#### THIS LEASE IS THE PROPERTY OF:

Woodbury County, Iowa 620 Douglas Street, Suite 104 Sioux City, Iowa 51101

#### AND THE PROPERTY OF:

Customer Support Manager, State of Iowa, Motorola Solutions 1303 E. Algonquin Road Schaumburg, IL 60196 ATTN: Dave Gordon Phone: 319-377-6686

and

3/14/17 #10 Law Department

a Solutions, Inc.
 Monroe St. 43rd Floor
 IL 60661
 tich Heller
 847) 576-1817
 2) 559-5694

C/O Starcomm Public Safety J P.O. Box 447 Sioux City, Iowa 51102 ATTN: Glenn Sedivy Phone: (712) 279-6959 Fax: (712) 279-6157

And

The City of Sioux City, Iowa 405 6<sup>th</sup> Street, P.O. Box 447 Sioux City, Iowa 51102

#### SITE LEASE AGREEMENT

THIS SITE LEASE AGREEMENT (hereinafter called "Lease"), is made and entered into as of this <u>2014</u> day of <u>MARCH</u>, 2017, by and between Woodbury County, Iowa, whose address is 620 Douglas Street, Suite 104, Sioux City, Iowa 51101 under the direction of the Starcomm Public Safety Board, whose address is P.O. Box 447 Sioux City, Iowa 51102 and the City of Sioux City, Iowa whose address is 405 6<sup>th</sup> Street, P.O. Box 447, Sioux City, IA 51102, hereinafter called "Lessors", and Motorola Solutions, Inc. having an address of 500 W. Monroe St., Chicago, IL 60661, hereinafter called "Lessee".

In consideration of the covenants and agreements hereinafter set forth, the parties hereto agree as follows:

1. <u>Leased Premises</u>. Lessor is the owner of that certain real property <u>described below</u> (the "Property"). Lessors hereby Lease to the Lessee, for the period, at the rental, and upon the terms and conditions hereinafter set forth, certain portions of the Property, tower, and a portion of the interior space on the ground (the "Premises") located on the Property within the city limits of Sioux City, Iowa.

**2.** Communications Equipment Upgrade and Installation. A detailed list of Communications Equipment to be installed and upgraded by the Lessee at the Property and a detailed Site Plan is hereby attached as Exhibit A and incorporated herein as if fully set forth in this Agreement. A Structural

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Analysis of the communications tower is hereby attached as **Exhibit B** and incorporated herein as if fully set forth in this Agreement.

"Communications Equipment" shall be defined as: a communications facility including (without limitation) antennae and radios (including microwave antennae and radios); equipment cabinets; backup power sources (including batteries, generators and fuel storage tanks); and other associated equipment, fixtures, wiring, and cabling.

Lessee shall cause the Communications Equipment to be fully installed and upgraded on the Property by June 16, 2017. All costs associated with the installation of Communications Equipment and upgrading of the existing system shall be borne by the Lessee. The Communications Equipment shall service the Public Safety communication needs of the area.

The legal description for the location of the above tower and equipment is:

All that part of the South One-Half (S  $\frac{1}{2}$ ) of the Northwest Quarter (NW  $\frac{1}{4}$ ) of Section 36, Township 89 North, Range 47 West of the 5<sup>th</sup> Principal Meridian, Sioux City, Woodbury County, Iowa, described as follows:

Commencing at the Northeast corner of the SW  $\frac{1}{4}$  of the NW  $\frac{1}{4}$  of said Section 36; thence S 43°22'02"W for 60.00 feet to the point of beginning; thence S 46°37'58"E for 50.00 feet; thence S 43°22'02"W for 100.00 feet; thence N 46°37'58"W for 100.00 feet; thence N 43°22'02"E for 100.00 feet; thence S 46°37'58"E for 50.00 feet to the point of beginning. Said described lease contains 10,000.0 square feet.

NOTE: Basis of bearings established by reference to Plat of Survey and legal description as recorded on Roll 598 – Images 635 through 639 in the Woodbury County Recorder's Office, Sioux City, Iowa

(Property located in the vicinity of 4647 Stone Avenue)

**3.** <u>Access</u>. Lessors also grant to Lessee, the State of Iowa, and their respective employees, contractors, agents, representatives, and assigns, access to the Property and Premises described in paragraph one (1) above, seven days a week, 24 hours a day, throughout the term of this Lease, provided that, prior to Lessee or Lessee's contractors climbing the tower for antenna access, Lessee will give Lessors no less than 12 hours prior notice. To allow this access to climb the tower or Fenced Compound, Lessors will give Lessee a key to the lock on the Compound. Each time the Lessee's employee(s) access the location all the Lessee's employees will notify the Facility Manager, in writing, in person or if necessary over the phone by calling (712) 279-6960. These employees will be subject to criminal background checks, except in emergency situations and when otherwise agreed upon by Lessor in writing. Security access to the sites compound will be provided by the Starcomm Director or Facility Manager. Each employee of Lessee who climbs the tower will have in their possession a card showing that they have completed the Qualified Climber/Rescue course offered through Comtrain or similar program approved by Lessors. Each employee of Lessee will follow all OSHA regulations while climbing any portion of the tower including wearing all required safety harnesses and will use the safety climbing cable while on the tower. There will never be fewer than 2 certified climbers on the site during any type of climbing on the tower.

4. <u>Initial Term and Commencement Date of Lease</u>. The "Initial Term" of this Lease shall be for a period of Thirteen (13) years. The "Commencement Date" for the Initial Term of this Lease begins upon the start of installation of the Communications Equipment as described in Paragraph 1, in and about the Premises and expiring on the date which is thirteen (13) years thereafter. Lessee shall provide written

notification to the Parties of the date when installation shall commence. In any event the commencement date shall be no later than April 1, 2017.

**5.** <u>Renewal Terms</u>. Lessors hereby grant to Lessee the right, privilege and option to extend this Lease for four (4) additional "Renewal Terms" of Five (5) years; provided that the total length of all terms does not extend beyond the term of the Lease Agreement between Lessors and WIT; each with the consent and written approval from Lessors, from the end of the Initial Term, under the same terms, covenants and conditions as herein contained, provided that Lessee is not in default of any of the terms, covenants or conditions of this Lease at the conclusion of the Initial Term or any prior Renewal Term, respectively. This Lease shall automatically terminate unless Lessee gives written notice of the desire to extend or renew the Lease at least one hundred eighty (180) days prior to the end of the applicable term and obtains Lessors' consent to each requested extension.

#### 6. Termination.

a. Both Lessors and Lessee shall have the right to terminate this Lease for cause, in the event the other party defaults on any material provision of this Lease, and in the event that such default is not cured within thirty (30) days after written notice thereof is provided to the other party. Said curative period shall be extended another thirty (30) days provided defaulting party has shown a good faith effort to cure default. Notwithstanding the foregoing, the curative period for any monetary default is thirty (30) days from receipt of written notice and the curative period for lapse in insurance coverage is ten (10) days from the receipt of written notice

b. The parties agree that in the event that federal or state law requires the installation of back up power sources or supplies that the terms of this Lease will require an amendment to be negotiated between the parties. No additional equipment shall be placed upon the Premises by Lessee without the written consent of Lessors. Notwithstanding the foregoing, Lessee may install upgraded Communications Equipment to replace existing Communications Equipment without the written consent of Lessor. However, a detailed list of replaced items must be promptly provided to the Lessor.

c. This Lease may be terminated without further liability as set forth below:

1) by either party in the event the other party defaults on any material provision of this Lease, and in the event that such default is not cured within thirty (30) days after written notice thereof is provided to the other party. Said curative period shall be extended another thirty (30) days provided defaulting party has shown a good faith effort to cure default. Notwithstanding the foregoing, the curative period for any monetary default is thirty (30) days from receipt of written notice and the curative period for lapse in insurance coverage is ten (10) days from the receipt of written notice; or

2) by Lessee if it does not obtain or maintain any license, permit or other approval necessary for the construction and operation of Lessee's facilities; or

3) by Lessee if Lessee is unable to occupy and utilize the tower site due to an action of the FCC, including without limitation, a take-back of channels, a change in frequencies, or a change in licensed coverage area; or

4) by Lessee if Lessee determines that the tower site is not appropriate for its operations for economic or technological reasons, including, without limitation, signal interference; or

5) by Lessors if the Lessors determine the tower site is no longer suitable to be used by Lessors for their operation and the Lessors choose to remove the building; or

6) by Lessors after the expiration of the initial term of this Lease upon providing Lessee with written notice. Such notice, if given by Lessors, must be given not less than three hundred sixty-five (365) days prior to the date therein specified (this time is given for Lessee to find a new site, get zoning approval, construct a new site and move Lessee's shelter and antennas); or

7.) by Lessors at any time upon occurrence of a Separation Event, as that term is defined in 14(f), by giving at least thirty (30) days' notice in writing to the Lessee.

8) by the parties mutual agreement.

d. In the event of termination or expiration of this Lease, Lessee shall have a reasonable period of time (not exceeding ninety (90) days from the effective date of termination unless a longer time is allowed elsewhere in this Lease) to remove all Communications Equipment from the Premises, however all improvements to the tower and/or ancillary structures shall be left in place and in good repair by the Lessee. Upon expiration of this Lease, Lessee shall restore the Premises to reasonably good condition and repair, subject to ordinary wear and tear on the Premises, which is specifically excepted. Failure of Lessee to remove its Communications Equipment at the expiration or termination of this Lease may result in Lessors removing the equipment and payment of all charges occasioned by such removal will be the responsibility of the Lessee.

#### 7. Initial Term Rent .

a. Lessee shall pay Woodbury County, Iowa, administrator of funds of Starcomm Public Safety Board Ten Dollars (\$10) and other good and valuable consideration as full consideration for the initial Term and all Renewal Terms of this Lease. Unless otherwise specified in this Lease, each party shall bear its own costs.

8. Use and Non-Interference of Premises. Lessee shall have the right to use the Property and Premises for the purpose of installing, removing, replacing, modifying, repairing, maintaining, and operating a communications facility including (without limitation) antennae and radios (including microwave antennae and radios); equipment cabinets; backup power sources (including batteries, generators and fuel storage tanks); and other associated equipment, fixtures, wiring, and cabling (collectively the "Communications Equipment"). The parties acknowledge that (a) the Communications Equipment will be owned by Lessee, the State of Iowa, or their respective assignee and (b) the Communications Equipment will be used for emergency services, public safety and other governmental purposes, including the Iowa State Patrol and other Iowa state agencies, and any federal, state, county, municipality or other governmental body, including any department or agency thereof. Lessee shall not do or permit any activities upon the Premises, which would cause interference to Lessor or with Lessor's principle use of the Premises as a Lattice Tower in the City of Sioux City, Iowa at 4647 Stone Ave behind "The Security Institute". The Lessee shall further not do or permit any activities upon the premises which would cause interference to Western Iowa Tech (WIT). In addition, Lessors and Lessee shall not do or permit any activities upon the Premises, which would cause or permit physical, electronic, or other interference with the radio transmission facilities, equipment, or signal of WIT's own radio station currently designated as KWIT. The Lessee will be allowed to install its Communications Equipment inside and outside the communications tower house. This is not an exclusive lease of the premises. Lessors retains the right to lease additional space to other Tenants provided that the additional Tenants' equipment does not interfere with the activities and transmission signals of the Lessee. Additionally, Lessor will continue to use the premises for their own business or public safety purposes. Lessor affirmatively covenants that except for acts of God, neither Lessor nor its employees, agents, representatives, invitees, other tenants or licensees

shall cause or allow others to cause interruption of electrical power or interruption of telephone service to the Communication Equipment.

#### 9. Insurance and Indemnification.

Unless self-insured, at all times during the term of this Lease, Lessee shall at its expense carry and maintain for the mutual benefit of the Lessors:

a. Commercial General liability insurance against the claims for personal injury, death or property damage occurring in or about the Leased Premises or resulting from the installation, operation or maintenance of the Lessee's Communications Equipment on the Leased Premises, such insurance to be in the amount of \$1,000,000.00 for personal injuries and deaths resulting from any one accident and for property damage in any one accident, and an aggregate coverage in the amount of \$3,000,000.00 with Lessors included as additional insureds.

b. A Standard Workmen's Compensation and Employer's Liability Insurance Policy in the amount equal to the limit of liability and in a form prescribed by the laws of the state in which the Leased Premises is located.

c. Any contract workers contracted by Lessee shall also carry similar insurance as set forth in a. and b. above.

10. Damage or Destruction. If the Premises are damaged, destroyed by fire, winds, flood, or other natural or manmade cause, Lessors shall have the option to repair or replace the Premises at their sole expense, or to terminate this Lease effective on the date of such damage or destruction. Notwithstanding the foregoing, for purposes of implementing the ninety (90) day period specified in 6(d), the ninety (90) day period shall commence upon the later of (i) the Lessors having notified the Lessee of a decision not to repair or replace the Premises or (ii) sixty (60) days having passed without Lessors having notified Lessee of a decision to repair or replace the Premises (unless the Lessors have begun repair or replacement activities). In the event Lessors elect to terminate this Lease, Lessee shall have no further obligations hereunder. Lessors shall have up to sixty (60) days to decide on whether to repair or replace the Premises. Failure by Lessors to notify Lessee within sixty (60) days of Lessors' decision to repair or replace the Premises shall be deemed an election by Lessors to terminate this Lease, unless the Lessors have begun repair or replacement activities. If Lessors elect to repair or replace the Premises, Lessee shall have the option of either abating the rent due until such repair or replacement is completed and the Premises are restored to a condition that the Lessee can resume full operations at the Premises; or until Lessee begins operating a mobile telecommunication base station on the Premises. Lessee may immediately erect on an unused portion of the Property a temporary communications facility. In the event such repairs or restoration are not commenced within thirty (30) days or completed within ninety (90) days, Lessee may elect to terminate this Lease by so notifying Lessor in writing, The option to operate a mobile telecommunications base station on the Premises is subject to the Lessee obtaining all required State and local permits and obtaining verbal consent of the Starcomm Public Safety Board, said consent shall not be unreasonably withheld. Said verbal consent will be confirmed electronically or in writing by the Starcomm Public Safety Board within twenty-four (24) hours. If there is a condemnation of the Premises, then this Lease will terminate upon transfer of title to the condemning authority, without further liability to either party except for Lessor's obligation to reimburse Lessee for any prepaid fees. Lessee is entitled to pursue a separate condemnation award from the condemning authority. Lessor shall notify Lessee in writing within ten (10) days after it receives notice of any actual or contemplated condemnation proceedings.

11. <u>Taxes</u>. Lessors shall pay and be responsible for all taxes on the Premises, and Lessee shall pay and be responsible for all taxes due on Lessee's equipment and fixtures installed on the Premises.

12. <u>Notices</u>. Any notices required or permitted to be given hereunder shall be given in writing, and shall be deemed to have been given only upon receipt after mailing by certified or registered first class mail, postage prepaid, return receipt requested, or sending by reliable overnight courier and addressed to the parties as follows:

Lessors: Woodbury County, Iowa Board of Supervisors 620 Douglas Street, Suite 104 Sioux City, Iowa 51101 Phone: 712-279-6525

> Starcomm Public Safety Board P.O. Box 447 Sioux City, Iowa 51102 ATTN: Glenn Sedivy Phone: (712) 279-6959 Fax: (712 279-6157

City Clerk City of Sioux City, Iowa 405 6<sup>th</sup> Street, P.O. Box 447 Sioux City, Iowa 51102

Lessee:

Customer Support Manager, State of Iowa, Motorola Solutions 1303 E. Algonquin Road Schaumburg, IL 60196 ATTN: Dave Gordon Phone: 319-377-6686

Law Department Motorola Solutions, Inc. 500 W. Monroe St., 43rd Floor Chicago, IL 60661 ATTN: Rich Heller Phone: (847) 576-1817

**13. Hazardous Materials**. At no time during the term hereof shall the Lessee store, place, leave or deposit at the Tower or the Premises any substance or material which, if known to be present on or at such property, would require cleanup, removal or some other remedial action under any federal, state or local law, including statutes, regulations, ordinances, codes, rules and other governmental restrictions and requirements relating to the discharge of air pollutants, water pollutants, processed waste water, solid wastes, or otherwise relating to environmental hazardous substances, including but not limited to the Federal Solid Waste Disposal Act, the Federal Clean Air Act, the Federal Clean Water Act, the Federal Resource Conservation and Recovery Act of 1976, the Federal Comprehensive Environmental Response,

Compensation, and Liability Act of 1980, and all acts amendatory thereto, regulations of the Environmental Protection Agency, regulations of the Nuclear Regulatory Agency, and regulation of any State Department of Natural Resources or State Environmental Protection Agency now or at any time hereinafter in effect. The Lessee agrees to and does hereby indemnify and save the Lessors and owners harmless from any and all claims, demands, suits, actions, recoveries, judgments, costs and expenses relating in any way to Lessee's violation of this Section, and this indemnification obligation shall survive the expiration or termination of this Lease. Lessors acknowledge and agree that Lessee shall have no liability or responsibility whatsoever for any environmental violations or issues, at the tower or premises, existing prior to the date of Lessee's occupancy or otherwise not caused by Lessee. Lessor represents and warrants that it has no knowledge of any pre-existing environmental contamination on or about the Property or any substance, or chemical, or waste on the Property that is identified in any applicable state, federal, or local law or regulation as being hazardous, toxic, or dangerous. Lessor shall not introduce or allow any other tenant or licensee to introduce any such substance or chemical or waste onto, near or adjacent to the Property in violation of applicable law.

#### 14. Miscellaneous Provisions.

a. Lessors warrant that (i) Lessors are the owners of the tower and owners and/or lessees of the tower site property; (ii) that Lessors have full right, power, and authority to execute this agreement and if necessary have obtained all necessary consents to sublease the Premises; (iii) that Lessor will not have unsupervised access to the Communication Equipment on the Premises; (iv) that the Property: (a) abuts a public right-of-way over which practical access is possible, or (b) is accessible over easements appurtenant to such site; and (v) that to the best of Lessor's knowledge making of this Lease and the performance thereof will not violate any zoning or other laws, ordinances, restrictive covenants or the provision of any mortgage, lease or other agreements under which Lessor is bound and which restricts itself in any way with respect to the use or disposition of the Property. Lessors covenant that Lessee, in paying Rent and performing the covenants by Lessee herein made, shall and may peacefully and quietly have, hold, and enjoy the Leased Premises.

b. Lessee may, at its expense, make such improvements to the Property and Premises as it deems necessary for the operation of the Communication Equipment with prior written approval of the Lessor. Lessee shall obtain all necessary governmental and regulatory approvals required for Lessee's occupation and use of the Premises, including but not limited to zoning changes, and shall be responsible for the cost of obtaining such approvals. Lessors shall cooperate with Lessee in obtaining such approvals.

c. The provisions of this Lease shall bind and inure to the benefit of the parties hereto and their heirs, legal representatives, successors and assigns. References to Lessee herein shall include Lessee's transferees, successors, and assigns. References to Lessor herein shall include Lessor's transferees, successors, and assigns.

d. This Lease and the attached exhibits contain the entire agreement of the parties with respect to its subject matter and supersede any prior oral or written agreements.

e. This Lease may be amended in writing only, signed by all the parties in interest at the time of such amendment.

f. Lessee may assign this Lease to the State of Iowa or any of its departments, agencies or designees, or to any of Lessee's affiliates without the prior consent of Lessor. In addition, in the event Lessee separates one or more of its businesses (each a "Separated Business"), whether by way of a sale, establishment of a joint venture, spin-off or otherwise (each a "Separation Event"), Lessee may, without the prior written consent of Lessor and at no additional cost to Lessee, assign this Lease such that it will continue to benefit

the Separated Business and its affiliates following the Separation Event. In the event of such a permitted transfer, Lessee shall provide written notice to Lessors of the Separation Event within thirty days of the completion of the Separation Event. This Lease shall continue as a direct lease between Lessor and any permitted transferee, and the original Lessee shall be released from any and all future liability hereunder. Lessee shall notify Lessors in writing of the name and address of any assignee. This Lease may be assigned by Lessors without the consent of Lessee provided that the assignee shall occupy and use the Premises subject to this Lease. Lessor shall notify Lessees in writing of the name and address of any assignee.

g. No waiver by either party of any provision herein shall be deemed a waiver of any other provision or of any prior or subsequent breach of any provision herein.

h. If any term or provision of this Lease is held to be invalid or unenforceable, such invalidity or unenforceability shall not be construed to affect any other provision of this Lease and the remaining provisions shall be enforceable in accordance with their terms.

i. This agreement shall be governed by and construed in accordance with the laws of the State of IOWA, without regard to its conflicts of law principles.

j. If Lessee does not vacate the Premises in accordance with the Lease terms upon valid termination of this Lease, such holding over shall be treated as creating a month to month tenancy. This holdover will not be approved for more than ninety (90) days. Rent during the holdover will be 150% of the current rent. Further, if Lessee does not vacate the Premises as required, Lessee's Communications Equipment may be removed by Lessors at Lessee's expense. Any bill for removal of Lessee's equipment by Lessors shall be paid in full within thirty (30) days of mailing.

k. Lessee may make, with prior approval from Lessors, reasonable alterations, additions, or improvements to the Premises necessary for its antennas, communication shelter, power cables and telephone cables, so long as the structural integrity of the Premises is not affected. Lessee will bear the total cost of such alterations, additions or improvements, including regular maintenance, and the cost of removal and returning the Premises to the condition it was at the time of entering into the Lease (subject to the terms of paragraph 6(d) of this Lease).

1. Lessee shall be solely responsible for maintenance of its Communications Equipment, and shall arrange for maintenance under separate contract for all such maintenance services. Lessee shall not expect or ask Lessors to do any special site maintenance for Lessee's antennas or shelter, unless Lessee enters into a separate maintenance contract with Lessors, which contract will be separate from the terms of this Lease (i.e.: in the event that some minor snow plowing is requested for Lessee's access to their shelter, Lessee will separately contract for that service under a separate document).

m. Lessee will bear any and all costs associated with temporary relocation of Lessee's equipment, if required, during repairs or painting of Lessors' building. Lessors will give Lessee at least thirty (30) days advance notice of scheduled repairs or painting of Lessors' building or tower which may affect Lessee's operation, so that Lessee can pre-plan for providing high-quality communications to Lessee's customers during any temporary relocation required by Lessors' repair or painting activities. Lessors are not required to provide notice of routine repairs, such as replacement of tower lights, which do not affect Lessee's operation. Lessors will provide Lessee notice of emergency repairs with at least twelve (12) hours prior notice unless it is impossible or impractical to do so and then the Lessee shall be provided with as much prior notice as possible under the emergency circumstances.

n. To the extent permitted by law, Lessee shall indemnify and hold Lessors harmless against all expenses, liabilities and claims of every kind, including reasonable attorney fees, to the extent arising from the negligent or wrongful acts or omissions of Lessee or anyone for whose acts Lessee may be liable and made necessary by or on behalf of any person or entity arising out of:

1) A failure by Lessee to perform any of the terms and conditions of this Lease; or

2) Any injury or damage happening on or about the Leased Premises which is caused in whole or in part by Lessee's use of the Premises, any act or omission of Lessee or anyone for whose acts Lessee may be liable; or

3) Any injury or damage to any employee, agent, or customer of Lessee or Lessors on or about the Leased Premises which is caused in whole or in part by Lessee's use of the Premises, any act or omission of Lessee or anyone for whose acts Lessee may be liable; or

4) Failure of Lessee to comply with any applicable laws or governmental authority; or

5) Any action brought by a third party for damages as a result of an injury caused by Lessee or action or inaction of the Lessee.

**15.** <u>Approval</u>. The parties agree that this Lease shall not be binding on either party unless and until it is fully executed by both parties. If this Lease is signed by only one party, it shall merely constitute an offer to lease. This Lease is subject to the consent to sublease by Western Iowa Tech (WIT), and subject to approval by Starcomm's Executive Board, the Woodbury County Board of Supervisors and the City Council of the City of Sioux City.

16. <u>Utilities</u>. Lessee shall be entitled to install any utilities and services required for the Communication Equipment. Lessor shall provide Lessee with such reasonable assistance as is necessary to enable Lessee to arrange for such utilities and services, including signing any easement or other instrument reasonably required by the utility company. Lessor represents that utilities required for Lessee's use of the Premises are available, and Lessee shall not be required to pay any share of such utilities and services as are used for the Communication Equipment. All electricity and any other utility services used by Lessee to operate the Communications Equipment will be paid by Lessor.

17. <u>Compliance with Laws</u>. The Parties shall comply with all applicable local, state, and federal government laws, codes and regulations, including without limitation FAA, FCC, NEPA, occupational health and safety, environmental, and electromagnetic (EME) requirements, and applicable requirements of the Americans with Disabilities Act.

18. <u>Short Form Lease</u>. The parties will, at any time upon the request of either one, promptly execute duplicate originals of an instrument, in recordable form, which will constitute a short form of this Lease setting forth a description of the premises, the term of this Lease and any portions hereof, excepting the rent and cost provisions.

**19.** <u>Contingency for Due Diligence</u>. Lessee shall have until the Commencement Date to conduct a due diligence examination of all factors affecting the Property and to satisfy itself in its sole discretion that the Property is suitable for Lessee's intended use. Lessor shall furnish Lessee with the legal description, coordinates, address or location and real estate tax numbers, if available, for the Property as well as copies of any title policies or searches, surveys or site drawings (including those dealing with utility or access easements), any Prime Lease or Ground Lease, including all amendments, current users of the Property and all broadcast frequencies and any studies dealing with structural, RF, engineering or environmental,

NEPA or EME matters, as well as other documentation reasonably requested by Lessee. Lessor shall also allow Lessee's personnel or its contractors to visit and investigate the Property and perform structural, engineering and environmental evaluations and tests. Lessor shall use its best efforts to obtain from the holder of any mortgage or deed of trust ("Mortgagee") a non-disturbance agreement in a form provided by or otherwise acceptable to Lessee. In the event Lessee is not satisfied with the Property or Lessee does not receive non-disturbance agreements from all Mortgagees Lessee shall have the right to terminate this Lease by so notifying Lessor in writing on or before the Commencement Date, in which event all funds paid by Lessee shall be returned to Lessee.

**23.** <u>Brokers</u>. Lessor and Lessee each represents to the other that he, she, or it did not deal with any broker or other person who may be entitled to a commission as a result of the transaction contemplated by this Lease, and Lessor and Lessee hereby agree to indemnify and hold the other harmless from a breach of the foregoing representation.

24. <u>Counterparts: Facsimile Signatures</u>. This Lease may be executed in one or more counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same instrument. In addition, a true and correct facsimile copy or computer image of this Agreement shall be treated as and shall have the same effect as an original signed copy of this document.

25. <u>Waiver of Lessor's Lien Rights</u>. Lessor agrees that it does not have any lien rights in Lessee's personal property or the Communications Equipment.

**26.** <u>Mutual Waiver of Consequential Damages and Limitation of Liability</u>. NOTWTHSTANDING ANYTHING TO THE CONTRARY IN THIS LEASE, ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, EACH PARTY AGREES THAT THE OTHER PARTY WILL NOT BE LIABLE FOR ANY COMMERCIAL LOSS; INCONVENIENCE; LOSS OF USE, TIME, DATA, GOOD WILL, REVENUES, PROFITS OR SAVINGS; OR OTHER SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS LEASE, AND EXCEPT FOR PERSONAL INJURY, DEATH, OR DAMAGE TO TANGIBLE PROPERTY, EACH PARTY'S TOTAL LIABILITY, WHETHER FOR BREACH OF CONTRACT, WARRANTY, NEGLIGENCE, STRICT LIABILITY IN TORT, INDEMNIFICATION, OR OTHERWISE, WILL BE LIMITED TO THE DIRECT DAMAGES RECOVERABLE UNDER LAW, BUT NOT TO EXCEED \$3,000,000.00. This limitation of liability provision survives the expiration or termination of this Lease and applies to the fullest extent permitted by law, notwithstanding any contrary provision.

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IN WITNESS WHEREOF the parties have executed this Agreement as of the date first above written.

**CITY OF SIOUX CITY, IOWA** 

By

Robert E. Scott Mayor of Sioux City, Iowa

Certification of City Clerk:

I, Lisa L. McCardle, certify that I am the City Clerk of the City of Sioux City, Iowa, and that Mayor Robert E. Scott, who executed this Agreement for and on behalf of the City, was duly authorized and empowered to do so as of  $March 20^{TB}$ , 2017.

Lisa L. McCardle, City Clerk of the City of Sioux City, Iowa

#### **WOODBURY COUNTY, IOWA**

Bv

Matthew Ung Chairperson

**Certification of County Auditor:** 

I, Patrick Gill, certify that I am the County Auditor of the Woodbury County, Iowa and that Matthew Ung, who executed this Agreement for and on behalf of the County, was duly authorized and empowered to do so as of \_\_\_\_\_\_\_\_\_\_. 2017

Patrick Gill Woodbury County Auditor

STARCOMM, WOODBURY, IOWA By 5 **Douglas Young** Chairperson

Certification of Starcomm:

I, Carrie Anfinson-Haden, certify that I am the Administrative Secretary for Starcomm and that Chairperson Douglas Young, who executed this Lease for and on behalf of Starcomm, was duly authorized and empowered to do so as of Mancu 2, 2017.

10 ANJUNSON

Carie Anfinson-Haden, Administrative Secretary for Starcomm

By:	MOTOROLA SOLUTIONS, INC.	
Title:	Senior Vice President	
Date:	February 28, 2017	

STATE OF	ILLINOIS	)
		: SS
COUNTY OF	СООК	)

On this <u>28th</u> day of <u>February</u>, 20 <u>17</u> before me, the undersigned a Notary Public in and for said County and State, personally appeared <u>James T. Mears</u> to me personally known, who being by me duly sworn, did state that he is the <u>Senior Vice President</u> of said corporation executing the within and foregoing instrument, that said instrument was signed on behalf of said corporation by authority of its Board of Directors ; and that the said <u>James T. Mears</u> as such officer acknowledged the execution of said instrument to be the voluntary act and deed of said corporation by it and by him voluntarily executed.

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NOTARY PUBLIC in and for said COUNTY and STATE



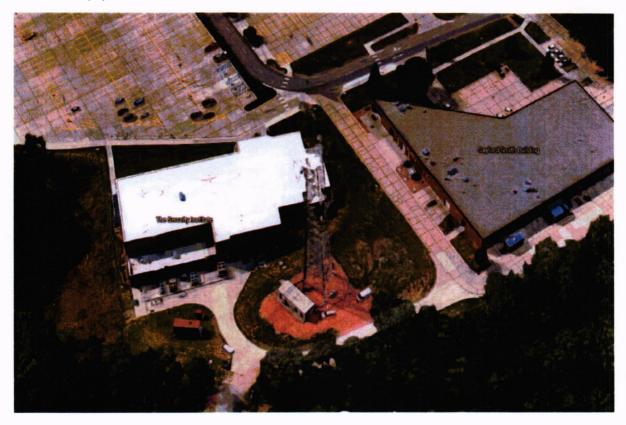
#### **EXHIBIT A**

#### DESCRIPTION OF PROPERTY AND EQUIPMENT TO BE INSTALLED

This exhibit provides the address, location, and general description of the property subject to the Lease.

#### Legal Description:

The site is known as "WIT" consists of a self supporting tower, communications shelter, and backup generator. Additional antennas are planned for this tower resulting in tower strengthening work as documented in the loading analysis report (ISICS-93 WIT twr SA). With the exception of the antennas to be mounted on the tower, all new equipment is to be installed inside the equipment shelter.



#### Address or Location:

Western Iowa Tech (WIT) 4647 Stone Ave Sioux City, IA

#### Coordinates:

42-29-06N/96-20-47W

#### Equipment to be installed on the tower:

- 21ft Omni directional antenna (SC412-HF2LDF) @ 305 feet
- 6ft parabolic dish (SB6-W60AC) @ 310 feet
- 6ft parabolic dish (SB6-W60AC) @ 279 feet
- 6ft parabolic dish (SB6-W60AC) @ 170 feet
- 4ft parabolic dish (SB4-W60AD) @ 138 feet

#### Equipment to be installed inside the shelter:

- Replace prime site LAN switches with 48 ports to add Geo-Prime Site Capability
- Voting comparators with FDMA/TDMA (DDM) capability
- 3 Base Radios to existing Expansion Radio Rack
- Coriant MPLS router
- Additional DC rectifiers to existing Eltek chassis to increase output capacity
- Additional battery strings to increase runtime
- Dispatch wireline connectivity (via backhaul network) to ISICS Core

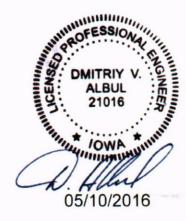


### Structural Analysis of a 330 ft Self-Supporting Tower

Site Name: ISICS – 93 WIT County: Woodbury Location: Sioux City, IA

Checked By:

Derek Hartzell Structural Design Engineer IV





Pyramid Network Services, LLC

6519 Towpath Rd

East Syracuse, NY 13057

May 2016



May 10, 2016

James Reek Pyramid Network Services 6519 Towpath Rd East Syracuse, NY 13057

RE: ISICS – 93 WIT S Lakeport St, Sioux City, IA

James:

We have completed the structural analysis of the subject tower and **have found it to be overloaded within the scope of this analysis to support the proposed antenna loading**. The tower was analyzed according to the requirements of TIA 222-G-2 standard for Woodbury County, IA for 90 mph (3-sec. gust) wind speed with no ice and 50 mph wind with 3/4" ice per the 2009 IBC as referenced by the 2010 Iowa State Building Code. Topographic Category 1, Exposure C, and Structure Class III were used in this analysis.

The subject tower is a 330' Sabre S3TL-29 self-supporting tower consisting of all-bolted sections with pipe legs and angle bracing. Tower face dimensions range from 5'0" at the top to 33'0" at the base. Foundation capacities are based on manufacturer's design reactions.

The loading used in the analysis consisted of the existing antennas/lines as well as the following:

- (1) proposed SC412-HF2LDF antenna @ 305' (height of tip @ 325') fed by 1-1/4" coax cable
- (3) proposed SB6-W60 dishes @ 170', 279' and 310' (each fed by one CNT-400)
- (1) proposed SB4-W60 dish @ 138', lowered from 145' to avoid interference with the existing 8' dish (fed by one CNT-400)

The proposed feed lines were assumed to be located as shown on drawing E-7.

The results of the analysis showed one section of leg, eight sections of diagonals and four sections of horizontals being overloaded with a maximum stress rating of 206.5%. Note that a reinforcement design of these elements is outside the scope of this analysis but can be completed under separate contract. All other tower and foundation elements were loaded within allowable limits.

The maximum displacement of the proposed microwave dishes at service wind speed is as follows:

Elevation(ft)	Dish	Displacement (deg)
309.00	SB6-W60 @ 356.99°	0.56
279.00	SB6-W60 @ 356.99°	0.47
170.00	SB6-W60 @ 106.29°	0.19
138.00	SB4-W60 @ 106.29°	0.15

For a detailed listing of tower performance, please see pages 12 to 14 of the calculations.

We appreciate the opportunity to provide our services to Pyramid Network Services, Motorola and Iowa State EMS and if you have any questions concerning this analysis, please contact us. Please let us know if we can be of further assistance in providing a price quote to design the reinforcement for this tower.

Sincerely,

ARMOR TOWER, INC.

Konzai la Koussaila Ait Oumessaoud

Structural Design Engineer I



#### PRIMARY ASSUMPTIONS USED IN THE ANALYSIS

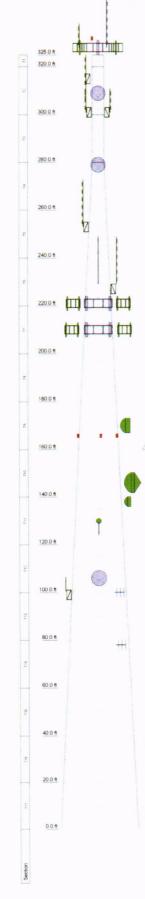
- 1. Leg A is assumed to be oriented Northwest.
- 2. Allowable steel stresses are defined by AISC-LRFD-13<sup>th</sup> Edition and all welds conform to AWS D1.1 specifications.
- Armor Tower has been commissioned to analyze the tower according to the requirements of TIA 222-G-2 for Woodbury County, IA. Per this code, a



basic wind speed of 90 mph (3-sec. gust) without ice and 40 mph with <sup>3</sup>/<sub>4</sub>" ice is recommended. This site is not within a special wind region according to the ASCE 7 wind map. Note that Section 3108.4 of the International Building Code states that "Towers shall be designed to resist wind loads according to TIA/EIA-222".

- 4. The acceptability of the analyzed antenna loading is the responsibility of Pyramid Network Services and its affiliates to confirm with the tower owner.
- 5. Any deviation from the analyzed antenna loading will require a re-analysis of the tower for verification of structural integrity. The proposed feed lines must be located as shown on drawing E-7.
- 6. This analysis assumes all tower members are galvanized adequately to prevent corrosion of the steel and that all tower members are in "like new" condition with no physical deterioration. This analysis also assumes the tower has been maintained properly per TIA 222-G Annex J recommended inspection and maintenance procedures for tower owners and is in a plumb condition. Armor Tower has not completed a condition assessment of the tower.
- 7. No accounting for residual stresses due to incorrect tower erection can be made. This analysis assumes all bolts are appropriately tightened providing necessary connection continuity and that the installation of the tower was performed by a qualified tower erector.
- This analysis has compared the current reactions with the tower design reactions. It is our assumption
  that the foundations were properly designed and installed and are able to develop the full tower
  design reactions.
- 9. No conclusions, expressed or implied, shall indicate that Armor Tower has made an evaluation of the original design, materials, fabrication, or potential installation or erection deficiencies. Any information contrary to that assumed for the purpose of preparing this analysis could alter the findings and conclusions stated herein.
- 10. Tower member sizes and geometry is based on customer-supplied data, Sabre Communications drawings dated July 29, 2004. Existing equipments are based on a mapping report done by SGS dated July 7, 2015. It is our assumption that this data is complete and accurately reflects the existing conditions of the tower and equipment. Armor Tower has not been commissioned to field validate this data. Armor Tower reserves the right to add to or modify this report as more information becomes available. Proposed equipment was outlined in the files (RF design State of Iowa Site Book9f) and (State of Iowa Summary using Leased Towers for MW Repeaters) sheets supplied by the customer.





	DESIGNED APPURTENANCE LOADING				
TYPE	ELEVATION	TYPE	ELEVATION		
ighting	330	LPA-185063/12CF W. MtgPipe (Alpha)	221		
	328	LPA-185063/12CF W. MtgPipe (Alpha)	221		
	328	TMA (9"x12"x3") (Beta)	212		
	328	TMA (9"x12"x3") (Beta)	212		

TYPE	ELEVATION	TYPE	ELEVATION
Flash Beacon Lighting	330	LPA-185063/12CF W. MtgPipe (Alpha)	221
Halo Mount	328	LPA-185063/12CF W. MtgPipe (Alpha)	221
18' Dipole	328	TMA (9"x12"x3") (Beta)	212
18 Dipole	328	TMA (9"x12"x3") (Beta)	212
10 Dipole	328	TMA (9"x12"x3") (Gamma)	212
10' Dipole	328	TMA (9"x12"x3") (Alpha)	212
12"x4"x3" TMA	328	TMA (9"x12"x3") (Gamma)	212
1.5"Sch40 x 8ft (P-Motorola Stabilizer)	324	TMA (9"x12"x3") (Alpha)	212
1.5"Sch40 x 8ft (Stabilizer)	321	(2) BTS/520015	210
3' Sidearm Mount (P-Motorola)	315	3'x6"x3" Antenna	210
4"Sch40 x 6ft (dish mount) (P-Motorola)	309	3'x6"x3" Antenna	210
SB6-W60 (P-Motorola @ 356.99*)	309	6' Sector Boom	210
the of the local division of the barrier and the first operation of the barrier of the second s		3'x6"x3" Antenna	210
SC412-HF2LDF (P-Motorola)	305	3'x6"x3" Antenna	210
3' Sidearm Mount	301	6' Sector Boom	210
3' Sidearm Mount	301	(2) BTS/520015	210
3' Sidearm Mount	301	4"Sch40 x 6ft (dish mount)	170
20' Dipole	301	(P-Motorola)	
10' Dipole	301	SB6-W60 (P-Motorola @ 106.29")	170
10' Dipole	301	OBLight	165
4"Sch40 x 6ft (dish mount) (P-Motorola)	279	OB Light	165
S86-W60 (P-Motorola @ 356.99*)	279	OB Light	165
1.5"Sch40 x Bft (Stabilizer)	263	Camera	147
1.5"Sch40 x 8ft (Stabilizer)	263	4"Sch40 x 6ft (Dish mount)	146
3' Sidearm Mount	253	1.25 Sch.40 x 15ft (Dish support)	146
3' Sidearm Mount	253	RFS PAD8-59	146
DB204-A	253	4"Sch40 x 6ft (dish mount) (P-Motorola)	138
DB204-A	253	SB4-W60 (P-Motorola @ 106.29*)	138
1.5"Sch40 x 8ft (Stabilizer)	249	1.5"Sch40 x 5ft (Dish mount)	130
1.5 Sch40 x 8ft (Stabilizer)	249	M# SP-4.7/2' Dia, Dish	130
DB264-A	227	SODU/ExtendAir	129
3' Sidearm Mount	227	3' Sidearm Mount	129
DB224	225	MFB4803	124
3' Sidearm Mount	225	MF 54603 RFS PAD6/59	124
		and a start of a start of the s	106
LPA-185063/12CF W. MtgPipe (Gamma)	221	4"Sch40 x 6ft (Dish mount) Yagi	106
LPA-185063/12CF W. MtgPipe	221	DB230-J	99
(Gamma)		3' Sidearm Mount	99
LPA-185063/12CF W. MtgPipe (Beta)	221	6 ampi	99
LPA-185063/12CF W. MtgPipe (Beta)	221	Yagi	78
Sabre 12' T-Boom (set of 3)	221	100	10

#### MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-50	50 ksi	62 ksi	A36	36 ksi	58 ksi

#### TOWER DESIGN NOTES

**COVER DESIGN NOTES** 

 1. Tower is located in Woodbury County, Iowa.

 2. Tower designed for a 90.00 mph basic wind in accordance with the TIA-222-G Standard.

 3. Tower is also designed for a 90.00 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.

 5. Deflections are based upon a 60.00 mph wind.

 6. Tower Structure Class III.

 7. Topographic Category 1 with Crest Height of 0.00 ft

 8. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.

 9. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.

 10. Weikis are fabricated with ER-70S-6 electrodes.

 11. Appurtenance are indicated as (P)roposed. All others are existing.

 12. TOWER RATING: 206.5%

ALL REACTIONS ARE FACTORED

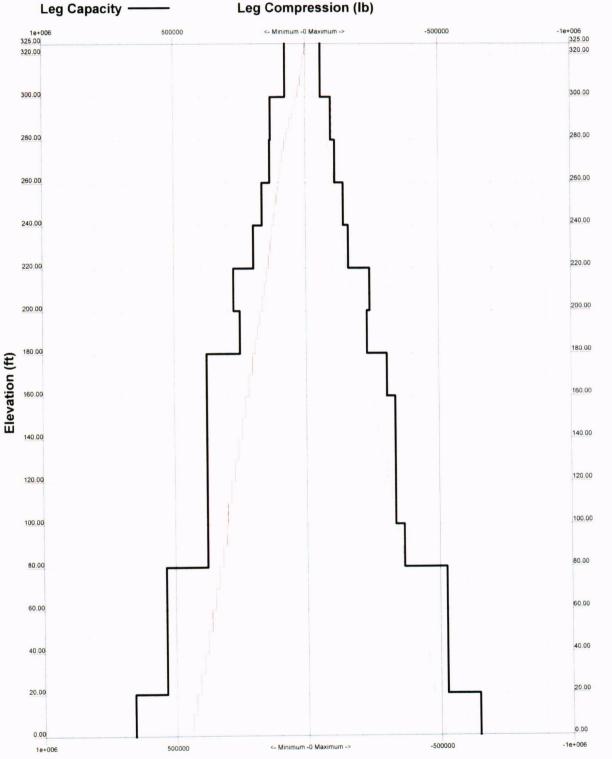
MAX. CORNER REACTIONS AT BASE DOWN: 533820 lb SHEAR: 57541 lb



AXIAL 275265 lb SHEAR MOMENT 32309 lb 5512 kip-ft 1 TORQUE 11 kip-ft 50.00 mph WIND - 0.75 in ICE AXIAL 83987 Ib MOMENT SHEAR 96148 lb له .... 14459 kip-ft

TORQUE 31 kip-ft REACTIONS - 90.00 mph WIND

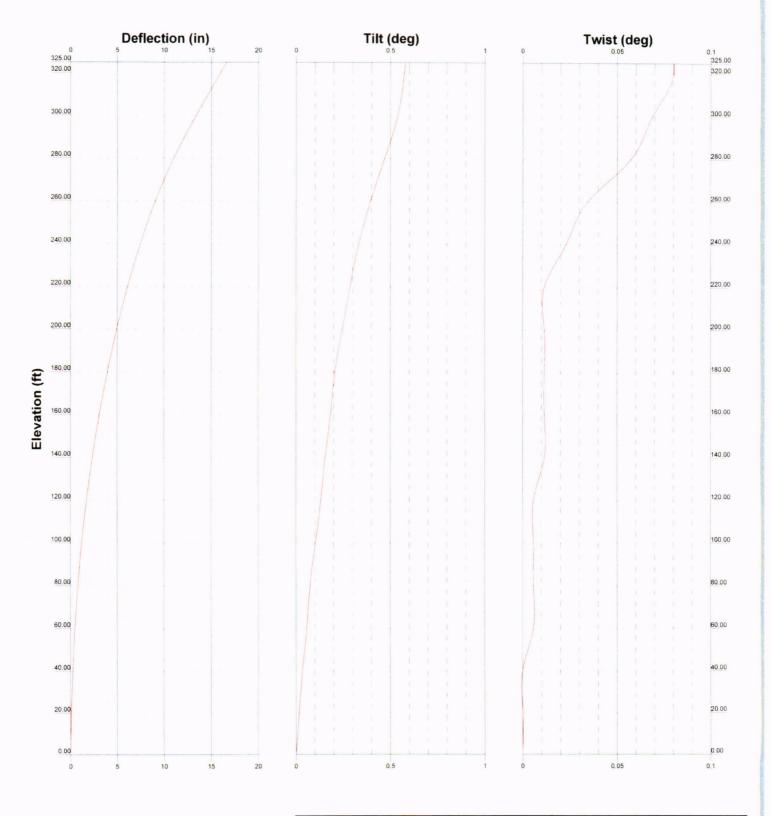
	Armor Tower Inc	3	30' SELF-SUPPORTI	NG TOWER	ANALYSIS
ARMOR	9 N Main St		t ISICS - 93 WIT		
<b>IOWER</b>	Cortland NY	Client	Pyramid Network Services	Drawn by KA	App'd
	Phone: (607) 434-0754	0	TIA-222-G	Date 05/10/16	Scale NTS
		Path	Participation backwork Structures State Earth In OFFICIA	Ad her Gallery Selection (MAT at	Dwg No. E-1



TIA-222-G - 90.00 mph/50.00 mph 0.75 in Ice Exposure C

Armor Tower Inc 9 N Main St Cortland, NY Phone: (607) 434-0754 FAX: (866) 870-0840

Point State (100) State: St



ARMOR	9 N Main St	Job: 330' SELF-SUPPORTII Project: ISICS - 93 WIT	NG TOWER	ANALYSIS	
TOWER	Cortland, NY	Client: Pyramid Network Services	Drawn by: KA	App'd	
	Phone: (607) 434-0754	Code: TIA-222-G	Date: 05/10/16	Scale: NTS	
		Path: Z:Pyramid Network Snycikowa State EMS/93 WIT/2016-	04 twr SAttax tokter193 WIT.er	Dwg No. E-5	

Round Flat App In Face	App Out Face
Thet App III Face	App Out Face
1-1/4" (P-Motorola),	
(4) CNT-400 (3/8") (P-Motorola)	
	LDF6-50A (1-1/4 FOAM)
	LDF1-50A (1/4 FOAM) (10) LDF5-50A (7/8 FOAM) Feedline Ladder (Af)
	(3) LDF4-50A (1/2 FOAM)
	(3) LDF4-50A (1/2 FOAM) (2) RFS E60J • (4) LDF4.5-50 (5/8 FOAM) (2) LDF2-50A (3/8 FOAM)
	Safety Line 3/8 Lighting drop cord
610F150A restine to the roam	
CORTAGE CON	
on the sone	
LOFT S 4 LOF	
(a) ·	

Feed Line Plan

ARMOR TOWER	Armor Tower Inc 9 N Main St	Projec	30' SELF-SUPPORTI		ANALYSIS	
<b>ITOWER</b>	Cortland, NY	Client:	Pyramid Network Services	Drawn by: KA	App'd:	
	Phone: (607) 434-0754	0.1	TIA-222-G	Date: 05/10/16	Scale: NTS	
	FAX: (866) 870-0840		Pyramid Network Szycikowa State EMSI93 WIT/2016-	04 two SA\tox tokder(93 WIT.er	Dwg No. E-7	

	Job 330' SELF-SUPPORTING TOWER ANALYSIS	Page 1 of 12
Armor Tower Inc 9 N Main St	Project ISICS - 93 WIT	Date 11:17:44 05/10/16
Cortland, NY Phone: (607) 434-0754 FAX: (866) 870-0840	Client Pyramid Network Services	Designed by KA

		Load Combinations	
Comb.		Description	
No.	DestOal		
1	Dead Only		
3	1.2 Dead+1.6 Wind 0 deg - No Ice		
4	0.9 Dead+1.6 Wind 0 deg - No Ice		
5	1.2 Dead+1.6 Wind 30 deg - No Ice 0 9 Dead+1.6 Wind 30 deg - No Ice		
6	1.2 Dead+1.6 Wind 60 deg - No Ice		
7	0.9 Dead+1.6 Wind 60 deg - No Ice		
8	1.2 Dead+1.6 Wind 90 deg - No Ice		
9	0.9 Dead+1.6 Wind 90 deg - No Ice		
10	1.2 Dead+1.6 Wind 120 deg - No Ice		
11	0.9 Dead+1.6 Wind 120 deg - No Ice		
12	1.2 Dead+1.6 Wind 150 deg - No Ice		
13	0.9 Dead+1.6 Wind 150 deg - No Ice		
14	1.2 Dead+1.6 Wind 180 deg - No Ice		
15	0.9 Dead+1.6 Wind 180 deg - No Ice		
16	1.2 Dead+1.6 Wind 210 deg - No Ice		
17	0.9 Dead+1.6 Wind 210 deg - No Ice		
18	1.2 Dead+1.6 Wind 240 deg - No Ice		
19	0.9 Dead+1.6 Wind 240 deg - No Ice		
20	1.2 Dead+1.6 Wind 270 deg - No Ice		
21	0.9 Dead+1.6 Wind 270 deg - No Ice		
22	1.2 Dead+1.6 Wind 300 deg - No Ice		
23	0.9 Dead+1.6 Wind 300 deg - No Ice		
24	1.2 Dead+1.6 Wind 330 deg - No Ice		
25	0.9 Dead+1.6 Wind 330 deg - No Ice		
26	1.2 Dead+1.0 Ice+1.0 Temp		
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp		
28	1.2 Dead+1.0 Wind 30 deg+1.0 lce+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 47	Dead+Wind 210 deg - Service		
47	Dead+Wind 240 deg - Service Dead+Wind 270 deg - Service		
48	Dead+Wind 300 deg - Service		
50	Dead+Wind 330 deg - Service		

ARMOR TOWER ENGINEERING	Job 330' SELF-SUPPORTING TOWER ANALYSIS	Page 2 of 12
Armor Tower Inc 9 N Main St	Project ISICS - 93 WIT	Date 11:17:44 05/10/16
Cortland, NY Phone: (607) 434-0754 FAX: (866) 870-0840	Client Pyramid Network Services	Designed by KA

### **Maximum Tower Deflections - Service Wind**

Section	Elevation	Horz.	Gov.	Tilt	Twist
No.		Deflection	Load		
	ft	in	Comb.	o	o
Tl	325 - 320	16.65	39	0.577	0.078
T2	320 - 300	15.99	39	0.574	0.078
T3	300 - 280	13.40	39	0.537	0.071
T4	280 - 260	11.04	39	0.471	0.054
T5	260 - 240	9.07	39	0.395	0.035
T6	240 - 220	7.47	39	0.333	0.022
T7	220 - 200	6.11	47	0.284	0.014
T8	200 - 180	4.95	47	0.249	0.009
Т9	180 - 160	3.95	47	0.209	0.009
T10	160 - 140	3.09	47	0.182	0.010
T11	140 - 120	2.34	47	0.156	0.010
T12	120 - 100	1.70	47	0.129	0.008
T13	100 - 80	1.19	47	0.102	0.007
T14	80 - 60	0.78	47	0.075	0.005
T15	60 - 40	0.47	43	0.055	0.004
T16	40 - 20	0.24	43	0.036	0.002
T17	20 - 0	0.09	43	0.016	0.001

## **Critical Deflections and Radius of Curvature - Service Wind**

Elevation	Appurtenance	Gov. Load	Deflection	Tilt	Twist	Radius of Curvature
ft		Comb.	in	0	0	ft
330.00	Flash Beacon Lighting	39	16.65	0.577	0.078	68446
328.00	Halo Mount	39	16.65	0.577	0.078	68446
324.00	1.5"Sch40 x 8ft	39	16.52	0.576	0.078	68446
321.00	1.5"Sch40 x 8ft	39	16.12	0.575	0.078	68446
315.00	3' Sidearm Mount	39	15.33	0.569	0.077	44251
309.00	<b>SB6-W6</b> 0	39	14.54	0.558	0.075	32135
305.00	SC412-HF2LDF	39	14.03	0.549	0.073	27130
301.00	3' Sidearm Mount	39	13.52	0.539	0.071	23262
279.00	SB6-W60	39	10.93	0.467	0.053	11205
263.00	1.5"Sch40 x 8ft	39	9.34	0.406	0.037	12110
253.00	3' Sidearm Mount	39	8.47	0.372	0.029	14565
249.00	1.5"Sch40 x 8ft	39	8.15	0.359	0.027	16260
227.00	DB264-A	47	6.56	0.299	0.016	24681
225.00	DB224	47	6.43	0.295	0.015	25147
221.00	Sabre 12' T-Boom (set of 3)	47	6.18	0.286	0.014	26027
212.00	TMA (9"x12"x3")	47	5.62	0.269	0.012	26429
210.00	6' Sector Boom	47	5.51	0.266	0.011	26438
170.00	SB6-W60	47	3.50	0 194	0.010	40277
165.00	OB Light	47	3.29	0.188	0.010	43476
147.00	Camera	47	2.59	0.166	0.010	42224
146.00	RFS PAD8-59	47	2.55	0.164	0.010	41883
138.00	SB4-W60	47	2.27	0.153	0.010	40206
130.00	M# SP-4 7/2' Dia, Dish	47	2.01	0.143	0.009	40898
129.00	SODU/ExtendAir	47	1.97	0.141	0.009	40996
124.00	3' Sidearm Mount	47	1.82	0.134	0.008	41489
106.00	RFS PAD6/59	47	1.33	0.110	0.007	39015
100.00	Yagi	47	1.19	0.102	0.007	38685
99 00	3' Sidearm Mount	47	1.16	0.100	0.007	39075
78.00	Yagi	47	0.75	0.072	0.005	61277

	Job 330' SELF-SUPPORTING TOWER ANALYSIS	Page 3 of 12
Armor Tower Inc 9 N Main St	Project ISICS - 93 WIT	Date 11:17:44 05/10/16
Cortland, NY Phone: (607) 434-0754 FAX: (866) 870-0840	Client Pyramid Network Services	Designed by KA

### **Bolt Design Data**

Section No.	Elevation ft	Component Type	Bolt Grade	Maximum Load per Bolt	Allowable Load lb	Ratio Load Allowable	Allowable Ratio	Criteria
TI	325	Diagonal	A325X	<i>lb</i> 3181.65	5811.33	0.547 🖌	1	Member Block Shear
		Top Girt	A325X	714.24	5220.00	0.137 🖌	1	Member Bearing
T2	320	Diagonal	A325X	4348.76	5811.33	0.748	1	Member Block Shear
		Top Girt	A325X	635.81	5811.33	0.109 🖌	1	Member Block Shear
T3	300	Diagonal	A325X	5671.24	5811.33	0.976 🖌	1	Member Block Shear
		Top Girt	A325X	339.26	5811.33	0.058 🖌	1	Member Block Shear
T4	280	Diagonal	A325X	3726.58	5811.33	0.641	1	Member Block Shear
		Top Girt	A325X	644.78	13050.00	0.049 🖌	1	Member Bearing
T5	260	Diagonal	A325X	3721.47	5811.33	0.640 🖌	1	Member Block Shear
T6	240	Diagonal	A325X	4207.38	6830.86	0.616 🗸		Member Block Shear
T7	220	Diagonal	A325X	6429.77	7830.00	0.821 🖌	1	Member Bearing
T8	200	Diagonal	A325X	6891.23	8971.88	0.768	1	Member Block Shear
T9	180	Diagonal	A325X	8214.83	12615.00	0.651 🖌	1	Member Bearing
T10	160	Diagonal	A325X	9373.64	12615.00	0.743 🖌	· 1	Member Bearing
TH	140	Diagonal	A325X	10859.80	12615 00	0.861 🖌	1	Member Bearing
T12	120	Diagonal	A325X	11975.00	12615.00	0.949 🖌	1	Member Bearin
T13	100	Diagonal	A325X	8053.49	10263.30	0.785	1	Member Block Shear
		Horizontal	A325X	5906.72	10263.30	0.576	1	Member Block Shear
T14	80	Diagonal	A325X	8280.43	10263.30	0.807 🖌		Member Block Shear
		Horizontal	A325X	6567.32	11622.70	0.565 🖌	1	Member Block Shear
T15	60	Diagonal	A325X	8976.41	11622.70	0.772 🖌	1	Member Block Shear
		Horizontal	A325X	7244.70	14528.30	0.499 🖌	1	Member Block Shear
T16	40	Diagonal	A325X	9369.89	12506.30	0.749	• 1	Member Block Shear
		Horizontal	A325X	7840.26	18759.40	0.418 🖌	1	Member Block Shear
T17	20	Diagonal	A325X	9775.12	12506.30	0.782 🖌		Member Block Shear
		Horizontal	A325X	8488.70	18759.40	0.453 🖌	1	Member Block Shear

	JOD 330' SELF-SUPPORTING TOWER ANALYSIS	Page 4 of 12
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## **Compression Checks**

i sete to				Leg Do	esign	Data (C	ompres	sion
Section No.	Elevation	L	$L_u$	Kl/r	A	$P_{u}$	$\phi P_n$	Ratio P <sub>u</sub>
	ft	ft	ft		$in^2$	lb	lb	$\phi P_n$
T1	325 - 320	5.00	5.00	63.3 K=1.00	1 70	-8069.65	57192.30	0.141
T2	320 - 300	20.00	5.00	63.3 K=1.00	1.70	-32282.90	57192.30	0.564
T3	300 - 280	20.00	5.00	67.1 K=1.00	2.95	-77531.30	95329.90	0.813
T4	280 - 260	20.03	5.01	52.9 K=1.00	3.02	-105780.00	110613.00	0.956
T5	260 - 240	20.03	5.01	46.0 K=1.00	3.68	-129426.00	141805.00	0.913
T6	240 - 220	20.03	6.68	54.3 K=1.00	4.41	-151917.00	159914.00	0.950
Τ7	220 - 200	20.03	6.68	43.6 K=1.00	6.11	-180788.00	239211.00	0.756
Т8	200 - 180	20.03	6.68	35.7 K=1.00	5.58	-211099.00	228830.00	0.923
Т9	180 - 160	20.03	10.02	54.8 K=1.00	8.40	-238889.00	303748.00	0.786
T10	160 - 140	20.03	10.02	40.9 K=1.00	8.40	-270083.00	334421.00	0.808
TH	140 - 120	20.03	10.02	40.9 K=1.00	8.40	-303423.00	334421.00	0.907
T12	120 - 100	20.03	10.02	40.9 K=1.00	8.40	-337339.00	334421.00	1.009 X
T13	100 - 80	20.03	5.01	20.5 K=1.00	8.40	-361159.00	366576.00	0.985
T14	80 - 60	20.03	5.01	16.4 K=1.00	11.91	-397098.00	525490.00	0.756
T15	60 - 40	20.03	5.01	16.4 K=1.00	11.91	-434356.00	525490.00	0.827
T16	40 - 20	20.03	5.01	16.4 K=1.00	11.91	-473437.00	525490.00	0.901
T17	20 - 0	20.03	5.01	13.7 K=1.00	14.58	-513832.00	647072.00	0.794

			Dia	agonal	Desi	gn Data	(Comp	ression)
Section No.	Elevation	L	L <sub>u</sub>	Kl/r	A	$P_{u}$	$\phi P_n$	Ratio $P_u$
	ft	ft	ft		$in^2$	lb	lb	$\phi P_n$
T1	325 - 320	6.20	3.10	108.3 K=1.00	0.62	-1598.46	10848.60	0.147 1
T2	320 - 300	6.20	3.10	108.3	0.62	-4202.92	10848.60	0.387

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Section No.	Elevation	L	$L_{\mu}$	Kl/r	A	$P_{u}$	$\phi P_n$	Ratio
INO.	ft	ft	ft		in <sup>2</sup>	lb	lb	$\frac{P_u}{\phi P_n}$
				K=1.00				~
T3	300 - 280	6.20	3.10	108.3 K=1.00	0.62	-5601 22	10848.60	0.516
T4	280 - 260	7.45	3.86	135.0 K=1.00	0.62	-3442.18	7696.82	0.447
T5	260 - 240	9.08	4.67	163.1 K=1.00	0.62	-3841.89	5274.61	0.728
T6	240 - 220	11.55	5.95	181.3 K=1.00	0.71	-4526.32	4911.55	0.922
Τ7	220 - 200	13.20	6.77	164.2 K=1.00	0.90	-6646.75	7562.30	0.879
T8	200 - 180	14.87	7.60	184.4 K=1.00	0.90	-7085.24	5995.62	1.182 X
T9	180 - 160	18.07	9.31	188.7 K=1.00	1.44	-8371.74	9140.37	0.916
T10	160 - 140	19.65	10.09	191.9 K=1.00	1 56	-9629.97	9571.06	1.006 X
T11	140 - 120	21.42	10 97	189.7 K=1.00	1 69	-11217.60	10607.30	1.058 <sup>1</sup>
T12	120 - 100	23.23	11.87	194.1 K=1.00	1.81	-12430.40	10851.30	1.146 <sup>1</sup>
T13	100 - 80	16.01	15.55	200.6 K=1.00	1.44	-16683.40	8080.38	2.065
T14	80 - 60	16.80	15.85	151.9 K=0.88	1.56	-17475.30	15271.70	1.144 X
T15	60 - 40	17.62	16.68	143.3 K=0.91	1.81	-19118.00	19923.00	0.960
T16	40 - 20	18.45	17.46	147.8 K=0.89	1.81	-20010.40	18717.30	1.069 X
T17	20 - 0	19.30	18.22	152.2 K=0.88	1.81	-20688.30	17645.80	1.172 X

## Horizontal Design Data (Compression)

Section No.	Elevation	L	$L_u$	Kl/r	A	$P_{\mu}$	$\phi P_n$	$Ratio P_u$
	ft	ft	ft		in <sup>2</sup>	lb	lb	$\phi P_n$
T13	100 - 80	24.00	11.64	221.4 K=1.00	1.56	-12206.50	7191.31	1.697 X
T14	80 - 60	26.00	12.35	182.5 K=0.90	1.81	-13313.60	12276.30	1.084 X
T15	60 - 40	28.00	13.35	183.0 K=0.90	2.40	-14630.80	16194 50	0.903

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Section No.	Elevation	L	$L_u$	Kl/r	A	$P_u$	φ <i>P</i> <sub>n</sub>	Ratio P <sub>u</sub>
ft	ft	ft		in <sup>2</sup>	lb	lb	$\phi P_n$	
T16	40 - 20	30.00	14.32	208.8 K=0.88	2.67	-15759.30	13842 00	1.139 X
T17	20 - 0	32.00	15.24	220.3 K=0.88	2.67	-16992.60	12430.90	1.367 X

## Top Girt Design Data (Compression)

Section Elevation No.	L	$L_u$	Kl/r	$A \qquad P_u \qquad \phi P_n$		$\phi P_n$	Ratio P <sub>u</sub>	
	ft	ft	ft	ft		lb	lb	$\phi P_n$
TI	325 - 320	5.00	4.76	122.7 K=1.00	1.36	-995.30	19963.70	0.050
T2	320 - 300	5.00	4.76	166.3 K=1.00	0.62	-1044.85	5071.88	0.206
T3	300 - 280	5.00	4.76	166.3 K=1.00	0.62	-402.83	5071.88	0.079
T4	280 - 260	5.00	4.76	166.3 K=1.00	0.62	-644.78	5071 88	0 127

## Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation	L	$L_{u}$	Kl/r	A	$P_{u}$	$\phi P_n$	Ratio P <sub>u</sub>
110.	ft	ft	ft		$in^2$	lb	lb	$\phi P_n$
T13	100 - 80	6.00	5.64	114.3 K=1.00	1.44	-6263.27	23443.30	0.267
T14	80 - 60	6.50	6.05	122.7 K=1.00	1.44	-6886.53	21126.30	0.326
T15	60 - 40	7.00	6.55	133.9 K=1.00	2.11	-7532.65	26569.10	0.284
T16	40 - 20	7.50	7.05	144.2 K=1.00	2.11	-8210.41	22935.10	0.358
T17	20 - 0	8.00	7.47	152.7 K=1.00	2.11	-8910.93	20447.50	0.436

## Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation	L	$L_u$	Kl/r	A	$P_{u}$	$\mathbf{\Phi} P_n$	Ratio P <sub>u</sub>
	ft	ft	ft		$in^2$	lb	lb	$\phi P_n$
T13	100 - 80	7.62	7.15	144.8 K=1.00	1.44	-3977.83	15508.50	0.256
T14	80 - 60	8.01	7.43	150.6	1.44	-4240.62	14335.50	0.296

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Section No.	Elevation	L	$L_u$	KU/r	A	$P_{\mu}$	$\phi P_n$	Ratio P <sub>u</sub>
	ft	ft	ft		in <sup>2</sup>	lb	lb	$\phi P_n$
				K=1.00				1
T15	60 - 40	8.40	7.84	159.0 K=1.00	1.44	-4520.34	12867.90	0.351
T16	40 - 20	8.81	8.26	167.5 K=1.00	1.44	-4821.23	11593 00	0.416
T17	20 - 0	9.22	8.59	163.4 K=1.00	1.56	-5137.19	13200.30	0.389 1

## Inner Bracing Design Data (Compression)

Section No.	Elevation	Elevation $L = L_u$	Kl/r	A	$P_{u}$	$\phi P_n$	Ratio P <sub>u</sub>	
	ft	ft	ft		in	lb	lb	$\phi P_n$
T13	100 - 80	12.00	12.00	241.6 K=1.00	1.09	-22.75	4218.27	0.005
T14	80 - 60	13.00	13.00	247.2 K=1.00	1.56	-25.25	5765.99	0.004
T15	60 - 40	14.00	14.00	242.1 K=1.00	1.69	-27 44	6515.19	0.004
T16	40 - 20	15.00	15.00	245.2 K=1.00	1.81	-27.40	6799.32	0.004
T17	20 - 0	16.00	16.00	241.5 K=1.00	1.94	-26.59	7514.04	0.004

## **Tension Checks**

			Leg Design Data (Tension)							
Section No.	Elevation	L	$L_u$	Kl/r	A	$P_u$	$\phi P_n$	Ratio P <sub>u</sub>		
	ft	ft	ft		in	lb	lb	$\phi P_n$		
TI	325 - 320	5.00	5.00	63.3	1.70	2879.07	76682.30	0.038		
T2	320 - 300	20.00	5.00	63.3	1 70	28784.70	76682 30	0.375		
T3	300 - 280	20.00	5.00	67.1	2 95	72883.60	132536.00	0.550		
T4	280 - 260	20.03	5.01	52.9	3 02	99945.20	135717.00	0.736		
T5	260 - 240	20.03	5.01	46.0	3.68	121699.00	165529.00	0.735		
Τ6	240 - 220	20.03	6.68	54.3	4.41	141237.00	198335.00	0.712		
T7	220 - 200	20.03	6.68	43.6	6.11	166260.00	274880 00	0.605		

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Section No.	Elevation	L	$L_{\mu}$	Kl/r	A	$P_{u}$	$\phi P_n$	Ratio $P_u$
	ft	ft	ft		$in^2$	lb	lb	$\phi P_n$
Τ8	200 - 180	20.03	6.68	35.7	5.58	193455.00	251161.00	0.770
Т9	180 - 160	20.03	10.02	54.8	8 40	217859.00	378222.00	0.576
T10	160 - 140	20.03	10.02	40.9	8.40	244744 00	377967.00	0.648
T11	140 - 120	20.03	10.02	40.9	8.40	272979.00	377967.00	0.722 1
T12	120 - 100	20.03	10.02	40.9	8.40	301229.00	377967.00	0.797
T13	100 - 80	20.03	5.01	20.5	8 40	319860.00	377967.00	0.846
T14	80 - 60	20.03	5.01	16.4	11.91	349107.00	535873.00	0.651
T15	60 - 40	20.03	5.01	16.4	11.91	378218.00	535873.00	0.706 1
T16	40 - 20	20.03	5.01	16.4	11.91	408321.00	535873.00	0.762
T17	20 - 0	20.03	5.01	13.7	14.58	438875.00	656053.00	0.669 1
								~

Diagonal Design Data (Tension)
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Section No.	Elevation	L	$L_u$	Kl/r	A	$P_u$	$\phi P_n$	Ratio P <sub>u</sub>
	ft	ft	ft		$in^2$	lb	lb	$\phi P_n$
TI	325 - 320	6.20	3.10	69.3	0.36	3181.65	15675.30	0.203
T2	320 - 300	6.20	3.10	69.3	0.36	4348.76	15675.30	0.277
T3	300 - 280	6.20	3.10	69.3	0.36	5671.24	15675.30	0.362
T4	280 - 260	6.34	3.32	74.2	0.36	3726.58	15675.30	0.238
T5	260 - 240	8.65	4.46	99.6	0.36	3721.47	15675.30	0.237
T6	240 - 220	11.55	5.95	115.8	0.43	4207.38	18739.00	0.225
T7	220 - 200	13.20	6.77	104.4	0.57	6429.77	24839.90	0.259
T8	200 - 180	14.87	7.60	117.3	0.55	6891.23	24075.20	0.286
Т9	180 - 160	18.07	9.31	120.1	0.92	8214.83	39843.30	0.206
T10	160 - 140	19.65	10.09	132.6	1.01	9373.64	43758.30	0.214
ТП	140 - 120	21.42	10.97	120.8	1.10	10859.80	47999.50	0.226

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No.	ft	ft	ft		in <sup>2</sup>	lb	$\varphi P_n$	$P_u$
 	<i>J</i> .	<i>.</i>	<u>J</u> i		in	10	lb	$\phi P_n$
T12	120 - 100	23.23	11.87	132.6	1.19	11975.00	51914.50	0.231
T13	100 - 80	16.01	15.55	200.6	0.94	16107.00	40862.80	0 394 1
T14	80 - 60	16.80	15.85	176.2	1.03	16560.90	44777.80	0.370 1
T15	60 - 40	17.62	16.68	161.6	1.22	17952.80	52934.10	0.339 1
T16	40 - 20	18.45	17.46	169.5	1.19	18739.80	51914.50	0.361
T17	20 - 0	19.30	18.22	176.7	1.19	19550.20	51914.50	0.377

	Horizontal Design Data (Tension)										
Section No.	Elevation	L	$L_u$	Kl/r	A	$P_{u}$	$\phi P_n$	Ratio P <sub>u</sub>			
	ft	ft	ft		in <sup>2</sup>	lb	lb	$\phi P_n$			
T13	100 - 80	24.00	11.64	153.0	1.03	11813.40	44777.80	0.264			
T14	80 - 60	26.00	12.35	140.2	1.22	13134.60	52934.10	0.248			
T15	60 - 40	28.00	13.35	131.1	1.62	14489.40	70653.50	0.205			
T16	40 - 20	30.00	14.32	166.1	1.76	15680.50	76403.70	0.205			
T17	20 - 0	32.00	15.24	176.6	1.76	16977.40	76403.70	0.222 1			

Top Girt Design Data (Tension)

Section No.	Elevation	L	$L_u$	Kl/r	A	$P_u$	$\phi P_n$	Ratio P"
	ft	ft ft	ft		$in^2$	Ib	lb	$\phi P_n$
TI	325 - 320	5.00	4.76	122.7	0.95	714.24	41355.80	0.017
T2	320 - 300	5.00	4.76	106.4	0.36	635.81	15675.30	0.041
T3	300 - 280	5.00	4.76	106.4	0.36	339.26	15675.30	0.022
T4	280 - 260	5.00	4.76	106.4	0.36	233.22	15675.30	0.015

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Section	Elevation							Data (Tens	
No.		L	$L_{\mu}$	Kl/r	A	$P_u$	$\phi P_n$	Ratio $P_u$	
	ft	ft	ft		$in^2$	lb	lb	$\phi P_n$	
T13	100 - 80	6.00	5.64	72.8	1.44	6263.27	46656.00	0.134	
T14	80 - 60	6.50	6.05	78.1	1.44	6886.53	46656.00	0.148 1	
T15	60 - 40	7.00	6.55	86.1	2.11	7532.65	68364.00	0.110	
T16	40 - 20	7.50	7.05	92.7	2.11	8210.41	68364.00	0.120 1	
T17	20 - 0	8.00	7.47	98.2	2.11	8910.93	68364.00	0.130 1	

Ratio P <sub>u</sub>	$\phi P_n$	$P_{u}$	A	Kl/r	$L_u$	L	Elevation	Section No.
$\phi P_n$	16	lb	$in^2$		ft	ft	ft	
0.087	46656.00	4049.04	1.44	89.8	6.96	7.43	100 - 80	T13
0.092	46656.00	4303.58	1.44	93.4	7.24	7.81	80 - 60	T14
0.098 1	46656.00	4576.44	1.44	98.6	7.64	8.20	60 - 40	T15
0.104	46656.00	4871.63	1.44	104.0	8.06	8.60	40 - 20	T16
0.103	50544.00	5182.73	1.56	110.2	8.38	9.02	20 - 0	T17

# Inner Bracing Design Data (Tension)

Section No.	Elevation	L	$L_{u}$	Kl/r	A	$P_{u}$	$\phi P_n$	Ratio P <sub>u</sub>
	ft	ft	ft	ft	in <sup>2</sup>	lb	lb	$\phi P_{\mu}$
T13	100 - 80	11.50	11.50	147.0	1.09	2.54	35316.00	0.000
T14	80 - 60	12.50	12.50	164.3	1.56	3.26	50544.00	0.000
T15	60 - 40	13.50	13.50	148.6	1.69	1.52	54756.00	0.000
T16	40 - 20	14.50	14.50	161.9	1.81	0.07	58644.00	0.000

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Cortland, NY Phone: (607) 434-0754 FAX: (866) 870-0840	Client Pyramid Network Services	Designed by KA

Section Capacity Table

#### Section Elevation Component Critical P oPallo % Pass ft Type Element lb No. 16 Capacity Fail TI 325 - 320 Leg -8069.65 3 57192.30 14.1 Pass T2 320 - 300 Leg 15 -32282.90 57192.30 56.4 Pass T3 300 - 280 Leg 45 -77531.30 95329.90 813 Pass T4 280 - 260 75 -105780.00 Leg 110613.00 95.6 Pass **T5** 260 - 240 Leg 105 -129426.00 141805.00 91.3 Pass **T6** 240 - 220 Leg 132 -151917.00 159914.00 95.0 Pass T7 220 - 200 Leg 153 -180788.00 239211.00 756 Pass **T8** 200 - 180 174 Leg -211099.00 228830.00 92.3 Pass **T9** 180 - 160 195 Leg -238889.00 303748.00 78.6 Pass T10 160 - 140 Leg 210 -270083.00 334421.00 80.8 Pass T11 140 - 120 Leg 225 -303423.00 334421.00 90.7 Pass T12 120 - 100 -337339.00 Leg 240 334421.00 100.9 Fail 🗶 T13 100 - 80 255 Leg -361159.00 366576.00 98.5 Pass T14 80 - 60 Leg 306 -397098.00 525490.00 75.6 Pass T15 60 - 40 Leg 355 -434356.00 525490.00 82.7 Pass T16 40 - 20 Leg 406 -473437.00 525490.00 90 1 Pass T17 20 - 0Leg 457 -513832.00 647072.00 79.4 Pass T1 325 - 320 Diagonal 11 3181.65 15675.30 20.3 Pass 54.7 (b) T2 320 - 300 Diagonal 24 -4202.92 10848.60 38 7 Pass 74.8 (b) T3 300 - 280 Diagonal 54 -5601.22 10848.60 51.6 Pass 97.6 (b) T4 280 - 260 Diagonal 84 -3442.18 7696.82 44 7 Pass 64.1 (b) T5 260 - 240 Diagonal 111 -3841.89 5274.61 72.8 Pass **T6** 240 - 220 Diagonal 138 -4526.32 4911.55 92.2 Pass T7 220 - 200 Diagonal 159 -6646.75 7562 30 879 Pass **T8** 200 - 180 Diagonal 180 -7085.24 5995.62 118.2 Fail 🗶 Т9 180 - 160 Diagonal 199 -8371.74 9140.37 91.6 Pass T10 160 - 140 Diagonal 214 -9629.97 9571.06 100.6 Fail 👗 T11 140 - 120 Diagonal 229 -11217.60 10607.30 105.8 x Fail T12 120 - 100 Diagonal 244 -12430.40 10851.30 114.6 Fail 🗶 T13 100 - 80 Diagonal 267 -16683.40 8080.38 Fail 🗶 206.5 T14 80 - 60 Diagonal 318 -17475.30 15271.70 114.4 Fail 🗶 T15 60 - 40 Diagonal 369 -19118.00 19923.00 96.0 Pass T16 40 - 20 Diagonal 420 -20010.4018717 30 106.9 Fail X T17 20 - 0 Diagonal 471 -20688.30 17645.80 X 117.2 Fail T13 100 - 80 Horizontal 263 -12206.50 7191.31 169.7 x Fail T14 80 - 60 Horizontal 314 -13313.60 12276.30 108.4 Fail 🗶 T15 60 - 40 Horizontal -14630.80 365 16194.50 90.3 Pass 40 - 20 T16 Horizontal 416 -15759.30 13842.00 113.9 Fail 🗶 T17 20 - 0 Horizontal 467 -16992.60 12430.90 136.7 Fail 🗶 **T**1 325 - 320 Top Girt 6 -995 30 19963.70 5.0 Pass 13.7 (b) T2 320 - 300 Top Girt 18 -1044.85 5071.88 20.6 Pass T3 300 - 280 Top Girt 48 -402.83 5071.88 7.9 Pass **T**4 280 - 260 Top Girt 76 -644.78 5071.88 12.7 Pass T13 100 - 80 Redund Horz 1 272 -6263.27 23443.30 26.7 Pass Bracing T14 80 - 60 Redund Horz 1 319 -6886.53 21126.30 32.6 Pass Bracing T15 60 - 40 Redund Horz 1 360 -7532.65 26569.10 28.4 Pass

Bracing

Redund Horz 1

411

-8210.41

22935.10

35.8

Pass

T16

40 - 20

		2	Job 33	0' SELF-SI	UPPORTI	NG TOWE	R ANALYSIS	Page 12 of 12
	Armor Tower 9 N Main St		Project ISICS - 93 WIT					Date 11:17:44 05/10/16
Cortland, NY Phone: (607) 434-0754 FAX: (866) 870-0840			Client	Py	ramid Net	work Servi	ces	Designed by KA
Section	Elevation ft	Componer Type	nt Critic		ØP <sub>allow</sub>	% Capacity	Pass	

No.	ft	Type	Element	lb	lb	Capacity	Fail
		Bracing					
T17	20 - 0	Redund Horz 1	462	-8910.93	20447.50	43.6	Pass
		Bracing					
T13	100 - 80	Redund Diag 1	269	-3977.83	15508.50	25.6	Pass
		Bracing					
T14	80 - 60	Redund Diag 1	320	-4240.62	14335.50	29.6	Pass
		Bracing					
T15	60 - 40	Redund Diag 1	361	-4520.34	12867.90	35.1	Pass
		Bracing					
T16	40 - 20	Redund Diag 1	429	-4821.23	11593.00	41.6	Pass
		Bracing					
T17	20 - 0	Redund Diag 1	480	-5137.19	13200.30	38.9	Pass
		Bracing					
T13	100 - 80	Inner Bracing	278	-22.75	4218.27	1.1	Pass
T14	80 - 60	Inner Bracing	329	-25.22	5765.99	0.9	Pass
T15	60 - 40	Inner Bracing	380	-27.39	6515.19	1.0	Pass
T16	40 - 20	Inner Bracing	431	-27.30	6799.32	0.9	Pass
T17	20 - 0	Inner Bracing	482	-26.45	7514.04	0.9	Pass
						Summary	
					Leg (T12)	100.9	Fail 👗
					Diagonal	206.5	Fail 🕽

		1
Leg (T12)	100.9	Fail 🗶
Diagonal	206.5	Fail 🗶
(T13)		
Horizontal	169.7	Fail 🗶
(T13)		
Top Girt	20.6	Pass
(T2)		
Redund	43.6	Pass
Horz 1		
Bracing		
(T17)		
Redund	41.6	Pass
Diag 1		
Bracing		
(T16)		
Inner	1.1	Pass
Bracing		
(T13)		
Bolt Checks	97.6	Pass
RATING =	206.5	Fail 👗
and the standard barries and share a spectrum standards of	of the same of the	No. of Concession, Name of Street, or other states of the

## Foundation Capacity Table

	Design Reaction (TIA-222-F)	Design Reaction *1.35 (TIA-222-G)	Tower Reaction (TIA-222-G)	% Loaded	Pass Fail
Down (kips)	96-1	130	84.0	64.7%	Pass
Shear (kips)	75 6	102	96.1	94.3%	Pass
Moment (kips-ft)	11244	15179	14459	95.3%	Pass

### CONSENT TO SUBLEASE

On this <u>3</u><sup>th</sup> day of <u>March</u>, 2017, Western Iowa Tech Community College as Landlord and pursuant to paragraph 9 of the <u>Lease – Business Property</u> dated May 17, 2004 hereby consents to the attached sublease between Starcomm, Woodbury County, Iowa, the City of Sioux City and Motorola Solutions, Inc.

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Western Iowa Tech Community College By: Print Name: Title