3237.73	1967.80	-96.29
240	35.33	0.00	-30.60	17.67	1955.02	3386.19	0.00
270	30.60	14.68	-33.84	2.59	85.30	3787.86	96.29
300	17.67	25.42	-28.01	-13.18	-1870.45	3065.16	166.77
330	0.00	29.36	-14.68	-25.42	-3388.17	1411.76	192.57

Radio 8843 - Elevation 124 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	35.33	0.00	0.00	-35.33	-3910.04	0.00	0.00
30	30.60	14.68	14.68	-30.60	-3323.03	-1820.06	96.29
60	17.67	25.42	25.42	-17.67	-1719.29	-3152.44	166.77
90	0.00	29.36	29.36	0.00	471.46	-3640.12	192.57
120	17.67	25.42	25.42	17.67	2662.21	-3152.44	166.77
150	30.60	14.68	14.68	30.60	4265.96	-1820.06	96.29
180	35.33	0.00	0.00	35.33	4852.97	0.00	0.00
210	30.60	14.68	-14.68	30.60	4265.96	1820.06	-96.29
240	17.67	25.42	-25.42	17.67	2662.21	3152.44	-166.77
270	0.00	29.36	-29.36	0.00	471.46	3640.12	-192.57
300	17.67	25.42	-25.42	-17.67	-1719.29	3152.44	-166.77
330	30.60	14.68	-14.68	-30.60	-3323.03	1820.06	-96.29

DC9-48-60-24-8C-EV - Elevation 124 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	24.73	0.00	0.00	-24.73	-3067.11	0.00	0.00
30	24.73	0.00	12.37	-21.42	-2656.20	-1533.56	0.00
60	24.73	0.00	21.42	-12.37	-1533.56	-2656.20	0.00
90	24.73	0.00	24.73	0.00	0.00	-3067.11	0.00
120	24.73	0.00	21.42	12.37	1533.56	-2656.20	0.00
150	24.73	0.00	12.37	21.42	2656.20	-1533.56	0.00
180	24.73	0.00	0.00	24.73	3067.11	0.00	0.00
210	24.73	0.00	-12.37	21.42	2656.20	1533.56	0.00
240	24.73	0.00	-21.42	12.37	1533.56	2656.20	0.00
270	24.73	0.00	-24.73	0.00	0.00	3067.11	0.00
300	24.73	0.00	-21.42	-12.37	-1533.56	2656.20	0.00
330	24.73	0.00	-12.37	-21.42	-2656.20	1533.56	0.00

DC9-48-60-24-8C-EV - Elevation 124 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	24.73	0.00	0.00	-24.73	-3067.11	0.00	0.00
30	24.73	0.00	12.37	-21.42	-2656.20	-1533.56	0.00
60	24.73	0.00	21.42	-12.37	-1533.56	-2656.20	0.00
90	24.73	0.00	24.73	0.00	0.00	-3067.11	0.00
120	24.73	0.00	21.42	12.37	1533.56	-2656.20	0.00
150	24.73	0.00	12.37	21.42	2656.20	-1533.56	0.00
180	24.73	0.00	0.00	24.73	3067.11	0.00	0.00
210	24.73	0.00	-12.37	21.42	2656.20	1533.56	0.00
240	24.73	0.00	-21.42	12.37	1533.56	2656.20	0.00
270	24.73	0.00	-24.73	0.00	0.00	3067.11	0.00
300	24.73	0.00	-21.42	-12.37	-1533.56	2656.20	0.00
330	24.73	0.00	-12.37	-21.42	-2656.20	1533.56	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	238.82	0.00	0.00	-238.82	-29614.03	0.00	0.00
30	238.82	0.00	119.41	-206.83	-25646.50	-14807.01	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	238.82	0.00	206.83	-119.41	-14807.01	-25646.50	0.00
90	238.82	0.00	238.82	0.00	0.00	-29614.03	0.00
120	238.82	0.00	206.83	119.41	14807.01	-25646.50	0.00
150	238.82	0.00	119.41	206.83	25646.50	-14807.01	0.00
180	238.82	0.00	0.00	238.82	29614.03	0.00	0.00
210	238.82	0.00	-119.41	206.83	25646.50	14807.01	0.00
240	238.82	0.00	-206.83	119.41	14807.01	25646.50	0.00
270	238.82	0.00	-238.82	0.00	0.00	29614.03	0.00
300	238.82	0.00	-206.83	-119.41	-14807.01	25646.50	0.00
330	238.82	0.00	-119.41	-206.83	-25646.50	14807.01	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	238.82	0.00	0.00	-238.82	-29614.03	0.00	0.00
30	238.82	0.00	119.41	-206.83	-25646.50	-14807.01	0.00
60	238.82	0.00	206.83	-119.41	-14807.01	-25646.50	0.00
90	238.82	0.00	238.82	0.00	0.00	-29614.03	0.00
120	238.82	0.00	206.83	119.41	14807.01	-25646.50	0.00
150	238.82	0.00	119.41	206.83	25646.50	-14807.01	0.00
180	238.82	0.00	0.00	238.82	29614.03	0.00	0.00
210	238.82	0.00	-119.41	206.83	25646.50	14807.01	0.00
240	238.82	0.00	-206.83	119.41	14807.01	25646.50	0.00
270	238.82	0.00	-238.82	0.00	0.00	29614.03	0.00
300	238.82	0.00	-206.83	-119.41	-14807.01	25646.50	0.00
330	238.82	0.00	-119.41	-206.83	-25646.50	14807.01	0.00

SitePro VFA12-WLL-30120 - Elevation 124 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	238.82	0.00	0.00	-238.82	-29614.03	0.00	0.00
30	238.82	0.00	119.41	-206.83	-25646.50	-14807.01	0.00
60	238.82	0.00	206.83	-119.41	-14807.01	-25646.50	0.00
90	238.82	0.00	238.82	0.00	0.00	-29614.03	0.00
120	238.82	0.00	206.83	119.41	14807.01	-25646.50	0.00
150	238.82	0.00	119.41	206.83	25646.50	-14807.01	0.00
180	238.82	0.00	0.00	238.82	29614.03	0.00	0.00
210	238.82	0.00	-119.41	206.83	25646.50	14807.01	0.00
240	238.82	0.00	-206.83	119.41	14807.01	25646.50	0.00
270	238.82	0.00	-238.82	0.00	0.00	29614.03	0.00
300	238.82	0.00	-206.83	-119.41	-14807.01	25646.50	0.00
330	238.82	0.00	-119.41	-206.83	-25646.50	14807.01	0.00

6' x 18" x 6" panel - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	125.36	89.52	-63.81	-140.21	-18745.38	9497.76	-1355.74
30	0.00	103.37	51.68	-89.52	-11902.61	-6093.43	-696.95
60	125.36	89.52	153.33	-14.85	-1821.63	-19815.04	148.59
90	217.13	51.68	213.88	63.81	8796.34	-27990.38	954.32
120	250.72	0.00	217.13	125.36	17106.24	-28428.89	1504.33

6' x 18" x 6" panel - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	217.13	51.68	162.20	153.33	20881.44	-21013.05	1651.27
180	125.36	89.52	63.81	140.21	19110.37	-7729.94	1355.74
210	0.00	103.37	-51.68	89.52	12267.59	7861.25	696.95
240	125.36	89.52	-153.33	14.85	2186.62	21582.86	-148.59
270	217.13	51.68	-213.88	-63.81	-8431.35	29758.20	-954.32
300	250.72	0.00	-217.13	-125.36	-16741.26	30196.71	-1504.33
330	217.13	51.68	-162.20	-153.33	-20516.45	22780.87	-1651.27

6' x 18" x 6" panel - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	125.36	89.52	63.81	-140.21	-19784.61	-8897.76	-148.59
30	217.13	51.68	162.20	-153.33	-21555.68	-22180.87	-954.32
60	250.72	0.00	217.13	-125.36	-17780.49	-29596.71	-1504.33
90	217.13	51.68	213.88	-63.81	-9470.58	-29158.20	-1651.27
120	125.36	89.52	153.33	14.85	1147.39	-20982.86	-1355.74
150	0.00	103.37	51.68	89.52	11228.36	-7261.25	-696.95
180	125.36	89.52	-63.81	140.21	18071.14	8329.94	148.59
210	217.13	51.68	-162.20	153.33	19842.21	21613.05	954.32
240	250.72	0.00	-217.13	125.36	16067.01	29028.89	1504.33
270	217.13	51.68	-213.88	63.81	7757.11	28590.38	1651.27
300	125.36	89.52	-153.33	-14.85	-2860.86	20415.04	1355.74
330	0.00	103.37	-51.68	-89.52	-12941.84	6693.43	696.95

6' x 18" x 6" panel - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	250.72	0.00	0.00	-250.72	-33173.26	-600.00	1504.33
30	217.13	51.68	51.68	-217.13	-28638.55	-7577.34	1651.27
60	125.36	89.52	89.52	-125.36	-16249.51	-12685.10	1355.74
90	0.00	103.37	103.37	0.00	674.24	-14554.67	696.95
120	125.36	89.52	89.52	125.36	17597.99	-12685.10	-148.59
150	217.13	51.68	51.68	217.13	29987.04	-7577.34	-954.32
180	250.72	0.00	0.00	250.72	34521.74	-600.00	-1504.33
210	217.13	51.68	-51.68	217.13	29987.04	6377.34	-1651.27
240	125.36	89.52	-89.52	125.36	17597.99	11485.10	-1355.74
270	0.00	103.37	-103.37	0.00	674.24	13354.67	-696.95
300	125.36	89.52	-89.52	-125.36	-16249.51	11485.10	148.59
330	217.13	51.68	-51.68	-217.13	-28638.55	6377.34	954.32

1900 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	35.83	47.46	-7.30	-59.02	-7668.24	2196.14	-511.24
30	0.00	54.80	27.40	-47.46	-6108.02	-2488.50	-342.08
60	35.83	47.46	54.76	-23.18	-2831.11	-6182.00	-81.27
90	62.06	27.40	67.45	7.30	1284.46	-7894.70	201.32
120	71.66	0.00	62.06	35.83	5135.92	-7167.67	429.97
150	62.06	27.40	40.05	54.76	7691.27	-4195.72	543.40
180	35.83	47.46	7.30	59.02	8265.82	224.81	511.24
210	0.00	54.80	-27.40	47.46	6705.61	4909.45	342.08

1900 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	35.83	47.46	-54.76	23.18	3428.70	8602.96	81.27
270	62.06	27.40	-67.45	-7.30	-686.87	10315.65	-201.32
300	71.66	0.00	-62.06	-35.83	-4538.33	9588.62	-429.97
330	62.06	27.40	-40.05	-54.76	-7093.69	6616.67	-543.40

1900 MHz RRH - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	35.83	47.46	7.30	-59.02	-9164.73	-1332.14	81.27
30	62.06	27.40	40.05	-54.76	-8590.18	-5752.67	-201.32
60	71.66	0.00	62.06	-35.83	-6034.82	-8724.62	-429.97
90	62.06	27.40	67.45	-7.30	-2183.36	-9451.65	-543.40
120	35.83	47.46	54.76	23.18	1932.20	-7738.96	-511.24
150	0.00	54.80	27.40	47.46	5209.12	-4045.45	-342.08
180	35.83	47.46	-7.30	59.02	6769.33	639.19	-81.27
210	62.06	27.40	-40.05	54.76	6194.78	5059.72	201.32
240	71.66	0.00	-62.06	35.83	3639.42	8031.67	429.97
270	62.06	27.40	-67.45	7.30	-212.04	8758.70	543.40
300	35.83	47.46	-54.76	-23.18	-4327.60	7046.00	511.24
330	0.00	54.80	-27.40	-47.46	-7604.52	3352.50	342.08

1900 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	71.66	0.00	0.00	-71.66	-8775.34	-864.00	429.97
30	62.06	27.40	27.40	-62.06	-7479.24	-4562.98	543.40
60	35.83	47.46	47.46	-35.83	-3938.22	-7270.82	511.24
90	0.00	54.80	54.80	0.00	898.91	-8261.96	342.08
120	35.83	47.46	47.46	35.83	5736.03	-7270.82	81.27
150	62.06	27.40	27.40	62.06	9277.05	-4562.98	-201.32
180	71.66	0.00	0.00	71.66	10573.16	-864.00	-429.97
210	62.06	27.40	-27.40	62.06	9277.05	2834.98	-543.40
240	35.83	47.46	-47.46	35.83	5736.03	5542.82	-511.24
270	0.00	54.80	-54.80	0.00	898.91	6533.96	-342.08
300	35.83	47.46	-47.46	-35.83	-3938.22	5542.82	-81.27
330	62.06	27.40	-27.40	-62.06	-7479.24	2834.98	201.32

800 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.68	56.26	5.02	-62.07	-8493.02	-152.88	-404.59
30	0.00	64.97	32.48	-56.26	-7709.52	-3860.03	-405.56
60	26.68	56.26	51.24	-35.38	-4890.79	-6392.13	-297.86
90	46.22	32.48	56.27	-5.02	-792.09	-7070.72	-110.34
120	53.37	0.00	46.22	26.68	3488.32	-5713.95	106.73
150	46.22	32.48	23.78	51.24	6803.52	-2685.39	295.21
180	26.68	56.26	-5.02	62.07	8265.20	1203.48	404.59
210	0.00	64.97	-32.48	56.26	7481.70	4910.63	405.56
240	26.68	56.26	-51.24	35.38	4662.97	7442.73	297.86
270	46.22	32.48	-56.27	5.02	564.27	8121.32	110.34
300	53.37	0.00	-46.22	-26.68	-3716.15	6764.55	-106.73

800 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	46.22	32.48	-23.78	-51.24	-7031.34	3735.99	-295.21

800 MHz RRH - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.68	56.26	-5.02	-62.07	-8777.08	316.88	297.86
30	46.22	32.48	23.78	-51.24	-7315.40	-3571.99	110.34
60	53.37	0.00	46.22	-26.68	-4000.20	-6600.55	-106.73
90	46.22	32.48	56.27	5.02	280.21	-7957.32	-295.21
120	26.68	56.26	51.24	35.38	4378.91	-7278.73	-404.59
150	0.00	64.97	32.48	56.26	7197.65	-4746.63	-405.56
180	26.68	56.26	5.02	62.07	7981.15	-1039.48	-297.86
210	46.22	32.48	-23.78	51.24	6519.47	2849.39	-110.34
240	53.37	0.00	-46.22	26.68	3204.27	5877.95	106.73
270	46.22	32.48	-56.27	-5.02	-1076.15	7234.72	295.21
300	26.68	56.26	-51.24	-35.38	-5174.84	6556.13	404.59
330	0.00	64.97	-32.48	-56.26	-7993.58	4024.03	405.56

800 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	53.37	0.00	0.00	-53.37	-6692.59	-164.00	106.73
30	46.22	32.48	32.48	-46.22	-5727.38	-4549.33	295.21
60	26.68	56.26	56.26	-26.68	-3090.36	-7759.61	404.59
90	0.00	64.97	64.97	0.00	511.88	-8934.66	405.56
120	26.68	56.26	56.26	26.68	4114.11	-7759.61	297.86
150	46.22	32.48	32.48	46.22	6751.13	-4549.33	110.34
180	53.37	0.00	0.00	53.37	7716.35	-164.00	-106.73
210	46.22	32.48	-32.48	46.22	6751.13	4221.33	-295.21
240	26.68	56.26	-56.26	26.68	4114.11	7431.61	-404.59
270	0.00	64.97	-64.97	0.00	511.88	8606.66	-405.56
300	26.68	56.26	-56.26	-26.68	-3090.36	7431.61	-297.86
330	46.22	32.48	-32.48	-46.22	-5727.38	4221.33	-110.34

800 MHz RRH - Elevation 135 - From Face A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.68	56.26	5.02	-62.07	-8472.52	-188.39	-376.46
30	0.00	64.97	32.48	-56.26	-7689.02	-3895.54	-373.07
60	26.68	56.26	51.24	-35.38	-4870.29	-6427.64	-269.72
90	46.22	32.48	56.27	-5.02	-771.59	-7106.23	-94.10
120	53.37	0.00	46.22	26.68	3508.82	-5749.46	106.73
150	46.22	32.48	23.78	51.24	6824.02	-2720.90	278.97
180	26.68	56.26	-5.02	62.07	8285.70	1167.97	376.46
210	0.00	64.97	-32.48	56.26	7502.20	4875.12	373.07
240	26.68	56.26	-51.24	35.38	4683.47	7407.23	269.72
270	46.22	32.48	-56.27	5.02	584.77	8085.81	94.10
300	53.37	0.00	-46.22	-26.68	-3695.65	6729.05	-106.73
330	46.22	32.48	-23.78	-51.24	-7010.84	3700.48	-278.97

800 MHz RRH - Elevation 135 - From Face B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.68	56.26	-5.02	-62.07	-8756.58	352.39	269.72
30	46.22	32.48	23.78	-51.24	-7294.90	-3536.48	94.10
60	53.37	0.00	46.22	-26.68	-3979.70	-6565.05	-106.73
90	46.22	32.48	56.27	5.02	300.71	-7921.81	-278.97
120	26.68	56.26	51.24	35.38	4399.41	-7243.23	-376.46
150	0.00	64.97	32.48	56.26	7218.15	-4711.12	-373.07
180	26.68	56.26	5.02	62.07	8001.65	-1003.97	-269.72
210	46.22	32.48	-23.78	51.24	6539.97	2884.90	-94.10
240	53.37	0.00	-46.22	26.68	3224.77	5913.46	106.73
270	46.22	32.48	-56.27	-5.02	-1055.65	7270.23	278.97
300	26.68	56.26	-51.24	-35.38	-5154.34	6591.64	376.46
330	0.00	64.97	-32.48	-56.26	-7973.08	4059.54	373.07

800 MHz RRH - Elevation 135 - From Face C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	53.37	0.00	0.00	-53.37	-6733.59	-164.00	106.73
30	46.22	32.48	32.48	-46.22	-5768.38	-4549.33	278.97
60	26.68	56.26	56.26	-26.68	-3131.36	-7759.61	376.46
90	0.00	64.97	64.97	0.00	470.88	-8934.66	373.07
120	26.68	56.26	56.26	26.68	4073.11	-7759.61	269.72
150	46.22	32.48	32.48	46.22	6710.13	-4549.33	94.10
180	53.37	0.00	0.00	53.37	7675.35	-164.00	-106.73
210	46.22	32.48	-32.48	46.22	6710.13	4221.33	-278.97
240	26.68	56.26	-56.26	26.68	4073.11	7431.61	-376.46
270	0.00	64.97	-64.97	0.00	470.88	8606.66	-373.07
300	26.68	56.26	-56.26	-26.68	-3131.36	7431.61	-269.72
330	46.22	32.48	-32.48	-46.22	-5768.38	4221.33	-94.10

14' sector mount - Elevation 135 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	237.53	0.00	0.00	-237.53	-32066.05	0.00	0.00
30	237.53	0.00	118.76	-205.70	-27770.02	-16033.03	0.00
60	237.53	0.00	205.70	-118.76	-16033.03	-27770.02	0.00
90	237.53	0.00	237.53	0.00	0.00	-32066.05	0.00
120	237.53	0.00	205.70	118.76	16033.03	-27770.02	0.00
150	237.53	0.00	118.76	205.70	27770.02	-16033.03	0.00
180	237.53	0.00	0.00	237.53	32066.05	0.00	0.00
210	237.53	0.00	-118.76	205.70	27770.02	16033.03	0.00
240	237.53	0.00	-205.70	118.76	16033.03	27770.02	0.00
270	237.53	0.00	-237.53	0.00	0.00	32066.05	0.00
300	237.53	0.00	-205.70	-118.76	-16033.03	27770.02	0.00
330	237.53	0.00	-118.76	-205.70	-27770.02	16033.03	0.00

14' sector mount - Elevation 135 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	237.53	0.00	0.00	-237.53	-32066.05	0.00	0.00
30	237.53	0.00	118.76	-205.70	-27770.02	-16033.03	0.00

14' sector mount - Elevation 135 - None B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	237.53	0.00	205.70	-118.76	-16033.03	-27770.02	0.00
90	237.53	0.00	237.53	0.00	0.00	-32066.05	0.00
120	237.53	0.00	205.70	118.76	16033.03	-27770.02	0.00
150	237.53	0.00	118.76	205.70	27770.02	-16033.03	0.00
180	237.53	0.00	0.00	237.53	32066.05	0.00	0.00
210	237.53	0.00	-118.76	205.70	27770.02	16033.03	0.00
240	237.53	0.00	-205.70	118.76	16033.03	27770.02	0.00
270	237.53	0.00	-237.53	0.00	0.00	32066.05	0.00
300	237.53	0.00	-205.70	-118.76	-16033.03	27770.02	0.00
330	237.53	0.00	-118.76	-205.70	-27770.02	16033.03	0.00

14' sector mount - Elevation 135 - None C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	237.53	0.00	0.00	-237.53	-32066.05	0.00	0.00
30	237.53	0.00	118.76	-205.70	-27770.02	-16033.03	0.00
60	237.53	0.00	205.70	-118.76	-16033.03	-27770.02	0.00
90	237.53	0.00	237.53	0.00	0.00	-32066.05	0.00
120	237.53	0.00	205.70	118.76	16033.03	-27770.02	0.00
150	237.53	0.00	118.76	205.70	27770.02	-16033.03	0.00
180	237.53	0.00	0.00	237.53	32066.05	0.00	0.00
210	237.53	0.00	-118.76	205.70	27770.02	16033.03	0.00
240	237.53	0.00	-205.70	118.76	16033.03	27770.02	0.00
270	237.53	0.00	-237.53	0.00	0.00	32066.05	0.00
300	237.53	0.00	-205.70	-118.76	-16033.03	27770.02	0.00
330	237.53	0.00	-118.76	-205.70	-27770.02	16033.03	0.00

8' x 1' x 6" panel - Elevation 115 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	975.27	0.00	0.00	-975.27	-114922.35	0.00	0.00
30	844.61	289.18	289.18	-844.61	-99896.29	-33255.58	-3076.73
60	487.64	500.87	500.87	-487.64	-58844.32	-57600.36	-5329.05
90	0.00	578.36	578.36	0.00	-2766.28	-66511.16	-6153.46
120	487.64	500.87	500.87	487.64	53311.76	-57600.36	-5329.05
150	844.61	289.18	289.18	844.61	94363.74	-33255.58	-3076.73
180	975.27	0.00	0.00	975.27	109389.80	0.00	0.00
210	844.61	289.18	-289.18	844.61	94363.74	33255.58	3076.73
240	487.64	500.87	-500.87	487.64	53311.76	57600.36	5329.05
270	0.00	578.36	-578.36	0.00	-2766.28	66511.16	6153.46
300	487.64	500.87	-500.87	-487.64	-58844.32	57600.36	5329.05
330	844.61	289.18	-289.18	-844.61	-99896.29	33255.58	3076.73

8' x 1' x 6" panel - Elevation 115 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	487.64	500.87	-171.87	-677.59	-76539.25	17369.16	5329.05
30	0.00	578.36	289.18	-500.87	-56217.22	-35651.25	6153.46
60	487.64	500.87	672.74	-189.95	-20461.21	-79760.85	5329.05
90	844.61	289.18	876.04	171.87	21147.97	-103140.51	3076.73
120	975.27	0.00	844.61	487.64	57461.18	-99525.68	0.00

8' x 1' x 6" panel - Elevation 115 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	844.61	289.18	586.86	672.74	78748.32	-69884.93	-3076.73
180	487.64	500.87	171.87	677.59	79305.53	-22160.49	-5329.05
210	0.00	578.36	-289.18	500.87	58983.49	30859.91	-6153.46
240	487.64	500.87	-672.74	189.95	23227.49	74969.52	-5329.05
270	844.61	289.18	-876.04	-171.87	-18381.69	98349.18	-3076.73
300	975.27	0.00	-844.61	-487.64	-54694.90	94734.35	0.00
330	844.61	289.18	-586.86	-672.74	-75982.05	65093.60	3076.73

8' x 1' x 6" panel - Elevation 115 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	487.64	500.87	171.87	-677.59	-76539.25	-17369.16	-5329.05
30	844.61	289.18	586.86	-672.74	-75982.05	-65093.60	-3076.73
60	975.27	0.00	844.61	-487.64	-54694.90	-94734.35	0.00
90	844.61	289.18	876.04	-171.87	-18381.69	-98349.18	3076.73
120	487.64	500.87	672.74	189.95	23227.49	-74969.52	5329.05
150	0.00	578.36	289.18	500.87	58983.49	-30859.91	6153.46
180	487.64	500.87	-171.87	677.59	79305.53	22160.49	5329.05
210	844.61	289.18	-586.86	672.74	78748.32	69884.93	3076.73
240	975.27	0.00	-844.61	487.64	57461.18	99525.68	0.00
270	844.61	289.18	-876.04	171.87	21147.97	103140.51	-3076.73
300	487.64	500.87	-672.74	-189.95	-20461.21	79760.85	-5329.05
330	0.00	578.36	-289.18	-500.87	-56217.22	35651.25	-6153.46

Ericsson RRUS-11 - Elevation 115 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	237.25	0.00	0.00	-237.25	-29404.13	0.00	0.00
30	205.46	43.38	43.38	-205.46	-25748.84	-4988.34	-418.13
60	118.62	75.13	75.13	-118.62	-15762.41	-8640.05	-724.23
90	0.00	86.75	86.75	0.00	-2120.70	-9976.67	-836.26
120	118.62	75.13	75.13	118.62	11521.02	-8640.05	-724.23
150	205.46	43.38	43.38	205.46	21507.45	-4988.34	-418.13
180	237.25	0.00	0.00	237.25	25162.74	0.00	0.00
210	205.46	43.38	-43.38	205.46	21507.45	4988.34	418.13
240	118.62	75.13	-75.13	118.62	11521.02	8640.05	724.23
270	0.00	86.75	-86.75	0.00	-2120.70	9976.67	836.26
300	118.62	75.13	-75.13	-118.62	-15762.41	8640.05	724.23
330	205.46	43.38	-43.38	-205.46	-25748.84	4988.34	418.13

Ericsson RRUS-11 - Elevation 115 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	118.62	75.13	-65.17	-124.38	-13243.02	5657.47	724.23
30	0.00	86.75	43.38	-75.13	-7579.71	-6824.91	836.26
60	118.62	75.13	140.30	-5.75	398.70	-17970.68	724.23
90	205.46	43.38	199.62	65.17	8554.39	-24793.32	418.13
120	237.25	0.00	205.46	118.62	14702.06	-25464.72	0.00
150	205.46	43.38	156.25	140.30	17194.45	-19804.98	-418.13
180	118.62	75.13	65.17	124.38	15363.71	-9330.62	-724.23
210	0.00	86.75	-43.38	75.13	9700.40	3151.76	-836.26

Ericsson RRUS-11 - Elevation 115 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	118.62	75.13	-140.30	5.75	1722.00	14297.52	-724.23
270	205.46	43.38	-199.62	-65.17	-6433.70	21120.17	-418.13
300	237.25	0.00	-205.46	-118.62	-12581.37	21791.57	0.00
330	205.46	43.38	-156.25	-140.30	-15073.75	16131.83	418.13

Ericsson RRUS-11 - Elevation 115 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	118.62	75.13	65.17	-124.38	-13243.02	-5657.47	-724.23
30	205.46	43.38	156.25	-140.30	-15073.75	-16131.83	-418.13
60	237.25	0.00	205.46	-118.62	-12581.37	-21791.57	0.00
90	205.46	43.38	199.62	-65.17	-6433.70	-21120.17	418.13
120	118.62	75.13	140.30	5.75	1722.00	-14297.52	724.23
150	0.00	86.75	43.38	75.13	9700.40	-3151.76	836.26
180	118.62	75.13	-65.17	124.38	15363.71	9330.62	724.23
210	205.46	43.38	-156.25	140.30	17194.45	19804.98	418.13
240	237.25	0.00	-205.46	118.62	14702.06	25464.72	0.00
270	205.46	43.38	-199.62	65.17	8554.39	24793.32	-418.13
300	118.62	75.13	-140.30	-5.75	398.70	17970.68	-724.23
330	0.00	86.75	-43.38	-75.13	-7579.71	6824.91	-836.26

Raycap RDC-3315-PF-48 J-box - Elevation 115 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	53.41	0.00	0.00	-53.41	-6431.69	0.00	0.00
30	46.26	17.44	17.44	-46.26	-5608.75	-2005.12	-168.07
60	26.71	30.20	30.20	-26.71	-3360.44	-3472.96	-291.11
90	0.00	34.87	34.87	0.00	-289.19	-4010.23	-336.15
120	26.71	30.20	30.20	26.71	2782.06	-3472.96	-291.11
150	46.26	17.44	17.44	46.26	5030.38	-2005.12	-168.07
180	53.41	0.00	0.00	53.41	5853.32	0.00	0.00
210	46.26	17.44	-17.44	46.26	5030.38	2005.12	168.07
240	26.71	30.20	-30.20	26.71	2782.06	3472.96	291.11
270	0.00	34.87	-34.87	0.00	-289.19	4010.23	336.15
300	26.71	30.20	-30.20	-26.71	-3360.44	3472.96	291.11
330	46.26	17.44	-17.44	-46.26	-5608.75	2005.12	168.07

Raycap RDC-3315-PF-48 J-box - Elevation 115 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.71	30.20	-8.03	-39.51	-4398.71	672.86	291.11
30	0.00	34.87	17.44	-30.20	-3328.37	-2255.56	336.15
60	26.71	30.20	38.23	-12.80	-1327.46	-4646.70	291.11
90	46.26	17.44	48.78	8.03	1067.89	-5859.88	168.07
120	53.41	0.00	46.26	26.71	3215.84	-5570.00	0.00
150	46.26	17.44	31.34	38.23	4540.86	-3854.76	-168.07
180	26.71	30.20	8.03	39.51	4687.89	-1173.74	-291.11
210	0.00	34.87	-17.44	30.20	3617.56	1754.67	-336.15
240	26.71	30.20	-38.23	12.80	1616.64	4145.82	-291.11
270	46.26	17.44	-48.78	-8.03	-778.71	5358.99	-168.07
300	53.41	0.00	-46.26	-26.71	-2926.66	5069.12	0.00

Raycap RDC-3315-PF-48 J-box - Elevation 115 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	46.26	17.44	-31.34	-38.23	-4251.67	3353.88	168.07

Raycap RDC-3315-PF-48 J-box - Elevation 115 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.71	30.20	8.03	-39.51	-4398.71	-672.86	-291.11
30	46.26	17.44	31.34	-38.23	-4251.67	-3353.88	-168.07
60	53.41	0.00	46.26	-26.71	-2926.66	-5069.12	0.00
90	46.26	17.44	48.78	-8.03	-778.71	-5358.99	168.07
120	26.71	30.20	38.23	12.80	1616.64	-4145.82	291.11
150	0.00	34.87	17.44	30.20	3617.56	-1754.67	336.15
180	26.71	30.20	-8.03	39.51	4687.89	1173.74	291.11
210	46.26	17.44	-31.34	38.23	4540.86	3854.76	168.07
240	53.41	0.00	-46.26	26.71	3215.84	5570.00	0.00
270	46.26	17.44	-48.78	8.03	1067.89	5859.88	-168.07
300	26.71	30.20	-38.23	-12.80	-1327.46	4646.70	-291.11
330	0.00	34.87	-17.44	-30.20	-3328.37	2255.56	-336.15

14' sector mount - Elevation 115 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	229.64	0.00	0.00	-229.64	-26408.84	0.00	0.00
30	229.64	0.00	114.82	-198.88	-22870.73	-13204.42	0.00
60	229.64	0.00	198.88	-114.82	-13204.42	-22870.73	0.00
90	229.64	0.00	229.64	0.00	0.00	-26408.84	0.00
120	229.64	0.00	198.88	114.82	13204.42	-22870.73	0.00
150	229.64	0.00	114.82	198.88	22870.73	-13204.42	0.00
180	229.64	0.00	0.00	229.64	26408.84	0.00	0.00
210	229.64	0.00	-114.82	198.88	22870.73	13204.42	0.00
240	229.64	0.00	-198.88	114.82	13204.42	22870.73	0.00
270	229.64	0.00	-229.64	0.00	0.00	26408.84	0.00
300	229.64	0.00	-198.88	-114.82	-13204.42	22870.73	0.00
330	229.64	0.00	-114.82	-198.88	-22870.73	13204.42	0.00

14' sector mount - Elevation 115 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	229.64	0.00	0.00	-229.64	-26408.84	0.00	0.00
30	229.64	0.00	114.82	-198.88	-22870.73	-13204.42	0.00
60	229.64	0.00	198.88	-114.82	-13204.42	-22870.73	0.00
90	229.64	0.00	229.64	0.00	0.00	-26408.84	0.00
120	229.64	0.00	198.88	114.82	13204.42	-22870.73	0.00
150	229.64	0.00	114.82	198.88	22870.73	-13204.42	0.00
180	229.64	0.00	0.00	229.64	26408.84	0.00	0.00
210	229.64	0.00	-114.82	198.88	22870.73	13204.42	0.00
240	229.64	0.00	-198.88	114.82	13204.42	22870.73	0.00
270	229.64	0.00	-229.64	0.00	0.00	26408.84	0.00
300	229.64	0.00	-198.88	-114.82	-13204.42	22870.73	0.00
330	229.64	0.00	-114.82	-198.88	-22870.73	13204.42	0.00

14' sector mount - Elevation 115 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	229.64	0.00	0.00	-229.64	-26408.84	0.00	0.00
30	229.64	0.00	114.82	-198.88	-22870.73	-13204.42	0.00
60	229.64	0.00	198.88	-114.82	-13204.42	-22870.73	0.00
90	229.64	0.00	229.64	0.00	0.00	-26408.84	0.00
120	229.64	0.00	198.88	114.82	13204.42	-22870.73	0.00
150	229.64	0.00	114.82	198.88	22870.73	-13204.42	0.00
180	229.64	0.00	0.00	229.64	26408.84	0.00	0.00
210	229.64	0.00	-114.82	198.88	22870.73	13204.42	0.00
240	229.64	0.00	-198.88	114.82	13204.42	22870.73	0.00
270	229.64	0.00	-229.64	0.00	0.00	26408.84	0.00
300	229.64	0.00	-198.88	-114.82	-13204.42	22870.73	0.00
330	229.64	0.00	-114.82	-198.88	-22870.73	13204.42	0.00

8' x 1' x 6" panel - Elevation 105 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	956.77	0.00	0.00	-956.77	-103377.20	0.00	0.00
30	828.59	283.69	283.69	-828.59	-89918.00	-29787.80	-3182.15
60	478.38	491.37	491.37	-478.38	-53146.79	-51593.98	-5511.65
90	0.00	567.39	567.39	0.00	-2916.39	-59575.60	-6364.31
120	478.38	491.37	491.37	478.38	47314.02	-51593.98	-5511.65
150	828.59	283.69	283.69	828.59	84085.23	-29787.80	-3182.15
180	956.77	0.00	0.00	956.77	97544.42	0.00	0.00
210	828.59	283.69	-283.69	828.59	84085.23	29787.80	3182.15
240	478.38	491.37	-491.37	478.38	47314.02	51593.98	5511.65
270	0.00	567.39	-567.39	0.00	-2916.39	59575.60	6364.31
300	478.38	491.37	-491.37	-478.38	-53146.79	51593.98	5511.65
330	828.59	283.69	-283.69	-828.59	-89918.00	29787.80	3182.15

8' x 1' x 6" panel - Elevation 105 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	478.38	491.37	-168.61	-664.73	-68338.71	15178.15	5511.65
30	0.00	567.39	283.69	-491.37	-50135.79	-32313.47	6364.31
60	478.38	491.37	659.98	-186.35	-18108.30	-71823.46	5511.65
90	828.59	283.69	859.42	168.61	19162.01	-92765.17	3182.15
120	956.77	0.00	828.59	478.38	51688.60	-89527.28	0.00
150	828.59	283.69	575.73	659.98	70755.99	-62977.38	-3182.15
180	478.38	491.37	168.61	664.73	71255.10	-20229.48	-5511.65
210	0.00	567.39	-283.69	491.37	53052.18	27262.13	-6364.31
240	478.38	491.37	-659.98	186.35	21024.69	66772.13	-5511.65
270	828.59	283.69	-859.42	-168.61	-16245.62	87713.84	-3182.15
300	956.77	0.00	-828.59	-478.38	-48772.21	84475.95	0.00
330	828.59	283.69	-575.73	-659.98	-67839.60	57926.04	3182.15

8' x 1' x 6" panel - Elevation 105 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	478.38	491.37	168.61	-664.73	-68338.71	-15178.15	-5511.65
30	828.59	283.69	575.73	-659.98	-67839.60	-57926.04	-3182.15

8' x 1' x 6" panel - Elevation 105 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
60	956.77	0.00	828.59	-478.38	-48772.21	-84475.95	0.00
90	828.59	283.69	859.42	-168.61	-16245.62	-87713.84	3182.15
120	478.38	491.37	659.98	186.35	21024.69	-66772.13	5511.65
150	0.00	567.39	283.69	491.37	53052.18	-27262.13	6364.31
180	478.38	491.37	-168.61	664.73	71255.10	20229.48	5511.65
210	828.59	283.69	-575.73	659.98	70755.99	62977.38	3182.15
240	956.77	0.00	-828.59	478.38	51688.60	89527.28	0.00
270	828.59	283.69	-859.42	168.61	19162.01	92765.17	-3182.15
300	478.38	491.37	-659.98	-186.35	-18108.30	71823.46	-5511.65
330	0.00	567.39	-283.69	-491.37	-50135.79	32313.47	-6364.31

Ericsson RRUS-11 - Elevation 105 - From Leg A							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	232.75	0.00	0.00	-232.75	-26686.12	0.00	0.00
30	201.56	42.55	42.55	-201.56	-23411.99	-4468.17	-434.77
60	116.37	73.71	73.71	-116.37	-14466.92	-7739.10	-753.04
90	0.00	85.11	85.11	0.00	-2247.71	-8936.34	-869.54
120	116.37	73.71	73.71	116.37	9971.49	-7739.10	-753.04
150	201.56	42.55	42.55	201.56	18916.57	-4468.17	-434.77
180	232.75	0.00	0.00	232.75	22190.69	0.00	0.00
210	201.56	42.55	-42.55	201.56	18916.57	4468.17	434.77
240	116.37	73.71	-73.71	116.37	9971.49	7739.10	753.04
270	0.00	85.11	-85.11	0.00	-2247.71	8936.34	869.54
300	116.37	73.71	-73.71	-116.37	-14466.92	7739.10	753.04
330	201.56	42.55	-42.55	-201.56	-23411.99	4468.17	434.77

Ericsson RRUS-11 - Elevation 105 - From Leg B							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	116.37	73.71	-63.93	-122.02	-11688.00	4766.02	753.04
30	0.00	85.11	42.55	-73.71	-6615.24	-6414.75	869.54
60	116.37	73.71	137.64	-5.64	531.20	-16398.27	753.04
90	201.56	42.55	195.84	63.93	7836.45	-22509.47	434.77
120	232.75	0.00	201.56	116.37	13343.06	-23110.86	0.00
150	201.56	42.55	153.28	137.64	15575.55	-18041.30	-434.77
180	116.37	73.71	63.93	122.02	13935.71	-8659.17	-753.04
210	0.00	85.11	-42.55	73.71	8862.95	2521.59	-869.54
240	116.37	73.71	-137.64	5.64	1716.51	12505.11	-753.04
270	201.56	42.55	-195.84	-63.93	-5588.74	18616.31	-434.77
300	232.75	0.00	-201.56	-116.37	-11095.35	19217.70	0.00
330	201.56	42.55	-153.28	-137.64	-13327.83	14148.14	434.77

Ericsson RRUS-11 - Elevation 105 - From Leg C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	116.37	73.71	63.93	-122.02	-11688.00	-4766.02	-753.04
30	201.56	42.55	153.28	-137.64	-13327.83	-14148.14	-434.77
60	232.75	0.00	201.56	-116.37	-11095.35	-19217.70	0.00
90	201.56	42.55	195.84	-63.93	-5588.74	-18616.31	434.77
120	116.37	73.71	137.64	5.64	1716.51	-12505.11	753.04

Ericsson RRUS-11 - Elevation 105 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
150	0.00	85.11	42.55	73.71	8862.95	-2521.59	869.54
180	116.37	73.71	-63.93	122.02	13935.71	8659.17	753.04
210	201.56	42.55	-153.28	137.64	15575.55	18041.30	434.77
240	232.75	0.00	-201.56	116.37	13343.06	23110.86	0.00
270	201.56	42.55	-195.84	63.93	7836.45	22509.47	-434.77
300	116.37	73.71	-137.64	-5.64	531.20	16398.27	-753.04
330	0.00	85.11	-42.55	-73.71	-6615.24	6414.75	-869.54

Raycap RDC-3315-PF-48 J-box - Elevation 105 - From Leg A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	52.40	0.00	0.00	-52.40	-5808.49	0.00	0.00
30	45.38	17.11	17.11	-45.38	-5071.36	-1796.03	-174.76
60	26.20	29.63	29.63	-26.20	-3057.50	-3110.81	-302.69
90	0.00	34.21	34.21	0.00	-306.51	-3592.06	-349.52
120	26.20	29.63	29.63	26.20	2444.48	-3110.81	-302.69
150	45.38	17.11	17.11	45.38	4458.35	-1796.03	-174.76
180	52.40	0.00	0.00	52.40	5195.48	0.00	0.00
210	45.38	17.11	-17.11	45.38	4458.35	1796.03	174.76
240	26.20	29.63	-29.63	26.20	2444.48	3110.81	302.69
270	0.00	34.21	-34.21	0.00	-306.51	3592.06	349.52
300	26.20	29.63	-29.63	-26.20	-3057.50	3110.81	302.69
330	45.38	17.11	-17.11	-45.38	-5071.36	1796.03	174.76

Raycap RDC-3315-PF-48 J-box - Elevation 105 - From Leg B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.20	29.63	-7.88	-38.76	-3916.29	561.58	302.69
30	0.00	34.21	17.11	-29.63	-2957.56	-2061.47	349.52
60	26.20	29.63	37.50	-12.56	-1165.29	-4203.28	302.69
90	45.38	17.11	47.85	7.88	980.27	-5289.94	174.76
120	52.40	0.00	45.38	26.20	2904.24	-5030.30	0.00
150	45.38	17.11	30.75	37.50	4091.09	-3493.91	-174.76
180	26.20	29.63	7.88	38.76	4222.79	-1092.46	-302.69
210	0.00	34.21	-17.11	29.63	3264.07	1530.59	-349.52
240	26.20	29.63	-37.50	12.56	1471.80	3672.39	-302.69
270	45.38	17.11	-47.85	-7.88	-673.77	4759.06	-174.76
300	52.40	0.00	-45.38	-26.20	-2597.74	4499.41	0.00
330	45.38	17.11	-30.75	-37.50	-3784.58	2963.03	174.76

Raycap RDC-3315-PF-48 J-box - Elevation 105 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	26.20	29.63	7.88	-38.76	-3916.29	-561.58	-302.69
30	45.38	17.11	30.75	-37.50	-3784.58	-2963.03	-174.76
60	52.40	0.00	45.38	-26.20	-2597.74	-4499.41	0.00
90	45.38	17.11	47.85	-7.88	-673.77	-4759.06	174.76
120	26.20	29.63	37.50	12.56	1471.80	-3672.39	302.69
150	0.00	34.21	17.11	29.63	3264.07	-1530.59	349.52
180	26.20	29.63	-7.88	38.76	4222.79	1092.46	302.69
210	45.38	17.11	-30.75	37.50	4091.09	3493.91	174.76

Raycap RDC-3315-PF-48 J-box - Elevation 105 - From Leg C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
240	52.40	0.00	-45.38	26.20	2904.24	5030.30	0.00
270	45.38	17.11	-47.85	7.88	980.27	5289.94	-174.76
300	26.20	29.63	-37.50	-12.56	-1165.29	4203.28	-302.69
330	0.00	34.21	-17.11	-29.63	-2957.56	2061.47	-349.52

14' sector mount - Elevation 105 - None A

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	225.29	0.00	0.00	-225.29	-23655.02	0.00	0.00
30	225.29	0.00	112.64	-195.10	-20485.85	-11827.51	0.00
60	225.29	0.00	195.10	-112.64	-11827.51	-20485.85	0.00
90	225.29	0.00	225.29	0.00	0.00	-23655.02	0.00
120	225.29	0.00	195.10	112.64	11827.51	-20485.85	0.00
150	225.29	0.00	112.64	195.10	20485.85	-11827.51	0.00
180	225.29	0.00	0.00	225.29	23655.02	0.00	0.00
210	225.29	0.00	-112.64	195.10	20485.85	11827.51	0.00
240	225.29	0.00	-195.10	112.64	11827.51	20485.85	0.00
270	225.29	0.00	-225.29	0.00	0.00	23655.02	0.00
300	225.29	0.00	-195.10	-112.64	-11827.51	20485.85	0.00
330	225.29	0.00	-112.64	-195.10	-20485.85	11827.51	0.00

14' sector mount - Elevation 105 - None B

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	225.29	0.00	0.00	-225.29	-23655.02	0.00	0.00
30	225.29	0.00	112.64	-195.10	-20485.85	-11827.51	0.00
60	225.29	0.00	195.10	-112.64	-11827.51	-20485.85	0.00
90	225.29	0.00	225.29	0.00	0.00	-23655.02	0.00
120	225.29	0.00	195.10	112.64	11827.51	-20485.85	0.00
150	225.29	0.00	112.64	195.10	20485.85	-11827.51	0.00
180	225.29	0.00	0.00	225.29	23655.02	0.00	0.00
210	225.29	0.00	-112.64	195.10	20485.85	11827.51	0.00
240	225.29	0.00	-195.10	112.64	11827.51	20485.85	0.00
270	225.29	0.00	-225.29	0.00	0.00	23655.02	0.00
300	225.29	0.00	-195.10	-112.64	-11827.51	20485.85	0.00
330	225.29	0.00	-112.64	-195.10	-20485.85	11827.51	0.00

14' sector mount - Elevation 105 - None C

Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	225.29	0.00	0.00	-225.29	-23655.02	0.00	0.00
30	225.29	0.00	112.64	-195.10	-20485.85	-11827.51	0.00
60	225.29	0.00	195.10	-112.64	-11827.51	-20485.85	0.00
90	225.29	0.00	225.29	0.00	0.00	-23655.02	0.00
120	225.29	0.00	195.10	112.64	11827.51	-20485.85	0.00
150	225.29	0.00	112.64	195.10	20485.85	-11827.51	0.00
180	225.29	0.00	0.00	225.29	23655.02	0.00	0.00
210	225.29	0.00	-112.64	195.10	20485.85	11827.51	0.00
240	225.29	0.00	-195.10	112.64	11827.51	20485.85	0.00
270	225.29	0.00	-225.29	0.00	0.00	23655.02	0.00
300	225.29	0.00	-195.10	-112.64	-11827.51	20485.85	0.00

14' sector mount - Elevation 105 - None C							
Wind Azimuth °	F_a lb	F_s lb	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
330	225.29	0.00	-112.64	-195.10	-20485.85	11827.51	0.00

Discrete Appurtenance Totals - Service

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.00	-14352.53	-1789326.62	971.39	-3157.05
30	7146.91	-12429.65	-1549869.54	-888203.37	-4246.51
60	12378.81	-7176.26	-895660.62	-1539124.47	-4198.12
90	14293.82	0.00	-1994.62	-1777378.13	-3024.85
120	12378.81	7176.26	891671.37	-1539124.47	-1041.08
150	7146.91	12429.65	1545880.29	-888203.37	1221.66
180	0.00	14352.53	1785337.37	971.39	3157.05
210	-7146.91	12429.65	1545880.29	890146.15	4246.51
240	-12378.81	7176.26	891671.37	1541067.25	4198.12
270	-14293.82	0.00	-1994.62	1779320.90	3024.85
300	-12378.81	-7176.26	-895660.62	1541067.25	1041.08
330	-7146.91	-12429.65	-1549869.54	890146.15	-1221.66

Dish Pressures - No Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
176.00	8' dish with radome	300.0000	450.00	-1.78	-1.03	1.426	50.27	57
176.00	8' dish with radome	180.0000	450.00	0.00	2.06	1.426	50.27	57
164.00	8' dish with radome	300.0000	450.00	-2.08	-1.20	1.405	50.27	56
		Sum Weight:	1350.00					

Dish Vectors - No Ice

8' dish with radome - Elevation 176 - From Face A											
Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.000420	-0.000890	-0.000404	-396.33	-839.84	-3049.83	76.69	-925.48	-163348.06	-12694.84	-4778.92
30	0.000340	-0.001040	-0.000390	320.84	-981.38	-2944.14	768.54	-689.48	-121812.15	-134461.08	-4964.65
60	0.001070	-0.001280	0.000002	1009.69	-1207.85	15.10	1478.34	-541.19	-95712.06	-259386.04	-2471.68
90	0.001950	-0.001050	0.000277	1840.09	-990.82	2091.10	2088.97	61.97	10443.77	-366856.64	51.16
120	0.002210	0.000000	0.000000	2085.43	0.00	0.00	1806.04	1042.72	183054.90	-317060.38	0.00
150	0.001950	0.001050	-0.000277	1840.09	990.82	-2091.10	1098.15	1778.12	312485.29	-192472.89	-51.16
180	0.001070	0.001280	-0.000002	1009.69	1207.85	-15.10	270.49	1550.88	272490.93	-46803.94	2471.68
210	0.000340	0.001040	0.000390	320.84	981.38	2944.14	-212.84	1010.32	177352.79	38261.87	4964.65
240	-0.000420	0.000890	0.000404	-396.33	839.84	3049.83	-763.15	529.16	92668.08	135116.15	4778.92
270	-0.001330	0.000700	0.000132	-1255.03	660.54	996.48	-1417.16	-55.47	-10225.78	250223.23	2356.44
300	-0.001770	0.000000	0.000000	-1670.23	0.00	0.00	-1446.47	-835.12	-147443.83	255380.21	0.00
330	-0.001330	-0.000700	-0.000132	-1255.03	-660.54	-996.48	-756.62	-1199.57	-211586.79	133967.40	-2356.44

8' dish with radome - Elevation 176 - From Face C

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.002210	0.000000	0.000000	2085.43	0.00	0.00	0.00	-2085.43	-366109.80	0.00	0.00
30	0.001950	0.001050	-0.000277	1840.09	990.82	-2091.10	990.82	-1840.09	-322929.06	-174383.75	-51.16
60	0.001070	0.001280	-0.000002	1009.69	1207.85	-15.10	1207.85	-1009.69	-176778.87	-212582.10	2471.68
90	0.000340	0.001040	0.000390	320.84	981.38	2944.14	981.38	-320.84	-55540.64	-172722.95	4964.65
120	-0.000420	0.000890	0.000404	-396.33	839.84	3049.83	839.84	396.33	70679.98	-147810.99	4778.92
150	-0.001330	0.000700	0.000132	-1255.03	660.54	996.48	660.54	1255.03	221812.57	-116255.83	2356.44
180	-0.001770	0.000000	0.000000	-1670.23	0.00	0.00	0.00	1670.23	294887.66	0.00	0.00
210	-0.001330	-0.000700	-0.000132	-1255.03	-660.54	-996.48	-660.54	1255.03	221812.57	116255.83	-2356.44
240	-0.000420	-0.000890	-0.000404	-396.33	-839.84	-3049.83	-839.84	396.33	70679.98	147810.99	-4778.92
270	0.000340	-0.001040	-0.000390	320.84	-981.38	-2944.14	-981.38	-320.84	-55540.64	172722.95	-4964.65
300	0.001070	-0.001280	0.000002	1009.69	-1207.85	15.10	-1207.85	-1009.69	-176778.87	212582.10	-2471.68
330	0.001950	-0.001050	0.000277	1840.09	-990.82	2091.10	-990.82	-1840.09	-322929.06	174383.75	51.16

8' dish with radome - Elevation 164 - From Face A

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.000420	-0.000890	-0.000404	-390.48	-827.44	-3004.82	75.56	-911.82	-150080.43	-11453.98	-4995.03
30	0.000340	-0.001040	-0.000390	316.10	-966.90	-2900.69	757.20	-679.31	-111947.66	-123243.60	-5226.33
60	0.001070	-0.001280	0.000002	994.79	-1190.03	14.88	1456.53	-533.20	-87986.03	-237933.14	-2847.45
90	0.001950	-0.001050	0.000277	1812.93	-976.20	2060.24	2058.14	61.06	9472.19	-336598.40	-287.76
120	0.002210	0.000000	0.000000	2054.66	0.00	0.00	1779.39	1027.33	167940.85	-290882.08	0.00
150	0.001950	0.001050	-0.000277	1812.93	976.20	-2060.24	1081.95	1751.88	286766.67	-176502.36	287.76
180	0.001070	0.001280	-0.000002	994.79	1190.03	-14.88	266.50	1527.99	250049.15	-42768.43	2847.45
210	0.000340	0.001040	0.000390	316.10	966.90	2900.69	-209.70	995.41	162705.92	35327.72	5226.33
240	-0.000420	0.000890	0.000404	-390.48	827.44	3004.82	-751.88	521.35	84959.65	124246.48	4995.03
270	-0.001330	0.000700	0.000132	-1236.51	650.80	981.77	-1396.25	-54.65	-9503.85	229922.54	2547.11
300	-0.001770	0.000000	0.000000	-1645.59	0.00	0.00	-1425.12	-822.79	-135479.28	234656.99	0.00
330	-0.001330	-0.000700	-0.000132	-1236.51	-650.80	-981.77	-745.45	-1181.86	-194366.84	123191.85	-2547.11

Dish Totals - No Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	152.25	-3922.74	-679538.29	-24148.81	-9773.95
30	2516.56	-3208.88	-556688.87	-432088.43	-10242.14
60	4142.72	-2084.08	-360476.95	-709901.27	-2847.45
90	5128.50	-197.81	-35624.68	-876178.00	4728.05
120	4425.26	2466.37	421675.72	-755753.45	4778.92
150	2840.65	4785.03	821064.52	-485231.08	2593.04
180	536.99	4749.10	817427.74	-89572.38	5319.13
210	-1083.08	3260.76	561871.27	189845.43	7834.55
240	-2354.87	1446.83	248307.71	407173.62	4995.03
270	-3794.80	-430.96	-75270.27	652868.73	-61.11
300	-4079.44	-2667.60	-459701.97	702619.29	-2471.68
330	-2492.89	-4221.52	-728882.68	431543.00	-4852.39

Dish Pressures - With Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf	t_z in

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf	t_z in
176.00	8' dish with radome	300.0000	1384.30	-1.78	-1.03	1.426	54.00	8	1.7733
176.00	8' dish with radome	180.0000	1384.30	0.00	2.06	1.426	54.00	8	1.7733
164.00	8' dish with radome	300.0000	1377.73	-2.08	-1.20	1.405	53.98	8	1.7609
		Sum Weight:	4146.33						

Dish Vectors - With Ice

8' dish with radome - Elevation 176 - From Face A

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.000420	-0.000890	-0.000404	-58.40	-123.76	-449.41	11.30	-136.38	-25427.28	479.32	-704.21
30	0.000340	-0.001040	-0.000390	47.28	-144.61	-433.84	113.25	-101.60	-19306.66	-17463.82	-731.58
60	0.001070	-0.001280	0.000002	148.79	-177.99	2.22	217.84	-79.75	-15460.63	-35872.41	-364.22
90	0.001950	-0.001050	0.000277	271.15	-146.00	308.14	307.82	9.13	182.20	-51708.97	7.54
120	0.002210	0.000000	0.000000	307.30	0.00	0.00	266.13	153.65	25617.69	-44371.14	0.00
150	0.001950	0.001050	-0.000277	271.15	146.00	-308.14	161.82	262.02	44690.19	-26012.27	-7.54
180	0.001070	0.001280	-0.000002	148.79	177.99	-2.22	39.86	228.53	38796.73	-4546.91	364.22
210	0.000340	0.001040	0.000390	47.28	144.61	433.84	-31.36	148.88	24777.44	7988.15	731.58
240	-0.000420	0.000890	0.000404	-58.40	123.76	449.41	-112.46	77.97	12298.54	22260.33	704.21
270	-0.001330	0.000700	0.000132	-184.94	97.34	146.84	-208.83	-8.17	-2863.61	39222.18	347.24
300	-0.001770	0.000000	0.000000	-246.12	0.00	0.00	-213.15	-123.06	-23083.68	39982.10	0.00
330	-0.001330	-0.000700	-0.000132	-184.94	-97.34	-146.84	-111.49	-176.76	-32535.60	22091.05	-347.24

8' dish with radome - Elevation 176 - From Face C

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.002210	0.000000	0.000000	307.30	0.00	0.00	0.00	-307.30	-51235.38	0.00	0.00
30	0.001950	0.001050	-0.000277	271.15	146.00	-308.14	146.00	-271.15	-44872.38	-25696.70	-7.54
60	0.001070	0.001280	-0.000002	148.79	177.99	-2.22	177.99	-148.79	-23336.10	-31325.50	364.22
90	0.000340	0.001040	0.000390	47.28	144.61	433.84	144.61	-47.28	-5470.78	-25451.97	731.58
120	-0.000420	0.000890	0.000404	-58.40	123.76	449.41	123.76	58.40	13128.74	-21781.01	704.21
150	-0.001330	0.000700	0.000132	-184.94	97.34	146.84	97.34	184.94	35399.21	-17131.13	347.24
180	-0.001770	0.000000	0.000000	-246.12	0.00	0.00	0.00	246.12	46167.35	0.00	0.00
210	-0.001330	-0.000700	-0.000132	-184.94	-97.34	-146.84	-97.34	184.94	35399.21	17131.13	-347.24
240	-0.000420	-0.000890	-0.000404	-58.40	-123.76	-449.41	-123.76	58.40	13128.74	21781.01	-704.21
270	0.000340	-0.001040	-0.000390	47.28	-144.61	-433.84	-144.61	-47.28	-5470.78	25451.97	-731.58
300	0.001070	-0.001280	0.000002	148.79	-177.99	2.22	-177.99	-148.79	-23336.10	31325.50	-364.22
330	0.001950	-0.001050	0.000277	271.15	-146.00	308.14	-146.00	-271.15	-44872.38	25696.70	7.54

8' dish with radome - Elevation 164 - From Face A

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.000420	-0.000890	-0.000404	-57.51	-121.87	-442.57	11.13	-134.30	-23681.83	1044.76	-735.69
30	0.000340	-0.001040	-0.000390	46.56	-142.41	-427.23	111.52	-100.05	-18065.43	-15420.22	-769.76
60	0.001070	-0.001280	0.000002	146.52	-175.27	2.19	214.53	-78.53	-14536.23	-32312.30	-419.39
90	0.001950	-0.001050	0.000277	267.02	-143.78	303.44	303.13	8.99	-182.07	-46844.25	-42.38
120	0.002210	0.000000	0.000000	302.62	0.00	0.00	262.08	151.31	23158.04	-40110.91	0.00
150	0.001950	0.001050	-0.000277	267.02	143.78	-303.44	159.36	258.03	40659.35	-23264.45	42.38
180	0.001070	0.001280	-0.000002	146.52	175.27	-2.19	39.25	225.05	35251.39	-3567.40	419.39
210	0.000340	0.001040	0.000390	46.56	142.41	427.23	-30.89	146.61	22387.01	7935.02	769.76
240	-0.000420	0.000890	0.000404	-57.51	121.87	442.57	-110.74	76.79	10936.13	21031.45	735.69
270	-0.001330	0.000700	0.000132	-182.12	95.85	144.60	-205.65	-8.05	-2976.96	36595.98	375.15
300	-0.001770	0.000000	0.000000	-242.37	0.00	0.00	-209.90	-121.19	-21531.29	37293.30	0.00
330	-0.001330	-0.000700	-0.000132	-182.12	-95.85	-144.60	-109.79	-174.07	-30204.57	20876.11	-375.15

Dish Totals - With Ice

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	22.43	-577.98	-100344.49	1524.07	-1439.90
30	370.78	-472.80	-82244.48	-58580.73	-1508.88
60	610.36	-307.07	-53332.96	-99510.21	-419.39
90	755.57	-29.15	-5470.65	-124005.19	696.73
120	651.97	363.36	61904.47	-106263.06	704.21
150	418.51	704.98	120748.74	-66407.86	382.08
180	79.11	699.70	120215.48	-8114.31	783.61
210	-159.58	480.43	82563.67	33054.30	1154.10
240	-346.95	213.16	36363.41	65072.79	735.69
270	-559.09	-63.50	-11311.35	101270.14	-9.19
300	-601.03	-393.03	-67951.07	108600.90	-364.22
330	-367.29	-621.99	-107612.56	68663.87	-714.85

Dish Pressures - Service

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
176.00	8' dish with radome	300.0000	450.00	-1.78	-1.03	1.426	50.27	34
176.00	8' dish with radome	180.0000	450.00	0.00	2.06	1.426	50.27	34
164.00	8' dish with radome	300.0000	450.00	-2.08	-1.20	1.405	50.27	34
		Sum Weight:	1350.00					

Dish Vectors - Service

8' dish with radome - Elevation 176 - From Face A

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.000420	-0.000890	-0.000404	-239.75	-508.05	-1844.96	46.39	-559.86	-98998.50	-7362.61	-2890.95
30	0.000340	-0.001040	-0.000390	194.09	-593.67	-1781.02	464.92	-417.09	-73871.84	-81023.67	-3003.31
60	0.001070	-0.001280	0.000002	610.80	-730.68	9.13	894.31	-327.38	-58082.90	-156595.56	-1495.22
90	0.001950	-0.001050	0.000277	1113.14	-599.38	1264.98	1263.70	37.49	6134.83	-221608.64	30.95
120	0.002210	0.000000	0.000000	1261.56	0.00	0.00	1092.54	630.78	110553.91	-191484.98	0.00
150	0.001950	0.001050	-0.000277	1113.14	599.38	-1264.98	664.32	1075.65	188851.30	-116117.24	-30.95
180	0.001070	0.001280	-0.000002	610.80	730.68	-9.13	163.63	938.18	164657.18	-27996.51	1495.22
210	0.000340	0.001040	0.000390	194.09	593.67	1781.02	-128.75	611.18	107104.48	23463.05	3003.31
240	-0.000420	0.000890	0.000404	-239.75	508.05	1844.96	-461.66	320.11	55875.46	82053.91	2890.95
270	-0.001330	0.000700	0.000132	-759.22	399.59	602.81	-857.30	-33.56	-6368.97	151686.59	1425.50
300	-0.001770	0.000000	0.000000	-1010.39	0.00	0.00	-875.02	-505.19	-89377.42	154806.24	0.00
330	-0.001330	-0.000700	-0.000132	-759.22	-399.59	-602.81	-457.71	-725.66	-128179.95	81358.99	-1425.50

8' dish with radome - Elevation 176 - From Face C

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	0.002210	0.000000	0.000000	1261.56	0.00	0.00	0.00	-1261.56	-221107.81	0.00	0.00
30	0.001950	0.001050	-0.000277	1113.14	599.38	-1264.98	599.38	-1113.14	-194986.13	-105491.41	-30.95
60	0.001070	0.001280	-0.000002	610.80	730.68	-9.13	730.68	-610.80	-106574.28	-128599.05	1495.22
90	0.000340	0.001040	0.000390	194.09	593.67	1781.02	593.67	-194.09	-33232.64	-104486.72	3003.31

8' dish with radome - Elevation 176 - From Face C

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
120	-0.000420	0.000890	0.000404	-239.75	508.05	1844.96	508.05	239.75	43123.04	-89416.52	2890.95
150	-0.001330	0.000700	0.000132	-759.22	399.59	602.81	399.59	759.22	134548.93	-70327.60	1425.50
180	-0.001770	0.000000	0.000000	-1010.39	0.00	0.00	0.00	1010.39	178754.85	0.00	0.00
210	-0.001330	-0.000700	-0.000132	-759.22	-399.59	-602.81	-399.59	759.22	134548.93	70327.60	-1425.50
240	-0.000420	-0.000890	-0.000404	-239.75	-508.05	-1844.96	-508.05	239.75	43123.04	89416.52	-2890.95
270	0.000340	-0.001040	-0.000390	194.09	-593.67	-1781.02	-593.67	-194.09	-33232.64	104486.72	-3003.31
300	0.001070	-0.001280	0.000002	610.80	-730.68	9.13	-730.68	-610.80	-106574.28	128599.05	-1495.22
330	0.001950	-0.001050	0.000277	1113.14	-599.38	1264.98	-599.38	-1113.14	-194986.13	105491.41	30.95

8' dish with radome - Elevation 164 - From Face A

Wind Azimuth °	C_A	C_S	C_M	F_A lb	F_S lb	F_M lb-ft	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	-0.000420	-0.000890	-0.000404	-236.22	-500.55	-1817.73	45.71	-551.60	-91003.20	-6558.64	-3021.69
30	0.000340	-0.001040	-0.000390	191.22	-584.91	-1754.74	458.06	-410.94	-67935.23	-74184.46	-3161.61
60	0.001070	-0.001280	0.000002	601.79	-719.89	9.00	881.11	-322.55	-53439.91	-143564.55	-1722.53
90	0.001950	-0.001050	0.000277	1096.71	-590.54	1246.32	1245.05	36.94	5516.29	-203250.94	-174.08
120	0.002210	0.000000	0.000000	1242.94	0.00	0.00	1076.42	621.47	101380.04	-175595.39	0.00
150	0.001950	0.001050	-0.000277	1096.71	590.54	-1246.32	654.51	1059.78	173262.33	-106402.72	174.08
180	0.001070	0.001280	-0.000002	601.79	719.89	-9.00	161.22	924.34	151050.50	-25501.95	1722.53
210	0.000340	0.001040	0.000390	191.22	584.91	1754.74	-126.85	602.16	98213.24	21741.40	3161.61
240	-0.000420	0.000890	0.000404	-236.22	500.55	1817.73	-454.84	315.38	51181.54	75531.76	3021.69
270	-0.001330	0.000700	0.000132	-748.01	393.69	593.91	-844.65	-33.06	-5963.04	139459.26	1540.84
300	-0.001770	0.000000	0.000000	-995.48	0.00	0.00	-862.11	-497.74	-82170.40	142323.31	0.00
330	-0.001330	-0.000700	-0.000132	-748.01	-393.69	-593.91	-450.95	-714.95	-117793.74	74893.78	-1540.84

Dish Totals - Service

Wind Azimuth °	V_x lb	V_z lb	OTM_x lb-ft	OTM_z lb-ft	Torque lb-ft
0	92.10	-2373.02	-411109.51	-13921.25	-5912.64
30	1522.36	-1941.17	-336793.19	-260699.54	-6195.86
60	2506.09	-1260.74	-218097.10	-428759.15	-1722.53
90	3102.42	-119.66	-21581.52	-529346.31	2860.18
120	2677.01	1492.00	255056.99	-456496.89	2890.95
150	1718.42	2894.65	496662.56	-292847.56	1568.63
180	324.85	2872.91	494462.53	-53498.46	3217.75
210	-655.20	1972.56	339866.64	115532.06	4739.42
240	-1424.55	875.24	150180.05	247002.20	3021.69
270	-2295.62	-260.70	-45564.66	395632.57	-36.97
300	-2467.81	-1613.73	-278122.11	425728.59	-1495.22
330	-1508.04	-2553.76	-440959.82	261744.17	-2935.40

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Leg Weight	17079.39					
Bracing Weight	14136.83					
Total Member Self-Weight	31216.22			-6694.78	42826.08	
Total Weight	58218.20			-6694.78	42826.08	

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Wind 0 deg - No Ice		152.25	-83806.68	-8061335.53	16937.56	-88549.83
Wind 30 deg - No Ice		39458.47	-67278.20	-6557289.40	-3844205.87	-82884.02
Wind 60 deg - No Ice		67843.61	-38910.33	-3826012.75	-6646979.02	-78835.84
Wind 90 deg - No Ice		81086.96	-197.81	-42241.52	-7907789.81	-47732.97
Wind 120 deg - No Ice		74680.46	43076.76	4143457.45	-7159583.55	17455.74
Wind 150 deg - No Ice		42015.32	72721.60	7081325.17	-4054903.81	67415.13
Wind 180 deg - No Ice		536.99	80602.06	7866948.04	-48486.00	84095.01
Wind 210 deg - No Ice		-38024.99	67330.08	6549238.14	3684135.60	80476.42
Wind 240 deg - No Ice		-69546.69	40288.57	3860131.47	6702723.69	80983.42
Wind 270 deg - No Ice		-79753.26	-430.96	-81887.10	7766653.29	52399.91
Wind 300 deg - No Ice		-70843.71	-41262.49	-4035195.73	6912322.56	-15148.50
Wind 330 deg - No Ice		-41667.57	-72158.09	-7002377.00	4083388.47	-69674.48
Member Ice	42695.83					
Total Weight Ice	174892.81			-95005.93	137409.31	
Wind 0 deg - Ice		22.43	-20333.37	-2087214.63	133595.34	-13381.70
Wind 30 deg - Ice		9845.00	-16916.46	-1766008.47	-840925.55	-21519.66
Wind 60 deg - Ice		16936.29	-9752.37	-1063913.79	-1548487.98	-27874.55
Wind 90 deg - Ice		20160.15	-29.15	-100244.71	-1862668.19	-26281.71
Wind 120 deg - Ice		18121.83	10469.12	934129.48	-1643908.53	-13831.40
Wind 150 deg - Ice		10317.22	17883.87	1672460.73	-881948.09	1619.61
Wind 180 deg - Ice		79.11	19983.15	1881543.65	123956.95	12725.40
Wind 210 deg - Ice		-9633.81	16924.09	1576779.52	1079541.65	21164.89
Wind 240 deg - Ice		-17081.60	9894.44	875393.02	1809364.65	28190.86
Wind 270 deg - Ice		-19963.67	-63.50	-106085.41	2104075.65	26969.26
Wind 300 deg - Ice		-17662.19	-10262.82	-1111727.30	1879217.32	14171.39
Wind 330 deg - Ice		-10266.00	-17800.87	-1848872.67	1148346.62	-1952.38
Total Weight	58218.20			-6694.78	42826.08	
Wind 0 deg - Service		92.10	-51177.75	-4939029.39	-12949.86	-54057.54
Wind 30 deg - Service		24109.88	-41114.74	-4020546.85	-2380901.47	-50756.48
Wind 60 deg - Service		41456.78	-23778.28	-2344722.37	-4099976.93	-48268.71
Wind 90 deg - Service		49532.48	-119.66	-23576.15	-4871317.11	-29259.69
Wind 120 deg - Service		45592.65	26298.72	2540711.53	-4410071.03	10472.11
Wind 150 deg - Service		25656.62	44407.67	4341510.86	-2508360.72	41014.57
Wind 180 deg - Service		324.85	49239.15	4825391.68	-52527.08	51362.65
Wind 210 deg - Service		-23242.71	41146.13	4019631.05	2237676.77	49300.03
Wind 240 deg - Service		-42487.04	24612.04	2369316.81	4087306.94	49567.87
Wind 270 deg - Service		-48725.67	-260.70	-47559.28	4739546.15	32082.90
Wind 300 deg - Service		-43271.66	-25201.20	-2471265.16	4214101.32	-9076.38
Wind 330 deg - Service		-25446.24	-44066.78	-4289797.37	2479200.11	-42381.33

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice

Comb. No.	Description
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	180 - 160	Leg	Max Tension	23	16897.77	-188.61	-28.13
			Max. Compression	2	-18656.25	133.88	161.48
			Max. Mx	22	5492.05	-665.47	30.66
			Max. My	12	-797.03	-17.74	979.08
			Max. Vy	14	1251.92	-664.75	-67.42
			Max. Vx	24	-1551.35	-16.64	627.38
		Diagonal	Max Tension	4	4291.64	0.00	0.00
			Max. Compression	4	-4223.89	0.00	0.00
			Max. Mx	38	434.48	27.50	-3.38
			Max. My	4	-3268.00	2.04	13.30
			Max. Vy	37	30.92	27.45	-3.58
			Max. Vx	4	-3.74	0.00	0.00
		Top Girt	Max Tension	22	402.45	0.00	0.00
			Max. Compression	11	-385.18	0.00	0.00
			Max. Mx	31	-70.47	-43.88	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. My	36	-15.88	0.00	1.27
			Max. Vy	31	35.10	0.00	0.00
			Max. Vx	36	-1.01	0.00	0.00
T2	160 - 140	Leg	Max Tension	23	43552.87	-35.08	-19.07
			Max. Compression	10	-47394.59	333.36	56.25
			Max. Mx	14	41365.82	-336.58	-20.43
			Max. My	9	-1959.06	-11.77	429.84
			Max. Vy	14	-135.92	-139.56	-16.74
			Max. Vx	20	-237.11	-4.34	-136.65
		Diagonal	Max Tension	4	4995.76	0.00	0.00
			Max. Compression	4	-5015.31	0.00	0.00
			Max. Mx	37	965.83	44.41	5.16
			Max. My	4	-4798.38	0.43	10.67
			Max. Vy	37	41.85	44.41	5.16
			Max. Vx	4	-2.57	0.00	0.00
T3	140 - 120	Leg	Max Tension	23	71037.37	-1004.70	-71.34
			Max. Compression	10	-81922.77	1996.50	70.59
			Max. Mx	22	68766.54	-2072.29	-86.31
			Max. My	20	-9134.81	-41.57	2002.98
			Max. Vy	14	-1171.25	-1016.02	22.95
			Max. Vx	8	1243.58	-51.53	1160.63
		Diagonal	Max Tension	4	8063.68	0.00	0.00
			Max. Compression	4	-8149.40	0.00	0.00
			Max. Mx	37	1115.67	82.29	-12.33
			Max. My	36	-1154.35	70.85	-13.48
			Max. Vy	37	62.75	82.29	-12.33
			Max. Vx	36	3.81	0.00	0.00
T4	120 - 100	Leg	Max Tension	23	117597.78	-1197.51	-37.43
			Max. Compression	10	-137329.29	986.59	-14.88
			Max. Mx	22	82553.30	-2072.29	-86.31
			Max. My	8	-8245.46	-46.85	1943.97
			Max. Vy	14	-1642.42	-1200.12	-24.89
			Max. Vx	8	1616.70	-18.10	1058.76
		Diagonal	Max Tension	4	13474.57	0.00	0.00
			Max. Compression	4	-13582.43	0.00	0.00
			Max. Mx	27	2239.10	132.38	16.31
			Max. My	18	-12685.75	8.13	-25.57
			Max. Vy	37	89.37	132.11	-19.41
			Max. Vx	36	5.43	0.00	0.00
T5	100 - 80	Leg	Max Tension	23	175069.83	-371.38	40.66
			Max. Compression	10	-200632.05	1426.39	-20.93
			Max. Mx	10	-200632.05	1426.39	-20.93
			Max. My	12	-12110.10	-7.74	-1520.01
			Max. Vy	11	-247.96	1425.31	-20.93
			Max. Vx	12	350.75	-7.74	-1520.01
		Diagonal	Max Tension	4	14435.33	0.00	0.00
			Max. Compression	4	-14580.08	0.00	0.00
			Max. Mx	37	2180.81	166.55	-22.64
			Max. My	4	-14558.11	19.60	27.44
			Max. Vy	37	101.06	166.55	-22.64
			Max. Vx	36	5.75	0.00	0.00
T6	80 - 60	Leg	Max Tension	23	224996.16	-1447.66	81.23
			Max. Compression	10	-256032.80	2155.21	-74.25
			Max. Mx	10	-256032.80	2155.21	-74.25
			Max. My	13	-10062.16	-71.30	-1936.38
			Max. Vy	10	-246.78	2155.21	-74.25
			Max. Vx	12	335.19	-91.04	-1935.93
		Diagonal	Max Tension	4	16655.79	0.00	0.00
			Max. Compression	4	-16846.03	0.00	0.00
			Max. Mx	37	2627.04	271.94	-37.64
			Max. My	4	-16359.66	31.49	41.53

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vy	37	135.71	271.94	-37.64
			Max. Vx	36	7.84	0.00	0.00
T7	60 - 40	Leg	Max Tension	23	277030.17	-1542.51	68.42
			Max. Compression	10	-314597.03	2203.66	-76.18
			Max. Mx	10	-314597.03	2203.66	-76.18
			Max. My	12	-16536.61	-114.84	-2028.64
			Max. Vy	29	297.34	-1941.36	81.30
			Max. Vx	12	-309.13	-114.84	-2028.64
		Diagonal	Max Tension	4	17373.53	0.00	0.00
			Max. Compression	4	-17631.60	0.00	0.00
			Max. Mx	37	3018.01	337.19	-44.29
			Max. My	36	-1722.87	289.58	-47.83
			Max. Vy	37	157.24	337.19	-44.29
			Max. Vx	36	-8.60	0.00	0.00
T8	40 - 20	Leg	Max Tension	23	326588.90	-1507.96	59.28
			Max. Compression	10	-371055.04	2769.92	-62.57
			Max. Mx	37	39836.85	-5372.41	-16.67
			Max. My	12	-19771.72	-171.13	-2510.06
			Max. Vy	29	814.57	-5343.84	61.57
			Max. Vx	12	-379.66	-171.13	-2510.06
		Diagonal	Max Tension	4	18068.38	0.00	0.00
			Max. Compression	4	-18439.45	0.00	0.00
			Max. Mx	37	1701.11	415.73	-51.33
			Max. My	29	-4684.13	357.08	55.99
			Max. Vy	37	174.61	380.90	-49.28
			Max. Vx	29	-9.39	0.00	0.00
T9	20 - 0	Leg	Max Tension	23	373357.17	-3010.03	8.97
			Max. Compression	10	-425451.12	0.00	-0.16
			Max. Mx	27	-152760.58	8505.88	-93.92
			Max. My	12	-23137.22	-278.48	-5692.54
			Max. Vy	29	-1301.74	-5343.84	61.56
			Max. Vx	12	-790.46	-278.48	-5692.54
		Diagonal	Max Tension	4	18967.29	0.00	0.00
			Max. Compression	2	-19663.82	0.00	0.00
			Max. Mx	37	-339.49	618.74	-66.19
			Max. My	29	-7447.22	562.93	73.89
			Max. Vy	37	207.46	618.74	-66.19
			Max. Vx	29	-11.12	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	18	413089.26	41585.64	-26355.54
	Max. H_x	18	413089.26	41585.64	-26355.54
	Max. H_z	7	-368608.35	-38003.45	24242.04
	Min. Vert	7	-368608.35	-38003.45	24242.04
	Min. H_x	7	-368608.35	-38003.45	24242.04
	Min. H_z	18	413089.26	41585.64	-26355.54
Leg B	Max. Vert	10	439405.19	-45750.06	-25897.85
	Max. H_x	23	-385051.49	41098.12	23296.96
	Max. H_z	23	-385051.49	41098.12	23296.96
	Min. Vert	23	-385051.49	41098.12	23296.96
	Min. H_x	10	439405.19	-45750.06	-25897.85
	Min. H_z	10	439405.19	-45750.06	-25897.85
Leg A	Max. Vert	2	429265.88	-2233.98	51191.24

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Max. H_x	19	-176783.20	7435.37	-22422.62
	Max. H_z	2	429265.88	-2233.98	51191.24
	Min. Vert	15	-378403.49	2113.71	-46420.43
	Min. H_x	8	25493.03	-7305.19	2010.38
	Min. H_z	15	-378403.49	2113.71	-46420.43

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	58218.20	-0.00	-0.00	-6694.69	42825.73	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	69861.84	152.25	-83806.54	-8086519.01	25685.32	-88750.35
0.9 Dead+1.0 Wind 0 deg - No Ice	52396.38	152.24	-83806.58	-8078494.80	12809.49	-88682.01
1.2 Dead+1.0 Wind 30 deg - No Ice	69861.84	39458.39	-67278.08	-6578252.60	-3847029.09	-83078.15
0.9 Dead+1.0 Wind 30 deg - No Ice	52396.38	39458.41	-67278.11	-6571315.35	-3856994.59	-83026.48
1.2 Dead+1.0 Wind 60 deg - No Ice	69861.84	67843.48	-38910.25	-3838992.39	-6658232.35	-79006.17
0.9 Dead+1.0 Wind 60 deg - No Ice	52396.38	67843.51	-38910.27	-3834082.11	-6666089.15	-78963.32
1.2 Dead+1.0 Wind 90 deg - No Ice	69861.84	81086.80	-197.81	-43935.39	-7922828.07	-47827.53
0.9 Dead+1.0 Wind 90 deg - No Ice	52396.38	81086.85	-197.79	-41863.39	-7929766.22	-47802.87
1.2 Dead+1.0 Wind 120 deg - No Ice	69861.84	74680.34	43076.68	4154329.38	-7172208.85	17477.47
0.9 Dead+1.0 Wind 120 deg - No Ice	52396.38	74680.37	43076.71	4153269.12	-7179744.66	17453.59
1.2 Dead+1.0 Wind 150 deg - No Ice	69861.84	42015.24	72721.47	7101097.21	-4058307.72	67548.40
0.9 Dead+1.0 Wind 150 deg - No Ice	52396.38	42015.28	72721.50	7097821.68	-4068144.94	67515.53
1.2 Dead+1.0 Wind 180 deg - No Ice	69861.84	536.99	80601.90	7889030.18	-39965.85	84288.79
0.9 Dead+1.0 Wind 180 deg - No Ice	52396.38	536.99	80601.94	7885148.93	-52785.75	84240.15
1.2 Dead+1.0 Wind 210 deg - No Ice	69861.84	-38024.93	67329.95	6567270.89	3703674.27	80667.77
0.9 Dead+1.0 Wind 210 deg - No Ice	52396.38	-38024.95	67329.98	6564392.13	3688076.21	80617.44
1.2 Dead+1.0 Wind 240 deg - No Ice	69861.84	-69546.57	40288.50	3869999.38	6731100.37	81152.34
0.9 Dead+1.0 Wind 240 deg - No Ice	52396.38	-69546.60	40288.52	3869158.33	6713262.68	81094.22
1.2 Dead+1.0 Wind 270 deg - No Ice	69861.84	-79753.10	-430.96	-83678.68	7798212.07	52481.22
0.9 Dead+1.0 Wind 270 deg - No Ice	52396.38	-79753.15	-430.94	-81583.70	7779561.95	52458.82
1.2 Dead+1.0 Wind 300 deg - No Ice	69861.84	-70843.57	-41262.41	-4048596.50	6941387.58	-15173.03
0.9 Dead+1.0 Wind 300 deg - No Ice	52396.38	-70843.60	-41262.43	-4043541.99	6923349.63	-15166.95
1.2 Dead+1.0 Wind 330 deg -	69863.15	-41668.30	-72158.17	-7024482.17	4104149.28	-69801.16

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
No Ice 0.9 Dead+1.0 Wind 330 deg - No Ice	52396.38	-41667.50	-72158.00	-7017224.18	4088240.44	-69771.83
1.2 Dead+1.0 Ice+1.0 Temp	186536.45	0.01	0.01	-97517.68	147041.49	2.19
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	186536.45	22.44	-20333.21	-2107207.29	143219.79	-13527.86
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	186536.45	9844.94	-16916.32	-1783264.82	-839894.90	-21721.47
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	186536.45	16936.17	-9752.29	-1075067.86	-1553681.15	-28081.48
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	186536.45	20160.01	-29.14	-102930.05	-1870638.46	-26443.41
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	186536.45	18121.71	10469.06	940553.36	-1649870.49	-13898.76
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	186536.45	10317.15	17883.74	1685434.80	-881220.47	1667.74
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	186536.45	79.12	19983.02	1896346.06	133532.47	12869.76
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	186536.45	-9633.73	16923.97	1588908.05	1097485.29	21361.90
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	186536.45	-17081.46	9894.38	881339.09	1833699.56	28392.91
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	186536.45	-19963.51	-63.49	-108747.27	2131044.09	27123.57
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	186536.45	-17662.04	-10262.73	-1123220.78	1904198.06	14235.71
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	186536.45	-10265.91	-17800.73	-1866815.52	1166905.02	-2000.17
Dead+Wind 0 deg - Service	58218.20	92.10	-51177.67	-4955909.80	27253.53	-54159.80
Dead+Wind 30 deg - Service	58218.88	24110.71	-41114.53	-4035235.51	-2346620.71	-50875.99
Dead+Wind 60 deg - Service	58218.20	41456.71	-23778.24	-2355302.84	-4070016.70	-48353.09
Dead+Wind 90 deg - Service	58218.20	49532.40	-119.66	-28367.75	-4843295.15	-29286.79
Dead+Wind 120 deg - Service	58218.20	45592.59	26298.68	2542350.16	-4380815.63	10482.87
Dead+Wind 150 deg - Service	58217.88	25656.45	44407.21	4347699.14	-2474380.90	41058.49
Dead+Wind 180 deg - Service	58218.20	324.85	49239.07	4832770.10	-12432.77	51458.26
Dead+Wind 210 deg - Service	58218.86	-23242.12	41146.73	4024945.32	2283431.68	49417.72
Dead+Wind 240 deg - Service	58218.20	-42486.98	24612.00	2370468.85	4137612.09	49654.43
Dead+Wind 270 deg - Service	58218.20	-48725.60	-260.70	-52398.39	4791491.62	32104.44
Dead+Wind 300 deg - Service	58218.20	-43271.58	-25201.16	-2482079.98	4264753.75	-9088.56
Dead+Wind 330 deg - Service	58218.20	-25446.20	-44066.71	-4305094.85	2525581.84	-42425.06

Solution Summary

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
1	-0.00	-58218.20	-0.00	0.00	58218.20	0.00	0.000%
2	152.25	-69861.84	-83806.68	-152.25	69861.84	83806.54	0.000%
3	152.25	-52396.38	-83806.68	-152.24	52396.38	83806.58	0.000%
4	39458.47	-69861.84	-67278.20	-39458.39	69861.84	67278.08	0.000%
5	39458.47	-52396.38	-67278.20	-39458.41	52396.38	67278.11	0.000%
6	67843.61	-69861.84	-38910.33	-67843.48	69861.84	38910.25	0.000%
7	67843.61	-52396.38	-38910.33	-67843.51	52396.38	38910.27	0.000%
8	81086.96	-69861.84	-197.81	-81086.80	69861.84	197.81	0.000%
9	81086.96	-52396.38	-197.81	-81086.85	52396.38	197.79	0.000%
10	74680.46	-69861.84	43076.76	-74680.34	69861.84	-43076.68	0.000%
11	74680.46	-52396.38	43076.76	-74680.37	52396.38	-43076.71	0.000%
12	42015.32	-69861.84	72721.60	-42015.24	69861.84	-72721.47	0.000%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
13	42015.32	-52396.38	72721.60	-42015.28	52396.38	-72721.50	0.000%
14	536.99	-69861.84	80602.06	-536.99	69861.84	-80601.90	0.000%
15	536.99	-52396.38	80602.06	-536.99	52396.38	-80601.94	0.000%
16	-38024.99	-69861.84	67330.08	38024.93	69861.84	-67329.95	0.000%
17	-38024.99	-52396.38	67330.08	38024.95	52396.38	-67329.98	0.000%
18	-69546.69	-69861.84	40288.57	69546.57	69861.84	-40288.50	0.000%
19	-69546.69	-52396.38	40288.57	69546.60	52396.38	-40288.52	0.000%
20	-79753.26	-69861.84	-430.96	79753.10	69861.84	430.96	0.000%
21	-79753.26	-52396.38	-430.96	79753.15	52396.38	430.94	0.000%
22	-70843.71	-69861.84	-41262.49	70843.57	69861.84	41262.41	0.000%
23	-70843.71	-52396.38	-41262.49	70843.60	52396.38	41262.43	0.000%
24	-41667.57	-69861.84	-72158.09	41668.30	69863.15	72158.17	0.001%
25	-41667.57	-52396.38	-72158.09	41667.50	52396.38	72158.00	0.000%
26	-0.00	-186536.45	-0.00	-0.01	186536.45	-0.01	0.000%
27	22.43	-186536.45	-20333.37	-22.44	186536.45	20333.21	0.000%
28	9845.00	-186536.45	-16916.46	-9844.94	186536.45	16916.32	0.000%
29	16936.29	-186536.45	-9752.37	-16936.17	186536.45	9752.29	0.000%
30	20160.15	-186536.45	-29.15	-20160.01	186536.45	29.14	0.000%
31	18121.83	-186536.45	10469.12	-18121.71	186536.45	-10469.06	0.000%
32	10317.22	-186536.45	17883.87	-10317.15	186536.45	-17883.74	0.000%
33	79.11	-186536.45	19983.15	-79.12	186536.45	-19983.02	0.000%
34	-9633.81	-186536.45	16924.09	9633.73	186536.45	-16923.97	0.000%
35	-17081.60	-186536.45	9894.44	17081.46	186536.45	-9894.38	0.000%
36	-19963.67	-186536.45	-63.50	19963.51	186536.45	63.49	0.000%
37	-17662.19	-186536.45	-10262.82	17662.04	186536.45	10262.73	0.000%
38	-10266.00	-186536.45	-17800.87	10265.91	186536.45	17800.73	0.000%
39	92.10	-58218.20	-51177.75	-92.10	58218.20	51177.67	0.000%
40	24109.88	-58218.20	-41114.74	-24110.71	58218.88	41114.53	0.001%
41	41456.78	-58218.20	-23778.29	-41456.71	58218.20	23778.24	0.000%
42	49532.48	-58218.20	-119.66	-49532.40	58218.20	119.66	0.000%
43	45592.65	-58218.20	26298.72	-45592.59	58218.20	-26298.68	0.000%
44	25656.62	-58218.20	44407.67	-25656.45	58217.88	-44407.21	0.001%
45	324.85	-58218.20	49239.15	-324.85	58218.20	-49239.07	0.000%
46	-23242.71	-58218.20	41146.13	23242.12	58218.86	-41146.73	0.001%
47	-42487.04	-58218.20	24612.04	42486.98	58218.20	-24612.00	0.000%
48	-48725.67	-58218.20	-260.70	48725.60	58218.20	260.70	0.000%
49	-43271.66	-58218.20	-25201.20	43271.58	58218.20	25201.16	0.000%
50	-25446.24	-58218.20	-44066.78	25446.20	58218.20	44066.71	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00002965
3	Yes	4	0.00000001	0.00002097
4	Yes	4	0.00000001	0.00003276
5	Yes	4	0.00000001	0.00002399
6	Yes	4	0.00000001	0.00003508
7	Yes	4	0.00000001	0.00002617
8	Yes	4	0.00000001	0.00003259
9	Yes	4	0.00000001	0.00002379
10	Yes	4	0.00000001	0.00002947
11	Yes	4	0.00000001	0.00002078
12	Yes	4	0.00000001	0.00003244
13	Yes	4	0.00000001	0.00002366

14	Yes	4	0.00000001	0.00003497
15	Yes	4	0.00000001	0.00002610
16	Yes	4	0.00000001	0.00003274
17	Yes	4	0.00000001	0.00002401
18	Yes	4	0.00000001	0.00002988
19	Yes	4	0.00000001	0.00002122
20	Yes	4	0.00000001	0.00003258
21	Yes	4	0.00000001	0.00002381
22	Yes	4	0.00000001	0.00003492
23	Yes	4	0.00000001	0.00002605
24	Yes	4	0.00000001	0.00003247
25	Yes	4	0.00000001	0.00002365
26	Yes	4	0.00000001	0.00001359
27	Yes	4	0.00000001	0.00009088
28	Yes	4	0.00000001	0.00008922
29	Yes	4	0.00000001	0.00008814
30	Yes	4	0.00000001	0.00008624
31	Yes	4	0.00000001	0.00008422
32	Yes	4	0.00000001	0.00008404
33	Yes	4	0.00000001	0.00008419
34	Yes	4	0.00000001	0.00008443
35	Yes	4	0.00000001	0.00008690
36	Yes	4	0.00000001	0.00009072
37	Yes	4	0.00000001	0.00009340
38	Yes	4	0.00000001	0.00009298
39	Yes	4	0.00000001	0.00002550
40	Yes	4	0.00000001	0.00002739
41	Yes	4	0.00000001	0.00002879
42	Yes	4	0.00000001	0.00002728
43	Yes	4	0.00000001	0.00002542
44	Yes	4	0.00000001	0.00002718
45	Yes	4	0.00000001	0.00002869
46	Yes	4	0.00000001	0.00002731
47	Yes	4	0.00000001	0.00002557
48	Yes	4	0.00000001	0.00002721
49	Yes	4	0.00000001	0.00002868
50	Yes	4	0.00000001	0.00002716

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 160	8.905	43	0.4135	0.1826
T2	160 - 140	7.170	43	0.3879	0.1405
T3	140 - 120	5.598	43	0.3295	0.0931
T4	120 - 100	4.226	43	0.2978	0.0694
T5	100 - 80	2.983	43	0.2529	0.0521
T6	80 - 60	1.931	43	0.1929	0.0349
T7	60 - 40	1.135	43	0.1484	0.0246
T8	40 - 20	0.544	43	0.0983	0.0163
T9	20 - 0	0.169	43	0.0445	0.0080

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.00	Generic Lightning Rod 4' copper	43	8.905	0.4135	0.1826	89220
179.00	18'x2 3/8" Pipe Mount	43	8.817	0.4128	0.1807	89220
178.00	Kreco CO-41AN	43	8.729	0.4121	0.1788	89220
177.00	4' x 2" omni whip	43	8.641	0.4113	0.1770	89220
176.00	8' dish with radome	43	8.552	0.4106	0.1751	89220
174.00	Sinclair SC351D-HF2LDF	43	8.376	0.4089	0.1712	74350
170.83	Comprod 531-7071D	43	8.098	0.4059	0.1649	48648
168.00	Sinclair SC351D-HF2LDF	43	7.852	0.4025	0.1591	37175
164.42	Comprod 531-7071D	43	7.543	0.3970	0.1512	28626
164.00	8' dish with radome	43	7.508	0.3963	0.1502	27892
163.00	SD212 2-bay dipole	43	7.423	0.3944	0.1479	26316
162.00	Sinclair SC351D-HF2LDF	43	7.338	0.3924	0.1455	25012
158.00	SD212 2-bay dipole	43	7.004	0.3827	0.1353	22298
156.00	Sinclair SC351D-HF2LDF	43	6.839	0.3771	0.1299	21937
153.00	3' Yagi	43	6.596	0.3680	0.1220	21658
135.00	6' x 18" x 6" panel	43	5.239	0.3193	0.0849	24054
124.00	TPA65R-BU8DA-K	43	4.489	0.3035	0.0728	40427
115.00	(4) 8' x 1' x 6" panel	43	3.903	0.2891	0.0652	41828
105.00	(4) 8' x 1' x 6" panel	43	3.280	0.2666	0.0566	28949

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 160	14.526	11	0.6712	0.2905
T2	160 - 140	11.702	11	0.6318	0.2236
T3	140 - 120	9.142	11	0.5371	0.1498
T4	120 - 100	6.906	11	0.4858	0.1123
T5	100 - 80	4.877	11	0.4130	0.0846
T6	80 - 60	3.158	11	0.3154	0.0569
T7	60 - 40	1.857	11	0.2426	0.0402
T8	40 - 20	0.890	11	0.1609	0.0267
T9	20 - 0	0.277	11	0.0728	0.0132

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.00	Generic Lightning Rod 4' copper	11	14.526	0.6712	0.2905	56461
179.00	18'x2 3/8" Pipe Mount	11	14.383	0.6702	0.2875	56461
178.00	Kreco CO-41AN	11	14.239	0.6691	0.2844	56461
177.00	4' x 2" omni whip	11	14.095	0.6680	0.2814	56461
176.00	8' dish with radome	11	13.952	0.6669	0.2784	56461
174.00	Sinclair SC351D-HF2LDF	11	13.665	0.6644	0.2723	47051
170.83	Comprod 531-7071D	11	13.213	0.6598	0.2623	30786
168.00	Sinclair SC351D-HF2LDF	11	12.813	0.6546	0.2530	23525
164.42	Comprod 531-7071D	11	12.310	0.6461	0.2404	18115
164.00	8' dish with radome	11	12.253	0.6450	0.2389	17651
163.00	SD212 2-bay dipole	11	12.114	0.6420	0.2352	16653
162.00	Sinclair SC351D-HF2LDF	11	11.976	0.6389	0.2314	15826

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
158.00	SD212 2-bay dipole	11	11.431	0.6236	0.2153	14091
156.00	Sinclair SC351D-HF2LDF	11	11.164	0.6145	0.2068	13848
153.00	3' Yagi	11	10.768	0.5998	0.1950	13647
135.00	6' x 18" x 6" panel	11	8.557	0.5207	0.1369	14826
124.00	TPA65R-BU8DA-K	11	7.334	0.4952	0.1178	25030
115.00	(4) 8' x 1' x 6" panel	11	6.379	0.4718	0.1056	25877
105.00	(4) 8' x 1' x 6" panel	11	5.362	0.4352	0.0918	17823

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	180	Leg	A325N	0.7500	6	2816.30	30101.40	0.094 ✔	1	Bolt Tension
		Diagonal	A325X	0.6250	1	4291.64	8287.50	0.518 ✔	1	Member Bearing
		Top Girt	A325X	0.6250	1	402.45	5850.00	0.069 ✔	1	Member Bearing
T2	160	Leg	A325N	1.0000	6	7258.81	54517.00	0.133 ✔	1	Bolt Tension
		Diagonal	A325X	0.6250	1	4995.76	12431.30	0.402 ✔	1	Member Bearing
T3	140	Leg	A325N	1.0000	6	11839.60	54517.00	0.217 ✔	1	Bolt Tension
		Diagonal	A325X	0.6250	1	8063.68	16575.00	0.486 ✔	1	Member Bearing
T4	120	Leg	A325N	1.0000	6	19599.60	54517.00	0.360 ✔	1	Bolt Tension
		Diagonal	A325X	0.7500	1	13474.60	16087.50	0.838 ✔	1	Member Bearing
T5	100	Leg	A325N	1.2500	6	29178.30	87219.80	0.335 ✔	1	Bolt Tension
		Diagonal	A325X	0.7500	1	14435.30	16087.50	0.897 ✔	1	Member Bearing
T6	80	Leg	A325N	1.2500	6	37499.40	87219.80	0.430 ✔	1	Bolt Tension
		Diagonal	A325X	0.7500	1	16655.80	20109.40	0.828 ✔	1	Member Bearing
T7	60	Leg	A325N	1.2500	6	46171.70	87219.80	0.529 ✔	1	Bolt Tension
		Diagonal	A325X	0.7500	1	17373.50	24131.30	0.720 ✔	1	Member Bearing
T8	40	Leg	A325N	1.5000	8	40823.60	126472.00	0.323 ✔	1	Bolt Tension
		Diagonal	A325X	0.7500	1	18068.40	24131.30	0.749 ✔	1	Member Bearing
T9	20	Leg	F1554-105	1.5000	6	62226.20	131742.00	0.472 ✔	1	Bolt Tension
		Diagonal	A325X	0.7500	1	18967.30	20109.40	0.943 ✔	1	Member Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	P2.875x.276	20.03	5.01	65.0 K=1.00	2.2535	-18656.30	74430.70	0.251 [1] ✔
T2	160 - 140	P3.5x.3	20.03	5.01	52.9 K=1.00	3.0159	-47394.60	110613.00	0.428 [1] ✔
T3	140 - 120	P5.5625x.500	20.03	6.68	44.6 K=1.00	7.9522	-81922.80	309502.00	0.265 [1] ✔
T4	120 - 100	P5.5625x.500	20.03	6.68	44.6 K=1.00	7.9522	-137329.00	309502.00	0.444 [1] ✔
T5	100 - 80	P5.5625x.500	20.03	6.68	44.6 K=1.00	7.9522	-200632.00	309502.00	0.648 [1] ✔
T6	80 - 60	P8.625x.5	20.03	10.02	41.8 K=1.00	12.7627	-256033.00	505555.00	0.506 [1] ✔
T7	60 - 40	P8.625x.5	20.03	10.02	41.8 K=1.00	12.7627	-314597.00	505555.00	0.622 [1] ✔
T8	40 - 20	P8.625x.5	20.03	10.02	41.8 K=1.00	12.7627	-371055.00	505555.00	0.734 [1] ✔
T9	20 - 0	P10.75x.5	20.03	10.02	33.1 K=1.00	16.1007	-425451.00	668659.00	0.636 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L2x2x1/8	8.40	4.06	122.6 K=1.00	0.4844	-4223.89	9224.37	0.458 [1] ✔
T2	160 - 140	L2x2x3/16	10.08	4.87	148.3 K=1.00	0.7150	-4916.94	9303.44	0.529 [1] ✔
T3	140 - 120	L2 1/2x2 1/2x1/4	12.58	6.07	148.3 K=1.00	1.1900	-8149.40	15489.20	0.526 [1] ✔
T4	120 - 100	L3x3 1/2x1/4	14.32	6.94	131.9 K=1.00	1.5600	-13582.40	25646.00	0.530 [1] ✔
T5	100 - 80	L3x3 1/2x1/4	16.11	7.84	149.1 K=1.00	1.5600	-14580.10	20092.80	0.726 [1] ✔
T6	80 - 60	L3 1/2x4x5/16	19.30	9.37	154.1 K=1.00	2.2500	-16846.00	27119.80	0.621 [1] ✔
T7	60 - 40	L3 1/2x4x3/8	21.03	10.25	169.1 K=1.00	2.6700	-17631.60	26719.60	0.660 [1] ✔
T8	40 - 20	L4x4x3/8	22.81	11.14	169.6 K=1.00	2.8600	-18439.50	28454.20	0.648 [1] ✔
T9	20 - 0	L5x5x5/16	24.62	11.95	144.3 K=1.00	3.0300	-19663.80	41672.50	0.472 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L2x2x1/8	5.00	4.52	136.5 K=1.00	0.4844	-385.18	7444.69	0.052 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	P2.875x.276	20.03	5.01	65.0	2.2535	16897.80	101409.00	0.167 [1] ✔
T2	160 - 140	P3.5x.3	20.03	5.01	52.9	3.0159	43552.90	135717.00	0.321 [1] ✔
T3	140 - 120	P5.5625x.500	20.03	6.68	44.6	7.9522	71037.40	357847.00	0.199 [1] ✔
T4	120 - 100	P5.5625x.500	20.03	6.68	44.6	7.9522	117598.00	357847.00	0.329 [1] ✔
T5	100 - 80	P5.5625x.500	20.03	6.68	44.6	7.9522	175070.00	357847.00	0.489 [1] ✔
T6	80 - 60	P8.625x.5	20.03	10.02	41.8	12.7627	224996.00	574322.00	0.392 [1] ✔
T7	60 - 40	P8.625x.5	20.03	10.02	41.8	12.7627	277030.00	574322.00	0.482 [1] ✔
T8	40 - 20	P8.625x.5	20.03	10.02	41.8	12.7627	326589.00	574322.00	0.569 [1] ✔
T9	20 - 0	P10.75x.5	20.03	10.02	33.1	16.1007	373357.00	724530.00	0.515 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L2x2x1/8	8.40	4.06	80.6	0.2930	4291.64	14282.20	0.300 [1] ✔
T2	160 - 140	L2x2x3/16	9.65	4.66	93.4	0.4308	4995.76	21000.60	0.238 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T3	140 - 120	L2 1/2x2 1/2x1/4	12.58	6.07	97.0	0.7519	8063.68	36653.90	0.220 [1] ✔
T4	120 - 100	L3x3 1/2x1/4	14.32	6.94	93.1	1.0059	13474.60	49039.50	0.275 [1] ✔
T5	100 - 80	L3x3 1/2x1/4	16.11	7.84	105.0	1.0059	14435.30	49039.50	0.294 [1] ✔
T6	80 - 60	L3 1/2x4x5/16	19.30	9.37	106.8	1.4824	16655.80	72268.10	0.230 [1] ✔
T7	60 - 40	L3 1/2x4x3/8	21.03	10.25	118.6	1.7564	17373.50	85624.80	0.203 [1] ✔
T8	40 - 20	L4x4x3/8	22.81	11.14	110.1	1.8989	18068.40	92571.70	0.195 [1] ✔
T9	20 - 0	L5x5x5/16	24.62	11.95	92.4	2.0674	18967.30	100787.00	0.188 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L2x2x1/8	5.00	4.52	91.2	0.2930	402.45	14282.20	0.028 [1] ✔

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	**180 - 160**	**Leg**	**P2.875x.276**	**3**	**-18656.30**	**74430.70**	**25.1**	**Pass**
		Diagonal	L2x2x1/8	11	-4223.89	9224.37	45.8 51.8 (b)	Pass
		Top Girt	L2x2x1/8	6	-385.18	7444.69	5.2 6.9 (b)	Pass
T2	**160 - 140**	**Leg**	**P3.5x.3**	**32**	**-47394.60**	**110613.00**	**42.8**	**Pass**
		Diagonal	L2x2x3/16	38	-4916.94	9303.44	52.9	Pass
T3	**140 - 120**	**Leg**	**P5.5625x.500**	**59**	**-81922.80**	**309502.00**	**26.5**	**Pass**
		Diagonal	L2 1/2x2 1/2x1/4	65	-8149.40	15489.20	52.6	Pass
T4	**120 - 100**	**Leg**	**P5.5625x.500**	**80**	**-137329.00**	**309502.00**	**44.4**	**Pass**
		Diagonal	L3x3 1/2x1/4	86	-13582.40	25646.00	53.0 83.8 (b)	Pass
T5	**100 - 80**	**Leg**	**P5.5625x.500**	**101**	**-200632.00**	**309502.00**	**64.8**	**Pass**
		Diagonal	L3x3 1/2x1/4	107	-14580.10	20092.80	72.6 89.7 (b)	Pass
T6	**80 - 60**	**Leg**	**P8.625x.5**	**122**	**-256033.00**	**505555.00**	**50.6**	**Pass**
		Diagonal	L3 1/2x4x5/16	128	-16846.00	27119.80	62.1 82.8 (b)	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T7	**60 - 40**	**Leg**	**P8.625x.5**	**137**	**-314597.00**	**505555.00**	**62.2**	**Pass**
		Diagonal	L3 1/2x4x3/8	143	-17631.60	26719.60	66.0	Pass
							72.0 (b)	
T8	**40 - 20**	**Leg**	**P8.625x.5**	**152**	**-371055.00**	**505555.00**	**73.4**	**Pass**
		Diagonal	L4x4x3/8	158	-18439.50	28454.20	64.8	Pass
							74.9 (b)	
T9	**20 - 0**	**Leg**	**P10.75x.5**	**167**	**-425451.00**	**668659.00**	**63.6**	**Pass**
		Diagonal	L5x5x5/16	173	-19663.80	41672.50	47.2	Pass
							94.3 (b)	
							Summary	
						Leg (T8)	73.4	Pass
						Diagonal (T9)	94.3	Pass
						Top Girt (T1)	6.9	Pass
						Bolt Checks	94.3	Pass
						RATING =	**94.3**	**Pass**

Element Map

Section No.	Section Elevation ft	Component Type	Element List
T1	180.00-160.00	Leg	1-3
		Diagonal	7-30
		Top Girt	4-6
T2	160.00-140.00	Leg	31-33
		Diagonal	34-57
T3	140.00-120.00	Leg	58-60
		Diagonal	61-78
T4	120.00-100.00	Leg	79-81
		Diagonal	82-99
T5	100.00-80.00	Leg	100-102
		Diagonal	103-120
T6	80.00-60.00	Leg	121-123
		Diagonal	124-135
T7	60.00-40.00	Leg	136-138
		Diagonal	139-150
T8	40.00-20.00	Leg	151-153
		Diagonal	154-165
T9	20.00-0.00	Leg	166-168
		Diagonal	169-180
			Total number of elements: 180

All-Points Technology Corp., P.C.
567 Vauxhall Street Extension - Suite 311
Waterford, CT 06385
(860) 663-1697

Client:	**SAI Communications, Inc.**	Site No.:	**CT1425S**
Job:	**Manchester Eversource**	Job No.:	**CT1931644**
Calculated By:	**M. Larson**	Date:	**26-May-21**

Mat Foundation Analysis

Program assumes:

Mat is square in plan view.
Water table is below bottom of mat.
Unit weight of concrete = 150 pcf
Unit weight of soil = 125 pcf
Self-supporting tower with 3 piers

Information to be provided:

Pier is round or square in plan dimension ("R" or "S")	Shape =	R	
OTM = Overturning Moment to be resisted	OTM =	8294	ft-kips
H = Height from ground surface to top of mat (if buried)	H =	4.25	ft.
P_M = Projection of pier above mat	P_M =	4.75	ft.
y = Thickness of mat	y =	1.75	ft.
x = Width of mat	x =	34.00	ft.
d = Diameter of round pier	d =	4.0	ft.
S = Size of tension bars	S =	10	

Mass of tower and appurtenances (below)

Results:

Component	Mass	Moment Arm	Moment Resist.
Pier	9.0 kips	17 ft.	152.2 ft-kips
Overburden	702.4 kips	17 ft.	11941.2 ft-kips
Mat	303.5 kips	17 ft.	5158.7 ft-kips

Overturning Moment Resistance = 17252.10 ft-kips
Factor of Safety = 2.08 SATISFACTORY
Concrete Quantity = 81.6 c.y.

ATTACHMENT 6

Sanket Joshi
SAI Group
12 Industrial Way
Salem, NH 03079
sjoshi@saigrp.com

August 26, 2022

Connecticut Siting Council

Subject: AT&T Wireless, CT1425 – Manchester, CT

Dear Connecticut Siting Council:

At the request of AT&T Wireless, SAI Group has performed an assessment of the RF Power Density at the proposed site located at 324 Olcott Street, Manchester, CT.

Calculations were done in compliance with FCC OET Bulletin 65 and incorporating an additional 10 dB Off-Beam Pattern Adjustment which results in a number that is 10 percent of the standard "Worst-Case" calculation. This report provides an FCC compliance assessment based on an analysis that all transmitters are simultaneously operating at full power.

Power Density formula:

$$S = \frac{2.56 * 1.64 * ERP * 0.1}{4 * \pi * R^2}$$

Transmission Mode	Antenna Centerline AGL (ft)	Frequency (MHz)	Number of Channels	Effective Radiated Power per Channel (Watts)	Power Density (mW/cm2)	Standard Limits (mW/cm2)	% MPE (Uncontrolled/ General Public)
AT&T LTE	124	770	1	3,229	0.0083	0.5133	1.62%
AT&T LTE	124	770	1	1,343	0.0035	0.5133	0.68%
AT&T LTE	124	725	1	1,343	0.0035	0.4833	0.72%
AT&T LTE	124	1900	1	4,562	0.0118	1	1.18%
AT&T LTE	124	2100	1	5,877	0.0152	1	1.52%
AT&T LTE	124	2300	1	3,428	0.0089	1	0.89%
AT&T 5G	124	850	1	1,000	0.0026	0.5667	0.46%
Others							14.41%
Total							**21.47%**

Conclusion: AT&T's proposed antenna installation along with other existing antennae is calculated to be within **21.47%**[1] of FCC Standard for General Public/Uncontrolled Maximum Permissible Exposure (MPE).

Sincerely,

Sanket Y Joshi
SAI Group

[1] The total %MPE is a summation of each unrounded contribution. Hence, summing each rounded value may vary by approximately 0.01%.

ATTACHMENT 7

CERTIFICATE OF SERVICE

I hereby certify that on the 31st day of August, 2022, a copy of the following letter and Sub-Petition for a declaratory ruling filed with the Connecticut Siting Council was sent by certified mail, return receipt requested, to the attached list of City officials:

Dated: August 31, 2022

Brown Rudnick LLP
Joseph A. Giammarco

Town of Manchester

MAYOR JAY MORAN MANCHESTER BOARD OF DIRECTORS 41 CENTER STREET P.O. BOX 191 MANCHESTER, CT 06045-0191	GARY ANDERSON, AICP DIRECTOR OF PLANNING LINCOLN CENTER, 2ND FL. 494 MAIN STREET P.O. BOX 191 MANCHESTER, CT 06045-0191
DAVID LAIUPPA ENVIRONMENTAL PLANNER/ WETLANDS AGENT LINCOLN CENTER, 2ND FL. 494 MAIN STREET P.O. BOX 191 MANCHESTER, CT 06045-0191	DARRYL E. THAMES, SR. TOWN CLERK 41 CENTER STREET P.O. BOX 191 MANCHESTER, CT 06045-0191

CERTIFICATE OF SERVICE

I hereby certify that on the 31st day of August, 2022, a copy of the following letter and Sub-Petition for a declaratory ruling filed with the Connecticut Siting Council was sent by certified mail, return receipt requested, to the attached list of abutting property owners:

Dated: August 31, 2022

Brown Rudnick LLP
Joseph A. Giammarco

CONNECTICUT LIGHT & POWER CO. P.O. BOX 270 HARTFORD, CT 06141 Parcel ID 33-4300-0250 *Identified as parcel **A** on Abutters Map* Parcel ID 33-5920-451 *Identified as parcel **G** on Abutters Map* Parcel ID 33-2710-799 *Identified as parcel **I** on Abutters Map*	TOWN OF MANCHESTER 41 CENTER STREET MANCHESTER, CT 06040 Parcel ID 18-3960-864 *Identified as parcel **B** on Abutters Map* Parcel ID 33-4300-325 *Identified as parcel **R** on Abutters Map* Parcel ID 18-3960-864 *Identified as parcel **S** on Abutters Map*
WALKER HORACE 169 OLCOTT STREET MANCHESTER, CT 06040 Parcel ID 32-4300-169 *Identified as parcel **C** on Abutters Map*	EMPIRE TOOL & MFG CO. RICHARD SCHAUSTER VP/FINANCE 180 OLCOTT STREET MANCHESTER, CT 06040 Parcel ID 32-4300-180 *Identified as parcel **D** on Abutters Map*
ARBORS OF HOP BROOK LIMITED PARTNERSHIP 403 WEST CENTER STREET MANCHESTER, CT 06040 Parcel ID 33-5920-403 *Identified as parcel **E** on Abutters Map*	MCKEE BROTHERS LLC 435 WEST CENTER STREET MANCHESTER, CT 06040 Parcel 33-5920-435 *Identified as parcel **F** on Abutters Map*
450 WEST CENTER LLC C/O MAGIC LINCER TENNIS ACADEMY LLC 109 PIERSON LANE WINDSOR, CT 06095 Parcel ID 33-5920-404 *Identified as parcel **H** on Abutters Map*	KBB LLC P.O. BOX 234 MANCHESTER, CT 06045 Parcel ID 33-5920-500 *Identified as parcel **J** on Abutters Map*

US ACQUISITION LLC 512 WEST CENTER STREET MANCHESTER, CT 06040 Parcel ID 33-5920-512 *Identified as Parcel **K** on Abutters Map*	JASE PROPERTIES LLC 239 OLD POST ROAD TOLLAND, CT 06084 Parcel ID 33-2710-878 *Identified as parcel **L** on Abutters Map*
LEEMILTS PETROLEUM INC. C/O GETTY PROPERTIES CORP. 292 MADISON AVENUE, 9TH FL. NEW YORK, NY 10017 Parcel ID 33-2710-886 *Identified as parcel **M** on Abutters Map*	REICHELT CONSTRUCTION CONTRACTING 8 SPENCER STREET MANCHESTER, CT 06040 Parcel ID 33-5190-008 *Identified as parcel **N** on Abutters Map*
LYNCH FAMILY II LLC 61 RUSHFORDE DRIVE MANCHESTER, CT 06040 Parcel ID 33-4300-363 *Identified as parcel **O** on Abutters Map* Parcel ID 33-4300-365 *Identified as parcel **P** on Abutters Map* Parcel ID 33-5190-11 *Identified as parcel **Q** on Abutters Map*	TOWN OF MANCHESTER HIGHWAY GARAGE 41 CENTER STREET MANCHESTER, CT 06040 Parcel ID 32-4300-263 *Identified as parcel **T** on Abutters Map*

August 31, 2022

VIA CERTIFIED MAIL/
RETURN RECEIPT REQUESTED

[Insert Abutter/Official
Name and Address]

Re: New Cingular Wireless PCS, LLC ("AT&T") – Connecticut Siting Council Sub-Petition for a Declaratory Ruling -- Modification of an Existing Tower and Collocation of a Wireless Telecommunications Facility at 324 Olcott Street (also known as 250 Olcott Street), Manchester, Connecticut

To Whom it May Concern:

On behalf of our client New Cingular Wireless PCS, LLC ("AT&T"), we are providing this notice to you with respect to the above referenced matter pursuant to the Connecticut Siting Council's (the "Siting Council") ruling in Petition No. 1133. AT&T is filing a sub-petition (the "Sub-Petition") with the Siting Council for a declaratory ruling to administratively approve AT&T's collocation of a wireless telecommunications facility on the existing lattice tower located at 324 Olcott Street (also known as 250 Olcott Street), Manchester, Connecticut. The facility consists of nine (9) panel antennas at the 124' above ground level ("AGL") antenna centerline height on the existing lattice tower (the "Tower") together with related amplifiers, cables, fiber and other associated antenna equipment, including, without limitation, remote radio heads, surge arrestors, and a global positioning system antenna with associated electronic equipment in a walk-in cabinet, an emergency backup power propane-fueled generator, and other appurtenances on a proposed equipment pad and propane tank all located within an existing compound enclosed by a chain link fence. The existing 180' Tower is owned by Eversource Energy.

This Sub-Petition is an eligible facilities request submitted pursuant to the Federal Middle Class Tax Relief and Job Creation Act of 2012, also known as the Spectrum Act and codified at 47 U.S.C. §1455(a). AT&T's proposed modification qualifies as an eligible facilities request under the Spectrum Act and associated regulations promulgated by the Federal Communications Commission.

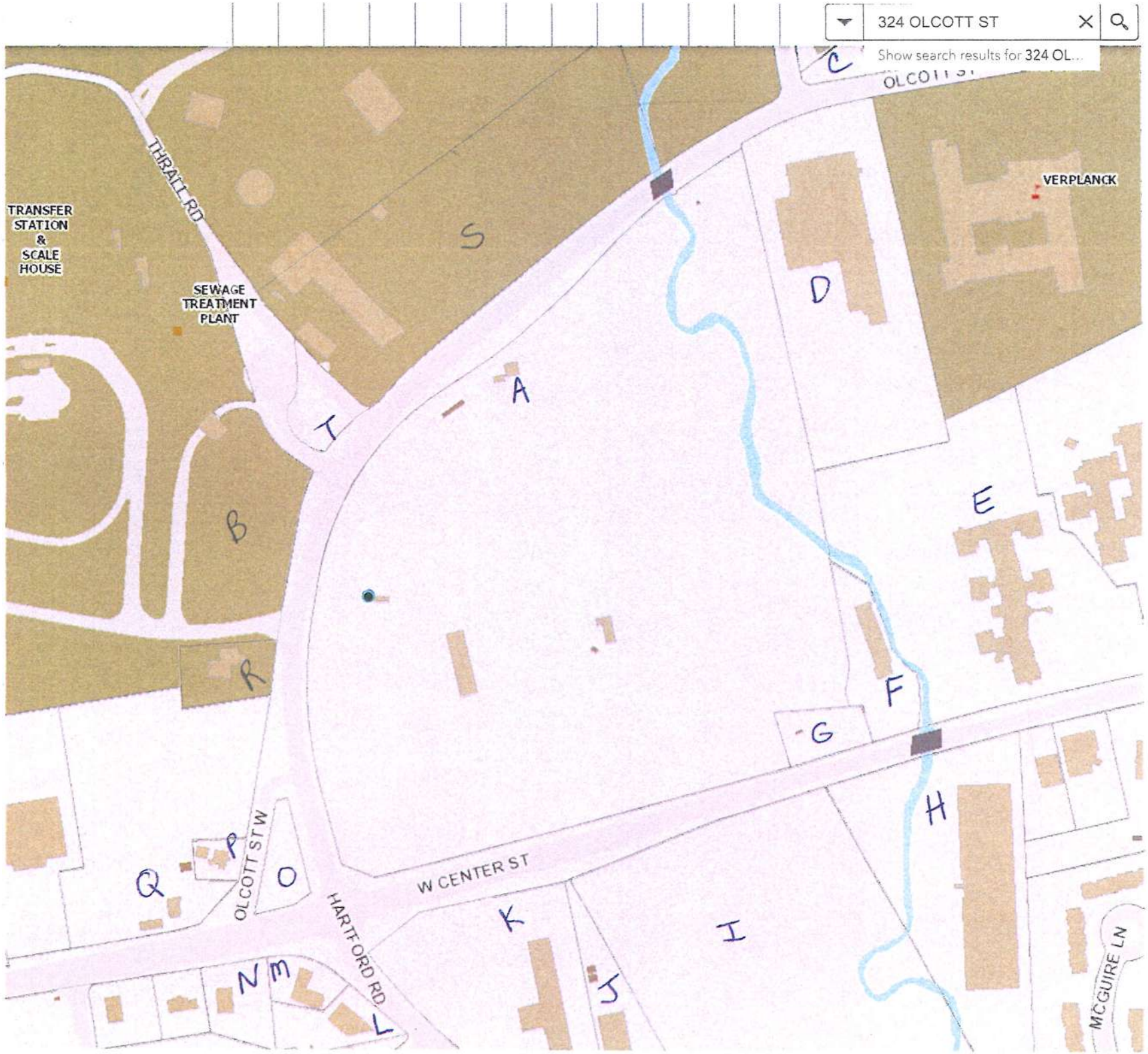
Any comments or concerns regarding this Sub-Petition should be submitted to the Siting Council within thirty (30) days of the date of this notice.

If you have any questions, please do not hesitate to contact us or the Siting Council at 860-827-2935.

Sincerely,

/s/ Thomas J. Regan
Thomas J. Regan, Esq.

Enclosure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