



staff report

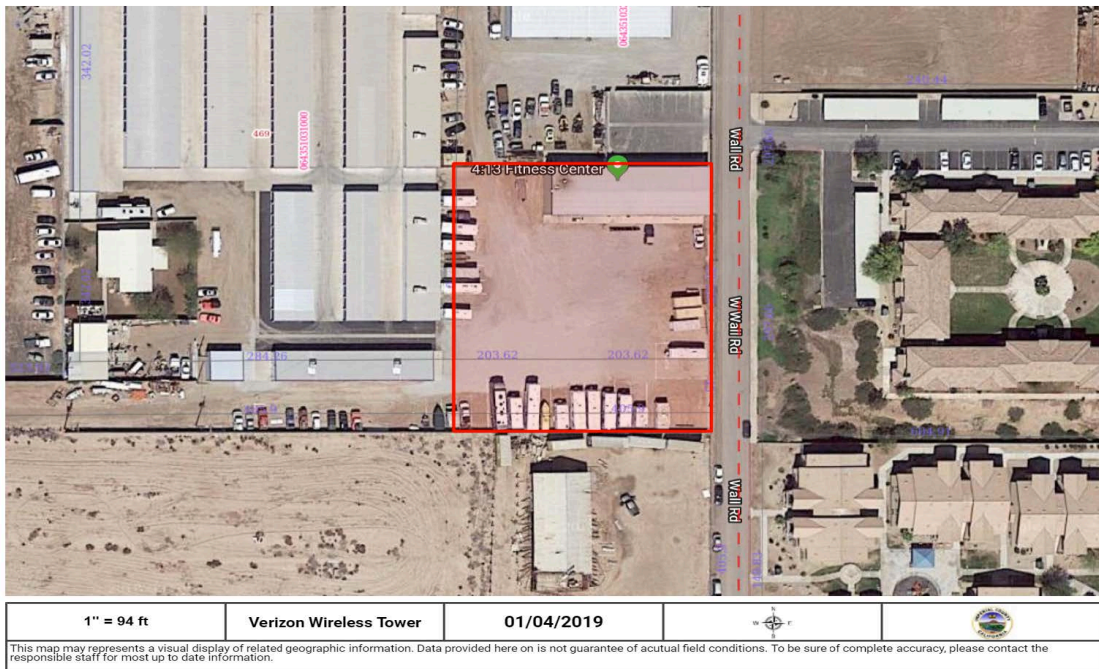
Agenda Item No. D-1

To: City of Imperial Planning Commission
From: Lisa Tylanda, Planner
Date: January 23, 2019
Subject: Conditional Use Permit Request CUP (19-01)
Verizon Cellular Tower
463 West Aten Road

Background

Verizon Wireless submitted an application for a Conditional Use Permit (CUP) to allow for the modification and time extension of an existing cell-phone tower with ground equipment at 463 West Aten Road. The existing 82-foot antenna tower is currently camouflaged as a windmill. The communication facility is located at the rear of the existing self-storage yard on the southeast corner of the property at Tucker Storage. Additional equipment such as generator, prefabricated 194 square foot equipment building, is currently existing and surrounded by a 40 foot x 30 foot overall concrete block enclosure area.

Conditional Use Permit (19-01) 463 West Aten Road; Imperial, CA 92251



Discussion/Analysis

Airport and Federal Aviation Regulations (FAR)

The existing tower is approximately 2,200' from the eastern edge of Runway 8-26, and has previously undergone review and approval in 2014 by the County Airport Land Use Compatibility Plan (ALUCP). The height of the proposed tower does not infringe any imaginary surfaces (primary surface, horizontal surface, conical surface, transitional surface, or approach surface) for obstruction evaluation. The subject site is located in Zone D of the ALUCP. Zone D is an area of negligible risk with no limit on residential densities or population intensities. In 2014 a "Determination of No Hazard to Air Navigation" study was conducted by the Federal Aviation Administration (FAA). The aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided certain conditions that must be followed. No further review will be needed during this CUP process for the proposed modifications to the existing tower and time extension for the life of the project.

Evaluation

The applicant is proposing modifications to the tower (which consists of changing-out and updating equipment) and a time extension increase on the life of permit from the currently ordained 3 years. The applicant's proposed project and time extension will have no impact to the surrounding uses as it is already an existing use. The purpose of the conditional use permit, is to allow for the modifications to the tower, ensure that the existing tower is within the FCC guidelines in regards to radio frequency emissions, and increase the life of the permit because the current Conditional Use Permit for this site has expired. After reviewing all items submitted to staff, it has been determined that the facility is within FCC guidelines in regards to Radio Frequency emission and meets the City operating standards for Telecommunication Facilities and an increase from a 3 year to a 15 year "permit life" provided that the company operating the tower provide documentation that reflects the Telecommunication Facility being in compliance with FCC guidelines every 7.5 years, should not have a negative effect to the other facilities operating or residing nearby.

Section 24.19.340 of the City of Imperial Zoning Ordinance requires that the Commission make specific findings be made when reviewing a CUP. The required findings are listed below in ***bold italics***, followed by an evaluation.

1. ***That the proposed location, size, design, and operating characteristics of the proposed use is in accord with the Title and Purpose of this Ordinance, the Purpose of the zone in which the site is located, the Imperial General Plan, and the development policies and standard of the City.***

The subject site is located within a C-1 Neighborhood Commercial zone. The purpose of the C-1 zone is to provide an area for offices, shopping center, and limited retail service for the convenience of the residents of the neighborhood. The existing camouflaged cell tower does not interfere with operations/businesses in this zone. The tower was previously approved and the proposed modifications and time extension to the life of the permit will not impact the zone.

2. ***That the location, size, design, and operating characteristics of the proposed use will be compatible with and will not adversely affect or be materially detrimental to adjacent uses, residents, buildings, structures, or natural resources with consideration given to those items listed in Section 24.19.340.B of the Imperial Zoning Ordinance.***

Commercial uses are located to the west and east of the subject parcel and the Imperial Business Park is located to the north. A portion of the Imperial Garden Apartments is located to the east and vacant residentially-zoned areas are located to the south. The tower is camouflaged as a windmill to minimize the visual impact along Aten Road, and with the implementation of the Conditions of Approval (i.e., minimum 100' separation between the tower location and the boundaries of any residential zones), the project will be compatible with and will not adversely affect adjacent uses and residents. An electromagnetic field (RF/EMF) and Noise Level study was provided by the Applicant and shows that the proposed tower will not adversely affect the surrounding neighborhood with regards to RF/EMF emissions.

3. *That the proposed location, size, design, and operating characteristics of the proposed use and the conditions under which it would be operated or maintained will not be detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.*

The project is currently an existing cell tower and the proposed modifications and time extension are very limited in nature, and as such, will not be detrimental to the public health, safety, or welfare.

4. *That the proposed Conditional Use will comply with each of the applicable provisions of the Zoning Ordinance, except for any approved Variance.*

The existing tower and proposed modifications to the tower and "life of approval" time extension complies with the provisions of the City's Wireless Telecommunication Ordinance and will comply with all provision of the Zoning Ordinance.

Environmental Compliance

The proposed modifications/construction project has been determined to be Categorical Exemption under CEQA. Existing facilities are in the location and the minor land alteration will have no significant impact to the surrounding areas. No scenic trees or vegetation will be removed from the property.

Recommendation

A public hearing is required for the project and if there are no testimonies to the contrary, Staff recommends that the Commission **approve the project subject to the attached conditions.**

Attachments:

Conditions of Approval
Resolution 2019-01
Site Plan and Elevations
Radio Frequency Report

EXHIBIT A

CONDITIONS OF APPROVAL

Conditional Use Permit # CUP (19-01)

Verizon Wireless – Tucker Storage

463 W. Aten Road; Imperial; CA 92251

APN: 064-351-032

1. The project is approved as shown on the “Conceptual Site Plan” dated March 17, 2014, collectively described as Exhibit “A” except as modified by the following conditions. Minor changes to the plans may be allowed subject to the approval of the Planning Director if found to be in substantial conformance to this development plan.
2. Conditional Use Permit #19-01 approves the installation/modification of a telecommunication facility, subject to a Building Permit application submission, review and approval from the Community Development Department.
3. Conditional Use Permit # 19-01 approves the “Permit Life” increase from the ordained three (3) years to fifteen (15) years, subject to a Radio Frequency Report Review at seven point five (7.5) and dependent on Community Development Department finding that the telecommunication facility is still compliant with FCC guidelines at that time.
4. The cellular tower shall be adequately camouflaged. The tower may consist of panel antennas, no more than one (1) 4’ microwave dish mounted on a 82’ high maximum lattice tower camouflaged as a faux-wood water tank (currently existing 1.4.2019). The supporting tower structure shall be brown colored. Other acceptable camouflage designs include faux-wood water tower or similar structure. Decorative architectural features, may exceed the height limit by no more than twelve feet (12’). The Planning Director may approve minor alterations to the design, including height, color and camouflage technique.
5. The improvements associated with the communication facility, including equipment shelters, antennae, and fencing shall be properly maintained at all times and all outdoor storage areas and appurtenant structures shall be screened from public view.
6. The tower shall be designed to support/collocate antennae for additional carriers and shall be made available for lease to other carriers.
7. The tower shall install any markings and lighting required by FAR Part 77 or imposed by the Airport Land Use Commission in accordance with the adopted Airport Land Use Compatibility Plan.

8. Issues regarding on- and off-site liquefaction are unknown for this location and shall be addressed through the preparation of a site-specific geotechnical report that would include recommendations regarding design criteria for reducing liquefaction effects on the proposed structure.
9. A frequency evaluation shall be submitted to the Planning and Building Departments prior to the establishment of service to demonstrate the frequencies will not interfere with the City's emergency broadcast services. The Developer/Applicant shall provide radio coverage documentation to the Fire Department indicating that this facility will not interfere with public safety amplification signals.
10. The applicant shall assume full responsibility for resolving television interference, if any is caused by the operation of the proposed facility. The applicant shall take corrective action within 30 days of receipt by the Planning Department of any written television interference complaint.
11. The Developer/Applicant shall comply with all local, State and Federal laws, regulations, rules, ordinances, and standards as they pertain to this project, whether specified herein or not. Where conflicts occur, the most stringent shall apply.
12. The Developer/Applicant shall pay all applicable impact and capacity fees.
13. The Conditional Use Permit shall not constitute the waiver of any requirement of the City's Ordinances or regulations, except where a condition set forth herein specifically provides for a waiver.
14. The Applicant shall agree to defend, indemnify and hold harmless the City of Imperial and its agents, including consultants, officers and employees from any claim, action or proceeding against the City or its agents, including consultants, officers and employees to attack, set aside, void, or annul the approval of the Conditional Use Permit. This indemnification obligation shall include, but not be limited to, damages, costs, expenses, attorney's fees, or expert witness costs that may be asserted by any person or entity, including the Property Owner/Applicant arising out of or in connection with the approval of the Conditional Use Permit, including any claim for private attorney general fees claimed by, or awarded to any party from the City.
15. All conditions of approval for this Conditional Use Permit shall be reprinted and included as a plan sheet(s) with the building permit plan check sets submitted for review and approval. These conditions of approval shall be on, at all times, all grading, landscaping, and construction plans kept on the project site. It is the responsibility of the applicant to ensure that the project contractor is aware of, and abides by, all conditions of approval. Prior approval from the Planning Department must be received before any changes are constituted in site design, grading, building design, building colors or materials, landscape material, etc.

16. The provisions of the permit are to run with the project and shall bind the current and future owner(s) successor(s) in interest, assignee(s) and/or transferor(s) of said project for fifteen (15) years.
17. All obsolete or unused communication facilities shall be removed by the applicant within six months after the use of that facility has ceased or the facility has been abandoned. The applicant shall notify the Planning department at the time of the abandonment, and all disturbance related to the communication facility shall be restored to pre-project condition.
18. If the Community Development Department finds and determines that the Permittee or successor-in-interest has not complied or cannot comply with the terms and conditions of the CUP, or the Planning/Building Department determines that the permitted activities constitute a nuisance, the City shall provide Permittee with notice and opportunity to comply with the enforcement or abatement order. If after receipt of the order (1) Permittee fails to comply, and/or (2) Permittee cannot comply with the conditions set forth in the CUP, then the matter shall be referred to the Planning Commission for permit modification, suspension, or termination, or to the appropriate enforcement authority.
19. As between the City and the Permittee, any violation of this permit may be a "nuisance per se". The City may enforce the terms and conditions of this permit in accordance with its Codified Ordinances and/or State law. The provisions of this paragraph shall not apply to any claim of nuisance per se brought by a third party.
20. In the event the facility is operated or maintained to constitute a public nuisance consistent with Municipal Code Chapter 14 Abatement of Nuisances, then abatement shall follow all necessary procedures set forth in Chapter 14.
21. In the event a heritage resource or other item of historical or archaeological interest is discovered during grading and construction activities, the project proponent shall ensure that all such activities cease within 50 feet of the discovery until an archaeologist can examine the find in place and determine its significance. If the find is determined to be significant and authenticated, the archaeologist shall determine the proper method(s) for handling the resource or item. Grading and construction activities may resume after the appropriate measures are taken or the site is determined not be of significance.
22. In the event of the discovery of human remains, all work is to stop, and the County coroner shall be immediately notified pursuant to Section 7050.5 of the Health and Safety Code and Section 5097.98 of the Public Resources Code. If the remains are determined to be Native American, the Coroner must contact the Native American Heritage Commission within 24 hours. The treatment and disposition of human remains shall be completed consistent with guidelines of the Native American Heritage Commission.

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verizon^v

ATEN

PROPOSED SITE MODIFICATION PCS

**463 WEST ATEN ROAD
IMPERIAL, CA 92251**

MTX: 54

BSC: 22

PROJECT APPROVAL

LANDLORD: _____
 PROJECT MANAGER: _____
 CONSTRUCTION MANAGER: _____
 RF ENGINEER: _____
 SITE ACQUISITION: _____
 ZONING MANAGER: _____
 UTILITY COORDINATOR: _____

PREPARED FOR:
verizon^v
 15505 SAND CANYON AVENUE
 BLDG. D, FIRST FLR.
 IRVINE, CALIFORNIA 92618
 949.286.7000

PREPARED BY:
JACOBS[®]
 Jacobs Engineering Group, Inc.
 2600 MICHELSON DRIVE, SUITE 500
 IRVINE, CALIFORNIA 92612
 PHONE: 949-250-1816
 FAX: 949-224-7501

ENGINEER SEAL:

Robert A. Kitsteiner

DESIGN REVISION:

NO.	DATE	REVISIONS	BY
3	5-31-18	REPLACED EQUIPMENT	RU
2	1-30-18	100%CD	DB
1	6-15-17	90% CD	RU

NOT VALID WITHOUT SIGNATURE AND DATE

VERIZON SITE ID:
ATEN
463 WEST ATEN ROAD
IMPERIAL, CA 92251

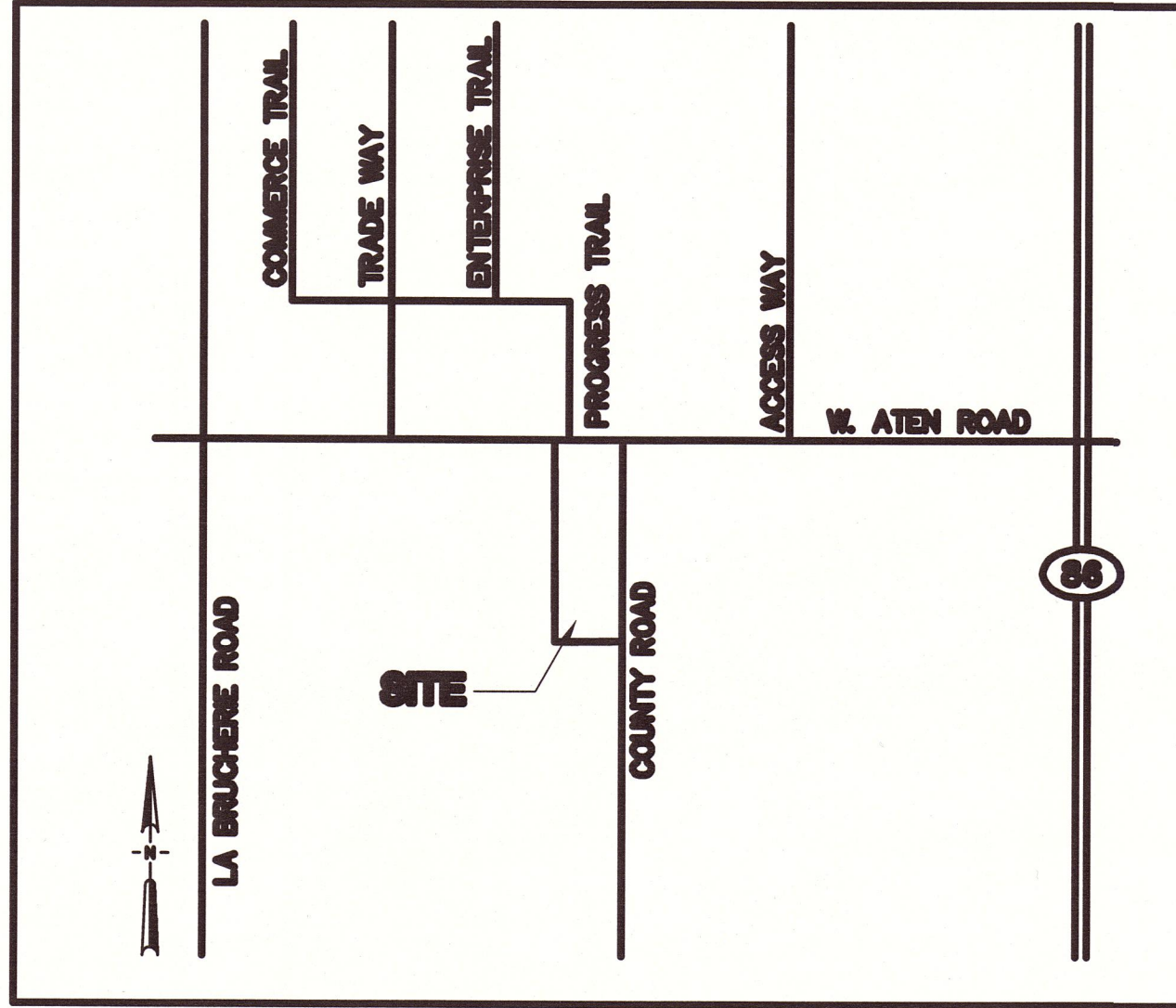
TOWER OWNER SITE ID:
 TBD

PREPARED BY:
 APPROVED BY: RJK
 DESIGNED BY: RU
 PROJECT NO: EU608C09
 DATE: 6-12-17

DRAWING NAME:
 TITLE SHEET

DRAWING NUMBER:
T1

VICINITY MAP



PROJECT DIRECTORY

PROPERTY OWNER: JERRY & SUSAN TUCKER
 463 WEST ATEN ROAD
 IMPERIAL, CA. 92251
 PHONE: 760-604-4104

APPLICANT: VERIZON WIRELESS
 15505 SAND CANYON DRIVE
 BUILDING "D" 1st FLOOR
 IRVINE, CALIFORNIA 92618

PREPARED BY: JACOBS ENGINEERING GROUP, INC.
 2600 MICHELSON DRIVE, SUITE 500
 IRVINE, CALIFORNIA 92612
 CONTACT: ROBERT KITSTEINER
 PHONE: (949) 224-7929

SITE ACQUISITION: JACOBS ENGINEERING GROUP, INC.
 2600 MICHELSON DRIVE, SUITE 500
 IRVINE, CALIFORNIA 92612
 CONTACT: KIM ICE
 PHONE: (760) 650-6268

SITE SUMMARY

ANTENNA TYPE: FAUX WATER TANK TOWER
 TOP OF TOWER: 81'-10" A.G.L.
 ANTENNA RAD CENTER: 75'-0" A.G.L.
 LATITUDE / LONGITUDE: 32° 49' 25.961" N / 115° 34' 27.855" W
 ZONING JURISDICTION: CITY OF IMPERIAL
 ZONING CLASSIFICATION: C1 / COMMERCIAL
 PARCEL ID: 064-351-032-000

PROJECT DESCRIPTION

VERIZON WIRELESS IS SUBMITTING AN APPLICATION FOR BUILDING PERMIT APPROVAL FOR THE FOLLOWING:

- REMOVE (6) EXISTING VERIZON PANEL ANTENNAS
- REMOVE (3) EXISTING REMOTE RADIO UNITS RRUS12 FROM TOWER
- REMOVE (3) EXISTING RRUS2212 & (12) EXISTING DIPLEXERS FROM SHELTER
- INSTALL (6) NEW 8 FT. PANEL ANTENNAS WITH DUAL MOUNTING BRACKETS
- INSTALL (6) NEW REMOTE RADIO UNITS "BLACK BOX"
- REPLACE (E) SURGE PROTECTOR IN TANK WITH (N) RAYCAP 6627
- ADD RACK-MOUNTED RAYCAP 6627 IN SHELTER

CODE COMPLIANCE

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

- 2016 CALIFORNIA ADMINISTRATIVE CODE • 2016 CALIFORNIA FIRE CODES (INCL. TITLES 24 & 25)
- 2016 CALIFORNIA BUILDING CODES • 2016 CALIFORNIA ENERGY CODES
- 2016 CALIFORNIA ELECTRICAL CODES • TIA-222-G CODES
- 2016 CALIFORNIA MECHANICAL CODES • LOCAL BUILDING CODES
- 2016 CALIFORNIA PLUMBING CODES • CITY/COUNTY ORDINANCES

FCC NOTE
 THIS WIRELESS COMMUNICATION FACILITY COMPLIES WITH FEDERAL STANDARDS FOR RADIO FREQUENCY IN ACCORDANCE WITH THE TELECOMMUNICATION ACT OF 1996 AND SUBSEQUENT AMENDMENTS AND ANY OTHER REQUIREMENTS IMPOSED BY STATE OR FEDERAL REGULATORY AGENCIES.

DRIVING DIRECTIONS

FROM VERIZON OFFICE, DEPART SAND CANYON AVE TOWARD BARRANCA PKWY TAKE RAMP RIGHT FOR I-405 SOUTH TOWARD SAN DIEGO, BEAR RIGHT ONTO I-5 S, KEEP LEFT ONTO I-805 S, TAKE RAMP RIGHT AND FOLLOW SIGNS FOR CA-52 EAST, AT EXIT 18C, TAKE RAMP LEFT AND FOLLOW SIGNS FOR CA-67 NORTH, BEAR RIGHT ONTO MAPLEVIEW ST, ROAD NAME CHANGES TO LAKE JENNINGS PARK RD, TAKE RAMP RIGHT FOR I-8 EAST TOWARD EL CENTRO TAKE RAMP RIGHT, TURN LEFT ONTO FORRESTER RD / CR-530 TURN RIGHT ONTO W HIGHWAY 80 / W EVAN HEWES HWY / CR-S80 TURN LEFT ONTO AUSTIN RD, TURN RIGHT ONTO W ATEN RD ARRIVE AT 463 W ATEN RD, THE LAST INTERSECTION IS IMPERIAL BUSINESS PARK

GENERAL CONTRACTOR NOTES

CONTRACTOR SHALL VERIFY ALL PLANS WITH EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE SAME.

HANDICAP REQUIREMENTS
 FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION HANDICAP ACCESS IS NOT REQUIRED.

PLUMBING REQUIREMENTS
 FACILITY HAS NO SANITARY OR POTABLE WATER.

DIG ALERT



UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
 TOLL FREE 1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG

DRAWINGS PLOTTED TO SCALE ON 24x36 SHEETS

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DRAWINGS PLOTTED TO SCALE ON 24x36 SHEETS

PART 1 - GENERAL CONDITIONS:

- 1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
1.1. GENERAL CONTRACTOR - TBD
1.2. SUBCONTRACTOR - TBD
1.3. OWNER - VERIZON WIRELESS
2. THE CONTRACTOR SHALL VISIT THE SITE BEFORE BIDDING ON THE WORK CONTAINED WITHIN THIS DESIGN PACKAGE. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS, AND ELEVATIONS BEFORE STARTING WORK. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH ACCEPTED CONSTRUCTION PRACTICES.
3. IT IS THE INTENTION OF THESE DRAWINGS TO SHOW THE COMPLETED INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, TIES, FORM WORK, ETC., IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL ORDINANCES, TO SAFELY EXECUTE ALL WORK AND SHALL BE RESPONSIBLE FOR SAME. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES.
4. REFERENCES:
4.1. THE PUBLICATIONS LISTED BELOW ARE PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE. THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION UNLESS OTHERWISE NOTED. EXCEPT AS MODIFIED BY THE REQUIREMENT SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISION OF THESE PUBLICATIONS.
4.2. 1. ANSI/IEEE (AMERICAN NATIONAL STANDARDS INSTITUTE)
4.3. 2. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
4.4. 3. ICE (INSULATED CABLE ENGINEERS ASSOCIATION)
4.5. 4. NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION)
4.6. 5. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)
4.7. 6. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
4.8. 7. UL (UNDERWRITERS LABORATORIES, INC.)
5. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE CONTRACTOR SHALL USE ADEQUATE NUMBER OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
8. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO INDEMNIFY AND HOLD DESIGN ENGINEER / ARCHITECT HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT.
9. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOWN DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
10. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
11. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER / ARCHITECT PRIOR TO PROCEEDING.
12. GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
13. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. SUBCONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.
14. SITE GROUNDING SHALL COMPLY WITH VERIZON WIRELESS GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH VERIZON WIRELESS GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT, THEY SHALL GOVERN. GROUNDING SHALL BE COMPLETED BEFORE ERECTION OF A NEW TOWER.
15. ALL WORK SHALL COMPLY WITH OSHA AND STATE SAFETY REQUIREMENTS. PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, PROPOSED CONSTRUCTION, AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION. IF TEMPORARY LIGHTING AND MARKING IS REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION (FAA), IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE NECESSARY LIGHTS AND NOTIFY THE PROPER AUTHORITIES IN THE EVENT OF A PROBLEM.
16. ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL CODES OR ORDINANCES. THE MOST STRINGENT CODE WILL APPLY IN THE CASE OF DISCREPANCIES OR DIFFERENCES IN THE CODE REQUIREMENTS.
17. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

- 18. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AMPLE NOTICE TO THE BUILDING INSPECTION DEPARTMENT TO SCHEDULE THE REQUIRED INSPECTIONS. A MINIMUM OF 24 HOURS OF NOTICE SHOULD BE GIVEN AND THE BUILDING INSPECTION DEPARTMENTS HAVE REQUESTED THAT GROUPS OF TWO OR THREE SITES BE SCHEDULED AT ONE TIME IF POSSIBLE.
19. THE COMPLETE BID PACKAGE INCLUDES THESE CONSTRUCTION DRAWINGS ALONG WITH THE SPECIFICATIONS AND TOWER DRAWINGS/ANALYSIS. CONTRACTOR IS RESPONSIBLE FOR REVIEW OF THE TOTAL BID PACKAGE PRIOR TO BID SUBMITTAL.
20. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL PROPOSED UTILITIES WITHIN THE CONSTRUCTION LIMITS PRIOR TO CONSTRUCTION.
21. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND SUBCONTRACTORS TO THE SITE AND/OR BUILDING.
22. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.
23. RECORD DRAWINGS: MAINTAIN A RECORD OF ALL CHANGES, SUBSTITUTIONS, ETC., BETWEEN THE WORK AS SPECIFIED AND INSTALLED. RECORD CHANGES ON A CLEAN SET OF CONTRACT DRAWINGS WHICH SHALL BE TURNED OVER TO THE CONSTRUCTION MANAGER UPON COMPLETION OF THE PROJECT. THE CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.
24. PERMITS: THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS, LICENSES, FEES AND INSPECTIONS, ETC.
25. SUBCONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
26. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
27. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
28. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.
29. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.
30. SUBCONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
31. SUBCONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.
32. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).
33. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
34. NO WHITE STROBIC LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.

PART 2 - PRODUCTS

- 1. GENERAL:
1.1. ALL MATERIALS AND EQUIPMENT SHALL BE UL LISTED, NEW, AND FREE FROM DEFECTS.
1.2. ALL ITEMS OF MATERIALS AND EQUIPMENT SHALL BE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AS SUITABLE FOR THE USE INTENDED.
1.3. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
1.4. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING EQUAL TO OR GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 10,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELEC
2. MATERIALS AND EQUIPMENT:
1. CONDUIT:
1.1. RIGID METAL CONDUIT (RMC) SHALL BE HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE INCLUDING ENDS AND THREADS AND ENAMELED OR LACQUERED INSIDE IN ADDITION TO GALVANIZING.
2. LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE UL LISTED.
2.1. CONDUIT CLAMPS, STRAPS AND SUPPORTS SHALL BE STEEL OR MALLEABLE IRON. ALL FITTINGS SHALL BE COMPRESSION AND CONCRETE TIGHT TYPE. GROUNDING BUSHINGS WITH INSULATED THROATS SHALL BE INSTALLED ON ALL CONDUIT TERMINATIONS.
2.2. NONMETALLIC CONDUIT AND FITTINGS SHALL BE SCHEDULE 80 PVC. INSTALL USING SOLVENT-CEMENT-TYPE JOINTS AS RECOMMENDED BY THE MANUFACTURER.
3. CONDUCTORS AND CABLE:

- 3.1. CONDUCTORS AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, SIZE AS INDICATED, 12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR USED.
3.2. 10 AWG AND SMALLER CONDUCTOR SHALL BE SOLID OR STRANDED AND 8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.
3.3. SOLDERLESS, COMPRESSION-TYPE CONNECTORS SHALL BE USED FOR TERMINATION OF ALL STRANDED CONDUCTORS.
3.4. STRAIN-RELIEF SUPPORTS GRIPS SHALL BE HUBBELL KELLEMS OR APPROVED EQUAL. CABLES SHALL BE SUPPORTED IN ACCORDANCE WITH THE NEC AND CABLE MANUFACTURER'S RECOMMENDATIONS.
3.5. ALL CONDUCTORS SHALL BE TAGGED AT BOTH ENDS OF THE CONDUCTOR, AT ALL PULL BOXES, J-BOXES, EQUIPMENT AND CABINETS AND SHALL BE IDENTIFIED WITH APPROVED PLASTIC TAGS (ACTION CRAFT, BRADY, OR APPROVED EQUAL).
4. DISCONNECT SWITCHES:
4.1. 1. DISCONNECT SWITCHES SHALL BE HEAVY DUTY, DEAD-FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE AND INTERLOCK WITH COVER IN CLOSED POSITION, RATING AS INDICATED, UL LABELED FURNISHED IN NEMA 3R ENCLOSURE, SQUARE-D OR APPROVED EQUAL.
5. SYSTEM GROUNDING:
5.1. ALL GROUNDING COMPONENTS SHALL BE TINNED AND GROUNDING CONDUCTOR SHALL BE 2 AWG BARE, SOLID, TINNED, COPPER. ABOVE GRADE GROUNDING CONDUCTORS SHALL BE INSULATED WHERE NOTED.
5.2. GROUNDING BUSES SHALL BE BARE, TINNED, ANNEALED COPPER BARS OF RECTANGULAR CROSS SECTION. STANDARD BUS BARS MGB, SHALL BE FURNISHED AND INSTALLED BY THE SUBCONTRACTOR. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD. ALL GROUNDING BUSES SHALL BE IDENTIFIED WITH MINIMUM 3/4" LETTERS BY WAY OF STENCILING OR DESIGNATION PLATE.
5.3. CONNECTORS SHALL BE HIGH-CONDUCTIVITY, HEAVY DUTY, LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED. USE TWO-HOLE COMPRESSION LUGS WITH HEAT SHRINK FOR MECHANICAL CONNECTIONS.
5.4. EXOTHERMIC WELDED CONNECTIONS SHALL BE PROVIDED IN KIT FORM AND SELECTED FOR THE SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS TO BE CONNECTED.
5.5. GROUND RODS SHALL BE COPPER-CLAD STEEL WITH HIGH-STRENGTH STEEL CORE AND ELECTROLYTIC-GRADE COPPER OUTER SHEATH, MOLTEN WELDED TO CORE, 5/8"x10'-0". ALL GROUNDING RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES.
5.6. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS IN COMPLIANCE WITH THE SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULLBOXES, DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.
6. OTHER MATERIALS:
6.1. THE SUBCONTRACTOR SHALL PROVIDE OTHER MATERIALS, THOUGH NOT SPECIFICALLY DESCRIBED, WHICH ARE REQUIRED FOR A COMPLETELY OPERATIONAL SYSTEM AND PROPER INSTALLATION OF THE WORK.
6.1. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
7. PANELS AND LOAD CENTERS:
7.1. ALL PANEL DIRECTORIES SHALL BE TYPEDWRITTEN.

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Table with 4 columns: NO., DATE, REVISIONS, BY. Includes entries for replaced equipment and CD percentages.

VERIZON SITE ID:
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463 WEST ATEN ROAD
IMPERIAL, CA 92251

TOWER OWNER SITE ID:
TBD

PREPARED BY:
APPROVED BY: RK
DESIGNED BY: RU
PROJECT NO: EU608C09
DATE: 6-12-17

DRAWING NAME:
GENERAL NOTES

DRAWING NUMBER:
SP1

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DRAWINGS PLOTTED TO SCALE ON 24x36 SHEETS

PART 3 - EXECUTION

- 1. GENERAL:
 - 1.1. ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - 1.1. EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT OR WATER, AND AGAINST CHEMICAL OR MECHANICAL INJURY DURING INSTALLATION AND CONSTRUCTION PERIODS.
- 2. LABOR AND WORKMANSHIP:
 - 2.1. ALL LABOR FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL SYSTEM SHALL BE INSTALLED BY EXPERIENCED WIREMEN, IN A NEAT AND WORKMAN-LIKE MANNER.
 - 2.2. ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED, ALIGNED AND TESTED BY THE SUBCONTRACTOR AS REQUIRED TO PRODUCE THE INTENDED PERFORMANCE.
 - 2.3. UPON COMPLETION OF WORK, THE SUBCONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE ALL LABELS AND ANY DEBRIS, CRATING OR CARTONS AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.
- 3. COORDINATION:
 - 3.1. THE SUBCONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE OWNER-FURNISHED EQUIPMENT DELIVERY SCHEDULE TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.
- 4. INSTALLATION:
 - 4.1. CONDUIT:
 - 4.1.1. ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4 INCH TRADE SIZE.
 - 4.1.2. PROVIDE RIGID PVC SCHEDULE 80 CONDUITS FOR ALL RISERS, RMC OTHERWISE NOTED. EMT MAY BE INSTALLED FOR EXTERIOR CONDUITS WHERE NOT SUBJECT TO PHYSICAL DAMAGE.
 - 4.1.3. THE INSTALLATION OF SCHEDULE 80 PVC AND RMC CONDUITS SHALL BE 24 INCHES MINIMUM DEPTH. ALL 90 DEGREE BENDS SHALL BE RMC. EXPANSION JOINTS ARE REQUIRED ON ALL CONDUIT RISERS.
 - 4.1.4. USE GALVANIZED FLEXIBLE STEEL CONDUIT WHERE DIRECT CONNECTION TO EQUIPMENT WITH MOVEMENT, VIBRATION, OR FOR EASE OF MAINTENANCE. USE LIQUID TIGHT, FLEXIBLE METAL CONDUIT FOR OUTDOOR APPLICATIONS. INSTALL GALVANIZED FLEXIBLE STEEL CONDUIT AT ALL POINTS OF CONNECTION TO EQUIPMENT MOUNTED ON SUPPORT TO ALLOW FOR EXPANSION AND CONTRACTION.
 - 4.1.5. A RUN OF CONDUIT BETWEEN BOXES OR EQUIPMENT SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF THREE QUARTER-BENDS. CONDUIT BEND SHALL BE MADE WITH THE UL LISTED BENDER OR FACTORY 90 DEGREE ELBOWS MAY BE USED.
 - 4.1.6. FIELD FABRICATED CONDUITS SHALL BE CUT SQUARE WITH A CONDUIT CUTTING TOOL AND REAMED TO PROVIDE A SMOOTH INSIDE SURFACE.
 - 4.1.7. PROVIDE INSULATED GROUNDING BUSHING FOR ALL CONDUITS.
 - 4.1.8. SUBCONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION. TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLUGGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. SUBCONTRACTOR SHALL REPLACE ANY CONDUITS CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.
 - 4.1.9. ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATE SIZE MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF CONDUCTORS OR CABLES. CONDUIT SHALL BE FREE OF DIRT AND DEBRIS.
 - 4.1.10. INSTALL PULL STRINGS IN ALL CLEAN EMPTY CONDUITS. IDENTIFY PULL STRINGS AT EACH END.
 - 4.1.11. INSTALL 2" HIGHLY VISIBLE AND DETECTABLE TAPE 12" ABOVE ALL UNDERGROUND CONDUITS AND CONDUCTORS.
 - 4.1.12. CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.
 - 4.1.13. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS TO ALLOW FOR RACEWAYS AND CABLES TO BE ROUTED THROUGH THE BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS, SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE EFFECTIVELY SEALED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FIRE STOPS AT FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE, AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.
- 5. CONDUCTORS AND CABLE:
 - 5.1. ALL POWER WIRING SHALL BE COLOR CODED AS FOLLOWS:

DESCRIPTION	208/240/120 VOLT SYSTEMS
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUNDING	GREEN
 - 5.2. SPLICES SHALL BE MADE ONLY AT OUTLETS, JUNCTION BOXES, OR ACCESSIBLE RACEWAY CONDULETS APPROVED FOR THIS PURPOSE.
 - 5.3. PULLING LUBRICANTS SHALL BE UL APPROVED. SUBCONTRACTOR SHALL USE NYLON OR HEMP ROPE FOR PULLING CONDUCTOR OR CABLES INTO THE CONDUIT.
 - 5.4. CABLES SHALL BE NEATLY TRAINED, WITHOUT INTERLACING, AND BE OF SUFFICIENT LENGTH IN ALL BOXES & EQUIPMENT TO PERMIT MAKING A NEAT ARRANGEMENT. CABLES SHALL BE SECURED IN A MANNER TO AVOID TENSION ON CONDUCTORS OR TERMINALS. CONDUCTORS SHALL BE PROTECTED FROM MECHANICAL INJURY AND MOISTURE. SHARP BENDS OVER CONDUIT BUSHINGS ARE PROHIBITED. DAMAGED CABLES SHALL BE REMOVED AND REPLACED AT THE SUBCONTRACTOR'S

- 6. DISCONNECT SWITCHES:
 - 6.1. INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB. CONNECT TO WIRING SYSTEM AND GROUNDING SYSTEM AS INDICATED.
- 7. GROUNDING:
 - 7.1. ALL METALLIC PARTS OF ELECTRICAL EQUIPMENT WHICH DO NOT CARRY CURRENT SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING MANUFACTURER, VERIZON WIRELESS MOBILITY GROUNDING STANDARD ND-00071, ND-00135, AND THE NATIONAL ELECTRICAL CODE.
 - 7.2. PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEM INDICATED WITH ASSEMBLY OF MATERIALS, INCLUDING GROUNDING ELECTRODES, BONDING JUMPERS AND ADDITIONAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
 - 7.3. ALL GROUNDING CONDUCTORS SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND WITH GRADUAL BEND AS REQUIRED. GROUNDING CONDUCTORS SHALL NOT BE LOOPED OR SHARPLY BENT. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND IN THE SHORTEST AND STRAIGHTEST PATHS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.
 - 7.4. BUILDINGS AND/OR NEW TOWERS GREATER THAN 75 FEET IN HEIGHT AND WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE SUBCONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 AWG COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).
 - 7.5. TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR CONNECTORS AND BOLTS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT AVAILABLE, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUES SPECIFIED IN UL TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
 - 7.6. SUBCONTRACTOR SHALL VERIFY THE LOCATIONS OF GROUNDING TIE-IN-POINTS TO THE EXISTING GROUNDING SYSTEM. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
 - 7.7. ALL GROUNDING CONNECTIONS SHALL BE INSPECTED FOR TIGHTNESS. EXOTHERMIC WELDED CONNECTIONS SHALL BE APPROVED BY THE INSPECTOR HAVING JURISDICTION BEFORE BEING PERMANENTLY CONCEALED.
 - 7.8. APPLY CORROSION-RESISTANCE FINISH TO FIELD CONNECTIONS AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DESTROYED. USE KOPR-SHIELD ANTI-OXIDATION COMPOUND ON ALL COMPRESSION GROUNDING CONNECTIONS.
 - 7.9. A SEPARATE, CONTINUOUS, INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS.
 - 7.10. BOND ALL INSULATED GROUNDING BUSHINGS WITH A BARE #6 AWG GROUNDING CONDUCTOR TO A GROUND BUS.
 - 7.11. DIRECT BURIED GROUNDING CONDUCTORS SHALL BE INSTALLED AT A NOMINAL DEPTH OF 36" MINIMUM BELOW GRADE, OR 6" BELOW THE FROST LINE, USE THE GREATER OF THE TWO DISTANCES.
 - 7.12. ALL GROUNDING CONDUCTORS EMBEDDED IN OR PENETRATING CONCRETE SHALL BE INSTALLED IN SCHEDULE 80 PVC CONDUIT.
 - 7.13. SUBCONTRACTOR SHALL REPAIR, AND/OR REPLACE, EXISTING GROUNDING SYSTEM COMPONENTS DAMAGED DURING CONSTRUCTION AT THE SUBCONTRACTOR'S EXPENSE.
- 8. ACCEPTANCE TESTING:
 - 8.1. CERTIFIED PERSONNEL USING CERTIFIED EQUIPMENT SHALL PREFORM REQUIRED TESTS AND SUBMIT WRITTEN TEST REPORTS UPON COMPLETION.
 - 8.2. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, THE NONCOMPLYING ITEMS SHALL BE REMOVED FROM THE PROJECT SITE AND REPLACED WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS PROMPTLY AFTER RECEIPT OF NOTICE FOR NON-COMPLIANCE.
- 9. TEST PROCEDURES:
 - 9.1. ALL FEEDERS SHALL HAVE INSULATION TESTED AFTER INSTALLATION, BEFORE CONNECTION TO DEVICES. THE CONDUCTORS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS. TESTING SHALL BE FOR ONE MINUTE USING 1000V DC. PROVIDE WRITTEN DOCUMENTATION FOR ALL TEST LISTED TO SUBCONTRACTOR.
 - 9.2. PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING DEVICES FOR ELECTRICAL CONTINUITY AND PROPER POLARITY CONNECTIONS.
 - 9.3. MEASURE AND RECORD VOLTAGES BETWEEN PHASES AND BETWEEN PHASE CONDUCTORS AND NEUTRALS. SUBMIT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES
 - 9.4. PERFORM GROUNDING TEST TO MEASURE GROUNDING RESISTANCE OF GROUNDING SYSTEM USING THE IEEE STANDARD 3-POINT "FALL-OF-POTENTIAL" METHOD. PROVIDE PLOTTED TEST VALUES AND LOCATION SKETCH. NOTIFY THE ENGINEER IMMEDIATELY IF MEASURED VALUE IS OVER 5 OHMS.

EXPENSE.

METALS

PART 1 - GENERAL

- 1. SECTION INCLUDES:
 - 1.1. STRUCTURAL STEEL FRAMING MEMBERS, BASE PLATES, PLATES, BARS, THREADED STRUCTURAL FASTENERS, ANTENNA SUPPORT ASSEMBLIES, GRATING, STEEL PLATFORMS AND PEDESTAL SUPPORTS, AND GROUTING UNDER BASE PLATES.
- 2. QUALITY ASSURANCE
 - 2.1. FABRICATE STRUCTURAL STEEL MEMBERS IN ACCORDANCE WITH AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
 - 2.2. PERFORM DESIGN UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE.

PART 2 - PRODUCTS

- 1. MATERIALS:
 - A. STRUCTURAL STEEL MEMBERS: ASTM A572, GRADE 50
 - B. STRUCTURAL TUBING: ASTM A500, GRADE B
 - C. PIPE: ASTM A53, TYPE E OR S, GRADE B
 - D. BOLTS, NUTS, AND WASHERS: ASTM A325
 - E. ANCHOR BOLTS: ASTM A307
 - F. WELDING MATERIALS: AWS D1.1, TYPE REQUIRED FOR MATERIALS BEING WELDED
 - G. GROUT: NON-SHRINK TYPE, PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTIZIER ADDITIVES, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 7000 psi AT 28 DAYS.
 - H. SHOP AND TOUCH-UP PRIMER: SSPC 15 TYPE 1, RED OXIDE
- 2. TOUCH-UP PRIMER FOR GALV. SURFACES:
 - 2.1. ZINC RICH TYPE
 - 3. FABRICATION:
 - 3.1. CONTINUOUSLY SEAL JOINTED MEMBERS BY CONTINUOUS WELDS.
 - 4. FINISH:
 - 4.1. GRIND EXPOSED WELDS SMOOTH.
 - 4.2. PREPARE STRUCTURAL COMPONENT SURFACES IN ACCORDANCE WITH SSPC SP-1 TO SP-10 PROCEDURES.
 - 4.3. STRUCTURAL STEEL MEMBERS SHALL BE HOT DIPPED GALVANIZED.
- PART 3 - EXECUTION**
- 1. EXAMINATION AND PREPARATION:
 - 1.1. VERIFY THAT THE FIELD CONDITIONS ARE ACCEPTABLE TO PERFORM THE WORK.
 - 2. ERECTION:
 - 2.1. ALLOW FOR ERECTION LOADS. PROVIDE TEMPORARY BRACING TO MAINTAIN FRAMING IN ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRIDGING AND BRACING.
 - 2.2. NO UNAUTHORIZED WELDING SHALL BE PERFORMED ON CROWN CASTLE USA, INC TOWERS. ALL OTHER WELDING SHALL BE IN ACCORDANCE WITH AMERICAN WELDING SOCIETY AWS 01.1 STRUCTURAL STEEL WELDING CODE-STEEL WELD ELECTRODES SHALL BE E70XX.
 - 2.3. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER.
 - 2.4. AFTER ERECTION, TOUCH-UP WELDS, ABRASIONS, AND SURFACES NOT SHOP PRIMED OR GALVANIZED WITH ZINC RICH PAINT (ALL EXISTING AND NEW AREAS).
 - 3. FIELD QUALITY CONTROL:
 - 3.1. FIELD INSPECTION OF MEMBERS, CONNECTIONS, WELDS AND BOLT / NUT TORQUE.

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NO.	DATE	REVISIONS	BY
3	5-31-18	REPLACED EQUIPMENT	RU
2	1-30-18	100%CD	DB
1	6-15-17	90% CD	RU

NOT VALID WITHOUT SIGNATURE AND DATE

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TOWER OWNER SITE ID:
TBD

PREPARED BY:
APPROVED BY: RK
DESIGNED BY: RU
PROJECT NO: EU808C09
DATE: 6-12-17

DRAWING NAME:
GENERAL NOTES

DRAWING NUMBER:
SP2

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DRAWINGS PLOTTED TO SCALE ON 24x36 SHEETS

GENERAL ELECTRICAL NOTES:

- ALL ELECTRICAL MATERIALS, EQUIPMENT AND INSTALLATION PROCEDURES TO CONFORM WITH VERIZON WIRELESS SPECIFICATIONS.
- CONTRACTOR SHALL PERFORM ALL VERIFICATION TESTS 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 ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
- ALL MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NFPA, AND 'UL' LISTED.
- THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED PER THE NEC, AND ALL APPLICABLE LOCAL CODES.
- ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE A MINIMUM INTERRUPTING RATING OF 42,000 AIC.
- FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT REFER TO VENDOR PRINTS PROVIDED BY VERIZON WIRELESS FOR BTS CABINET.
- PATCH, REPAIR, AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
- PROVIDE VERIZON WIRELESS WITH ONE SET OF COMPLETE ELECTRICAL 'AS-BUILT' DRAWINGS AT THE COMPLETION OF THE JOB SHOWING ACTUAL ROUTINGS AND WIRING CONNECTIONS.
- ALL EQUIPMENT PUNCH OUTS AND CONDUITS (USED AND SPARE) TO BE RODENT PROOFED WITH CAPS, STEEL MESH, AND/OR FOAM FILL BY CONTRACTOR AS NEEDED.
- ALL CONTRACTOR FURNISHED MATERIALS AND EQUIPMENT SPECIFIED ON THE PROJECT SHALL BE NEW AND UNUSED, OF CURRENT MANUFACTURE AND OF THE HIGHEST GRADE.
- ALL EQUIPMENT, MATERIAL AND THE INSTALLATION METHODS SPECIFIED ON THE PROJECT DRAWINGS SHALL BE DESIGNED AND FABRICATED IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS, AND APPROPRIATE INDUSTRIAL CONSENSUS STANDARDS AND CODES INCLUDING ANSI, IEEE, NEMA, NFPA AND UL, ALL AS REVISED AS OF THE DATE OF THIS WORK PACKAGE.
- ALL ELECTRICAL ITEMS BOTH CONTRACTOR AND OWNER FURNISHED SHALL BE CHECKED FOR AGREEMENT WITH THE PROJECT DRAWINGS AND SPECIFICATIONS AND SHALL BE VISUALLY INSPECTED TO ENSURE THAT EQUIPMENT IS UNDAMAGED AND IS IN PROPER ALIGNMENT, INSTALLED PER MANUFACTURER'S INSTRUCTIONS, ELECTRICAL CONNECTIONS ARE TIGHT AND PROPERLY INSULATED WHERE REQUIRED, FUSES ARE OF THE PROPER TYPE AND SIZE, AND ELECTRICAL ENCLOSURES ARE OF THE PROPER NEMA TYPE.
- THE EQUIPMENT AND MATERIALS SHALL BE FURNISHED AND INSTALLED TO OPERATE SAFELY AND CONTINUOUSLY WITH NO PROTECTION FROM THE WEATHER.
- ELECTRICAL WORK REPRESENTED ON THE PROJECT DRAWINGS IS SHOWN DIAGRAMMATICALLY. EXACT LOCATIONS AND ELEVATIONS OF ELECTRICAL EQUIPMENT SHALL BE DETERMINED IN THE FIELD AND VERIFIED WITH THE OWNER'S REPRESENTATIVE.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY SUPPORTS FOR EQUIPMENT INSTALLED AS PART OF THIS PROJECT. SUPPORTS SHALL CONSIST OF GALVANIZED STEEL FRAMES, PLATES, BRACKETS, RACKS AND OTHER SHAPES OF ADEQUATE SIZE AND FASTENED WITH BOLTS, SCREWS OR BY WELDING TO PROVIDE RIGID SUPPORT.

GENERAL RACEWAY NOTES:

- CONDUIT AND CONDUIT FITTINGS SHALL MEET ANSI AND NEC STANDARDS FOR MATERIAL AND WORKMANSHIP AND SHALL BE UL LISTED.
- EMT CONDUIT ELECTRIC METALLIC TUBING SHALL CONFORM TO ANSI C803 AND THE REQUIREMENTS OF NEC, PARAGRAPH 348 AND BE PROTECTED ON EXTERIOR WITH A ZINC COATING AND ON INTERIOR SURFACES WITH EITHER A ZINC COATING OR LACQUER ENAMEL. FITTINGS SHALL BE ZINC COATED STEEL.
- MINIMUM CONDUIT SIZE SHALL BE 3/4", SIZES NOT SHOWN ON DRAWINGS SHALL BE PER NEC.
- ALL SPARE CONDUITS SHALL HAVE A METALLIC PULL WIRE.
- CONDUIT SUPPORTS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AND IN ACCORDANCE WITH THE NEC.

GENERAL CONDUCTOR NOTES:

- ALL POWER, CONTROL AND COMMUNICATION WIRING SHALL MEET NEMA-WC, ASTM, UL, AND NEC STANDARDS FOR MATERIAL AND WORKMANSHIP UNLESS OTHERWISE SPECIFIED.
- ALL CONDUCTOR ACCESSORIES INCLUDING CONNECTORS, TERMINATIONS, INSULATING MATERIALS, SUPPORT GRIPS, MARKER AND CABLE TIES SHALL BE FURNISHED AND INSTALLED SUPPLIER'S INSTALLATION INSTRUCTIONS SHALL BE OBTAINED FOR CABLE ACCESSORIES. THESE INSTRUCTIONS SHALL BE IN THE POSSESSION OF THE CRAFTSMAN WHILE INSTALLING THE ACCESSORIES AND SHALL BE AVAILABLE TO THE COMPANY FOR REFERENCE.
- WHERE POSSIBLE, NO. 6 AWG AND SMALLER WIRE SHALL BE COLORED CODED BY THE COLOR OF THE INSULATION COVERING. COLOR CODING OF WIRE LARGER THAN NO. 6 AWG MAY BE BY MEANS OF SELF-ADHESIVE WRAP AROUND TYPE MARKERS, PER NEC.
- TERMINAL CONNECTOR FOR CONDUCTORS 8 AWG AND LARGER SHALL BE PRESSURE OR BOLTED CLAMP TYPE BURNDY QUICKLUG, VARILUG OR ACCEPTABLE EQUAL: OR COMPRESSION TYPE, BURNDY TYPE YAV OR YA (LONG BARREL), PANDUIT TYPE LCA OR LCC, OR ACCEPTABLE EQUAL. ACCEPTABLE CONNECTORS INCLUDED WITH COMPANY-FURNISHED EQUIPMENT MAY BE USED.
- TERMINATION PROVISIONS OF EQUIPMENT FOR CIRCUITS RATED 100 AMPERES OR LESS OR MARKED FOR NOS. 14 THROUGH 1 CONDUCTORS, SHALL BE USED ONLY FOR CONDUCTORS RATED 66°C (140°F). CONDUCTORS WITH HIGHER TEMPERATURE RATINGS SHALL BE PERMITTED, PROVIDED THE AMPACITY OR THE CONDUCTOR SIZE USED.
- TERMINAL CONNECTORS FOR CONDUCTORS SMALLER THAN 8 AWG SHALL BE COMPRESSION TYPE CONNECTORS SIZED FOR THE CONDUCTOR AND THE TERMINAL. THE CONNECTORS SHALL BE CONSTRUCTED OF FINE GRADE HIGH CONDUCTIVITY COPPER IN ACCORDANCE WITH QQ-C-516 AND SHALL BE TIN-PLATED IN ACCORDANCE WITH MIL-T-10727. THE INTERIOR SURFACE OF THE CONNECTOR WIRE BARREL SHALL BE SERRATED AND THE EXTERIOR SURFACE OF THE CONNECTOR WIRE BARREL SHALL BE PROVIDED WITH CRIMP GUIDES.

GENERAL GROUNDING NOTES:

- ALL WORK SHALL COMPLY WITH THE LATEST VERIZON WIRELESS GROUNDING SPECIFICATIONS AND REQUIREMENTS.
- ALL METALLIC COMPONENTS ON THE SITE MUST BE GROUNDED TO THE GROUND RING. THIS INCLUDES STEEL CONDUITS USED TO DELIVER THE TELCO AND POWER UTILITY LINES TO THE SITE OR USED TO PROVIDE ACCESS BY UTILITIES OR CONTRACTORS TO THE VARIOUS CABINETS.
- THE CONTRACTOR MUST VERIFY THAT NEW GROUNDING SYSTEM RESISTANCE IS EQUAL TO OR LESS THAN FIVE (5) OHMS PER VERIZON WIRELESS SPECIFICATIONS.
- RUN ALL GROUND WIRES IN AN ORGANIZED MANNER, AVOID CROSSING OF WIRES WHEREVER POSSIBLE. DO NOT RUN WIRES OVER CONCRETE SLAB.
- INSTALL ALL GROUND WIRES IN A DOWNWARD SLOPE FOR MAXIMUM LIGHTNING PROTECTION.
- MAINTAIN ALL MINIMUM BENDING RADII OF THE GROUNDING WIRES.
- DO NOT REMOVE MORE INSULATION FROM THE GROUND WIRES THAN NECESSARY WHEN CADWELDING OR CRIMPING IF EXCESS INSULATION IS REMOVED, THE CONNECTION WILL BE CONSIDERED UNACCEPTABLE AND WILL BE CORRECTED PER THE VERIZON WIRELESS REPRESENTATIVES'S DIRECTION.
- DOWN LEAD FOR ANTENNA SECTORS MUST BE CONNECTED DIRECTLY TO THE GROUND RING.
- ALL BASE TRANSCEIVER SITE EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH THE INTERNATIONAL ELECTRICAL CODE (NEC), AND THE LATEST EDITION OF LIGHTNING PROTECTION CODE NFPA 780 AND VERIZON WIRELESS STANDARDS.
- ALL GROUNDING CONNECTIONS, INTERIOR AND EXTERIOR, MADE THROUGHOUT THIS DOCUMENT SHALL BE MADE USING AN ANTI-OXIDATION COMPOUND, THE ANTI-OXIDATION COMPOUND SHALL BE 'THOMAS AND BETTS' KOPR-SHIELD (TM OF JET LUBE, INC.) THERE IS NO EQUIVALENT FOR THIS PRODUCT: NO OTHER COMPOUND WILL BE ACCEPTED. COAT ALL WIRES BEFORE LUGGING. COAT ALL SURFACES BEFORE CONNECTING.
- ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FIELD INSPECTED AND MODIFIED TO ENSURE PROPER CONTACT PRIOR TO CADWELD. GALVANIZING SHALL BE REMOVED BY GRINDING SURFACE TO BARE METAL 'SLAG' FROM CADWELD MUST BE REMOVED AND WELD SHALL BE SPRAYED WITH COLD GALVANIZE AFTER COMPLETION.
- FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED. CLIPS OF THE FOLLOWING MATERIALS AND TYPES MAY BE USED TO SUPPORT GROUNDING CONDUCTORS.
 - PLASTIC CLIPS
 - STAINLESS STEEL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTOR.
 - FERROUS METAL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTOR.
- ALL HARDWARE, BOLTS, NUTS, WASHERS, AND LOCK WASHERS SHALL BE 18-8 STAINLESS STEEL. EVERY CONNECTION SHALL BE (BOLT-FLATWASHER-BUSS-LUG-FLATWASHER-LOCKWASHER-NUT), IN THAT EXACT ORDER WITH NUT FACING OUTWARD, BACK TO BACK LUGGING SHALL BE (BOLT-FLATWASHER-LUG-FLATWASHER-LUG- BUSS-LUG-FLATWASHER-LOCK WASHER-NUT), IN THAT EXACT ORDER IS ACCEPTED WHERE NECESSARY TO CONNECT MANY LUGS TO A BUSS BAR. STACKING OF LUGS, BUS-LUG-LUG, IS NOT ACCEPTABLE.
- THE COMPRESSION GROUND LUG FOR #2 AWG BARE SOLID GROUNDING CONDUCTORS SHALL BE BURNDY TYPE YA3C-2TC.
- THE ANTENNA CABLES SHALL BE GROUNDED AT THE TOP AND BOTTOM OF THE VERTICAL RUN. THE ANTENNA CABLE SHIELD SHALL BE BONDED TO A COPPER GROUND BUS AT THE LOWEST POINT OF THE VERTICAL RUN. THE ANTENNA CABLE SHIELD SHALL BE GROUNDED JUST BEFORE ENTERING THE BTS. GROUNDING KITS ON COAX CABLE SHALL HAVE A MINIMUM BEND OF 6" AND SHALL BE KEPT AS CLOSE TO VERTICAL AS POSSIBLE. FLAT WASHER SUPPLIED WITH GROUND KITS MUST BE REPLACED WITH SMALLER STAINLESS STEEL FLAT WASHERS, WASHERS MUST REMAIN FLAT AGAINST GROUND BAR, ALL FASTENERS MUST BE STAINLESS STEEL AND KOPR-SHIELD MUST BE USED ON BOTH SIDES OF THE GROUND BAR.

PREPARED FOR:



PREPARED BY:



ENGINEER SEAL:



DESIGN REVISION:

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VERIZON SITE ID:

A TEN
463 WEST ATEN ROAD
IMPERIAL, CA 92251

TOWER OWNER SITE ID:

TBD

PREPARED BY:

APPROVED BY: RK
DESIGNED BY: RU
PROJECT NO: EU608C09
DATE: 6-12-17

DRAWING NAME:

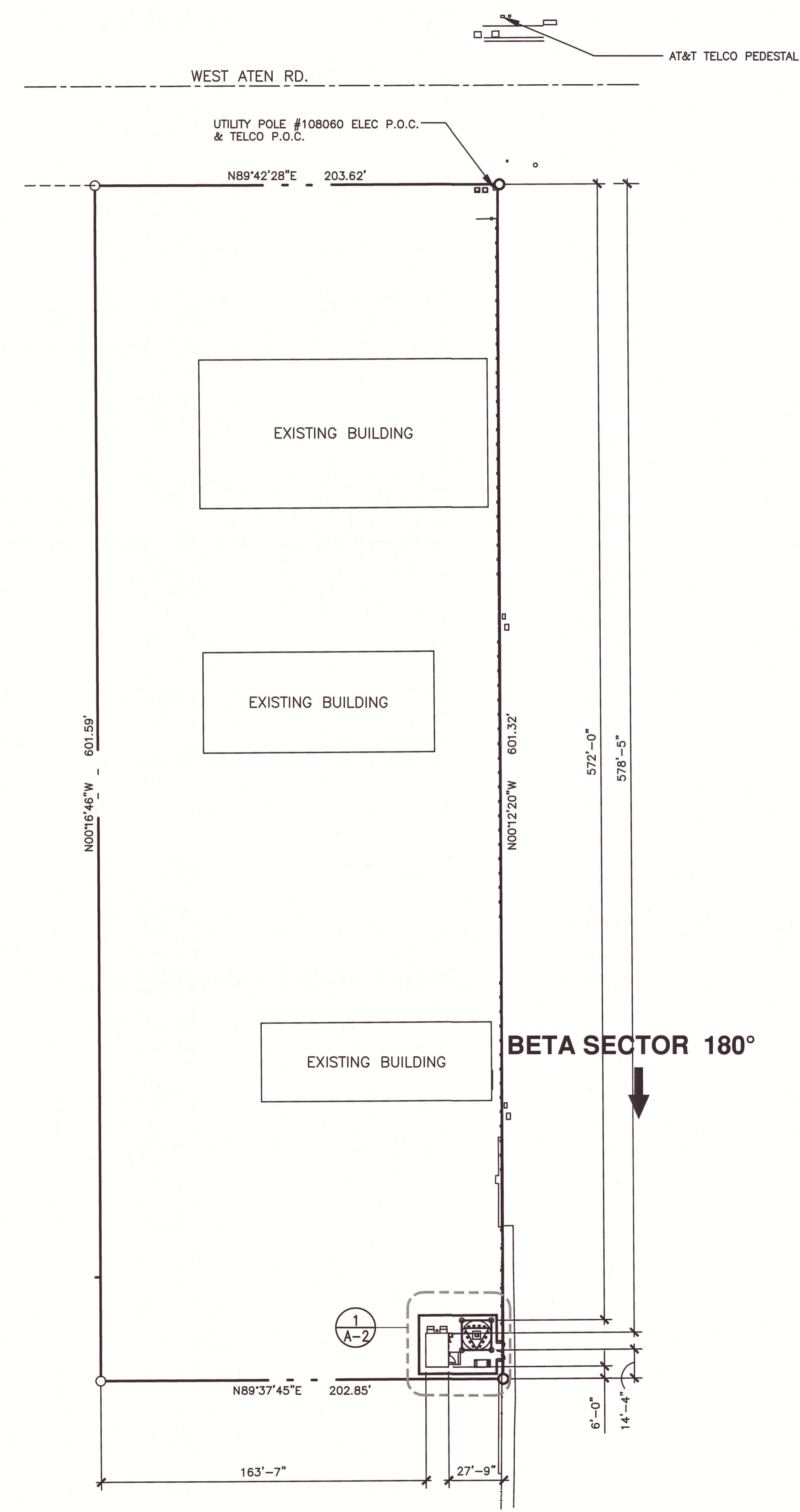
GENERAL NOTES

DRAWING NUMBER:

SP3

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DRAWINGS PLOTTED TO SCALE ON 24x36 SHEETS

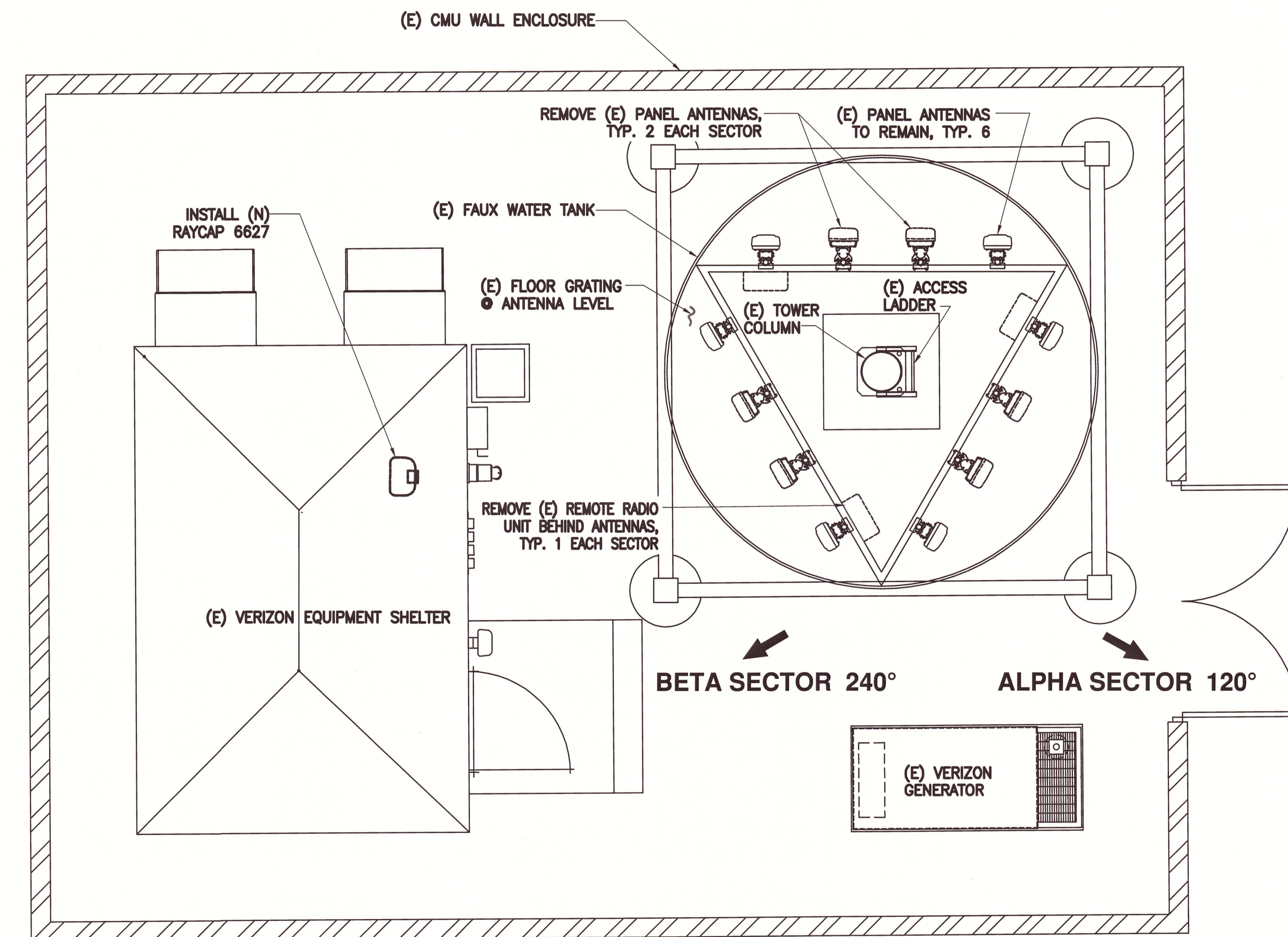


SITE PLAN

SCALE
NORTH 3/16"=1'

0' 1' 3' 7'

1



EXISTING SHELTER AND TOWER / ANTENNA PLAN

SCALE
NORTH 3/16"=1'

0' 1' 3' 7'

2

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15505 SAND CANYON AVENUE
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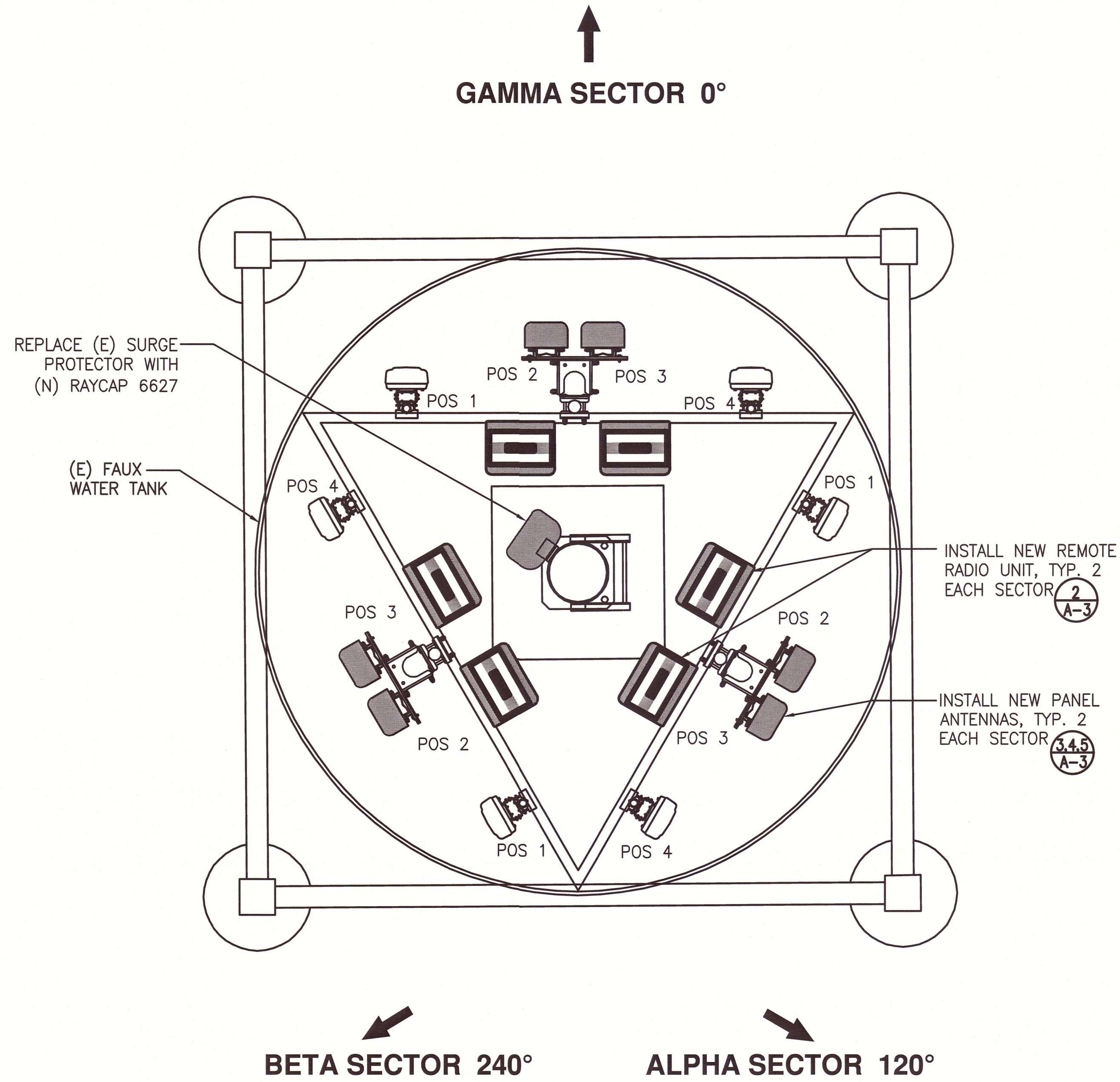
TOWER OWNER SITE ID:
TBD

PREPARED BY:
APPROVED BY: RK
DESIGNED BY: RU
PROJECT NO: EU608C09
DATE: 6-12-17

DRAWING NAME:
SITE PLAN, (E) SHELTER & TOWER/ ANTENNA PLAN

DRAWING NUMBER:
A1

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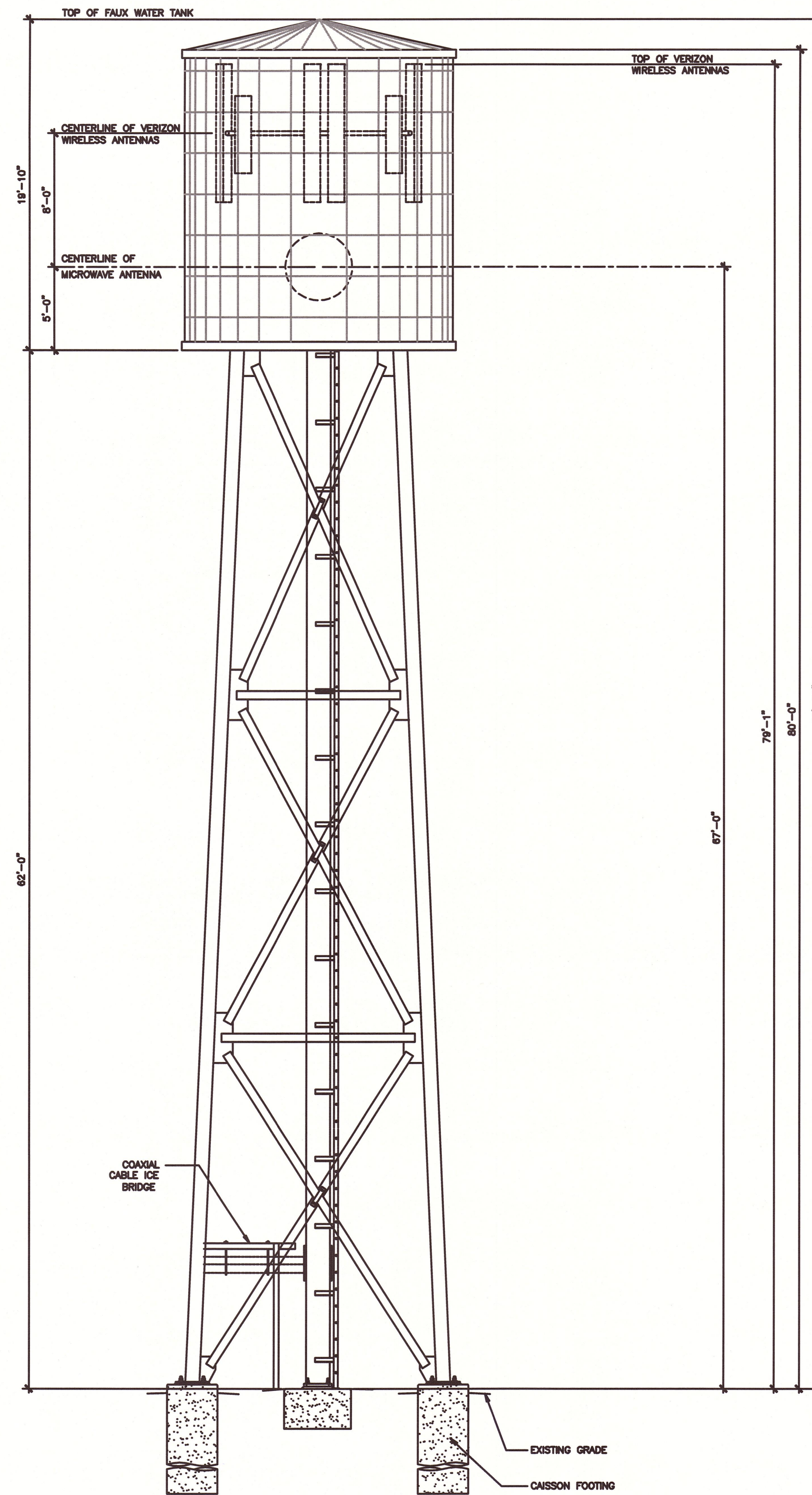


NEW ANTENNA PLAN

SCALE 1/2"=1'
 NORTH
 0' 6" 1' 2' 4'

1

EXISTING TOWER ELEVATION



SCALE 5/16"=1'
 0' 1' 3' 7'

2

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ENGINEER SEAL:

Robert A. Kitzhaber

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 APPROVED BY: RU
 DESIGNED BY: RU
 PROJECT NO: EU608C09
 DATE: 6-12-17

DRAWING NAME:
 NEW ANTENNA PLAN
 & ELEVATION

DRAWING NUMBER:
A2

DRAWINGS PLOTTED TO SCALE ON 24x36 SHEETS

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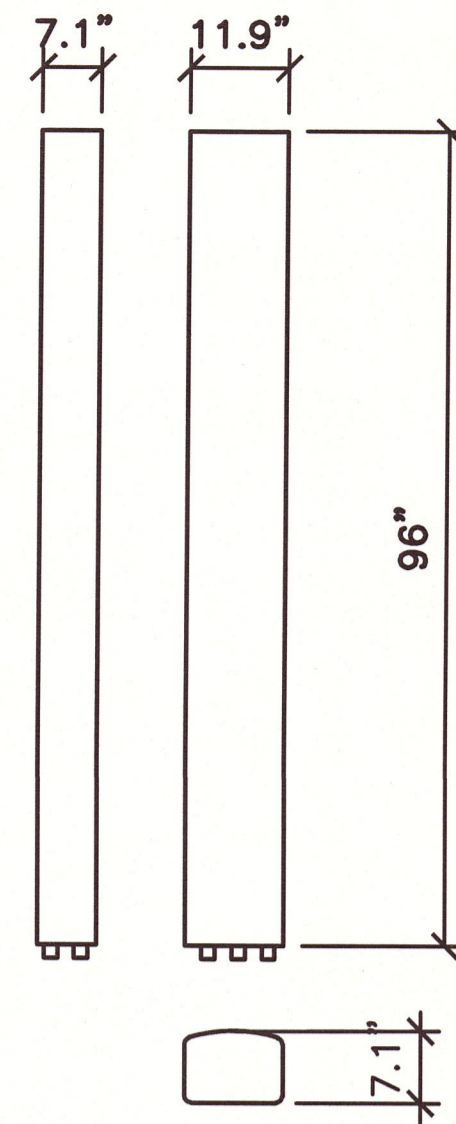
DRAWINGS PLOTTED TO SCALE ON 24x36 SHEETS

MANUFACTURER:
COMMSCOPE

MODEL:
NHH-65C-R2B

DIMENSION (HxWxD):
96"x11.9"x7.1"

WEIGHT:
51.6 LBS



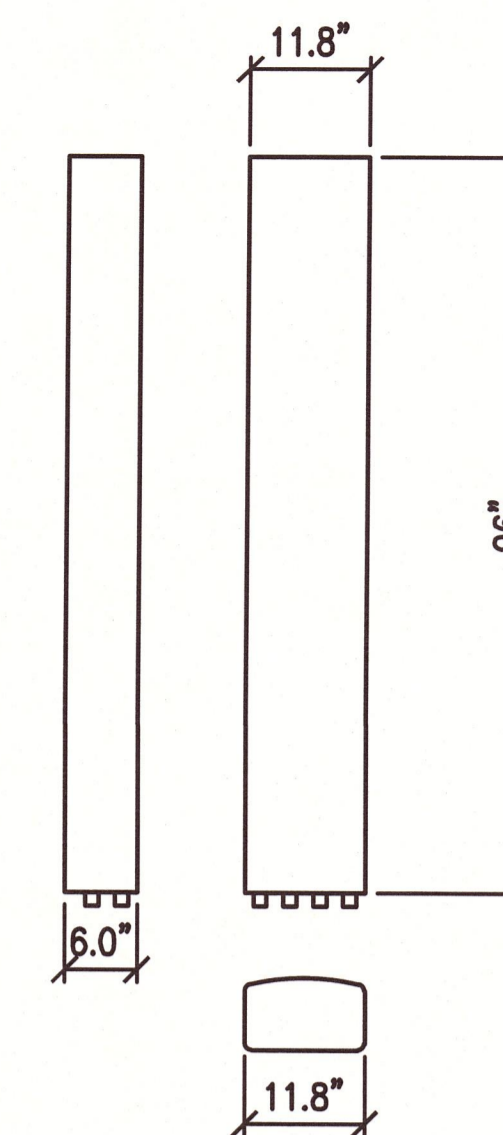
4 PANEL ANTENNA DETAIL
N.T.S

MANUFACTURER:
KATHREIN

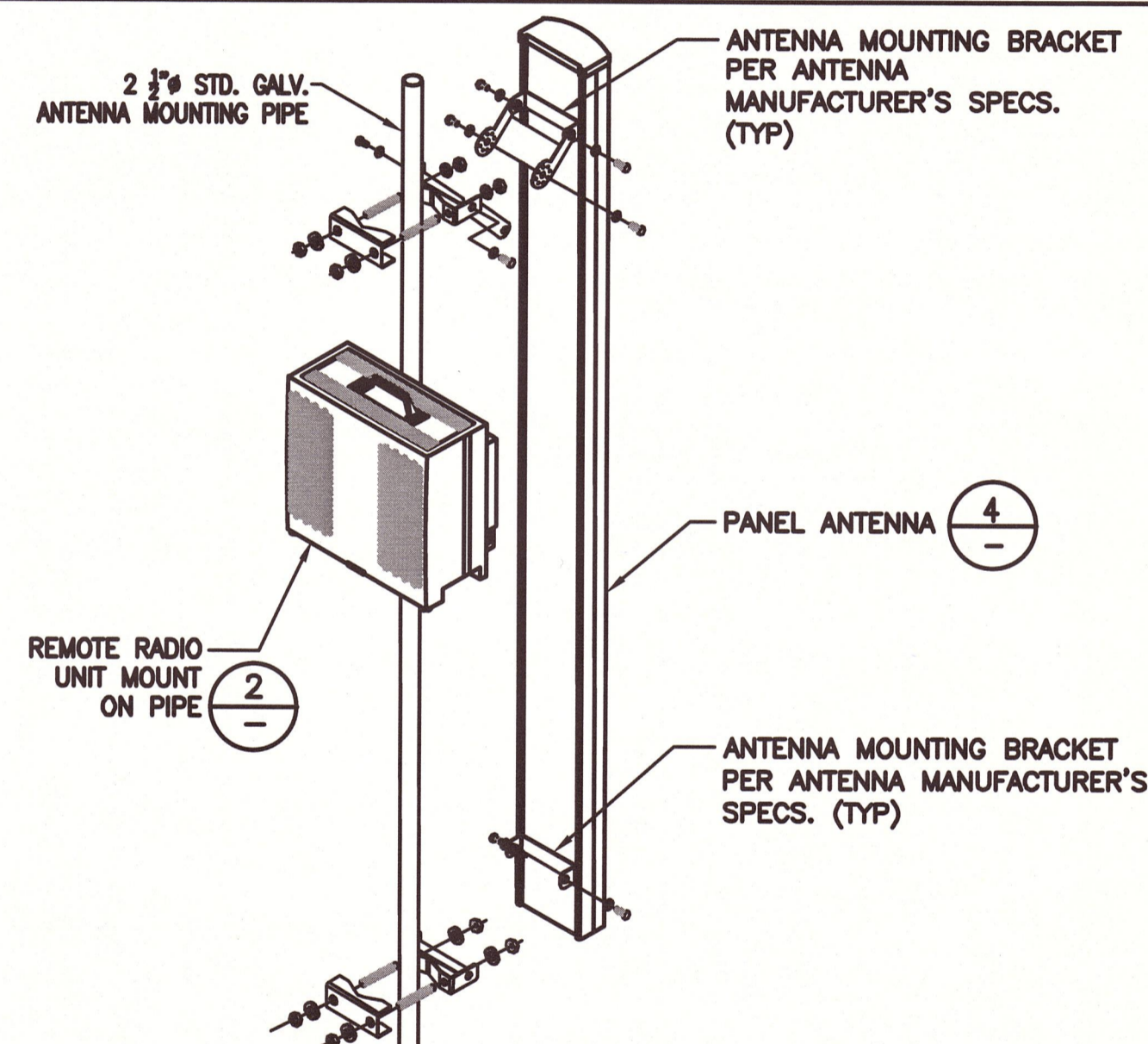
MODEL:
80010766V01

DIMENSION (HxWxD):
96" x 11.8" x 6"

WEIGHT:
62.7 LBS WITH CLAMPS



1 PANEL ANTENNA DETAIL
N.T.S



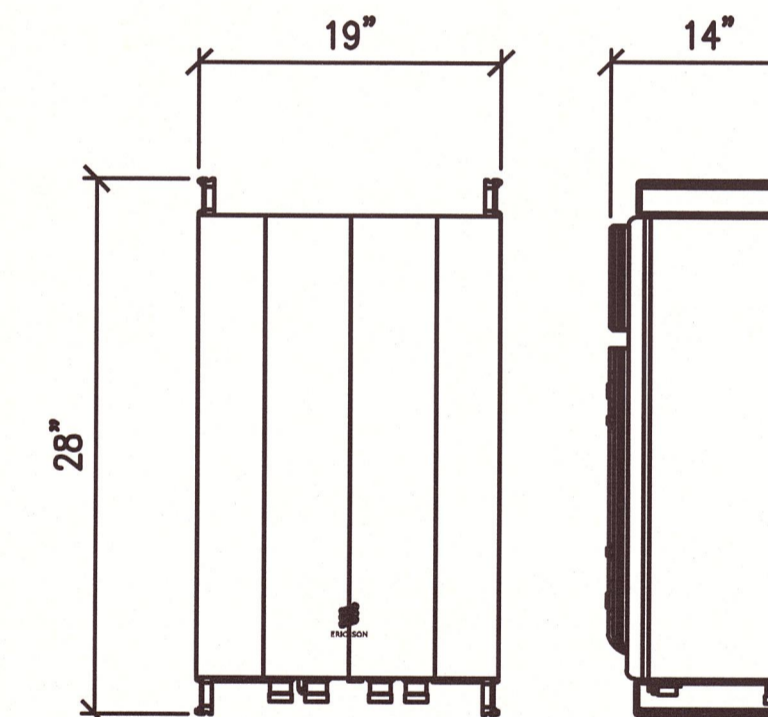
5 PANEL ANTENNA MOUNT DETAIL

MANUFACTURER:
ERICSSON

MODEL:
BLACK BOX

DIMENSION (HxWxD):
28"x19"x14"

WEIGHT:
82 LBS



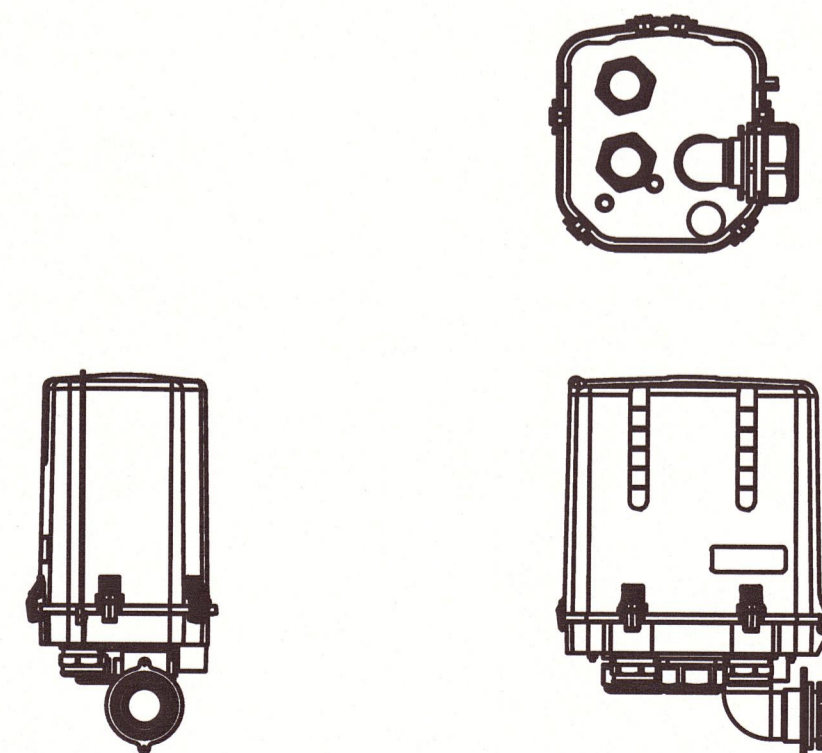
2 REMOTE RADIO UNIT DETAIL

MANUFACTURER:
RAYCAP

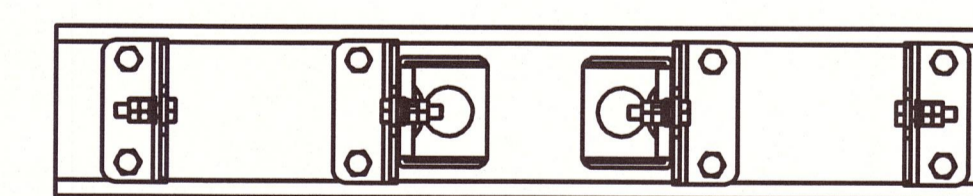
MODEL:
RCMDC-6627-PF-48 OVP

DIMENSIONS:
35" LONG x 21" WIDE x 18" HIGH

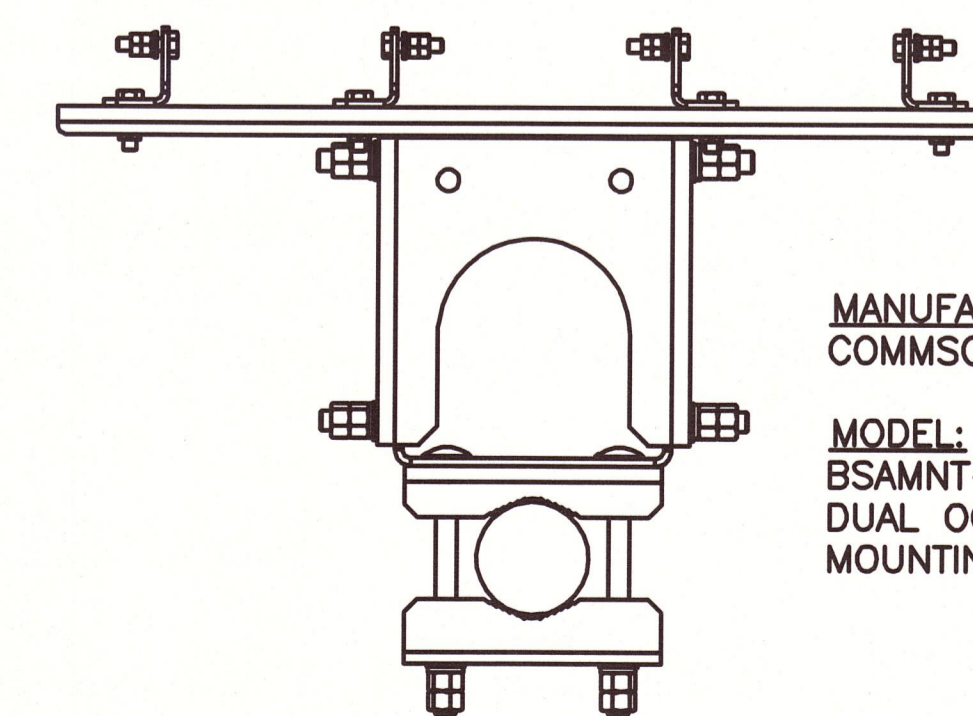
WEIGHT:
43 LBS



6 SURGE PROTECTOR UNIT DETAIL



REAR



PLAN

MANUFACTURER:
COMMSCOPE

MODEL:
BSAMNT-SBS-2-2-L
DUAL OCTOPORT
MOUNTING BRACKET

3 ANTENNA MOUNTING BRACKET DETAIL

PREPARED FOR:

verizon

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ENGINEER SEAL:

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VERIZON SITE ID:

A TEN
463 WEST ATEN ROAD
IMPERIAL, CA 92251

TOWER OWNER SITE ID:

TBD

PREPARED BY:

APPROVED BY: RIK
DESIGNED BY: RU
PROJECT NO: EU608C09
DATE: 6-12-17

DRAWING NAME:

DETAILS

DRAWING NUMBER:

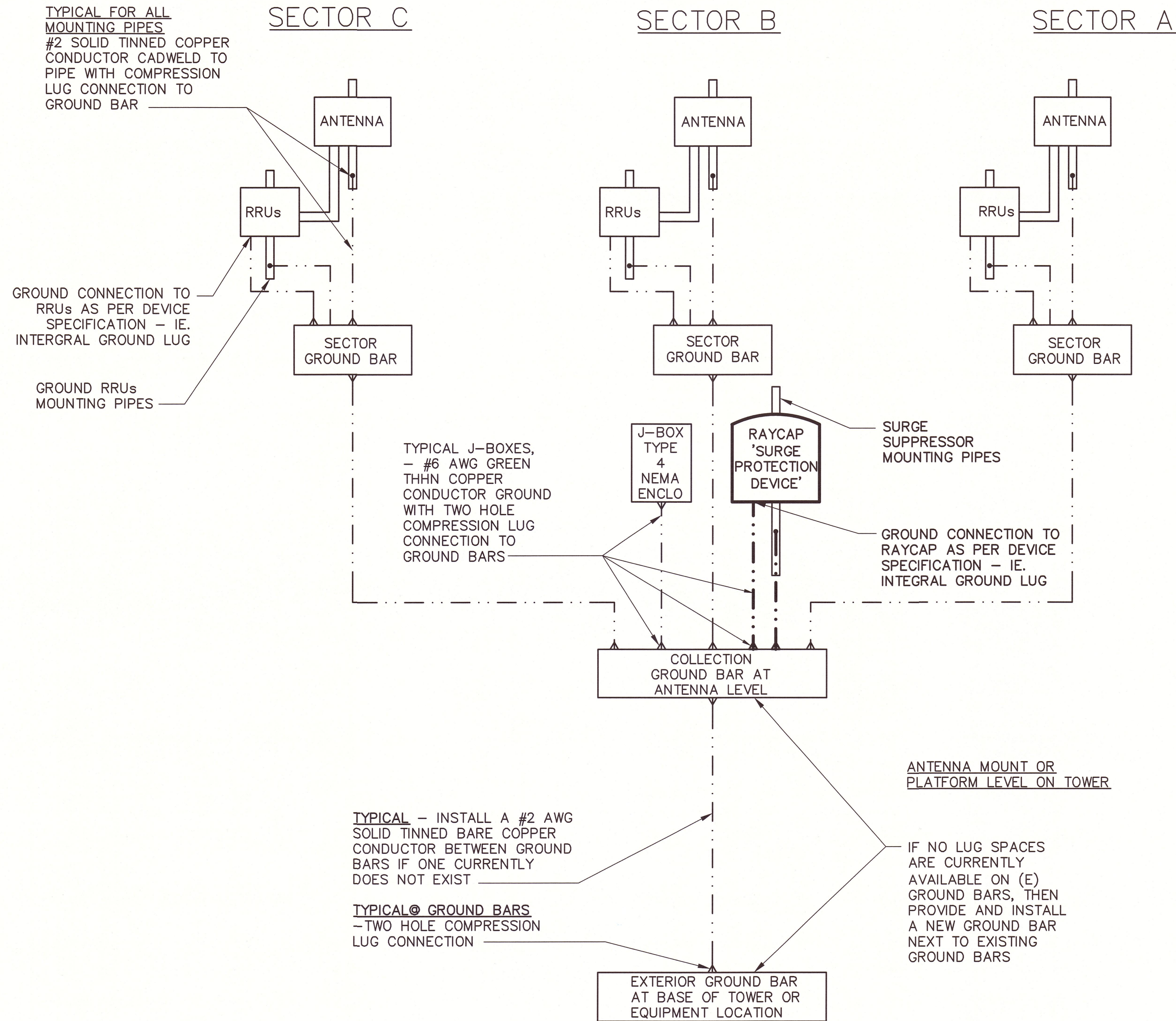
A3

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SCHEMATIC GROUNDING DIAGRAM

GROUND ANY EXISTING OR NEW ITEMS INDICATED ON THIS DIAGRAM NOT CURRENTLY GROUNDED - GROUND ITEMS AS PER THIS DIAGRAM AND DRAWING SPECIFICATIONS SP1-SP3

THIS DIAGRAM IS SCHEMATIC IN NATURE WHEREAS EXISTING ITEMS ARE CURRENTLY GROUNDED IT IS NOT REQUIRED TO RE-GROUND THESE ITEMS



GROUNDING NOTES:

- IF A NEW GROUND BAR IS REQUIRED AT THE BASE OF THE TOWER OR EQUIPMENT EXOTHERMICALLY WELD (2) TWO #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUNDING BAR. ROUTE CONDUCTORS TO BURIED GROUNDING RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
- ALL GROUNDING BARS SHALL BE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE." THE CONTRACTOR SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION WITH 1" HIGH LETTERS.
- ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING
- FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING
- NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUNDING BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUNDING TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
- ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL.
- IF THERE IS NO EXISTING GROUND BAR AS INDICATED IN THE SCHEMATIC DIAGRAM OR IF NO LUG SPACES ARE CURRENTLY AVAILABLE ON AN EXISTING GROUND BAR, THEN PROVIDE AND INSTALL A NEW GROUND BAR NEXT TO THE EXISTING GROUND BAR IN SAME MANNER AS EXISTING. RUN THE NEW DOWNLEAD PARALLEL TO THE EXISTING GROUND BAR DOWNLEAD AND TO ITS CURRENT GROUND AND SECURE THE SAME.

PREPARED FOR:

verizon

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REGISTERED PROFESSIONAL ENGINEER
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C86713
STATE OF CALIFORNIA

DESIGN REVISION:

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463 WEST ATEN ROAD
IMPERIAL, CA 92251

TOWER OWNER SITE ID:

TBD

PREPARED BY:

APPROVED BY: RK
DESIGNED BY: RU
PROJECT NO: EU608C09
DATE: 6-12-17

DRAWING NAME:

GROUNDING DIAGRAM

DRAWING NUMBER:

A4