Village of Hinsdale
19 E. Chicago Avenue
Hinsdale, IL 60521-3489
(630)789-7000
Village Website: www.villageofhinsdale.org

PUBLIC SERVICES UTILITY PERMIT APPLICATION

SPRINT-TMOB-0002

Date of Application: 8/31/2020 Permit No: _____ Permit Expiration Date: 03/12/21

Utility Company Information:

Company Name: T-Mobile Central LLC
Address: 1400 Opus Place
City, State, Zip: Downers Grove, IL 60515
Contact Person: Mike Blasutti
Phone Number: 773-444-5400
Email Address: mike.blasutti@t-mobile.com
Cell Number: _____
Project/Work Order Number: CH65464A_Anchor

Contractor Information:

Company Name: SAC Wireless, LLC.
Address: 540 W. Madison Street, 16th Floor
City, State, Zip: Chicago, IL 60661
Contact Person: Thomas Eberhardt
Phone Number: 847-994-1600
Email Address: thomas.eberhardt@sacw.com
Cell Number: _____

PROJECT LOCATION: 339 W. 57th Street

Description of work covered under this permit: Removal and addition of antennas and ancillary equipment. Please refer to construction drawings.

Start Date: 1/22/21 **Completion Date:** 2/12/21

Site Plan/Details/Specifications (3 sets) included with application? (•) YES ( ) NO
Certificate of Insurance included with application? ( ) YES (•) NO

Type of Utility: [ ] ComEd [ ] Nicor [ ] Comcast [ ] Water [ ] Sewer
[✓] Communications: [ ] Fiber Optic [✓] Wireless [ ] Other: 5G

Applicant Information:

Print Name: Rachael Ceckowski Phone Number: 847-254-3209
Company: NTP Wireless Email Address: rachael.ceckowski@ntpwireless.com
Signature: Rachael Ceckowski Date: 8/31/2020

ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION IN EFFECT ON THE DATE OF PERMIT APPLICATION OF THE FOLLOWING: STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION & SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION, ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, AND THE VILLAGE OF HINSDALE SUBDIVISION ORDINANCE AND ENGINEERING STANDARDS.

Village Use Only

Permit Approved: YES NO

Conditions for Approval/Reasons for Denial: RESTORE ALL DISTURBED AREAS

Approved By: A. Diaz Date: 01/04/21

MSA *MUNICIPAL SERVICES ASSOCIATES, INC.*

December 10, 2020

Mr. George Peluso
Director of Public Services
Village of Hinsdale
19 East Chicago Avenue
Hinsdale, Illinois 60521

Dear Mr. Peluso:

At the direction of the Village of Hinsdale, Municipal Services Associates, Inc. (MSA) has reviewed the plans submitted by NTP Wireless and T-Mobile ("T-Mobile") for the replacement, relocation and installation of antenna panels, remote radios and radio modules, and base station equipment located on an existing water tank and in a shelter building located on property adjacent to Hinsdale Central High School at 333 West 57th Street. T-Mobile presently operates a twelve (12) panel antenna array described below.

Existing Facilities: There are two (2) active antenna arrays on the water tower. T-Mobile's antenna array is at a centerline height of 99' (30.18 meters) above ground level (AGL) on the tower. A Verizon Wireless antenna array is located beneath the T-Mobile array, and it has a centerline height of 70' (21.34 meters) AGL. There are two (2) inactive antenna arrays. An antenna array that belonged to US Cellular is mounted at 70' (21.34 meters) AGL, and an antenna array that belonged to Clearwire is mounted at the same height. Both arrays are located adjacent to Verizon's antenna array. Base stations for T-Mobile and Verizon are located in a shelter building at the base of the 104' (31.71 meters) tower. There are no other antenna facilities on this monopole tower.

FCC 2014 Authorization Order "Shot Clock" Period of Review: NTP Wireless and T-Mobile submitted an application for permit, including fees, to the Village on August 31, 2020. Plans were submitted to the Village on September 9, 2020. A letter to Ms. Rachael Ceckowski from MSA requesting additional information from NTP Wireless and T-Mobile was sent on October 12, 2020. NTP Wireless responded to this request on November 16, and on December 2, 2020. As a result, the application review period was tolled for a period of thirty-five (35) days. The proposed project does not entail a "Substantial Modification" as defined by the "Spectrum Act" at 47 CFR 1.6100(c)(3)(i), and the review period for Eligible Facilities Requests such as that proposed by NTP Wireless and T-Mobile is sixty (60) days. At the time of preparation of this report, fifty-seven (57) days have elapsed.

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This project involves the removal of outmoded antennas, remote radios, cables, radio modules and subracks, and cabinets, and installation of new base station cabinets, seven (7) replacement antennas, eight (8) remote radio units, a cable "Pendant" distribution box, a cable over-voltage protection (COVP) box, new hybrid radio jumper cables and antenna jumper cables, a new site support cabinet, new radio frequency (RF) modules, new signal splitters, and a cell site signal router. There is no new significant construction proposed for the tower or base station. Therefore, other than issuance of the required building permit, MSA recommends no additional action from the Village.

Proposed Project

T-Mobile proposes changes to its antenna array on the monopole tower, and to its base station platform. As noted above, the project will entail removal, relocation, replacement, and installation elements. These are described below:

Removals:

- Twelve (12) antennas. (4G)
- Four (4) Nokia FHFB radios operating at 1.9 GHz. (4G)
- Four (4) Nokia FXFB radios operating at 1.9 GHz. (4G)
- Four (4) Nokia FRIG radios operating at 1.7 - 2.1 GHz. (4G)
- Four (4) Nokia FRBG base station radio modules.
- A Nokia AMOB base station subrack.
- Two (2) Nokia ESMB "Flexi" Multiradio RF modules.
- A Nokia FSMF "Flexi" Multiradio RF module.
- Twelve (12) coaxial jumper cables.
- Two (2) Site Support Cabinets.

Relocations:

- One (1) existing Nokia FSMF "Flexi" Multiradio RF module to new Site Support Cabinet.
- One (1) existing Nokia FSEB external alarm module to new Site Support Cabinet.

Replacements:

- T-Mobile will replace twelve (12) existing antennas with three (3) Nokia AAHF Massive Multiple Input -Multiple Output (MIMO) antennas operating at 2.45-2.69 GHz (4G/5G), and Four (4) Commscope FFHH-65C-R3 antennas operating at 617-806 MHz (5G). A total of seven (7) antennas will be on the antenna array.
- Existing radio replacements include four (4) new Nokia AHLOA remote radio units (RRUs) operating at 600-700 MHz (5G) and four (4) new Nokia AHFIG RRUs operating at 1.930-1.995 MHz (5G) and 2.110-2.200 MHz (4G). A total of eight (8) RRUs will be on the antenna array.

Replacements (Continued):

- A new Site Support Cabinet and a new battery cabinet installed in the base station.
- Replacement of Nokia FRBG, ESMB, and FSMF base station RF modules with the following:
  One (1) Nokia AMIA RF module, One (1) ASIB core module, One (1) ASIK core module, Three (3) ABIC RF capacity modules, and three (3) ABIL capacity modules,
  One (1) new Nokia AMIA RF module, One (1) ASIA core module, One (1) ASIK core module, and two (2) new ABIL capacity modules. Three (3) existing ABIA RF capacity modules will be retained and installed in the new cabinet.

Additions:

- New RF jumper cables extending from the RRUs to the new antenna panels.
- Three (3) new Hybrid fiber/power long jumper cables extending along the water tank handrail to connect furthermost segments of the antenna array.
- A new Cable Over-Voltage Protection box (COVP) in the base station located adjacent to the Site Support Cabinet.
- A new NWS hybrid cable "Pendant" breakout box attached to the antenna array platform.
- A new Baseband Unit (BBU) signal processor located in the base station.
- A new Cell Site Router /Interconnect Router (CSR/IXRe) installed in the base station.
- Six (6) new fiber splitters installed in the new Site Support Cabinet.

Retentions:

- Four (4) Raycap COVP boxes located on the antenna array.
- Two (2) Raycap COVP boxes located in the base station.
- Four (4) High-Capacity trunk hybrid cables from the station COVP boxes to the pendant box serving the new antennas and radios.

Project Purpose: The proposed project is intended to improve cell site coverage of 4G/LTE and 5G service throughout much of the Village of Hinsdale. T-Mobile's proposed changes will provide more bandwidth for 5G users, including newly acquired Sprint users, who live or travel along the 55th Street, and Madison Street corridors. It will also provide expanded coverage to downtown Hinsdale, Hinsdale Central High School and Hinsdale's residential areas within an approximate one (1) mile radius of the cell site.

The improvements include addition of three (3) additional Massive Input-Massive Output (MIMO) antennas. These antennas have integrated radios that use targeted signaling that provides greater data speeds, and that operates in the 2.495-2.690 GHz range.

T-Mobile will replace older 4G/LTE radios with new radios that provide 16 times more transmission and reception channels along with more bandwidth blocks in the 1.93-1.99 GHz range and new bandwidth in the 2.11-2.20 GHz range. Nearly all new cell phones being sold by T-Mobile are 5G-capable. Many users are retiring older 4G/LTE phones in favor of 5G units.

This transition is driving demand from mobile users as well as demand by users of newer computers, and other Internet-enabled devices that are 5G-ready. Also, wireless users located in residences in the area near the cell site and Hinsdale Central High School, are moving toward implementation of 5G technology for their day-to-day applications and operations which also increase demand, especially with remote learning that has been made necessary due to COVID-19. The new antenna and radio improvements are designed to provide greater signal capacity, signal transmission and reception speed, and availability of frequencies for a diverse variety of wireless applications.

The new improvements to the cell site will replace T-Mobile's older 4G/LTE equipment with new antennas and radios providing 4G/LTE and 5G service by combining T-Mobile's low and mid-band 600-Megahertz (MHz) 5G radios, antennas, and radio frequency modules and submodules with new radio frequency modules to be installed in its base station that provide bandwidth blocks from 1.93GHz to 2.69 GHz. None of these frequencies are Millimeter Wave, or ultra-wideband frequencies that are used for 5G service by other carriers.

Description:

Antenna Array, RF Modules, and Base Station Equipment: T-Mobile plans to upgrade its antenna array through replacement of twelve (12) antenna panels, remote radio heads (RRH), and through replacement and upgrading of its Site Support Cabinet that will include new RF modules and a new signal router. The centerline array is located at 99' (30.18 meters) AGL. The top of the water tank is located at 104' (31.71 meters) AGL.

T-Mobile will remove all of its existing antenna panels and will replace them with seven (7) new antenna panels. Three (3) of the new panels will be Nokia AAHF series antenna panels that will join four (4) new Commscope antenna panels. The new Nokia AAHF antenna panels will carry LTE/5G–Time Division Duplex Transceivers operating at frequencies of 2.495–2.690 GHz. These antennas are Massive Multiple Input/Multiple Output (Massive MIMO) units capable of carrying sixty-four (64) transmission channels and sixty-four (64) receiver channels. The AAHF antennas also include integrated radios that operate at the frequencies indicated above. These antenna panels have dimensions of 25.6" (.651 meters) in height, 10.3" (.262 meters) in width, and 19.7" (.501 meters) in depth. Each panel weighs 103.6 pounds (47.1 kilograms). These antenna panels will be installed on the north, east, and south faces of the water tank handrail.

The new Commscope antenna panels are intended for 4G/LTE wireless service, and they are also capable of providing 5G service in lower bandwidth ranges. The Commscope antennas operate at the following bandwidth ranges: 617-698 MHz (T-Mobile 5G), 698-806 MHz (T-Mobile 5G), 1.695-1.880 GHz (4G/LTE), 1.850 GHz-1.990 GHz (4G/LTE), 1.920-2.200 GHz (4G/LTE) and 2.300-2.360 GHz (4G/LTE). T-Mobile plans to utilize four (4) transmission channels and four (4) reception channels in all of the bandwidth blocks. The antenna panels have dimensions of 95.9" (2.44 meters) in height, 25.2" (.640 meters) in width, and 9.3" (.235 meters) in depth. Each antenna panel weighs 127.6 pounds (58.0 kilograms). The antenna panels will be installed on all four (4) faces of the water tank handrail.

The upgrade will also include replacement of four (4) existing Nokia FXFB 1.9 GHz radios, four (4) FRIG 1.7-2.1 GHz radios, and four (4) FHFB 1.9 GHz radios. These radios will be replaced with four (4) new Nokia AHFIG remote radio heads (RRHs) operating at 1.930-1.995 GHZ and 2.110-2.200 GHz. The new AHFIG RRHs are 27.3" (.695 meters) in height, 12.1" (.308 meters) in width, and 5.2" (.132 meters) in depth. Each AHFIG weighs 70.5 pounds (32.0 kilograms).

The AHFIG RRUs are intended to be paired with Nokia AHLOA RRUs that also provide 5G service and operate in the following radio frequency spectrum bands: 617-652 MHz, 663-698 MHz, 698-715 MHz, and 728-745 MHz. These frequencies are low-band frequencies used by T-Mobile for its 5G services. T-Mobile proposes installation of four (4) AHLOA RRUs. Each AHLOA RRU measures at 22.02" (.560 meters) in height, 12.1" (.308 meters) in width, and 7.44" (.189 meters) in depth. Each AHLOA RRU weighs 83.6 pounds (38.0 kilograms).

Additional modifications to the antenna array include retention of two (2) hybrid fiber/coaxial trunk cables. These cables will measure 195' (59.45 meters) in length. The hybrid trunk cables will be connected to an NWS “Pendant” cable distribution box located on the antenna array. The Pendant will serve as the connecting point between the trunk cables and hybrid jumper cables leading to the Commscope and Nokia AAHF antennas, and the Nokia AHLOA and AHFIG RRUs.

Depending on the distance between the breakout box and the RRUs, the length of the jumper cables connecting the Pendant box and the RRUs will be between 15' (4.57 meters) to 60' (18.29 meters), to 90' (27.44 meters). The Pendant will also serve to connect the hybrid trunk cables to the new radio frequency (RF) modules to be installed in two (2) new Site Support Cabinets located in the base station shelter building. Cabling will be located on the exterior of the water tank. Four (4) existing COVP boxes will remain on the antenna array.

Base station improvements include replacement of two (2) existing Site Support Cabinets with a new Site Support Cabinet and a battery cabinet. The new Site Support Cabinet has dimensions of 72" (1.83 meters) in height, 30.0" (.779 meters) in width, and 34.6" (.880 meters) in depth. The Site Support Cabinet will weigh 595 pounds (270.5 kilograms). The battery cabinet has dimensions of 72" (1.83 meters) in height, 30.0" (.779 meters) in width, and 35" (.891 meters) in depth. The second cabinet weighs 540 pounds (245.5 kilograms).

The Site Support Cabinet will house radio frequency (RF) modules and core RF modules which serve as the hub of the base station transmission and reception network. The cabinet will contain a Nokia ASIB and two (2) Nokia ASIK core modules, two (2) Nokia AMIA RF modules, three (3) Nokia ABIC RF capacity modules, and five (5) Nokia ABIL capacity modules. Three (3) existing ABIA RF capacity modules will be retained and installed in the new cabinet. An existing Nokia FSMF "Flexi" Multiradio RF module housed in a cabinet planned for removal will be relocated to the new Site Support Cabinet along with an existing Nokia FSEB external alarm module. In addition, the cabinet will include jumper cables for interconnection of the modules and six (6) fiber optic cable splitters.

T-Mobile proposes several additions of conduit pipes. These additions including a new 4" electric conduit connecting the new Site Support Cabinet to the battery cabinet containing power cables connecting the Site Support Cabinet to the battery cabinet, and a new 4" electric conduit enclosing power lines for a breaker switch and an Ethernet cable from the battery cabinet to the Site Support Cabinet. Plans include installation of two (2) new 1" conduit pipes that will connect power lines and fiber optic cables from the Site Support Cabinet to the new COVP box and to three (3) existing COVP boxes. Also, two (2) new EMT conduit pipes will connect the Site Support Cabinet to the base station's Ciena Ethernet switch with power and fiber optic lines.

The base station includes a Power Protection Cabinet. A new 2" electric conduit containing power and ground wires will be installed from the Site Support Cabinet to the Power Protection Cabinet, and a new 1" conduit pipe containing a power line will connect the Power Protection Cabinet to an alarm installed in the new Site Support Cabinet. In addition, a new breaker switch will be installed in the Site Support Cabinet.

Grounding: New antenna panels, radios, and "Pendant" breakout boxes, will be grounded to sector ground bars located around the circumference of the water tank. The new antenna panels will use #2 AWG solid tinned ground wire between each antenna panel and its mast pipe mount. The pipe mounts will use #2 AWG solid tinned ground wire to ground to the sector ground bars. The breakout box will utilize #2 AWG stranded green jacketed ground wire to ground to the sector ground bars, and the AHLOA and AHFIG RRUs and will utilize ##6 AWG stranded green jacketed ground wire to the sector ground bars.

T-Mobile's equipment in the shelter building will be grounded to a Master Ground Bar located within the shelter. The new COVP box will be grounded to the Master Ground Bar by #2 AWG stranded green jacketed ground wire. The Site Support Cabinet will contain a cabinet ground bar. The Nokia FSEB alarm module will be grounded to the cabinet ground bar by #6 AWG stranded green ground wire, and the Nokia AMIA subrack and system modules will be grounded by #6 AWG stranded green ground wire. The Site Support Cabinet and battery cabinet will be grounded to their respective plinth platforms by #2 stranded green jacketed ground wire, and the plinths will be grounded to the Master Ground Bar by #2 stranded green jacketed ground wire.

T-Mobile's grounding plan for the proposed project was complete, however, the plans did not indicate if the sector ground bars on the water tank were grounded to a ground bar located at the base of the tank. MSA recommends that NTP Wireless or T-Mobile indicate if there is a ground between the sector ground bars and the base of the water tank, and that Village electrical inspection staff determine if there is a ground bar at the base of the water tank for verification purposes.

Requested Information of Applicant

MSA reviewed NTP Wireless and T-Mobile's submission. On October 12, 2020, MSA notified Ms. Rachael Ceckowski of NTP Wireless, representative for T-Mobile, that additional information would be needed from NTP Wireless or T-Mobile in order to complete the review.

Specifically, MSA requested the following informational items:

1. An indication of the provider of the backhaul network for the proposed project.

2. An indication of the general contractor for the project if SAC Wireless is not the general contractor for the project.

3. "Before and After" photo simulations of the antenna array, water tower and base station.

4. Completion of FCC Office of Engineering and Technology (OET) Bulletin 65 Appendix A forms showing that the proposed project is exempt from FCC RF regulations and requirements. These forms may be found in Appendix A, located on Page 18 of the FCC Local and State Government Advisory Committee (LSGAC) RF Guide, which was included with the request for information.

On November 16, 2020, MSA received the requested information from Ms. Ceckowski. MSA requested a statement from T-Mobile on November 24, 2020 indicating that T-Mobile undertake best efforts to prevent frequencies transmitted from the proposed antennas from interfering with frequencies used by Village of Hinsdale Police, Fire, or Public Safety personnel. NTP Wireless and T-Mobile provided the statement on December 2, 2020. NTP Wireless and T-Mobile's information was acceptable.

FCC OET Bulletin 65 Appendix A Checklist and Radio Frequency Emissions Safety Compliance: The FCC completely occupies the field as to setting RF safety standards in the United States. The Village is not permitted to set its own standards regardless of whether higher, lower, or even the same as the FCC's standards. The Commission derives its authority under a provision of the National Environmental Policy Act (NEPA) of 1969.

The Commission permits the Village to determine if a proposed wireless project meets the required FCC 47 CFR § 1.1307 et seq. (the "FCC rules") and FCC Office of Engineering and Technology Bulletin 65 ("OET 65") RF safety requirements.

The actual standards set by the Commission are found in the FCC Office of Engineering and Technology Bulletin 65, titled "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields." A website containing the bulletin is at: http://www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf.

Under the FCC rules, certain types of wireless projects are deemed to be "categorically excluded," thus not subject to further RF evaluation under the rules due to identified factors including: whether the antenna supporting structure is a building or is shared to perform some other function, and the lowest portion of the transmitting antenna is at least 10 meters (32.8 feet) above ground.

T-Mobile provided a completed FCC OET Bulletin 65 checklist indicating that the proposed antennas are exempted from FCC Radio Frequency (RF) regulations. The lowest point of the mounting height of the antennas is 95' (28.96 meters) AGL. The antenna array is 62.2' (18.96 meters) above the maximum regulatory threshold of 32.8' (10.00 meters) AGL. The project is a general wireless communications service that is not subject to FCC RF regulations.

The use of panel antennas and other forms of wireless telecommunications creates a concern that radio frequencies used by cellular and wireless providers might interfere with radio frequencies used for local government public safety and public services communications. T-Mobile and other wireless providers may be using a radio frequency spectrum that had been previously used for analog television transmission. Other frequencies formerly used for television transmission will be allocated by the FCC to local governments for public safety uses. T-Mobile was requested to provide a statement of good faith that it would not interfere with Village of Hinsdale frequencies used by police, fire, or administrative personnel. T-Mobile's response was as follows:

> "Please be advised that in connection with the above referenced project, and in response to your RFI Letter dated October 12, 2020, T-Mobile will undertake best efforts to prevent frequencies transmitted from the proposed antennas and radios to not interfere with existing local frequencies."

Based on the responses from T-Mobile, MSA is satisfied that T-Mobile has met the informational requirements necessary in order for us to properly opine on this project.

Structural Evaluation: T-Mobile provided a structural analysis prepared by WT Group Structural Engineering ("WTG") of Hoffman Estates, Illinois, on August 12, 2020. WTG tested stress levels on the water tank using the proposed antenna panels, RRUs, breakout box, COVP boxes, and cabling, as load factors, along with existing antenna arrays and attachments of Clearwire, US Cellular, and Verizon Wireless.

Tests were performed according to American National Standards Institute /Telecommunications Industry Association (ANSI/TIA) 222-G standards, the 2012 International Building Code, the American Society of Civil Engineers (ASCE) 7-10 standard for Minimum Design Loads for Buildings and Other structures, the American Institute of Steel Construction Manual, Fifteenth Edition, and the American Water Works Association (AWWA) D100-05 standard. The ANSI/TIA standards set tests using a basic wind speed of 90-MPH, a three (3) second gust, a wind load of 30 pounds per square foot (PSF) for the antenna panels. The AWWA standard includes an effective wind speed of 100-MPH for the water tank supports.

Results of the analysis found that the level of the water tank where the proposed project is to be located passed section capacity and wind speed tests, and that the water tank capacity level also passed. WTG assigned a capacity level rating of 5.9% (1), a stress level at the tank base of 122.0 pounds per square inch (PSI) and axial stress of 212.8 PSI with no overturning. (2). WTG opined that "The existing water tank structural components have been checked for the applied loading of the existing and proposed antennas. Based on the percent usage with existing and proposed antennas, the existing water tank is ***structurally adequate*** to support the existing and proposed antennas and RRUs load. The adequacy of the existing mounts to support the antenna loading is not part of this scope and has not been checked." (3) The results of the structural evaluation are acceptable. (**Emphasis provided by author of analysis)**

It should be noted that a higher rating indicates that less structural capacity exists for loads created by one or more antenna arrays and associated cabling and equipment. In this instance, the rating is considerably lower than the maximum rating (105%) that would indicate that no additional capacity exists for proposed equipment. The structural evaluation is attached.

Section 6409(a) - Spectrum Act - Evaluation:

MSA has reviewed the NTP Wireless and T-Mobile application for the following scope of work at 333 West 57th Street, stated on pages two and three of this report:

MSA has reviewed the proposed project and plans in light of Section 6409(a), also known as the "Spectrum Act," contained within the Middle Class Tax Relief and Job Creation Act of 2012. Section 6409(a), codified at 47 CFR §1.6100, addresses mandatory collocations at existing wireless towers and base stations, facially eliminating local discretion in connection with collocation projects in the event that there is no "Substantial Change" to the tower or base station. In the definition below, the new FCC rules regarding Wireless Facility Modifications shows that the term "Collocation" is construed broadly by the FCC for considering wireless facilities installations.

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(1) WT Group Structural Engineering, Structural Calculations, Site No. CH65464A, August 12, 2020, at 3.
(2) *Ibid,* at 18.
(3) *Ibid,* at 3.

47 CFR §1.6100 says in its entirety:

§ 1.6100 Wireless Facility Modifications.

(a) [Reserved]

(b) Definitions. Terms used in this section have the following meanings.

(1) Base station. A structure or equipment at a fixed location that enables Commission-licensed or authorized wireless communications between user equipment and a communications network. The term does not encompass a tower as defined in this subpart or any equipment associated with a tower.

(i) The term includes, but is not limited to, equipment associated with wireless communications services such as private, broadcast, and public safety services, as well as unlicensed wireless services and fixed wireless services such as microwave backhaul.

(ii) The term includes, but is not limited to, radio transceivers, antennas, coaxial or fiber-optic cable, regular and backup power supplies, and comparable equipment, regardless of technological configuration (including Distributed Antenna Systems and small-cell networks).

(iii) The term includes any structure other than a tower that, at the time the relevant application is filed with the State or local government under this section, supports or houses equipment described in paragraphs (b)(1)(i) through (ii) of this section that has been reviewed and approved under the applicable zoning or siting process, or under another State or local regulatory review process, even if the structure was not built for the sole or primary purpose of providing such support.

(iv) The term does not include any structure that, at the time the relevant application is filed with the State or local government under this section, does not support or house equipment described in paragraphs (b)(1)(i)-(ii) of this section.

(2) Collocation. The mounting or installation of transmission equipment on an eligible support structure for the purpose of transmitting and/or receiving radio frequency signals for communications purposes.

(3) Eligible facilities request. Any request for modification of an existing tower or base station that does not substantially change the physical dimensions of such tower or base station, involving:

(i) Collocation of new transmission equipment;

(ii) Removal of transmission equipment; or

(iii) Replacement of transmission equipment.

(4) Eligible support structure. Any tower or base station as defined in this section, provided that it is existing at the time the relevant application is filed with the State or local government under this section.

(5) Existing. A constructed tower or base station is existing for purposes of this section if it has been reviewed and approved under the applicable zoning or siting process, or under another State or local regulatory review process, provided that a tower that has not been reviewed and approved because it was not in a zoned area when it was built, but was lawfully constructed, is existing for purposes of this definition.

(6) Site. For towers other than towers in the public rights-of-way, the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site, and, for other eligible support structures, further restricted to that area in proximity to the structure and to other transmission equipment already deployed on the ground. The current boundaries of a site are the boundaries that existed as of the date that the original support structure or a modification to that structure was last reviewed and approved by a State or local government, if the approval of the modification occurred prior to the Spectrum Act or otherwise outside of the Section 6409(a) process.

(7) Substantial change. A modification substantially changes the physical dimensions of an eligible support structure if it meets any of the following criteria:

(i) For towers other than towers in the public rights-of-way, it increases the height of the tower by more than 10% or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater; for other eligible support structures, it increases the height of the structure by more than 10% or more than ten feet, whichever is greater;

(A) Changes in height should be measured from the original support structure in cases where deployments are or will be separated horizontally, such as on buildings' rooftops; in other circumstances, changes in height should be measured from the dimensions of the tower or base station, inclusive of originally approved appurtenances and any modifications that were approved prior to the passage of the Spectrum Act.

(ii) For towers other than towers in the public rights-of-way, it involves adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater; for other eligible support structures, it involves adding an appurtenance to the body of the structure that would protrude from the edge of the structure by more than six feet;

(iii) For any eligible support structure, it involves installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets; or, for towers in the public rights-of-way and base stations, it involves installation of any new equipment cabinets on the ground if there are no pre-existing ground cabinets associated with the structure, or else involves installation of ground cabinets that are more than 10% larger in height or overall volume than any other ground cabinets associated with the structure;

(iv) It entails any excavation or deployment outside the current site, except that, for towers other than towers in the public rights-of-way, it entails any excavation or deployment outside of the current site by more than 30 feet in any direction; (4)

(v) It would defeat the concealment elements of the eligible support structure; or

(vi) It does not comply with conditions associated with the siting approval of the construction or modification of the eligible support structure or base station equipment, provided however that this limitation does not apply to any modification that is non-compliant only in a manner that would not exceed the thresholds identified in § 1.6100(b)(7)(i) through (iv).

(8) Transmission equipment. Equipment that facilitates transmission for any Commission-licensed or authorized wireless communication service, including, but not limited to, radio transceivers, antennas, coaxial or fiber-optic cable, and regular and backup power supply. The term includes equipment associated with wireless communications services including, but not limited to, private, broadcast, and public safety services, as well as unlicensed wireless services and fixed wireless services such as microwave backhaul.

(9) Tower. Any structure built for the sole or primary purpose of supporting any Commission-licensed or authorized antennas and their associated facilities, including structures that are constructed for wireless communications services including, but not limited to, private, broadcast, and public safety services, as well as unlicensed wireless services and fixed wireless services such as microwave backhaul, and the associated site.

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(4) The underlined passages on pp. 11-12 are changes to the Spectrum Act as considered by the FCC for the Report and Order titled In the Matter of Implementation of State and Local Governments Obligation to Approve Certain Wireless Facility Modification Requests Under Section 6409(a) of the Spectrum Act of 2012, WT Docket No. 19-250., approved October 27, 2020. These passages become effective January 2, 2021.

(c) Review of applications. A State or local government may not deny and shall approve any eligible facilities request for modification of an eligible support structure that does not substantially change the physical dimensions of such structure.

(1) Documentation requirement for review. When an applicant asserts in writing that a request for modification is covered by this section, a State or local government may require the applicant to provide documentation or information only to the extent reasonably related to determining whether the request meets the requirements of this section. A State or local government may not require an applicant to submit any other documentation, including but not limited to documentation intended to illustrate the need for such wireless facilities or to justify the business decision to modify such wireless facilities.

(2) Timeframe for review. Within 60 days of the date on which an applicant submits a request seeking approval under this section, the State or local government shall approve the application unless it determines that the application is not covered by this section.

(3) Tolling of the timeframe for review. The 60-day period begins to run when the application is filed, and may be tolled only by mutual agreement or in cases where the reviewing State or local government determines that the application is incomplete. The timeframe for review is not tolled by a moratorium on the review of applications.

(i) To toll the timeframe for incompleteness, the reviewing State or local government must provide written notice to the applicant within 30 days of receipt of the application, clearly and specifically delineating all missing documents or information. Such delineated information is limited to documents or information meeting the standard under paragraph (c)(1) of this section.

(ii) The timeframe for review begins running again when the applicant makes a supplemental submission in response to the State or local government's notice of incompleteness.

(iii) Following a supplemental submission, the State or local government will have 10 days to notify the applicant that the supplemental submission did not provide the information identified in the original notice delineating missing information. The timeframe is tolled in the case of second or subsequent notices pursuant to the procedures identified in this paragraph (c)(3). Second or subsequent notices of incompleteness may not specify missing documents or information that were not delineated in the original notice of incompleteness.

(4) Failure to act. In the event the reviewing State or local government fails to approve or deny a request seeking approval under this section within the timeframe for review (accounting for any tolling), the request shall be deemed granted. The deemed grant does not become effective until the applicant notifies the applicable reviewing authority in writing after the review period has expired (accounting for any tolling) that the application has been deemed granted.

(5) Remedies. Applicants and reviewing authorities may bring claims related to Section 6409(a) to any court of competent jurisdiction.

[80 FR 1269, Jan. 8, 2015. Redesignated and amended at 83 FR 51886, Oct. 15, 2018]

Spectrum Act Rules Analysis

The rules as shown above cited in 47 CFR §1.6100 which implement Section 6409(a) of the Middle Class Tax Relief and Job Creation Act (P.L. 112-96) ("Spectrum Act") enacted into law on February 22, 2012, provide for mandatory collocation permitting at eligible facilities when requests for collocating antenna facilities are submitted to a local government.

The proposed project includes replacement of antenna panels and RRUs, and a Site Support Cabinet, installation of antenna panels, RRUs, combination antenna/radio units, a "Pendant" cable breakout box, a Cable Over-Voltage Protection surge arrester box (COVP) a new Site Support Cabinet, a battery cabinet, two (2) core modules, eight (8) RF modules, six (6) fiber cable splitters, a cell site router, and electrical and fiber conduit pipes housing power and fiber cabling. The proposed project is consistent with the definition of an *Eligible Facilities Request* as stated in 47 CFR §1.6100(b)(3), and *does not* entail a *Substantial Change* as defined by 47 CFR §1.6100(b)(7).

Having reviewed the current project plans for this site, MSA's opinions as the Village's technology expert are as follows:

1. The instant project is a "collocation of new transmission equipment" within the meaning of 47 CFR §1.6100(a)(2); and

2. The instant project consists of no substantial modifications or extensive external changes. T-Mobile will be replacing antennas, radios, adding base station equipment, and removing inadequate equipment. These actions *do not* rise to the level of the definition of *Substantial Change* as described above.

Recommendations

MSA opines that the proposed project will substantially enhance wireless service capacity and data speed throughout Hinsdale. The project will actually reduce the number of antenna panels and radios on the water tank, while providing a broader range of frequencies serving both 4G/LTE users and 5G users.

The proposed project is intended to provide Hinsdale businesses and residents with the next generation of wireless services. The installation of Massive Multiple Input/Multiple Output (MIMO) antennas and complementary radios will provide businesses, and residences, along with fixed and mobile users, faster transmission and reception speeds, and more available frequencies for wireless operations.

The project will allow T-Mobile to more effectively deliver communications to a broader spectrum of wireless devices that now include connected vehicles, and Internet equipped appliances, business equipment, medical equipment, and personal devices, such as wearable wireless equipment, as well as smartphones, laptop computers, and tablets. Wireless communications equipment used by Hinsdale first responders within the range of the cell site that relies on high-speed data and Internet connectivity will also benefit.

T-Mobile's proposed project is designed to boost the ability of the cell site to handle a greater traffic load. This project underscores that effort by adding more 5G channels and frequencies. 5G wireless equipment has entered the marketplace and is growing quickly. T-Mobile is moving toward upgrading its other sites in communities near Hinsdale in order to provide 5G service throughout the Village and surrounding communities.

The antennas and radios currently located on the antenna array set for replacement are operating 4G/LTE wireless services in the 698-896 MHz frequency range and at higher frequencies including mid-band frequency ranges at 1.710-2.155 GHz, and 1.695-2.360 GHz. The replacement antennas and radios operate at 617-698 MHz (T-Mobile 5G), 663-698 MHz, 698-806 MHz (T-Mobile 5G), 728-745 MHz, 1.695-1.880 GHz (4G/LTE), 1.850 GHz-1.990 GHz (4G/LTE), 1.920-2.200 GHz (4G/LTE), 2.300-2.360 GHz (4G/LTE), and 2.495–2.690 GHz (T-Mobile 5G), including similar frequency ranges compared to those currently in use.

The proposed project involves the replacement of all twelve (12) antenna panels with seven (7) new antenna panels, including three (3) antenna panels with integrated RRUs, and replacement of twelve (12) RRUs with eight (8) new RRUs. The project will also replace two (2) Site Support Cabinets with a new Site Support Cabinet and a battery cabinet. Radio Frequency (RF) modules will be replaced, a new cable breakout box, Cell Site Router and a new COVP surge arrester box will be added, along with new conduits and wiring. The project does not involve any new construction.

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(5) 47 CFR §1.6100(c).

The proposed project slightly improves the aesthetic appearance of the location where the cell site located, does not include any significant increase in the height of the antennas and mounts, will not create an adverse effect upon nearby properties, or have an adverse effect on the character or future development of the zoning district.

A Building Permit will be required for replacing the antennas and RRUs, and adding the breakout boxes, and for adding base station modules, the Site Support Cabinet, and new cables. MSA recommends that T-Mobile indicate if the sector ground bars at the top of the water tank are connected to a ground bar at the base of the water tank, and that the Village's Electrical Inspector determine if there is a ground bar at the base of the water tank for verification purposes. Other than the inspection, MSA recommends that NTP Wireless and T-Mobile be allowed to proceed with the proposed project.

Should the Village have any questions concerning this report, or if any additional background is needed, please contact me at your first opportunity.

Sincerely,

Stuart Chapman

Stuart Chapman, President
Municipal Services Associates, Inc.

Attachments

cc: Ms. Kathleen Gargano, Village Manager, Village of Hinsdale (ls./att.) (by e-mail)
Mr. Rob McGinniss, MCP, Director of Community Development, Building Commissioner,Village of Hinsdale
Mr. Al Diaz, Assistant Village Engineer, Village of Hinsdale
Ms. Rachael Ceckowski, Solutions Specialist, Site Acquisition, NTP Wireless, representative for T-Mobile (ls./att.)(by e-mail)

T-Mobile®

SITE NUMBER: CH65464A

SITE NAME: HINSDALE WATER TANK

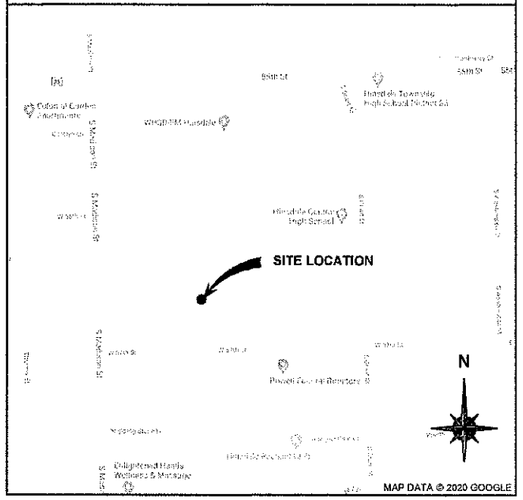
SITE TYPE: WATER TANK

JURISDICTION: VILLAGE OF HINSDALE

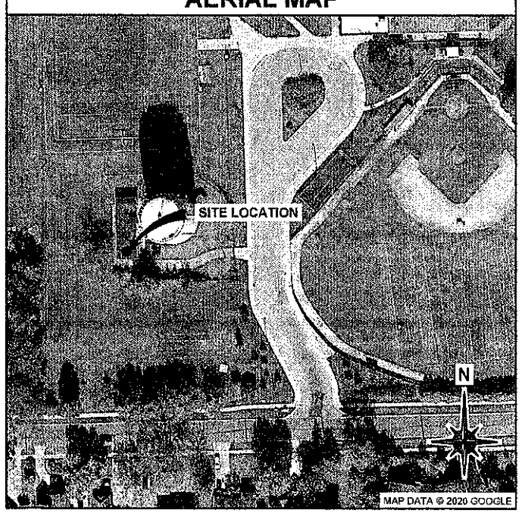
CITY: HINSDALE

COUNTY: DUPAGE

LOCATION MAP



AERIAL MAP



PROJECT DESCRIPTION

NO NEW WATER OR SEWER IS REQUIRED AS FACILITY IS UNMANNED.

EXISTING BUILD OUT:

12 ANTENNAS, 16 RRU MODULES, 6 COVP'S, 4 HCS, 22 COAX, 2 SITE SUPPORT CABINETS, 1 FCOA CABINET, 4 SYSTEM MODULES IN FCOA CABINET, 1 AMOB ON SSC

FINAL BUILD OUT:

7 ANTENNAS, 8 RRU MODULES, 5 COVP'S, 1 TOWER OVP, 1 BREAKOUT BOX, 4 HCS, 3 HCS 2.0 LONG JUMPERS, 1 SITE SUPPORT CABINET, 1 BATTERY CABINET, 1 FCOA CABINET, 6 FIBER SPLITTERS IN SSC, 1 SYSTEM MODULE IN SSC, 2 AMIA'S IN SSC

SCOPE OF WORK:

- (2) GSM PCS ESMB'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- (1) UMTS PCS FSMF TO BE REMOVED AND RETURNED TO WAREHOUSE
- RELOCATE (1) EXISTING FSMF TO SSC. RE-PURPOSE FOR GSM-UMTS PCS
- (1) EXISTING AMOB TO BE REMOVED AND RETURNED TO WAREHOUSE
- (4) EXISTING FRIG'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- (4) EXISTING FXFB'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- (4) EXISTING FHFB'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- (4) EXISTING FRBG'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- INSTALL (4) NEW AHLOA'S (1 PER SECTOR)
- INSTALL (4) NEW AHFIG'S (1 PER SECTOR)
- REPLACE (12) EXISTING ANTENNAS WITH (7) NEW ANTENNAS
- INSTALL NEW RF JUMPERS FOR NEW AND RELOCATED RRU'S
- EXISTING (22) COAX TO BE REMOVED
- UTILIZE (4) EXISTING HCS CABLES
- INSTALL (3) NEW HCS 2.0 LONG JUMPERS
- UTILIZE (2) EXISTING EQUIPMENT COVP'S & (4) EXISTING ANTENNA COVP'S
- INSTALL (1) NEW TOWER OVP AT EQUIPMENT
- INSTALL (1) NEW BREAKOUT BOX AT ANTENNAS
- RELOCATE (1) EXISTING FSEB TO SSC
- EXISTING (2) SSC'S TO BE REMOVED
- INSTALL (1) NEW SSC AT EQUIPMENT
- INSTALL (1) NEW BBU AT EQUIPMENT
- INSTALL (1) NEW AMIA W/ (1) ASIB CORE MODULE, (1) ASIK CORE MODULE, (3) ABIC CAPACITY MODULES AND (3) ABIL CAPACITY MODULES IN NEW SSC
- INSTALL (1) NEW AMIA W/ (1) EXISTING ASIA CORE MODULE, (1) NEW ASIK CORE MODULE, (3) EXISTING ABIA CAPACITY MODULES AND (2) NEW ABIL CAPACITY MODULES IN NEW SSC
- INSTALL (6) NEW FIBER SPLITTERS IN NEW SSC (2 PER SECTOR)
- INSTALL NEW CSR IXRe

APPLICABLE CODES

BUILDING CODE:

INTERNATIONAL BUILDING CODE 2006 (WITH AMENDMENTS)

ELECTRICAL CODE:

NATIONAL ELECTRICAL CODE 2005

PROJECT TYPE

ANCHOR

PROJECT LOCATION

COORDINATES (NAD83):

LAT: 41.78613610°
LONG: -87.93419160°

DATA OBTAINED FROM T-MOBILE RFDS

SITE ADDRESS:

339 W. 57TH STREET
HINSDALE, IL 60521
DUPAGE COUNTY

CONTACTS

APPLICANT:

T-MOBILE
1400 OPUS PLACE
DOWNERS GROVE, IL 60515
TEL: T.B.D.
CONTACT: T.B.D.

PROPERTY OWNER:

VILLAGE OF HINSDALE
TEL: T.B.D.
CONTACT: T.B.D.

PROJECT TEAM

A&E:

WT GROUP, LLC
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
CONTACT: KATIE OLESEN
TEL: (224) 293-6408
FAX: (224) 293-6444

STRUCTURAL ENGINEER:

WT GROUP, LLC
2675 PRATUM AVENUE
HOFFMAN ESTATES, IL 60192
TEL: (224) 293-6333
FAX: (224) 293-6444

SHEET INDEX

SHEET NUMBER:	DESCRIPTION:
T-1	TITLE SHEET
T-2	GENERAL NOTES & SPECIFICATIONS
T-3	GENERAL NOTES & SPECIFICATIONS
C-1	OVERALL SITE PLAN
C-2	EXISTING & NEW SITE PLANS
A-1	ELEVATION
A-2	ANTENNA PLANS & SCHEDULE
A-3	EQUIPMENT SPECIFICATIONS
A-4	EQUIPMENT SPECIFICATIONS
A-5	EQUIPMENT SPECIFICATIONS
A-6	EQUIPMENT SPECIFICATIONS
A-7	RF PLUMBING DIAGRAM
E-1	UTILITY PLAN
GR-1	GROUNDING DETAILS
GR-2	GROUNDING DETAILS

APPROVALS

PENDING APPROVAL OF THE JURISDICTION, THE FOLLOWING PARTIES HAVE REVIEWED THE DESIGN WITHIN THEIR FUNCTIONAL RESPONSIBILITIES AND HAVE APPROVED THIS PROJECT FOR CONSTRUCTION. CONTRACTORS MAY NOT START CONSTRUCTION WITHOUT A NOTICE TO PROCEED (NTP).

	PRINT NAME	SIGNATURE	DATE
LANDLORD			
PRECON. MGR			
DEVELOP. MGR			
CONST. INSP.			
A&E MGR.			
RF ENGINEER			
OPERATIONS			
ZONING REP			
UTILITIES			

T-Mobile

NTP

WT GROUP
Engineering with Precision, Pace and Passion.
2675 Pratum Avenue | Hoffman Estates, IL 60192
T: 224.293.6333 | F: 224.293.6444
IL License No. 184.007570-0015 Expires 04.30.2021
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CH65464A
HINSDALE WATER TANK
339 W. 57TH STREET
HINSDALE, IL 60521

JEFFERY S. SUTONSKY
062-047235
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS

EXPIRES: 11/30/21 SIGNED: 08/13/20

REVISIONS

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	07/15/20	JTB
1	FINAL	08/13/20	KLO

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL

CHECK: JKR
DRAWN: JTB
JOB: 2001106T

T-1
TITLE SHEET

GENERAL REQUIREMENTS:

1.1 INTENT

1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH.
3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

1.2 CONFLICTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER OR THING CONCERNING WHICH SUCH BIDDER MIGHT HAVE FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING.
3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS GOVERNING THE WORK.

1.3 CONTRACTS AND WARRANTIES

1. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.

1.4 STORAGE

1. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.
2. THE BTS MUST BE STORED INSIDE UNTIL THERE IS POWER ON SITE.

1.5 CLEAN UP

1. THE CONTRACTORS SHALL AT ALL TIMES KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK, THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY FOR USE.
2. EXTERIOR: VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
   - A. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   - B. IF NECESSARY TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.
3. INTERIOR: VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS/FLOOR/CEILING.
   - A. REMOVE ALL TRACES OF SPLASHED MATERIAL FROM ADJACENT SURFACES.
   - B. REMOVE PAINT DROPPINGS, SPOTS, STAINS AND DIRT FROM FINISHED SURFACES.

1.6 CHANGE ORDER PROCEDURE

1. CHANGE ORDERS MAY BE INITIATED BY THE OWNER AND/OR THE CONTRACTOR INVOLVED. THE CONTRACTOR, UPON VERBAL REQUEST FROM THE OWNER SHALL PREPARE A WRITTEN PROPOSAL DESCRIBING THE CHANGE IN WORK OR MATERIALS AND ANY CHANGES IN THE CONTRACT AMOUNT AND PRESENT TO THE OWNER WITHIN 72 HRS FOR APPROVAL. SUBMIT REQUESTS FOR SUBSTITUTIONS IN THE FORM AND IN ACCORDANCE WITH PROCEDURES REQUIRED FOR CHANGE ORDER PROPOSALS. ANY CHANGES IN SCOPE OF WORK OR MATERIALS WHICH ARE PERFORMED BY THE CONTRACTOR WITHOUT A WRITTEN CHANGE ORDER AS DESCRIBED AND APPROVED BY THE OWNER SHALL PLACE FULL RESPONSIBILITY OF THESE ACTIONS ON THE CONTRACTOR.

1.7 RELATED DOCUMENTS AND COORDINATION

1. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.8 SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.
2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

1.9 PRODUCTS AND SUBSTITUTIONS

1. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION. INCLUDE RELATED SPECIFICATION SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS.
2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

1.10 QUALITY ASSURANCE

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

1.11 ADMINISTRATION

1. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. SUBMIT A BAR TYPE PROGRESS CHART NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.
3. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON-SITE MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE (THOUGH NOT LIMITED TO) THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).
4. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.
5. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL SAFETY REQUIREMENTS IN THEIR AGREEMENT.
6. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.
7. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
8. NOTIFY THE OWNER / PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

1.12 INSURANCE AND BONDS

1. CONTRACTOR SHALL AT THEIR OWN EXPENSE CARRY AND MAINTAIN FOR THE DURATION OF THE PROJECT ALL INSURANCE AS REQUIRED AND LISTED AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

ANTENNA INSTALLATION:

1.1 REQUIREMENTS OF REGULATOR AGENCIES

1. FURNISH U.L. LISTED EQUIPMENT WHERE SUCH LABEL IS AVAILABLE. INSTALL IN CONFORMANCE WITH U.L. STANDARDS WHERE APPLICABLE.
2. INSTALL ANTENNA, ANTENNA CABLES, GROUNDING SYSTEM IN ACCORDANCE WITH DRAWINGS AND SPECIFICATION IN EFFECT AT PROJECT LOCATION AND RECOMMENDATIONS OF STATE AND LOCAL BUILDING CODES, SPECIAL CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS OF WORK. THIS INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:
   - A. TIA - TELECOMMUNICATIONS INDUSTRY ASSOCIATION TIA-222-G. STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
   - B. FAA - FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AC 70/7460-IH, OBSTRUCTION MARKING AND LIGHTING.
   - C. FCC - FEDERAL COMMUNICATIONS COMMISSION RULES AND REGULATIONS FORM 715, OBSTRUCTION MARKING AND LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES AND FORM 715A, HIGH INTENSITY OBSTRUCTION LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES.
   - D. AISC - AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
   - E. NEC - NATIONAL ELECTRICAL CODE - ON TOWER LIGHTING KITS.
   - F. UL - UNDERWRITER'S LABORATORIES APPROVED ELECTRICAL PRODUCTS.
   - G. IN ALL CASES, PART 77 OR THE FAA RULES AND PARTS 17 AND 22 OF THE FCC RULES ARE APPLICABLE AND IN THE EVENT OF CONFLICT, SUPERSEDE ANY OTHER STANDARDS OR SPECIFICATIONS.
   - H. LIFE SAFETY CODE NFPA-101.

T-Mobile

WT GROUP

NTP

CH65464A
HINSDALE WATER TANK
339 W. 57TH STREET
HINSDALE, IL 60521

JEFFERY B. GUTOWSKI
062-047235
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS

EXPIRES: 11/30/21 SIGNED: 08/13/20

REVISIONS

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	07/16/20	JTB
0	FINAL	08/13/20	KLO

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL

CHECK: JKR

DRAWN: JTB

JOB: 2001106T

T-2

GENERAL NOTES & SPECIFICATIONS

GENERAL ELECTRIC PROVISION:

1. SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
2. CONTRACTOR SHALL PERFORM ALL VERIFICATION OBSERVATIONS TEST, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
3. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANEL BOARD, PULL BOX, J-BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.).
4. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
5. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.
6. ALL CONDUIT INSTALLED SHALL BE SURFACE MOUNTED OR DIRECT BURIAL UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL CARRY OUT THEIR WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES AND O.S.H.A.
8. CONTRACTOR TO OBTAIN ALL PERMITS, PAY PERMIT FEES, AND BE RESPONSIBLE FOR SCHEDULING INSPECTIONS.
9. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
10. ALL CONDUIT SHALL HAVE A PULL WIRE OR ROPE.
11. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.
12. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC., SHALL BE TURNED OVER TO THE OWNER AT JOB COMPLETION.
13. USE T-TAP CONNECTIONS ON ALL MULTI-CIRCUITS WITH COMMON NEUTRAL CONDUCTOR FOR LIGHTING FIXTURES.
14. ALL CONDUCTORS SHALL BE COPPER.
15. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
16. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
17. PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
18. PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH APPLICABLE LOCAL BUILDING CODES.
19. WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS.
20. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER UNLESS OTHERWISE NOTED.
21. ALL MATERIALS SHALL BE U.L. LISTED.
22. CONDUIT
    - A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3
    - B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTING SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
    - C. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT SHALL HAVE FULL SIZE EQUIPMENT GROUND WIRE.
    - D. CONDUIT RUNS SHALL BE SURFACE MOUNTED UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE OWNER PRIOR TO INSTALLING. NO HORIZONTAL CONDUITS SHALL BE BELOW 7'-6" A.F.F. NO BX OR ROMEX CABLE IS PERMITTED.
    - E. PARALLEL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 30" BELOW GRADE - STACKED UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 24" BELOW GRADE.
    - F. ABOVE GROUND CONDUIT SHALL BE P.V.C. SCHEDULE 80 (UNLESS NOTED OTHERWISE).
23. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
24. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUND TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.

811 Know what's **below.** **Call** before you dig.

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EXPIRES: 11/30/21 SIGNED: 08/13/20

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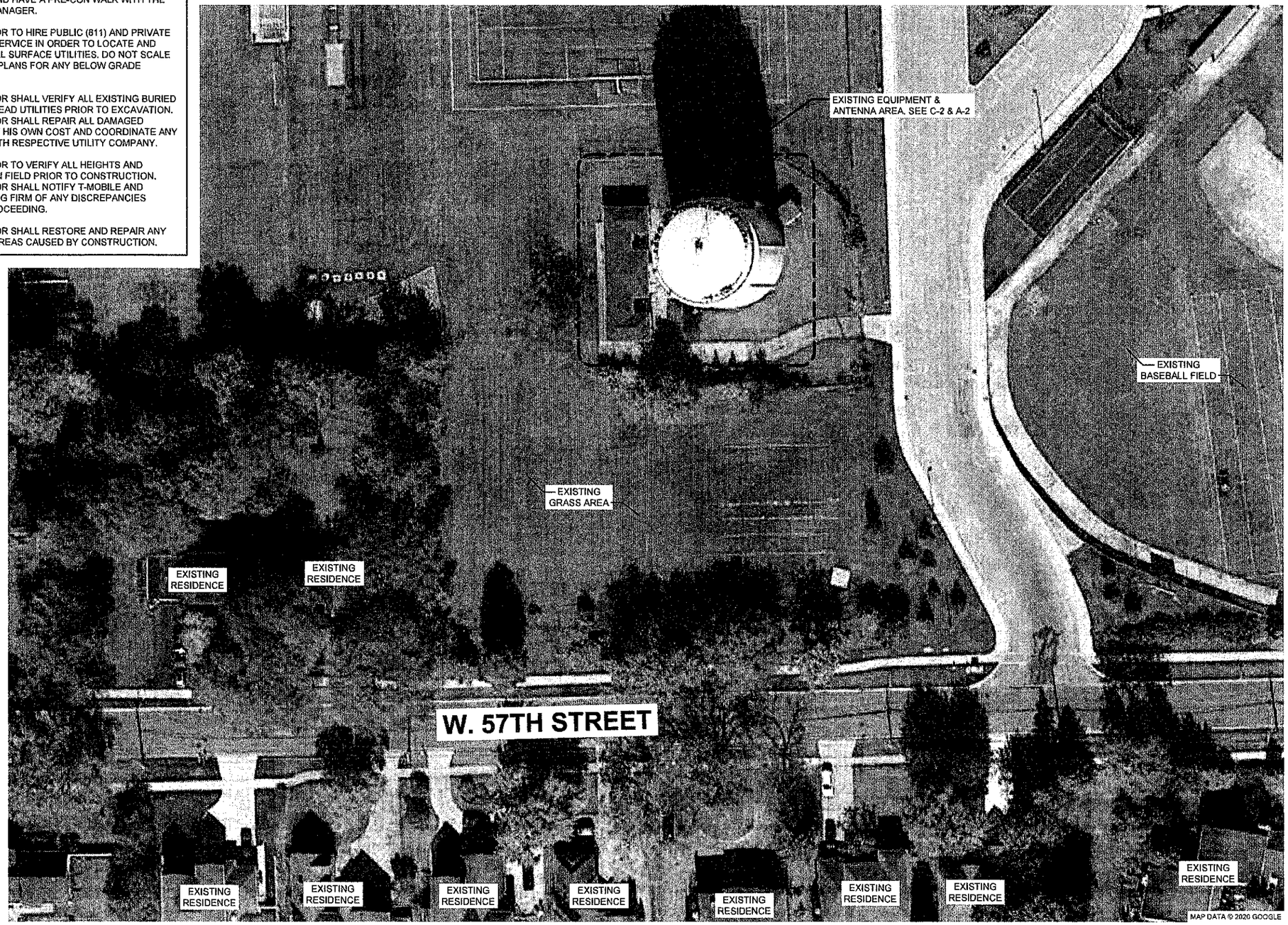
CHECK: JKR
DRAWN: JTB
JOB: 2001106T

T-3
GENERAL NOTES & SPECIFICATIONS

IMPORTANT SITE NOTES:

1. CONTRACTOR WILL NOT START CONSTRUCTION UNTIL AFTER THEY HAVE RECEIVED THE PRE-CON PACKAGE AND HAVE A PRE-CON WALK WITH THE PROJECT MANAGER.
2. CONTRACTOR TO HIRE PUBLIC (811) AND PRIVATE LOCATING SERVICE IN ORDER TO LOCATE AND PROTECT ALL SURFACE UTILITIES. DO NOT SCALE OFF THESE PLANS FOR ANY BELOW GRADE UTILITIES
3. CONTRACTOR SHALL VERIFY ALL EXISTING BURIED AND OVERHEAD UTILITIES PRIOR TO EXCAVATION. CONTRACTOR SHALL REPAIR ALL DAMAGED UTILITIES AT HIS OWN COST AND COORDINATE ANY REPAIRS WITH RESPECTIVE UTILITY COMPANY.
4. CONTRACTOR TO VERIFY ALL HEIGHTS AND AZIMUTHS IN FIELD PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY T-MOBILE AND ENGINEERING FIRM OF ANY DISCREPANCIES BEFORE PROCEEDING.
5. CONTRACTOR SHALL RESTORE AND REPAIR ANY DAMAGED AREAS CAUSED BY CONSTRUCTION.



N

OVERALL SITE PLAN

SCALE: 1" = 60'-0"

1

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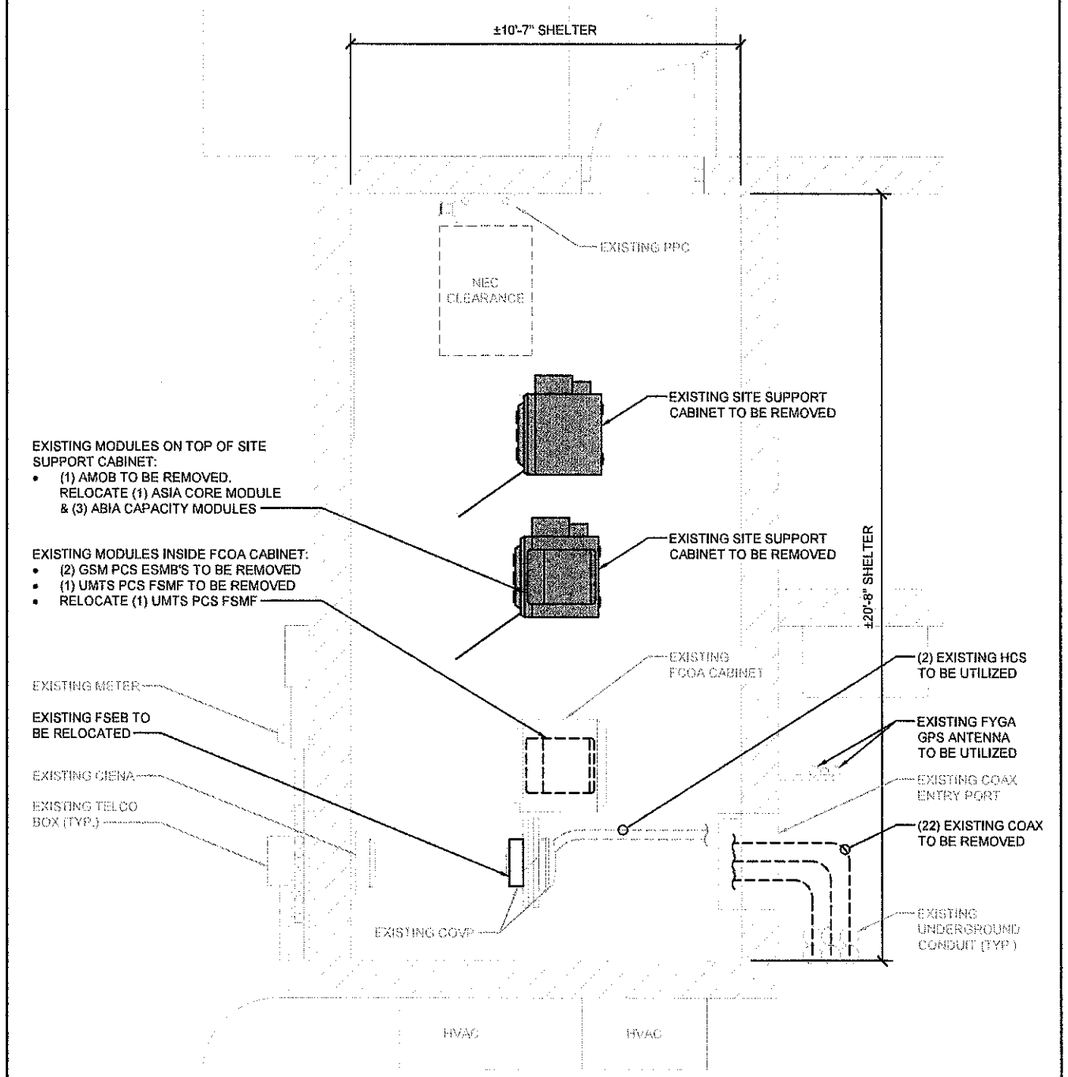
DRAWN: JTB
JOB: 20011057

C-1
OVERALL SITE PLAN

LEGEND

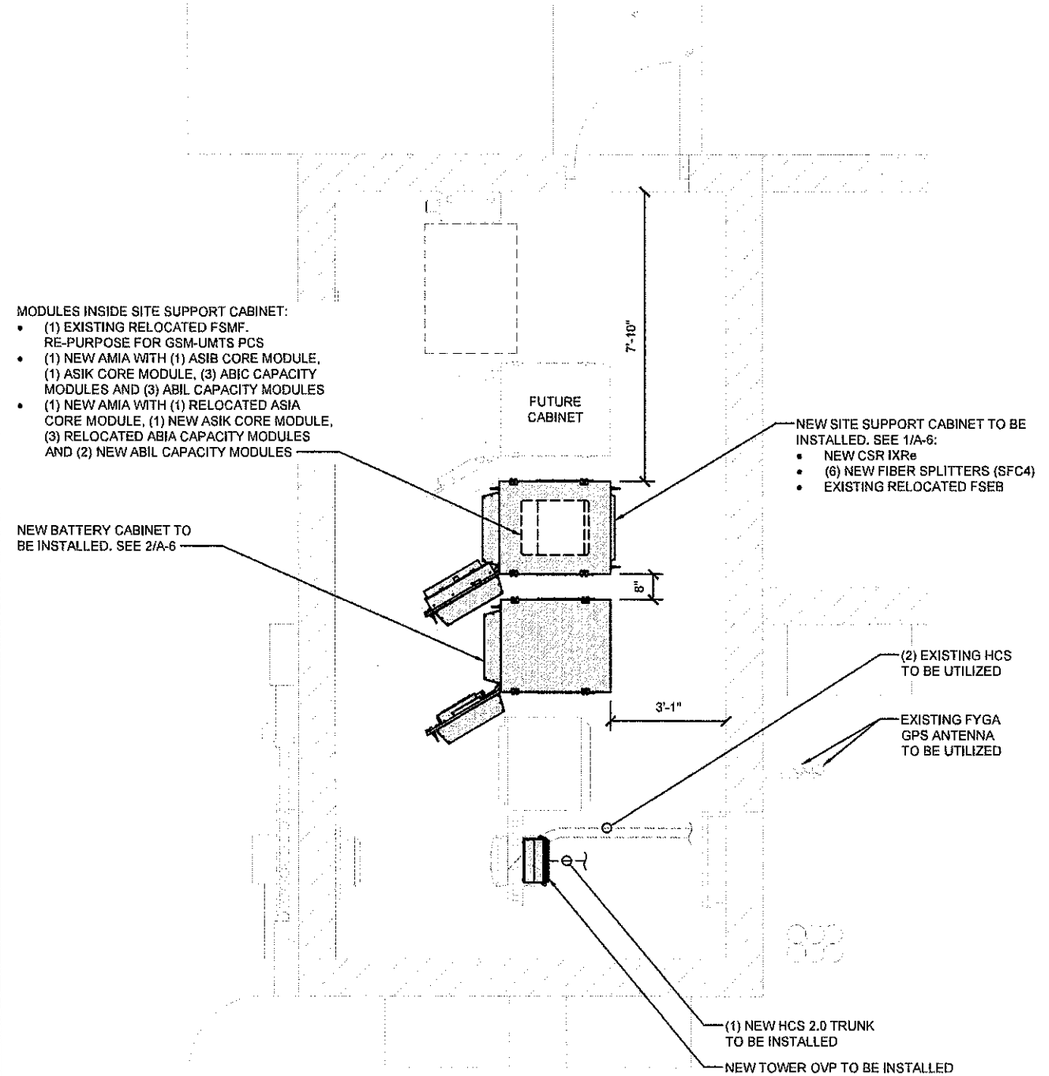
- EXISTING EQUIPMENT
- REMOVED EQUIPMENT
- RELOCATED EQUIPMENT
- NEW EQUIPMENT



EXISTING SITE PLAN

SCALE: 1/4" = 1'-0"

1



NEW SITE PLAN

SCALE: 1/4" = 1'-0"

2

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JOB: 2001108T

C-2
EXISTING & NEW SITE PLANS

IMPORTANT SITE NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING FINAL RF CONFIGURATION AND NOTIFY T-MOBILE AND ENGINEERING FIRM WITH ANY DISCREPANCIES.
2. CONTRACTOR SHALL VERIFY ALL FINAL CONNECTION LOCATIONS WITH T-MOBILE ENGINEER, RF ENGINEER, AND NET-OPS PRIOR TO INSTALLATION.
3. CONTRACTOR TO USE PROPER TORQUE WRENCH WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
4. CONTRACTOR TO ARRANGE NEW MODULES/EQUIPMENT TO AVOID INTERFERING WITH SAFETY CLIMB.

NOTE:
A STRUCTURAL ANALYSIS OF THE TOWER OR STRUCTURE HAS BEEN COMPLETED BY THE W-T GROUP, LLC ON 08/12/2020. THE LOCATION AND MOUNTING SHOWN IN THE STRUCTURAL ANALYSIS SHALL SUPERSEDE THESE DRAWINGS.

NOTE:
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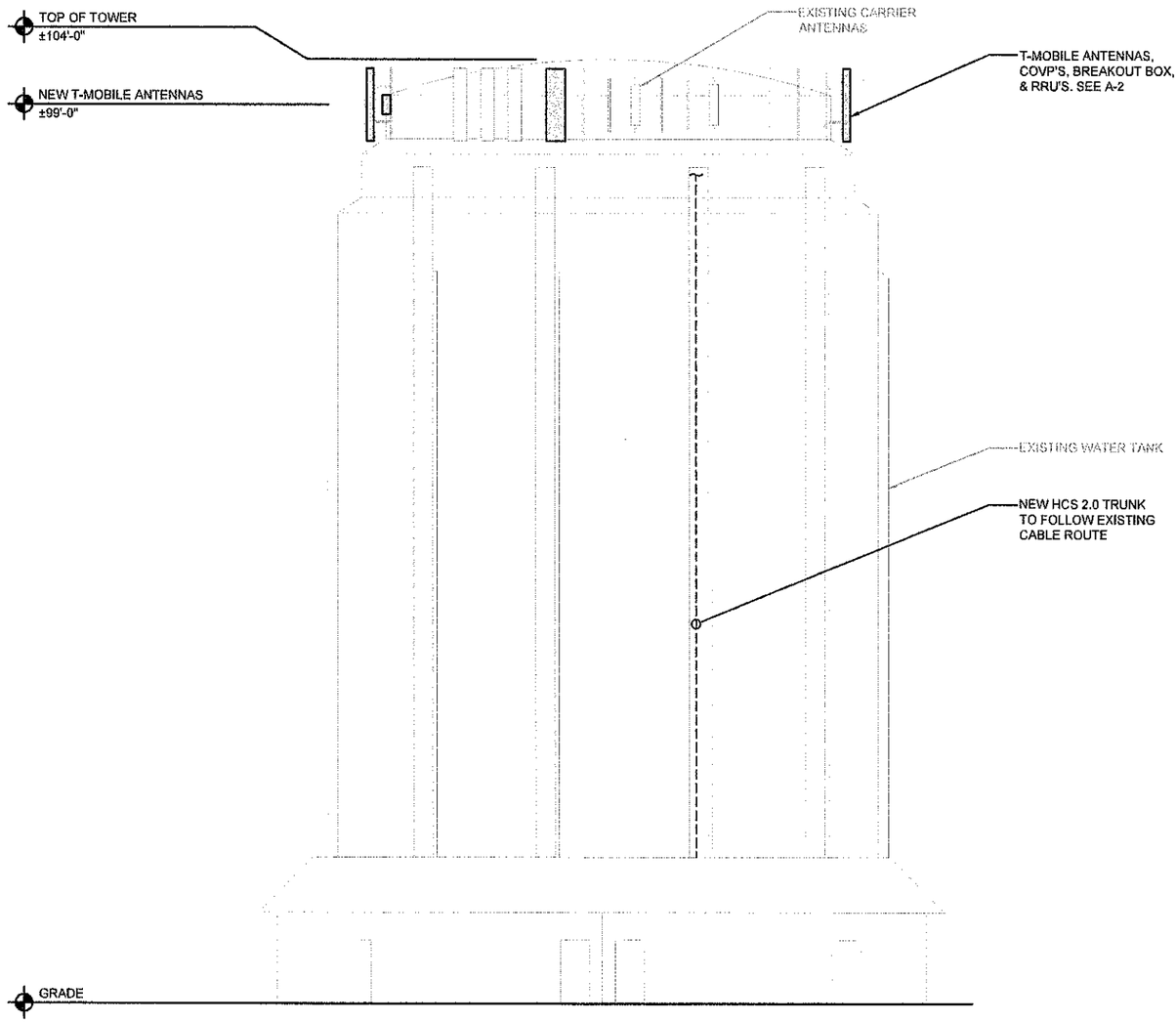

LEGEND

- EXISTING EQUIPMENT
- REMOVED EQUIPMENT
- RELOCATED EQUIPMENT
- NEW EQUIPMENT

ELEVATION | 1

SCALE: 1/16" = 1'-0"

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JOB: 2001106T

A-1
ELEVATION

LEGEND

- EXISTING EQUIPMENT
- REMOVED EQUIPMENT
- RELOCATED EQUIPMENT
- NEW EQUIPMENT

ANTENNA & CABLE SCHEDULE

SECTOR	ALPHA		BETA		GAMMA		DELTA
LOCATION	A-2	A-1	B-2	B-1	C-2	C-1	D-1
TECHNOLOGY	LTE 5G B41	GSM-UMTS-LTE PCS/LTE AWS/ LTE 600-700/N600	LTE 5G B41	GSM-UMTS-LTE PCS/LTE AWS/ LTE 600-700/N600	LTE 5G B41	GSM-UMTS-LTE PCS/LTE AWS/ LTE 600-700/N600	GSM-UMTS-LTE PCS/LTE AWS/ LTE 600-700/N600
AZIMUTH	0°		90°		180°		270°
RAD CENTER	±99'-0"		±99'-0"		±99'-0"		±99'-0"
COLOR CODING	RED	RED (1-8)	GREEN	GREEN (1-8)	BLUE	BLUE (1-8)	YELLOW (1-8)
MODEL #	AAHF (ACTIVE ANTENNA-MASSIVE MIMO)	COMMSCOPE FFHH-65C-R3	AAHF (ACTIVE ANTENNA-MASSIVE MIMO)	COMMSCOPE FFHH-65C-R3	AAHF (ACTIVE ANTENNA-MASSIVE MIMO)	COMMSCOPE FFHH-65C-R3	COMMSCOPE FFHH-65C-R3
MECHANICAL DOWNTILT	-	-	-	-	-	-	-
ELECTRICAL DOWNTILT	-	-	-	-	-	-	-
RRU TYPE	AAHF (INTEGRATED)	AHLOA AHFIG	AAHF (INTEGRATED)	AHLOA AHFIG	AAHF (INTEGRATED)	AHLOA AHFIG	AHLOA AHFIG
HCS DIA. & TYPE	HCS 2.0 TRUNK	EXISTING HIGH CAP HCS	SHARED HCS 2.0 TRUNK	EXISTING HIGH CAP HCS	SHARED HCS 2.0 TRUNK	EXISTING HIGH CAP HCS	EXISTING HIGH CAP HCS
HCS ACTUAL LENGTH	±195'-0"	-	-	-	-	-	-
HCS FACTORY LENGTH	±200'-0"	±75'-0"	-	±75'-0"	-	±200'-0"	±200'-0"
JUMPER TYPE FROM COVP/BREAKOUT BOX TO RRU	HCS 2.0 LONG JUMPER	HYBRID JUMPER	HCS 2.0 LONG JUMPER	HYBRID JUMPER	HCS 2.0 LONG JUMPER	HYBRID JUMPER	HYBRID JUMPER
JUMPER LENGTH	±90'-0"	±15'-0" / ±15'-0"	±60'-0"	±15'-0" / ±15'-0"	±15'-0"	±15'-0" / ±15'-0"	±15'-0" / ±15'-0"
JUMPER TYPE FROM RRU TO ANTENNA	-	RF JUMPER	-	RF JUMPER	-	RF JUMPER	RF JUMPER
JUMPER LENGTH	-	±6'-0" / ±6'-0"	-	±6'-0" / ±6'-0"	-	±6'-0" / ±6'-0"	±6'-0" / ±6'-0"

NOTE:
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NOTE:
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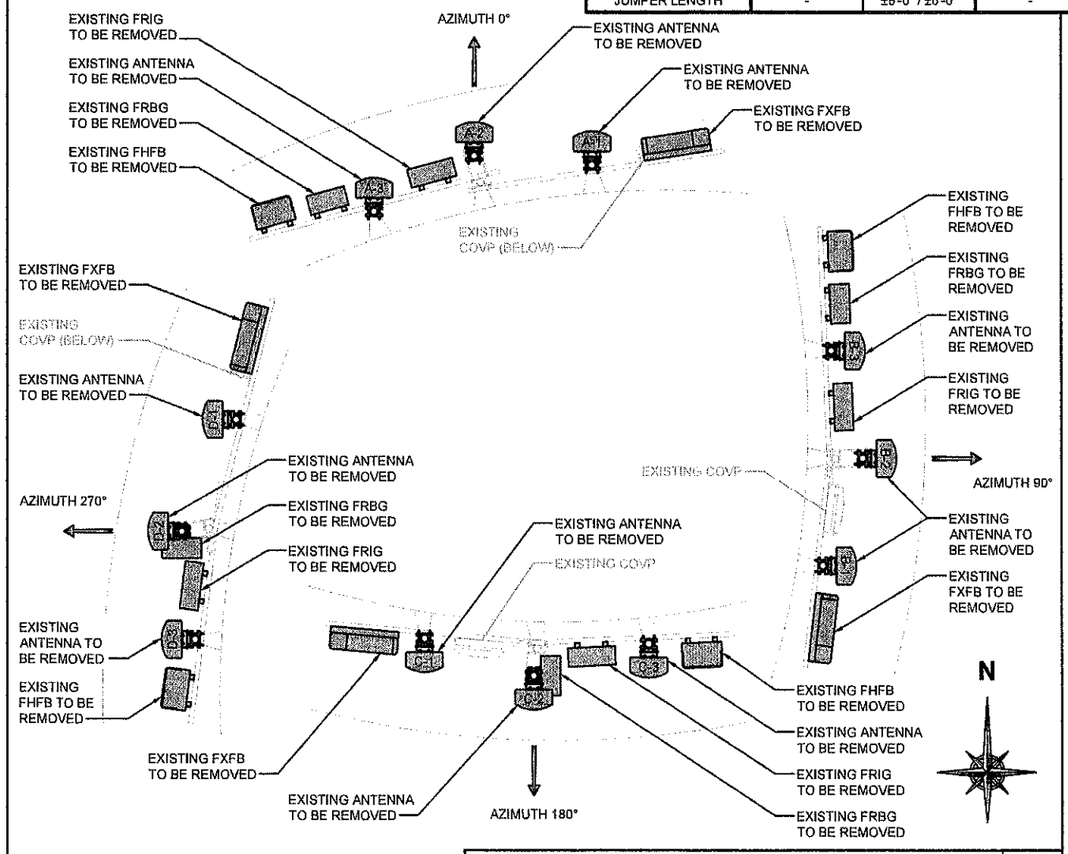
NOTE:
ANTENNA INFORMATION OBTAINED FROM T-MOBILE RF DATA CONFIGURATION SHEET DATED 04/26/2020. CONTRACTOR TO OBTAIN THE MOST CURRENT & FINAL RFDS FROM T-MOBILE FOR AZIMUTH SETTINGS PRIOR TO CONSTRUCTION

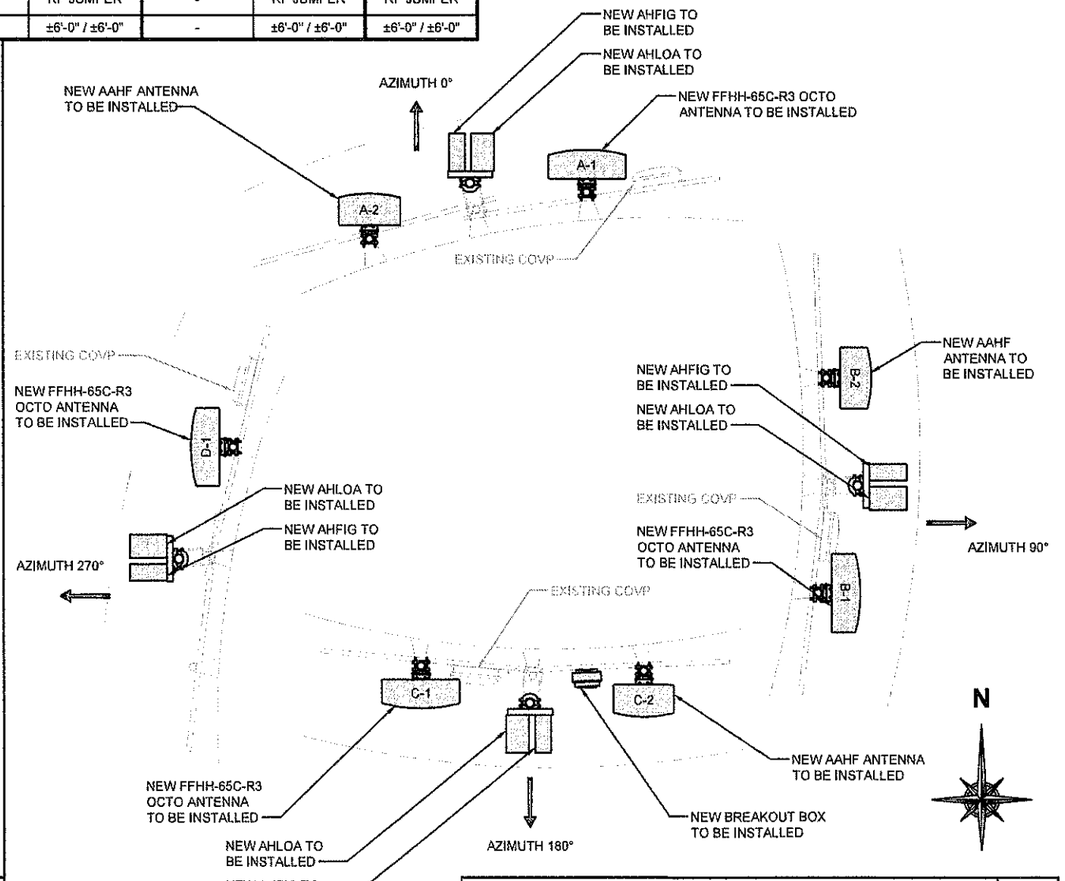
NOTE:
CONTRACTOR TO REPLACE EXISTING ANTENNA MAST PIPE WITH NEW MAST PIPE TO ACCOMMODATE NEW ANTENNA



EXISTING ANTENNA PLAN

SCALE: NONE

1



NEW ANTENNA PLAN

SCALE: NONE

2

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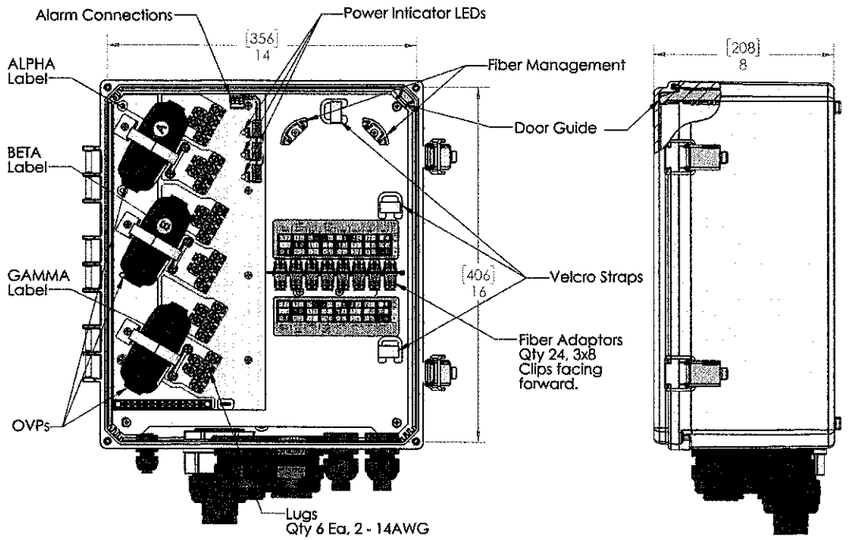
DRAWN: JTB
JOB: 2001106T

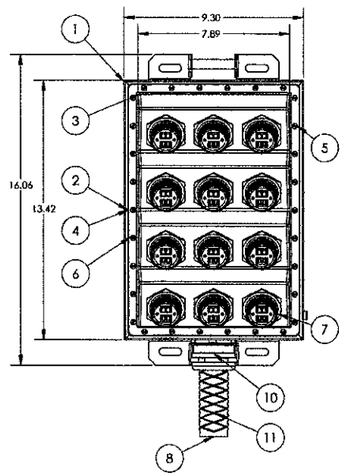
A-2
ANTENNA PLANS & SCHEDULE

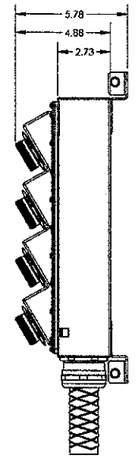


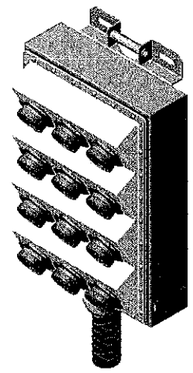
TOWER OVP DETAIL

SCALE: NONE

1







ITEM NO.	PART NUMBER	DESCRIPTION	AC-DIST08-6IP-SHIR/QTY.
1	AC-DIST05-24IP-DC	IP SHEETMETAL BOX	1
2	AC-GKT05-FB-HICAP	GASKET EPDM	1
3	AC-FB-FRONT-4STEP-3CON	HYBRID MODULE INCLINE MOUNT THERMO SHELL	1
4	AC-STR05-HICAP	METAL O-RING	1
5	Regular LW 0.125	WASHER	30
6	3GMRB06058	TAMPERED PROOF #6-32 SCREW	30
7	CF-970850-101_106_W/LC	JAM NUT RECEPTACLE	12
8	ASU9325TYP02	HYBRID CABLE HI-CAP	1
9	6000428	LOCKNUT FOR CABLE GLAND	1
10	4220342	CABLE GLAND	1
11	HOIST GRIP	CABLE HOIST GRIP	1

HYBRID CABLE HI-CAP BREAKOUT BOX

SCALE: NONE

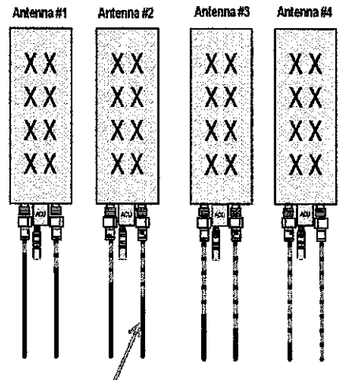
2

Coax Color Coding

- ❑ Antennas will be labeled (back of antenna view) Right to left 1 - X ports
- ❑ Coax/Jumper lines will be identified by sector color and by number of bands around the coax/jumper

Sector A	Red
Sector B	Green
Sector C	Blue
Sector D	Yellow
Sector E	White
Sector F	Black
LMU	Brown + Sector Color Bands (1,2)
Fiber ID	Gray
Unused Coax	Pink
Microwave	Orange
PWE T-1's + GPS Downlink cable	ID w/Label Maker

Front of the Antenna

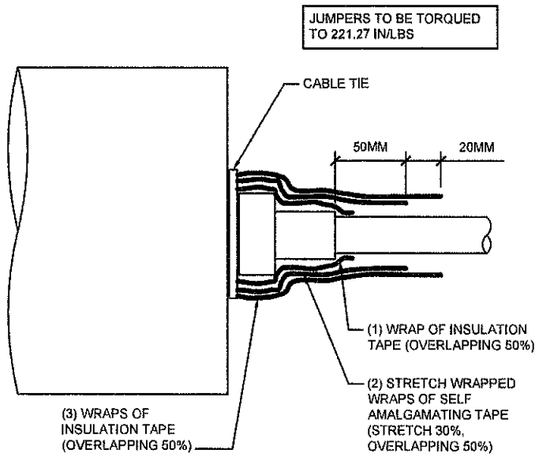


- ❑ Example – Coax with *four bands* of *RED* tape will represent *Alpha sector* and *the 4th port of antenna*.

COAX COLOR CODING

SCALE: NONE

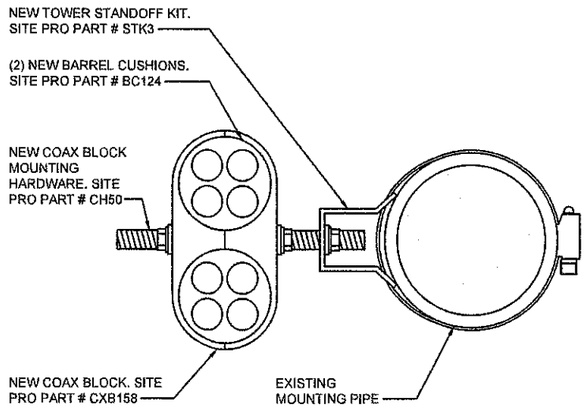
3



RF JUMPER CONNECTION DETAIL

SCALE: NONE

4



RF JUMPER MOUNTING DETAIL

SCALE: NONE

5

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DRAWN: JTB
JOB: 20011057

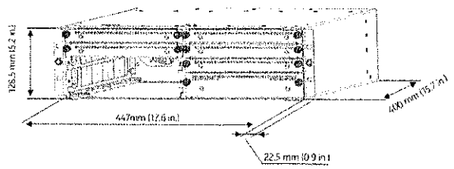
A-3
EQUIPMENT
SPECIFICATIONS

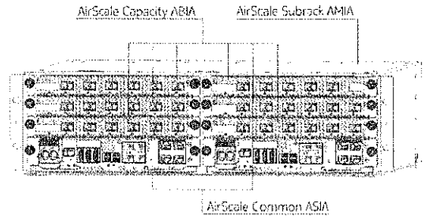
Nokia AirScale System Module Indoor consists of the following items:

- One Nokia AirScale Subrack (AMIA), including backplane for high bandwidth connectivity between processing plug-in units
- One or two Nokia AirScale Common (ASIA) plug-in units for transport interfacing and for centralized processing
- Up to six Nokia AirScale Capacity (ABIA) plug-in units for baseband processing and for optical interfaces with radio units

Weight	Empty: 5.1 kg (11.2 lb) With dummy panels: 6.8 kg (15 lb) With all units: 23.9 kg (52.7 lb)

The AirScale Subrack (AMIA) has a 3U height and fits into a standard 19 in. rack. Multiple subracks can be stacked on top of each other. The indoor subrack includes fans, a backplane for internal communication, and the DC-feed. The direction of the cooling air can be changed by rotating fans. The default direction is front-to-back.

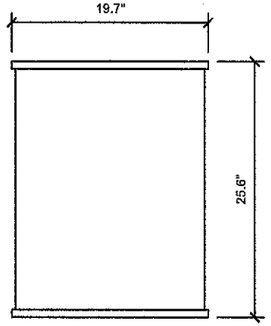




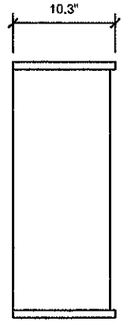
AMIA DETAIL

SCALE: NONE

1



FRONT



SIDE

NOKIA AAHF

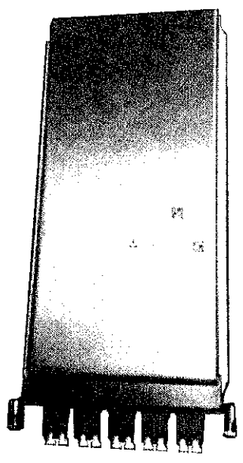
SIZE (L x W x D): 25.6" x 19.7" x 10.3"

WEIGHT (W/O MOUNTING KIT): 103.6 LBS

ANTENNA DETAIL

SCALE: NONE

2

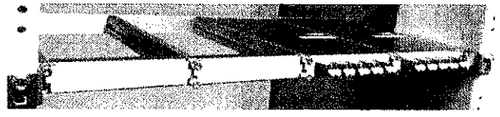


FRONT

SIDE

NOKIA SFC4

SIZE (L x W x D): T.B.D.
WEIGHT: T.B.D.

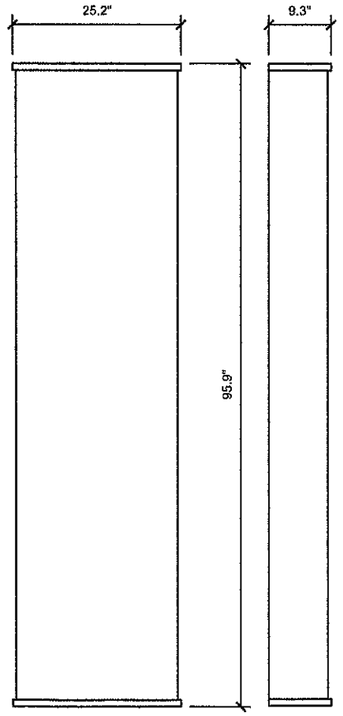


MOUNTING (SITE SUPPORT CABINET)

FIBER SPLITTER DETAIL

SCALE: NONE

3



FRONT

SIDE

COMMSCOPE FFHH-65C-R3

SIZE (L x W x D): 95.9" x 25.2" x 9.3"

WEIGHT (W/O MOUNTING KIT): 127.6 LBS

ANTENNA DETAIL

SCALE: NONE

4

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OF ILLINOIS

EXPIRES: 11/30/21 SIGNED: 08/13/20

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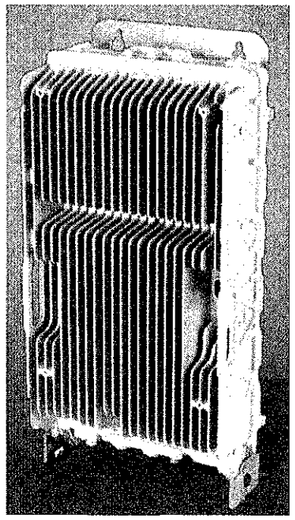
JOB: 2001106T

A-4
EQUIPMENT SPECIFICATIONS

Supported Frequency bands	3GPP Band 12/71
Frequencies	Band 12 adjusted: Rx 698 – 715 MHz, TX 728 – 745 MHz Band 71: RX 663 MHz – 698 MHz, TX 617 MHz – 652 MHz
Number of TX/RX paths/pipes	4 pipes; 2T2R, 2T4R, 4T4R for both bands
Instantaneous Bandwidth IBW	16 MHz for B12 and 35MHz for B71 1 MHz below B12 NB IoT future use
Occupied Bandwidth OBW	52 MHz total across bands
Output Power	60W per TX shared between bands
Supply Voltage / Range	DC-48 V / -36 V to -60 V
Typical Power Consumption	664W [ETSI Busy Hour Load at 4TX@60W (Both Bands Active)]
	395W [ETSI Busy Hour Load at 4TX@30W (One Band Active)]
Antenna Ports	4 ports, 4.3-10+
Optical Ports	2 x CPRI 9.8 Gbps
ALD Control Interfaces	AISG3.0 from ANT1, 2, 3, 4 and RET (DC on ANT1 & ANT3)
Other Interfaces	External Alarm MDR-26 Serial connector (4 inputs, 1 Output) DC Circular Power Connector
Physical	560 mm x 308 mm x 189 mm Approximately 38kg with no covers or brackets
Operating Temperature Range	-40°C to 55°C (with no solar load)
Surge Protection	Class II 5A
Installation Options	Vertical & Horizontal Book Mount, Pole & Wall Mount

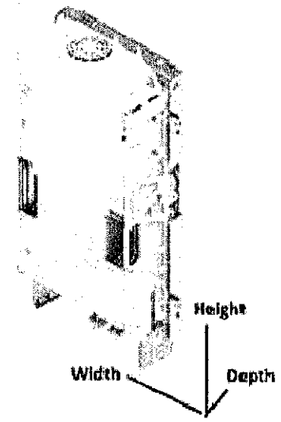


AHLOA DETAIL

SCALE: NONE

1

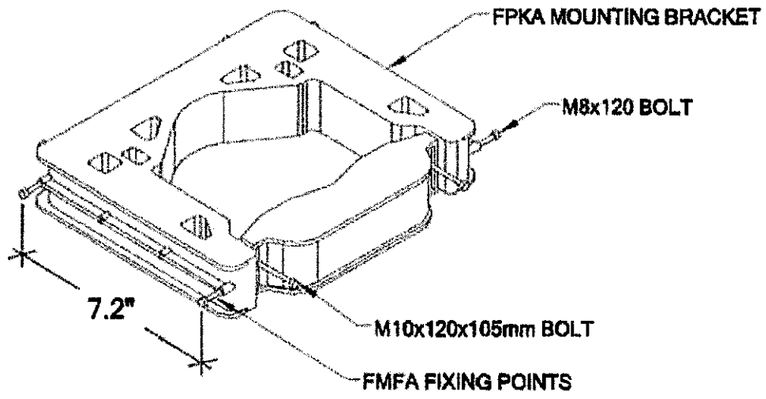
	Instantaneous BW (DL/UL)	65MHz on Band 25, 80MHz on Band 66
	Supported Modulation schemes	up to 64QAM (UL) and up to 256QAM (DL)
	Supported bandwidths	LTE 1.4,3,5,10,15,20 MHz
	No. of ports	4T4R
	Output Power	80 W for Band 25 and 40 W for Band 66 (Total Power is 480W)
	DC connector	Terminal block
	Optical Fiber connector	2 x 9.8Gbps CPRI, R2CT IP seal
	RF Connector	4.3-10+
	AISG	AISG on all ports, DC on ANT1 and ANT3
	Dimensions **(H x W x D) in**	27.3 x 12.1 x 5.2
	Weight lbs	70.5 without cover
	HW/SW Availability	Available now – SRAN19A
	5G NR Support	YES
NB-IoT Support	YES (in band, guardband, standalone)	



AHFIG DETAIL

SCALE: NONE

2



FPKA BRACKET DETAIL

SCALE: NONE

3

NOT USED

SCALE: NONE

4

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JOB: 2001105T

A-5
EQUIPMENT SPECIFICATIONS

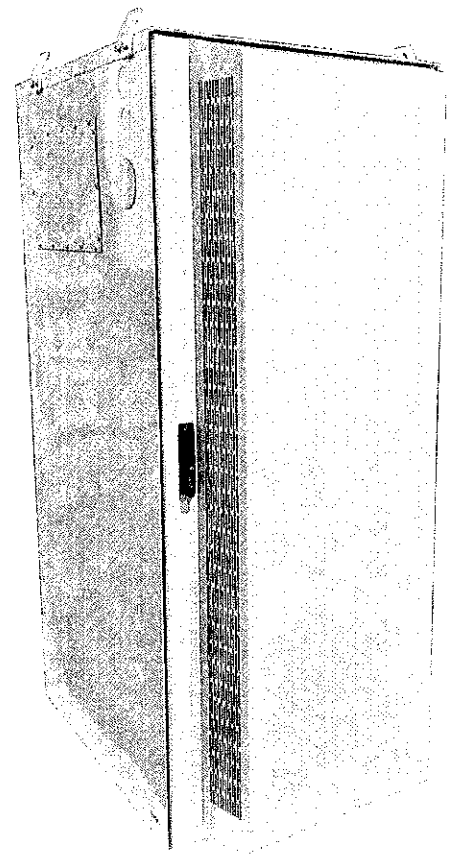
Smarter. Greener. Together.

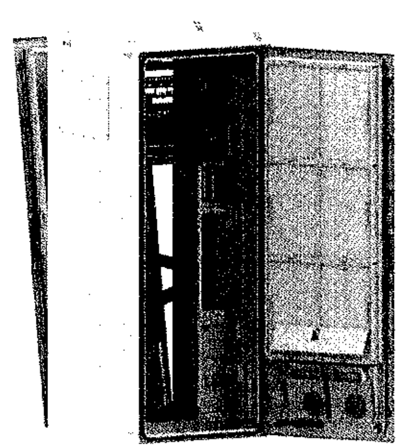
Specifications

Model	**HPL3 (HP-Large 3 Power Cabinet)**
1. General	
Construction	Aluminum enclosure
Dimensions (W x H x D)	30 x 72 x 34.6 in. (762 x 1829x 879mm). Depth with Door/Hatch: 44.7 in. (1136mm)
Weight	~595 lbs (~270kg) (without customer equipment or batteries)
Internal rack dimension	Total Equipment space 30RU: Horizontal rack: 19" x 27RU Vertical rack: 19" x 3RU Power System space: 23" x 12RU
Mounting options	Pad-mount, plinth option
Finish	Polyester Power Paint (Tan)
Safety	UL Listed , IEC / EN 60950
2. Environment	
Operating temperature	-40°C to +50°C (-40°F to +122°F) with solar load. IP 55
Protection class	designed to GR-487
Acoustics	65dBA @5000W heat load , 70dBA @ 6000W
Humidity (relative)	95%, non-condensing (Max.)
3. Thermal Management	
Cooling Equipment:	Direct Air Cooling, 6000W capacity, 5°C delta T
Heating Equipment:	Forced air heating (2) 1000W AC heaters
4. Equipment	
Cable entry	Knock-out plate on each upper side wall / Additional knockouts on sides (1) 3" conduit hole with hole plug
Door latch	3 point latching, 5/16 nut driver tool, pad-locking capability
Primary ground	10 double-hole ¼"-20 threaded holes on 5/8" center ground bar
Lifting Ears	4 Lifting Tabs
Plinth	Optional 6" plinth available
Standard equipment	AC Load Center: 240V split phase, dual feed / (1) 200A + (1)100A 208V 3-phase, single feed / (1) 200A AC Surge Protection for each breaker feed GFCI Receptacle 120V Temp Probes (6 form-C) Alarm Termination block 605A/ 54V (336kW) redundant Power System with DIN rail distribution: 12 rectifier positions (3x55A DPR3000 rectifiers included) 48 poles for load (2x10A, 3x50A, and 6x100A load breakers included) 16 poles for battery (2) SB350 / (2) SB175 Battery connections (3) SB350 Generator connections (6) DC powered centrifugal fans with (3) MERV-13 filters, (GORE option) Clogged Filter alarm pressure switch
Front Door:	Door intrusion alarm (2) 1000W AC powered heaters LED interior cabinet light
Rear Hatch:	Exhaust vent with (3) MERV-13 filters, (GORE option)
5. Ordering Information	

Cabinet	ESOA600-HCU01	HP-Large 3 600A Power / Equipment Cabinet
Rectifier	ESR-48/60A A-T	48V / 56A 3000W, 96.4%, CAN communication
Controller (Spare)	TPS1020028AU17	Orion TOUCH Controller
Plinth, 6"	37993318816900-S	Plinth for V1/V2, HPL2, HPL3, LB2 and LB3

*All specifications are subject to change without prior notice





SITE SUPPORT CABINET | 1

SCALE: NONE

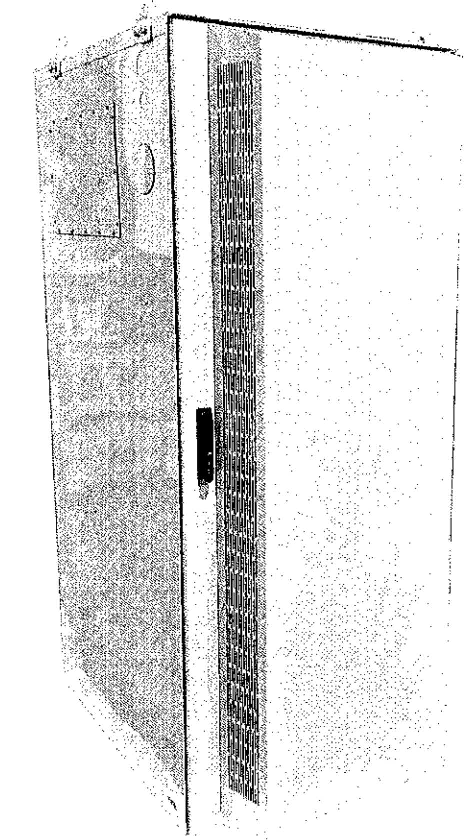
Smarter. Greener. Together.

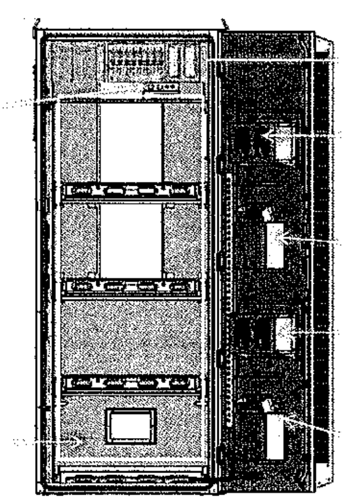
Specifications

Model	**Large 3 Battery (LB3) Cabinet**
1. General	
Construction	Aluminum enclosure
Dimensions (W x H x D)	30 x 72 x 35in. (766 x 1829x 889mm), Depth with door: 41 in. (1046mm)
Weight	~540lbs (245kg) (without batteries)
Internal rack dimension	4 battery trays to support up to 210Ah batteries
Mounting options	Pad-mount, plinth option
Finish	Polyester Powder Paint (Tan)
Safety	UL Listed, IEC / EN 60950
2. Environment	
Operating temperature	-40C to +50C (-40F to +122F) with solar load.
Protection class	IP55 designed to GR-487
Acoustics	65 dBA
Humidity (relative)	95%, non-condensing (Max.)
3. Thermal management	
Cooling	Direct Air Cooling: (4) Axial Fans. Filters: F6 front and rear
Heating	Forced air heating (2) 1000W AC heaters
4. Equipment	
Cable Entry	Knock-out plate on each upper side wall Additional knockouts each side
Door latch	3 point latching, 5/16 Nut driver tool, pad-locking capability
Lifting Ears	4 eye bolts
Standard equipment	AC Load Center with AC Surge protection and GFCI outlet Left or Right side AC entry options (2) 1000W AC powered heater DC Load Center 600A bulk feed bus bar (4) 20050A DIN rail battery breakers (4) 2-hole lug landings (2) Anderson SB350 input connectors to daisy chain 2nd battery cabinet 2AWG battery cables from breakers to trays Configurable trays for (4) strings of up to 210Ah batteries Door intrusion switch LED interior cabinet light Fan Control Board, factory wired alarms via RJ45 output (fan & breaker alarms) Cabinet Connection kit (2) 4/0 cables with SB350 disconnects to connect to power cabinet
5. Ordering Information	

Cabinet	ESOF015-ECV04	Large Battery 3 Cabinet
Plinth, 6"	37993318816900-S	Plinth for V1/V2, HPL2, LB2 cabinets only

*All specifications are subject to change without prior notice.





BATTERY CABINET | 2

SCALE: NONE

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OF ILLINOIS

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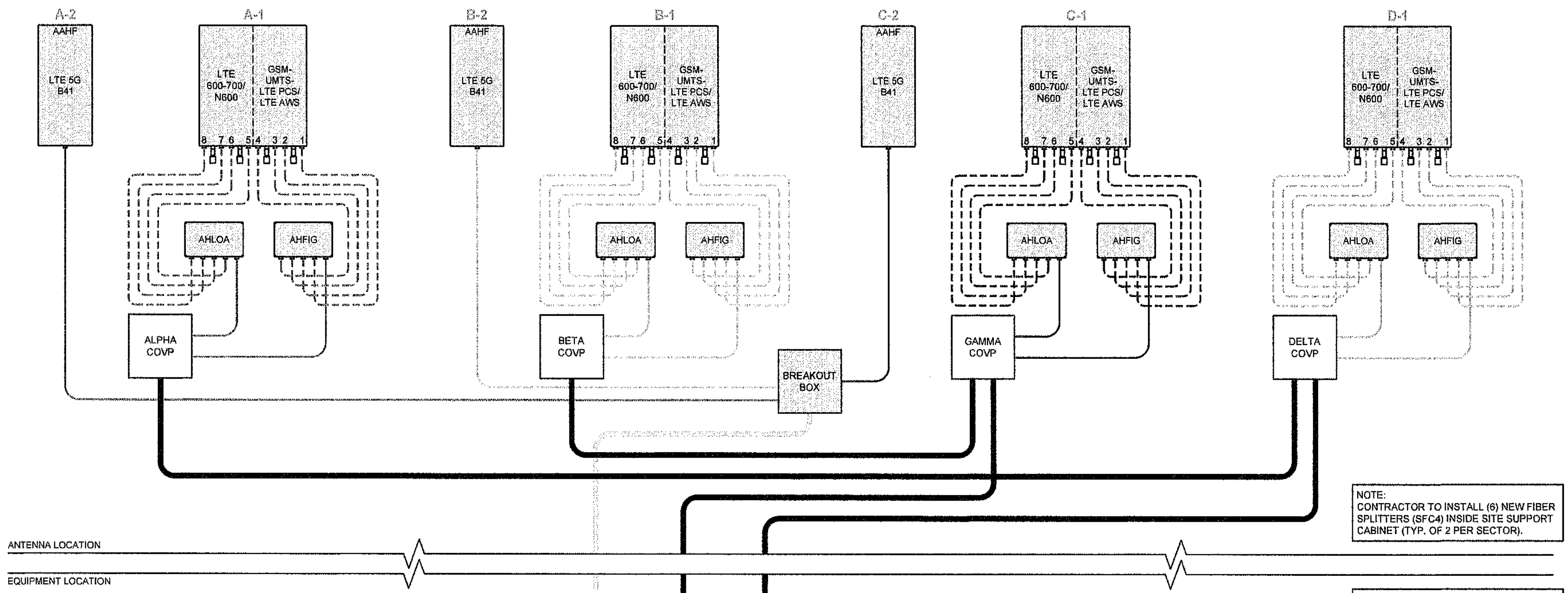
A-6
EQUIPMENT SPECIFICATIONS



NOTE:
CONTRACTOR TO INSTALL (6) NEW FIBER SPLITTERS (SFC4) INSIDE SITE SUPPORT CABINET (TYP. OF 2 PER SECTOR).

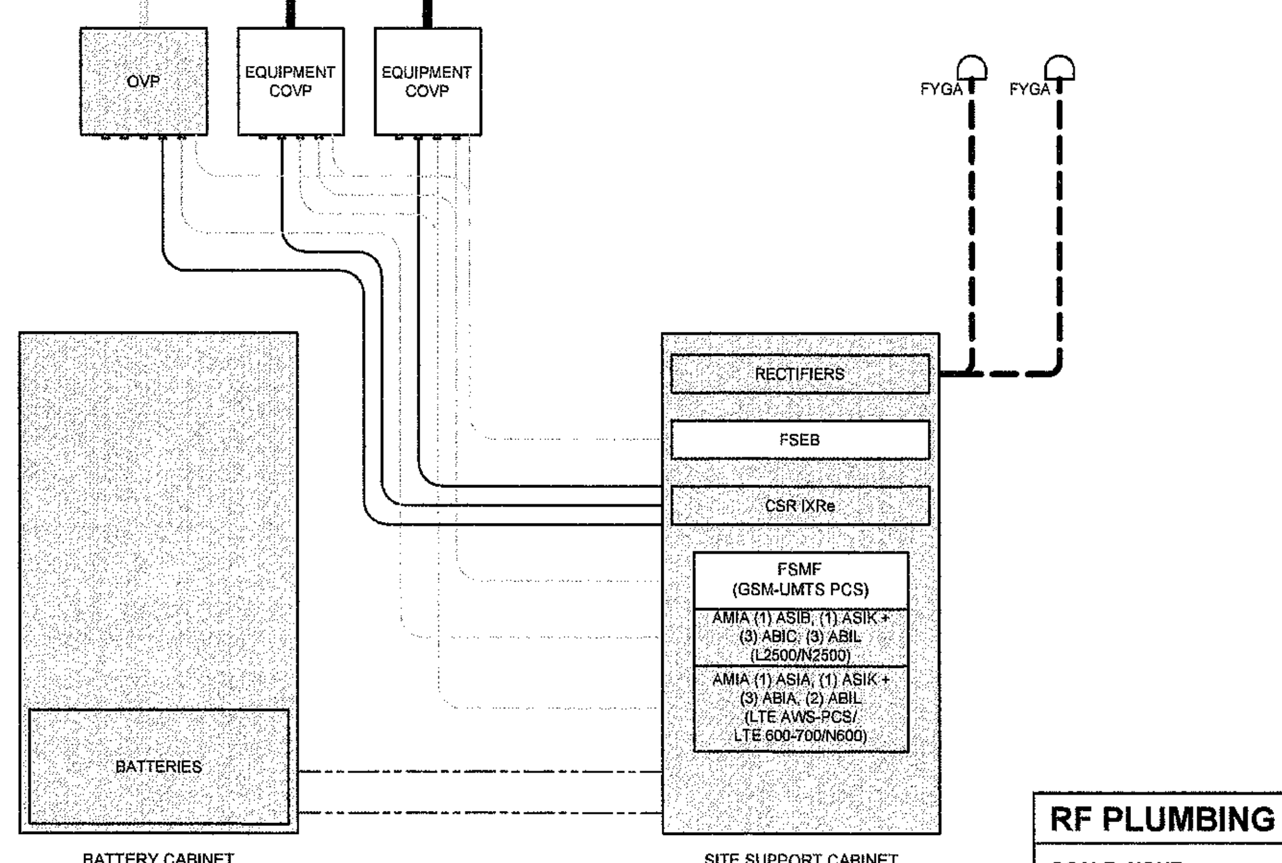
NOTE:
CONTRACTOR TO REFER TO THE RADIO AND ANTENNA INSTALLATION MOPs FOR THE CORRECT PLUMBING DIAGRAM

NOTE:
CONTRACTOR TO OBTAIN THE MOST CURRENT RFDS FROM T-MOBILE PRIOR TO CONSTRUCTION

COMPLETE SCOPE OF WORK

- (2) GSM PCS ESMB'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- (1) UMTS PCS FSMF TO BE REMOVED AND RETURNED TO WAREHOUSE
- RELOCATE (1) EXISTING FSMF TO SSC. RE-PURPOSE FOR GSM-UMTS PCS
- (1) EXISTING AMOB TO BE REMOVED AND RETURNED TO WAREHOUSE
- (4) EXISTING FRIG'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- (4) EXISTING FXFB'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- (4) EXISTING FHFB'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- (4) EXISTING FRBG'S TO BE REMOVED AND RETURNED TO WAREHOUSE
- INSTALL (4) NEW AHLOA'S (1 PER SECTOR)
- INSTALL (4) NEW AHFIG'S (1 PER SECTOR)
- REPLACE (12) EXISTING ANTENNAS WITH (7) NEW ANTENNAS
- INSTALL NEW RF JUMPERS FOR NEW AND RELOCATED RRU'S
- EXISTING (22) COAX TO BE REMOVED
- UTILIZE (4) EXISTING HCS CABLES
- INSTALL (3) NEW HCS 2.0 LONG JUMPERS
- UTILIZE (2) EXISTING EQUIPMENT COVP'S & (4) EXISTING ANTENNA COVP'S
- INSTALL (1) NEW TOWER OVP AT EQUIPMENT
- INSTALL (1) NEW BREAKOUT BOX AT ANTENNAS
- RELOCATE (1) EXISTING FSEB TO SSC
- EXISTING (2) SSC'S TO BE REMOVED
- INSTALL (1) NEW SSC AT EQUIPMENT
- INSTALL (1) NEW BBU AT EQUIPMENT
- INSTALL (1) NEW AMIA W/ (1) ASIB CORE MODULE, (1) ASIK CORE MODULE, (3) ABIC CAPACITY MODULES AND (3) ABIL CAPACITY MODULES IN NEW SSC
- INSTALL (1) NEW AMIA W/ (1) EXISTING ASIA CORE MODULE, (1) NEW ASIK CORE MODULE, (3) EXISTING ABIA CAPACITY MODULES AND (2) NEW ABIL CAPACITY MODULES IN NEW SSC
- INSTALL (6) NEW FIBER SPLITTERS IN NEW SSC (2 PER SECTOR)
- INSTALL NEW CSR IXRe

- SWEEP TEST EXISTING COAX LINES & ANTENNA USED FOR FINAL BUILD
- RESTORE EXISTING GROUNDS AS NEEDED FOR EXISTING COAX LINES & ANTENNAS USED FOR FINAL BUILD
- OBTAIN CURRENT RFDS WITHIN 48 HOURS PRIOR TO CONSTRUCTION
- FOLLOW PORT MATRIX PER RF CONFIGURATION
- FOLLOW CURRENT T-MOBILE STANDARD OPERATION PROCEDURE
- RETURN ALL UNUSED NEW & OLD EQUIPMENT MATERIALS/EQUIPMENT TO WAREHOUSE IN THE SAME CONDITION WHEN IT WAS REMOVED
- PROVIDE CLOSEOUT PACKAGE WITHIN 72 HOURS AFTER SITE COMPLETION
- CLOSE ANY OPEN PERMITS AFTER SITE COMPLETION



LEGEND

- ALPHA CABLES
- BETA CABLES
- GAMMA CABLES
- DELTA CABLES
- RF JUMPER
- MAIN POWER & FIBER
- POWER & FIBER JUMPER
- ALARM CABLE
- AISG RET CABLE
- HYBRID CABLE
- COAX CABLE
- POWER
- RELOCATED EQUIPMENT
- NEW EQUIPMENT
- EXISTING EQUIPMENT

RF PLUMBING DIAGRAM

SCALE: NONE

1

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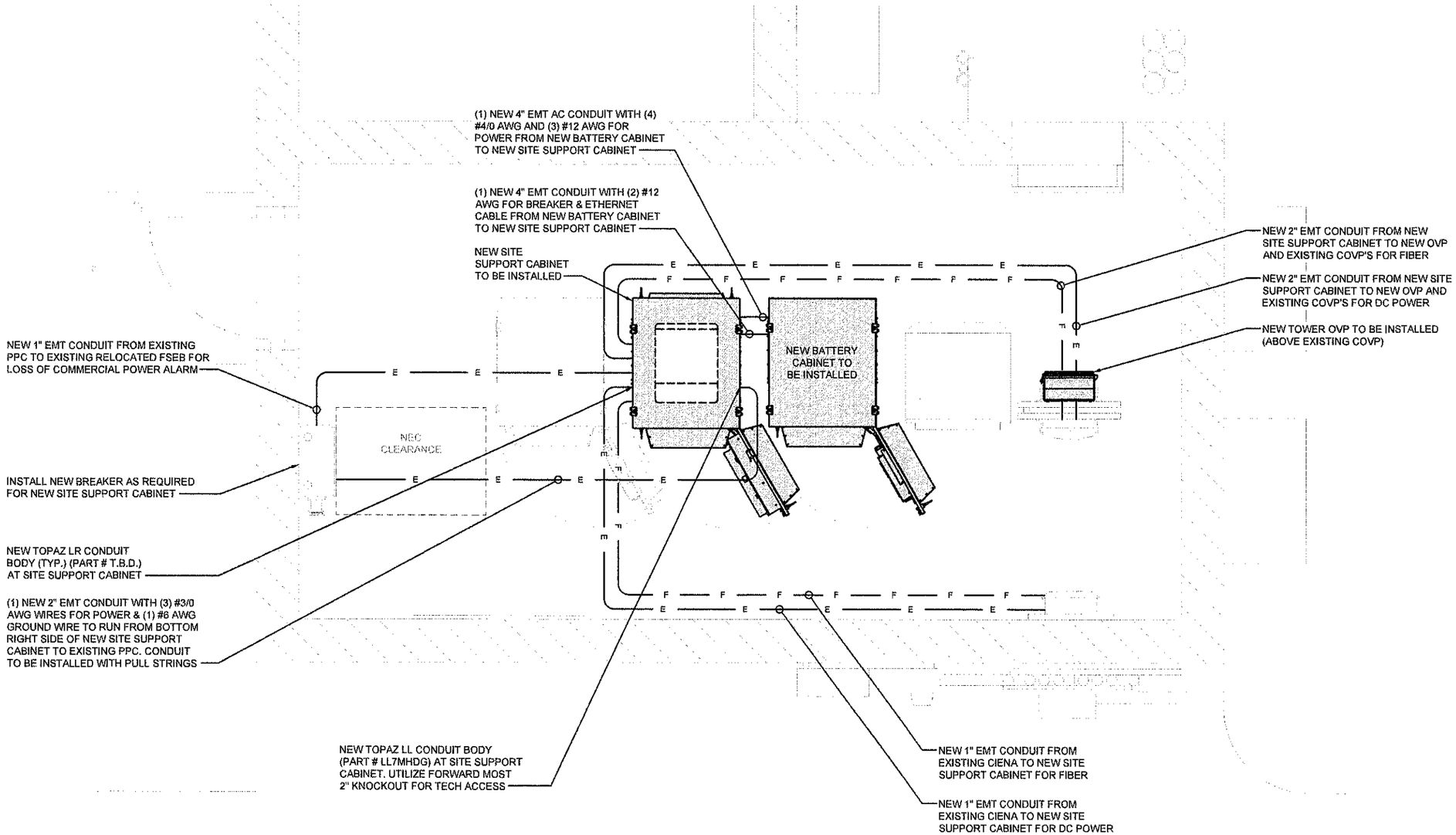
A-7
RF PLUMBING DIAGRAM

PPC NOTES:
- LOW VOLTAGE CONDUIT FROM PPC TO SSC
- (2) RUNS OF BELDEN 27916A 18 AWG 2 CONDUCTOR TYPE TC CABLE, 600V WIRE
- WIRE TO NORMALLY CLOSED RELAY FOR LOCP
- WIRE TO NORMALLY OPEN RELAY FOR GENERATOR RUN

LEGEND
- F —— FIBER LINE
- E —— ELECTRIC LINE



N

UTILITY PLAN

SCALE: 3/8" = 1'-0"

1

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E-1
UTILITY PLAN

GROUNDING STANDARDS:

1.0 DEFINITIONS

AGB: ANTENNA GROUND BAR

AWG: AMERICAN WIRE GAUGE

CADWELDING: AN EXOTHERMIC WELDING PROCESS WHICH CREATES POSITIVE CONTACT OF POSITIVE CONTACT OF GROUNDING CONDUCTORS

EMT: ELECTRICAL METAL TUBING (LIGHT GAUGE METALLIC CONDUIT)

MGB: MASTER GROUND BAR

PVC: POLYVINYL CHLORIDE CONDUIT

RFI: RADIO FREQUENCY INTERFERENCE

TGB: TOWER GROUND BAR

THWN: LETTER TYPE DESIGNATION FOR CONDUCTOR INSULATION THAT IS A MOISTURE AND HEAT RESISTANT THERMOPLASTIC WITH A MAXIMUM OPERATING TEMPERATURE OF 75 DEGREES CELSIUS OR 167 DEGREES FAHRENHEIT

T/I: TENANT IMPROVEMENT

2.0 BACKGROUND

2.1 AREAS OF CONCERN: WHEN DESIGNING A GROUNDING SYSTEM FOR A MOBILE RADIO FACILITY THERE ARE FOUR INTERRELATED AREAS OF CONCERN. THE BASIC OBJECTIVE FOR EACH IS:

1. LIGHTNING PROTECTION -TO MAINTAIN ALL EQUIPMENT AT THE SAME POTENTIAL DURING A LIGHTNING IMPULSE.
2. RFI FOR NOISE INDUCTION CONTROL -TO ESTABLISH THE LOWEST POSSIBLE IMPEDANCE AMONG ALL EQUIPMENT.
3. ELECTROSTATIC CONTROL -TO REDUCE ELECTROSTATIC DISCHARGE PROBLEMS.
4. PERSONNEL SAFETY -TO MAINTAIN A MINIMUM VOLTAGE DIFFERENCE BETWEEN ANY TWO METALLIC OBJECTS WHICH PERSONNEL MIGHT CONTACT SIMULTANEOUSLY.

2.2 A/C GROUNDING: IN THIS GROUNDING SYSTEM THE A/C SERVICE GROUND SHALL BE KEPT ISOLATED FROM THE EQUIPMENT FRAME WORK AND LIGHTNING PROTECTION GROUND SYSTEMS EXCEPT FOR ONE SPECIFIC POINT. THIS POINT IS THE MAIN GROUNDING POINT OF THE SYSTEM. THIS WOULD TYPICALLY BE CONNECTING THE A/C SERVICE GROUND AT THE COMMERCIAL POWER RISER POLE DISCONNECT/METER BASE TO THE EXTERNAL GROUND RING. ALL GROUNDING CONNECTIONS INSIDE OF CABINETS SHALL BE SCRAPED TO BARE METAL AND COATED WITH NOALOX.

2.3 LIGHTNING CONSIDERATIONS: LIGHTNING DAMAGE OCCURS FROM EITHER INDUCTION OR FROM AN ACTUAL DIRECT STRIKE TO THE BUILDING, USUALLY TAKEN THROUGH THE TOWER AND/OR ANTENNAS. STRIKES TO OTHER NEARBY OBJECTS INDUCE HIGH ENERGY INTO POWER OR TELEPHONE CABLES ENTERING THE BUILDING. THIS TYPE OF EFFECT HISTORICALLY CAUSES MOST OF THE DAMAGE TO THE BUILDING AND ITS CONTENTS.

3.0 STATION GROUNDING SYSTEM

3.1 MATERIALS:

1. #2 AWG, BARE SOLID TINNED COPPER WIRE, FOR ALL EXTERIOR CONDUCTORS AND TOWER GROUND BAR CONDUCTORS OR AS OTHERWISE SPECIFIED. GROUNDS TO THE RF MODULES SHALL BE NO. 6 STANDARD GREEN INSULATED JUMPERS. THE GROUND WIRE TO THE MGB SHALL BE GREEN JACKETED STRANDED #2 TINNED WIRE BURNDY CONNECTED TO THE BUSS BAR AND CONNECTED TO THE GROUND RING ON A GROUND ROD.
2. #2 AWG, INSULATED STRANDED COPPER CABLE IS ACCEPTABLE FOR INTERIOR GROUND BAR CONDUCTORS ON TENANT IMPROVEMENT SITES.
3. 5/8" X 10" GROUND RODS OF SOLID COPPER, STAINLESS STEEL OR COPPER CLAD HIGH STRENGTH STEEL.
4. ABOVE GRADE CONNECTIONS SHALL BE BURNDY HYGROUND COMPRESSION. BELOW GRADE CONNECTIONS SHALL BE EXOTHERMIC WELD OR OTHER APPROVED EXOTHERMIC WELDING SYSTEM FOR BONDING AS SPECIFIED.
5. XIT OR ADVANCED GROUNDING ELECTRODE (AGE), ALL CHEMICAL GROUND RODS SHALL BE UL APPROVED.
6. SOLID COPPER PLATES OF MINIMUM 3'X3'X1/4" SIZE AS SPECIFIED.
7. NOALOX OR APPROVED EQUAL CONDUCTIVE MEDIUM MATERIAL SHALL BE USED IN ALL MECHANICAL CONNECTIONS.
8. #2 AWG STRANDED INSULATED (GREEN) FOR ALL INTERNAL EQUIPMENT GROUNDING.
9. MECHANICAL FASTENERS (I.E., DOUBLE LUGS, SPLIT BOLTS PARALLEL CONNECTORS) SHALL BE BRONZE, BRASS, COPPER OR STAINLESS STEEL AND HAVE NOALOX BETWEEN CONDUCTOR AND CONNECTION.
10. BOLTS, NUTS AND SCREWS USED TO FASTEN MECHANICAL CONNECTORS SHALL BE STAINLESS STEEL WITH STAR TYPE STAINLESS STEEL LOCK WASHERS.
11. ALL LUG TUBE FASTENERS SHALL PROVIDE TWO HOLES TO ALLOW A DOUBLE BOLT CONNECTION.

3.2 MASTER GROUND BAR (MGB): THE PURPOSE OF THE MASTER GROUND BAR IS TO GROUND THE BTS AND ANY OTHER METALLIC OBJECTS AROUND THE BTS. IF AN MGB IS NOT PROVIDED WITH THE BTS, THE MGB SHALL BE AS FOLLOWS: THE MGB IS A COPPER BAR MEASURING 4"W X 24"L X 1/4" LOCATED AS CLOSE TO THE BTS AS POSSIBLE. THE MGB SHALL HAVE A MINIMUM NUMBER OF (28) 3/8" HOLES. GROUND BAR SHALL BE SUPPORTED BY MOUNTING BRACKETS WITH INSULATOR STANDOFFS. (2) #2 TINNED SHALL BE MECHANICALLY ATTACHED (2-HOLE COMPRESSION LUG 3/8" HOLES, 1" CENTER TO CENTER SPACING) TO THE MGB AND DOWN LEADS THEN TAKEN THROUGH CONDUIT TO THE GROUND RING. THIS CONDUCTOR SHALL BE KEPT SEPARATE AND ISOLATED UNTIL TERMINATING AT THE MAIN GROUNDING POINT, (I.E. EXTERIOR GROUND RING OR BUILDING STEEL).

3.3 ANTENNA GROUND BAR (AGB): THE PURPOSE OF THE ANTENNA GROUND BAR IS PRIMARILY FOR LIGHTNING PROTECTION. COAXIAL CABLE IS USUALLY THE ONLY ITEM GROUNDED TO THIS BAR, HOWEVER IT IS ACCEPTABLE TO BOND EXTERIOR; CABLE TRAY, WAVE GUIDE PORTS AND CANTILEVERED WAVE GUIDE BRIDGES TO THE AGB. THE AGB IS A COPPER BAR MEASURING 4"W X 24"L X 1/4". THERE SHALL BE TWO AGBS, ONE LOCATED AT THE TOP OF THE TOWER AT THE START OF THE VERTICAL RUN OF COAX, THE OTHER AT THE BOTTOM OF THE VERTICAL RUN OF COAX BEFORE IT MAKES ITS BEND. (IF THE TOWER IS OVER 200' THERE SHALL BE A THIRD AGB LOCATED AT HE MIDDLE OF THE TOWER).THE AGB SHALL HAVE A MINIMUM OF (28) 3/8" HOLES. GROUND BARS SHALL BE SUPPORTED BY MOUNTING BRACKETS WITH INSULATOR STANDOFFS. USE #2 AWG SOLID TINNED WIRE W/ 2-HOLE SHORT BARREL COMPRESSION LUGS 3/8" HOLES, 1" CENTER TO CENTER SPACING). THIS CONDUCTOR SHALL BE KEPT SEPARATE AND ISOLATED UNTIL TERMINATING AT THE MAIN GROUNDING POINT (I.E. EXTERIOR GROUND RING, OR BUILDING STEEL.)

3.4 SURGE ARRESTOR GROUND BAR: THE PURPOSE OF THE SURGE ARRESTOR GROUND BAR IS FOR LIGHTING PROTECTION. THE SURGE ARRESTOR GROUND BAR IS A BENT (3" X 3") X 1/4" X 24" COPPER BAR. IT IS LOCATED ON THE WAVEGUIDE BRIDGE SUPPORT CLOSEST TO THE EQUIPMENT. ONE FACE OF THE BAR SHALL HAVE A MINIMUM OF (28) 3/8" DIA. HOLES. HOLES SHALL BE IN PAIRS THAT ARE 1" CENTER TO CENTER. THE OTHER FACE SHALL HAVE 3/8" DIA. HOLES AS REQUIRED TO ATTACH AND GROUND COAXIAL SURGE ARRESTORS. THE GROUND BAR SHALL BE SUPPORTED BY MOUNTING BRACKETS WITH INSULATOR STANDOFFS.

3.5 ANTENNA GROUNDING: EACH ANTENNA COAXIAL CABLE SHALL TYPICALLY BE GROUNDED AT THREE POINTS USING A HARD-SHELL COAXIAL CABLE KIT FROM THE MANUFACTURER OF THE ANTENNA CABLE. A TYPICAL INSTALLATION SHALL BE AS FOLLOWS:

A. THE FIRST GROUND CONNECTION SHALL OCCUR AS CLOSE TO THE ANTENNA AS POSSIBLE, BELOW THE FIRST POINT THE COAX CABLE BEGINS TO RUN VERTICAL DOWN THE TOWER. THIS GROUND SHALL TERMINATE DIRECT TO THE TOP AGB. ON A T/I, GROUND TO THE AGB AT THE ANTENNA MOUNTS.

B. THE SECOND GROUND SHALL BE MADE AT THE BOTTOM OF THE VERTICAL RUN OF THE COAXIAL CABLE AS IT TURNS OUT AWAY FROM THE TOWER TOWARDS THE BTS. THIS GROUND SHALL BE TERMINATED AT THE TGB. THE TGB SHALL HAVE TWO (2) LEADS OF #2 AWG BARE TINNED SOLID COPPER WIRE, AND SHALL TERMINATE AT THE TOWER GROUND RING. THESE SHALL BE ENCASED IN PVC PIPE.

C. THE THIRD GROUND SHALL BE ON THE SURGE ARRESTOR. GROUND TO BE ATTACHED TO THE CABLE ON STRAIGHT RUNS (NOT WITHIN BENDS) AND BE WEATHERPROOFED PER THE MANUFACTURER'S SPECIFICATIONS. THE SURGE ARRESTORS SHALL BE GROUNDED TO THE GROUND BAR. THE SAGB SHALL HAVE TWO (2) LEADS OF #2 AWG BARE TINNED SOLID COPPER WIRE, AND SHALL TERMINATE AT THE TOWER GROUND RING. THESE SHALL BE ENCASED IN PVC PIPE.

3.6 EXOTHERMIC WELD & BURNDY CONNECTIONS

EXOTHERMIC WELDS AND BURNDY CONNECTIONS SHALL BOND ALL UNDERGROUND AND DAMP LOCATION CONNECTIONS, SHELTER SKID GROUNDS, TOWER OR MONOPOLE GROUNDS, FENCING CORNER AND GATE POSTS, ANTENNA GROUND BARS, (AGB) SURGE ARRESTER GROUND BAR, AND THE MASTER GROUND BAR (MGB). MECHANICAL CONNECTIONS SHALL BE TYPICALLY USED TO BOND ALL INTERIOR EQUIPMENT, COAX CABLE BRIDGES AND COAXIAL CABLE GROUND KITS. ALL LUG TYPE MECHANICAL CONNECTORS TO THE MGB OR AGB SHALL BE TWO HOLE TYPE CONNECTED WITH STAINLESS STEEL BOLTS AND NUTS WITH STAINLESS STEEL LOCK WASHERS AND NOALOX ON EITHER SIDE OF THE BUSS BAR.

3.7 LIMITS OF BEND RADIUS: IT IS IMPORTANT THAT THE GROUNDING CONDUCTOR CONNECTING THE INSIDE AND OUTSIDE GROUND SYSTEMS BE AS STRAIGHT AS POSSIBLE, WITH NO TURN OR BEND SHORTER THAN ONE FOOT RADIUS WITH A THREE FOOT RADIUS PREFERRED. NO RIGHT ANGLE OR SHARP BENDS SHALL BE ALLOWED.

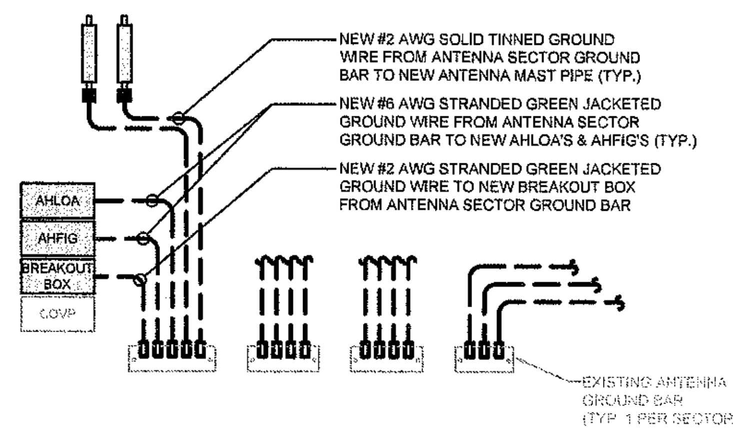
3.8 BONDING PREPARATION & FINISH: ALL SURFACES REQUIRE PREPARATION PRIOR TO BONDING OF EITHER EXOTHERMIC WELD OR BURNDY FASTENERS. GALVANIZED SURFACES SHALL BE GROUND OR SANDED TO THE POINT OF EXPOSING THE STEEL SURFACE BELOW, PRIOR TO BONDING THE GROUND CONDUCTOR. FOR OTHER SURFACES INCLUDING COPPER BUSS BARS ALL PAINT, RUST TARNISH AND GREASE SHALL BE REMOVED PRIOR TO BONDING THE GROUND CONDUCTOR. EXOTHERMIC WELD TYPE BONDS SHALL BE FINISHED WITH THE APPLICATION OF COLD GALVANIZATION AND WHEN APPLICABLE, FINISH PAINTED WITH AN APPROPRIATE COLOR AS REQUIRED. MECHANICAL TYPE BONDS ON BUSS BARS SHALL BE FINISHED WITH THE APPLICATION OF NOALOX OR OTHER APPROVED CONDUCTIVE MEDIUM MATERIAL BETWEEN CONNECTOR AND BUSS BAR. MECHANICAL TYPE BONDS ON ALL OTHER SURFACES SHALL BE FINISHED WITH THE APPLICATION OF COLD GALVANIZATION AND/OR THE APPROPRIATE PAINT TO MATCH AS REQUIRED.

3.9 TESTING: THE OUTSIDE GROUND RING SHALL BE TESTED AFTER INSTALLATION BUT PRIOR TO BACKFILLING THE GROUND RING TRENCH. THE GROUND FIELD RESISTANCE SHALL MEASURE 5 OHMS OR LESS TO GROUND. ANY DIFFICULTY IN ACHIEVING THIS LEVEL OF RESISTANCE MUST BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER. THE RESISTANCE TO GROUND SHALL BE MEASURED USING THE FALL OF POTENTIAL METHOD. TESTING SHALL BE PERFORMED BY AN OWNER PROVIDED INDEPENDENT TESTING LABORATORY FROM WHICH A WRITTEN REPORT SHALL BE PRODUCED FOR REVIEW BY THE PROJECT MANAGER.

3.10 GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE.
2. ALL GROUNDING SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE.
3. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
4. CONTRACTOR TO OBTAIN ALL PERMITS, PAY PERMIT FEES, AND BE RESPONSIBLE FOR SCHEDULING INSPECTIONS.
5. PROVIDE ALL LABOR AND MATERIAL DESCRIBED ON THIS DRAWING, AND ALL ITEMS INCIDENTAL TO COMPLETING AND PRESENTING THIS PROJECT AS FULLY OPERATIONAL.
6. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("EXOTHERMIC WELD") TO ANTENNA MASTS, AND THE GROUND BARS. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS.
7. GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH COAX CABLE GROUNDING KITS & INSTALL WEATHER PROOFING KIT AT EACH CONNECTION.
8. ALL EQUIPMENT FURNISHED BY OTHERS SHALL BE PROVIDED WITH PROPER MOTOR STARTERS, DISCONNECTS, CONTROLS, ETC. BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL INSTALL AND COMPLETELY WIRE ALL ASSOCIATED EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S WIRE DIAGRAMS AND AS REQUIRED FOR A COMPLETE OPERATING INSTALLATION. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF EQUIPMENT PRIOR TO ROUGH-IN OF CONDUIT AND WIRING TO AVOID CONFLICTS WHERE APPLICABLE.
9. GROUNDING CONDUCTORS SHALL BE COPPER OR SOLID TINNED COPPER. ALL CONNECTIONS MADE BELOW GRADE SHALL BE SOLID TINNED COPPER. ALL CONNECTIONS ABOVE GRADE STRANDED IS PERMITTED.
10. ALL EXOTHERMIC WELDS ABOVE FINISHED GRADE SHALL BE PAINTED WITH CO-GALVANIZED ZINC ENRICHED PAINT TO MATCH COLOR OBJECT BONDED TO.
11. CONNECT COAX GROUND KITS TO MASTER GROUND BAR AT BASE OF TOWER.
12. CONNECT COAX GROUND KITS TO GROUND BUS AT TOP OF TOWER.
13. CONNECT RF MODULE GROUND TO GROUND BUS AT TOP OF TOWER.
14. PLAN DRAWINGS SHOWN HEREIN DO NOT NECESSARILY DEPICT ELECTRICAL REQUIREMENTS OF INDIVIDUAL EQUIPMENT AND DEVICES SUCH AS THE EQUIPMENT GROUNDING REQUIREMENTS, POWER REQUIREMENTS AND TELCO RACEWAY REQUIREMENTS.
15. PLAN DRAWINGS SHOWN HEREIN ARE DIAGRAMMATIC AND DO NOT NECESSARILY DEPICT THE EXACT EQUIPMENT QUANTITIES, LOCATION, LAYOUT AND CONFIGURATION. REFER TO ARCHITECTURAL PLANS FOR EXACT EQUIPMENT LOCATION, LAYOUT AND CONFIGURATION.
16. NUMBER OF ANTENNAS REPRESENTED IN THIS DETAIL ARE FOR SHOWING CLARITY OF GROUND SYSTEM REQUIREMENTS ONLY. SEE RF INFO FOR ANTENNA QUANTITY.
17. CONTRACTOR TO 'NOALOX' ALL CONNECTIONS TO GROUND BARS.

ANTENNA SECTOR



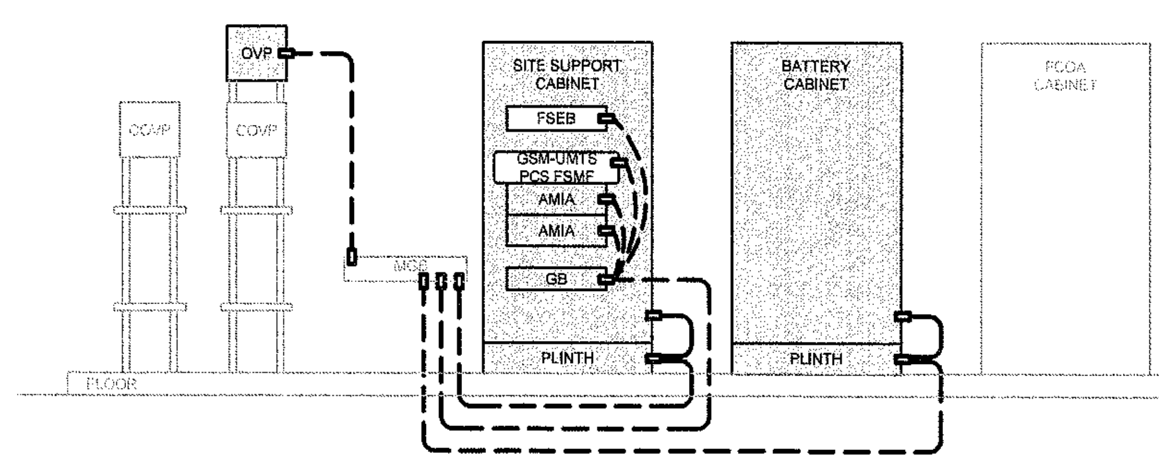
LEGEND

— — —	NEW GROUNDING WIRE
■	EXOTHERMIC WELD
▭	MECHANICAL CONNECTION/DOUBLE HOLE LUG TYPE CONNECTION
(box)	EXISTING ANTENNA/EQUIPMENT
(box)	RELOCATED ANTENNA/EQUIPMENT
(box)	NEW ANTENNA/EQUIPMENT

NOTES:

- SYSTEM MODULE TO CABINET GROUND BAR: #6 AWG STRANDED GREEN JACKETED GROUND WIRE
- AMIA TO CABINET GROUND BAR: #6 AWG STRANDED GREEN JACKETED GROUND WIRE
- DELTA CABINETS TO PLINTH: #2 AWG STRANDED GREEN JACKETED GROUND WIRE
- CABINET PLINTH TO MASTER GROUND BAR: #2 AWG STRANDED GREEN JACKETED GROUND WIRE
- FSEB TO CABINET GROUND BAR: #6 AWG STRANDED GREEN JACKETED GROUND WIRE
- OVP TO MASTER GROUND BAR: #2 AWG STRANDED GREEN JACKETED GROUND WIRE

NOTE:
CONTRACTOR TO INSTALL/REPLACE NEW OR MISSING GROUND BARS AS REQUIRED.



GROUNDING RISER

SCALE: NONE

1

T-Mobile

WT GROUP
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wtengineering.com
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NTP

CH65464A
HINSDALE WATER TANK
339 W. 57TH STREET
HINSDALE, IL 60521

JEFFERY B. GUTOWSKY
062-047235
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

EXPIRES: 11/30/21 SIGNED: 08/13/20

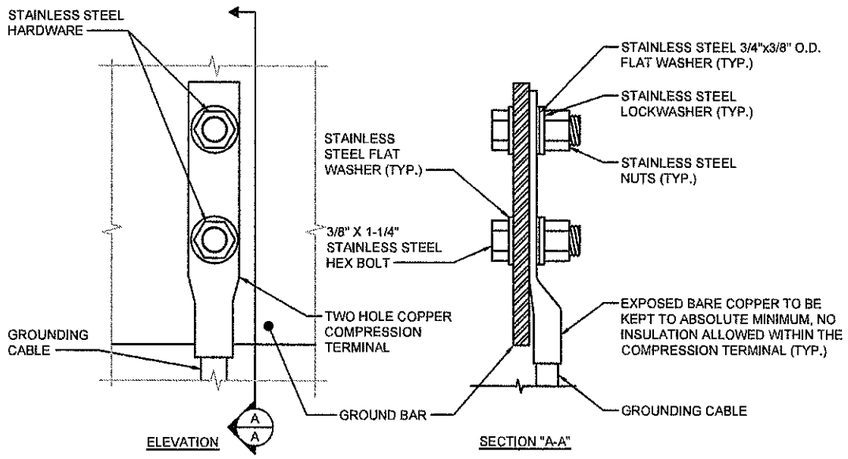
REVISIONS

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	07/15/20	JTB
0	FINAL	08/13/20	KLO

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL

CHECK: JKR
DRAWN: JTB
JOB: 2001105T

GR-1
GROUNDING DETAILS



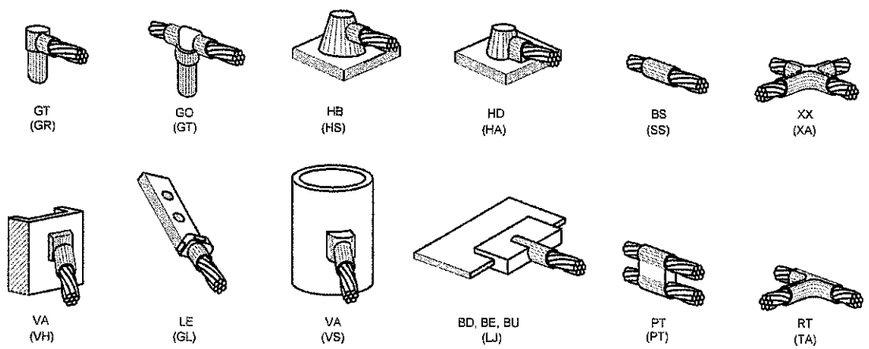
1. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS
2. NO CRIMPING OF SOLID #2. USE EXOTHERMIC WELD ONLY

GROUND BAR CONNECTION DETAIL

SCALE: NONE

1

NOTE:
THE FOLLOWING SYMBOLS SHOWN ARE HARGER ULTRAWELD EXOTHERMIC CONNECTIONS WITH PART NUMBERS BELOW. THESE CONNECTIONS MAY BE CROSS-REFERENCED WITH CADWELD CONNECTIONS WHICH ARE SHOWN IN PARENTHESIS

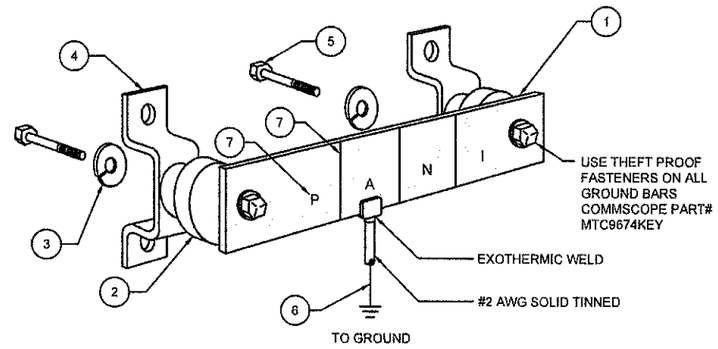


EXOTHERMIC WELD TYPES

SCALE: NONE

2

KEY NOTES:	
1.	1/4" THK ELECTRICAL TINNED GROUND BAR HARGER OR APPROVED EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
2.	INSULATORS (UNLESS NOTED OTHERWISE)
3.	3/8" STAINLESS STEEL LOCKWASHERS
4.	WALL MOUNTING BRACKET
5.	3/8" STAINLESS STEEL BNLF BOLTS
6.	EXOTHERMICALLY WELD #2 AWG BARE TINNED SOLID COPPER CONDUCTOR TO GROUND BAR. ROUTE CONDUCTOR TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD
7.	CONTRACTOR SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "N", "I") WITH 1" HIGH LETTERS



EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION

SECTION "P" - SURGE PRODUCERS

- COLLECTOR GROUND BAR
- GENERATOR FRAMEWORK (IF AVAILABLE)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND
- FIBER GROUND BAR
- EQUIPMENT ROOM COLLECTOR GROUND BAR
- HVAC
- RECTIFIER FRAMES

SECTION "A" - SURGE ABSORBERS

- INTERIOR GROUND RING
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING)
- METALLIC COLD WATER PIPE (IF AVAILABLE)
- BUILDING STEEL (IF AVAILABLE)
- AC POWER

SECTION "N" - NON-ISOLATED GROUND ZONE EQUIPMENT

- MISCELLANEOUS NON-ISOLATED GROUND ZONE EQUIPMENT
- CABLE TRAY SYSTEM
- EQUIPMENT FRAMES
- BATTERY RACKS
- DC POWER

SECTION "I" - ISOLATED GROUND ZONE

- ISOLATED EQUIPMENT FRAMES
- ISOLATED GROUND BAR - IGB

NOTES:
-EXTERIOR GROUND BARS TO BE TIN PLATED
-HARDWARE SHALL BE STAINLESS STEEL
-CONTRACTOR SHALL GROUP INCOMING WIRES
-CONTRACTOR TO APPLY 'KOPR-SHIELD' TO ALL CONNECTIONS

NOTE:
CONTRACTOR TO INSTALL/REPLACE NEW OR MISSING GROUND BARS AS REQUIRED.

GROUND BAR DETAIL

SCALE: NONE

3

T-Mobile

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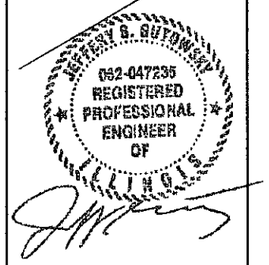
CH65464A
HINSDALE WATER TANK
339 W. 57TH STREET
HINSDALE, IL 60521



EXPIRES: 11/30/21 SIGNED: 08/13/20

REVISIONS

REV.	ISSUED FOR	DATE	BY
A	FOR CLIENT REVIEW	07/15/20	JTB
1	FINAL	08/13/20	KLO

AQUATIC \ DESIGN & PROGRAM MANAGEMENT
CIVIL \ TELECOMMUNICATION \ MECHANICAL
PLUMBING \ ELECTRICAL \ LAND SURVEYING
ACCESSIBILITY CONSULTING \ STRUCTURAL

CHECK: JKR
DRAWN: JTB
JOB: 2001106T

GR-2
GROUNDING DETAILS

T-Mobile

T-Mobile Central LLC
Chicago / Milwaukee Markets
1400 Opus Place
Downers Grove, IL 60515

December 1, 2020

Re: T-Mobile Confirmation of No Interference
Site # CH65464A
Site Address: 339 W. 57th Street, Hindsdale, IL 60521
Project: Anchor Phase 1

Dear Mr. Chapman,

Please be advised that in connection with the above referenced project, and in response to your RFI Letter dated October 12, 2020, T-Mobile will undertake best efforts to prevent frequencies transmitted from the proposed antennas and radios to not interfere with existing local frequencies.

If you have any questions, please contact me at theodore.fairchild4@T-Mobile.com or (224) 401-8211. Thank you in advance for your cooperation in this matter.

Sincerely,

Jim Fairchild

T-Mobile
Jim Fairchild
Site Development Manager
1400 Opus Place
7th floor
Downers Grove, IL 60515

NTPWIRELESS
EVERY SITE, EVERY DAY

November 16, 2020

Village of Hinsdale
Attn: Stuart Chapman
19 E. Chicago Ave.
Hinsdale, IL 60521

RE: Response Letter to Request for Information for T-Mobile Equipment Upgrade to Existing Installation – 339 W. 57th St., Hinsdale, IL 60521 (CH65464A)

Dear Mr. Chapman,

Pursuant to your request for more information please find the following responses in order to complete the review process:

Information Requests:

1. An indication of the provider of the backhaul network for the proposed project.
Response: The provider of the backhaul network for the proposed project is AT&T.

2. An indication of the general contractor for the project if SAC Wireless is not the general contractor for the project.
Response: SAC is the general contractor for the project.

3. "Before and After" photo simulations of the antenna array, water tower and base station.
Response: Please find the attached "Before and After" photo simulations.

4. Completion of FCC Office of Engineering and Technology (OET) Bulletin 65 Appendix A forms showing that the proposed project is exempt from FCC RF regulations and requirements. These forms may be found in Appendix A, located on Page 18 of the FCC Local and State Government Advisory Committee (LSGAC) RF Guide, which is included with this correspondence.
Response: Please find the attached FCC form showing that the proposed project is exempt from FCC RF regulations and requirements.

If you have any questions regarding the provided information, please contact me at (847) 254-3209 or via email at rachael.ceckowski@ntpwireless.com.

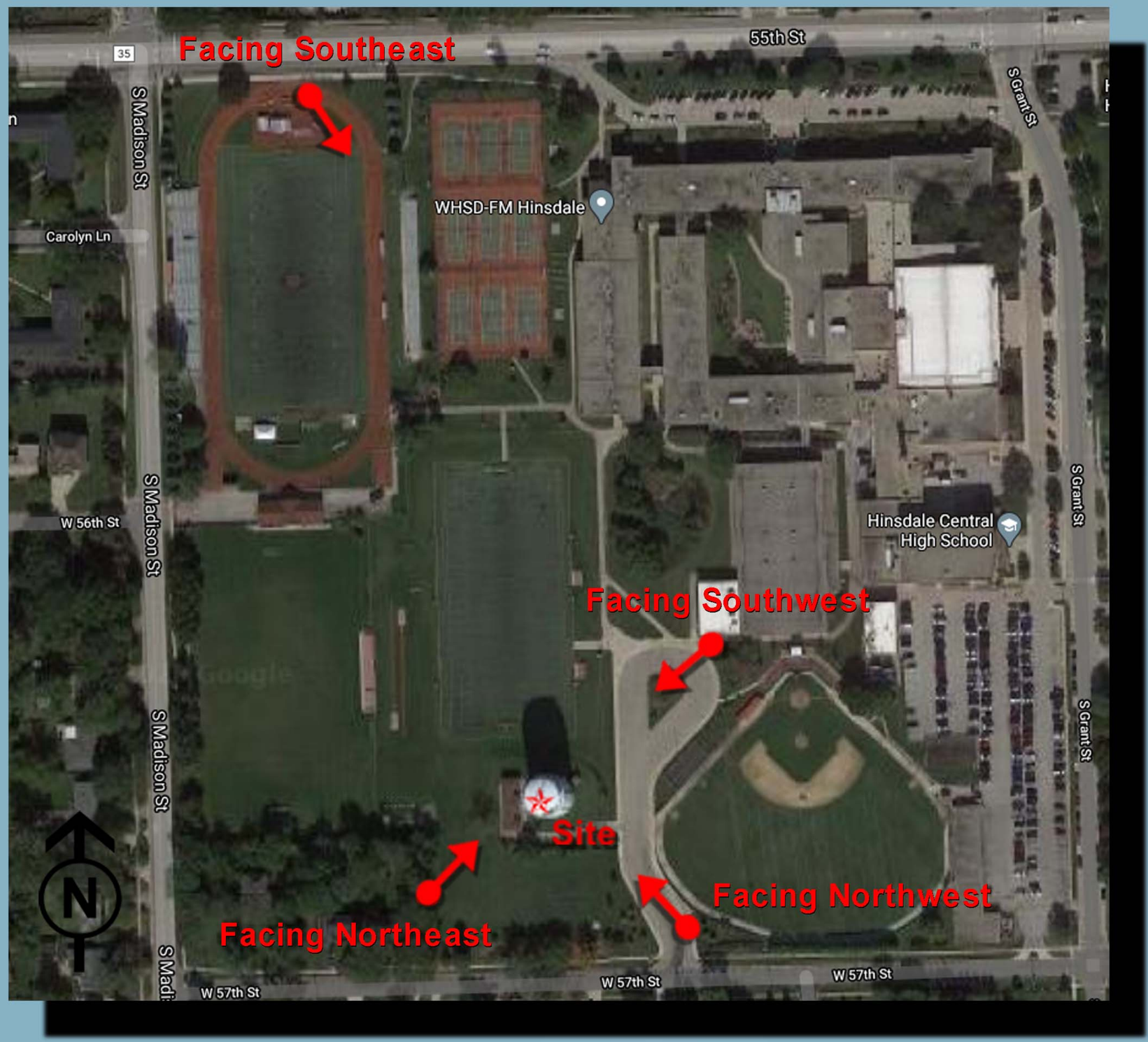
Sincerely,

Rachael Ceckowski

Rachael Ceckowski
Solution Specialist, Site Acquisition
NTP Wireless
Agent of T-Mobile

CH65464A - Hinsdale Water Tank

339 W. 57th St
Hinsdale, IL 60521



View Arrow

Disclaimer: This photo simulation is an artist's depiction of a future installation. The actual construction may vary slightly in size, layout, color and texture from this simulation.

CH65464A - Hinsdale Water Tank

339 W. 57th St
Hinsdale, IL 60521

Facing Northeast

T-Mobile

WT Group
Engineering • Design • Consulting

Disclaimer: This photo simulation is an artist's depiction of a future installation. The actual construction may vary slightly in size, layout, color and texture from this simulation.

CH65464A - Hinsdale Water Tank

339 W. 57th St
Hinsdale, IL 60521

Facing Northeast

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CH65464A - Hinsdale Water Tank

339 W. 57th St
Hinsdale, IL 60521

Facing Northwest

EXISTING

T-Mobile

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CH65464A - Hinsdale Water Tank

339 W. 57th St
Hinsdale, IL 60521

Facing Northwest

T-Mobile

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CH65464A - Hinsdale Water Tank

339 W. 57th St
Hinsdale, IL 60521

Facing Southeast

EXISTING

...on is an artist's depiction of a future installation. The actual construction may vary slightly in size, layout, color and texture from this simulation.

CH65464A - Hinsdale Water Tank

339 W. 57th St
Hinsdale, IL 60521

Facing Southeast

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PROPOSED

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...on is an artist's depiction of a future installation. The actual construction may vary slightly in size, layout, color and texture from this simulation.

CH65464A - Hinsdale Water Tank

339 W. 57th St
Hinsdale, IL 60521

Facing Southwest

T-Mobile

EXISTING

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CH65464A - Hinsdale Water Tank

339 W. 57th St
Hinsdale, IL 60521

Facing Southwest

T-Mobile

PROPOSED

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MSA *MUNICIPAL SERVICES ASSOCIATES, INC.*

October 12, 2020

Ms. Rachael Ceckowski
SAC Wireless
540 West Madison Street, 10th Floor
Chicago, Illinois 60661

Dear Ms. Ceckowski:

At the request of the Village of Hinsdale, Municipal Services Associates, Inc. (MSA) has completed a review of the drawings and information for the proposed T-Mobile antenna, radio, cabling and base station equipment replacement and installation to be co-located on an existing water tower at 333 West 57th Street.

The proposed project includes removal of antenna panels, radios, cabinets, cabling and radio frequency (RF) modules, and replacement of removed equipment with seven (7) new panel antennas, eight (8) remote radio units and installation of two (2) new cable breakout boxes, two (2) new base station platform cabinets, two (2) new hybrid power/fiber cables and jumper cables, and eleven (11) RF modules, six (6) fiber splitters, a baseband unit, and a cell site router. The project is located in an IB zoning district and is classified as a Permitted Use by Article VII, Part III, Section 7-302(e) of the Hinsdale Zoning Code.

In order to complete this review, more information will be necessary. Therefore, on behalf of the Village, MSA requests the following additional information of SAC Wireless and/or T-Mobile:

1. An indication of the provider of the backhaul network for the proposed project.

2. An indication of the general contractor for the project if SAC Wireless is not the general contractor for the project.

3. "Before and After" photo simulations of the antenna array, water tower and base station.

4. Completion of FCC Office of Engineering and Technology (OET) Bulletin 65 Appendix A forms showing that the proposed project is exempt from FCC RF regulations and requirements. These forms may be found in Appendix A, located on Page 18 of the FCC Local and State Government Advisory Committee (LSGAC) RF Guide, which is included with this correspondence.

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This information should be forwarded to my office on or before Monday, November 2, 2020 in order to expedite the technical review. Upon receipt of this information, a report for the proposed antenna site can be prepared and submitted to the Village as a part of the completion of its administrative review.

If you have any questions concerning the information requested, please contact me at your earliest convenience at 847-882-7773 or 847-867-6117.

Sincerely,

Stuart Chapman

Stuart Chapman
President

cc: Kathleen Gargano, Village Manager, Village of Hinsdale
George Peluso, Director of Public Services, Village of Hinsdale
Rob McGinniss, MCP, Director of Community Development, Building Commissioner,Village of Hinsdale
Al Diaz, Assistant Village Engineer, Village of Hinsdale