Crown B4: 815663 Order TMO: 609809



Complete this application in its entirety and submit pages 4 and 5 along with the required materials (including any required supplements as listed on page 2 to the address below:

City of Hampton Community Development Department, Planning Division 22 Lincoln Street, 5th Floor Hampton, Virginia 23669

	OFFICE USE ONLY Date Received:
s)	RECEIVED  NOV 16 2022  CDD 5 <sup>TH</sup> FLOOR
	Case Number: UP 2 2

1. PROPERTY INFORMATION
Address or Location534 E. Mercury Blvd. Hampton, VA 23663
LRSN 12001708 Zoning District C- 3
Current Land Useexisting wireless communication facility
Proposed Land Useexisting wireless communication facility
The proposed use will be in: ☐ an existing building n/a ☐ a new addition n/a ☐ a new building n/a  **Outdoor facility
2. PROPERTY OWNER INFORMATION (an individual or a legal entity may be listed as owner)
Owner's Name Gilliam Properties LLC
Address1802 MARLIN CIR City Hampton State VA _ Zip _23664
Phone Email
3. APPLICANT INFORMATION (if different from owner)
Applicant's Name
Address 1200 MacArthur Blvd, Suite 200 City Mahwah State NJ Zip 07430
Phone201- 236-9093 Emailkaren.cancro@crowncastle.com
4. APPLICANT AGENT INFORMATION (if different from applicant)
Agent's Name Karen Cancro, Agent for Crown Castle USA Inc
Address 1200 Mac Artur Blvd, Suite 200 City Mahwah State NJ Zip 07430
Phone 201-236-9093 Email karen.cancro@crowncastle.com

#### 5. CERTIFICATION FOR LEGAL ENTITY PROPERTY OWNERS

Complete this section only if the property owner is **not** an individual but rather a legal entity such as a corporation, trust, LLC, partnership, diocese, etc. as specified in Step 2 above.

"I hereby submit that I am legally authorized to execute this application on behalf of the fee-simple owner of this property. I have read this application and it is submitted with my full knowledge and consent. I authorize city staff and representatives to have access to this property for inspection. The information contained in this application is accurate and correct to the best of my knowledge."

Name(s), title(s), signature(s), and date(s) of authorized representative(s) of the legal entity (attach additional page if necessary):

Name of	Legal Entity Gilliam Properties LLC		
Signed b	N. M. Suz	Signal Acquisitions IV LLC	Its (title)
	Name (printed)	,	Its (title)
	Signature		Date
	Name (printed)	,	Its (title)
	Signature		_ Date
"I hereby my full kr inspection Name(s)	e this section only if the property owner is submit that I am the fee-simple owner on the submit that I am the fee-simple owner on the submit that I am the fee-simple owner on the submit that I am the fee-simple owner (s) and date(s) of owner(s) rinted)	of this property. I have read to staff and representatives to halication is accurate and corre (attach additional page if n	this application and it is submitted with ave access to this property for ect to the best of my knowledge." ecessary):
	e		
	rinted)e		
[		OFFICE USE ONLY	
	☐ Application Form ☐ Narra	ative Statement	upplemental Form (if required)
	□ Application Fee □ Surv	ev Plat   \D\ \D\ \alpha	Iditional materials (if required)



1200 MacArthur Blvd Mahwah Twp, NJ 07430

Phone: (201) 236-9093 www.crowncastle.com

November 8, 2022, updated 01/09/2023

CITY OF HAMPTON

Community Development Department
Planning Division
22 LINCOLN STREET, 5TH FLOOR
HAMPTON, VA 23669

RE: Narrative Statement to Amend UP977

Site Address: 534 E. Mercury Blvd., Hampton, VA 23663 / T-Mobile - Crown BU 815663, APP ID 609809

On behalf of Global Signal Acquisitions IV LLC & Crown Castle USA Inc., we submit this request to increase the tower height to 135' with an overall height & appurtenances to 139' to accommodate T-Mobile equipment upgrades along with a new mount and mount pipes. Since the tower height is under 150' a lightning rod is not required and will not be apart of the scope. This tower extension is needed in order to complete T-Mobile's scope of work while also allowing for additional opportunities for collocation of new carriers for future scopes. Current CUP is already approved for 133' overall Tower Height and our Tower is currently at 125' with appurtenances. We are requesting to admen our CUP increasing the overall Tower height & Appurtenances by 6'.

This modification of the existing wireless facility noted above is considered an eligible facilities request for a minor modification under Section 6409¹ and the rules of the Federal Communications Commission ("FCC").²

Section 6409 mandates that state and local governments must approve any eligible facilities request for the modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station. Under Section 6409, to toll the review period, if the reviewing authority determines that the application is incomplete, it must provide written notice to the applicant within 30 days, which clearly and specifically delineates all missing documents or information reasonably related to whether the request meets the federal requirements.<sup>3</sup> Additionally, if a state or local government, fails to issue any approvals required for this request within 60 days, these approvals are deemed granted. The FCC has clarified that the 30-day and 60-day deadlines begins when an applicant: (1) takes the first step required under state or local law; and (2) submits information sufficient to inform the jurisdiction that this modification qualifies under the federal law<sup>4</sup>. Please note that with the submission of this letter and enclosed items, the thirty and sixty-day review periods have started. Based on this filing, the deadline for written notice of incomplete application is December 8, 2022, and the deadline for issuance of approval is January 8, 2023, updated to March, 14, 2023.

Our goal is to work with you to obtain approvals earlier than the deadline. We will respond promptly to any request for related information you may have in connection with this request. Please let us know how we can work with you to expedite the approval process. We look forward to working with you on this important project, which will improve wireless telecommunication services in your community using collocation on existing infrastructure. If you have any questions, please do not hesitate to contact me.

Regards,

Karen Cancra

Karen Cancro, Site Acquisition Specialist Crown Castle, Agent for Applicant (201) 236-9093

 $<sup>^1</sup>$  Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6409 (2012) (codified at 47 U.S.C. § 1455).

<sup>&</sup>lt;sup>2</sup> Acceleration of Broadband Deployment by Improving Wireless Facility Siting Policies, 29 FCC Rcd. 12865 (2014) (codified at 47 CFR § 1.6100); and Implementation of State & 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 (June 10, 2020).

<sup>&</sup>lt;sup>3</sup> See 47 CFR § 1.6100 (c)(3). <sup>4</sup> See 2020 Upgrade Order at paragraph 16.

#### 1200 MacArthur Blvd Mahwah Twp, NJ 07430

Phone: (201) 236-9093 www.crowncastle.com

#### Karen.Cancro@crowncastle.com Section 6409 Substantial Change Checklist Towers Outside of the Public Right of Way

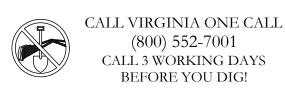
The Federal Communications Commission has determined that a modification substantially changes the physical dimension of a wireless tower or base station under 47 U.S.C. § 1455(a) if it meets one of six enumerated criteria under 47 C.F.R. § 1.6100.

#### Criteria for Towers Outside the Public Rights of Way

YES/NO	Does the modification increase the height of the tower by more than the greater of:
NO	(a) 10%
110	(b) or, the height of an additional antenna array plus separation of up to 20 feet from the top of
	the nearest existing antenna?
YES/NO	Does the modification add an appurtenance to the body of the tower that would protrude from the
NO	edge of the tower more than 20 feet or more than the width of the tower structure at the level of the
110	appurtenance, whichever is greater?
YES/NO	Does the modification involve the installation of more than the standard number of new equipment
NO	cabinets for the technology involved or add more than four new equipment cabinets?
YES/NO	Does the modification entail any excavation or deployment outside the current site by more than 30
NO	feet in any direction, not including any access or utility easements?
YES/NO	Does the modification defeat the concealment elements of the eligible support structure?
NO	
YES/NO	Does the modification violate conditions associated with the siting approval with the prior approval the
NO	tower or base station other than as specified in 47 C.F.R. § 1.6100(c)(7)(i) – (iv)?

If all questions in the above section are answered "NO," then the modification does <u>not</u> constitute a substantial change to the existing tower under 47 C.F.R. § 1.6100.

# I - Mobile - -





CHARLOTTE, NC 28217



CHARLOTTE, NC 28277



(919) 661-6351

TEP JOB #: 43952.682321

T-MOBILE SITE NUMBER: VA10036A

> BU #: **815663** PHOEBUS (REV)

534 E. MERCURY BLVD HAMPTON, VA 23663

EXISTING 125'-0" MONOPOLE TOWER

**ISSUED FOR:** 

CONSTRUCTION CONSTRUCTION

CONSTRUCTION

REV DATE DRWN DESCRIPTION

SEAL:	
	L H
	TYLER SHENK IN Lic. No. 060894
	EGONAL ENGINEE

IT IS A VIOLATION OF LAW FOR ANY PERSON, JNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

**SHEET NUMBER:** 

**REVISION:** 

11/07/22

T-MOBILE SITE NUMBER: VA10036A **BUSINESS UNIT #:815663** 

CROWN 815663 E MERCURY SITE ADDRESS: 534 E. MERCURY BLVD T-MOBILE SITE NAME: HAMPTON, VA 23663 MONOPOLE **HAMPTON** SITE TYPE: COUNTY:

125'-0" HAMPTON COUNTY JURISDICTION: TOWER HEIGHT:

# T-MOBILE ANCHOR SITE CONFIGURATION: 67E5998E\_1XAIR+1OP+1QP

#### SITE INFORMATION

PHOEBUS (REV)

CROWN CASTLE USA INC.

SITE NAME:

SITE ADDRESS: 534 E. MERCURY BLVD HAMPTON, VA 23663

COUNTY: HAMPTON 12001708 MAP/PARCEL #: **EXISTING** AREA OF CONSTRUCTION:

LATITUDE: 37° 1' 23.19" (37.02311166) -76° 19' 18.64" (-76.32184660) LONGITUDE

NAD83 LAT/LONG TYPE: 8 FT GROUND ELEVATION: C-3 **CURRENT ZONING:** 

**JURISDICTION:** HAMPTON COUNTY

TYPE OF CONSTRUCTION:

CARRIER/APPLICANT:

A&E FIRM:

TOWER OWNER:

CROWN CASTLE

CONTACTS:

USA INC. DISTRICT

A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR **HUMAN HABITATION** 

PROPERTY OWNER: GILLIAM PROPERTIES LLC

1802 MARLIN CIR HAMPTON, VA 23664

TOWER OWNER: CROWN CASTLE USA, INC. 3530 TORINGDON WAY, STE 300

326 TRYON ROAD

(919) 661-6351

(919) 661-6351

(919) 661-6351

RALEIGH, NC 27603

CHARLOTTE, NC 28277

T-MOBILE 2105 WATER RIDGE PARKWAY, SUITE 400

CHARLOTTE, NC 28217

JOSEPH T. CRESS - PROJECT MANAGER

TYLER SHENK - ELECTRICAL ENGINEER

CROWNAE.APPROVAL@CROWNCASTLE.COM

TYLER SHENK - CIVIL ENGINEER

CROWN CASTLE USA, INC.

2000 CORPORATE DRIVE

CANONSBURG, PA 15317

RICHMOND, VA 23236

ELECTRIC PROVIDER: DOMINION POWER (866) 366-4357

TELCO PROVIDER: VERIZON WIRELESS (800) 225-5499

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 22x34. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

**DRAWING INDEX** 

EXISTING & FINAL EQUIPMENT PLAN

PLUMBING DIAGRAM & COLOR CODE

ANTENNA GROUNDING DIAGRAM

AC PANEL SCHEDULES & ONE LINE DIAGRAM

ANTENNA & CABLE SCHEDULE

FINAL ELEVATION & ANTENNA PLANS

TITLE SHEET

SITE PLAN

GENERAL NOTES

EQUIPMENT SPECS

EQUIPMENT SPECS

GROUNDING DETAILS

GROUNDING DETAILS

ATTACHED | MOUNT SPECS

SHEET DESCRIPTION

# **LOCATION MAP**

NO SCALE

# **PROJECT TEAM**

TOWER ENGINEERING PROFESSIONALS

SHEET#

- REMOVE (1) HYBRID CABLES

- INSTALL (6) RRUs

#### GROUND SCOPE OF WORK:

- REMOVE (6) RU22

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:

BUILDING

2017 NATIONAL ELECTRICAL CODE **ELECTRICAL** 

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: B&T GROUP DATED: APRIL 22, 2022

DATED:

## APPROVAL DATE SIGNATURE RF CONST. FAA

**APPROVALS** 

SR DEV MGR

RFDS VERSION: 6 DATED: 02/27/2022 REG DIR

# PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE

- REMOVE (3) RRUs
- REMOVE (1) PLATFORM MOUNT
- INSTALL (9) ANTENNAS

- REMOVE (1) DUW30
- INSTALL (2) PSU 4813 BOOSTER, (2) RP 6651, (1) IXRe

# APPLICABLE CODES/REFERENCE **DOCUMENTS**

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE CODE TYPE CODE

VIRGINIA CONSTRUCTION BUILDING CODE/2018 IBC **MECHANICAL** 2018 VIRGINIA MECHANICAL CODE/2018 IMC

MOUNT ANALYSIS:

ORDER ID: 609809 REVISION: 0

> THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

#### TOWER SCOPE OF WORK:

- REMOVE (6) ANTENNAS
- REMOVE (2) 1-5/8" COAX
- INSTALL (3) 6x24 HCS 4AWG 60m CABLES • INSTALL (1) PLATFORM MOUNT
- INSTALL (12) MOUNT PIPES

- INSTALL (2) CABINETS
- RAISE ICE BRIDGE AND REMOVE PLINTH AS NEEDED

#### BILLY.STUBBS@CROWNCASTLE.COM PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

BILLY STUBBS - A&E SPECIALIST

9011 ARBORETUM PARKWAY, SUITE 100

CHANDLER DAVIS - PROJECT MANAGER

CHANDLER.DAVIS@CROWNCASTLE.COM

#### CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

- 1. NOTICE TO PROCEED— NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800-788-7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
- "LOOK UP" CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT
- THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
- PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES. BUT IS NOT LIMITED TO. BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE. ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS
- ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED-STD-10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION)
- 5. ALL SITE WORK TO COMPLY WITH QAS-STD-10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE" AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.
- IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. 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 THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- 10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
- 11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
- 12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY
- 13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES
- 14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
- 15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
- 16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED RFACE APPLICATION.
- 17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT
- EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS. 18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- 19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION
- 20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- 21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- 22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

#### GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION CONTRACTOR:
- CARRIER: T-MOBILE TOWER OWNER: CROWN CASTLE USA INC.
- 2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
- THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
- NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
- SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSI<mark>ons and Measurements on</mark> the Drawings to ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. 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 THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHA<mark>LL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES</mark> AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE
- 10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING
- WITH ANY SUCH CHANGE OF INSTALLATION. 11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN
- DRAWINGS. 12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
- 13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- 14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

#### CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE. 2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED
- TO BE 1000 psf. 3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF
- . CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
- ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
- #4 BARS AND SMALLER 40 ksi #5 BARS AND LARGER 60 ksi THE FOLLOWING MINIMUM, CONCRETE COVER, SHALL, BE, PROVIDED, FOR REINFORCING, STEEL UNLESS SHOWN OTHERWISE
- ON DRAWINGS: CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH CONCRETE EXPOSED TO EARTH OR WEATHER:
  - #6 BARS AND LARGER #5 BARS AND SMALLER 1-1/2"
  - CONCRETE NOT EXPOSED TO EARTH OR WEATHER: SLAB AND WALLS . 3/4" BEAMS AND COLUMNS
- 7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACL 301 SECTION 4.2.4.

#### GREENFIELD GROUNDING NOTES:

- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- THE CONTRACTOR SHALL PERFORM IEEE FALL—OF—POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELEC<mark>TRODE SYSTEMS, THE CONTRACTOR SHA</mark>LL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE
- 4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT
- CLAMPS METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED
- WITH THE POWER CIRCUITS TO BTS EQUIPMENT. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED
- COPPER FOR OUTDOOR BTS.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
- 11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. 12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
- 13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
- 14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
- 15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- 16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- 17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC. 18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
- 19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT
- 20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
- 21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR 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 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).

#### **ELECTRICAL INSTALLATION NOTES:**

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED
- AND TRIP HAZARDS ARE ELIMINATED. 3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- 4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO
- REQUIREMENT OF THE NATIONAL ELECTRICAL CODE. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES
- ADOPTED CODE PRE THE GOVERNING JURISDICTION. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV
- PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE. PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).

NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT

- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS 8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- 10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH
- TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED. 11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS
- OTHERWISE SPECIFIED. 12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TO CABLE (#14 OR LARGER), WITH
- TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED. 13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP—STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND 📗
- BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE). 14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE
- 15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR I
- EXPOSED INDOOR LOCATIONS 16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- 17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT
- 18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION
- OCCURS OR FLEXIBILITY IS NEEDED. 19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET
- SCREW FITTINGS ARE NOT ACCEPTABLE. 20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND
- 21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS
- (WIREMOLD SPECMATE WIREWAY). 22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- 23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED
- MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE 24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR
- METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY—COATED OR NON—CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- 26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- 27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

<u>APWA UNIFORM COLOR CODE:</u>

PROPOSED EXCAVATION

GASEOUS MATERIALS

POTABLE WATER

SLURRY LINES

EMPORARY SURVEY MARKINGS

LECTRIC POWER LINES, CABLES,

GAS, OIL, STEAM, PETROLEUM, OR

COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS

ECLAIMED WATER, IRRIGATION, AND

SEWERS AND DRAIN LINES

CONDUIT, AND LIGHTING CABLES

- 28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY. 29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "T-MOBILE"
- 30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE						
SYSTEM	CONDUCTOR	COLOR				
	A PHASE	BLACK				
   120/240V, 1Ø	B PHASE	RED				
120/2400, 10	NEUTRAL	WHITE				
	GROUND	GREEN				
	A PHASE	BLACK				
	B PHASE	RED				
120/208V, 3Ø	C PHASE	BLUE				
	NEUTRAL	WHITE				
	GROUND	GREEN				
	A PHASE	BROWN				
	B PHASE	ORANGE OR PURPLE				
277/480V, 3Ø	C PHASE	YELLOW				
	NEUTRAL	GREY				
	GROUND	GREEN				
DC VOLTAGE	POS (+)	RED**				
DC VOLTAGE	NEG (-)	BLACK**				

BETTER) FOR EXTERIOR LOCATIONS.

SEE NEC 210.5(C)(1) AND (2)

\*\* POLARITY MARKED AT TERMINATION

#### **ABBREVIATIONS:**

- ANTENNA EXISTING
- FACILITY INTERFACE FRAME
- **GENERATOR**
- GPS GLOBAL POSITIONING SYSTEM GSM GLOBAL SYSTEM FOR MOBILE
- LTE LONG TERM EVOLUTION LOSS OF COMMERCIAL POWER RELAY
- MGB MASTER GROUND BAR MW MICROWAVE
- NATIONAL ELECTRIC CODE
- PROPOSED POWER PLANT
- QTY QUANTITY
- RECT RECTIFIER
- RBS RADIO BASE STATION REMOTE ELECTRIC TILT RET
- RFDS RADIO FREQUENCY DATA SHEET
- RRH REMOTE RADIO HEAD RRU REMOTE RADIO UNIT
- SMART INTEGRATED DEVICE SIAD
- TOWER MOUNTED AMPLIFIER TYP TYPICAL
- UMTS UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM W.P. WORK POINT

2105 WATER RIDGE PARKWAY ,SUITE#400 CHARLOTTE, NC 28217



CHARLOTTE, NC 28277



(919) 661-6351

TEP JOB #: 43952.682321

T-MOBILE SITE NUMBER: VA10036A

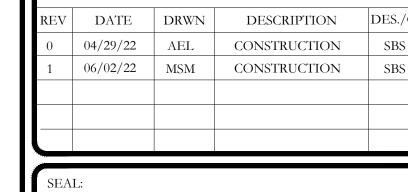
> BU #: **815663** PHOEBUS (REV)

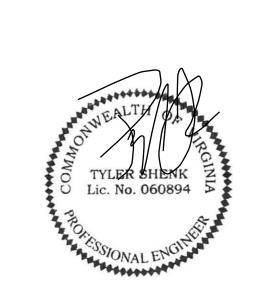
534 E. MERCURY BLVD HAMPTON, VA 23663

EXISTING 125'-0"

MONOPOLE TOWER

		ISSUI	ED FOR:	
REV	DATE	DRWN	DESCRIPTION	DES./C
0	04/29/22	AEL	CONSTRUCTION	SBS
1	06/02/22	MSM	CONSTRUCTION	SBS





06/02/22

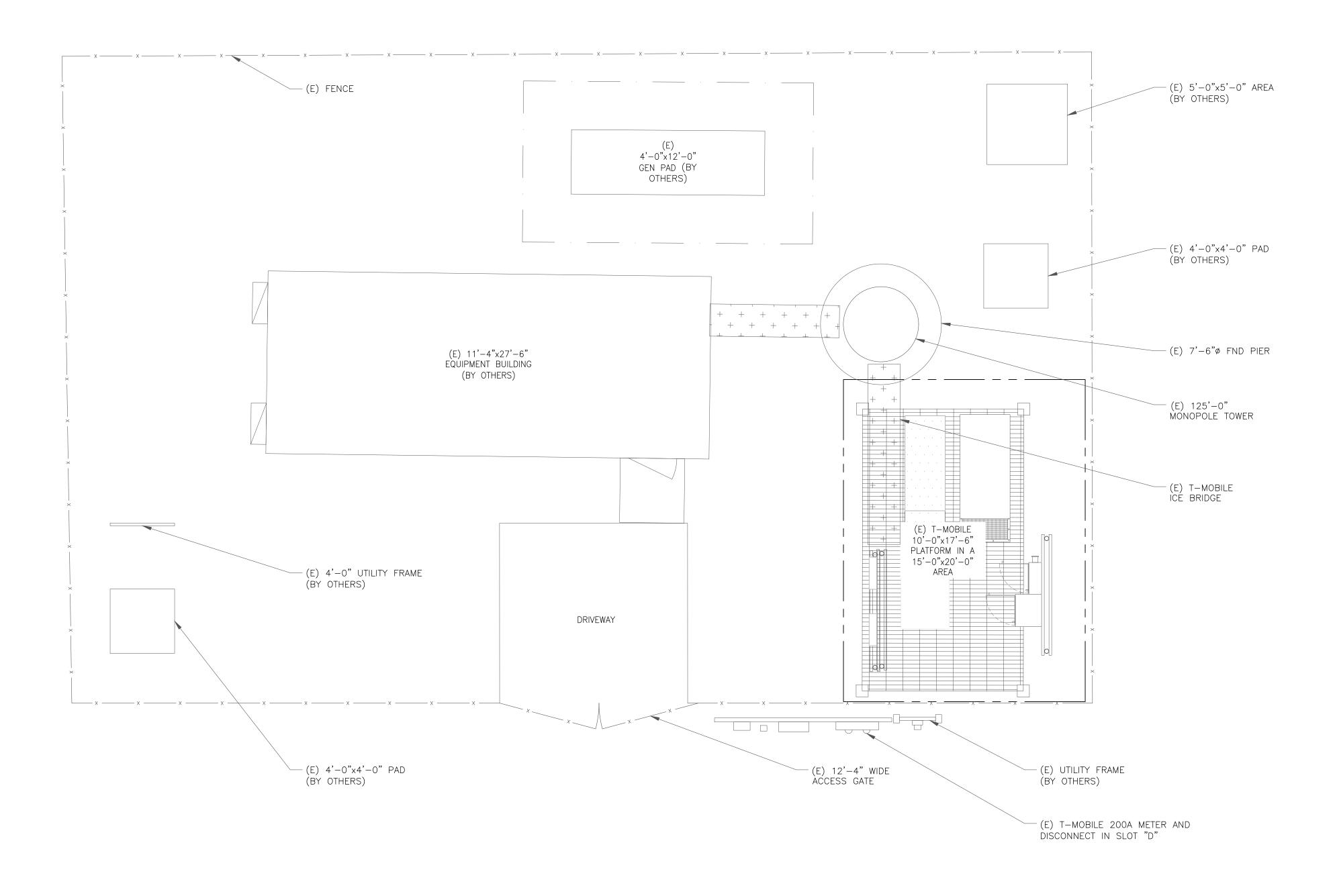
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

**SHEET NUMBER:** 

SITE PLAN SHOWN BELOW WAS REPRODUCED FROM INFORMATION PROVIDED BY CROWN CASTLE AND SITE WALK CONDUCTED BY TEP. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.

FLOODPLAIN NOTE:

THE TOWER IS LOCATED IN ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #5155270026H, DATED 05/16/2016





2105 WATER RIDGE PARKWAY ,SUITE#400 CHARLOTTE, NC 28217



CHARLOTTE, NC 28277



TOWER **ENGINEERING** PROFESSIONALS

326 TRYON RD RALEIGH, NC 27603 (919) 661-6351

TEP JOB #: 43952.682321

#### T-MOBILE SITE NUMBER: VA10036A

BU #: **815663** Phoebus (Rev)

534 E. MERCURY BLVD HAMPTON, VA 23663

EXISTING 125'-0" MONOPOLE TOWER

	ISSUED FOR:										
REV	DATE	DRWN	DESCRIPTION	DES./QA							
0	04/29/22	AEL	CONSTRUCTION	SBS							
1	06/02/22	MSM	CONSTRUCTION	SBS							

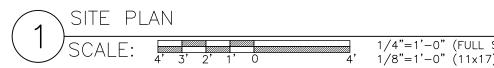
TYLER SHENK Lic. No. 060894

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

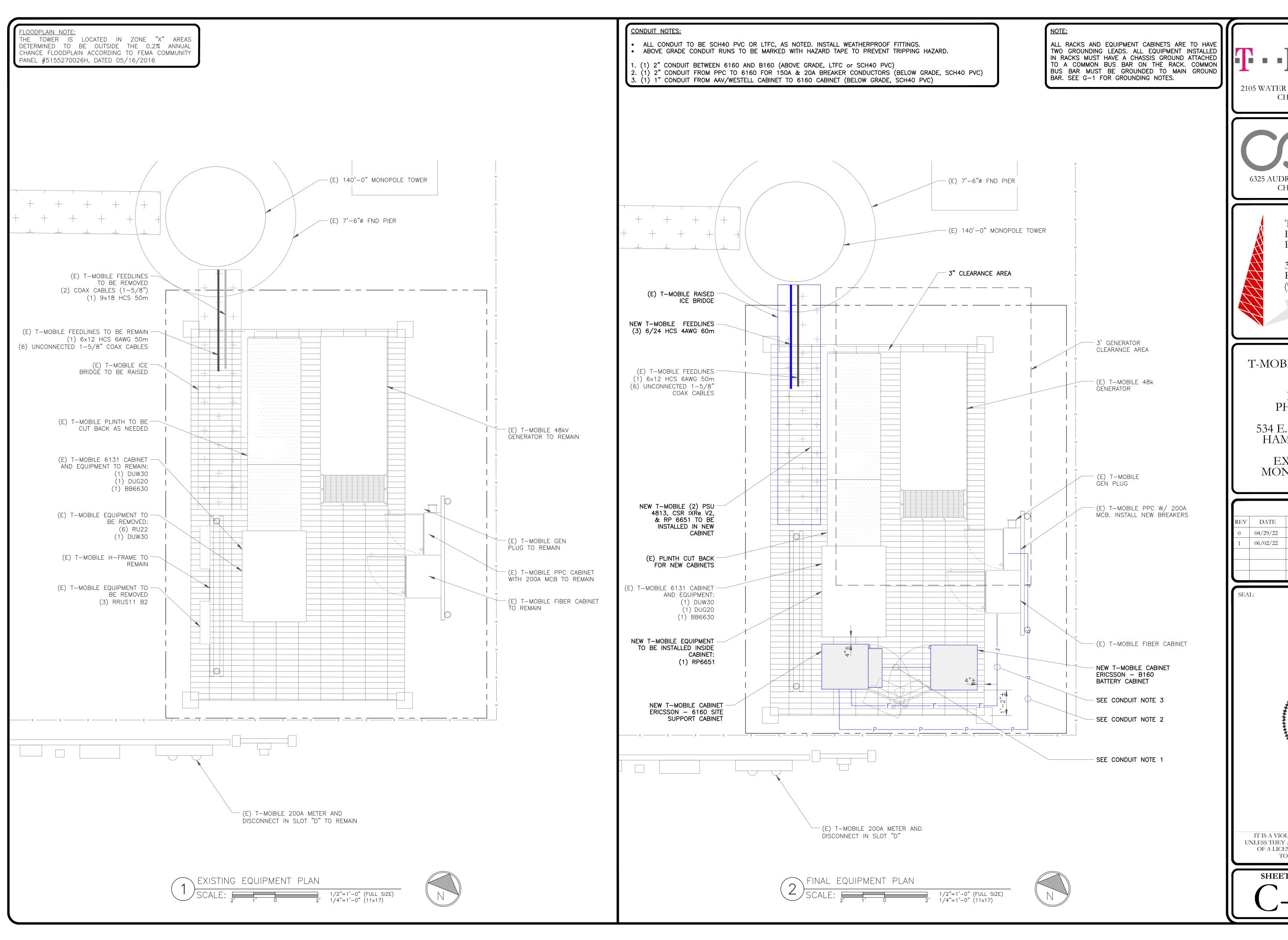
SHEET NUMBER:

REVISION:

06/02/22







2105 WATER RIDGE PARKWAY ,SUITE#400 CHARLOTTE, NC 28217



CHARLOTTE, NC 28277



TOWER ENGINEERING **PROFESSIONALS** 

326 TRYON RD RALEIGH, NC 27603 (919) 661-6351

TEP JOB #: 43952.682321

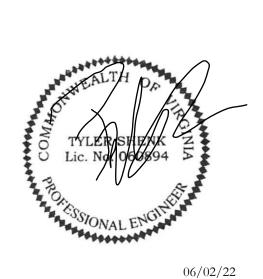
T-MOBILE SITE NUMBER: VA10036A

> BU #: **815663** PHOEBUS (REV)

534 E. MERCURY BLVD HAMPTON, VA 23663

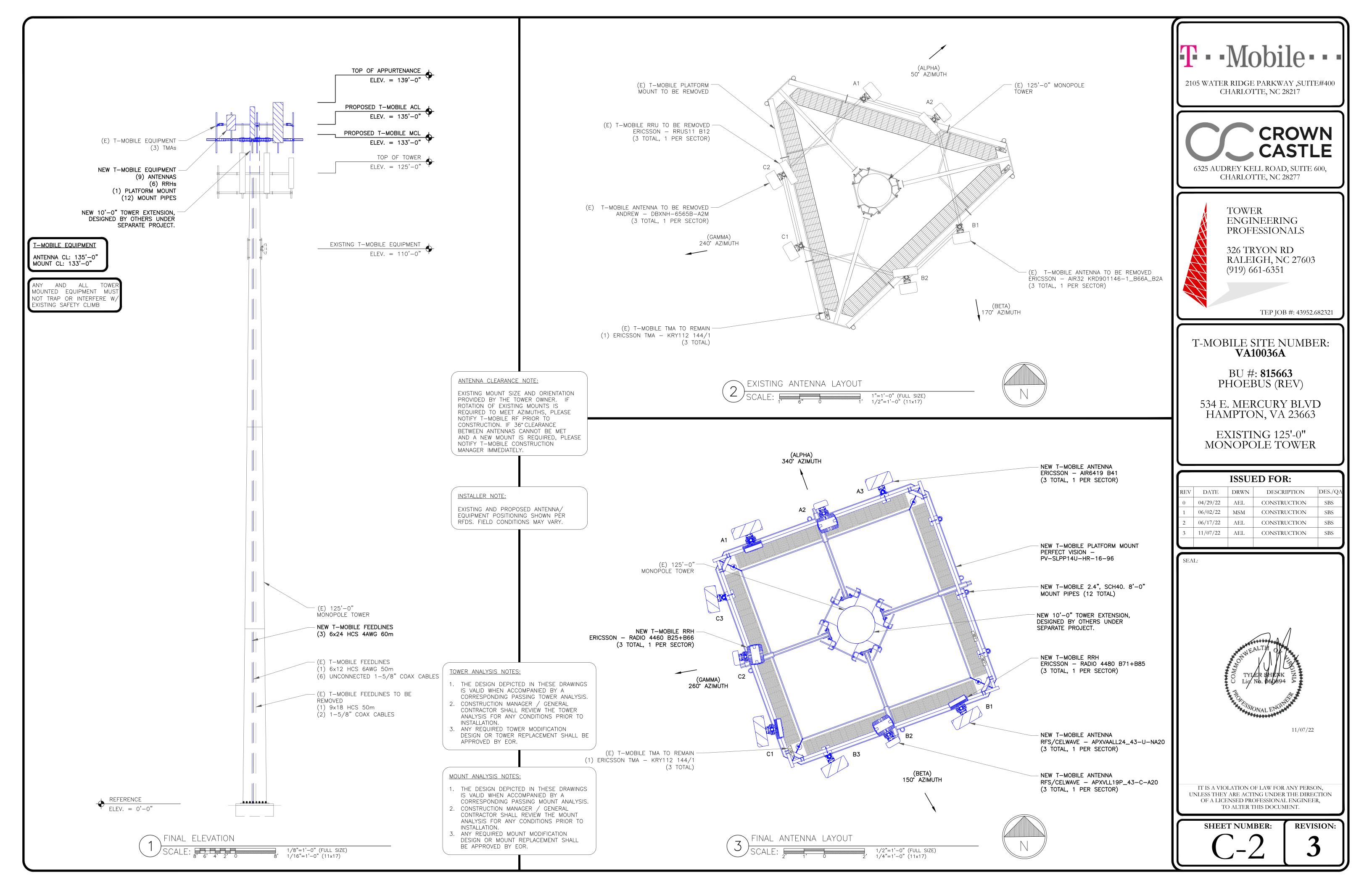
EXISTING 125'-0" MONOPOLE TOWER

	ISSUED FOR:										
REV	DATE	DRWN	DESCRIPTION	DES./QA							
0	04/29/22	AEL	CONSTRUCTION	SBS							
1	06/02/22	MSM	CONSTRUCTION	SBS							



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SHEET NUMBER:



	EXISTING ANTENNA SCHEDULE									
SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH.	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	L2100, L1900, G1900	113'-0"	50°	ERICSSON	*AIR32 KRD901146-1_B66A_B2A (OCTO)	0,	4°	_	(HYBRID SHARED)
ALPHA	_	_	-	_	_	_	_	_	**(1) ERICSSON TMA - KRY112 144/1	**(2) 1-5/8" COAX
ALPHA	A2	L700, U1900	113'-0"	50°	ANDREW	*DBXNH-6565B-A2M (QUAD)	0.	4°	*(1) RRUS11 B12	(1) 6X12 6AWG HCS 50M *(1) 1-5/8" COAX
ВЕТА	B1	L2100, L1900, G1900	113'-0"	170°	ERICSSON	*AIR32 KRD901146-1_B66A_B2A (OCTO)	0,	4°	_	(HYBRID SHARED)
BETA	_	-	_	170°	-	-	_	_	**(1) ERICSSON TMA - KRY112 144/1	**(2) 1-5/8" COAX
ВЕТА	B2	L700, U1900	113'-0"	170°	ANDREW	*DBXNH-6565B-A2M (QUAD)	O.	4°	*(1) RRUS11 B12	(1) 6X12 6AWG HCS 50M *(1) 1-5/8" COAX
		,					1			
GAMMA	A1	L2100, L1900, G1900	113'-0"	240°	ERICSSON	*AIR32 KRD901146-1_B66A_B2A (OCTO)	0,	4°	_	(HYBRID SHARED)
GAMMA	_	-	-	240°	_	_	_	_	**(1) ERICSSON TMA - KRY112 144/1	**(2) 1-5/8" COAX
GAMMA	A2	L700, U1900	113'-0"	240°	ANDREW	*DBXNH-6565B-A2M (QUAD)	O°	4°	*(1) RRUS11 B12	(1) 6X12 6AWG HCS 50M *(1) 1-5/8" COAX

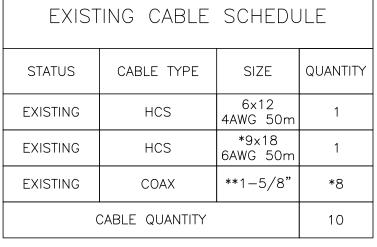
<sup>\*</sup>EQUIPMENT TO BE REMOVED

XEXISTING ANTENNA AND CABLE SCHEDULE SCALE: NOT TO SCALE

						FINAL ANTENNA SCHEDULE				
SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	Α1	L700, L600, N600	135'-0"	340°	RFS	APXVAALL24_43-U-NA20 (OCTO)	0.	6 <b>°</b>	(1) ERICSSON RRH - RADIO 4480 B71+B85	(1) 6x12 6AWG HCS 50m
ALPHA	A2	U1900, L1900, L2100	135'-0"	340°	RFS	APXVLL19P_43-C-A20 (QUAD)	0.	4°	(1) ERICSSON RRH - RADIO 4460 B25+B66	(1) 6x24 HCS 6AWG
ALPHA	А3	L2500, N2500	135'-0"	340°	ERICSSON	AIR6419 B41 (ACTIVE ANTENNA - MASSIVE MIMO)	0.	<b>4°</b>	_	HYBRID (SHARED)
ALPHA	_	-	_	_	_	-	_	_	*(1) ERICSSON TMA - KRY112 144/1	*(2) 1-5/8" COAX
						1				
ВЕТА	B1	L700, L600, N600	135'-0"	150°	RFS	APXVAALL24_43-U-NA20 (OCTO)	0.	6 <b>°</b>	(1) ERICSSON RRH - RADIO 4449 B71+B85	(1) 6X24 HCS 6AWG 60m
ВЕТА	B2	U1900, L1900, L2100	135'-0"	150°	RFS	APXVLL19P_43-C-A20 (QUAD)	0.	4°	(1) ERICSSON RRH - RADIO 4460 B25+B66	HYBRID (SHARED)
ВЕТА	В3	L2500, N2500	135'-0"	150°	ERICSSON	AIR6419 B41 (ACTIVE ANTENNA - MASSIVE MIMO)	0.	<b>4°</b>	_	HYBRID (SHARED)
ВЕТА	_	-	_	_	-	-	-	_	*(1) ERICSSON TMA - KRY112 144/1	*(2) 1-5/8" COAX
GAMMA	C1	L700, L600, N600	135'-0"	260°	RFS	APXVAALL24_43-U-NA20 (OCTO)	0.	6 <b>°</b>	(1) ERICSSON RRH - RADIO 4449 B71+B85	(1) 6X24 HCS 6AWG 60m
GAMMA	C2	U1900, L1900, L2100	135'-0"	260°	RFS	APXVLL19P_43-C-A20 (QUAD)	0.	4°	(1) ERICSSON RRHRADIO 4460 B25+B66	HYBRID (SHARED)
GAMMA	C3	L2500, N2500	135'-0"	260°	ERICSSON	AIR6419 B41 (ACTIVE ANTENNA - MASSIVE MIMO)	0.	4°	_	(1) 6X24 HCS 6AWG 60m
GAMMA	_	-	_	_	_	-	_	_	*(1) ERICSSON TMA - KRY112 144/1	*(2) 1-5/8" COAX

PROPOSED IN BOLD

\*NOTE - UNCONNECTED EQUIPMENT AND FEEDLINES



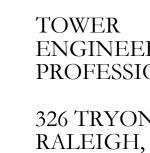
\*\*(2) 1-5/8" COAX TO BE REMOVED, (1) 1-5/8" COAX TO BE UNCONNECTED, (5) 1-5/8" UNCONNECTED COAX TO REMIAN

FINAL CABLE SCHEDULE								
STATUS	CABLE TYPE	SIZE	QUANTIT*					
EXISTING	COAX	1-5/8"	6					
EXISTING	HCS	6x12 6AWG 50m	1					
NEW	HCS	6x24 6AWG 50m	3					
	10							

2105 WATER RIDGE PARKWAY ,SUITE#400 CHARLOTTE, NC 28217



CHARLOTTE, NC 28277



ENGINEERING PROFESSIONALS

326 TRYON RD RALEIGH, NC 27603 (919) 661-6351

TEP JOB #: 43952.682321

T-MOBILE SITE NUMBER: VA10036A

BU #: **815663** PHOEBUS (REV)

534 E. MERCURY BLVD HAMPTON, VA 23663

EXISTING 125'-0" MONOPOLE TOWER

	ISSUED FOR:									
REV	DATE	DRWN	DESCRIPTION	DES./QA						
0	04/29/22	AEL	CONSTRUCTION	SBS						
1	06/02/22	MSM	CONSTRUCTION	SBS						
2	06/17/22	AEL	CONSTRUCTION	SBS						

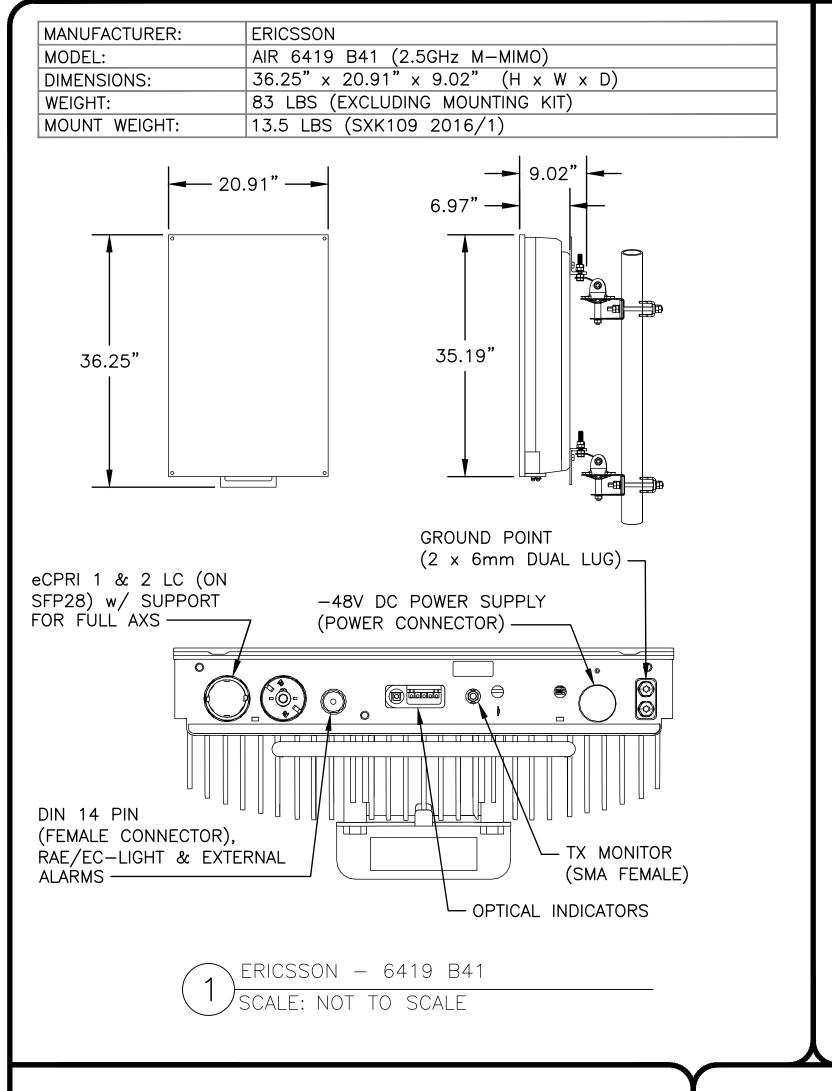


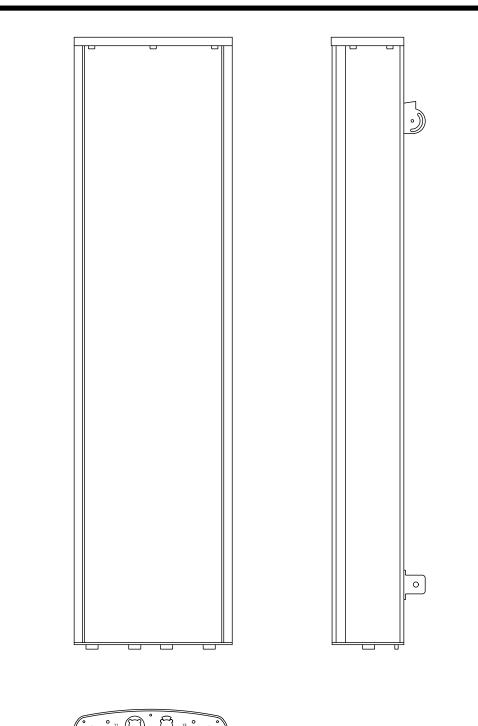
**REVISION:** 

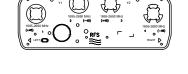
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SHEET NUMBER:

<sup>\*\*</sup>UNCONNECTED EQUIPMENT TO REMAIN

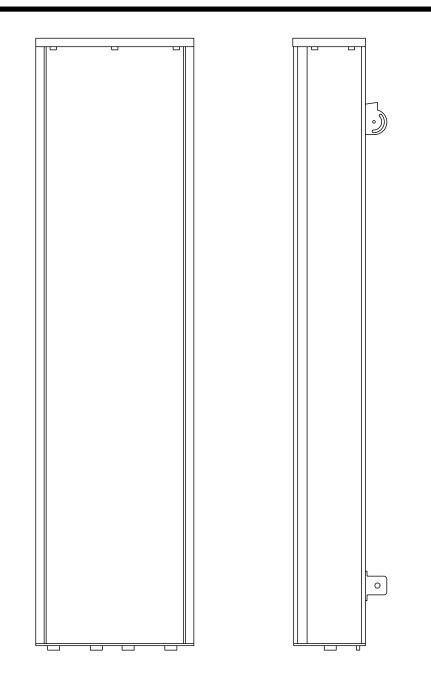






RFS/CELWAVE - APXVLL19P-43-C-A20
WEIGHT (WITHOUT MOUNTING HARDWARE): 48.39 LBS
SIZE (HxWxD): 75.8x11.30x4.60 IN.

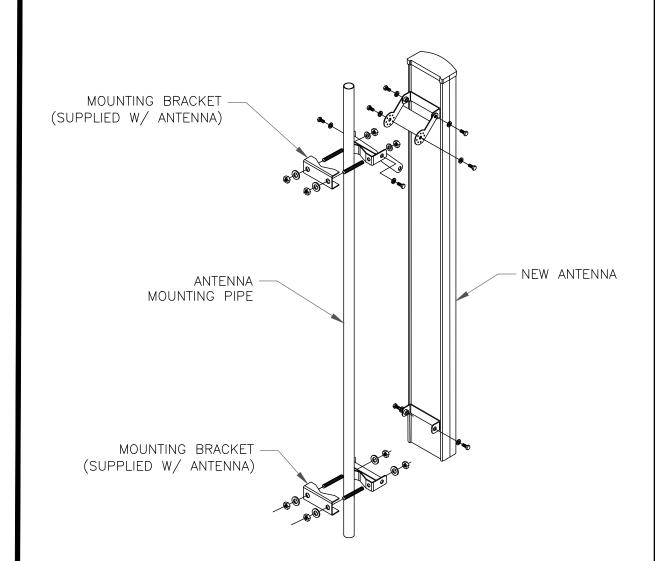
RFS/CELWAVE - APXVLL19P-43-C-A20 SCALE: NOT TO SCALE





RFS/CELWAVE — APXVAALL24\_43-U-NA20 WEIGHT (WITHOUT MOUNTING HARDWARE): 119 LBS SIZE (HxWxD): 95.87x24.02x8.86 IN.

RFS/CELWAVE - APXVAALL24\_43-U-NA20 SCALE: NOT TO SCALE



**VA10036A** BU #: **815663** 

PHOEBUS (REV)

T - Mobile - -

2105 WATER RIDGE PARKWAY ,SUITE#400 CHARLOTTE, NC 28217

CHARLOTTE, NC 28277

ENGINEERING PROFESSIONALS

326 TRYON RD

(919) 661-6351

RALEIGH, NC 27603

TOWER

CROWN

TEP JOB #: 43952.682321

534 E. MERCURY BLVD HAMPTON, VA 23663

T-MOBILE SITE NUMBER:

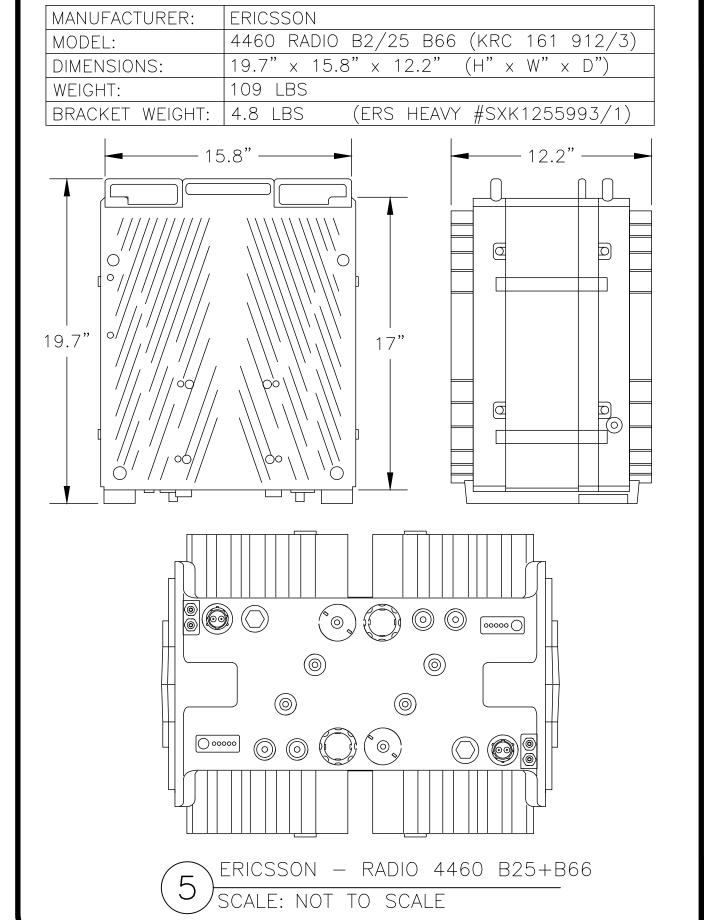
EXISTING 125'-0" MONOPOLE TOWER

**ISSUED FOR:** 

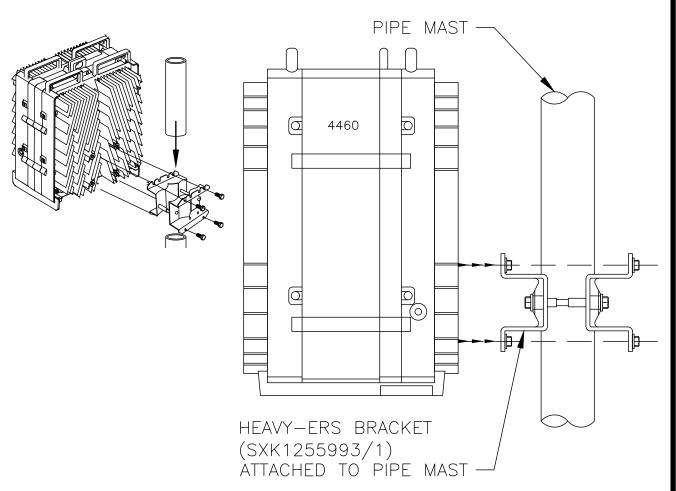
REV DATE DRWN DESCRIPTION DES./QA

06/02/22 MSM CONSTRUCTION

04/29/22 AEL CONSTRUCTION SBS



INSTALLATION KIT:	NTB1010029/50	1/RADIO
BRACKET:	ERS HEAVY BRACKET (SXK1255993/1)	1
POWER CONNECTOR:	CIRCULAR CONNECTOR (RNT4437/01)	2
GROUND CABLE:	CABLE -16mm2, GYNE, 2m 1 LUG w/ 2 M6 HOLES, 90° (RPM1192062/2)	1



INSTALLER NOTES:

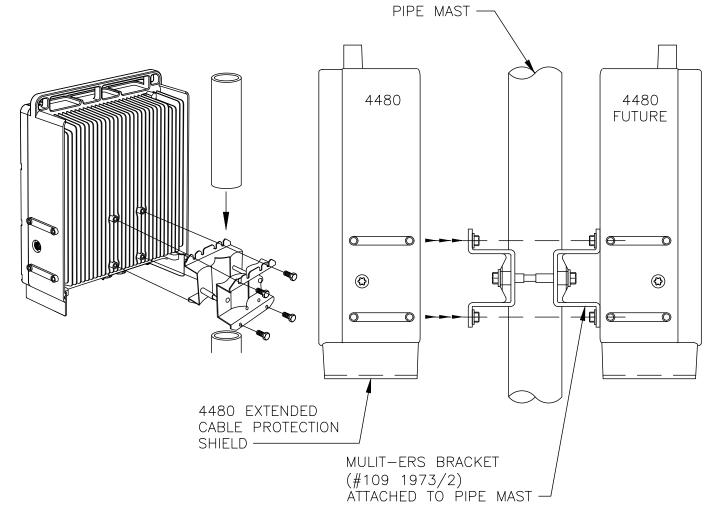
1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO
ENSURE THAT ALL RRHS RECEIVE ELECTRICAL POWER
WITHIN 24 HOURS OF BEING REMOVED FROM THE
MANUFACTURER'S PACKAGING.

2. DO NOT OPEN RRH PACKAGES IN THE RAIN.

3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE
TO BE GALVANIZED UNLESS NOTED OTHERWISE.

6 ERICSSON - RADIO 4460 MOUNTING DETAIL SCALE: NOT TO SCALE

INSTALLATION KIT:	TB1010029/10	1/RADIO
BRACKET:	MULTI ERS BRACKET (#109 1973/2)	1
POWER CONNECTOR:	CIRCULAR CONNECTOR (RNT4437/01)	2
GROUND CABLE:	CABLE -16mm2, GYNE, 2m 1 LUG w/ 2 M6 HOLES, 90° (RPM1192062/2)	1



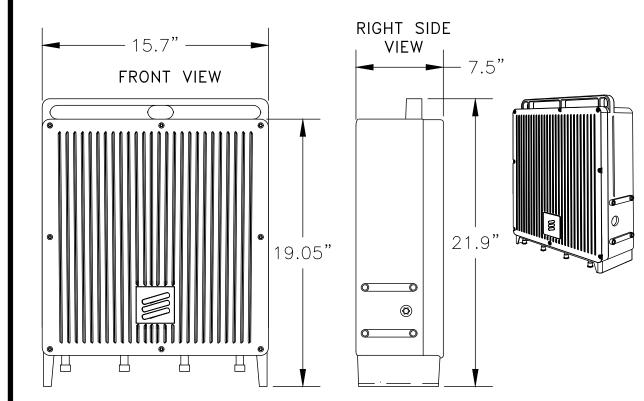
INSTALLER NOTES:
1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.

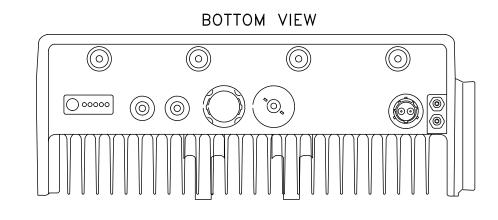
7 ERICSSON - RADIO 4480 MOUNTING DETAIL SCALE: NOT TO SCALE

MANUFACTURER:	ERICSSON
MODEL:	4480 RADIO (KRC 161 922/1)
DIMENSIONS:	21.9" x 15.7" x 7.5" (H x W x D)
MODEL BAND:	B71, B85 FOR NR AND LTE
WEIGHT:	81 LBS
BRACKET WEIGHT:	3.75 LBS (MULTI ERS #109 1973/2)

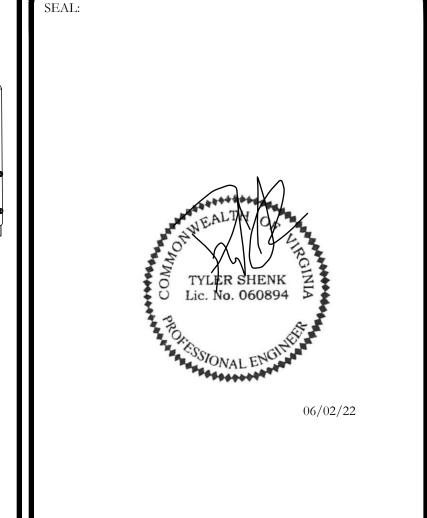
ANTENNA MOUNTING DETAIL

(4) SCALE: NOT TO SCALE



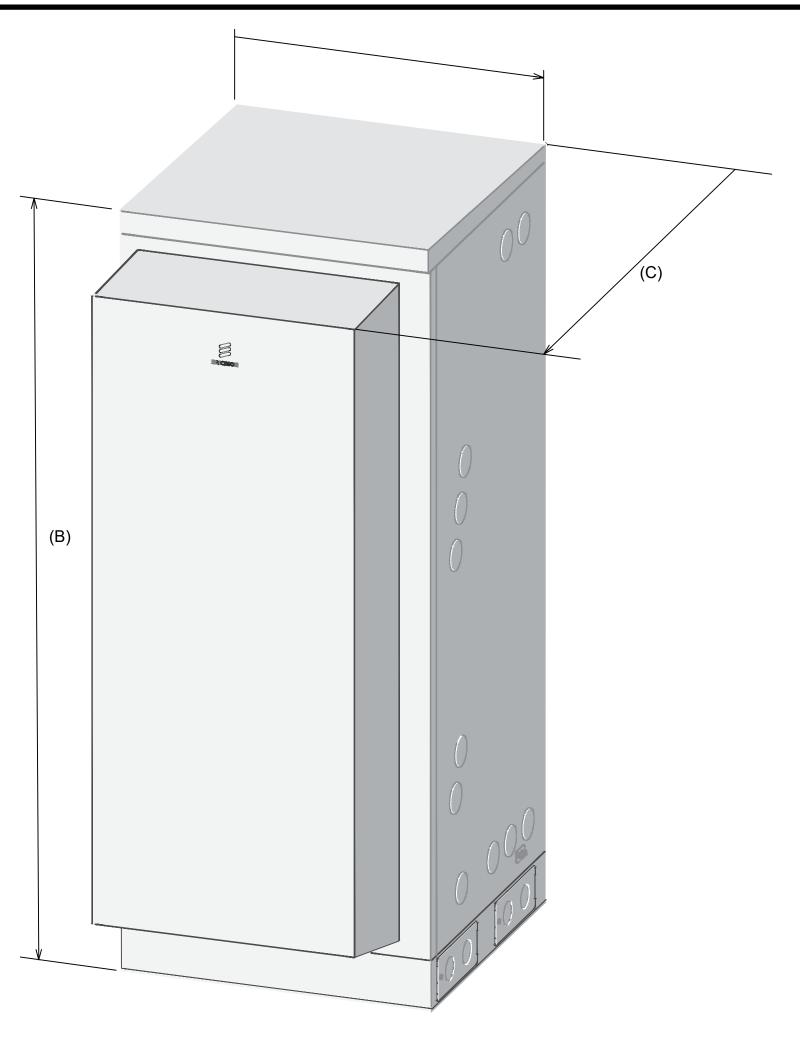


8 ERICSSON - RADIO 4480 B71+B85 SCALE: NOT TO SCALE



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SHEET NUMBER:

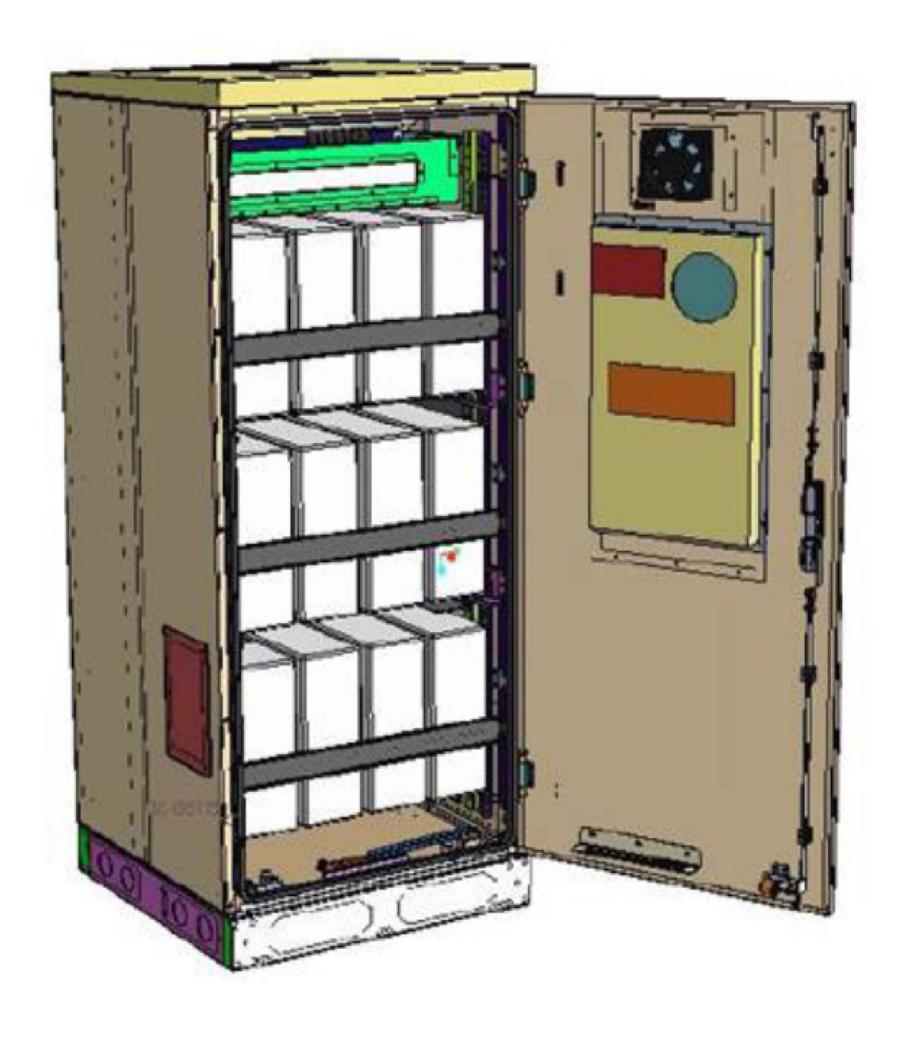


Dimensions	
Width (A)	650 mm / 25.5906 in
Height (B)	1450 mm / 57.08661 in (without base frame) 1600 mm / 62.99213 in (with base frame)
Depth (C)	850 mm / 33.4646 in
Weight	
Empty enclosure	176 kg / 388.014 lb

RICSSON 6160 CABINET DETAILS SCALE: NOT TO SCALE

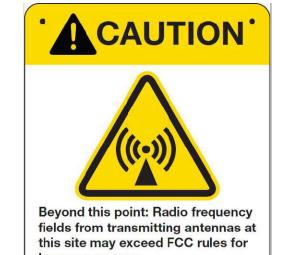
#### **INSTALLER NOTES:**

- 1. INFORMATION SHOWN PROVIDED BY T-MOBILE. CONTRACTOR TO REFERENCE CABINET MANUFACTURER'S SPECIFICATIONS FOR FURTHER DETAILS.
- 2. CONTRACTOR TO FOLLOW THE LATEST VERSION OF T-MOBILE REGIONAL CONSTRUCTION STANDARDS. CONTACT T-MOBILE FOR DETAILS.



ERICSSON B160 CABINET DETAILS SCALE: NOT TO SCALE

SITE SIGNAGE NOTE: WHERE APPLICABLE, CONTRACTOR TO FOLLOW ALL T-MOBILE SIGNAGE REQUIREMENTS. CONFIRM SITE SIGNAGE WITH T-MOBILE CM PRIOR TO CONSTRUCTION



human exposure. For your safety, obey all posted signs and site guidelines for working In radio frequency environments.

> For information contact: 877-611-5868 TM0142851 TMobile

# NOTICE



Transmitting antennas may cause radio frequency fields beyond this point that may exceed the FCC general public exposure limit. Obey all posted signs and site guidelines for working

in radio frequency environments. In accordance with Federal Communications Commission rules on radio frequency exposure 47 CFR 1.1307(b)

> For information contact: 877-611-5868 TM0142862 T Mobile

# **WARNING**



Beyond this point: Radio frequency fields from transmitting antennas at this site exceed FCC rules for human exposure.

Failure to obey all posted signs and site guidelines for working in radio frequency environments could result in serious injury. In accordance with Federal Communications ( radio frequency exposure 47 CFR 1.1307(b)

For information contact: 877-611-5868 TM0145\(\mathbb{T}71\) TMobile





Beyond this point: Radio frequency fields from transmitting antennas at this site exceed FCC rules for human exposure. Immediate and serious injury will occur on contact.

Failure to obey all posted signs and site guidelines for working in radio frequency environments could result in serious injury.

TM0145997 TMobile

## For information contact: 877-611-5868

# RADIOFREQUENCY ENVIRONMENTS All personnel should have electromagnetic energy

(EME) awareness training.

- All personnel entering this site must be authorized.
- Obey all posted signs.
- Assume all antennas are active.
- Before working on antennas, notify owners and disable appropriate transmitters.
- Maintain minimum 3 feet clearance from all antennas.
- ♠ Do not stop in front of antennas.
- Muse personal RF monitors while working near antennas.
- Never operate transmitters without shields during normal operation.

Do not operate base station antennas in equipment room For information contact: 877-611-5868 TM0130956 T Mobile

# T · · Mobile · · ·

2105 WATER RIDGE PARKWAY ,SUITE#400 CHARLOTTE, NC 28217



CHARLOTTE, NC 28277



326 TRYON RD RALEIGH, NC 27603 (919) 661-6351

TEP JOB #: 43952.682321

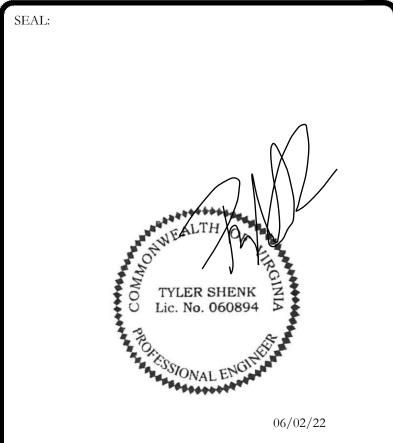
#### T-MOBILE SITE NUMBER: VA10036A

BU #: **815663** PHOEBUS (REV)

534 E. MERCURY BLVD HAMPTON, VA 23663

EXISTING 125'-0" MONOPOLE TOWER

REV DATE DRWN DESCRIPTION D 0 04/29/22 AEL CONSTRUCTION 1 06/02/22 MSM CONSTRUCTION			15501	ED FOR:	
	REV	DATE	DRWN	DESCRIPTION	DES./QA
1 06/02/22 MSM CONSTRUCTION	0	04/29/22	AEL	CONSTRUCTION	SBS
	1	06/02/22	MSM	CONSTRUCTION	SBS

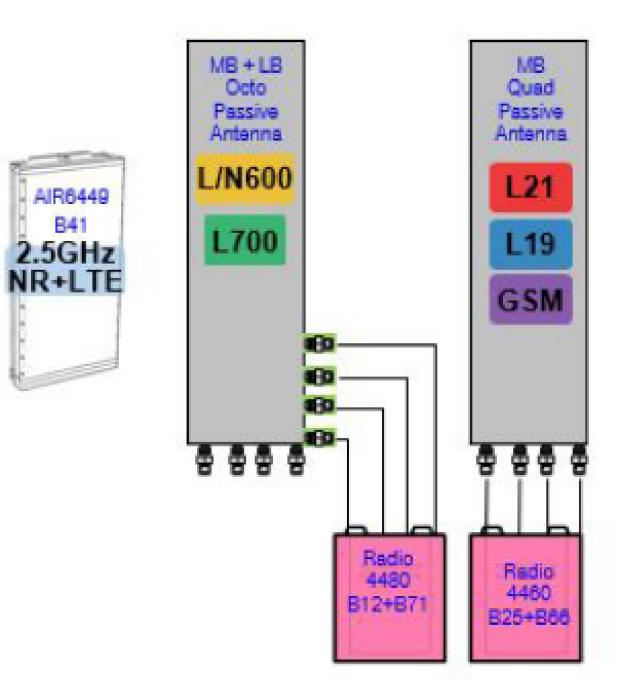


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TO ALTER THIS DOCUMENT.

**SHEET NUMBER:** 



PLUMBING DIAGRAM

SCALE: NOT TO SCALE



DC Power											
PAIR #	REF HOOKUP	PIN LETTER	AIR/RRU END		RADIO (TECHNOLOGY)	SECTOR	SPD LABELS				
1	-48	Α	BLACK	RED	AIR 32 B66Aa	ALPHA	ALPHA L21				
•	ov	В	RED	KLU	AIR 32 BODAS		ADTIALLI				
2	-48	A	BLACK	GREEN	GREEN AIR 32 B2a	ALPHA	ALPHA G/L19				
-	OV	В	RED	UNEEN	AIN 32 DEB	ALTIA	TETTI OF ELS				
3	-48	A	BLACK	BLUE	AIR 32 B66Aa	BETA	BETA L21				
3	ov	В	RED	DEUE	AIR 32 DUGAB	DEIA	BEIALZI				
4	-48	Α	BLACK	YELLOW	AIR 32 B2a	BETA	BETA G/L19				
*	ov	В	RED	TELLOW	AIR 32 B28	DEIA	BETA 6/L19				
6	-48	A	BLACK	WHITE	AIR 32 B66Aa	GAMMA	GAMMA L21				
ø	OV	В	RED	WALLE	AIN 22 BODAB	MINIMA	GAMINIA LZI				
6	-48	A	BLACK	BLACK	AIR 32 B2a	GAMMA	CAMMA C/110				
0	ov	В	RED	BUALK	MIN 32 B28	UMNINA	GAMMA G/L19				

	Radio 4415 d	or Sprint 19	00		Radi	o 4449	
port 1	port 2	port 3	port 4	port 1	port 2	port 3	port 4
RED 1	RED 2	RED 3	RED 4	RED 5	RED 6	RED 7	0 0 0

PIN LETTER	AIR/RRU END		RADIO	SECTOR	SPD LABELS	
Α	BLACK	RED	Radio 4449	ALPHA	ALPHA L600/N600 B71	
В	RED	NED	Radio 4443	ALTHA	ALTHA LOUU/NOUU B/1	
А	BLACK	GREEN	Radio 4449	ALPHA	Alpha L700 B85	
В	RED	GREEN	Radio 4449	ALPHA	Fig. 10 2700 B03	
A	BLACK	BLUE	Radio 4449	BETA	Beta L600/N600 B71	
В	RED	BLUE	Radio 4445	DETA	Beta Loody Nood B7 1	
Α	BLACK	YELLOW	Radio 4449	BETA	Beta L700 B85	
В	RED	TELLOW	Kadio 4443	DETA	5614 6755 555	
A	BLACK	WHITE	Radio 4449	GAMMA	Gamma L600/N600 B71	
В	RED	WHILE	Kaulo 4443	GAIVINA	Gaillilla LGOU/NGOU B71	
А	BLACK	BLACK	Radio 4449	GAMMA	Gamma L700 B85	
В	RED	DUACK	Radio 4443	GAMINIA	Garrieria E700 DOJ	

Beta RF Jumper Color Code										
R	tadio 4415	or Sprint 19	00		Rad	io 44 <b>4</b> 9				
port 1	port 2	port 3	port 4	port 1	port 2	port 3	port 4			
BLUE 1	BLUE 2	BLUE 3	BLUE 4	BLUE 5	BLUE 6	BLUE 7	BLUE 8			

PAIR#	REF HOOKUP	PIN LETTER	AIR/RRU END		RADIO (TECHNOLOGY)	SECTOR	SPD LABELS
1	-48	Α	BLACK	RED	Radio 4415	Alpha	ALPHA B25 L19
1	OV	В	RED	NEU	Nadio 4413	Aipila	ALFIIA 025 L15
2	-48	А	BLACK	GREEN	Radio 4415	Beta	BETA B25 L19
2	OV	В	RED			Deta	DETA 023 L19
3	-48	Α	BLACK	BLUE	Radio 4415	Gamma	GAMMA B25 L19
3	OV	В	RED			Gallina	GAMINIA B23 L13
4	-48	А	BLACK	YELLOW			
4	OV	В	RED	TELLOW			
6	-48	Α	BLACK	WHITE			
0	OV	В	RED	WHILE			
6	-48	А	BLACK	DIACK			
0	OV	В	RED	BLACK			

	Gamma RF Jumper Color Code											
R	Radio 4415 d	or Sprint 190	00		Radio	4449						
port 1	port 2	port 3	port 4	port 1	port 2	port 3	port 4					
YELLOW 1	YELLOW 2	YELLOW 3	YELLOW 4	YELLOW 5	YELLOW 6	YELLOW 7	YELLOW 8					

PAIR#	REF HOOKUP	PIN LETTER	AIR/RI	RU END	RADIO (TECHNOLOGY)	SECTOR	SPD LABELS	
1	-48	А	BLACK	RED	Air 6449	Alpha	Alpha L/N41	
1	ov	В	RED	KLD	All 0443	Alpha	мрна сляч.	
2	-48	Α	BLACK	GREEN	Air 6449	Beta	Beta L/N41	
2	ov	В	RED	GREEN	AI 0445	Deta	Deta L/N41	
3	-48	Α	BLACK	BLUE	Air 6449	Gamma	Gamma L/N4	
3	ov	В	RED			Gamma	Gamma L/Nz	
4	-48	А	BLACK	YELLOW				
4	ov	В	RED	TELLOW				
6	-48	А	BLACK	WHITE				
ь	ov	В	RED	WHILE				
	-48	A	BLACK	BLACK				
6	ον	В	RED	BLACK				

	Delta RF Jumper Color Code							
ı	Radio 4415 d	or Sprint 190	00		Radio	4449		
port 1	port 2	port 3	port 4	port 1	port 2	port 3	port 4	
GREEN 1	GREEN 2	GREEN 3	GREEN 4	GREEN 5	GREEN 6	GREEN 7	GREEN 8	

T - Mobile - - -

2105 WATER RIDGE PARKWAY ,SUITE#400 CHARLOTTE, NC 28217



CHARLOTTE, NC 28277

TOWER ENGINEERING PROFESSIONALS 326 TRYON RD

(919) 661-6351

RALEIGH, NC 27603

TEP JOB #: 43952.682321

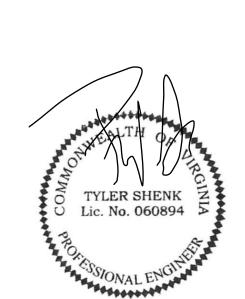
T-MOBILE SITE NUMBER: **VA10036A** 

BU #: **815663** PHOEBUS (REV)

534 E. MERCURY BLVD HAMPTON, VA 23663

EXISTING 125'-0" MONOPOLE TOWER

	ISSUED FOR:								
REV	DATE	DRWN	DESCRIPTION	DES./QA					
0	04/29/22	AEL	CONSTRUCTION	SBS					
1	06/02/22	MSM	CONSTRUCTION	SBS					



06/02/22

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SHEET NUMBER:

REVISION:

COLOR CODE CHART
SCALE: NOT TO SCALE

LOAD CALCULATIONS TAKEN FROM INFORMATION PROVIDED BY CROWN CASTLE. CONTRACTOR TO VERIFY LOADS WITH MANUFACTURER'S SPECIFICATIONS PRIOR TO CONSTRUCTION

EXISTIN	G 200	A M.C	.B, 240	0/12	20 V	AC	·, ·	Ø,	3W PP	C PAN	EL SC	HEDULE		
LOAD SERVED	VOLT AMPERES (WATTS)		TRIP	CNI		HASE	=	CĶT	TRIP	VOLT A (WA	MPERES TTS)	LOAD SERVED		
	L1	L1 L2		#				#		L1	L2			
SURGE	100		60	1		Α	$\sim$	2	10	340		FAN		
SONGE		100		3	<u> </u>	В		4	15		180	GFI. REC		
*SPARE (OFF)	_		50	5	<u> </u>	Α		6	15	500		GFI. REC, LIGHT, SWITCH		
SI / NINE (OTT)		-	30	7	]	В		8	100		3750	6131		
SPARE	_		_	9		Α	$\downarrow \downarrow \downarrow$	10	100	3750		0131		
SPARE			_	11		В	$\bot$	12	30		_	SPARE (OFF)		
SPARE	_		_	13	]	Α	$\bot$	14	30	_		SPARE (OIT)		
SPARE		_	_	15		В		16	40		3840	LUMOS		
SPARE	_		_	17		Α		18	40	3840		LUMUS		
SPARE		_	_	19		В		20	_		-	SPARE		
SPARE	_		_	21		Α		22	_	_		SPARE		
SPARE		_	_	23		В		24	_		_	SPARE		
VOLT AMPS	100	100								8430	7770	VOLT AMPS		
L1 VOLT AMPERES			85	30		78	70	L2 VOL	T AMPERE	ES				
					8	530	)		MAX VO	LT AMPER	RES			
					7	71.1			MAX AM	MAX AMPS				
					8	8.9			MAX AM	MAX AMPS x 125%				
	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·												

<sup>\* -</sup> EXISTING BREAKERS TO BE REMOVED. NOTIFY TEP IF BREAKERS ARE TO REMAIN

PROPOSI	ED 20	OA M.(	C.B, 24	40/1	20	VA	C,	1ø,	3W PF	PC PAN	NEL SO	CHEDULE	
LOAD SERVED	VOLT AMPERES (WATTS)		TRIP	CKT	I Chi I		ASE CKT		TRIP	VOLT AMPERES (WATTS)		LOAD SERVED	
	L1	L2		#			#			L1	L2		
MAIN	100		60	1		Α	$\sim$	2	10	340		FAN	
IVIZALIA		100		3		В	-	4	15		180	GFI. REC	
	_			5		Α	$\triangle$	6	15	500		GFI. REC, LIGHT, SWITCH	
6160		2770	150	7	$]$ $\downarrow$	В	$\downarrow \bigwedge$	8	100		5750	6131	
6160	2770		150	9	$ \$	Α		10	100	5750		0131	
		_		11		В	$\perp$	12	30		ı	SPARE (OFF)	
INTERNAL 6160 GFCI	180		20	13		Α		14	30	_		STAILE (OTT)	
SPARE		_	_	15		В	$\Box$	16	40		3840	LUMOS	
SPARE	_		_	17		Α	$\bot$	18	40	3840		LOMOS	
SPARE		_	_	19		В	$\triangle$	20	_		_	SPARE	
SPARE	_		_	21		Α	igwedge	22	-	_		SPARE	
SPARE		_	_	23		В	$\sim$	24	-		1	SPARE	
VOLT AMPS	3050	2870								10430	9770	VOLT AMPS	
	L	1 VOLT A	MPERES	13	480		120	640	L2 VOL	.T AMPERE	IS		
						3480	ס		MAX VO	LT AMPER	ES		
					1	12.3	3		MAX AM	MAX AMPS			
				140.4					MAX AMPS x 125%				

PROPOSED BREAKERS & LOADING IN BOLD



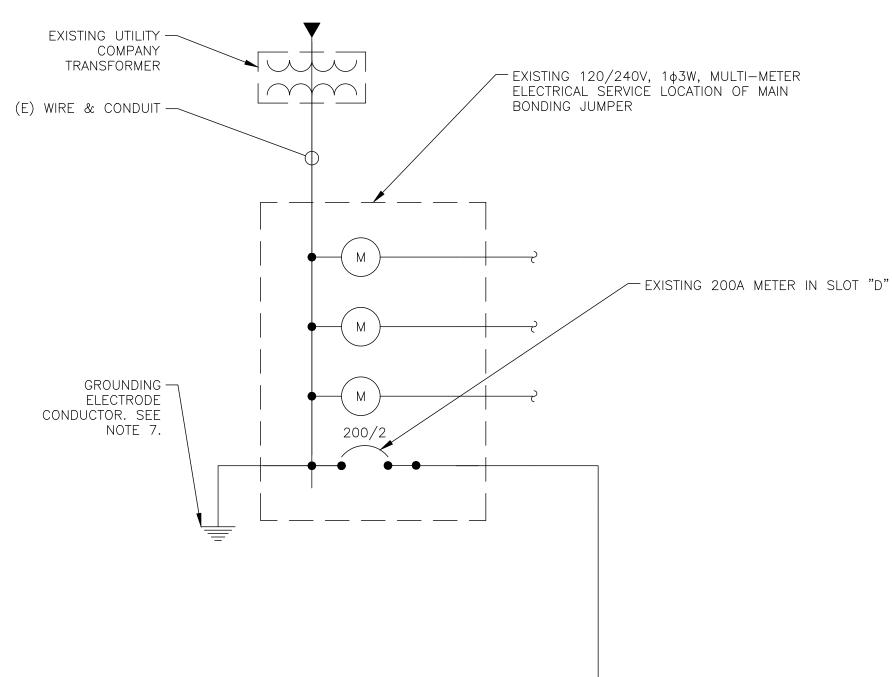
#### **GENERAL NOTES:**

1. ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2

EXISTING WIRE AND CONDUIT -

**EXISTING** RBS 6131 CABINET

EXISTING WIRE AND CONDUIT -



100/2

- ONE-LINE DIAGRAM NOTES:
- 1. ELECTRICAL SERVICE IS 200A, 120/240V, 1ø, 3W. 2. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT, REFER
- AVAILABLE FAULT CURRENT.
- 4. ALL EQUIPMENT WILL HAVE A MINIMUM AIC OF 10 KA. CONTRACTOR TO DETERMINE AVAILABLE FAULT CURRENT BEFORE ENERGIZING
- 5. CONTRACTOR SHALL NOTIFY UTILITY COMPANY OF CHANGES IN
- 6. CONTRACTOR TO VERIFY EXISTING CONDUIT(S) SIZE(S) PRIOR TO CONSTRUCTION AND MAY REUSE EXISTING CONDUIT(S) IF THEY MEET
- 7. GROUNDING ELECTRODE CONDUCTOR IS SIZED FOR SINGLE 200A SERVICE ONLY. IF METER BANK SHARES A COMMON NEUTRAL/GROUND POINT, CONTRACTOR WILL INSTALL (1) 3/0
- 8. EXISTING 15KW DC GENERATOR ASSUMED TO HAVE CAPACITY TO SUPPORT FINAL CONFIGURATION OF T-MOBILE 6131 CABINET. IT IS T-MOBILE'S RESPONSIBILITY TO VERIFY THE LOAD ON THE DC PLANT DOES NOT OVERLOAD THE CAPACITY OF THE DC GENERATOR.

EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E.: LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY

> - NEW (2) 3/0 & (1) #4 AWG GND FOR - 150A (2) #12 & (1) #12 AWG GND FOR - 20A

> > PROPOSED

ERICSSON B160

BATTERY CABINET

-(2) 2" CONDUIT FROM 6160 TO B160 CABINET (LTFC or

SCH40 PVC)

IN THE SAME 2" CONDUIT



T-MOBILE SITE NUMBER: VA10036A

2105 WATER RIDGE PARKWAY ,SUITE#400

CHARLOTTE, NC 28217

6325 AUDREY KELL ROAD, SUITE 600,

CHARLOTTE, NC 28277

ENGINEERING

326 TRYON RD

(919) 661-6351

PROFESSIONALS

RALEIGH, NC 27603

TEP JOB #: 43952.682321

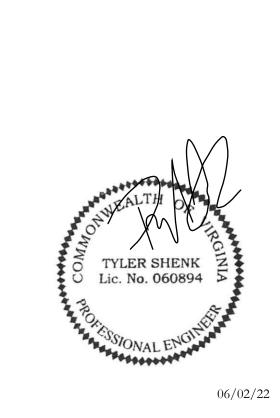
TOWER

BU #: **815663** PHOEBUS (REV)

534 E. MERCURY BLVD HAMPTON, VA 23663

EXISTING 125'-0" MONOPOLE TOWER

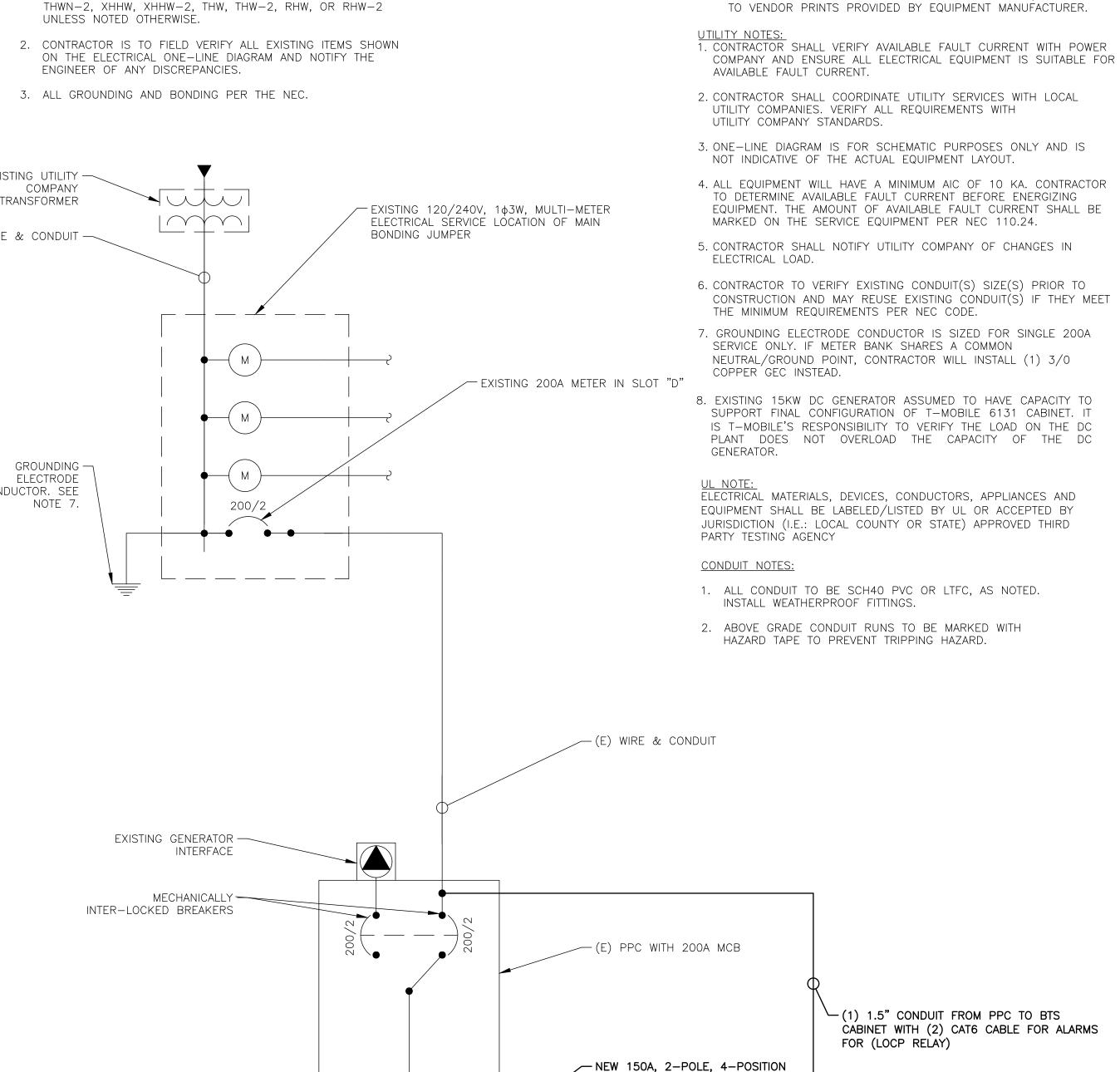
		ISSU	ED FOR:	
REV	DATE	DRWN	DESCRIPTION	DES./Q
0	04/29/22	AEL	CONSTRUCTION	SBS
1	06/02/22	MSM	CONSTRUCTION	SBS



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**SHEET NUMBER:** 



BREAKER FOR POWER TO NEW 6160

PROPOSED

CABINET

ERICSSON 6160 BLOCK

ALARM

- NEW 20A, SINGLE POLE BREAKER

CABINET

- EXISTING 15kW, DC GENERATOR.

SEE NOTE 8.

ONE LINE DIAGRAM

SCALE: NOT TO SCALE

#### T-MOBILE GROUNDING NOTES:

#### ALL GROUNDS MUST ROUTE DOWNHILL FOR ENTIRE DURATION OF ROUTE

1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

#### ICE BRIDGE/ EQUIPMENT POST:

#2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED TO GROUND RING (BOTH ENDS), FINAL WELD COLD GALVANIZED, IN ½" NON-METALLIC SEAL TIGHT CONDUIT, SEALED WITH SILICONE, ANCHORED TO PAD/PLATFORM TO AVOID TRIP HAZARD USING HAMMER SET ANCHORS.

#### PEDESTALS, PLINTHS, SSC CABINET, FCOA CABINETS:

- 1. #2 SOLID COPPER TINNED, 2 HOLE LUG WITH FLAT AND LOCK WASHER AT EQUIPMENT; EXOTHERMICALLY WELDED TO GROUND RING, FINAL WELD COLD GALVANIZED, IN ½" NON-METALLIC SEAL TIGHT CONDUIT, SEALED WITH SILICONE, ANCHORED TO PAD TO AVOID TRIP HAZARD USING HAMMER SET ANCHORS. EACH PART REQUIRES A SEPARATE DOWNLEAD, NO DAISY CHAINS.
- 2. ALL COMPONENTS INSIDE FCOA CABINETS REQUIRE A DEDICATED GROUND.

#### COVP's:

#6 THHN STRANDED (GREEN JACKET), CONNECTED AT EQUIPMENT SIDE USING OVP TERMINAL BLOCK CONNECTION; MECHANICALLY CONNECTED TO GROUND REFERENCE AT MASTER BUSS BAR USING 2 HOLE LUG WITH FLAT AND LOCK WASHER, IN ½" NON-METALLIC SEAL TIGHT CONDUIT, SEALED WITH SILICONE, AND ANCHORED TO PAD/PLATFORM TO AVOID TRIP HAZARD.

#### ANTENNA/ COVP/ RRU MAST PIPES:

- 1. ALL VERTICAL MAST PIPES: #2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED TO TOP OF PIPE (PIPE, DOWN MOLD), FINAL WELD COLD GALVANIZED, BONDED TO TOP BUSS BAR WITH 2 HOLE COPPER COMPRESSION LUG, FLAT AND LOCK WASHER.
- 2. EXISTING/REUSED PIPES: #2 SOLID COPPER TINNED, BONDED WITH COLD WATER CLAMP TO TOP OF PIPE, BONDED TO TOP BUSS WITH 2 HOLE COPPER COMPRESSION LUG, FLAT AND LOCK WASHER

#### AIR TERMINALS:

TO BE INSTALLED, ONLY IF REQUIRED

#### TMA's, DIPLEXERS AND TRIPLEXERS:

- 1. #6 THHN, WITH PROPER COPPER COMPRESSION LUG, FLATS AND LOCK WASHERS
- 2. ALL GROUND LUGS ON TMA MUST BE GROUNDED WITH SEPARATE DOWNLEAD TO BUSS BAR (NO DAISY CHAINS)

#### **ELEVATED STEEL PLATFORMS WITH LUNAR FEET:**

#2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED (FLAT PLATE MOLD) TO OUTSIDE PERIMETER BEAMS IN FOUR (4) PLACES, FINAL WELD COLD GALVANIZED, BONDED DIRECTLY TO SUBGRADE GROUND RING.

#### STEEL CANOPY (STEEL PLATFORM OR CONCRETE PAD):

- 1. #2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED (PIPE, DOWN MOLD) TO BOTTOM OF ALL VERTICAL SUPPORT POSTS, TYPICALLY FOUR (4) PIPES, FINAL WELD COLD GALVANIZED, BONDED DIRECTLY TO SUBGRADE GROUND RING.
- 2. #2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED (PIPE, UP MOLD) TO TOP OF ALL VERTICAL SUPPORT POSTS, TYPICALLY FOUR (4) PIPES, FINAL WELD COLD GALVANIZED, BONDED UP TO CANOPY GRIP—STRUT USING 2 HOLE COPPER COMPRESSION LUG, FLAT AND LOCK WASHER.

#### RRU

#6 THHN, WITH PROPER COPPER COMPRESSION LUG, ANTI-OXIDANT TO SECTOR BUSS BAR

#### FSBE ALARM BOX:

#6 THHN WITH ONE HOLE LUG BONDED TO PREVIOUSLY GROUNDED FCOA, PLINTH OR BUSS BAR.

#### SURGE SUPPRESSORS:

#6 THHN TO PREVIOUSLY GROUNDED BUSS BAR USING PROPER LUGS

#### FYGA/FYGB BRACKET:

- 1. #6 THHN TO PREVIOUSLY GROUNDED BUSS BAR USING PROPER LUGS
- 2. THROUGH BOLTS WITH FLAT, LOCK ON BRACKET

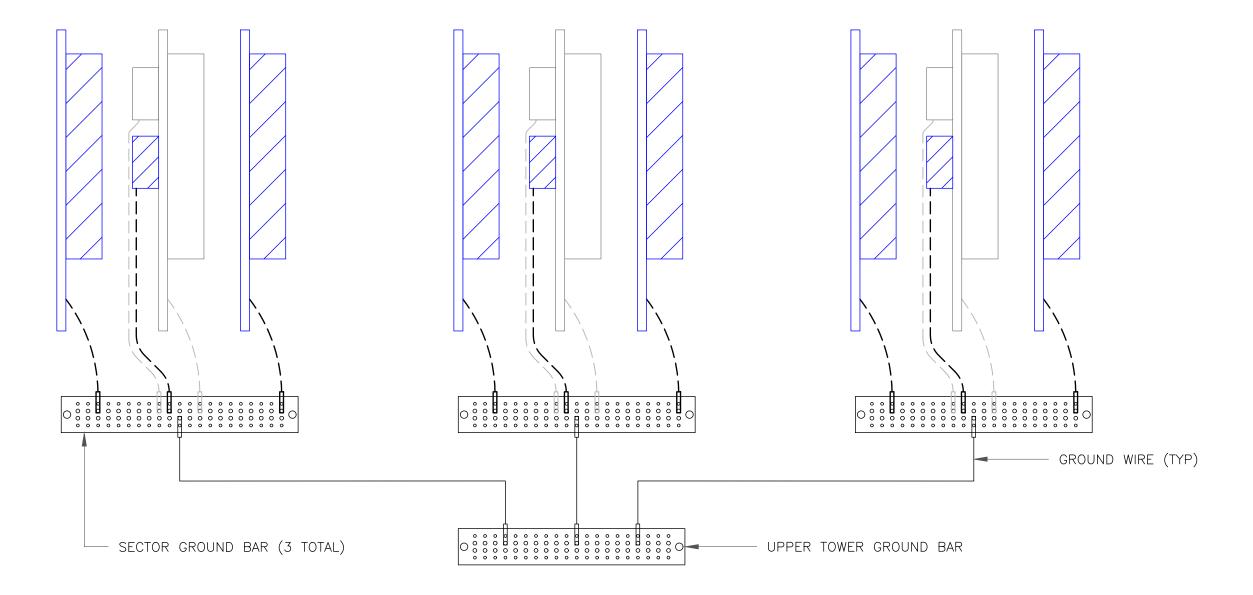
#### BUSS BARS:

- 1. PLATFORM / PAD BUSS BAR SHOULD BE MINIMUM 12" TINNED COPPER WITH INSULATORS, AND SHOULD HAVE TWO (2) EXOTHERMICALLY WELDED DOWN LEADS DIRECTLY TO GROUND RING USING #2 SOLID COPPER TINNED WIRE.
- 2. SECTOR BUSS BAR SHOULD BE PROPERLY SIZED TO ACCOMMODATE NECESSARY GROUNDING FOR EQUIPMENT ON EACH MOUNT, AND MAY BE SOLID COPPER (TINNED NOT REQUIRED). DO NOT USE INSULATORS ON SECTOR BUSS BARS ATTACH DIRECTLY TO TOWER MOUNT STEEL.

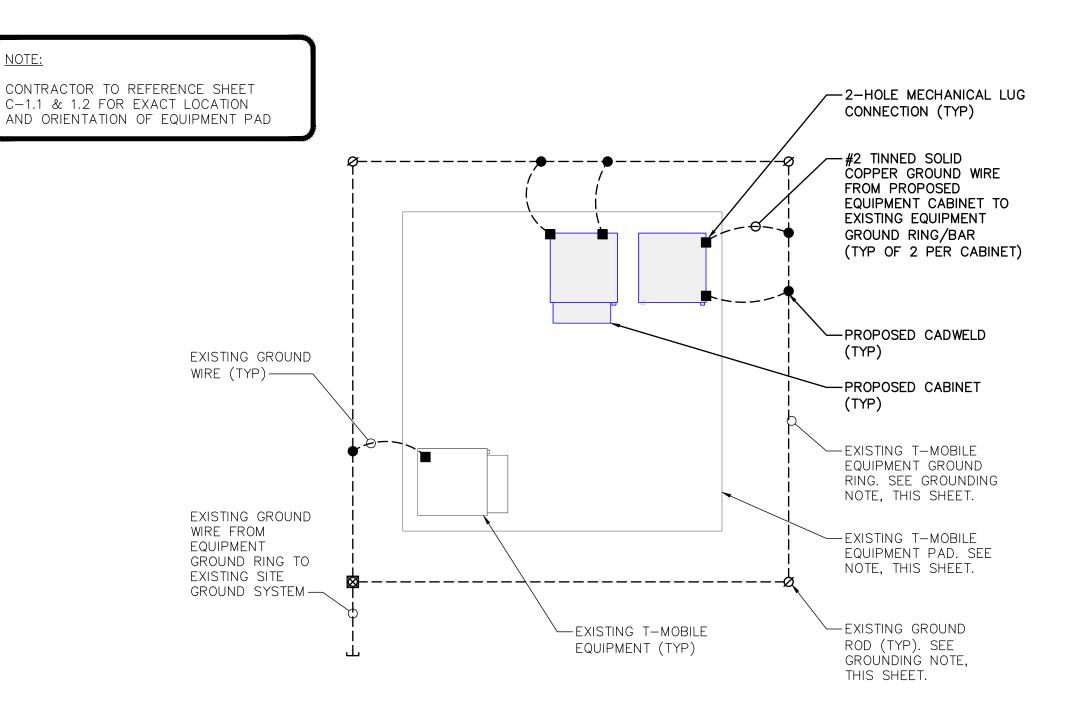
#### GENERAL:

- NO GROUND KITS ON HYBRID TRUNKS (TOP OR BOTTOM)
- NO GROUND KITS ON MICROWAVE IF CABLES (TOP OR BOTTOM)
- MICROWAVE SURGE SUPPRESSORS ARE NOT TO BE INSTALLED UPSTAIRS ON TOWER, DOWNSTAIRS ONLY (BULKHEAD PREFERRED)
- MICROWAVE ODU MUST BE GROUNDED TO TOWER TOP SECTOR OR COLLECTOR BUSS BAR
- ALL TMA'S AND DIPLEXERS MUST BE GROUNDED TO BUSS BAR. NO DAISY CHAIN ON TWIN/DUAL TMA
- ALL LUGS SHOULD BE PROPERLY SIZED FOR CONDUCTOR, BURNDY TINNED COPPER COMPRESSION STYLE
   1. INDOOR (OR INSIDE CABINET) SHOULD HAVE WINDOW
- 2. OUTDOOR SHOULD NOT HAVE WINDOW
- CONTRACTOR TO VERIFY EXISTENCE AND LOCATION OF EXISTING SITE GROUND SYSTEM.
- CONTRACTOR SHALL VERIFY THAT GROUNDING ELECTRODES SHALL BE CONNECTED IN A RING USING #2 AWG BARE TINNED COPPER WIRE. THE TOP OF THE GROUND RODS AND THE RING CONDUCTOR SHALL BE 30" BELOW FINISHED GRADE, OR TO FROST DEPTH, WHICHEVER IS GREATER. GROUNDING ELECTRODES SHALL BE DRIVEN ON 10'-0" CENTERS (PROVIDE AND INSTALL AS REQUIRED. REQUIRED PER PLAN BELOW).
- GROUNDING CONDUCTORS SHALL BE OF EQUAL LENGTH, MATERIAL, AND BONDING TECHNIQUE.
- CONTRACTOR SHALL ENSURE GROUND RING IS WITHIN 12 TO 36 INCHES OF THE EQUIPMENT PAD. PROVIDE AND INSTALL GROUNDING CONNECTIONS SHOWN BELOW AS NEEDED PER EXISTING SITE GROUNDING SYSTEM. CONTRACTOR SHALL VERIFY ALL EXISTING SITE GROUNDING CONDITIONS BEFORE STARTING WORK OR PURCHASING EQUIPMENT.
- ALL DOWN CONDUCTORS MUST GO DOWN.

<u>ALPHA</u> <u>BETA</u> <u>GAMMA</u>



1) TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE



TYPICAL CABINET GROUNDING DIAGRAM

SCALE: NOT TO SCALE



2105 WATER RIDGE PARKWAY ,SUITE#400 CHARLOTTE, NC 28217



CHARLOTTE, NC 28277



TOWER ENGINEERING PROFESSIONALS

326 TRYON RD RALEIGH, NC 27603 (919) 661-6351

TEP JOB #: 43952.682321

# T-MOBILE SITE NUMBER: **VA10036A**

BU #: **815663** Phoebus (Rev)

534 E. MERCURY BLVD HAMPTON, VA 23663

EXISTING 125'-0" MONOPOLE TOWER

	ISSUED FOR:								
REV	DATE	DRWN	DESCRIPTION	DES./QA					
0	04/29/22	AEL	CONSTRUCTION	SBS					
1	06/02/22	MSM	CONSTRUCTION	SBS					

SEAL:

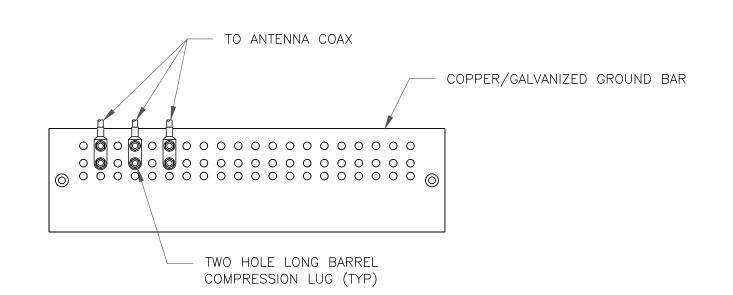


06/02/22

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SHEET NUMBER:

1



#### NOTES:

- 1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
- 2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
- 3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO ANTENNA MOUNT STEEL.

MONOPOLE

ANTENNA GROUND BAR

(BONDED TO TOWER STEEL)

2 HOLE LUG (TYP)

MECHANICAL CONNECTION

- COAX GROUND BAR WITH

INSULATORS, CONNECTED

DIRECTLY TO THE BOTTOM

2/0 TINNED BARE

COPPER WIRE

GROUND WIRE SEE NOTE 3

— EXOTHERMIC WELD (TYP)

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA

2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC.

TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.

3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE

RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

SCALE: NOT TO SCALE

LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE

TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.

MONOPOLE PIER

OF MONOPOLE. SEE NOTE 1.

LOCATED AT MCL



SCALE: NOT TO SCALE

TO TOWER MOUNTED EQUIPMENT -

TO ANTENNA -

STANDARD COAX

GREEN, 600V, THWN

WITH GROUND KII) (IYP)

COAX CABLE -

(TYP FOR ALL)

TO BTS EQUIPMENT VIA

GROUND WIRE-

INSPECTION WELL

NOTES:

NOTE 3

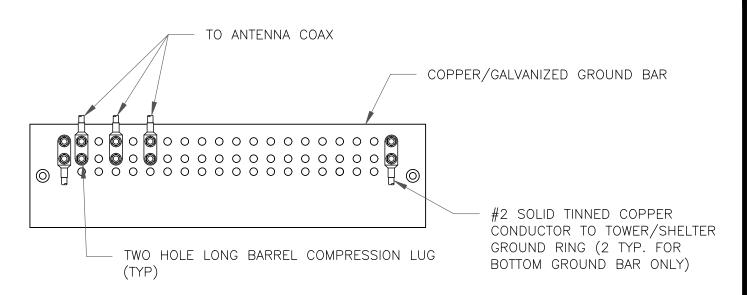
TRAY OR ICE BRIDGE

(TYP)

CABLE GROUND KIT

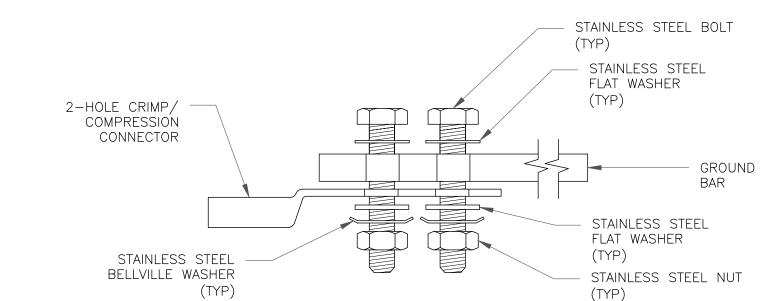
#6 STRANDED CU WIRE WITH-

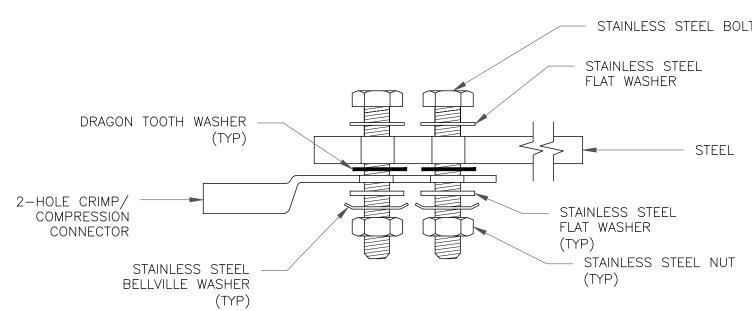
INSULATION (OR AS PROVIDED

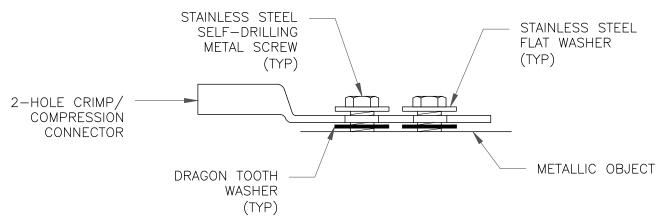


- 1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
- 2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
- 3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.





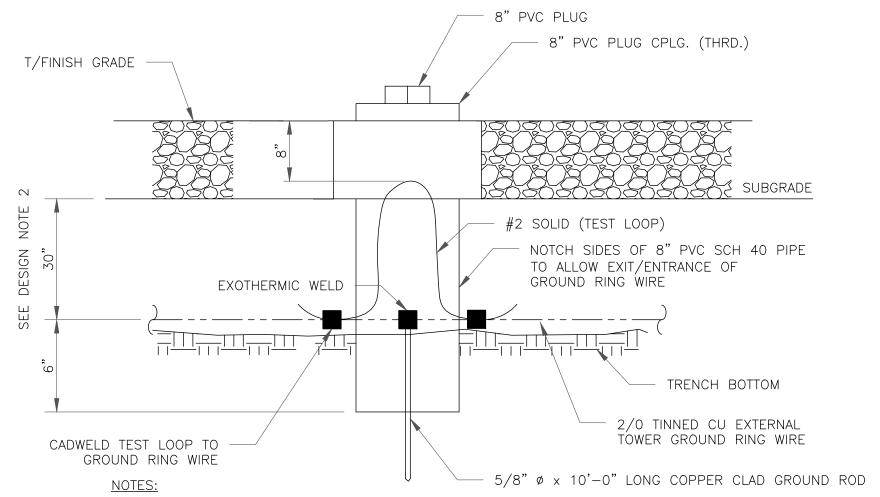




SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS







1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE

2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)





	ISSUED FOR:							
REV	DATE	DRWN	DESCRIPTION	DES./QA				
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1	06/02/22	MSM	CONSTRUCTION	SBS				

2105 WATER RIDGE PARKWAY ,SUITE#400 CHARLOTTE, NC 28217

6325 AUDREY KELL ROAD, SUITE 600,

CHARLOTTE, NC 28277

ENGINEERING

326 TRYON RD

T-MOBILE SITE NUMBER:

(919) 661-6351

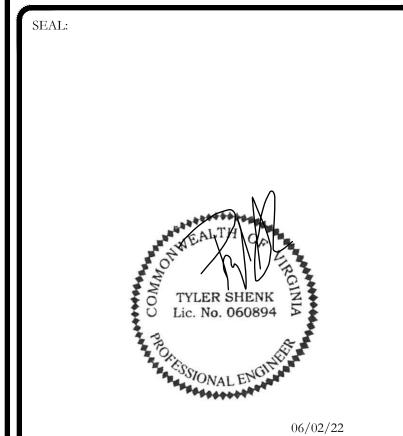
**PROFESSIONALS** 

RALEIGH, NC 27603

TOWER

CROWN CASTLE

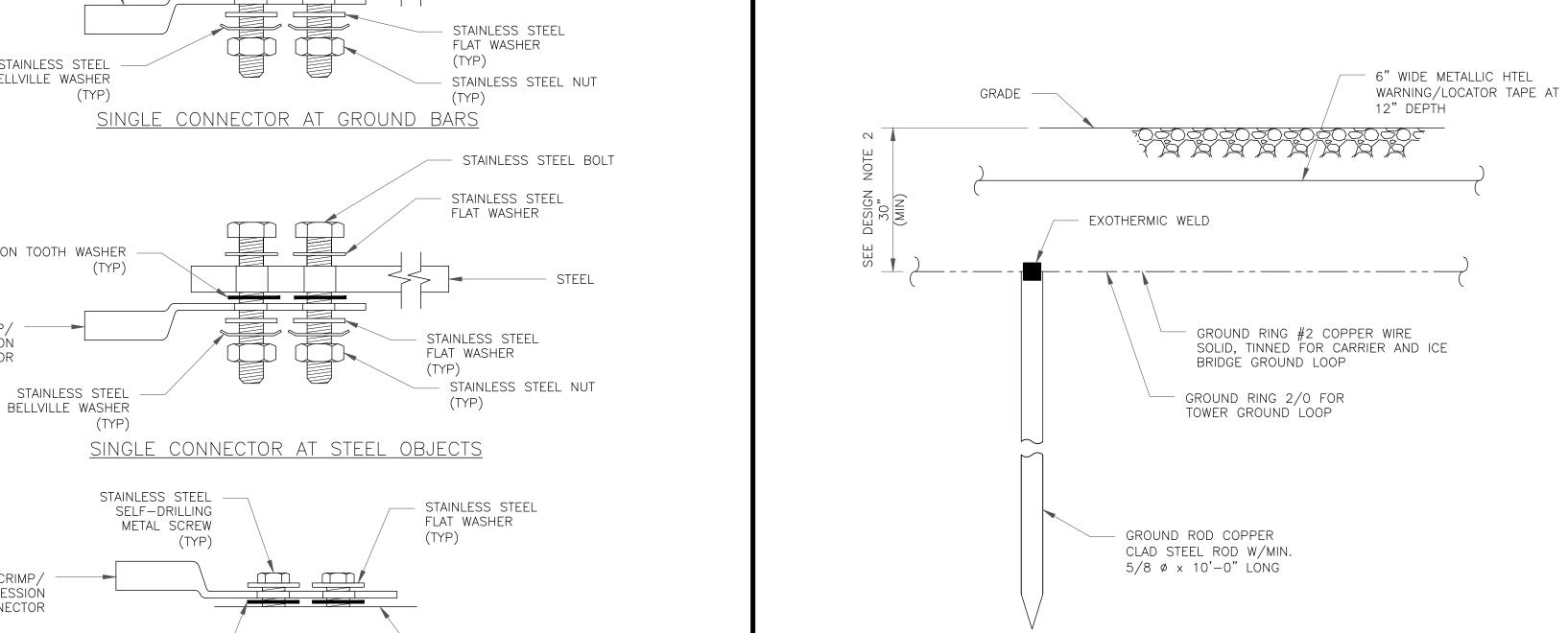
TEP JOB #: 43952.682321



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**REVISION:** 

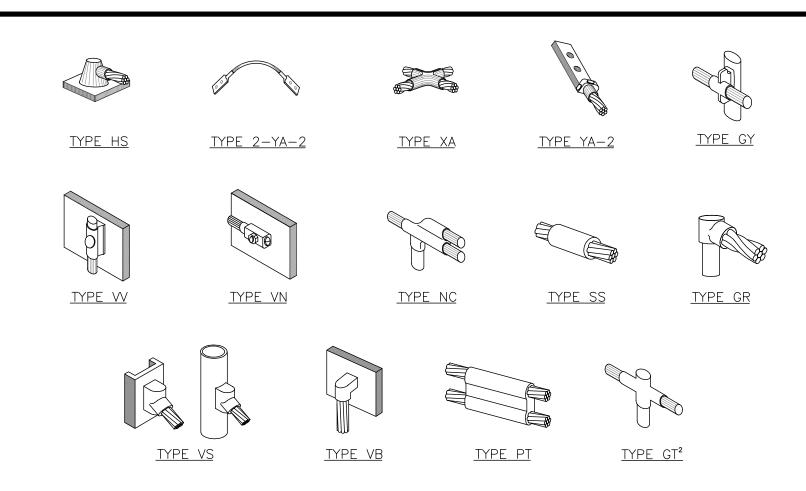


1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL

2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

GROUND ROD DETAIL SCALE: NOT TO SCALE

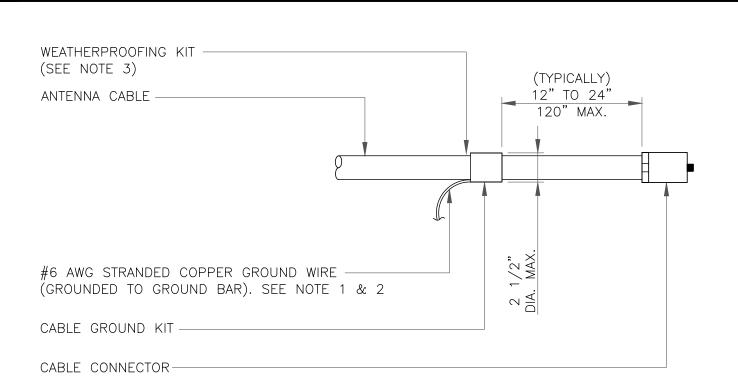
NOTES:



#### NOTE:

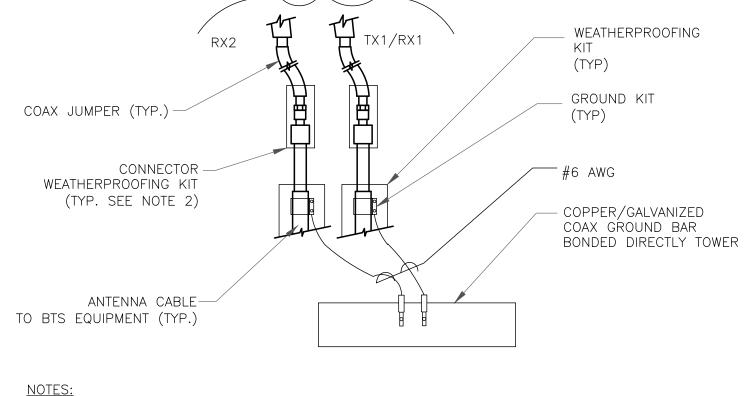
- 1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC
- MOLDS TO BE USED FOR THIS PROJECT. 2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

#### CADWELD GROUNDING CONNECTIONS CALE: NOT TO SCALE



- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
- GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
- WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT

CABLE GROUND KIT CONNECTION SCALE: NOT TO SCALE

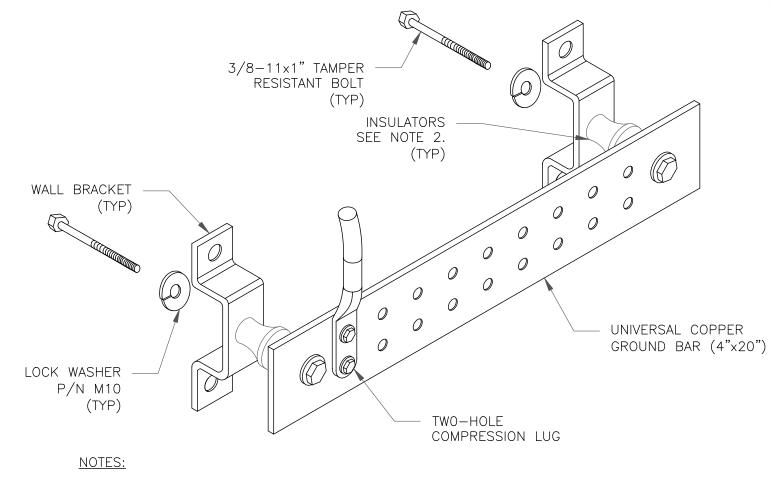


- 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.

TO ANTENNAS

2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE

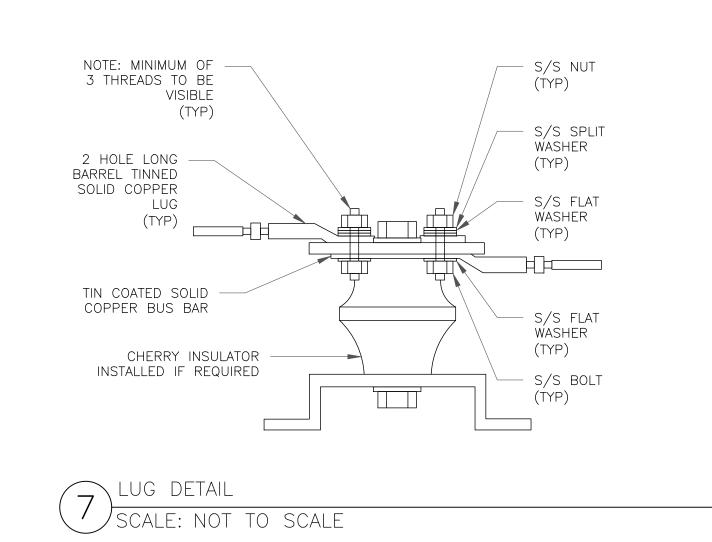
GROUND CABLE CONNECTION SCALE: NOT TO SCALE



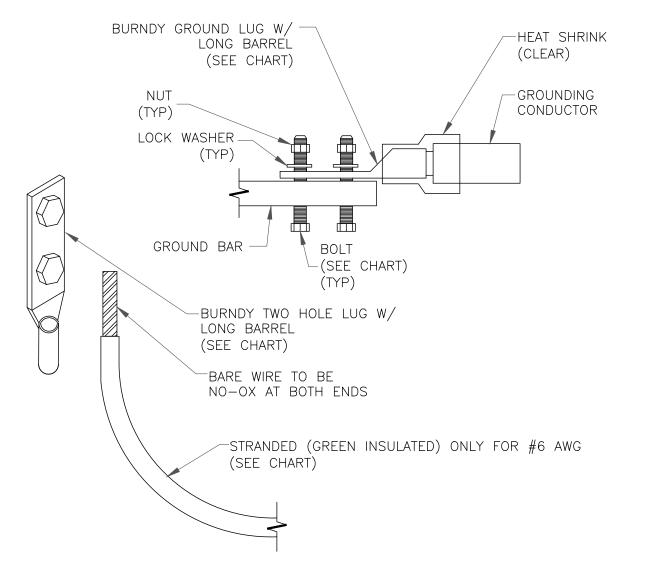
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.

2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

GROUND BAR DETAIL SCALE: NOT TO SCALE



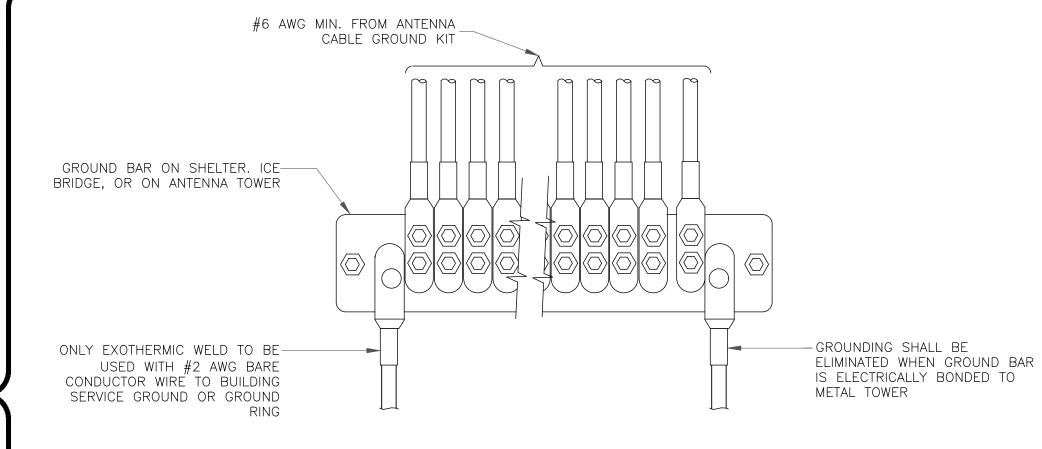




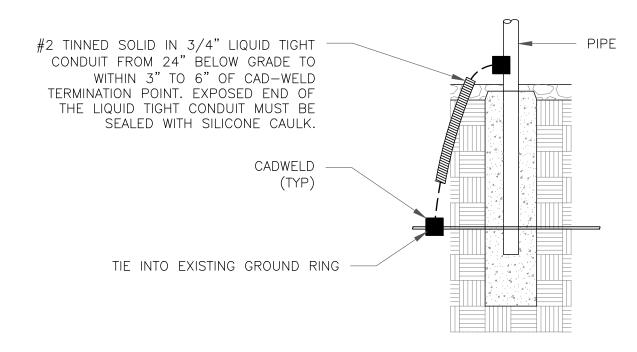
#### NOTES:

1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

MECHANICAL LUG CONNECTION SCALE: NOT TO SCALE



GROUNDWIRE INSTALLATION SCALE: NOT TO SCALE



TRANSITIONING GROUND DETAIL SCALE: NOT TO SCALE

2105 WATER RIDGE PARKWAY ,SUITE#400 CHARLOTTE, NC 28217



CHARLOTTE, NC 28277



TOWER ENGINEERING **PROFESSIONALS** 

326 TRYON RD RALEIGH, NC 27603 (919) 661-6351

TEP JOB #: 43952.682321

#### T-MOBILE SITE NUMBER: VA10036A

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EXISTING 125'-0" MONOPOLE TOWER

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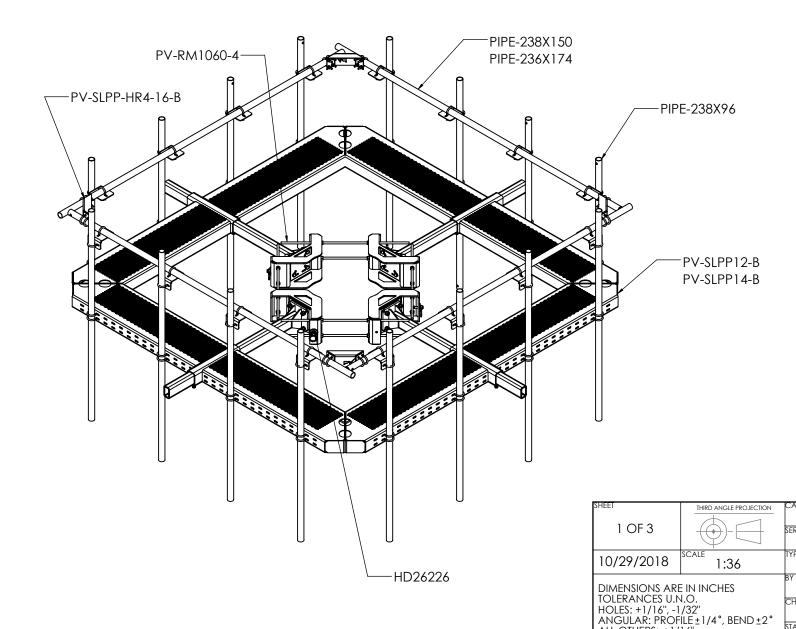


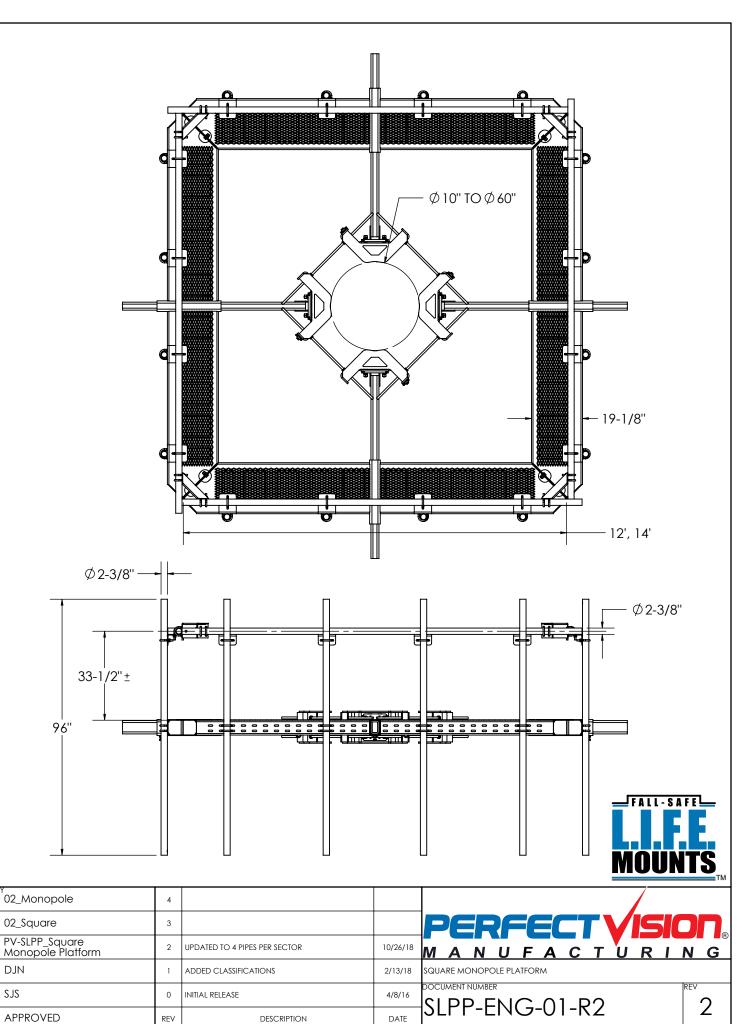
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**SHEET NUMBER:** 

#### L.I.F.E. MOUNT™ MONOPOLE SQUARE PLATFORM

	TABLE 1: Included Parts									
					Incl	ude	ed Po	arts		
		Weight	-RM1060-4	-SLPP12-B	-SLPP14-B	-SLPP-HR4-16-B	P-238X96	PIPE-238X150	PE-238X174	)26226
Part Number	Description	(lbs)	≥	≥		ΡV	PIPE-	F	PIPE	무
PV-SLPP12U-B	L.I.F.E. Mount™ 4 Sector Platform, 12' Face, 10"-60" Pole	3030	1	1	-	1	-	-	-	4
PV-SLPP12U-HR-B	L.I.F.E. Mount™ 4 Sector Platform, Handrail, 12' Face, 10"-60" Pole	3320	1	1	-	1	-	4	-	4
PV-SLPP-12U-HR-12-96	L.I.F.E. Mount™ 4 Sector Platform, Handrail, 12' Face, 10"-60" Pole, (12) Antenna Pipe	3680	1	1	-	1	12	4	-	4
PV-SLPP-12U-HR-16-96	L.I.F.E. Mount™ 4 Sector Platform, Handrail, 12' Face, 10"-60" Pole, (16) Antenna Pipe	3800	1	1	-	1	16	4	-	4
PV-SLPP14U-B	L.I.F.E. Mount™ 4 Sector Platform, 14' Face, 10'-60" Pole	3500	1	-	1	1	-	-	-	4
PV-SLPP14U-HR-B	L.I.F.E. Mount™ 4 Sector Platform, Handrail, 14' Face, 10"-60" Pole	3800	1	-	1	1	-	-	4	4
PV-SLPP14U-HR-12-96	L.I.F.E. Mount™ 4 Sector Platform, Handrail, 14' Face, 10"-60" Pole, (12) Antenna Pipe	4160	1	-	1	1	12	-	4	4
PV-SLPP14U-HR-16-96	L.I.F.E. Mount™ 4 Sector Platform, Handrail, 14' Face, 10"-60" Pole, (16) Antenna Pipe	4280	1	-	1	1	16	-	4	4





ALL OTHERS: ±1/16"

SJS

#### **MOUNT CLASSIFICATIONS:**

#### MOUNT CLASSIFICATION INFORMATION:

- STANDARDS: TIA-222-G / TIA-222-H
- MAX STRUCTURE HEIGHT: 400ff
- STRUCTURE CLASS: I OR II
- EXPOSURE CATEGORY: B OR C
- TOPOGRAPHIC CATEGORY: 1
- DESIGN WIND PRESSURE (NO ICE): 135psf
- DESIGN WIND PRESSURE (ICED): 15psf
- DESIGN ICE THICKNESS: 2.75in Radial

#### SEE STRUCTURAL LETTER SLPP-STL-01-RO FOR ADDITIONAL ANALYSIS INFO

#### **APPROVED MOUNTS:**

- PV-SLPP12U-HR-B, PV-SLPP12U-HR-12-96, PV-SLPP12U-16-96
- PV-SLPP14U-HR-B, PV-SLPP14U-HR-12-96, PV-SLPP14U-16-96

	APPROVED MOUNT CLASSIFICATIONS									
required extreme wind load (LBS)										
			700	750	1150	1550	1600			
CE	S)	0	M700R(0)-4[6]	M750R(0)-4[6]	M1150R(0)-4[6]	M1550R(0)-4[6]	M1600R(0)-4[6]			
IRED 1E IC	(LB)	600	M700R(600)-4[6]	M750R(600)-4[6]	M1150R(600)-4[6]	M1550R(600)-4[6]	M1600R(600)-4[6]			
-	٥	800	M700R(800)-4[6]	M750R(800)-4[6]	M1150R(800)-4[6]	M1550R(800)-4[6]	M1600R(800)-4[6]			
REQUEXTRE	Q	1100	M700R(1100)-4[6]	M750R(1100)-4[6]	M1150R(1100)-4[6]	M1550R(1100)-4[6]	M1600R(1100)-4[6]			
	7	1250	M700R(1250)-4[6]	M750R(1250)-4[6]	M1150R(1250)-4[6]	M1550R(1250)-4[6]	M1600R(1250)-4[6]			

#### **POLE THICKNESS LIMITATIONS:**

ON POLES WITH WALL THICKNESS EQUAL TO OR GREATER THAN THE VALUES LISTED BELOW, THE PERFECT VISION PV-SLPP MOUNT SERIES IS STRUCTURALLY CAP[ABLE OF SUPPORTING THE ABOVE LOADING SCENARIOS WITHOUT THE NEED FO AN ADDITIONAL KICKER BRACE.

FOR THIN WALL POLES, USE PV-PKBK-4 PLATFORM KICKER BRACE TO AVOID POLE CRIMPING FAILURES. KICKER BRACE CAN BE INSTALLED ABOVE OR BELOW PLATFORM.

POLE THICKNESS LIMITATION							
MAX REQUIRED	MIN POLE						
load (LBS)	THICKNESS						
600	1/4"						
950	1/4"						
1000	5/16"						
1600	5/16"						

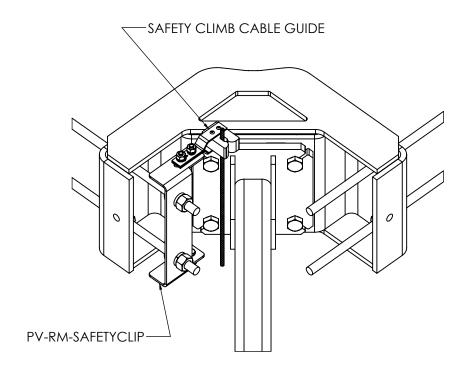
#### PLATFORM EPA:

PLATFORM EPA									
PART NUMBER	NO ICE (FT <sup>2</sup> )	1/2" RADIAL ICE (FT <sup>2</sup> )							
PV-SLPP12U-B	38.0	45.0							
PV-SLPP12U-HR-B	43.9	53.2							
PV-SLPP14U-B	45.0	53.2							
PV-SLPP14U-HR-B	51.6	62.4							

\*DOES NOT INCLUDE ANTENNA PIPES

#### **SAFETY CLIMB ROUTING:**

CABLE GUIDES AND PV-RM-SAFETYCLIP SOLD SEPARATELY

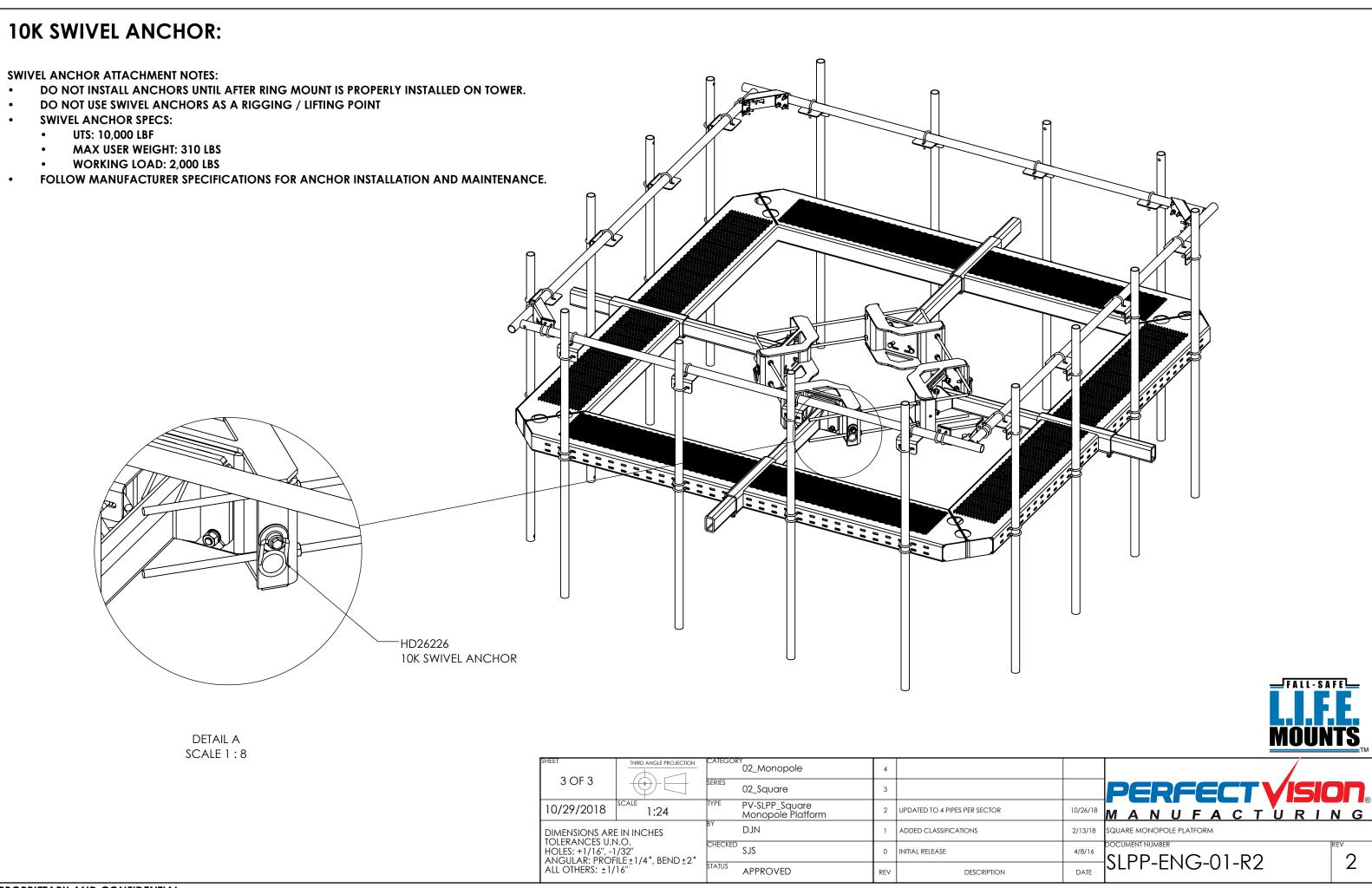


#### SAFETY CLIMB CABLE GUIDE ATTACHMENT

IF RING MOUNT IS TO BE INSTALLED ON THE SAFETY CLIMB FACE, USE THE RECOMMENDED ROUTING AS SHOWN



SHEET	THIRD ANGLE PROJECTION	CATEGOR	02_Monopole	4			
2 OF 3		SERIES	02_Square	3			PERFECT VISION
10/29/2018	NTS	TYPE	PV-SLPP_Square Monopole Platform	2	UPDATED TO 4 PIPES PER SECTOR	10/26/18	MANUFACTURING
DIMENSIONS ARE		BY	DJN	1	ADDED CLASSIFICATIONS	, ., .	SQUARE MONOPOLE PLATFORM
TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE±1/4°, BEND±2° ALL OTHERS: ±1/16"		CHECKED	SJS	0	INITIAL RELEASE	4/8/16	SLPP-ENG-01-R2 REV
		STATUS	APPROVED	REV	DESCRIPTION	DATE	SLFF-LING-UI-KZ Z





SITE NUMBER: 815663 SITE NAME: PHOEBUS (REV)

T-MOBILE SITE NAME: CROWN 815663 E MERCURY

T-MOBILE SITE NUMBER: VA10036A

T-MOBILE ANCHOR ON EXISTING MONOPOLE TOWER

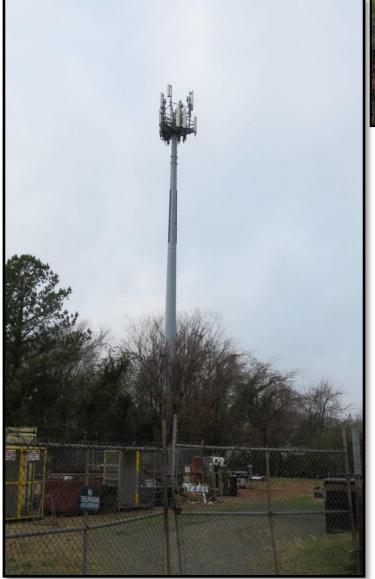
534 E. MERCURY BLVD HAMPTON, VA 23663 (HAMPTON COUNTY)



SITE #: 815663 SITE NAME: PHOEBUS (REV) ADDRESS: 534 E. MERCURY BLVD HAMPTON, VA 23663

HAMPTON, VA 23663 COUNTY: HAMPTON

#### **EXISTING VIEW: LOCATION 1**







SITE #: 815663 SITE NAME: PHOEBUS (REV) ADDRESS: 534 E. MERCURY BLVD

HAMPTON, VA 23663 COUNTY: HAMPTON

#### **PROPOSED VIEW: LOCATION 1**





PROPOSED EQUIPMENT AT ELEVATION 135'-0":

- (9) ANTENNAS
- (6) RADIOS
- (1) PLATFORM MOUNT
- (12) MOUNT PIPES

PROPOSED 10'-0" TOWER EXTENSION

#### PROPOSED GROUND EQUIPMENT:

• CABINET AND CABINET EQUIPMENT (NOT VISIBLE)



