Crown Castle
12 Gill Street, Suite 5800
Woburn, MA 01801

January 20, 2017

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

RE: **Notice of Exempt Modification for Sprint / Crown Site BU: 806953**
Sprint Site ID: CT03XC344
Located at: 69 Guinea Rd, Stamford, CT 06903
Latitude: 41° 6' 6.35"/ Longitude: -73° 35' 41.45"

Dear Ms. Bachman,

Sprint currently maintains three (3) antennas at the 157-foot level of the existing 160-foot monopole at 69 Guinea Rd, Stamford, CT. The tower and property owner is Crown Castle. Sprint now intends to add three (3) Argus antennas. Sprint also intends to install four (4) Belden fiber lines, one (1) Ethernet line, one (1) Southwire Powere line inside of 1" conduit, three (3) Nokia Mini-Macro, and one (1) junction box. The antennas would be installed at the158-foot level of the tower.

This facility was approved by the Connecticut Siting Council in Docket No. 180 on April 2, 1998. This approval included the conditions that:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of BAM, Springwich Cellular Limited Partnership (Springwich), Sprint PCS (Sprint), and Nextel Communications of the Mid-Atlantic, Inc. (Nextel); and such tower shall not exceed a height of 160 feet above ground level (AGL).

This modification complies with the aforementioned condition(s).

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72(b)(2). In

accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to the Honorable David Martin, Mayor, Town of Stamford, as well as the property owner and the tower owner.

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

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

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

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

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

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

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

Sincerely,

Amanda Goodall
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
339-205-7017
Amanda.Goodall@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes

Tab 2: Exhibit-2: Structural Modification Report

Tab 3: Exhibit-3: General Power Density Table report (RF Emissions Analysis Report)

cc: The Honorable David Martin, Mayor, Town of Stamford
888 Washington Boulevard 10th Floor
Stamford, CT 06901

DOCKET NO. 180 - Cellco Partnership d/b/a Bell Atlantic Mobile application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications tower and associated equipment located immediately north of the Merritt Parkway off Guinea Road (prime and alternate one sites), or 141 Den Road (alternate two site) in Stamford, Connecticut.

Connecticut Siting Council

April 2, 1998

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications tower and equipment buildings at the proposed prime site in Stamford, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Bell Atlantic Mobile (BAM) for the construction, operation, and maintenance of a telecommunications tower, associated equipment, and buildings at the proposed prime site, located within a 28-acre parcel at Guinea Road, Stamford, Connecticut. We find the effects on scenic resources and adjacent land uses of the first alternate site and second alternate site to be significant, and therefore deny certification of these sites.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of BAM, Springwich Cellular Limited Partnership (Springwich), Sprint PCS (Sprint), and Nextel Communications of the Mid-Atlantic, Inc. (Nextel); and such tower shall not exceed a height of 160 feet above ground level (AGL).

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: adjustment of the tower location within the leased parcel to protect a nearby stream and minimize grade; a final site plan(s) for site development to include the location and specifications for the tower foundation, antennas, equipment buildings, emergency generator and fuel tank, security fence, access road, and utility line; construction plans for site clearing, tree trimming, water drainage, and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; provisions for the tower finish that may include painting; and provisions for the prevention and containment of spills and/or other discharge into surface water and ground water bodies.

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

4. The Certificate Holder shall provide the Council a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally calculated and provided in the application.

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

6. If the facility does not initially provide, or permanently ceases to provide cellular services following completion of construction, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapplication for any continued or new use shall be made to the Council before any such use is made.

7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.

8. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the effective date of this Decision and Order or within three years after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant and Stamford Advocate.

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

The parties and intervenors to this proceeding are:

APPLICANT	**ITS REPRESENTATIVE**
Bell Atlantic Mobile	Kenneth C. Baldwin, Esq. Brian C. S. Freeman, Esq. Robinson & Cole One Commercial Plaza Hartford, CT 06103-3597 Mr. David S. Malko, P.E. Jennifer Young Gaudet Bell Atlantic Mobile 20 Alexander Drive Wallingford, CT 06492

INTERVENORS	ITS REPRESENTATIVE
Sprint Spectrum, L.P. d/b/a Sprint PCS	Elias A. Alexiades John W. Knuff Harris, Beach & Wilcox, LLP 147 North Broad Street Milford, CT 06460
Nextel Communications of the Mid-Atlantic, Inc.d/b/a Nextel Communications	Christopher B. Fisher, Esq. Cuddy, Feder & Worby, Esq. 90 Maple Avenue White Plains, NY 10601
Springwich Cellular Limited Partnership	Peter J. Tyrrell, Esq. General Counsel 500 Enterprise Drive Rocky Hill, CT 06067-3900

PARTIES	ITS REPRESENTATIVE
Charles H. Nobs, Maurice Lucas, and Ben and Myrna Raphan	Jeffrey J. Mirman, Esq. Levy & Droney, P.C. P.O. Box 887 Farmington, CT 06034

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VOL 10061 PG 0152
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DONNA M LOGLISCI
CITY & TOWN CLERK STAMFORD CT
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Recording requested by and when
recorded mail to: Corinna Crum
Stewart Title Guaranty – NTS
1980 Post Oak Blvd. #610
Houston, TX 77056
NTS# 09331350

GRANT OF EASEMENT AND ASSIGNMENT OF LEASE

Facilities:	BU806953
Street Address:	69 Guinea Road
City:	Stamford
County:	Fairfield
State:	Connecticut

between

GLOBAL SIGNAL ACQUISITIONS IV LLC,
a Delaware limited liability company ("GSA IV" or "Grantee")

and

GIRL SCOUTS OF CONNECTICUT, INC.,
a Connecticut non-stock corporation ("Grantor")

09331350

GRANT OF EASEMENT AND ASSIGNMENT OF LEASE

THIS GRANT OF EASEMENT AND ASSIGNMENT OF LEASE (the "Easement") is made this 8 day of October, 2009, by and between GIRL SCOUTS OF CONNECTICUT, INC., a Connecticut non-stock corporation having a mailing address of 340 Washington Street, Hartford, CT 06106 ("Grantor") and GLOBAL SIGNAL ACQUISITIONS IV LLC, a Delaware limited liability company, with its national headquarters located at 2000 Corporate Drive, Canonsburg, Pennsylvania 15317 ("GSA IV" or "Grantee").

1. **Description of Grantor's Property.** Grantor is the owner of that certain land and premises in the City of Stamford, County of Fairfield, State of Connecticut, by grant or conveyance described in the City of Stamford Land Records ("Land Records"), at Volume 1035, Page 131. The description of said property is attached hereto as Exhibit "A" (hereinafter "Grantor's Property").

2. **Description of Easement.** For good and valuable consideration, the actual consideration paid or to be paid in connection with this Easement being Nine Hundred Twenty-Five Thousand and No/100 Dollars ($925,000.00), the receipt and sufficiency of which the parties hereby acknowledge, Grantor grants and conveys unto GSA IV, its successors and assigns, forever, an exclusive, fifty (50) year easement for the use of a portion of Grantor's Property, that portion being described as a 100 feet by 100 feet parcel within Grantor's Property (the "Easement Area"), as such Easement Area is more particularly described by metes and bounds as the "100' x 100' Tower Easement Parcel" in Exhibit "B" attached hereto. The Grantor also grants to GSA IV, its successors and assigns, as part of this Easement, a non-exclusive easement and right-of-way (i) for ingress and egress, seven days per week, twenty-four hours per day, on foot or motor vehicle, including trucks, along a twenty feet wide right-of-way extending from the nearest public right-of-way together with the right to install, replace and maintain utility wires, poles, cables, conduits and pipes (the "Access Easement"), as is more particularly described by metes and bounds as the "20' Wide Access Easement" in Exhibit "B" attached hereto; and (ii) for the right to install, replace and maintain utility wires, poles, cables, conduits and pipes along that ten feet wide utility easement ("Utility Easement"), as is more particularly described by metes and bounds as the "10' Wide Utility Easement" in Exhibit "B" attached hereto (hereinafter the term "Easement Area" shall be deemed to also include the Access Easement and the Utility Easement unless stated to the contrary). In the event GSA IV or any public utility is unable or unwilling to use the above-described Access Easement, Grantor hereby agrees to grant an additional right-of-way, in form reasonably satisfactory to GSA IV, to GSA IV or at GSA IV's request, directly to a public utility, at no cost and in a location reasonably acceptable to GSA IV (the "Additional Access Easement"). For any such Additional Access Easement to be effective, such easement shall be recorded in the Land Records.

Except in the event of an emergency, in the event that GSA IV or any lessee, licensee or sub-easement

holder of GSA IV, desires to undertake any repair on the Easement Area that is anticipated to require more than two (2) days to complete, GSA IV must first provide prior notice of same to Grantor.

3. **Easement Area.** The Easement Area shall be used for maintaining and operating communications facilities, including without limitation, one tower structure, reasonable antenna support structures, cabinets, meter boards, equipment shelters, antennas, cables, equipment ("Equipment" or "Communications Facilities") and uses incidental thereto for GSA IV's use and the use of its lessees, licensees, and/or sub-easement holders (the "Permitted Use"). It is the intent of the parties that GSA IV's Communications Facilities shall not constitute a fixture. Notwithstanding the foregoing limitation to one tower structure, Grantor agrees that GSA IV may have two (2) tower structures located on the Easement Area for no more than a ninety (90) day period if necessary for GSA IV to replace a tower structure. Grantor shall not object to any improvements constructed by or on behalf of GSA IV on the Easement Area, not including the Access Easement, provided any such improvements are incidental to the Permitted Use. If requested by GSA IV, Grantor will execute, at GSA IV's sole cost and expense, all documents required by any governmental authority in connection with any development of, or construction, on the Easement Area, including documents necessary to petition the appropriate public bodies for certificates, permits, licenses, and other approvals deemed necessary by GSA IV, in GSA IV's discretion, to utilize the Easement Area for the Permitted Use. Grantor agrees to be named applicant if requested by GSA IV and if required as a matter of statute or regulation.

4. **Easement.** This Easement and GSA IV's rights and privileges hereunder shall be for a term of fifty (50) years from the date of this Easement and may be terminated only as provided for herein.

5. **GSA IV's Right to Terminate.** GSA IV shall have the unilateral right to terminate this Easement for any reason. Said termination shall be effective upon GSA IV providing written notice of termination to Grantor. Upon termination of this Easement, this Easement shall become null and void and all of the parties shall have no further obligations to each other, except as hereinafter provided.

6. **Hazardous Materials.**

(a) GSA IV shall not (either with or without negligence) cause or permit the use, storage, generation, escape, disposal or release of any Hazardous Materials in any manner not sanctioned by law. In all events, GSA IV shall indemnify and hold Grantor harmless from any and all claims, damages, fines, judgments, penalties, costs, liabilities or losses (including, without limitation, any and all sums paid for settlement of claims, attorneys' fees, and consultants' and experts' fees) from the presence or release of any Hazardous Materials on the Easement Area or the Grantor's Property if caused by GSA IV or persons acting under GSA IV or its lessees, licensees and/or sub-easement holders. GSA IV shall execute such affidavits, representations and the like from time to time as Grantor may reasonably request concerning GSA IV's

best knowledge and belief as to the presence of Hazardous Materials within the Easement Area.

(b) Grantor shall not (either with or without negligence) cause or permit the use, storage, generation, escape, disposal or release of any Hazardous Materials in any manner not sanctioned by law. Grantor shall indemnify and hold GSA IV harmless from any and all claims, damages, fines, judgments, penalties, costs, liabilities or losses (including, without limitation, any and all sums paid for settlement of claims, attorneys' fees, and consultants' and experts' fees) from the presence or release of any Hazardous Materials on Grantor's Property to the extent caused by Grantor or persons acting on Grantor's behalf. Grantor shall execute such affidavits, representations and the like from time to time as GSA IV may reasonably request concerning Grantor's best knowledge and belief as to the presence of Hazardous Materials on Grantor's Property.

(c) For purposes of this Easement, the term "Hazardous Materials" shall be defined as any substance which is (i) designated, defined, classified or regulated as a hazardous substance, hazardous material, hazardous waste, pollutant or contaminant under any Environmental Law, as currently in effect or as hereafter amended or enacted, (ii) a petroleum hydrocarbon, including crude oil or any fraction thereof and all petroleum products, (iii) PCBs, (iv) lead, (v) asbestos, (vi) flammable explosives, (vii) infectious materials, or (viii) radioactive materials. "Environmental Law(s)" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Sections 9601, et seq., the Resource Conservation and Recovery Act of 1976, 42 U.S.C. Sections 6901, et seq., the Toxic Substances Control Act, 15 U.S.C. Sections 2601, et seq., the Hazardous Materials Transportation Act, 49 U.S.C. 5101, et seq., and the Clean Water Act, 33 U.S.C. Sections 1251, et seq., as said laws have been supplemented or amended to date, the regulations promulgated pursuant to said laws and any other federal, state or local law, statute, rule, regulation or ordinance which regulates or proscribes the use, storage, disposal, presence, clean-up, transportation or release or threatened release into the environment of Hazardous Materials.

7. **Insurance.** At all times, GSA IV, at its sole expense, shall obtain and keep in force commercial general liability, worker's compensation and motor vehicle insurance as set forth in the Certificate of Insurance provided to Grantor with the execution of this Easement or which may be required by any federal, state or local statute or ordinance of any governmental body having jurisdiction in connection with the operation of GSA IV's business upon the Easement Area. Grantor and GSA IV agree to consult every five (5) years from the date of this Easement to determine if the insurance levels maintained by GSA IV should escalate based on what is standard in the industry ("Industry Standard") at the time of the review. Said Industry Standard may be determined by a review of insurance maintained by GSA IV at other similar communication tower sites located within the same area or region as Grantor's Property. Taking such Industry Standard into account, the Grantor shall have the right to reasonably increase the limits of said insurance coverage. The Grantor, its

successors and assigns, shall be an additional insured on the commercial general liability coverage.

8. **Security of GSA IV's Communications Facilities.** To the extent that the existing fence around the premises that is the subject of the Lease Agreement needs to be expanded to encompass the entire Communications Facilities, GSA IV shall construct a fence that is equal in height and aesthetic qualities as the existing fence, around the perimeter of GSA IV's Communications Facilities and shall maintain the same in good condition.

9. **Removal of Obstructions.** GSA IV has the right to remove obstructions, including but not limited to vegetation, which encroach upon, interfere with or present a hazard to GSA IV's use of the Easement Area, not including the Access Easement. GSA IV shall obtain Grantor's prior consent, which shall not be unreasonably withheld or delayed, prior to removing said obstructions from the Access Easement, unless said obstructions unreasonably prevent use of the Access Easement by GSA IV, its lessees, licensees and/or sub-easement holders, in which case said obstructions may be removed without such consent. GSA IV shall be responsible for the disposing off Grantor's Property of any materials related to the removal of obstructions.

10. **Possession of the Easement Area.** The parties hereby acknowledge that GSA IV or its affiliate or related entity as of the date of this Easement is in possession of the Easement Area pursuant to that certain Land Lease Agreement, as amended, originally dated October 19, 1995 by and between GSA IV, as successor lessee to Cellco Partnership, and Grantor, as lessor ("Lease Agreement"). A Notice of Lease providing public notice of the Lease Agreement has been recorded in the Land Records in Volume 4494, Page 334, as amended by that Amended and Restated Notice of Lease dated May 13, 1997, and recorded in the Land Records in Volume 4772, Page 260. Grantor hereby assigns to GSA IV all of Grantor's right, title and interest in the Lease Agreement, including but not limited to, the right to amend the Lease Agreement: (i) to extend the term length, and/or (ii) in any other manner deemed reasonably necessary by GSA IV. GSA IV shall maintain possession of the Easement Area pursuant to the terms and conditions of this Easement. Grantor is hereby released from all obligations and liabilities under the Lease Agreement.

11. **Real Estate and Personal Easement Area Taxes.** Grantor is currently a tax exempt entity, but if applicable, it shall pay all real estate taxes on Grantor's Property; provided GSA IV agrees to promptly reimburse Grantor for any documented increase in real estate taxes levied against Grantor's Property that are directly attributable to this Easement and/or the improvements constructed or installed by GSA IV or its tenants, licensees or sub-easement holders. Grantor agrees to provide GSA IV any documentation evidencing the increase and how such increase is attributable to GSA IV. GSA IV reserves the right to challenge any such governmental assessment, and Grantor agrees to reasonably cooperate with GSA IV in connection with any such challenge. In the event that Grantor fails to pay all applicable real estate taxes on Grantor's Property prior to such taxes becoming delinquent, GSA IV may, at its option, pay such real estate taxes (the

"Delinquent Taxes"). Nothing herein shall relieve GSA IV of its responsibility for all real estate and personal property taxes that may be assessed and due for the Equipment and Communications Facilities located on the Easement Area and its or others operations on the Easement Area pursuant to this Easement.

12. **Waiver of Subrogation.** The parties hereby waive any and all rights of action for negligence against the other which may hereafter arise on account of physical damage to the Easement Area or any other portion of Grantor's Property, including improvements and personal property located thereon, resulting from any fire or other casualty of the kind covered by property insurance policies with extended coverage regardless of whether or not, or in what amount, such insurance is now or hereafter carried by the parties.

13. **Enforcement.** (a) In the event Grantor fails to cure any violation of the terms of this Easement within thirty (30) days after written notice from GSA IV, or, if the violation is of such a nature that it cannot be cured within thirty (30) days, Grantor shall have such additional period of time to cure provided that it commences curing within said thirty (30) days and diligently prosecutes such cure to completion thereafter, and in any event cures same within ninety (90) days after the initial written notice from GSA IV, then GSA IV shall have the right to injunctive relief, to require specific performance of this Easement, to collect damages from Grantor, and to take such actions as may be necessary in GSA IV's discretion to cure such violation and charge Grantor with all reasonable costs and expenses incurred by GSA IV as a result of such violation (including, without limitation, GSA IV's reasonable attorneys' fees). All rights and remedies provided under this Easement are cumulative and may be pursued singularly, in any combination, and in any order. The failure to enforce any of the terms and provisions contained herein shall in no event be deemed to be a waiver of the right to thereafter strictly enforce the terms and provisions hereof.

(b) In the event GSA IV fails to cure any violation of the terms of this Easement within thirty (30) days after written notice from Grantor, Grantor shall have the right to injunctive relief, to require specific performance of this Easement, and to pursue an action for damages (including, without limitation, Grantor's reasonable attorneys fees and all reasonable costs and expenses incurred by Grantor as a result of such violations). All rights and remedies provided under this Easement are cumulative and may be pursued singularly, in any combination, and in any order. The failure to enforce any of the terms and provisions contained herein shall in no event be deemed to be a waiver of the right to thereafter strictly enforce the terms and provisions hereof. Notwithstanding anything to the contrary in this Easement, in no event may Grantor terminate this Easement as a result of GSA IV's failure to cure any violation of the terms contained herein; however, such violation remaining uncured beyond any applicable cure period shall entitle Grantor to any monetary damages allowed by law.

14. **Recording.** Grantor acknowledges that GSA IV intends to record this Easement in the Land Records and to file the Survey, defined in Exhibit "B", with the Town and City Clerk of Stamford, Connecticut.

15. **Hold Harmless.** Grantor hereby indemnifies, holds harmless, and agrees to defend GSA IV against all damages asserted against or incurred by GSA IV by reason of, or resulting from: (i) the breach by Grantor of, any representation, warranty, or covenant of Grantor contained herein or (ii) any negligent act or omission of Grantor, excepting however such damages as may be due to or caused by the acts of GSA IV or its agents. GSA IV hereby indemnifies, holds harmless, and agrees to defend Grantor against all damages asserted against or incurred by Grantor by reason of, or resulting from: (i) the breach by GSA IV of any representation, warranty, or covenant of GSA IV contained herein or (ii) any negligent act or omission of GSA IV, or its lessees, licensees, subtenants, or sub-easement holders, excepting however such damages as may be due to or caused by the acts of Grantor or its agents.

16. **Grantor's Covenant of Title.** Grantor covenants: (a) Grantor is seized of fee simple title to the Grantor's Property of which the Easement Area is a part and has the right and authority to grant this Easement; and (b) subject to the terms and conditions of this Easement, GSA IV shall have quiet possession, use and enjoyment of the Easement Area.

17. **Non-Interference.** From and after the date hereof and continuing until this Easement expires, GSA IV and its lessees, licensees and/or sub-easement holders shall have the right to maintain, repair, install and operate Communications Facilities, but in no event shall more than one (1) tower be constructed or located within, from or on the Easement Area, except as expressly provided in Section 3 above. Grantor shall not permit (i) the construction, installation or operation of any communications facilities that emit radio frequencies on Grantor's Property that measurably and unreasonably interferes with GSA IV's facilities constructed, installed and/or operated on the Easement Area pursuant to this Easement or the Lease Agreement, or (ii) any condition on Grantor's Property which materially and adversely interferes with GSA IV's Permitted Use. Each of the covenants made by Grantor in this Section 17 is a covenant running with the land for the benefit of the Easement Area and shall be binding upon Grantor and each successive owner of any portion of Grantor's Property and upon each person having any interest therein derived through any owner thereof.

18. **Eminent Domain.** If the whole or any part of the Easement Area shall be taken by right of eminent domain or any similar authority of law, the entire award solely allocated by the condemning authority for the value of the Easement Area and improvements so taken shall belong to GSA IV.

19. **Grantor's Property.** Grantor shall not do or permit anything that will unreasonably interfere with or negate any special use permit or approval pertaining to the Permitted Use of the Easement Area or cause any Equipment or the Communications Facility to be in nonconformance with applicable local, state, or federal laws. Grantor covenants and agrees that it shall not subdivide the Grantor's Property if any such subdivision will substantially and materially adversely affect the Easement Area's compliance (including any improvements located thereon) with applicable laws, rules, ordinances and/or zoning, or otherwise substantially and

materially adversely affect GSA IV's ability to utilize the Easement Area for the Permitted Use. Grantor shall not initiate or consent to any change in the zoning of Grantor's Property or impose or consent to any other restriction that would prevent or unreasonably limit GSA IV from using the Easement Area for the Permitted Use.

20. Entire Agreement. Grantor and GSA IV agree that this Easement contains all of the agreements, promises and understandings between Grantor and GSA IV. No verbal or oral agreements, promises or understandings shall be binding upon either Grantor or GSA IV in any dispute, controversy or proceeding at law. Any addition, variation or modification to this Easement shall be void and ineffective unless made in writing and signed by the parties hereto.

21. Construction of Document. Grantor and GSA IV acknowledge that this document shall not be construed in favor of or against the drafter and that this document shall not be construed as an offer until such time as it is executed by one of the parties and then tendered to the other party.

22. Applicable Law. This Easement and the parties performance hereunder shall be governed, interpreted, construed and regulated by the laws of the State of Connecticut. The parties agree that the exclusive venue for any litigation regarding this Easement shall be the Connecticut Superior Court for the Judicial District of Hartford in Hartford, Connecticut.

23. Notices. All notices hereunder shall be in writing and shall be given by (i) established express delivery service which maintains delivery records, (ii) hand delivery, or (iii) certified or registered mail, postage prepaid, return receipt requested. Notices may also be given by facsimile transmission, provided that the notice is concurrently given by one of the above methods. Notices are effective upon receipt, or upon attempted delivery if delivery is refused or if delivery is impossible because of failure to provide reasonable means for accomplishing delivery. The notices shall be sent to the parties at the following addresses:

Grantor:

Girl Scouts of Connecticut, Inc.
340 Washington Street
Hartford, CT 06106
Attention: Chief Executive Officer

GSA IV:

Global Signal Acquisitions IV LLC
c/o Crown Castle USA Inc.
E. Blake Hawk, General Counsel
Attn: Real Estate Department
2000 Corporate Drive
Canonsburg, PA 15317

24. Assignment. The parties hereto expressly intend that the easements granted herein shall be easements in gross, and as such, are transferable, assignable, inheritable, divisible and apportionable. GSA IV has the right, within its sole discretion, to sell, assign, lease, convey, license or encumber any of its interest in the Easement Area without consent. In addition, GSA IV has the right, within its sole discretion, to grant sub-easements over any portion of the Easement Area without consent. Any such sale, assignment, lease, license, conveyance, sub-easement or encumbrance shall be

binding upon the successors, assigns, heirs and legal representatives of the respective parties hereto and shall be subject to the terms and conditions of this Easement. An assignment of this Easement shall be effective upon GSA IV sending written notice thereof to Grantor at Grantor's mailing address stated above and shall relieve GSA IV from any further liability or obligation accruing hereunder on or after the date of the assignment

25. **Partial Invalidity.** If any term of this Easement is found to be void or invalid, then such invalidity shall not affect the remaining terms of this Easement, which shall continue in full force and effect.

26. **Mortgages.** This Easement shall be subordinate to any mortgage given by Grantor which currently encumbers Grantor's Property including the Easement Area, provided that any mortgagee holding such a mortgage shall recognize the validity of this Easement in the event of foreclosure of Grantor's interest and GSA IV's rights under this Easement. In the event that the Easement Area is or shall be encumbered by such a mortgage, Grantor shall obtain and furnish to GSA IV a non-disturbance agreement for each such mortgage, in recordable form.

27. **Successors and Assigns.** The terms of this Easement shall constitute a covenant running with the Grantor's Property for the benefit of GSA IV and its successors and assigns and shall extend to and bind the heirs, personal representatives, successors and assigns of the parties hereto and upon each person having any interest therein derived through any owner thereof. Any sale, mortgage, lease or other conveyance of Grantor's Property shall be under and subject to this Easement and GSA IV's rights hereunder.

28. **Construction of Easement.** The captions preceding the Sections of this Easement are intended only for convenience of reference and in no way define, limit or describe the scope of this Easement or the intent of any provision hereof. Whenever the singular is used, the same shall include the plural and vice versa and words of any gender shall include the other gender. As used herein, "including" shall mean "including, without limitation." This document may be executed in multiple counterparts, each of which shall be deemed a fully executed original.

29. **Removal Upon Termination.** GSA IV, upon the expiration or earlier termination of the Easement for any reason, shall, within ninety (90) days of such expiration or termination, remove its Equipment, Communications Facilities, including but not limited to, the tower, antennas, structures, building, fencing, fixtures and all personal property and foundations to a level of three feet (3') below the existing grade, and otherwise restore the Easement Area and the Grantor's Property to its original condition, reasonable wear and tear excepted. Grantor agrees and acknowledges that all of the Equipment, Communications Facilities, fixtures and personal property of GSA IV shall remain the personal property of GSA IV and GSA IV shall have the right to remove the same, whether or not said items are considered fixtures and attachments to real property under applicable law. If such time for removal causes GSA IV to remain on the Easement Area after the date of expiration or earlier termination of this

Easement, GSA IV shall pay Grantor the sum of $40,000.00 per month or a portion thereof as a use and occupancy fee, until such time as the removal of the Equipment, Communications Facilities, antennas, fixtures and all personal property are completed. Time is of the essence in the removal of the Equipment and Communications Facilities. Grantor reserves any and all rights it has at law to recover possession of the Easement Area upon such expiration or earlier termination of this Easement.

30. **Equipment Compliance.** GSA IV covenants that it will keep the Equipment and Communications Facilities in reasonably good repair and as required by all applicable federal, state and municipal laws, regulations and ordinances. GSA IV shall also comply with all rules and regulations enforced by the Federal Communications Commission and the Federal Aviation Administration with regard to the lighting, marking and painting of towers.

31. **Non-Use of Easement Area.** Notwithstanding the foregoing, in the event that GSA IV cease to use the Easement Area for its Permitted Use for a continuous period of more than three (3) years (for reasons other than casualty, condemnation or force majeure), Grantor may terminate this Easement only after first providing written notice to GSA IV and giving GSA IV the opportunity to reclaim the Easement Area within thirty (30) days of receipt of said written notice. In the event GSA IV fails to reclaim the Easement Area within the thirty (30)-day period, Grantor may thereafter terminate this Easement by providing written notice of termination to GSA IV and this Easement shall be deemed terminated. Upon termination, this Easement shall be of no further force or effect, except as otherwise provided herein, and GSA IV and Grantor shall promptly execute and Grantor may record such documents as required to record in the Land Records a notice of termination of this Easement.

IN WITNESS WHEREOF, Grantor and GSA IV, having read the foregoing and intending to be legally bound hereby, have executed this Easement under seal as of the day and year first written above.

GRANTOR:

GIRL SCOUTS OF CONNECTICUT, INC.,
a Connecticut non-stock corporation

Witness Barbara Jabs

Witness Arlene R. Stover

By: Jennifer Turner (SEAL)
Print Name: Jennifer Smith Turner
Title: Chief Executive Officer

STATE OF Connecticut)
)SS: Hartford
COUNTY OF Hartford)

The foregoing instrument was acknowledged before me this 8th day of October, 2009, by Jennifer Smith Turner as Chief Executive Officer on behalf of GIRL SCOUTS OF CONNECTICUT, INC., a Connecticut non-stock corporation, as his/her free act and deed.

By: Arlene R. Stover
Print Name: ARLENE R. STOVER
NOTARY PUBLIC
MY COMMISSION EXPIRES MAY 31, 2014
Notary Public/ Commissioner of the Superior Court
My Commission Expires: _____
[affix notary stamp or seal]

IN WITNESS WHEREOF, Grantor and GSA IV, having read the foregoing and intending to be legally bound hereby, have executed this Grant of Easement under seal as of the day and year first written above.

GSA IV:

GLOBAL SIGNAL ACQUISITIONS IV LLC,
a Delaware limited liability company

By: _____ (SEAL)
Print Name: E. Blake Hawk
Title: EVP
9 Oct 2009

Witness

Witness

STATE OF Texas)
)SS:
COUNTY OF Harris)

The foregoing instrument was acknowledged before me this 9th day of October, 2009, by E. Blake Hawk [name], as EVP [title], on behalf of GLOBAL SIGNAL ACQUISITIONS IV LLC, a Delaware limited liability company, as his/her free act and deed.

By: _____
Print Name: Theresa Little
Notary Public/ Commissioner of Superior Court
My Commission Expires: 4-4-12
[SEAL OR STAMP]

THERESA LITTLE
Notary Public, State of Texas
My Commission Expires
April 04, 2012

EXHIBIT A

GRANTOR'S PROPERTY

[Attached Hereto]

vol 1035 pg 131

Know All Men By These Presents

That OSCAR JOHN DOWDY, (Releasor)
of 1210 Colonial Road, in the
City of Stamford,
County of Fairfield and
State of Connecticut

for divers good causes and considerations thereunto moving, especially for one dollar and other valuable received to my full satisfaction of THE SOUTHWESTERN CONNECTICUT GIRL SCOUT COUNCIL, INC., (Releasee) a Connecticut corporation at Compounce Road, in the Town of Wilton, County of Fairfield and State of Connecticut

have remised, released, and forever quitclaimed, and do by these presents, for myself and heirs, fully and absolutely remise, release, and forever QUITCLAIM unto the said THE SOUTHWESTERN CONNECTICUT GIRL SCOUT COUNCIL, INC., its successors and assigns forever, all such right and title as I the said Releasor have or ought to have in or to all that certain tract of land situated in the City of Stamford, County of Fairfield and State of Connecticut, containing 20 acres more or less, and bounded:

Northerly - by land of Ann B. Weeden and Frederick S. Weeden, then Easterly, Southerly, Again Easterly, Northwesterly, Southerly, Westerly and Northerly all by the land of Louis Ransom and Gladys W. Ransom; and then again Northerly by land of Helen Gilbert;

Easterly - by Colonial Road;

Southerly - by Land formerly of Ethel Mills Chrouch, et al, now of the State of Connecticut and Southwesterly by land of Henry C. Brooks; and

Westerly, Northerly and again Westerly by land of Henry C. Brooks.

The premises are the same acquired by the Releasor from the Estate of Louis E. Farrington by Executors Deed dated June 30, 1960 and recorded in the Stamford Land Records in Book 901 at page 153.

The premises are conveyed together with a reservation contained in a deed from the estate of George H. Farrington to Ethel Mills Jane Chrouch et al, dated August 1st, 1934, recorded in Book 440 at page 340, together with all right, title and interest in and to Colonial Road, adjoining said premises as now or formerly laid out.

Vol 1035 Page 132

In recognition of the interest of the Releasor (by reason of his ownership of certain lands on both sides of said Oaklea Road in close proximity to the land being hereby released, and the establishment of his home on said Road at number 290) in the maintenance of the land being hereby released as an attractive, rural, residential area, and in the preservation of the value of the said other lands and home, the Releasee, for itself, its successors and assigns, as a part of the consideration for this deed and as covenants running with the land being hereby released, further covenants and agrees with the said Releasor, his heirs, executors, and assigns that for the period of the lives of the Releasor and the Releasor's wife, Olive McKay Dravis, plus ten (10) years:

(a) No building, structure, parking area, or other improvement of any kind shall be placed, or allowed or authorized to be placed, on any part of the said land which has not been approved in writing as to location, design, and appropriateness for the neighborhood, by the Releasor, his executor, or the assigns of the house now occupied by Releasor at 290 Oaklea Road, Stamford, Fairfield County, Connecticut. Such approval shall not be unreasonably withheld, but it may be made a condition thereof that any such improvement of an institutional appearance or character shall, by appropriate planting, landscaping, or other device, be completely screened from Oaklea Road or otherwise given a residential character or appearance when viewed from that road.

(b) The said land shall not be subdivided, or resold, or offered for resale, in parcels containing less than four (4) acres; except that the Releasee, its successors and assigns may exchange less than four (4) acres of the said land for contiguous land of an adjoining property owner, in which event the land so acquired by the Releasee shall become subject to all the covenants, restrictions, and encumbrances provided in the said deed, and the Releasee shall become subject to all the covenants, restrictions, and encumbrances provided in the said deed, and the Releasee shall take such action as the Releasor believes to be necessary to make them legally applicable to it.

(c) In the event the Releasee shall consider the resale of all or any part of the said land, the Releasee shall give the Releasor reasonable advance notice thereof, and the Releasor shall have the right to purchase it at the same price, and on the same terms and conditions, which the Releasee, in good faith, would accept from a third party. The Releasee shall give the Releasor ten (10) days notice of any bona fide offer to purchase all or any part of the same land which it intends to accept, and the Releasor may purchase the same at a price, and on terms and conditions, equivalent to the said offer.

The premises are subject to the grant from Lucia E. Farrington to the Northeastern Gas Transmission Company dated February 7th, 1951, recorded in Book 663 at page 41 and a Damage Release between the parties recorded in Book 663 at page 38, restrictive covenants and agreements above referred to, present layout of Oaklea Road, riparian rights of others in and to brook crossing said premises, Zoning and Planning Rules and Regulations of the City of Stamford, taxes of the City of Stamford on the list of September 1st, 1984 [illegible]

TO HAVE AND TO HOLD the premises unto it the said

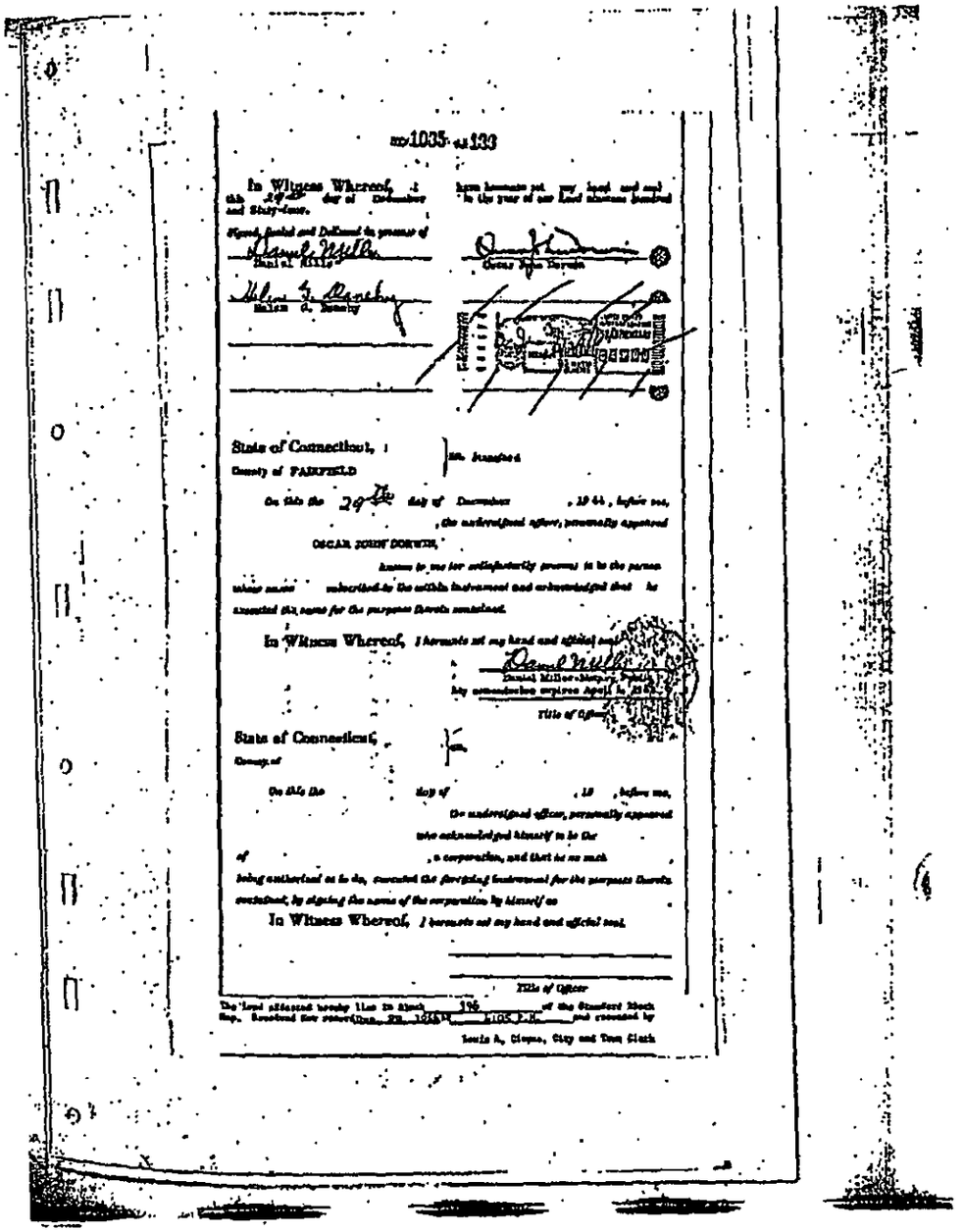
Releasee

and to its successors heirs and assigns, to the only use and behoof of the said

Releasee, its successors

heirs and assigns forever, so that neither I the said Releasor

nor any other person or persons in my name and behalf, shall or will hereafter claim or demand any right or title to the premises or any part thereof, but they and every of them shall by these presents be excluded and forever barred.



mv1035 ra133

In Witness Whereof, I have hereunto set my hand and seal this 29th day of December in the year of our Lord nineteen hundred and Sixty-four.

Signed, Sealed and Delivered in presence of

Daniel Miller

Oscar John Dorwin

William G. Hanchey

State of Connecticut, } ss. Stamford
County of FAIRFIELD }

On this the 29th day of December, 19 64, before me, the undersigned officer, personally appeared

OSCAR JOHN DORWIN,

known to me (or satisfactorily proven) to be the person whose name subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In Witness Whereof, I hereunto set my hand and official seal.

Daniel Miller
Notary Public
My commission expires April 1, 1965

Title of Officer

State of Connecticut, } ss.
County of }

On this the day of , 19 , before me, the undersigned officer, personally appeared who acknowledged himself to be the of , a corporation, and that he as such being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as

In Witness Whereof, I hereunto set my hand and official seal.

Title of Officer

This deed affected hereby lies in Block 196 of the Stamford Block Map, Enrolled for reference, Vol. 1014 Page 105 F.M. and recorded by

Louis A. Dispa, City and Town Clerk

EXHIBIT B

100' x 100' TOWER EASEMENT PARCEL

Commencing at a point at the corner of a stonewall of the parent parcel; thence S 83°28'27"E 560 feet more or less to the Point of Beginning of the Tower Easement Parcel; thence N 36°54'23" E 100.00 feet to a point; thence S 53°05'37" E 100.00 feet to a point; thence S 36°54'23" W 100.00 feet to a point; thence N 53°05'37" W 100.00 feet to Point of Beginning.

Said Tower Easement Parcel contains 10,000 square feet.

Together with:

20' WIDE ACCESS EASEMENT

Commencing at a concrete bound found at the southeasterly corner of the parent parcel; thence northerly along the right of way of Guinea Road 375 feet more or less to the Point of Beginning; thence N 51°26'27" W 46 feet more or less to a point; thence N 29°05'26" W 41.46 feet to a point; thence N 19°08'22" E 102.01 feet to a point; thence N 19°31'17 W 45.50 feet to a point; thence N 09°11'29" W 42.88 feet to a point; thence N 38°38'16" W 32.46 feet to a point; thence N 21°31'25" W 58.21 feet to a point; thence N 17°09'16" W 43.04 feet to a point; thence N 63°10'26" W 36.79 feet to a point; thence N 77° 09' 07" W 43.86 feet to a point; thence N 82°50'54" W 74.28 feet to a point; thence S 82°47'26" W 82.58 feet to a point; thence S 86°46'24"W 199.59 feet to a point; thence S 71°30'25" W 37.51 feet to a point; thence S 41°25'47" W 82.46 feet to a point; thence S 30°47'45" W 55.76 feet to a point; thence S 27°56'23" W 44.39 feet to a point; thence S 33°34'15" W 73.00 feet to a point on the northerly side of the Tower Easement Parcel, said point being N 53°05'37" W 15.42 feet from the northeast corner of the Tower Easement Parcel.

Meaning and intending to describe the center line of a non-exclusive 20' Wide Access Easement.

Said 20' Wide Access Easement contains 22,840 square feet or 0.52 acres more or less.

Together with:

10' WIDE UTILITY EASEMENT

Commencing at the northeast corner of the Tower Easement Parcel; thence N 53°05'37" W 20.46 feet to Point of Beginning of the Utility Easement being the southeast corner of said easement; thence N 53°05'37" W 10.00 feet to a point; thence N 36°54'23" E 20.83 feet to a point; thence S 53°05'37" E 10.00 feet to a point; thence S 36°54'23" W 20.83 feet to Point of Beginning.

Said 10' Wide Utility Easement contains 208.3 square feet.

The above three (3) easement areas are more fully shown and depicted on a certain survey Prepared by Geoline Surveying, Inc., dated August 13, 2009, and entitled "As-Built Cell Tower Plan, Crown Castle, 69 Guinea Road – Stamford – BU#806953 Connecticut", which survey will be filed simultaneously with the recording of the Easement, in the office of the City and Town Clerk of Stamford, Connecticut to which reference may be made.

69 GUINEA ROAD

Location	69 GUINEA ROAD	**Mblu**	002/ 6848/ / /
Acct#	002-6848	**Owner**	GIRL SCOUTS OF CONNECTICUT INC
Assessment	$1,003,970	**Appraisal**	$1,434,230
PID	24323	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$438,650	$995,580	$1,434,230
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$307,060	$696,910	$1,003,970

Owner of Record

Owner	GIRL SCOUTS OF CONNECTICUT INC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	340 WASHINGTON STREET HARTFORD, CT 06106-3317	**Book & Page**	9322/ 308
		Sale Date	04/16/2008
		Instrument	25

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
GIRL SCOUTS OF CONNECTICUT INC	$0		9322/ 308	25	04/16/2008
GIRL SCOUT COUNCIL SW CT INC	$0		4405/ 321		05/12/1995
SOUTHWESTERN CT GIRL SCT	$0		1035/ 131	25	12/29/1964

Building Information

Building 1 : Section 1

Year Built: 1963
Living Area: 1,960

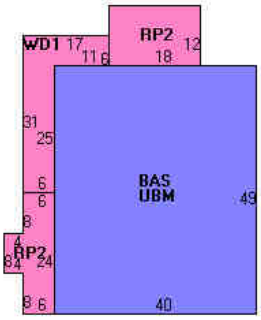
Building Attributes	
Field	**Description**
Style	Ranch
Stories:	1 Story
Occupancy	1

Building Photo

Exterior Wall 1	Cement fiberbd
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	
Heat Fuel	Electric
Heat Type:	Electr Basebrd
AC Type:	Central
Total Bedrooms:	00
Total Bthrms:	1
Total Half Baths:	0
Total Xtra Fixtrs:	3
Total Rooms:	4
Fireplace Msnry.	
Fpl. Gas/Prefab	1
Fpl. Outdoor	
Fpl. Addnl. Open	
Bsmt. Garage	

(http://images.vgsi.com/photos/StamfordCTPhotos//\00\11\94/79.jpg)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,960	1,960
RP2	Porch Covered	392	0
UBM	Basement, Unfinished	1,960	0
WD1	Deck, Wood	252	0
		4,564	1,960

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
RP2	Porch Coverd	1056 S.F	$26,290	1
RP2	Porch Coverd	756 S.F	$18,820	1
RP2	Porch Coverd	672 S.F	$16,730	1
RP2	Porch Coverd	216 S.F	$5,380	1
RP2	Porch Coverd	176 S.F	$4,380	1

Land

Land Use **Land Line Valuation**

Use Code	901	**Size (Acres)**	16.86
Description	Exmpt Res MDL-01	**Depth**	
Zone	RA3	**Assessed Value**	$696,910
Neighborhood	1100	**Appraised Value**	$995,580
Alt Land Appr	No		
Category			

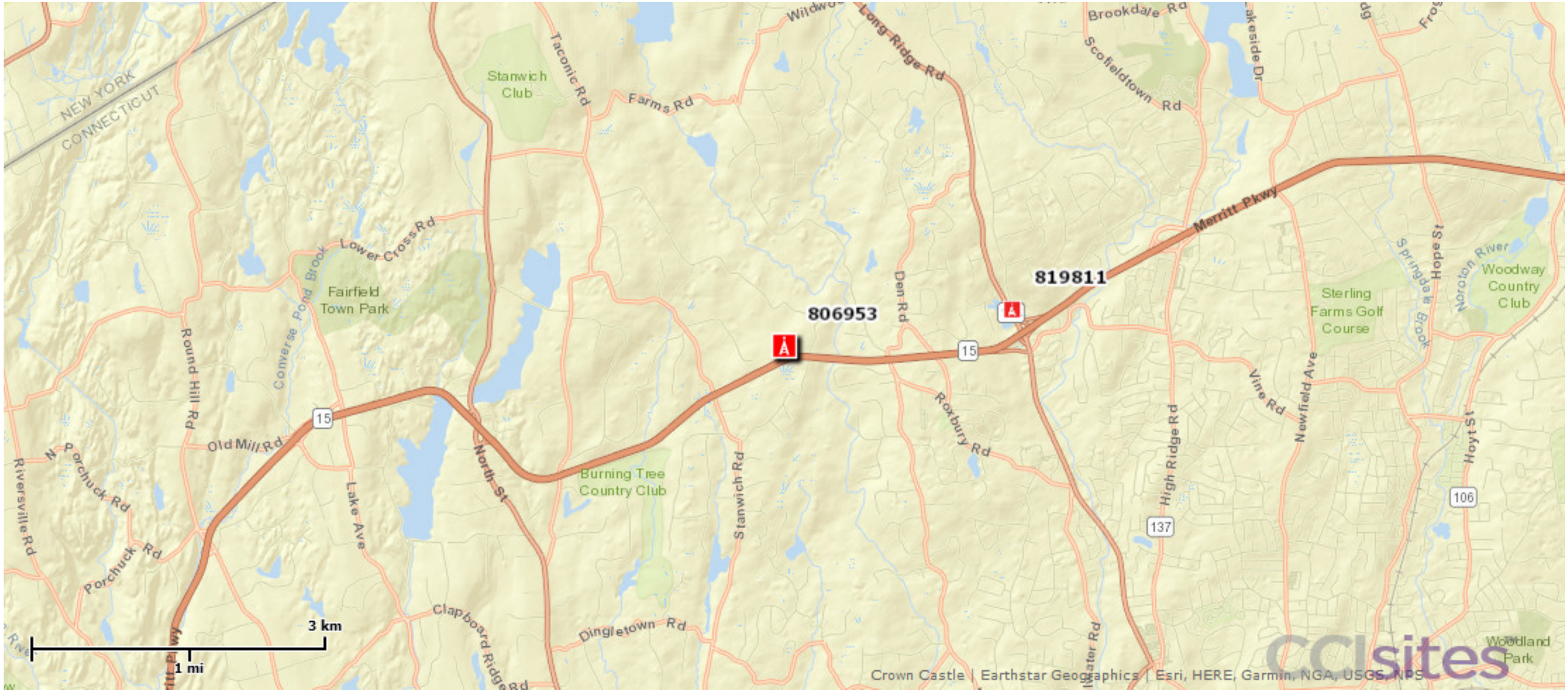
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FC1	Shed Wood			240 S.F.	$2,700	1
MS1	Misc Structure			528 S.F.	$3,050	1
WD1	Wood Deck			252 S.F.	$5,290	1
CEL1	Cell Tower			1 SITES	$139,880	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$438,650	$995,580	$1,434,230
2014	$438,650	$995,580	$1,434,230
2013	$438,650	$995,580	$1,434,230

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$307,060	$696,910	$1,003,970
2014	$307,060	$696,910	$1,003,970
2013	$307,060	$696,910	$1,003,970


819811
806953
Merritt Pkwy
15
Old Mill Rd
North St
Burning Tree Country Club
Fairfield Town Park
Stanwich Club
Taconic Rd
Farms Rd
Long Ridge Rd
Brookdale Rd
Scofieldtown Rd
Lakeside Dr
Hope St
Woodway Country Club
Sterling Farms Golf Course
Springdale Brook
Norton River
Lower Cross Rd
Converse Pond Brook
Round Hill Rd
Riversville Rd
N Porchuck Rd
Porchuck Rd
Lake Ave
Clapboard Ridge Rd
Dingletown Rd
Stanwich Rd
Roxbury Rd
Den Rd
High Ridge Rd
Vine Rd
Newfield Ave
Hoyt St
106
137
NEW YORK
CONNECTICUT
3 km
1 mi
Crown Castle | Earthstar Geographics | Esri, HERE, Garmin, NGA, USGS, NPS
CCIsites

Sprint

CROWN CASTLE

PROJECT:	2.5 MM OVERLAY ON NETWORK VISION
SITE NAME:	MERRIT 4 - ROXBURY (CROWN)
SITE CASCADE:	CT03XC344
CROWN BUN:	806953
SITE ADDRESS:	69 GUINEA ROAD STAMFORD, CT 06903
SITE TYPE:	MONOPOLE TOWER
MARKET:	SOUTHERN CONNECTICUT

SITE INFORMATION

TOWER OWNER:
CROWN ATLANTIC COMPANY LLC
2000 CORPORATE DRIVE
CANNONSBURG, PA 15317
(704) 405-6555

PROJECT MANAGER:
MARYELLEN PERROTTA
(781) 970-0057

LATITUDE (NAD83):
41° 6' 6.48" N

LONGITUDE (NAD83):
73° 35' 39.84" W

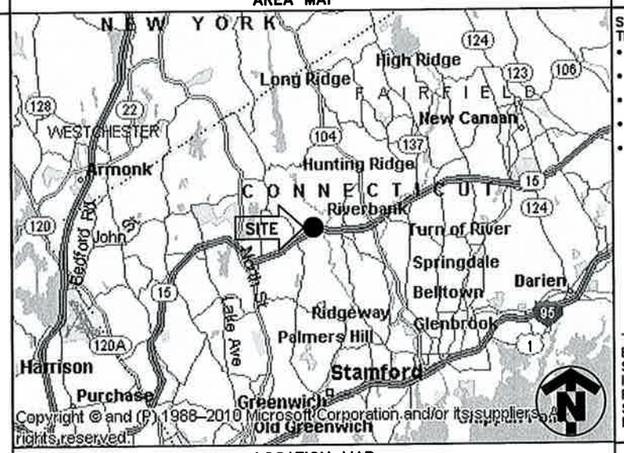
COUNTY:
FAIRFIELD

ZONING DISTRICT:
PC

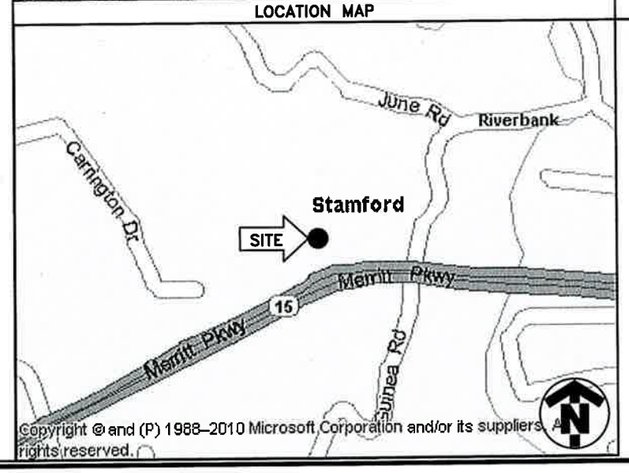
POWER COMPANY:
EVERSOURCE
(800) 286-2000

SPRINT CM:
MIKE DELIA
(781) 316-6348
MICHAEL.DELIA@SPRINT.COM

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- INSTALL (3) PANEL ANTENNAS
- INSTALL (3) MINI MACRO RADIOS
- INSTALL (1) DIN-RAIL IN EXISTING PPC
- INSTALL (2) 10"x8"x6" POLY-CARBONATE JUNCTION BOXES
- INSTALL (2) CORRUGATED FLEXIBLE CONDUITS WITH CABLING

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

APPLICABLE CODES

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

1. INTERNATIONAL BUILDING CODE (2012 IBC)
2. TIA-EIA-222-G OR LATEST EDITION
3. NFPA 780 – LIGHTNING PROTECTION CODE
4. 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
6. CT BUILDING CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

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

DRAWING INDEX

SHEET NO.	SHEET TITLE	REV.
T-1	TITLE SHEET	0
SP-1	SPRINT SPECIFICATIONS	0
A-1	OVERALL COMPOUND SITE PLAN	0
A-2	TOWER ELEVATION & CABLE PLAN	0
A-3	ANTENNA AND EQUIPMEMT PLAN	0
A-4	EQUIPMENT DETAILS	0
A-5	EQUIPMENT DETAILS	0
A-6	EQUIPMENT DETAILS	0

PLANS PREPARED FOR:
Sprint
3 Enterprise Drive
Albany, New York 12204

MLA PARTNER:
CROWN CASTLE

PLANS PREPARED BY:
INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 353-000

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

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	1/20/17	JDL	0

SITE NAME:
MERIT 4 - ROXBURY (CROWN)

SITE CASCADE:
CT03XC344

SITE ADDRESS:
69 GUINEA ROAD
STAMFORD, CT 06903

SHEET DESCRIPTION:
TITLE SHEET

SHEET NUMBER:
T1

SPRINT CONSTRUCTION SPECIFICATIONS
MINI-MACRO CELL SITES
REV. 0 7/25/16

1) BASIC REQUIREMENTS

a) MEET ALL REQUIREMENTS OF JURISDICTIONS.

b) IF EQUIPMENT FURNISHED BY COMPANY DOES NOT MATCH THE EQUIPMENT LISTED ON THE RFDS AND SHOWN ON THE PERMITTING DRAWINGS, RESOLVE DISCREPANCY THROUGH INSTALLER'S CONSTRUCTION MANAGER AND COMPANY'S POINT OF CONTACT.

c) CABLE INSTALLATIONS

i) ALL CABLES MUST BE OUTDOOR RATED AND HAVE UV RESISTANT OUTER JACKETS.

ii) CABLE BENDS MUST NOT EXCEED MANUFACTURER'S ALLOWABLE CABLE BEND RADII.

iii) AT RADIOS INSTALL SERVICE LOOPS FOR POWER, FIBER AND ETHERNET SECURED AT LEAST TWICE AT 180 TO THE STRUCTURE.

iv) SPARE FIBERS MUST BE ENCASED IN A LOW PROFILE WEATHERTIGHT ASSEMBLY

d) FIBERS MUST BE FIELD-TERMINATED WITH LC-TYPE CONNECTORS.

e) CONDUITS IN EARTH: PROVIDE PVC. CONDUITS EXPOSED AND IN FACILITIES: PROVIDE RGS. HAND DIG TRENCHES IN COMPOUNDS.

f) SECURE AND SUPPORT CONDUITS AND CABLES ON NO MORE THAN 48" INTERVALS.

g) ON TOWER SITES RGS CONDUITS MAY BE SURFACE MOUNTED AWAY FROM WALKWAYS AND ACCESS/EGRESS PATHS. IF INSTALLATIONS IN WALKWAYS AND ACCESS/EGRESS PATHS CANNOT BE AVOIDED, IDENTIFY THE CONDUIT ENVELOPE / TRIP HAZARD BY ALTERNATING YELLOW AND BLACK STRIPES PAINTED ON CONCRETE AND CONDUIT.

2) SPRINT-FURNISHED EQUIPMENT

a) INSTALL THE FOLLOWING EQUIPMENT AT LOCATIONS AND AZIMUTHS SHOWN ON THE CONSTRUCTION DRAWINGS.

i) PANEL ANTENNAS

ii) RADIOS

iii) GPS ANTENNAS

iv) FILTERS

v) 120 VOLT DIN-RAIL CIRCUIT BREAKER ASSEMBLY

3) TOWER INSTALLATIONS

a) MEET ALL REQUIREMENTS OF THE TOWER OWNER.

b) INSTALL CORRUGATED FLEXIBLE CONDUIT UP THE TOWER TO COMPANY'S RAD CENTER.

c) PROVIDE HANGING GRIPS OR CONDUIT CLAMPS AND ENSURE CONDUITS AS WELL AS INNER CABLES ARE SUPPORTED.

d) CONDUIT RISERS: AT TOP OF TOWER TURN CONDUIT DOWN AND PROVIDE CABLE TERMINATION FITTINGS. EXTEND CABLES TO RADIOS EXPOSED AND SECURED TO STRUCTURE. AT CONDUIT EXIT FROM TOWER, PROVIDE DRIP LOOPS AND WEEP HOLES.

e) AT ICE BRIDGE RUN CABLES IN RGS CONDUIT. UTILIZE CONDULETS TO MAKE COMPACT 90 DEGREE TURNS.

4) AC POWER TIE-IN

a) INSTALL SPRINT'S 120 VOLT DIN-RAIL CIRCUIT BREAKER ASSEMBLY IN THE EXISTING POWER PROTECTION CABINET TELCO SECTION.

b) INSTALL A 20 AMPERE MOLDED CASE CIRCUIT BREAKER IN AVAILABLE SPACE IN THE ADJACENT PPC POWER SECTION LOAD CENTER.

5) GROUNDING

a) 120 VOLT CIRCUITS: POWER CABLES MUST BE 3-WIRE WITH EQUIPMENT GROUNDING CONDUCTOR.

b) SUPPLEMENTAL GROUNDING: ALL GROUNDING HARDWARE MUST BE UL STAMPED AS SUITABLE FOR GROUNDING HARDWARE.

c) RADIOS: BOND RADIO TO THE TOWER TOP OR SECTOR GROUND BAR WITH #8 BARE TINNED COPPER WIRE (GREEN INSULATED ON ROOFTOPS).

d) DIN-RAIL CIRCUIT BREAKER ASSEMBLY: BOND SURGE ARRESTOR TO PPC TELCO BOARD GROUND BAR.

6) MINOR MATERIALS

a) CONDUIT

i) RIGID GALVANIZED STEEL CONDUIT (RGS): UL LISTED, COMPLIANT WITH ANSI STANDARD C80, HOT-DIP GALVANIZED, WITH THREADED FITTINGS. MANUFACTURERS: ALLIED, REPUBLIC, WHEATLAND, OR EQUAL.

ii) CORRUGATED FLEXIBLE CONDUIT: DURALINE OR EQUAL.

iii) LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LFMC): UL LABELED, UV RESISTANT, FLAME RETARDANT PVC JACKET, HOT-DIP GALVANIZED, GREY. MANUFACTURERS: AFC, ANACONDA, SOUTHWIRE OR EQUAL.

iv) PVC CONDUIT: SCHEDULE 40. CARLON OR EQUAL.

v) CABINET HUBS AND CABLE TERMINATION FITTINGS: OZ GEDNEY OR ROXTEC

b) COAXIAL CABLE JUMPERS: ½" LDF-4. MANUFACTURERS: COMMSCOPE, RFS OR FCT.

c) FASTENERS AND HARDWARE

i) TO SECURE RACEWAYS, UTILIZE NON CORRODING NON-MAGNETIC METALLIC FASTENERS AND HARDWARE SUITABLE FOR THE PURPOSE.

d) POWER CABLES - 3/C #12 SOOW BY SOUTHWIRE OR EQUAL.

e) ETHERNET CABLES AND CONNECTORS: OUTDOOR RATED, CAT 5E, BELDEN OR EQUAL.

f) FIBER CABLES: CORNING "FREEDOM FAN OUT" OUTDOOR RISER CABLE, 4F, SINGLE MODE, OR EQUAL.

g) RF TRANSPARENT PAINT FOR ANTENNA CONCEALMENT: SELECT NO/LOW CARBON PAINTS, WITH NO/LOW TITANIUM DIOXIDE, AND WITHOUT SUSPENDED METAL PARTICLES (ALUMINUM, ZINC, COPPER, ETC.)

7) COLOR CODING

a) COLOR CODE CABLES AND CONDUITS AS REQUIRED BY SPRINT STANDARD TS-0200.

8) TESTING AND CONSTRUCTION COMPLETE

a) SWEEP ALL COAXIAL CABLES ACCORDING TO SPRINT STANDARD TS-0200.

b) PANEL ANTENNA ALIGNMENT - USING ELECTRONIC ALIGNMENT TOOL. AZIMUTH/DOWNTILT +/- 1 DEGREE.

c) LEAVE EQUIPMENT DE-ENERGIZED UNTIL INSTRUCTED BY THE COMMISSIONING AND INTEGRATION TEAM TO ENERGIZE.

d) OTHER REQUIREMENTS AND DELIVERABLES MAY BE REQUIRED BEFORE THE CONSTRUCTION COMPLETE MILESTONE CAN BE ACTUALIZED IN SITERRA (SPRINT'S DATABASE-OF-RECORD).

PLANS PREPARED FOR:
Sprint
3 Enterprise Drive
Albany, New York 12204

MLA PARTNER:
CROWN CASTLE

PLANS PREPARED BY:
INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 353-000

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

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	1/20/17	JDL	0

SITE NAME:
MERIT 4 - ROXBURY (CROWN)

SITE CASCADE:
CT03XC344

SITE ADDRESS:
69 GUINEA ROAD
STAMFORD, CT 06903

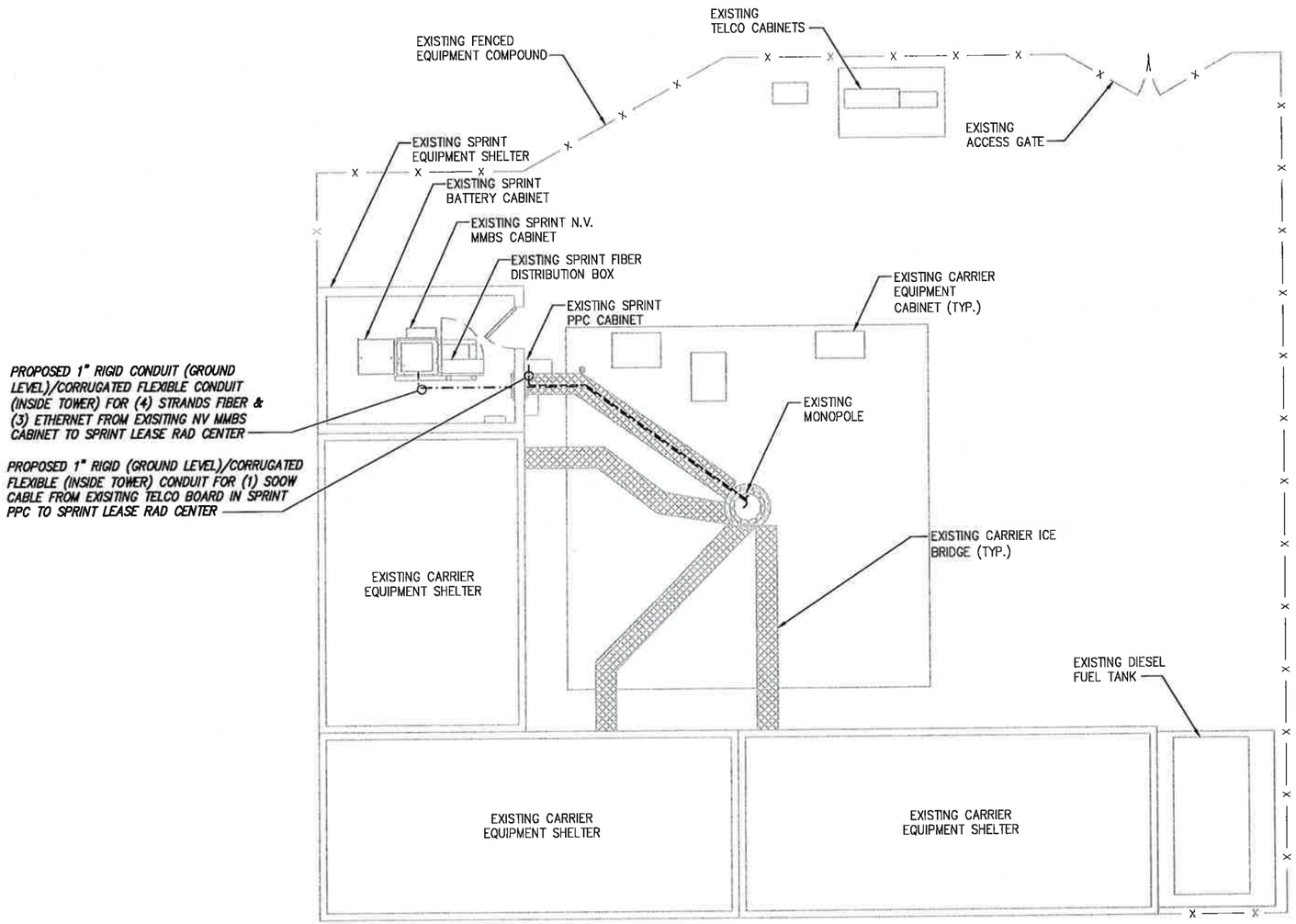
SHEET DESCRIPTION:
SPRINT SPECIFICATIONS

SHEET NUMBER:
SP-1

INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION AND ARE NOT THE RESULT OF A FIELD SURVEY.

LEGEND:

- 1" RGS (GROUND)/CORRUGATED (TOWER)
- 1" CORRUGATED PVC CONDUIT
- P — SOOW CABLE



N

GRAPHIC SCALE:

10' 5' 0 5' 10'

SCALE (11x17): 1" = 10'-0"
SCALE (22x34): 1" = 5'-0"

OVERALL SITE PLAN | SCALE: AS NOTED | 1

PLANS PREPARED FOR:

Sprint
3 Enterprise Drive
Albany, New York 12204

MLA PARTNER:

CROWN CASTLE

PLANS PREPARED BY:

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
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ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	1/20/17	JDL	0

SITE NAME:

MERIT 4 - ROXBURY (CROWN)

SITE CASCADE:

CT03XC344

SITE ADDRESS:

69 GUINEA ROAD
STAMFORD, CT 06903

SHEET DESCRIPTION:

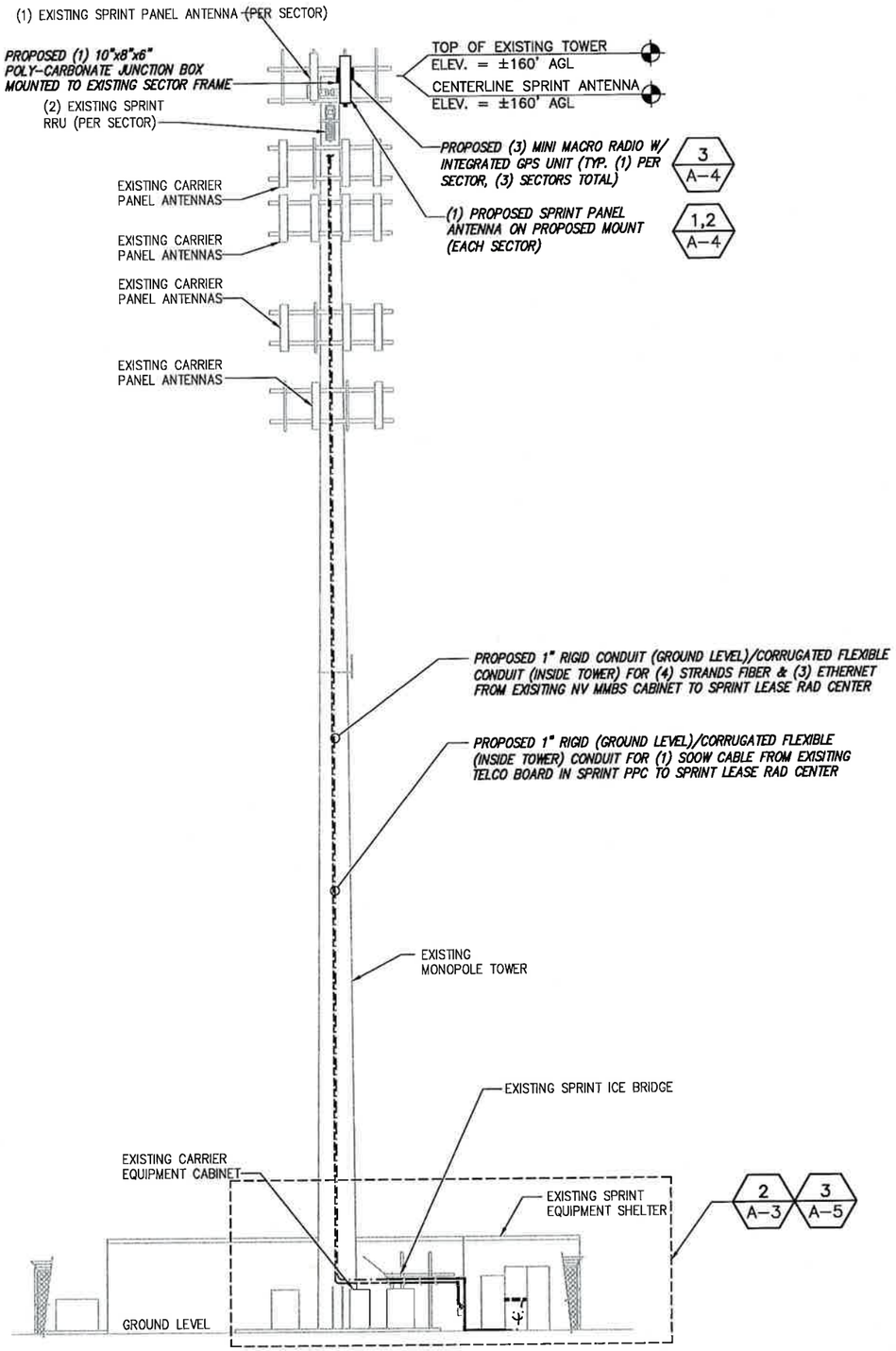
OVERLL COMPOUND SITE PLAN

SHEET NUMBER:

A-1

NOTE:
EMERGENCY CONTACT INFORMATION TO BE DISPLAYED ON FACE OF SPRINT BTS CABINET

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



SITE ELEVATION — SCALE: NTS — 1

LEGEND:
- 1" RGS (GROUND)/CORRUGATED (TOWER)
- 1" CORRUGATED PVC CONDUIT
- P — SOOW CABLE

PLANS PREPARED FOR:
Sprint
3 Enterprise Drive
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Fax # (518) 690-0793
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ENGINEERING LICENSE:
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LICENSED PROFESSIONAL ENGINEER

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REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	1/20/17	JDL	0

SITE NAME:
MERIT 4 - ROXBURY (CROWN)

SITE CASCADE:
CT03XC344

SITE ADDRESS:
69 GUINEA ROAD
STAMFORD, CT 06903

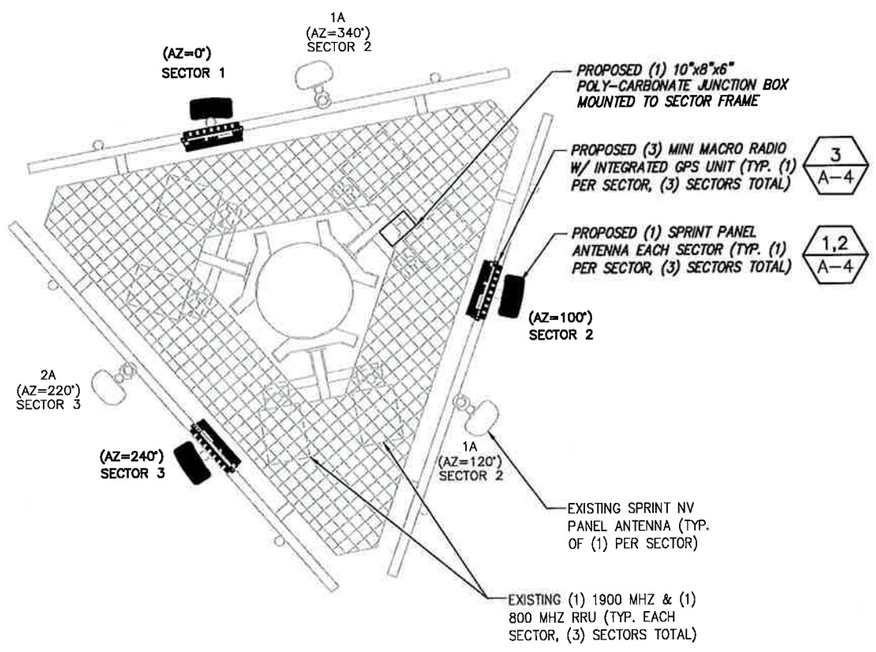
SHEET DESCRIPTION:
TOWER ELEVATION & CABLE PLAN

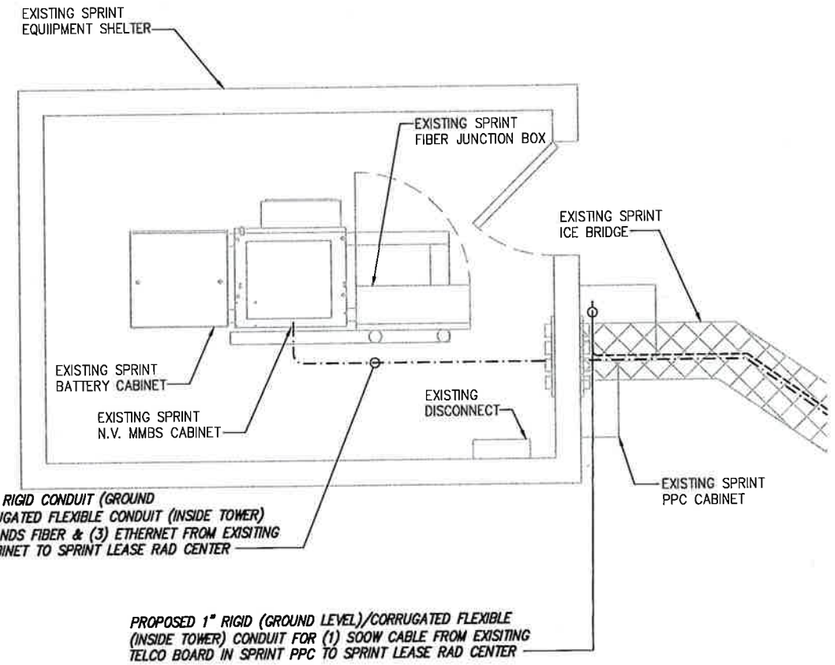
SHEET NUMBER:
A-2

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

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

NOTE:
REQUIRED PIPE MOUNTS TO BE SUPPLIED BY CONTRACTOR.





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

ANTENNA LAYOUT | SCALE: NTS | 1

EQUIPMENT SITE PLAN (FINAL/PERMANENT) | SCALE: AS NOTED | 2

PLANS PREPARED FOR:
Sprint
3 Enterprise Drive
Albany, New York 12204

MLA PARTNER:
CROWN CASTLE

PLANS PREPARED BY:

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
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SITE NAME:
MERIT 4 - ROXBURY (CROWN)

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CT03XC344

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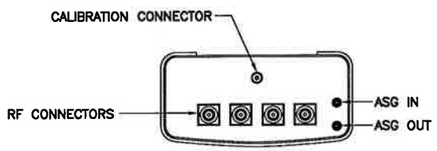
69 GUINEA ROAD
STAMFORD, CT 06903

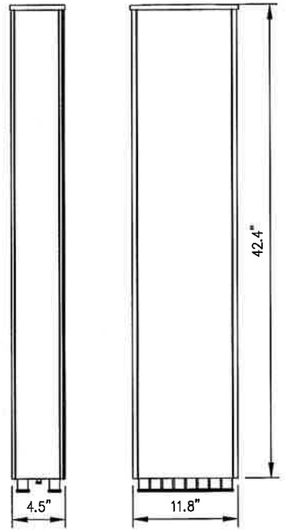
SHEET DESCRIPTION:
ANTENNA & EQUIPMENT PLAN

SHEET NUMBER:
A-3

COMMSCOPE/ARGUS: LLPX310R-V1	
RADOME MATERIAL:	POLYESTER FIBERGLASS PULTRUSION
DIMENSIONS, HxWxD.:	42.4"x11.8"x4.5"
WEIGHT:	27.6 lbs
CONNECTORS:	(8) 7-16 DIN FEMALE



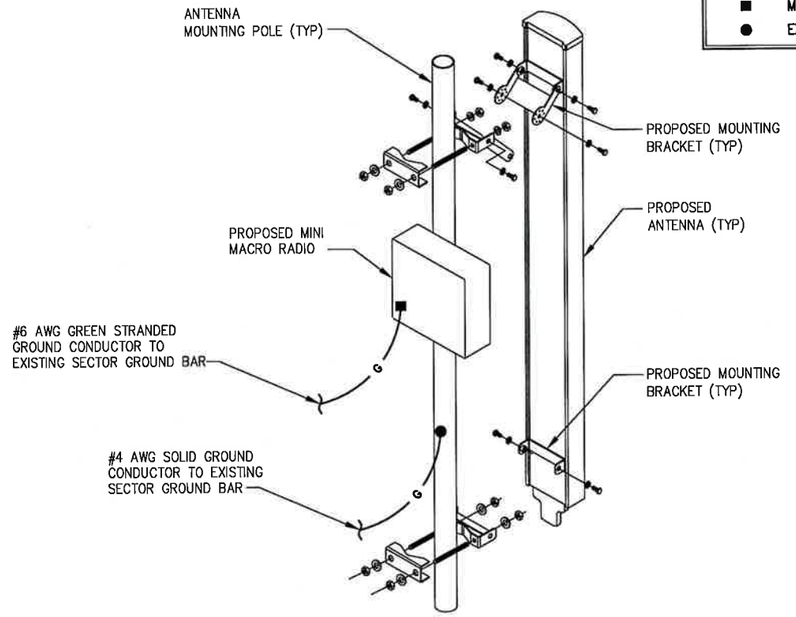
PLAN VIEW



SIDE VIEW FRONT VIEW

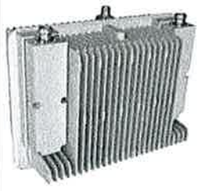
PROPOSED ANTENNA DETAIL — NO SCALE — 1

LEGEND:
- G — GROUND CONDUCTOR
- ■ MECHANICAL CONNECTION
- ● EXOTHERMIC CONNECTION

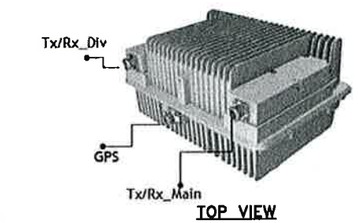


ANTENNA & MMBTS MOUNTING DETAIL — NO SCALE — 2

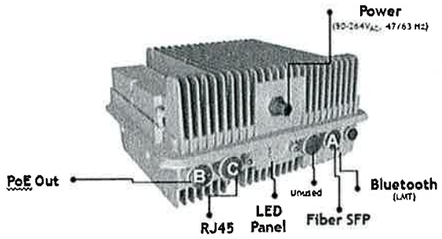
NOKIA: FWHR 2500 MHz 2 x 20W Micro BTS	
OPERATING AC VOLTAGE:	90-264 VAC
DIMENSION (H×W×D):	9.72"x12.87"x9.30"
WEIGHT:	24.7 LBS.



FRONT VIEW



TOP VIEW



BOTTOM VIEW

MINI MACRO RADIO DETAIL — NO SCALE — 3

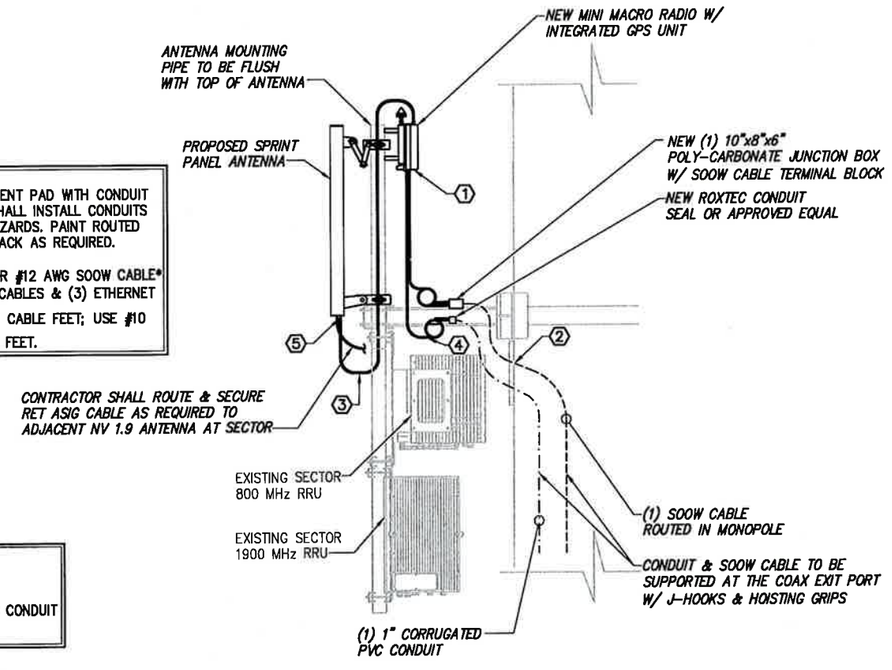
LEGEND:
1. OEM PROPRIETARY POWER CABLE
2. SOOW CABLE
3. 1/2" RF JUMPERS
4. ETHERNET/FIBER CABLES
5. RET CABLE

NOTE:
1. SECURE CONDUITS TO EXISTING EQUIPMENT PAD WITH CONDUIT CLAMPS AS REQUIRED. CONTRACTOR SHALL INSTALL CONDUITS IN A MANNER TO REDUCE TRIPPING HAZARDS. PAINT ROUTED COMMON ACCESS PATHS YELLOW & BLACK AS REQUIRED.
2. CONDUIT FILL: (1) - 9/C #10 OR #12 AWG SOOW CABLE* (2) - (4) FIBER CABLES & (3) ETHERNET

* USE #12 AWG FOR RUNS LESS THAN 200 CABLE FEET; USE #10 AWG FOR RUNS GREATER THAN 200 CABLE FEET.

NOTE:
RF JUMPERS FOR 2.5 DEPLOYMENT ARE NOT TO EXCEED 8' IN OVERALL LENGTH

LEGEND:
- 1" RGS CONDUIT
- 1" CORRUGATED PVC CONDUIT
- P SOOW CABLE



ANTENNA MOUNTING ELEVATION — NO SCALE — 4

PLANS PREPARED FOR:
Sprint
3 Enterprise Drive
Albany, New York 12204

MLA PARTNER:
CROWN CASTLE

PLANS PREPARED BY:

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

JOB NUMBER 353-000

ENGINEERING LICENSE:
STATE OF CONNECTICUT · JOHN S. STEVENS · No. 24706 · LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	1/20/17	JDL	0

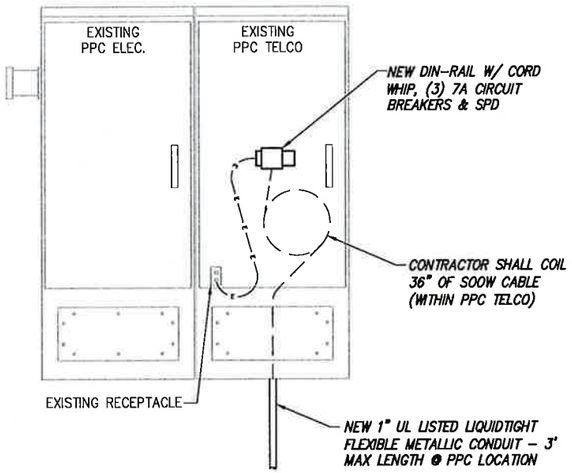
SITE NAME:
MERIT 4 - ROXBURY (CROWN)

SITE CASCADE:
CT03XC344

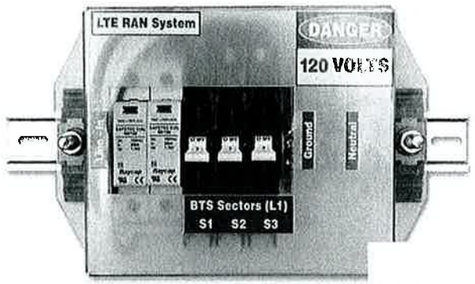
SITE ADDRESS:
69 GUINEA ROAD
STAMFORD, CT 06903

SHEET DESCRIPTION:
EQUIPMENT DETAILS

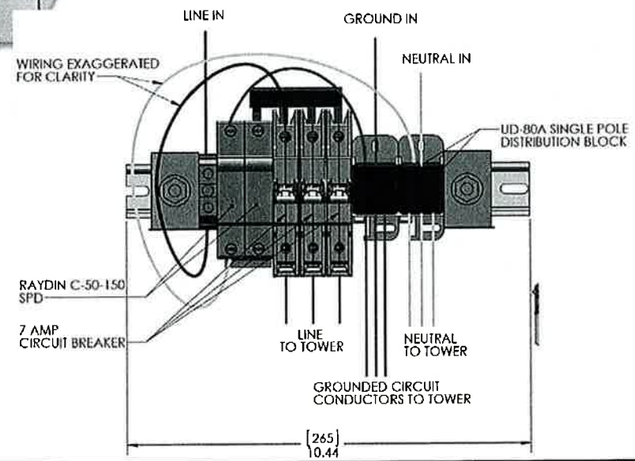
SHEET NUMBER:
A-4



POWER DETAIL | NO SCALE | 1



RAYCAP: RSTAC-4569-P-120	
OPERATING AC VOLTAGE:	120 1 PHASE 2 W+G
LOAD CENTER:	3 POSITION
OPERATING TEMPERATURE:	(°C) –40° C TO +75° C
DIMENSION (H×W×D):	10.44"x5.18"x2.71"
WEIGHT:	2.5 LBS.

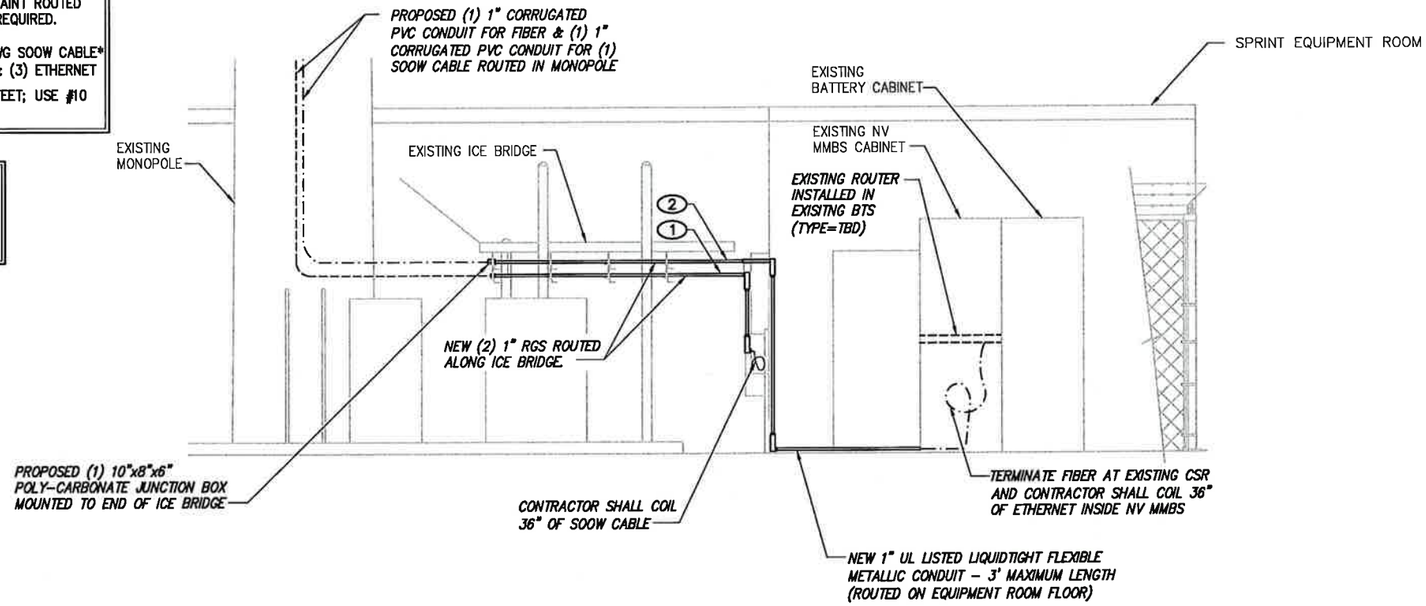


DIN-RAIL W/ CORD WHIP & SPD DETAIL | NO SCALE | 2

NOTE:
1. SECURE CONDUITS TO EXISTING EQUIPMENT PAD WITH CONDUIT CLAMPS AS REQUIRED. CONTRACTOR SHALL INSTALL CONDUITS IN A MANNER TO REDUCE TRIPPING HAZARDS. PAINT ROUTED COMMON ACCESS PATHS YELLOW & BLACK AS REQUIRED.
2. CONDUIT FILL: (1) – 9/C #10 OR #12 AWG SOOW CABLE* (2) – (4) FIBER CABLES & (3) ETHERNET

* USE #12 AWG FOR RUNS LESS THAN 200 CABLE FEET; USE #10 AWG FOR RUNS GREATER THAN 200 CABLE FEET.

LEGEND:
- 1" RGS CONDUIT
- 1" CORRUGATED PVC CONDUIT
- P SOOW CABLE



EQUIPMENT ELEVATION DETAIL | NO SCALE | 3

PLANS PREPARED FOR:
Sprint
3 Enterprise Drive
Albany, New York 12204

MLA PARTNER:
CROWN CASTLE

PLANS PREPARED BY:
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Albany, NY 12205
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Fax # (518) 690-0793

JOB NUMBER 353-000

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 27265
LICENSED PROFESSIONAL ENGINEER

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	1/20/17	JDL	0

SITE NAME:
MERIT 4 - ROXBURY (CROWN)

SITE CASCADE:
CT03XC344

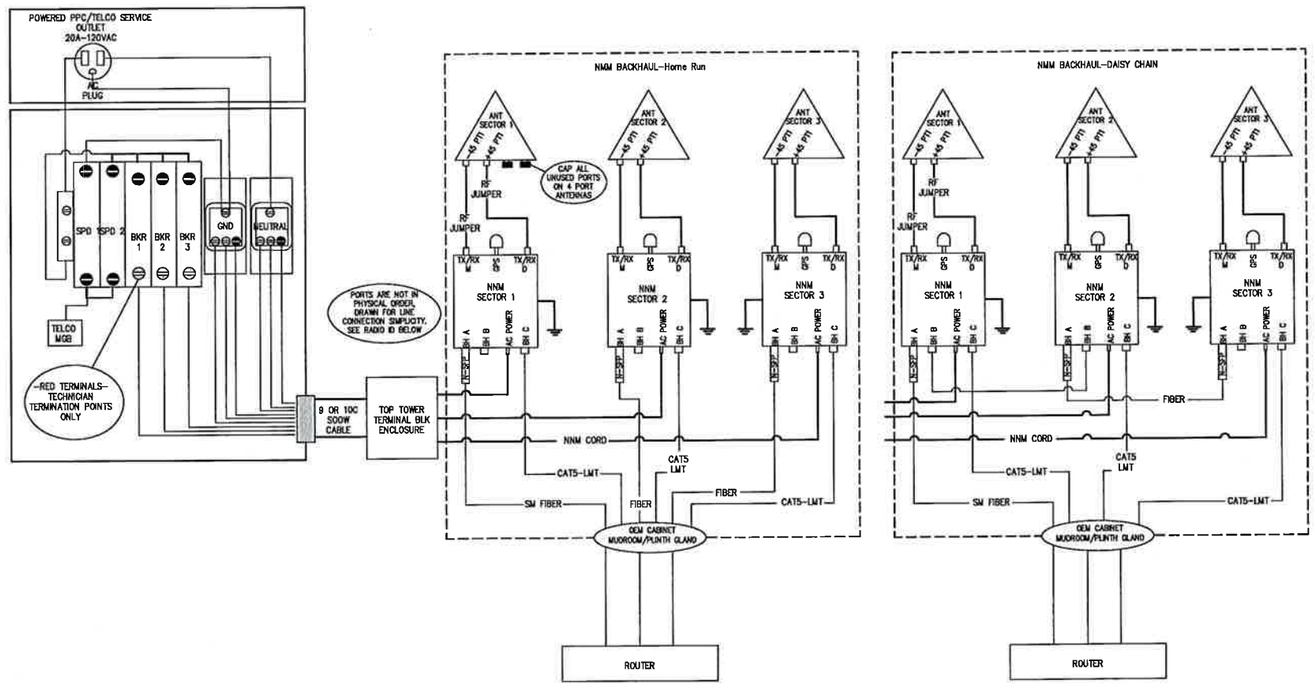
SITE ADDRESS:
69 GUINEA ROAD
STAMFORD, CT 06903

SHEET DESCRIPTION:
EQUIPMENT DETAILS

SHEET NUMBER:
A-5

AC POWER GROUND LEVEL:
POWER CIRCUITS/CABLES MUST BE 3 WIRE EQUIPMENT GROUNDING CONDUCTOR. SUPPLEMENTAL GROUNDING HARDWARE MUST BE UL STAMPED AS SUITABLE FOR GROUNDING HARDWARE.

1. THE PREFERRED AC POWER CONNECTION TO THE DIN RAIL ASSEMBLY IS HARD WIRED FROM A DEDICATED 20A PANEL BREAKER TO THE DIN RAIL (DIN RAIL MUST BE IN AN ENCLOSURE) HOWEVER IF THE PROVIDED POWER CORD IS CHOSEN THE DIN RAIL ASSEMBLY RECEPTACLE MUST NOT BE GFCI AS THEY WILL TRIP, REPLACE WITH STANDARD RECEPTACLE AS REQUIRED. WHEN USING THE SUPPLIED POWER PLUG, THE CORD AND OUTLET MUST BE LABELED "DO NOT DISCONNECT" AND "DO NOT UNPLUG"
2. IF PPC TELCO SECTION IS LESS THAN 50' FROM TOWER AND THE CONDUIT RUN IS 100% ABOVEGROUND INSTALL 9 OR 10/C SOOW IN 1.5" RGS (EXPOSED) ON ICE BRIDGE, SOOW EXPOSED UP THROUGH TOWER TO TERMINAL BOX AT THE RAD CENTER.
3. IF PPC TELCO SECTION IS MORE THAN 50' FROM TOWER, OR THE CONDUIT RUN AT ANY POINT IS UNDERGROUND ROUTE 1.5" RGS (EXPOSED) OR PVC (UNDERGROUND) WITH 9 EA. THHN/THWN CONDUCTORS. INSTALL A TERMINAL BOX WITH TERMINAL BLOCK ON ICE BRIDGE NEAREST TOWER AND TRANISTION TO SOOW. AT TELCO SECTION INDIVIDUAL CONDUCTORS ROUTE ACROSS PLYWOOD BACKBOARD TO THE DIN RAIL CIRCUIT BREAKER ASSEMBLY. SOME JURISDICTIONS MAY NOT ALLOW INDIVIDUAL CONDUCTORS TO ROUTE ACROSS BACKBOARD THEREFORE INSTALL ANOTHER TERMINAL BOX INSIDE OR OUTSIDE AND TRANSITION BACK TO SOOW.



NOTE:
1. AC POWER GROUND LEVEL NOTES AND NOKIA MM SYSTEM WIRING DIAGRAM REFERENCED FROM DOCUMENT ENTITLED "MINI-MACRO ON NV MACRO SITE INSTALLATION MOP" DATED NOVEMBER 2, 2016, PAGES 11-12 AND 14, RESPECTIVELY.

NOKIA MM SYSTEM WIRING DIAGRAM | NO SCALE | 1

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JOB NUMBER 353-000

ENGINEERING LICENSE:
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JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	1/20/17	JDL	0

SITE NAME:
MERIT 4 - ROXBURY (CROWN)

SITE CASCADE:
CT03XC344

SITE ADDRESS:
69 GUINEA ROAD
STAMFORD, CT 06903

SHEET DESCRIPTION:
EQUIPMENT DETAILS

SHEET NUMBER:
A-6

PJF PAUL J. FORD & COMPANY | 50 Years 1965 - 2015

Date: **January 12, 2017**

Sean Dempsey
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

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

Subject: **Structural Analysis Report**

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT03XC344
	Carrier Site Name:	Merrit 4-Roxbury (Crown)
Crown Castle Designation:	**Crown Castle BU Number:**	806953
	Crown Castle Site Name:	BRG 2044 (A) 943097
	Crown Castle JDE Job Number:	NA
	Crown Castle Work Order Number:	1348646
	Crown Castle Application Number:	374359 Rev. 1
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37517-0206.001.7805
Site Data:	**69 Guinea RD(Camp Rocky Craig), Stamford, Fairfield County, CT** **Latitude *41° 6' 6.35"*, Longitude *-73° 35' 41.45"*** **160 Foot - Monopole Tower**	

Dear Sean Dempsey,

Paul J. Ford and Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 990112, in accordance with application 374359, revision 1.

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

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

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category B and Topographic Category 1 with a maximum Topographic Factor, Kzt, of 1.0 were used in this analysis.

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

Respectfully submitted by:

Morgan Scroggy, E.I.
Structural Designer

STATE OF CONNECTICUT
JUSTIN T. KLINE
No. 30301
LICENSED PROFESSIONAL ENGINEER

1-12-17

Date: **January 12, 2017**

Sean Dempsey
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

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

Subject: **Structural Analysis Report**

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT03XC344
	Carrier Site Name:	Merrit 4-Roxbury (Crown)
Crown Castle Designation:	**Crown Castle BU Number:**	806953
	Crown Castle Site Name:	BRG 2044 (A) 943097
	Crown Castle JDE Job Number:	NA
	Crown Castle Work Order Number:	1348646
	Crown Castle Application Number:	374359 Rev. 1
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37517-0206.001.7805
Site Data:	**69 Guinea RD(Camp Rocky Craig), Stamford, Fairfield County, CT** **Latitude *41° 6' 6.35"*, Longitude *-73° 35' 41.45"*** **160 Foot - Monopole Tower**	

Dear Sean Dempsey,

Paul J. Ford and Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 990112, in accordance with application 374359, revision 1.

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

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

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category B and Topographic Category 1 with a maximum Topographic Factor, Kzt, of 1.0 were used in this analysis.

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

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1) INTRODUCTION

This tower is a 160 ft Monopole tower designed by VALMONT in August of 1999. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, “Structural Standard for Antenna Supporting Structures and Antennas”, with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category B and Topographic Category 1 with a maximum Topographic Factor, Kzt, of 1.0 were used in this analysis.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
157.0	158.0	3	argus technologies	LLPX310R-V1 w/ Mount Pipe	1 4 1	1/8 17/64 7/8	-
		1	box enclosures and assembly	BEN-92P			
		3	nokia	FWHR			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
157.0	158.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	3	1-1/4	1
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			
	157.0	9	rfs celwave	ACU-A20-N			
		1	tower mounts	Platform Mount [LP 602-1]			
156.0	158.0	3	alcatel lucent	TME-800MHz RRH	-	-	1
	156.0	3	alcatel lucent	TME-1900MHz RRH (65 MHz)			
		2	tower mounts	Pipe Mount [PM 601-3]			
149.0	151.0	3	cci antennas	HPA-65R-BUU-H6 w/ Mount Pipe	-	-	2
		3	ericsson	RRUS 12 B2/RRUS A2			
		3	powerwave technologies	1001983			
		3	ericsson	RRUS-11	1 2 12	3/8 5/8 1-5/8	1
		6	powerwave technologies	7770.00 w/ Mount Pipe			
		6		LGP21401			
		6		LGP21901			
		1	raycap	DC6-48-60-18-8F			
	149.0	1	tower mounts	Platform Mount [LP 602-1]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
139.0	142.0	3	alcatel lucent	RRH2X40-AWS	1 1 12	1/2 1-1/4 1-5/8	1
		6	andrew	DB846F65ZAXY w/ Mount Pipe			
		3	powerwave technologies	P65.16.XL.2 w/ Mount Pipe			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		6	rfs celwave	FD9R6004/2C-3L			
		3	rymsa wireless	MG D3-800TV w/ Mount Pipe			
		3		MG D3-800Tx w/ Mount Pipe			
	139.0	1	tower mounts	Platform Mount [LP 602-1]			
116.0	118.0	3	commscope	LNX-6515DS-VTM w/ Mount Pipe	12 1	1-5/8 1-1/4	1
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe			
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe			
		3	ericsson	KRY 112 144/1			
		3	ericsson	RRUS 11 B12			
	116.0	1	tower mounts	Platform Mount [LP 713-1]			
84.0	84.0	1	gps	GPS_A	-	-	1
		1	tower mounts	Side Arm Mount [SO 701-1]			
45.0	45.0	1	tower mounts	Pipe Mount [PM 601-1]	-	-	1
		1	trimble	BULLET III			
40.0	40.0	1	andrew	GPS-QBW-20N	-	-	1
		1	tower mounts	Pipe Mount [PM 601-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
-	-	-	-	-	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, 7/20/98	1104116	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Towerkraft, 2622, 7/30/98	1104113	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Valmont, 18917-69, 8/5/99	823122	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 1210025, 8/10/2013	4015064	CCISITES
4-POST-MODIFICATION INSPECTION	SGS, 140526, 8/13/2014	5577141	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 41705-162, 8/30/2009	1251715	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

1) Monopole was fabricated and installed in accordance with the manufacturer's specifications.
2) Monopole has been properly maintained in accordance with manufacturer's specifications.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Monopole was modified in conformance with the referenced modification drawings.
5) The existing monopole shaft has been reinforced using a Crown-approved system in accordance with the above referenced documents. However, in this analysis we found that the existing pole shaft without modifications has adequate capacity according to TIA-222-G-2 (addendum 2) and therefore, we did not consider the existing reinforcing elements in the strength calculations.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	160 - 111.33	Pole	TP31.29x19.6x0.25	1	-11.93	1568.58	56.5	Pass
L2	111.33 - 73.25	Pole	TP39.912x29.6683x0.3438	2	-22.75	2848.48	64.3	Pass
L3	73.25 - 36.33	Pole	TP48.088x37.8467x0.4063	3	-33.87	4024.95	64.5	Pass
L4	36.33 - 0	Pole	TP56x45.6746x0.4375	4	-50.61	4947.02	68.5	Pass
							Summary	
						Pole (L4)	68.5	Pass
						RATING =	**68.5**	**Pass**

Table 6 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	56.4	Pass
1	Base Plate	0	49.4	Pass
1	Base Foundation – Steel	0	55.4	Pass
1	Base Foundation Soil Interaction	0	61.4	Pass

Structure Rating (max from all components) =	**68.5%**

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

4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Tower Input Data

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

1) Tower is located in Fairfield County, Connecticut.
2) ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
3) Basic wind speed of 93 mph.
4) Structure Class II.
5) Exposure Category B.
6) Topographic Category 1.
7) Crest Height 0.0000 ft.
8) Nominal ice thickness of 0.7500 in.
9) Ice thickness is considered to increase with height.
10) Ice density of 56.00 pcf.
11) A wind speed of 50 mph is used in combination with ice.
12) Temperature drop of 50 °F.
13) Deflections calculated using a wind speed of 60 mph.
14) A non-linear (P-delta) analysis was used.
15) Pressures are calculated at each section.
16) Stress ratio used in pole design is 1.
17) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric				

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*	*Sides*	*in*	*in*	*in*	*in*	
L1	160.0000-111.3300	48.6700	4.67	12	19.6000	31.2900	0.2500	1.0000	A572-65 (65 ksi)
L2	111.3300-73.2500	42.7500	5.75	12	29.6683	39.9120	0.3438	1.3750	A572-65 (65 ksi)
L3	73.2500-36.3300	42.6700	6.67	12	37.8467	48.0880	0.4063	1.6250	A572-65 (65 ksi)
L4	36.3300-	43.0000		12	45.6746	56.0000	0.4375	1.7500	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
	0.0000								(65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	20.2914	15.5768	744.4315	6.9273	10.1528	73.3228	1508.4200	7.6664	4.5828	18.331
	32.3938	24.9872	3072.8897	11.1123	16.2082	189.5883	6226.5076	12.2979	7.7157	30.863
L2	31.8734	32.4586	3562.7009	10.4982	15.3682	231.8231	7218.9979	15.9752	7.0299	20.45
	41.3199	43.7971	8752.3577	14.1654	20.6744	423.3424	17734.6495	21.5556	9.7752	28.437
L3	40.6105	48.9768	8763.1086	13.4037	19.6046	446.9927	17756.4337	24.1049	9.0542	22.287
	49.7844	62.3737	18100.5493	17.0701	24.9096	726.6500	36676.6202	30.6984	11.7988	29.043
L4	48.9440	63.7278	16645.8031	16.1949	23.6595	703.5582	33728.9099	31.3649	11.0683	25.299
	57.9755	78.2737	30843.6108	19.8914	29.0080	1063.2795	62497.5176	38.5239	13.8355	31.624

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
HB114-1-0813U4-M5J(1 1/4")	A	No	Inside Pole	157.0000 - 0.0000	3	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
7919A(17/64)	C	No	Inside Pole	157.0000 - 0.0000	4	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
004U8X-32125E2G(1/8)	C	No	Inside Pole	157.0000 - 0.0000	1	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
TYPE SOOW 12/9(7/8")	C	No	Inside Pole	157.0000 - 0.0000	1	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
***								
LCF158-50JA-A0(1 5/8")	C	No	Inside Pole	149.0000 - 0.0000	12	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
FB-L98B-002-75000(3/8")	C	No	Inside Pole	149.0000 - 0.0000	1	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
WR-VG82ST-BRDA(5/8")	C	No	Inside Pole	149.0000 - 0.0000	2	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
2" (Nominal) Conduit	C	No	Inside Pole	149.0000 - 0.0000	1	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
***								
561(1-5/8")	B	No	Inside Pole	139.0000 - 0.0000	12	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
LDF6-50A(1-1/4")	C	No	CaAa (Out Of Face)	139.0000 - 0.0000	1	No Ice	0.1550	0.00
						1/2" Ice	0.2550	0.00
						1" Ice	0.3550	0.00
LDF4-50A(1/2")	C	No	CaAa (Out Of Face)	139.0000 - 0.0000	1	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
***								
MLE Hybrid 3Power/6Fiber RL 2(1 1/4")	A	No	Inside Pole	116.0000 - 0.0000	1	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
LDF7-50A(1-5/8")	A	No	Inside Pole	116.0000 - 0.0000	12	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
						1" Ice	0.0000	0.00
***								
3/4" Flat Reinforcement	C	No	CaAa (Out Of Face)	12.2500 - 1.7500	1	No Ice	0.1250	0.00
						1/2" Ice	0.2361	0.00
						1" Ice	0.3472	0.00
3/4" Flat Reinforcement	C	No	CaAa (Out Of Face)	78.5000 - 77.0000	1	No Ice	0.1250	0.00
						1/2" Ice	0.2361	0.00
						1" Ice	0.3472	0.00
1" Flat Reinforcement	C	No	CaAa (Out Of Face)	52.2500 - 12.2500	1	No Ice	0.1667	0.00
						1/2" Ice	0.2778	0.00
						1" Ice	0.3889	0.00
1" Flat Reinforcement	C	No	CaAa (Out Of Face)	88.5000 - 78.5000	1	No Ice	0.1667	0.00
						1/2" Ice	0.2778	0.00
						1" Ice	0.3889	0.00

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVSPP18-C-A20 w/ Mount Pipe	A	From Face	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	8.2619 8.8215 9.3462	6.9458 8.1266 9.0212	0.08 0.15 0.23
APXVSPP18-C-A20 w/ Mount Pipe	B	From Face	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	8.2619 8.8215 9.3462	6.9458 8.1266 9.0212	0.08 0.15 0.23
APXVSPP18-C-A20 w/ Mount Pipe	C	From Face	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	8.2619 8.8215 9.3462	6.9458 8.1266 9.0212	0.08 0.15 0.23
800 EXTERNAL NOTCH FILTER	A	From Face	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	0.6601 0.7627 0.8727	0.3211 0.3983 0.4830	0.01 0.02 0.02
800 EXTERNAL NOTCH FILTER	B	From Face	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	0.6601 0.7627 0.8727	0.3211 0.3983 0.4830	0.01 0.02 0.02
800 EXTERNAL NOTCH FILTER	C	From Face	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	0.6601 0.7627 0.8727	0.3211 0.3983 0.4830	0.01 0.02 0.02
(3) ACU-A20-N	A	From Face	4.0000 0.00 0.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	0.0667 0.1037 0.1481	0.1167 0.1620 0.2148	0.00 0.00 0.00
(3) ACU-A20-N	B	From Face	4.0000 0.00 0.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	0.0667 0.1037 0.1481	0.1167 0.1620 0.2148	0.00 0.00 0.00
(3) ACU-A20-N	C	From Face	4.0000 0.00 0.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	0.0667 0.1037 0.1481	0.1167 0.1620 0.2148	0.00 0.00 0.00
(2) 2 3/8" OD x 6 ft mount pipe	A	From Face	4.0000 0.00 0.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	1.4250 1.9250 2.2939	1.4250 1.9250 2.2939	0.00 0.01 0.03
(2) 2 3/8" OD x 6 ft mount pipe	B	From Face	4.0000 0.00 0.00	0.00	157.0000	No Ice 1/2" Ice	1.4250 1.9250 2.2939	1.4250 1.9250 2.2939	0.00 0.01 0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice			
(2) 2 3/8" OD x 6 ft mount pipe	C	From Face	4.0000 0.00 0.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	1.4250 1.9250 2.2939	1.4250 1.9250 2.2939	0.00 0.01 0.03
Platform Mount [LP 602-1]	A	None		0.00	157.0000	No Ice 1/2" Ice 1" Ice	32.0300 38.7100 45.3900	32.0300 38.7100 45.3900	1.34 1.80 2.26
LLPX310R-V1 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	4.5378 4.8914 5.2539	2.9834 3.5263 4.0859	0.05 0.08 0.13
LLPX310R-V1 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	4.5378 4.8914 5.2539	2.9834 3.5263 4.0859	0.05 0.08 0.13
LLPX310R-V1 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	4.5378 4.8914 5.2539	2.9834 3.5263 4.0859	0.05 0.08 0.13
FWHR	A	From Leg	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	1.0350 1.1637 1.2999	0.5082 0.6007 0.7006	0.03 0.04 0.05
FWHR	B	From Leg	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	1.0350 1.1637 1.2999	0.5082 0.6007 0.7006	0.03 0.04 0.05
FWHR	C	From Leg	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	1.0350 1.1637 1.2999	0.5082 0.6007 0.7006	0.03 0.04 0.05
BEN-92P	A	From Leg	4.0000 0.00 1.00	0.00	157.0000	No Ice 1/2" Ice 1" Ice	0.6453 0.7474 0.8569	0.4198 0.5067 0.6009	0.00 0.01 0.02
***									
TME-800MHz RRH	A	From Face	2.0000 0.00 2.00	0.00	156.0000	No Ice 1/2" Ice 1" Ice	2.1342 2.3195 2.5123	1.7730 1.9461 2.1267	0.05 0.07 0.10
TME-800MHz RRH	B	From Face	2.0000 0.00 2.00	0.00	156.0000	No Ice 1/2" Ice 1" Ice	2.1342 2.3195 2.5123	1.7730 1.9461 2.1267	0.05 0.07 0.10
TME-800MHz RRH	C	From Face	2.0000 0.00 2.00	0.00	156.0000	No Ice 1/2" Ice 1" Ice	2.1342 2.3195 2.5123	1.7730 1.9461 2.1267	0.05 0.07 0.10
TME-1900MHz RRH (65 MHz)	A	From Face	2.0000 0.00 0.00	0.00	156.0000	No Ice 1/2" Ice 1" Ice	2.3125 2.5168 2.7284	2.3750 2.5809 2.7943	0.06 0.08 0.11
TME-1900MHz RRH (65 MHz)	B	From Face	2.0000 0.00 0.00	0.00	156.0000	No Ice 1/2" Ice 1" Ice	2.3125 2.5168 2.7284	2.3750 2.5809 2.7943	0.06 0.08 0.11
TME-1900MHz RRH (65 MHz)	C	From Face	2.0000 0.00 0.00	0.00	156.0000	No Ice 1/2" Ice 1" Ice	2.3125 2.5168 2.7284	2.3750 2.5809 2.7943	0.06 0.08 0.11
(2) Pipe Mount [PM 601-3]	C	None		0.00	156.0000	No Ice 1/2" Ice	4.3900 5.4800 6.5700	4.3900 5.4800 6.5700	0.20 0.24 0.28

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
*****						1" Ice			
(2) 7770.00 w/ Mount Pipe	A	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	5.8424 6.2677 6.6966	4.7924 5.5082 6.2127	0.09 0.14 0.21
(2) 7770.00 w/ Mount Pipe	B	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	5.8424 6.2677 6.6966	4.7924 5.5082 6.2127	0.09 0.14 0.21
(2) 7770.00 w/ Mount Pipe	C	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	5.8424 6.2677 6.6966	4.7924 5.5082 6.2127	0.09 0.14 0.21
(2) LGP21401	A	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	1.1040 1.2388 1.3810	0.3471 0.4422 0.5444	0.01 0.02 0.03
(2) LGP21401	B	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	1.1040 1.2388 1.3810	0.3471 0.4422 0.5444	0.01 0.02 0.03
(2) LGP21401	C	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	1.1040 1.2388 1.3810	0.3471 0.4422 0.5444	0.01 0.02 0.03
(2) LGP21901	A	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	0.2310 0.2941 0.3647	0.1575 0.2129 0.2756	0.01 0.01 0.01
(2) LGP21901	B	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	0.2310 0.2941 0.3647	0.1575 0.2129 0.2756	0.01 0.01 0.01
(2) LGP21901	C	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	0.2310 0.2941 0.3647	0.1575 0.2129 0.2756	0.01 0.01 0.01
RRUS-11	A	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	2.7908 2.9984 3.2134	1.1923 1.3395 1.4957	0.05 0.07 0.09
RRUS-11	B	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	2.7908 2.9984 3.2134	1.1923 1.3395 1.4957	0.05 0.07 0.09
RRUS-11	C	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	2.7908 2.9984 3.2134	1.1923 1.3395 1.4957	0.05 0.07 0.09
DC6-48-60-18-8F	C	From Face	4.0000 0.00 2.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	0.9167 1.4583 1.6431	0.9167 1.4583 1.6431	0.02 0.04 0.06
2 3/8" OD x 6 ft mount pipe	A	From Face	4.0000 0.00 0.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	1.4250 1.9250 2.2939	1.4250 1.9250 2.2939	0.00 0.01 0.03
2 3/8" OD x 6 ft mount pipe	B	From Face	4.0000 0.00 0.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	1.4250 1.9250 2.2939	1.4250 1.9250 2.2939	0.00 0.01 0.03
2 3/8" OD x 6 ft mount pipe	C	From Face	4.0000 0.00 0.00	0.00	149.0000	No Ice 1/2" Ice 1" Ice	1.4250 1.9250 2.2939	1.4250 1.9250 2.2939	0.00 0.01 0.03

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		*C_AA_A Front* ft^2	*C_AA_A Side* ft^2	*Weight* K
Platform Mount [LP 602-1]	A	None		0.00	149.0000	1" Ice No Ice 1/2" Ice 1" Ice	32.0300 38.7100 45.3900	32.0300 38.7100 45.3900	1.34 1.80 2.26
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.00	149.0000	1" Ice No Ice 1/2" Ice 1" Ice	9.8953 10.4700 11.0098	8.1125 9.3041 10.2095	0.08 0.16 0.25
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.00	149.0000	1" Ice No Ice 1/2" Ice 1" Ice	9.8953 10.4700 11.0098	8.1125 9.3041 10.2095	0.08 0.16 0.25
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.00	149.0000	1" Ice No Ice 1/2" Ice 1" Ice	9.8953 10.4700 11.0098	8.1125 9.3041 10.2095	0.08 0.16 0.25
RRUS 12 B2/RRUS A2	A	From Leg	4.0000 0.00 2.00	0.00	149.0000	1" Ice No Ice 1/2" Ice 1" Ice	3.1450 3.3648 3.5920	1.8496 2.0271 2.2120	0.07 0.10 0.13
RRUS 12 B2/RRUS A2	B	From Leg	4.0000 0.00 2.00	0.00	149.0000	1" Ice No Ice 1/2" Ice 1" Ice	3.1450 3.3648 3.5920	1.8496 2.0271 2.2120	0.07 0.10 0.13
RRUS 12 B2/RRUS A2	C	From Leg	4.0000 0.00 2.00	0.00	149.0000	1" Ice No Ice 1/2" Ice 1" Ice	3.1450 3.3648 3.5920	1.8496 2.0271 2.2120	0.07 0.10 0.13
1001983	A	From Leg	4.0000 0.00 2.00	0.00	149.0000	1" Ice No Ice 1/2" Ice 1" Ice	0.0524 0.0861 0.1272	0.1758 0.2317 0.2950	0.00 0.01 0.01
1001983	B	From Leg	4.0000 0.00 2.00	0.00	149.0000	1" Ice No Ice 1/2" Ice 1" Ice	0.0524 0.0861 0.1272	0.1758 0.2317 0.2950	0.00 0.01 0.01
1001983	C	From Leg	4.0000 0.00 2.00	0.00	149.0000	1" Ice No Ice 1/2" Ice 1" Ice	0.0524 0.0861 0.1272	0.1758 0.2317 0.2950	0.00 0.01 0.01
***									
MG D3-800TV w/ Mount Pipe	A	From Face	4.0000 0.00 3.00	0.00	139.0000	1" Ice No Ice 1/2" Ice 1" Ice	3.5703 3.9790 4.3870	3.4178 4.1193 4.7842	0.04 0.07 0.11
MG D3-800TV w/ Mount Pipe	B	From Face	4.0000 0.00 3.00	0.00	139.0000	1" Ice No Ice 1/2" Ice 1" Ice	3.5703 3.9790 4.3870	3.4178 4.1193 4.7842	0.04 0.07 0.11
MG D3-800TV w/ Mount Pipe	C	From Face	4.0000 0.00 3.00	0.00	139.0000	1" Ice No Ice 1/2" Ice 1" Ice	3.5703 3.9790 4.3870	3.4178 4.1193 4.7842	0.04 0.07 0.11
(2) DB846F65ZAXY w/ Mount Pipe	A	From Face	4.0000 0.00 3.00	0.00	139.0000	1" Ice No Ice 1/2" Ice 1" Ice	7.2708 7.8325 8.3480	7.8208 9.0097 9.9124	0.05 0.11 0.19
(2) DB846F65ZAXY w/ Mount Pipe	B	From Face	4.0000 0.00 3.00	0.00	139.0000	1" Ice No Ice 1/2" Ice 1" Ice	7.2708 7.8325 8.3480	7.8208 9.0097 9.9124	0.05 0.11 0.19
(2) DB846F65ZAXY w/ Mount Pipe	C	From Face	4.0000 0.00 3.00	0.00	139.0000	1" Ice No Ice 1/2" Ice	7.2708 7.8325 8.3480	7.8208 9.0097 9.9124	0.05 0.11 0.19

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice			
P65.16.XL.2 w/ Mount Pipe	A	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	8.3708 8.9314 9.4571	5.7792 6.9491 7.8329	0.06 0.12 0.19
P65.16.XL.2 w/ Mount Pipe	B	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	8.3708 8.9314 9.4571	5.7792 6.9491 7.8329	0.06 0.12 0.19
P65.16.XL.2 w/ Mount Pipe	C	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	8.3708 8.9314 9.4571	5.7792 6.9491 7.8329	0.06 0.12 0.19
MG D3-800Tx w/ Mount Pipe	A	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	3.5703 3.9790 4.3870	3.4178 4.1193 4.7842	0.03 0.07 0.11
MG D3-800Tx w/ Mount Pipe	B	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	3.5703 3.9790 4.3870	3.4178 4.1193 4.7842	0.03 0.07 0.11
MG D3-800Tx w/ Mount Pipe	C	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	3.5703 3.9790 4.3870	3.4178 4.1193 4.7842	0.03 0.07 0.11
(2) FD9R6004/2C-3L	A	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	0.3142 0.3862 0.4656	0.0762 0.1189 0.1685	0.00 0.01 0.01
(2) FD9R6004/2C-3L	B	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	0.3142 0.3862 0.4656	0.0762 0.1189 0.1685	0.00 0.01 0.01
(2) FD9R6004/2C-3L	C	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	0.3142 0.3862 0.4656	0.0762 0.1189 0.1685	0.00 0.01 0.01
RRH2X40-AWS	A	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	2.1614 2.3597 2.5655	1.4199 1.5903 1.7676	0.04 0.06 0.08
RRH2X40-AWS	B	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	2.1614 2.3597 2.5655	1.4199 1.5903 1.7676	0.04 0.06 0.08
RRH2X40-AWS	C	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	2.1614 2.3597 2.5655	1.4199 1.5903 1.7676	0.04 0.06 0.08
DB-T1-6Z-8AB-0Z	C	From Face	4.0000 0.00 3.00	0.00	139.0000	No Ice 1/2" Ice 1" Ice	4.8000 5.0704 5.3481	2.0000 2.1926 2.3926	0.04 0.08 0.12
Platform Mount [LP 602-1]	A	None		0.00	139.0000	No Ice 1/2" Ice 1" Ice	32.0300 38.7100 45.3900	32.0300 38.7100 45.3900	1.34 1.80 2.26
***									
LNX-6515DS-VTM w/ Mount Pipe	A	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	11.6828 12.4043 13.1351	9.8418 11.3657 12.9138	0.08 0.17 0.27
LNX-6515DS-VTM w/ Mount Pipe	B	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice	11.6828 12.4043 13.1351	9.8418 11.3657 12.9138	0.08 0.17 0.27

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* K
						1" Ice			
LNX-6515DS-VTM w/ Mount Pipe	C	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	11.6828 12.4043 13.1351	9.8418 11.3657 12.9138	0.08 0.17 0.27
RRUS 11 B12	A	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	2.8333 3.0426 3.2593	1.1821 1.3299 1.4848	0.05 0.07 0.10
RRUS 11 B12	B	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	2.8333 3.0426 3.2593	1.1821 1.3299 1.4848	0.05 0.07 0.10
RRUS 11 B12	C	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	2.8333 3.0426 3.2593	1.1821 1.3299 1.4848	0.05 0.07 0.10
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	6.3292 6.7751 7.2137	5.6424 6.4259 7.1313	0.11 0.17 0.23
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	6.3292 6.7751 7.2137	5.6424 6.4259 7.1313	0.11 0.17 0.23
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	6.3292 6.7751 7.2137	5.6424 6.4259 7.1313	0.11 0.17 0.23
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	6.3186 6.7646 7.2032	5.6334 6.4160 7.1208	0.11 0.17 0.23
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	6.3186 6.7646 7.2032	5.6334 6.4160 7.1208	0.11 0.17 0.23
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	6.3186 6.7646 7.2032	5.6334 6.4160 7.1208	0.11 0.17 0.23
KRY 112 144/1	A	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	0.3500 0.4259 0.5093	0.1750 0.2343 0.3009	0.01 0.01 0.02
KRY 112 144/1	B	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	0.3500 0.4259 0.5093	0.1750 0.2343 0.3009	0.01 0.01 0.02
KRY 112 144/1	C	From Face	4.0000 0.00 2.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	0.3500 0.4259 0.5093	0.1750 0.2343 0.3009	0.01 0.01 0.02
Platform Mount [LP 713-1]	A	None		0.00	116.0000	No Ice 1/2" Ice 1" Ice	31.2700 39.6800 48.0900	31.2700 39.6800 48.0900	1.51 1.93 2.35
2 3/8" OD x 6 ft mount pipe	A	From Face	4.0000 0.00 0.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	1.4250 1.9250 2.2939	1.4250 1.9250 2.2939	0.00 0.01 0.03
2 3/8" OD x 6 ft mount pipe	B	From Face	4.0000 0.00 0.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	1.4250 1.9250 2.2939	1.4250 1.9250 2.2939	0.00 0.01 0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
2 3/8" OD x 6 ft mount pipe	C	From Face	4.0000 0.00 0.00	0.00	116.0000	No Ice 1/2" Ice 1" Ice	1.4250 1.9250 2.2939	1.4250 1.9250 2.2939	0.00 0.01 0.03
***									
GPS_A	C	From Face	4.0000 0.00 0.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice	0.2550 0.3205 0.3934	0.2550 0.3205 0.3934	0.00 0.00 0.01
Side Arm Mount [SO 701-1]	C	From Face	2.0000 0.00 0.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice	0.8500 1.1400 1.4300	1.6700 2.3400 3.0100	0.07 0.08 0.09
***									
BULLET III	A	From Leg	1.0000 0.00 0.00	0.00	45.0000	No Ice 1/2" Ice 1" Ice	0.0663 0.1015 0.1440	0.0663 0.1015 0.1440	0.00 0.00 0.00
Pipe Mount [PM 601-1]	A	From Leg	0.5000 0.00 0.00	0.00	45.0000	No Ice 1/2" Ice 1" Ice	3.0000 3.7400 4.4800	0.9000 1.1200 1.3400	0.07 0.08 0.09
***									
GPS-QBW-20N	A	From Leg	1.0000 0.00 0.00	0.00	40.0000	No Ice 1/2" Ice 1" Ice	0.1292 0.1779 0.2340	0.1292 0.1779 0.2340	0.00 0.00 0.00
Pipe Mount [PM 601-1]	A	From Leg	0.5000 0.00 0.00	0.00	40.0000	No Ice 1/2" Ice 1" Ice	3.0000 3.7400 4.4800	0.9000 1.1200 1.3400	0.07 0.08 0.09
***									

Tower Pressures - No Ice

G_H = 1.100

Section Elevation ft	z ft	K_z	q_z ksf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg % 	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 160.0000-111.3300	134.1093	1.075	0.02	106.841	A	0.000	106.841	106.841	100.00	0.000	0.000
					B	0.000	106.841		100.00	0.000	0.000
					C	0.000	106.841		100.00	0.000	4.289
L2 111.3300-73.2500	91.7516	0.964	0.02	116.133	A	0.000	116.133	116.133	100.00	0.000	0.000
					B	0.000	116.133		100.00	0.000	0.000
					C	0.000	116.133		100.00	0.000	7.757
L3 73.2500-36.3300	54.6142	0.831	0.02	139.057	A	0.000	139.057	139.057	100.00	0.000	0.000
					B	0.000	139.057		100.00	0.000	0.000
					C	0.000	139.057		100.00	0.000	8.376
L4 36.3300-0.0000	17.6535	0.7	0.01	161.849	A	0.000	161.849	161.849	100.00	0.000	0.000
					B	0.000	161.849		100.00	0.000	0.000
					C	0.000	161.849		100.00	0.000	10.957

Tower Pressure - With Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 160.0000-111.3300	134.1093	1.075	0.01	1.7258	120.840	A	0.000	120.840	120.840	100.00	0.000	0.000
						B	0.000	120.840		100.00	0.000	0.000
						C	0.000	120.840		100.00	0.000	13.839
L2 111.3300-73.2500	91.7516	0.964	0.01	1.6615	127.086	A	0.000	127.086	127.086	100.00	0.000	0.000
						B	0.000	127.086		100.00	0.000	0.000
						C	0.000	127.086		100.00	0.000	25.310
L3 73.2500-36.3300	54.6142	0.831	0.01	1.5775	149.281	A	0.000	149.281	149.281	100.00	0.000	0.000
						B	0.000	149.281		100.00	0.000	0.000
						C	0.000	149.281		100.00	0.000	26.522
L4 36.3300-0.0000	17.6535	0.7	0.00	1.4090	171.401	A	0.000	171.401	171.401	100.00	0.000	0.000
						B	0.000	171.401		100.00	0.000	0.000
						C	0.000	171.401		100.00	0.000	34.541

Tower Pressure - Service

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 160.0000-111.3300	134.1093	1.075	0.01	106.841	A	0.000	106.841	106.841	100.00	0.000	0.000
					B	0.000	106.841		100.00	0.000	0.000
					C	0.000	106.841		100.00	0.000	4.289
L2 111.3300-73.2500	91.7516	0.964	0.01	116.133	A	0.000	116.133	116.133	100.00	0.000	0.000
					B	0.000	116.133		100.00	0.000	0.000
					C	0.000	116.133		100.00	0.000	7.757
L3 73.2500-36.3300	54.6142	0.831	0.01	139.057	A	0.000	139.057	139.057	100.00	0.000	0.000
					B	0.000	139.057		100.00	0.000	0.000
					C	0.000	139.057		100.00	0.000	8.376
L4 36.3300-0.0000	17.6535	0.7	0.01	161.849	A	0.000	161.849	161.849	100.00	0.000	0.000
					B	0.000	161.849		100.00	0.000	0.000
					C	0.000	161.849		100.00	0.000	10.957

Load Combinations

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

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	160 - 111.33	Pole	Max Tension	14	0.00	-0.00	0.00
			Max. Compression	26	-31.13	0.40	-1.66
			Max. Mx	20	-11.95	528.57	-0.36
			Max. My	14	-11.93	0.03	-531.76
			Max. Vy	20	-17.40	528.57	-0.36
			Max. Vx	14	17.50	0.03	-531.76
			Max. Torque	10			-0.51
L2	111.33 - 73.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.81	1.03	-2.64
			Max. Mx	20	-22.76	1397.52	-0.69
			Max. My	14	-22.75	0.08	-1404.71
			Max. Vy	20	-25.50	1397.52	-0.69
			Max. Vx	14	25.58	0.08	-1404.71
			Max. Torque	10			-1.05
L3	73.25 - 36.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.54	1.74	-2.73
			Max. Mx	20	-33.88	2390.92	-0.54
			Max. My	14	-33.87	0.13	-2400.72
			Max. Vy	20	-29.61	2390.92	-0.54
			Max. Vx	14	29.75	0.13	-2400.72
			Max. Torque	10			-1.40
L4	36.33 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.66	2.67	-2.95
			Max. Mx	20	-50.61	3762.01	-0.39
			Max. My	14	-50.61	0.20	-3779.72
			Max. Vy	20	-34.07	3762.01	-0.39
			Max. Vx	14	34.26	0.20	-3779.72
			Max. Torque	12			-1.95

Maximum Tower Deflections - Service Wind

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

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 111.33	24.36	45	1.38	0.00
L2	116 - 73.25	12.53	45	1.08	0.00
L3	79 - 36.33	5.58	45	0.68	0.00
L4	43 - 0	1.63	45	0.35	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
157.0000	APXVSPP18-C-A20 w/ Mount Pipe	45	23.50	1.36	0.00	41390
156.0000	TME-800MHz RRH	45	23.21	1.36	0.00	41390
149.0000	(2) 7770.00 w/ Mount Pipe	45	21.21	1.32	0.00	18813
139.0000	MG D3-800TV w/ Mount Pipe	45	18.41	1.26	0.00	9854
116.0000	LNX-6515DS-VTM w/ Mount Pipe	45	12.53	1.08	0.00	4817
84.0000	GPS_A	45	6.35	0.74	0.00	5799
45.0000	BULLET III	45	1.78	0.36	0.00	5339
40.0000	GPS-QBW-20N	45	1.43	0.32	0.00	5681

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 111.33	105.23	14	5.97	0.01
L2	116 - 73.25	54.15	14	4.67	0.00
L3	79 - 36.33	24.14	14	2.96	0.00
L4	43 - 0	7.05	14	1.50	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
157.0000	APXVSPP18-C-A20 w/ Mount Pipe	14	101.51	5.89	0.01	9762
156.0000	TME-800MHz RRH	14	100.27	5.87	0.01	9762
149.0000	(2) 7770.00 w/ Mount Pipe	14	91.63	5.70	0.01	4436
139.0000	MG D3-800TV w/ Mount Pipe	14	79.54	5.43	0.00	2321
116.0000	LNX-6515DS-VTM w/ Mount Pipe	14	54.15	4.67	0.00	1130
84.0000	GPS_A	14	27.43	3.19	0.00	1349
45.0000	BULLET III	14	7.68	1.57	0.00	1236
40.0000	GPS-QBW-20N	14	6.18	1.39	0.00	1315

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	160 - 111.33 (1)	TP31.29x19.6x0.25	48.6700	0.0000	0.0	24.0842	-11.93	1568.58	0.008
L2	111.33 - 73.25 (2)	TP39.912x29.6683x0.3438	42.7500	0.0000	0.0	42.2720	-22.75	2848.48	0.008
L3	73.25 - 36.33	TP48.088x37.8467x0.406	42.670	0.0000	0.0	60.279	-33.87	4024.95	0.008

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L4	(3) 36.33 - 0 (4)	3 TP56x45.6746x0.4375	0 43.000 0	0.0000	0.0	5 78.273 7	-50.61	4947.02	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	160 - 111.33 (1)	TP31.29x19.6x0.25	531.76	955.67	0.556	0.00	955.67	0.000
L2	111.33 - 73.25 (2)	TP39.912x29.6683x0.3438	1404.71	2213.87	0.635	0.00	2213.87	0.000
L3	73.25 - 36.33 (3)	TP48.088x37.8467x0.4063	2400.72	3775.24	0.636	0.00	3775.24	0.000
L4	36.33 - 0 (4)	TP56x45.6746x0.4375	3779.72	5600.07	0.675	0.00	5600.07	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	160 - 111.33 (1)	TP31.29x19.6x0.25	17.50	784.29	0.022	0.15	1937.79	0.000
L2	111.33 - 73.25 (2)	TP39.912x29.6683x0.3438	25.57	1424.24	0.018	0.47	4489.02	0.000
L3	73.25 - 36.33 (3)	TP48.088x37.8467x0.4063	29.75	2012.48	0.015	0.86	7655.00	0.000
L4	36.33 - 0 (4)	TP56x45.6746x0.4375	34.26	2473.51	0.014	1.46	11355.25	0.000

Pole Interaction Design Data

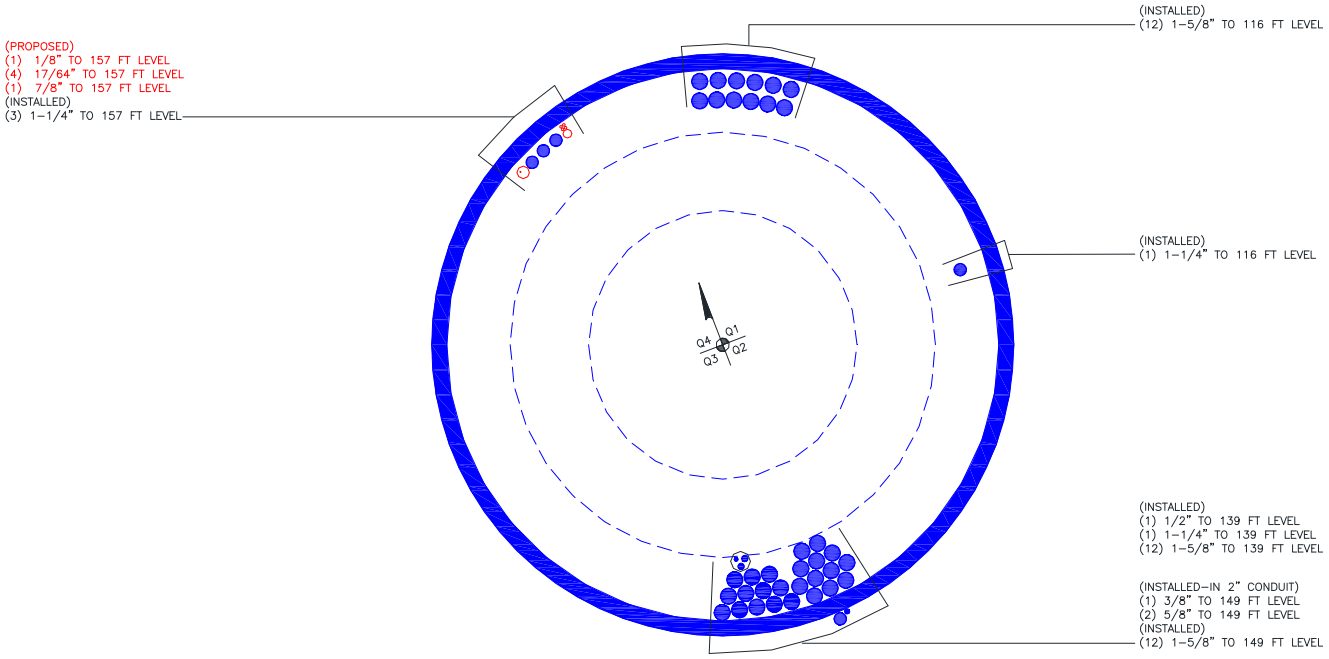
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	160 - 111.33 (1)	0.008	0.556	0.000	0.022	0.000	0.565 ✔	1.000	4.8.2 ✔
L2	111.33 - 73.25 (2)	0.008	0.635	0.000	0.018	0.000	0.643 ✔	1.000	4.8.2 ✔
L3	73.25 - 36.33 (3)	0.008	0.636	0.000	0.015	0.000	0.645 ✔	1.000	4.8.2 ✔
L4	36.33 - 0 (4)	0.010	0.675	0.000	0.014	0.000	0.685 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	160 - 111.33	Pole	TP31.29x19.6x0.25	1	-11.93	1568.58	56.5	Pass
L2	111.33 - 73.25	Pole	TP39.912x29.6683x0.3438	2	-22.75	2848.48	64.3	Pass
L3	73.25 - 36.33	Pole	TP48.088x37.8467x0.4063	3	-33.87	4024.95	64.5	Pass
L4	36.33 - 0	Pole	TP56x45.6746x0.4375	4	-50.61	4947.02	68.5	Pass
							Summary	
						Pole (L4)	68.5	Pass
						RATING =	**68.5**	**Pass**

APPENDIX B

BASE LEVEL DRAWING

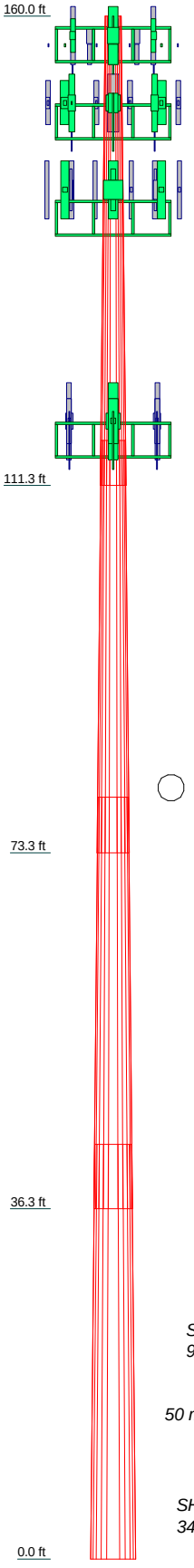


APPENDIX C

ADDITIONAL CALCULATIONS

Program Version 7.0.5.1 - 2/1/2016 File:G:/TOWER/375_Crown_Castle/2017/37517-0206_806953_BRG 2044 (A) 943097/37517-0206.001.7805_SA_1348646/37517-0206.001.7805.eri

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	48.6700	12	0.2500	4.6700	19.6000	31.2900	A572-65	3.4
2	42.7500	12	0.3438	5.7500	29.6683	39.9120		5.5
3	42.6700	12	0.4063	6.6700	37.8467	48.0880		8.1
4	43.0000	12	0.4375		45.6746	56.0000		10.4
								27.4



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
APXVSPP18-C-A20 w/ Mount Pipe	157	1001983	149
APXVSPP18-C-A20 w/ Mount Pipe	157	MG D3-800TV w/ Mount Pipe	139
APXVSPP18-C-A20 w/ Mount Pipe	157	MG D3-800TV w/ Mount Pipe	139
800 EXTERNAL NOTCH FILTER	157	MG D3-800TV w/ Mount Pipe	139
800 EXTERNAL NOTCH FILTER	157	(2) DB846F65ZAXY w/ Mount Pipe	139
800 EXTERNAL NOTCH FILTER	157	(2) DB846F65ZAXY w/ Mount Pipe	139
(3) ACU-A20-N	157	(2) DB846F65ZAXY w/ Mount Pipe	139
(3) ACU-A20-N	157	P65.16.XL.2 w/ Mount Pipe	139
(3) ACU-A20-N	157	P65.16.XL.2 w/ Mount Pipe	139
(2) 2 3/8" OD x 6 ft mount pipe	157	P65.16.XL.2 w/ Mount Pipe	139
(2) 2 3/8" OD x 6 ft mount pipe	157	MG D3-800Tx w/ Mount Pipe	139
(2) 2 3/8" OD x 6 ft mount pipe	157	MG D3-800Tx w/ Mount Pipe	139
Platform Mount [LP 602-1]	157	MG D3-800Tx w/ Mount Pipe	139
LLPX310R-V1 w/ Mount Pipe	157	(2) FD9R6004/2C-3L	139
LLPX310R-V1 w/ Mount Pipe	157	(2) FD9R6004/2C-3L	139
LLPX310R-V1 w/ Mount Pipe	157	(2) FD9R6004/2C-3L	139
FWHR	157	RRH2X40-AWS	139
FWHR	157	RRH2X40-AWS	139
FWHR	157	RRH2X40-AWS	139
BEN-92P	157	DB-T1-6Z-8AB-0Z	139
TME-800MHz RRH	156	Platform Mount [LP 602-1]	139
TME-800MHz RRH	156	LNX-6515DS-VTM w/ Mount Pipe	116
TME-800MHz RRH	156	LNX-6515DS-VTM w/ Mount Pipe	116
TME-1900MHz RRH (65 MHz)	156	LNX-6515DS-VTM w/ Mount Pipe	116
TME-1900MHz RRH (65 MHz)	156	RRUS 11 B12	116
TME-1900MHz RRH (65 MHz)	156	RRUS 11 B12	116
(2) Pipe Mount [PM 601-3]	156	RRUS 11 B12	116
(2) 7770.00 w/ Mount Pipe	149	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	116
(2) 7770.00 w/ Mount Pipe	149		
(2) 7770.00 w/ Mount Pipe	149	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	116
(2) LGP21401	149		
(2) LGP21401	149	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	116
(2) LGP21401	149		
(2) LGP21901	149	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	116
(2) LGP21901	149		
(2) LGP21901	149	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	116
RRUS-11	149		
RRUS-11	149		
RRUS-11	149	KRY 112 144/1	116
DC6-48-60-18-8F	149	KRY 112 144/1	116
2 3/8" OD x 6 ft mount pipe	149	KRY 112 144/1	116
2 3/8" OD x 6 ft mount pipe	149	Platform Mount [LP 713-1]	116
2 3/8" OD x 6 ft mount pipe	149	2 3/8" OD x 6 ft mount pipe	116
Platform Mount [LP 602-1]	149	2 3/8" OD x 6 ft mount pipe	116
HPA-65R-BUU-H6 w/ Mount Pipe	149	2 3/8" OD x 6 ft mount pipe	116
HPA-65R-BUU-H6 w/ Mount Pipe	149	GPS_A	84
HPA-65R-BUU-H6 w/ Mount Pipe	149	Side Arm Mount [SO 701-1]	84
RRUS 12 B2/RRUS A2	149	BULLET III	45
RRUS 12 B2/RRUS A2	149	Pipe Mount [PM 601-1]	45
RRUS 12 B2/RRUS A2	149	GPS-QBW-20N	40
1001983	149	Pipe Mount [PM 601-1]	40
1001983	149		

ALL REACTIONS ARE FACTORED

AXIAL 86 K

SHEAR 9 K

MOMENT 1082 k

TORQUE 1 kip-ft

50 mph WIND - 0.7500 in ICE

AXIAL 51 K

SHEAR 34 K

MOMENT 3780 kip-ft

TORQUE 2 kip-ft

REACTIONS - 93 mph WIND

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.0000 ft
8. TOWER RATING: 68.5%

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

Job:	***160' MP; Stamford, CT; BRG 2044 (A) 943097***		
Project:	***PJF 37517-0206 (BU 806953)***		
Client: Crown Castle	Drawn by: Morgan Scroggy		App'd:
Code: TIA-222-G	Date: 01/12/17		Scale: NTS
Path: G:\TOWER\375_Crown_Castle\2017\37517-0206_806953_BRG 2044 (A) 943097\37517-0206.001.7805_SA_1348646\37517-0206.001.7805.eri			Dwg No. E-1

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

TIA Rev G

Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#:	
Site Name:	
App #:	
Pole Manufacturer:	*Other*

Reactions		
Mu:	3780	ft-kips
Axial, Pu:	51	kips
Shear, Vu:	34	kips
Eta Factor, η	0.5	TIA G (Fig. 4-4)

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

Anchor Rod Data		
Qty:	20	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	64.48	in

Anchor Rod Results

Max Rod (Cu+ Vu/ή):	146.6 Kips	Rigid
Allowable Axial, Φ*Fu*Anet:	260.0 Kips	AISC LRFD
Anchor Rod Stress Ratio:	56.4% **Pass**	φ*Tn

Plate Data		
Diam:	70.48	in
Thick:	2.5	in
Grade:	60	ksi
Single-Rod B-eff:	9.00	in

Base Plate Results Flexural Check

Base Plate Stress:	26.7 ksi	Rigid
Allowable Plate Stress:	54.0 ksi	AISC LRFD
Base Plate Stress Ratio:	49.4% **Pass**	φ*Fy
		Y.L. Length: 31.96

Stiffener Data (Welding at both sides)		
Config:	0	*
Weld Type:	Both	
Groove Depth:	0.375	in **
Groove Angle:	45	degrees
Fillet H. Weld:	0.375	in
Fillet V. Weld:	0.3125	in
Width:	6	in
Height:	18	in
Thick:	0.75	in
Notch:	0.5	in
Grade:	50	ksi
Weld str.:	70	ksi

n/a

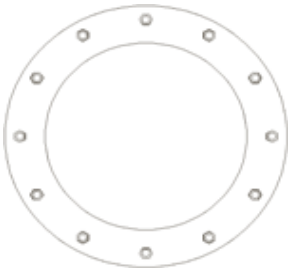
Stiffener Results

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

Pole Results

Pole Punching Shear Check: n/a

Pole Data		
Diam:	56	in
Thick:	0.4375	in
Grade:	65	ksi
# of Sides:	12	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None



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

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

foundation loads

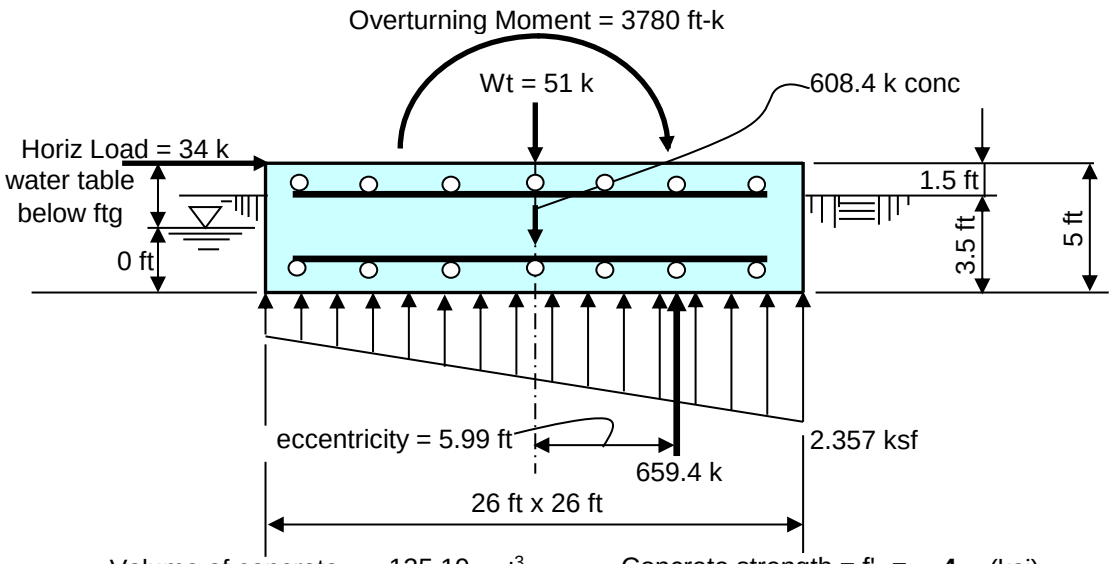
Limit states Tower or Pole Weight =	**51**	kips
limit states total horizontal force =	**34**	kips
limit states overturning moment =	**3780**	ft-kips

soil properties

Safety factor against overturning =	**1**	
Soil Density =	**125**	pcf
Ultimate soil bearing =	**20**	ksf
Depth to water table =	**99**	ft

mat dimensions

depth to bottom of footing =	**3.5**	ft
Footing thickness =	**5**	ft
Footing Width =	**26**	ft
Footing Length =	**26**	ft
Tower/Pole Center Offset =	**0**	ft



Volume of concrete = 125.19 yd^3 Concrete strength = f'_c = **4** (ksi)

Rebar = (72) #8 bars by 25.5 ft long

reinforcing steel = **(18) #8 @ 18 in o.c. ea way top and bottom**

Summary of analysis results

Overturning Moment: (Stress Ratio = 0.614) **< CONTROLLING CRITERIA**

Calculated Ultimate Overturning Moment = 3950 ft-kips

Resisting Moment = 6429.2 ft-kips

Factor of Safety against overturning = 1.628 **> 1 okay**

Rebar strength = F_y = **60** (ksi)

minimum cover over rebar = **3** inches

Soil Bearing (Stress Ratio = 0.157)

Limit States Maximum Net Soil Bearing = 15 ksf

Calculated limit states Soil Bearing Pressure = 2.357 **ksf < 15 ksf okay**

Bending Moment (Stress Ratio = 0.554)

Ultimate Bending Moment Resistance = 3526 ft-kips

Calculated Ultimate Bending Moment = 1953 **ft-kips < 3526 ft-kips okay**

Bending Shear (Stress Ratio = 0.134)

Ultimate Bending Shear Resistance = 1862 kips

Calculated Ultimate Bending Shear = 250 **kips < 1862 kips okay**

RF EMISSIONS COMPLIANCE REPORT

Crown Castle on behalf of Sprint

BU: 806953
Site Name: BRG 2044 (A) 943097
Sprint Application ID: 374359
69 Guinea Road (Camp Rocky Craig)
Stamford, CT
1/17/2017

Report Status:

The Site is Compliant

Prepared By:

Sitesafe, Inc.

200 North Glebe Road, Suite 1000 Arlington, VA 22203 Voice 703-276-1100
Fax 703-276-1169

Engineering Statement in Re:
Electromagnetic Energy Analysis
Sprint
Stamford, CT

My signature below indicates:

That I am an employee of Sitesafe, Inc. in Arlington, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Crown Castle (See attached Site Summary and Carrier documents), and that Sprint's installations involve communications equipment, antennas and associated technical equipment at a location referred to as the "BRG 2044 (A) 943097" ("the site"); and

That Sprint proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by Sprint and shown on the worksheet, and that worst-case 100% duty cycle have been assumed; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio-frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio-frequency radiation must utilize the standards set by the FCC, which is the Federal Agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," defined as situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and (2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for licensees of Sprint's operating frequency as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed Sprint operation is no more than 0.272% of the maximum in any accessible area on the ground and

That it is understood per FCC Guidelines and OET65 Appendix A, that regardless of the existent radio-frequency environment, only those licenses whose contributions exceed five percent of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 2.814% of the maximum in any accessible area up to two meters above the ground per OET-65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET-65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier and frequency range indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding Radio Frequency Safety.

In summary, it is stated here that the proposed operation at the site would not result in exposure of the Public to excessive levels of radio-frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307 and that Sprint's proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals, and approved contractor personnel trained in radio-frequency safety; and that the instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower, or in the immediate proximity of the antennas.

Sprint
BRG 2044 (A) 943097
Site Summary

Carrier	Area Maximum Percentage MPE
AT&T Mobility	0.125 %
AT&T Mobility	0.406 %
AT&T Mobility	0.287 %
Sprint	0.058 %
Sprint	0.058 %
Sprint	0.055 %
Sprint (Proposed)	0.101 %
T-Mobile	0.203 %
T-Mobile	0.265 %
T-Mobile	0.265 %
Verizon Wireless	0.225 %
Verizon Wireless	0.209 %
Verizon Wireless	0.228 %
Verizon Wireless	0.329 %

Composite Site MPE: 2.814 %

AT&T Mobility
BRG 2044 (A) 943097
Carrier Summary

Frequency:	737	MHz
Maximum Permissible Exposure (MPE):	491.33	µW/cm^2
Maximum power density at ground level:	0.61204	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.12457	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
CCI Antennas	HPA-65R-BUU-H6	151	23	881	0.382515	0.077852	0.585375	0.11914
CCI Antennas	HPA-65R-BUU-H6	151	143	881	0.380978	0.07754	0.585375	0.11914
CCI Antennas	HPA-65R-BUU-H6	151	263	881	0.380978	0.07754	0.585375	0.11914

AT&T Mobility
BRG 2044 (A) 943097
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	4.0648	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.40648	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Powerwave	7770.00	151	23	2339	0.547523	0.054752	1.138385	0.113838
Powerwave	7770.00	151	30	2339	0.547523	0.054752	1.138385	0.113838
CCI Antennas	HPA-65R-BUU-H6	151	23	1699	1.505048	0.150505	1.866241	0.186624
Powerwave	7770.00	151	143	2339	0.547523	0.054752	1.138385	0.113838
Powerwave	7770.00	151	150	2339	0.547523	0.054752	1.138385	0.113838
CCI Antennas	HPA-65R-BUU-H6	151	143	1699	1.517	0.1517	1.866241	0.186624
Powerwave	7770.00	151	263	2339	0.547523	0.054752	1.138385	0.113839
Powerwave	7770.00	151	270	2339	0.547523	0.054752	1.138385	0.113838
CCI Antennas	HPA-65R-BUU-H6	151	263	1699	1.505048	0.150505	1.866241	0.186624

AT&T Mobility
BRG 2044 (A) 943097
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	1.62748	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.2872	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Powerwave	7770.00	151	23	1094	0.458566	0.080923	0.71072	0.125421
Powerwave	7770.00	151	30	1094	0.457982	0.08082	0.71072	0.125421
Powerwave	7770.00	151	143	1094	0.458566	0.080923	0.71072	0.125421
Powerwave	7770.00	151	150	1094	0.458566	0.080923	0.71072	0.125421
Powerwave	7770.00	151	263	1094	0.457982	0.08082	0.71072	0.125421
Powerwave	7770.00	151	270	1094	0.457982	0.08082	0.71072	0.125421

Sprint
BRG 2044 (A) 943097
Carrier Summary

Frequency:	1945	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	0.58003	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.058	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	158	0	1268	0.253362	0.025336	0.45209	0.045209
RFS	APXVSPP18-C-A20	158	100	1268	0.254365	0.025436	0.45209	0.045209
RFS	APXVSPP18-C-A20	158	240	1268	0.253362	0.025336	0.45209	0.045209

Sprint
BRG 2044 (A) 943097
Carrier Summary

Frequency:	1930	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	0.58003	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.058	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	158	0	1268	0.253362	0.025336	0.45209	0.045209
RFS	APXVSPP18-C-A20	158	100	1268	0.254365	0.025436	0.45209	0.045209
RFS	APXVSPP18-C-A20	158	240	1268	0.253362	0.025336	0.45209	0.045209

Sprint
BRG 2044 (A) 943097
Carrier Summary

Frequency:	862	MHz
Maximum Permissible Exposure (MPE):	574.67	µW/cm^2
Maximum power density at ground level:	0.31405	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.05465	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	158	0	867	0.246678	0.042925	0.252897	0.044008
RFS	APXVSPP18-C-A20	158	100	867	0.246678	0.042925	0.252896	0.044008
RFS	APXVSPP18-C-A20	158	240	867	0.246678	0.042925	0.252897	0.044008

Sprint (Proposed)
BRG 2044 (A) 943097
Carrier Summary

Frequency:	2500	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	1.01122	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.10112	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ARGUS	LLPX310R-V1	158	0	1600	0.498438	0.049844	0.904702	0.09047
ARGUS	LLPX310R-V1	158	100	1600	0.502264	0.050226	0.904702	0.09047
ARGUS	LLPX310R-V1	158	240	1600	0.502264	0.050226	0.904702	0.09047

T-Mobile
BRG 2044 (A) 943097
Carrier Summary

Frequency:	731	MHz
Maximum Permissible Exposure (MPE):	487.33	µW/cm^2
Maximum power density at ground level:	0.99103	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.20336	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	LNX-6515DS-VTM	118	0	1715	0.666137	0.13669	0.736835	0.151197
ANDREW	LNX-6515DS-VTM	118	120	1715	0.666137	0.13669	0.736835	0.151197
ANDREW	LNX-6515DS-VTM	118	250	1715	0.666137	0.13669	0.736835	0.151197

T-Mobile
BRG 2044 (A) 943097
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.64606	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.26461	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Ericsson	AIR 21 B4A B2P	118	0	2061	0.729229	0.072923	0.837776	0.083778
Ericsson	AIR 21 B2A B4P	118	0	2061	0.729229	0.072923	0.837776	0.083778
Ericsson	AIR 21 B4A B2P	118	120	2061	0.729452	0.072945	0.837777	0.083778
Ericsson	AIR 21 B2A B4P	118	120	2061	0.729452	0.072945	0.837777	0.083778
Ericsson	AIR 21 B4A B2P	118	250	2061	0.729452	0.072945	0.837777	0.083778
Ericsson	AIR 21 B2A B4P	118	250	2061	0.729452	0.072945	0.837777	0.083778

T-Mobile
BRG 2044 (A) 943097
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.64606	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.26461	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Ericsson	AIR 21 B4A B2P	118	0	2061	0.729229	0.072923	0.837776	0.083778
Ericsson	AIR 21 B2A B4P	118	0	2061	0.729229	0.072923	0.837776	0.083778
Ericsson	AIR 21 B4A B2P	118	120	2061	0.729452	0.072945	0.837777	0.083778
Ericsson	AIR 21 B2A B4P	118	120	2061	0.729452	0.072945	0.837777	0.083778
Ericsson	AIR 21 B4A B2P	118	250	2061	0.729452	0.072945	0.837777	0.083778
Ericsson	AIR 21 B2A B4P	118	250	2061	0.729452	0.072945	0.837777	0.083778

Verizon Wireless
BRG 2044 (A) 943097
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.24632	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.22463	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RYMSA	MG D3-800Tx	142	30	4458	1.108028	0.110803	2.099159	0.209916
RYMSA	MG D3-800Tx	142	150	4458	1.108028	0.110803	2.099158	0.209916
RYMSA	MG D3-800Tx	142	270	4458	1.108028	0.110803	2.099158	0.209916

Verizon Wireless
BRG 2044 (A) 943097
Carrier Summary

Frequency:	751	MHz
Maximum Permissible Exposure (MPE):	500.67	µW/cm^2
Maximum power density at ground level:	1.0475	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.20922	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Powerwave	P65.16.XL.2	142	30	1476	0.596916	0.119224	1.028445	0.205415
Powerwave	P65.16.XL.2	142	150	1476	0.599203	0.119681	1.028445	0.205415
Powerwave	P65.16.XL.2	142	270	1476	0.596916	0.119224	1.028445	0.205415

Verizon Wireless
BRG 2044 (A) 943097
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.2833	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.22833	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RYMSA	MG D3-800TV	142	30	4268	1.045094	0.104509	2.14912	0.214912
RYMSA	MG D3-800TV	142	150	4268	1.045094	0.104509	2.14912	0.214912
RYMSA	MG D3-800TV	142	270	4268	1.045095	0.104509	2.14912	0.214912

Verizon Wireless
BRG 2044 (A) 943097
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	1.86479	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.32908	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	DB846F65ZAXY	142	30	2255	0.862932	0.152282	0.922468	0.162789
ANDREW	DB846F65ZAXY	142	30	2255	0.862932	0.152282	0.922468	0.162789
ANDREW	DB846F65ZAXY	142	150	2255	0.862932	0.152282	0.922468	0.162789
ANDREW	DB846F65ZAXY	142	150	2255	0.862932	0.152282	0.922468	0.162789
ANDREW	DB846F65ZAXY	142	270	2255	0.862932	0.152282	0.922468	0.162789
ANDREW	DB846F65ZAXY	142	270	2255	0.862932	0.152282	0.922468	0.162789