

January 18, 2023

Attorney Melanie Bachman Acting Executive Director Connecticut Siting Council Ten Franklin Square New Britain, CT 06501

### EM-T-MOBILE-151-220624

T-Mobile Site ID CT11269B 150 Mattatuck Heights Waterbury, CT Notice of Compliance with Conditions and Construction Completion

### Dear Attorney Bachman:

The T-Mobile site referenced above was approved by The Connecticut Siting Council (Council) on July 25, 2022 as an Exempt Modification. T-Mobile is now requesting the close out of the approval and hereby acknowledges the following conditions were met:

- 1. Prior to T-Mobile's antenna installation, antenna mount modifications shall be installed in accordance with the Mount Analysis prepared by Tower Engineering Solutions, dated May 3, 2022 and stamped and signed by Aaron Thomas Rucker;
- 2. Within 45 days following completion of equipment installation, T-Mobile shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations of the Mount Analysis;
- 3. Any deviation from the proposed modification as specified in this notice and supporting materials submitted to the Council shall render this acknowledgement invalid;
- 4. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- 5. The Council shall be notified in writing at least two weeks prior to the commencement of site construction activities:



- 6. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- 7. Deployment of any 5G services must comply with FCC and FAA guidance relative to air navigation, as applicable;
- 8. Any nonfunctioning antenna and associated antenna mounting equipment, or other equipment at this facility owned and operated by T-Mobile shall be removed within 60 days of the date the antenna or equipment ceased to function;
- 9. The validity of this action shall expire one year from the date of this letter; and
- 10. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The attached PE Closeout Letter dated January 13, 2022 provides evidence of compliance with the conditions outlined by the Council. In addition, T-Mobile hereby notifies the Council that construction of the acknowledged modifications was completed as of August 31, 2022.

Sincerely,

Victoria Masse

Zoning and Permitting

Victoria Masse

**Northeast Site Solutions** 

### **January 13, 2023**

Victoria Masse Northeast Site Solutions 420 Main Street Unit 1 Box 2 Sturbridge, MA 01566 (231) 409-5439



Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 (919) 661-6351

**Subject:** Post Construction Inspection Report

T-Mobile Designation: Site Number: CT11269B

Site Name: Waterbury/I-84/Mattatuck

**NE Site Solutions Designation:** Site Name: CT11269B

**Engineering Firm Designation:** TEP Project Number: 25631.794683

Site Data: 150 Mattatuck Heights, Waterbury, New Haven Co, CT 06705

Latitude 41°32′ 16.44″, Longitude -72°59′ 6.00″

143 Foot - Monopole Tower

Dear Victoria Masse,

Tower Engineering Professionals, Inc. (TEP) is pleased to submit this "**Post Construction Inspection Report**" (PCI Report) to Northeast Site Solutions for the equipment upgrades to the subject structure. The purpose of this PCI report is to confirm that T-Mobile's proposed upgrades were installed in conformance with the approved construction drawings by B+T Group, dated June 17, 2022 (Appendix A) and the workmanship conforms with industry standards.

All observations were performed after the construction was complete. TEP was not present during the construction phase. The onsite PCI was performed on January 12, 2023 by Matthew Leusink and Ronald Prado of TEP.

We at TEP appreciate the opportunity to provide our professional services to you and Northeast Site Solutions If you have any questions or need further assistance on this or any other projects, please give us a call.

Sincerely.

Kevin R. Arnett, PE, CWI

**Tower Engineering Professionals, Inc.** 

### **EXECUTIVE SUMMARY**

	PROPOSED LOADING SUMMARY						
Alpha Sec	ctor						
Antenna Position	Antenna (Qty.) Make/Model	RRU (Qty.) Make/Model	Surge Protector (Qty.) Make/Model	Coax			
A1	(1) Ericsson AIR 6419 B41	-					
A2	(1) RFS APXVAARR24_43-U- NA20	(1) Ericsson Radio 4449 B71 + B85 (1) Ericsson Radio B25 + B66	-	(1) 6x24 Hybrid Trunk			
A3	(1) Ericsson AIR 32 KRD901146-1_B66A_B2A	-					
Beta Sect	or						
B1	(1) Ericsson AIR 6419 B41	-					
B2	(1) RFS APXVAARR24_43-U- NA20	(1) Ericsson Radio 4449 B71 + B85 (1) Ericsson Radio B25 + B66	-	(1) 6x12 HCS			
В3	(1) Ericsson AIR 32 KRD901146-1_B66A_B2A	-					
Gamma S	Sector						
G1	(1) Ericsson AIR 6419 B41	-					
G2	(1) RFS APXVAARR24_43-U- NA20	(1) Ericsson Radio 4449 B71 + B85 (1) Ericsson Radio B25 + B66	-	(1) 6x12 HCS			
G3	(1) Ericsson AIR 32 KRD901146-1_B66A_B2A	-					

	INSTALLED LOADING SUMMARY							
Alpha Sec	Alpha Sector							
Antenna Position	Antenna (Qty.) Make/Model	RRU (Qty.) Make/Model	Surge Protector (Qty.) Make/Model	Coax				
A1	(1) Ericsson AIR 6419 B41	-						
A2	(1) RFS APXVAARR24_43-U- NA20	(1) Ericsson Radio 4449 B71 + B85 (1) Ericsson Radio B25 + B66	-	(1) 6x24 Hybrid Trunk				
А3	(1) Ericsson AIR 32 KRD901146-1_B66A_B2A	-						
Beta Sect	or							
B1	(1) Ericsson AIR 6419 B41	-						
B2	(1) RFS APXVAARR24_43-U- NA20	(1) Ericsson Radio 4449 B71 + B85 (1) Ericsson Radio B25 + B66	-	(1) 6x12 HCS				
В3	(1) Ericsson AIR 32 KRD901146-1_B66A_B2A	-						
Gamma S	ector							
G1	(1) Ericsson AIR 6419 B41	-						
G2	(1) RFS APXVAARR24_43-U- NA20	(1) Ericsson Radio 4449 B71 + B85 (1) Ericsson Radio B25 + B66	-	(1) 6x12 HCS				
G3	(1) Ericsson AIR 32 KRD901146-1_B66A_B2A	-						

<sup>-</sup> Loading discrepancies are highlighted

### **EXECUTIVE SUMMARY**

### **Photograph**



### <u>Item 1:</u>

### Observation:

Proposed upgrades were installed properly and the workmanship is in accordance with T-Mobile and industry standards.

### **Recommendation:**

No action required.





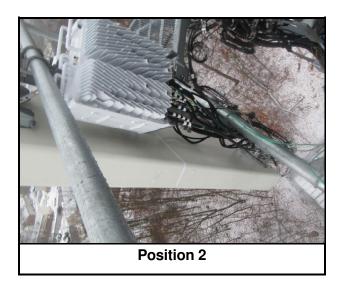


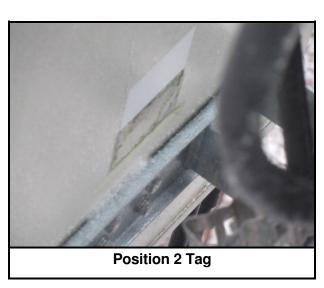


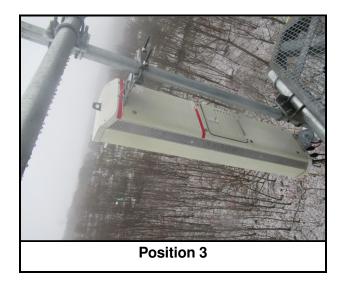


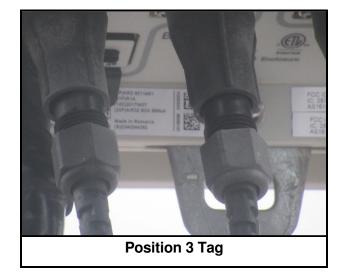


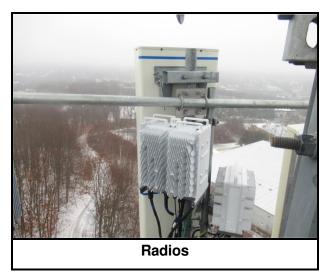






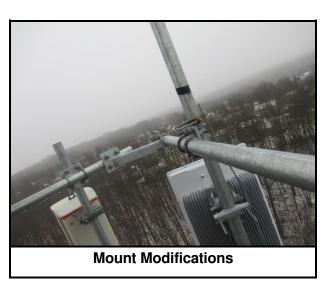












# APPENDIX A CONSTRUCTION DRAWINGS

# - Mobile - -

T-MOBILE SITE NUMBER: CT11269B

T-MOBILE SITE NAME:

WATERBURY/I-84/MATTATUCK

T-MOBILE ANCHOR SITE CONFIGURATION: 67D5A997DB HYBRID

SITE TYPE:

MONOPOLE

TOWER HEIGHT:

143'-0"

BUSINESS UNIT #:876317

SITE ADDRESS:

**COUNTY:** 

Waterbury

JURISDICTION:

**LOCATION MAP** 

WATERBURY

Wian Dr

NO SCALE

150 MATTATUCK HEIGHTS WATERBURY, CT 06705

I-84 Exit 25A

NEW HAVEN CONNECTICUT SITING COUNCIL

BLOOMFIELD, CT 06002



CLIFTON PARK, NY 12065



# T-MOBILE SITE NUMBER:

BU #: **876317** 

150 MATTATUCK HEIGHTS

EXISTING

	ISSUED FOR:							
EV	DATE	DRWN	DESCRIPTION	DES./QA				
A	6/2/22	GAC	PRELIMINARY REVIEW	LR				
0	6/17/22	GAC	CONSTRUCTION	LR				

# CT11269B

WATERBURY

WATERBURY, CT 06705

143'-0" MONOPOLE

	1550ED POR.						
REV	DATE	DRWN	DESCRIPTION	DES./QA			
A	6/2/22	GAC	PRELIMINARY REVIEW	LR			
0	6/17/22	GAC	CONSTRUCTION	LR			
4111				100			

# SITE INFORMATION

NEW HAVEN

0424-0141-0001

661 FT

CROWN CASTLE USA INC. SITE NAME:

WATERBURY

SITE ADDRESS:

150 MATTATUCK HEIGHTS WATERBURY, CT 06705

COUNTY: MAP/PARCEL #: AREA OF CONSTRUCTION:

GROUND ELEVATION:

**EXISTING** LATITUDE: 41.537861° LONGITUDE: -72.985028° LAT/LONG TYPE: NAD83

**CURRENT ZONING: JURISDICTION:** 

OCCUPANCY CLASSIFICATION: U TYPE OF CONSTRUCTION:

A.D.A. COMPLIANCE:

PROPERTY OWNER:

**ELECTRIC PROVIDER:** 

FACILITY IS UNMANNED AND NOT FOR

WATERBURY TWIN LLC & 150 MH LLC

IP - INDUSTRIAL PARK DISTRICT

CONNECTICUT SITING COUNCIL

12 ISELIN TERRACE LARCHMONT, NY 10538

TOWER OWNER: CROWN CASTLE

2000 CORPORATE DRIVE

CANONSBURG, PA 15317

**HUMAN HABITATION** 

CARRIER/APPLICANT:

T-MOBILE 35 GRIFFIN ROAD

BLOOMFIELD, CT 06002

CONNECTICUT LIGHT & POWER CO 1-800-286-2000

TELCO PROVIDER: LIGHTOWER 855-91-FIBER

# PROJECT TEAM

A&E FIRM:

1717 S. BOULDER AVE. TULSA, OK 74119 **MARVIN PHILLIPS** 

CROWN CASTLE USA INC. DISTRICT CONTACTS:

3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065

TRICIA PELON - PROJECT MANAGER

JASON DAMICO - CONSTRUCTION MANAGER JASON.DAMICO@CROWNCASTLE.COM

SHEET DESCRIPTION SHEET# T-1 TITLE SHEET **CODE SUMMARY CODE SUMMARY** GENERAL NOTES C-1.1OVERALL SITE PLAN SITE PLAN & ENLARGED SITE PLAN FINAL ELEVATION & ANTENNA PLANS ANTENNA & CABLE SCHEDULE PLUMBING DIAGRAM **EQUIPMENT SPECS** ANTENNA GROUNDING DIAGRAM GROUNDING DETAILS G-3 **GROUNDING DETAILS** 

ATTACHED HANDRAIL SPECIFICATIONS

**DRAWING INDEX** 

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. 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.

# PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:

- REMOVE (3) ANTENNAS
- REMOVE (3) TMAs
- REMOVE (6) 7/8" COAX CABLES • REMOVE (1) 9X18 HCS CABLE
- RELOCATE (6) ANTENNAS
- RELOCATE (3) RRHs
- INSTALL NEW T-MOBILE MOUNT MODIFICATION AS PER MOUNT DOCUMENT BY TOWER ENGINEERING PROFESSIONALS DATED 5/3/22
- INSTALL (3) ANTENNAS
- INSTALL (3) RRHs
- INSTALL (1) HYBRID TRUNK 6/24 4AWG

### GROUND SCOPE OF WORK:

- REMOVE (1) RBS 2106 CABINET • REMOVE (1) DUW30

- INSTALL (1) PSU 4813 vR2A (Kit) • INSTALL (1) CSR IXRe V2 (Gen2)
- THE POWER DESIGN FOR ANY AC ELECTRICAL POWER HERE FOR REFERENCE PURPOSES ONLY. T-MOBILE IS

### APPLICABLE CODES/REFERENCE **DOCUMENTS** ALL WORK SHALL BE PERFORMED AND MATERIALS 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: CODE CODE TYPE 2018 CONNECTICUT SBC/2015 IBC BUILDING **MECHANICAL** 2018 CONNECTICUT SBC/2015 IMC ELECTRICAL 2018 CONNECTICUT SBC/2017 NEC **REFERENCE DOCUMENTS:** STRUCTURAL ANALYSIS: B+T GROUP DATED: 5/9/22 MOUNT ANALYSIS: TOWER ENGINEERING PROFESSIONALS DATED: 5/3/22 AC ELECTRICAL POWER DESIGN: BY OTHERS DATED: RFDS REVISION: 5 DATED: 4/11/22 ORDER ID: 614658 REVISION: 0

CALL CONNECTICUT ONE CALL

(800) 922-4455 CBYD.COM

CALL 2 WORKING DAYS

BEFORE YOU DIG!

**APPROVAL** DATE SIGNATURE PROPERTY OWNER OR REP. LAND USE PLANNER T-MOBILE **OPERATIONS** NETWORK BACKHAUL CONSTRUCTION MANAGE

,<sub>el</sub>OO) \_\_,

**APPROVALS** 

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.

MTS ENGINEERING P.L.L.C. BER:2386985 Expires 3/31/23

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

**SHEET NUMBER:** 

**REVISION:** 

CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE

B+T GROUP

MARVIN.PHILLIPS@BTGRP.COM

TRICIA.PELON@CROWNCASTLE.COM

• REMOVE (6) RUS01 B4 • INSTALL NEW PAD EXTENSION

• INSTALL (1) 6160 CABINET

• INSTALL (1) B160 BATTERY CABINET • INSTALL (1) RP 6651

CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

### 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," CED-STD-10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," 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 JRFACE 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:
- CARRIFR: 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 DIMENSIONS AND MEASUREMENTS ON 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 SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES 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
- DESIGNATED LOCATION. 14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S

### 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.... #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....
- 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 ACI 301 SECTION 4.2.4.

### GREENFIELD GROUNDING NOTES:

- 1. 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 ELECTRODE SYSTEMS, THE CONTRACTOR SHALL 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. 4.1. 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 NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT
- 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).
- 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 OTHËRWISE SPECIFIÉD. 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
- 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
- 25. 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.
- 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 VOLIAGE	NEG (-)	BLACK**			

SEE NEC 210.5(C)(1) AND (2)\*\* POLARITY MARKED AT TERMINATION

FACILITY INTERFACE FRAME

LONG TERM EVOLUTION

MASTER GROUND BAR

RADIO BASE STATION

REMOTE RADIO HEAD

SMART INTEGRATED DEVICE

TOWER MOUNTED AMPLIFIER

UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM

REMOTE RADIO UNIT

REMOTE ELECTRIC TILT

RADIO FREQUENCY DATA SHEET

NATIONAL ELECTRIC CODE

GLOBAL POSITIONING SYSTEM

GLOBAL SYSTEM FOR MOBILE

ABBREVIATIONS:

GEN

GPS

GSM

MGB

MW

NEC

QTY

RBS

RET

RFDS

RRU

SIAD

TMA

TYP

UMTS

W.P.

RECT

ANTENNA EXISTING

GENERATOR

MICROWAVE

PROPOSED

QUANTITY

RECTIFIER

TYPICAL

WORK POINT

POWER PLANT

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

WHITE PROPOSED EXCAVATION EMPORARY SURVEY MARKINGS

CONDUIT, AND LIGHTING CABLES GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS

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

LECTRIC POWER LINES, CABLES,

POTABLE WATER ECLAIMED WATER, IRRIGATION, AND SLURRY LINES

SEWERS AND DRAIN LINES

35 GRIFFIN ROAD BLOOMFIELD, CT 06002



CLIFTON PARK, NY 12065



T-MOBILE SITE NUMBER CT11269B

> BU #: **876317** WATERBURY

150 MATTATUCK HEIGHTS WATERBURY, CT 06705

> EXISTING 143'-0" MONOPOLE

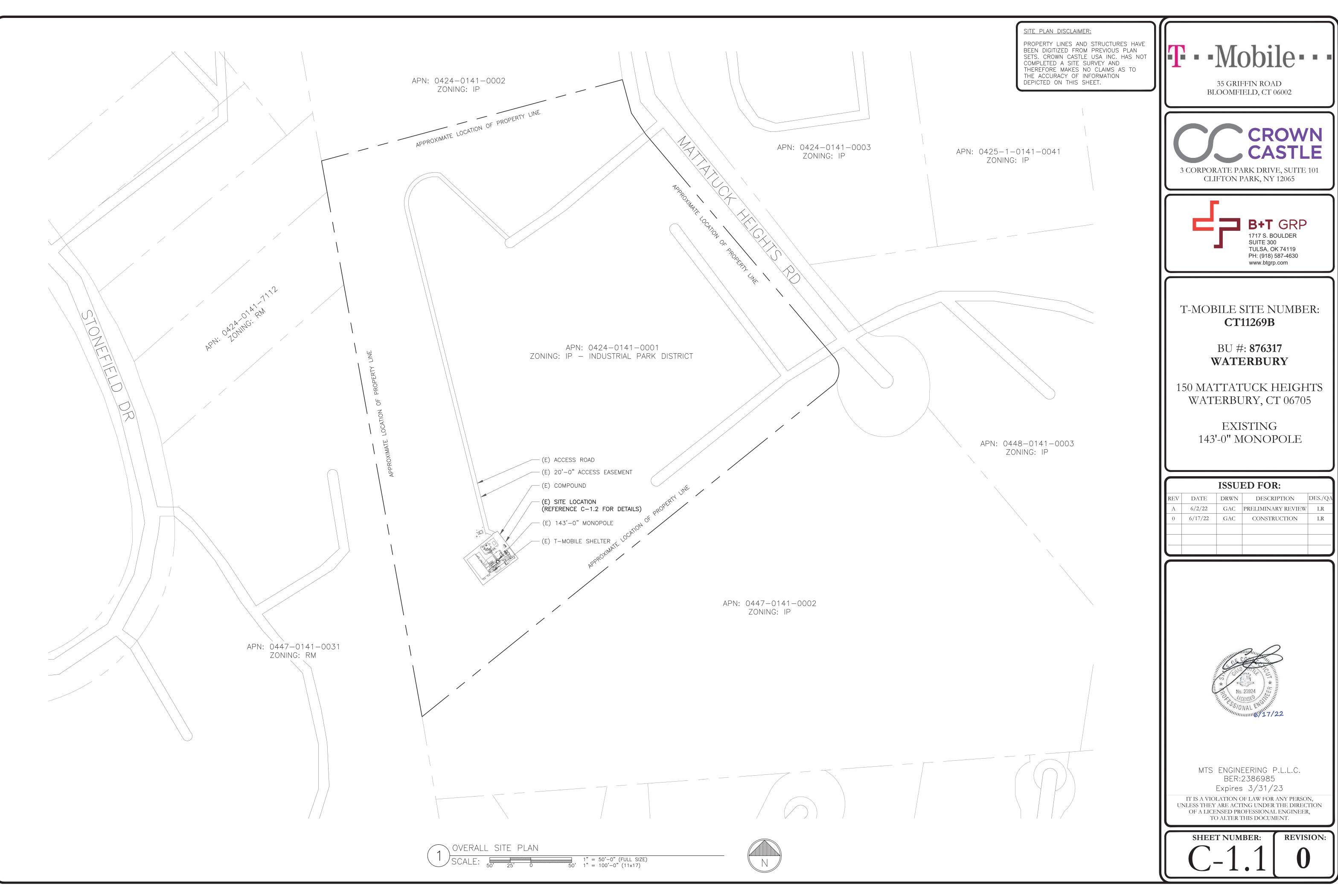
E		ISSUED FOR:						
	REV	DATE	DRWN	DESCRIPTION	DES./C			
	A	6/2/22	GAC	PRELIMINARY REVIEW	LR			
	0	6/17/22	GAC	CONSTRUCTION	LR			



MTS ENGINEERING P.L.L.C. BER:2386985 Expires 3/31/23

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**SHEET NUMBER:** 



35 GRIFFIN ROAD BLOOMFIELD, CT 06002





B+T GRP 1717 S. BOULDER SUITE 300 TULSA, OK 74119 PH: (918) 587-4630 www.btgrp.com

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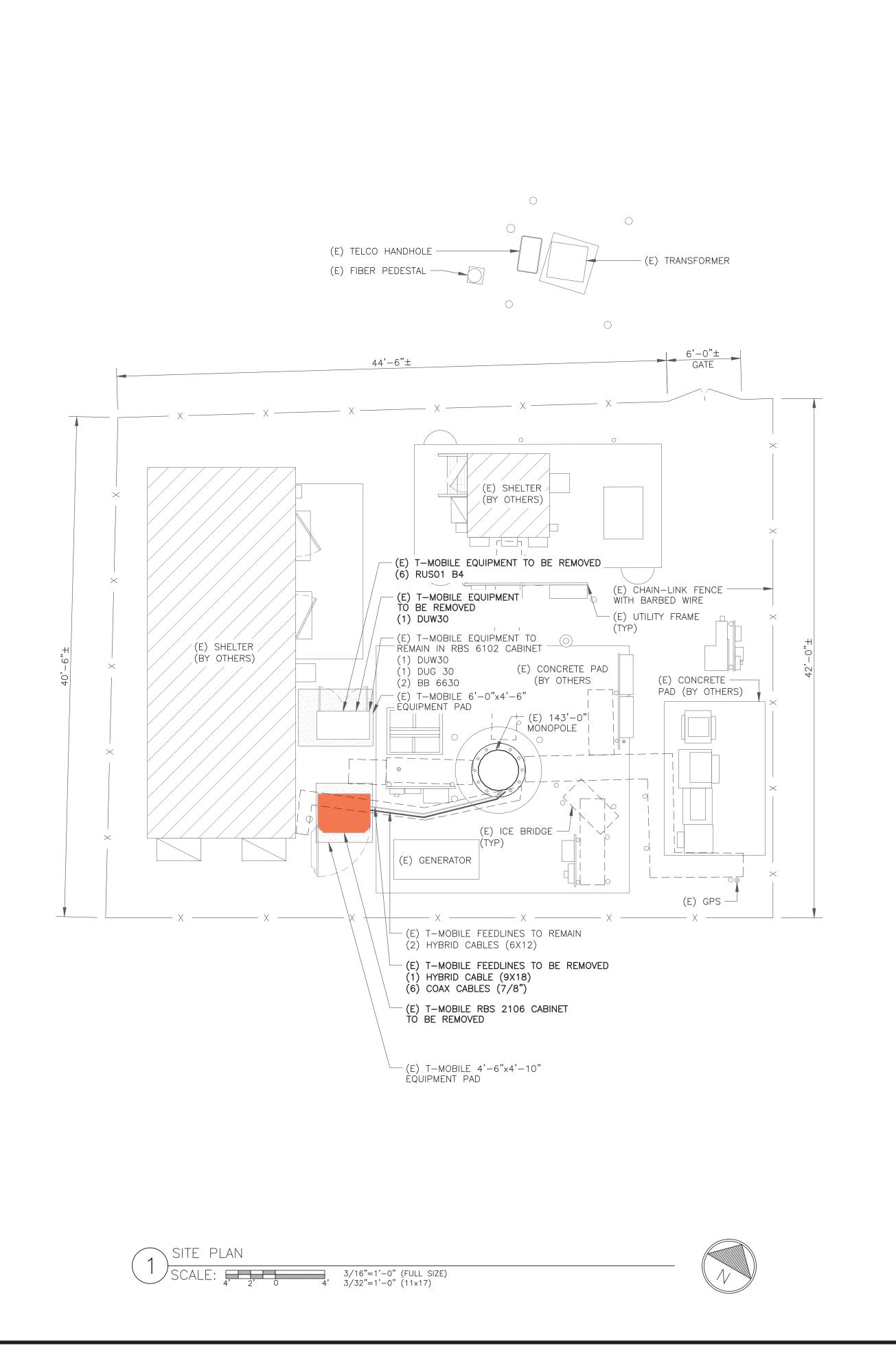
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# THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T-MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

35 GRIFFIN ROAD BLOOMFIELD, CT 06002



CLIFTON PARK, NY 12065



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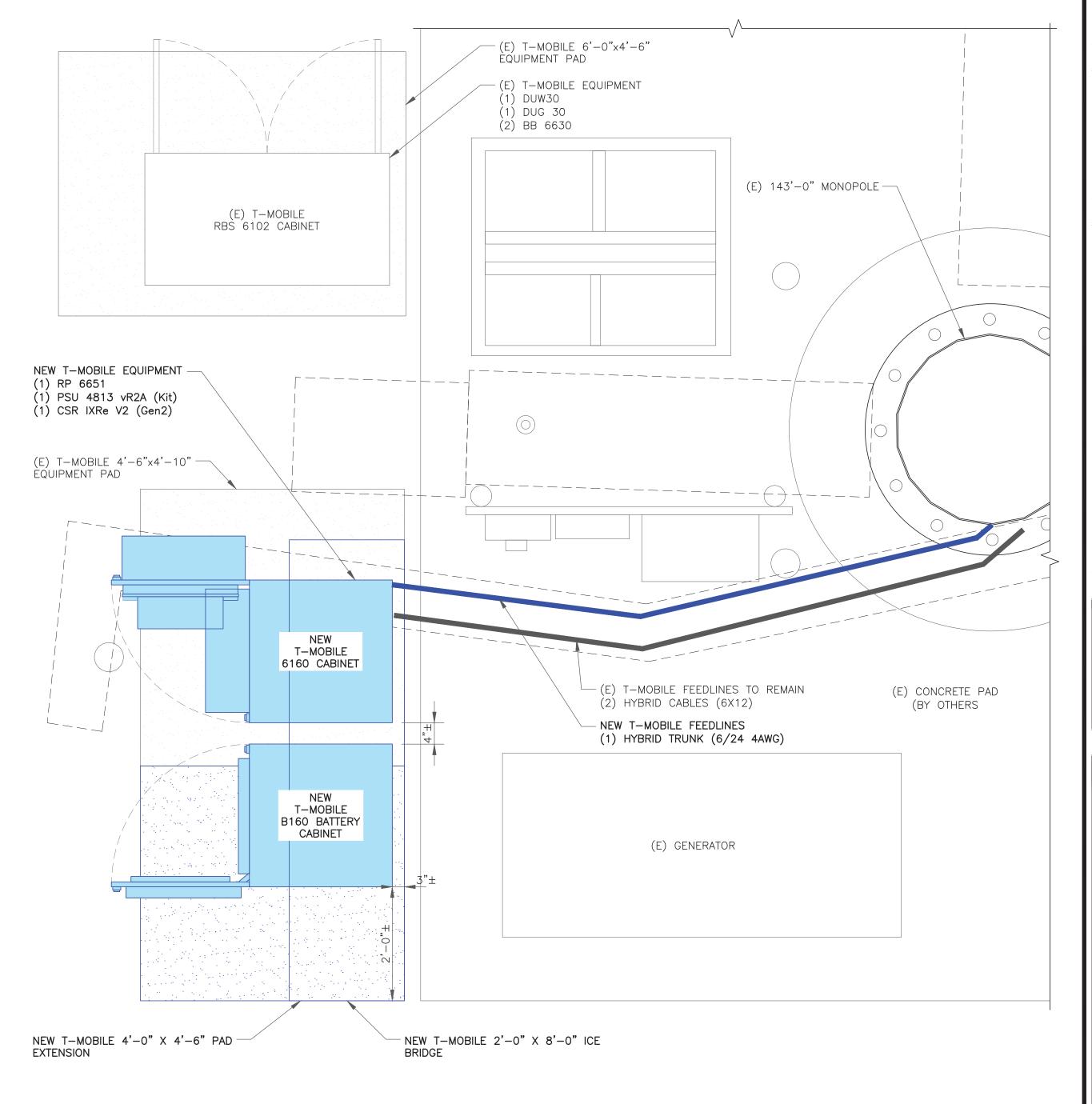
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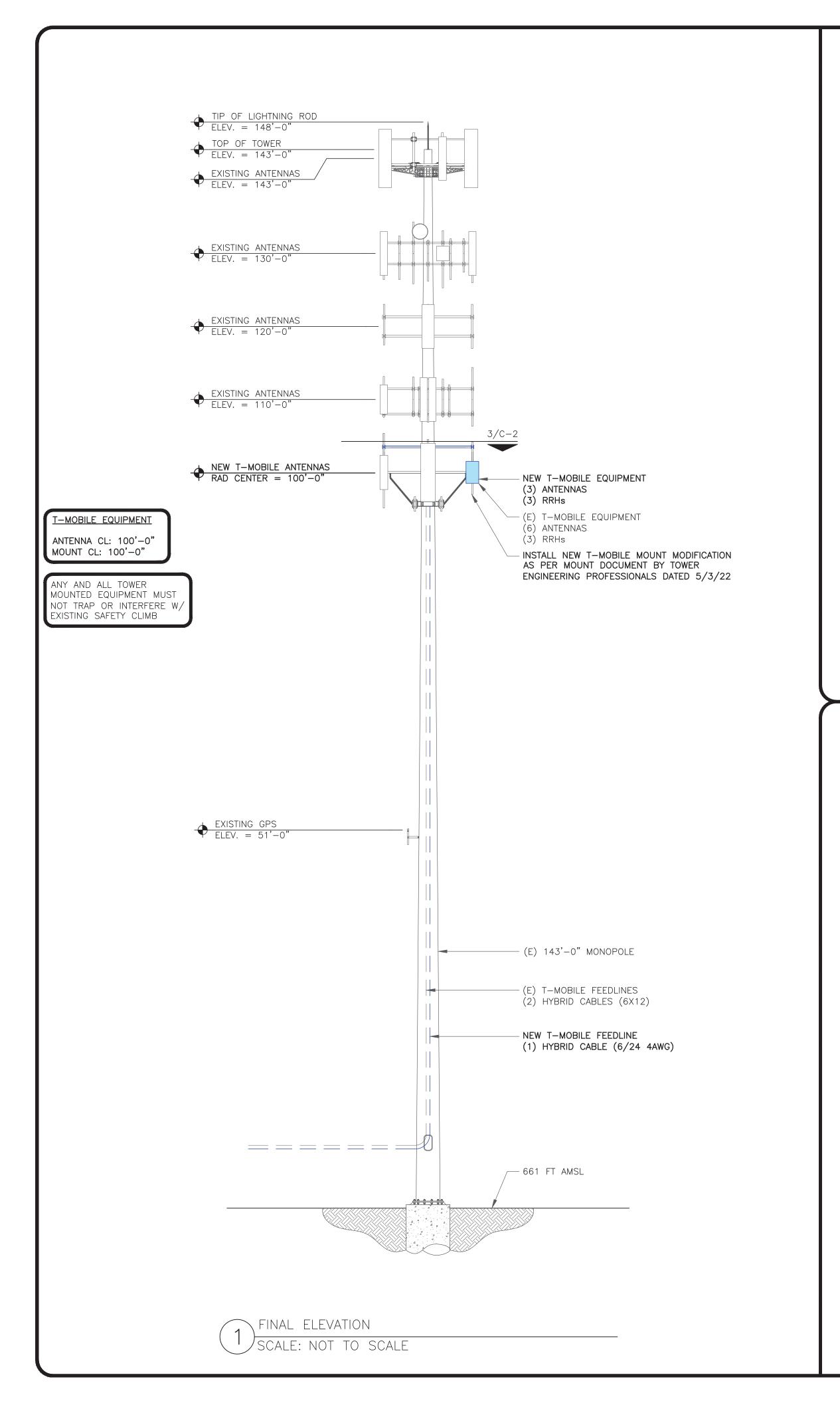


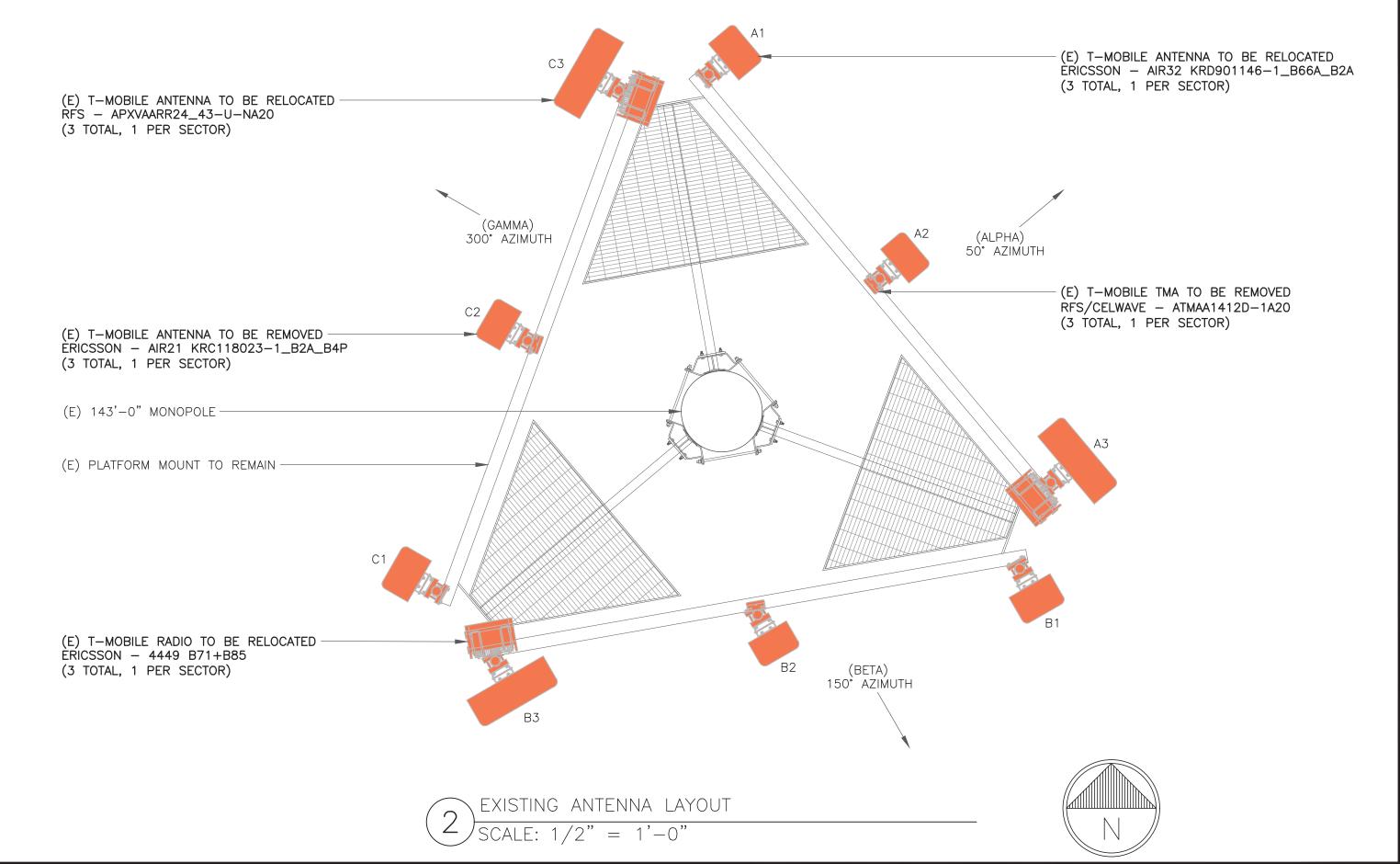
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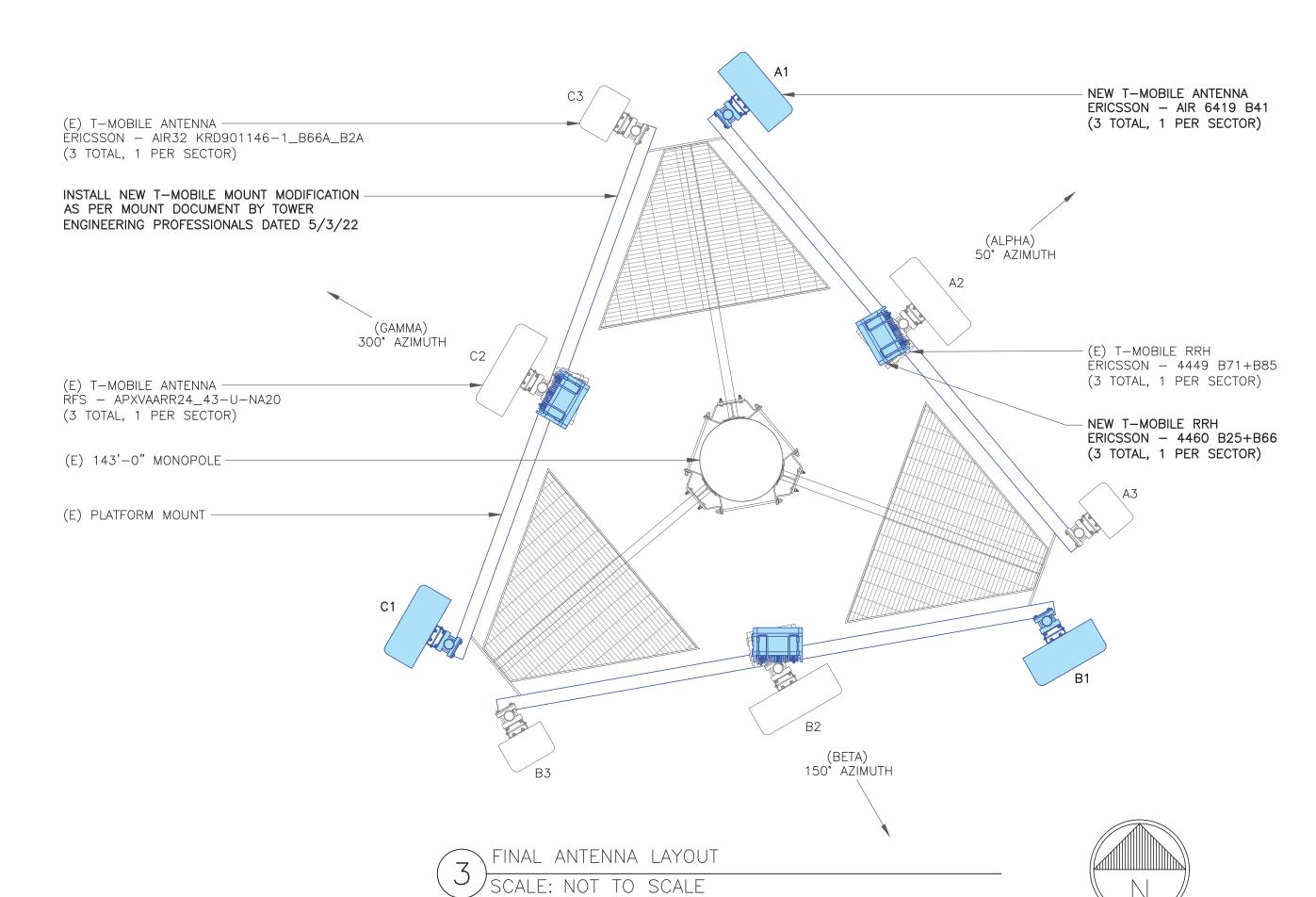
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SHEET NUMBER:

C-2

	RF SYSTEM SCHEDULE									
SECTOR	ANTENNA	TECH	MANUFACTURER	ANTENNA MODEL	AZIMUTH	M-TILT	E-TILT	RAD CENTER	TMA/RRU	FEEDLINE TYPE
	A1	N2500/L2500	ERICSSON	AIR 6419 B41	50°	0°	2°/2°	100'-0"	_	
ALPHA	A2	L700/L600/N600; <b>L1900/U1900</b>	RFS	APXVAARR24_43-U-NA20	50°	0°	2°/2°/2°/	100'-0"	ERICSSON — 4449 B71+B85 ERICSSON — 4460 B25+B66	
	А3	L2100; L1900/ <b>G1900</b>	ERICSSON	AIR32 KRD901146-1_B66A_B2A	50°	O°	2°/2°/2°/ 2°	100'-0"	-	
	B1	N2500/L2500	ERICSSON	AIR 6419 B41	150°	O°	2°/2°	100'-0"	-	
BETA	B2	L700/L600/N600; <b>L1900/U1900</b>	RFS	APXVAARR24_43-U-NA20	150°	0,	2°/2°/2°/	100'-0"	ERICSSON — 4449 B71+B85 ERICSSON — 4460 B25+B66	(1) HYBRID TRUNK 6/24 4AWG (2) 6x12 HCS
	В3	L2100; L1900/ <b>G1900</b>	ERICSSON	AIR32 KRD901146-1_B66A_B2A	150°	O.	2°/2°/2°/	100'-0"	-	
	C1	N2500/L2500	ERICSSON	AIR 6419 B41	300	0°	2°/2°	100'-0"	-	
GAMMA	C2	L700/L600/N600; <b>L1900/U1900</b>	RFS	APXVAARR24_43-U-NA20	300°	0,	2°/2°/2°/	100'-0"	ERICSSON — 4449 B71+B85 ERICSSON — 4460 B25+B66	
	С3	L2100; L1900/ <b>G1900</b>	ERICSSON	AIR32 KRD901146-1_B66A_B2A	300°	O°	2°/2°/2°/ 2°	100'-0"	-	

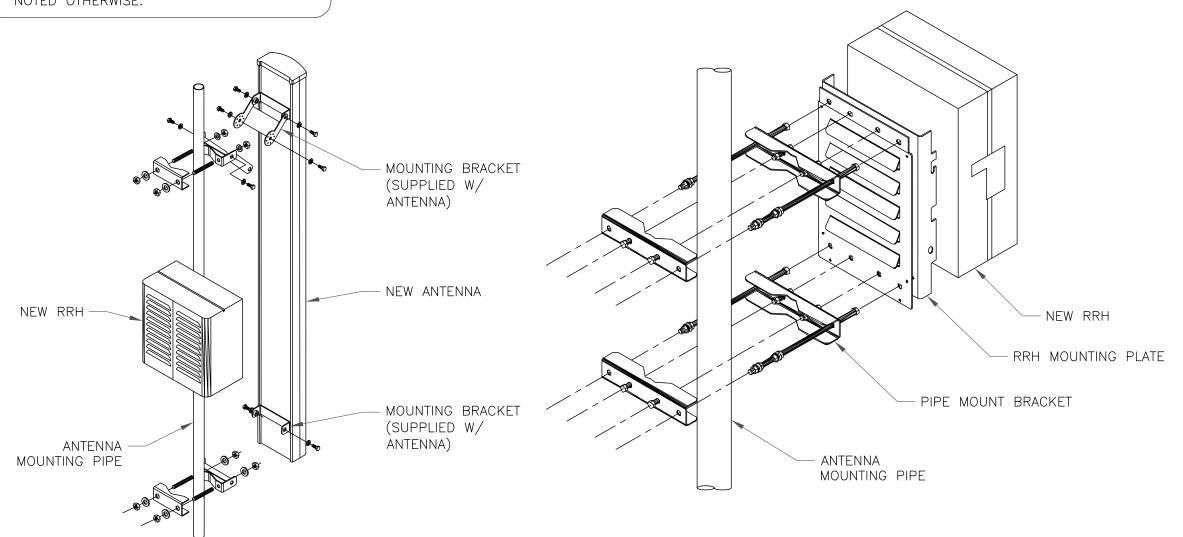
ANTENNA AND CABLE SCHEDULE

SCALE: NOT TO SCALE



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.



ANTENNA WITH RRH MOUNTING DETAIL

SCALE: NOT TO SCALE

T - Mobile - - -

35 GRIFFIN ROAD BLOOMFIELD, CT 06002



CORPORATE PARK DRIVE, SUITE 1 CLIFTON PARK, NY 12065



T-MOBILE SITE NUMBER:

www.btgrp.com

BU #: **876317 Waterbury** 

CT11269B

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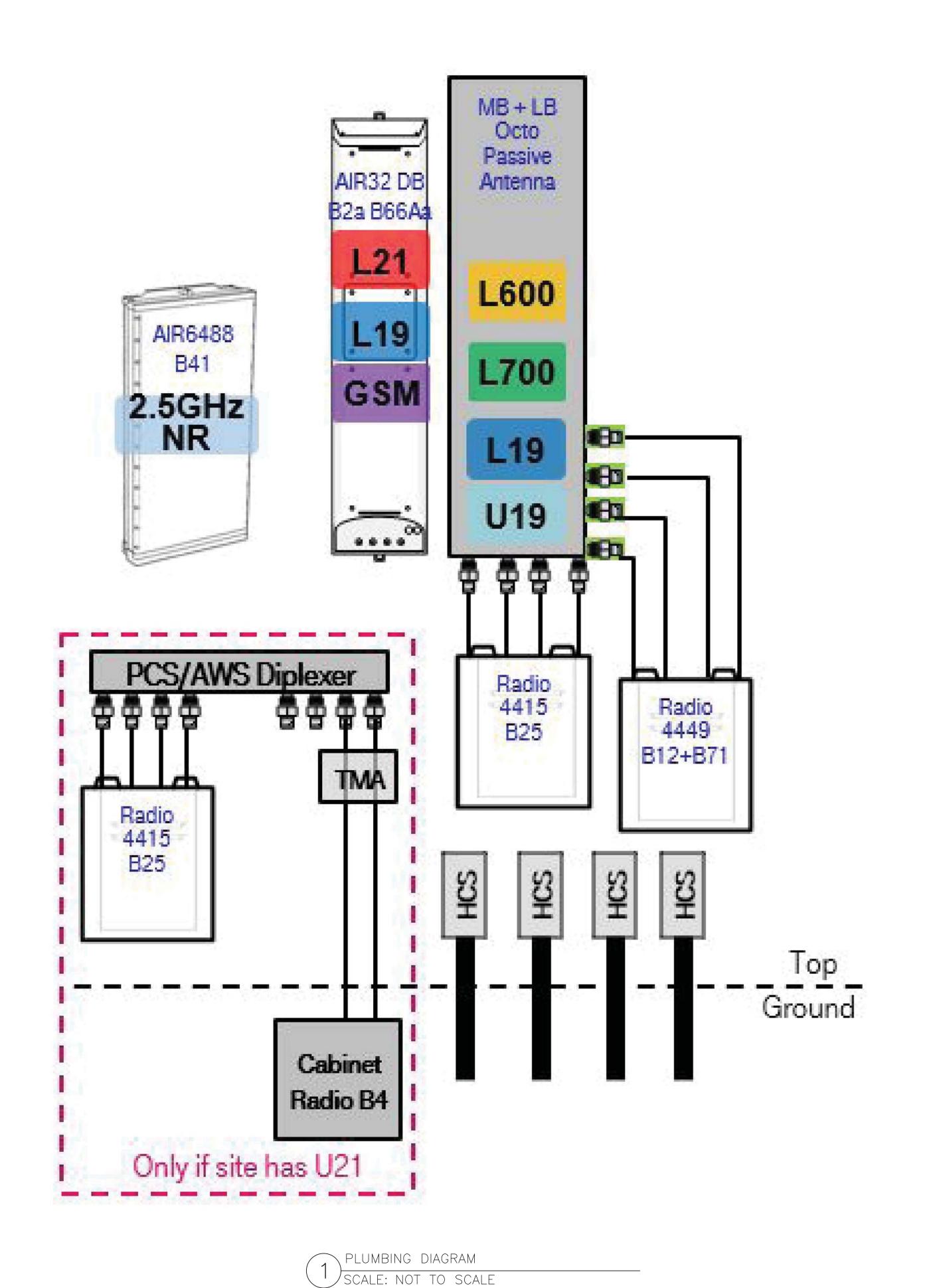


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0







3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065



T-MOBILE SITE NUMBER: **CT11269B** 

BU #: **876317 Waterbury** 

150 MATTATUCK HEIGHTS WATERBURY, CT 06705

> EXISTING 143'-0" MONOPOLE

ISSUED FOR:						
REV	DATE	DRWN	DESCRIPTION	DES./QA		
A	6/2/22	GAC	PRELIMINARY REVIEW	LR		
0	6/17/22	GAC	CONSTRUCTION	LR		

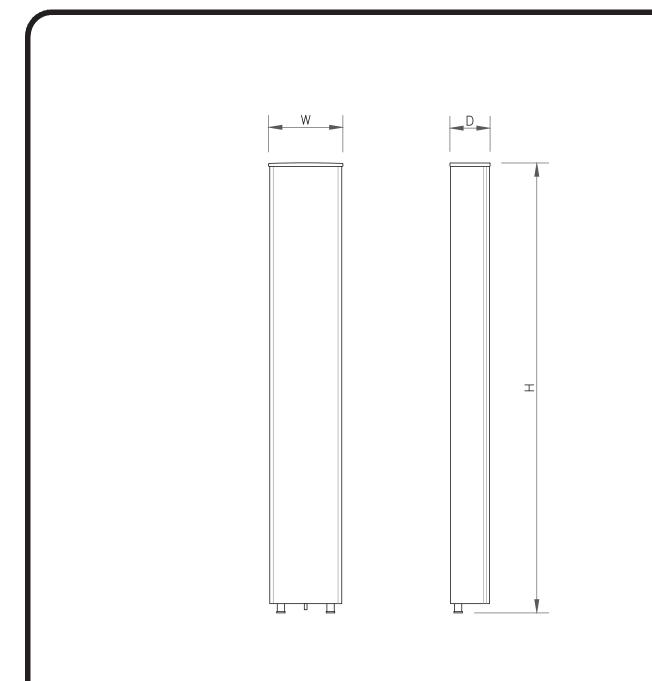


MTS ENGINEERING P.L.L.C. BER:2386985 Expires 3/31/23

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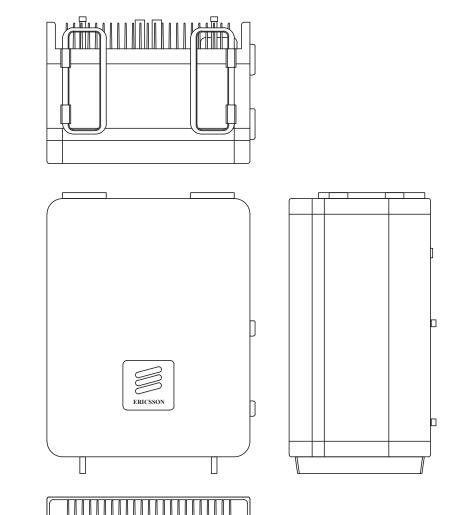
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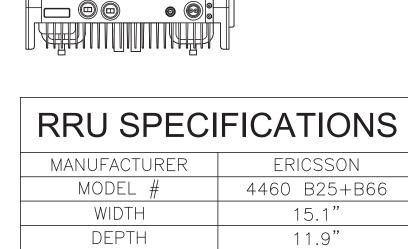
C-4



ANTE	ANTENNA SPECS						
MANUFACTURER	ERICSSON						
MODEL #	AIR 6419 B41						
WIDTH	20.91"						
DEPTH	9.02"						
HEIGHT	36.25"						
WEIGHT	96.5 LBS						

ANTENNA SPECS
SCALE: NOT TO SCALE





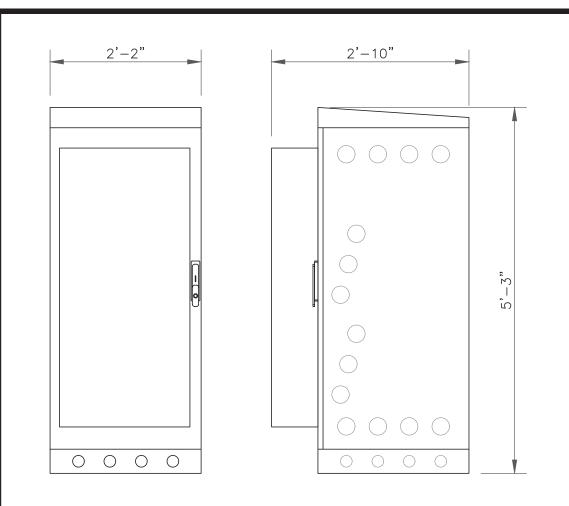
17"

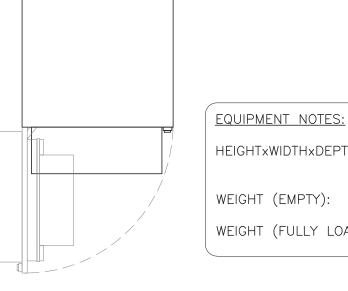
109 LBS

RRU SPECS
SCALE: NOT TO SCALE

HEIGHT

WEIGHT



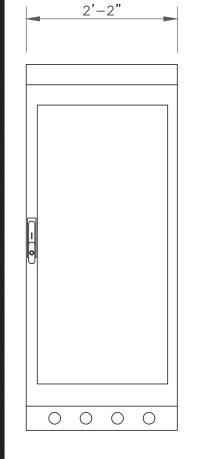


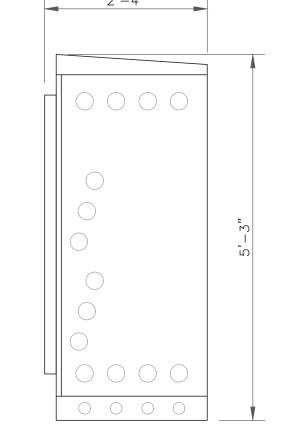
HEIGHT×WIDTH×DEPTH: 63.0" x 26.0" x 34.0" (1600.0mm x 660.0mm x 864.0mm)

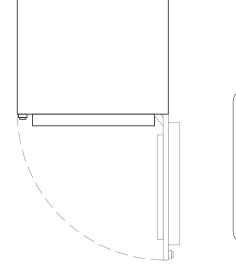
WEIGHT (EMPTY): 320 LBS (145 kg)

WEIGHT (FULLY LOADED): 1000 LBS (454 kg)

ERICSSON - 6160 SCALE: NOT TO SCALE







EQUIPMENT NOTES:

HEIGHTxWIDTHxDEPTH: 63.0" x 26.0" x 28.0"

(1600.0mm x 660.0mm x 711.0mm)

WEIGHT (EMPTY): 295 LBS (134 kg)
WEIGHT (FULLY LOADED): 2000 LBS (908 kg)

ERICSSON - B160
SCALE: NOT TO SCALE



BLOOMFIELD, CT 06002



CLIFTON PARK, NY 12065



T-MOBILE SITE NUMBER: **CT11269B** 

BU #: **876317 WATERBURY** 

150 MATTATUCK HEIGHTS WATERBURY, CT 06705

EXISTING 143'-0" MONOPOLE

	ISSUED FOR:									
REV	EV DATE DRWN DESCRIPTION DES./QA									
A	6/2/22	GAC	PRELIMINARY REVIEW	LR						
0	6/17/22	GAC	CONSTRUCTION	LR						

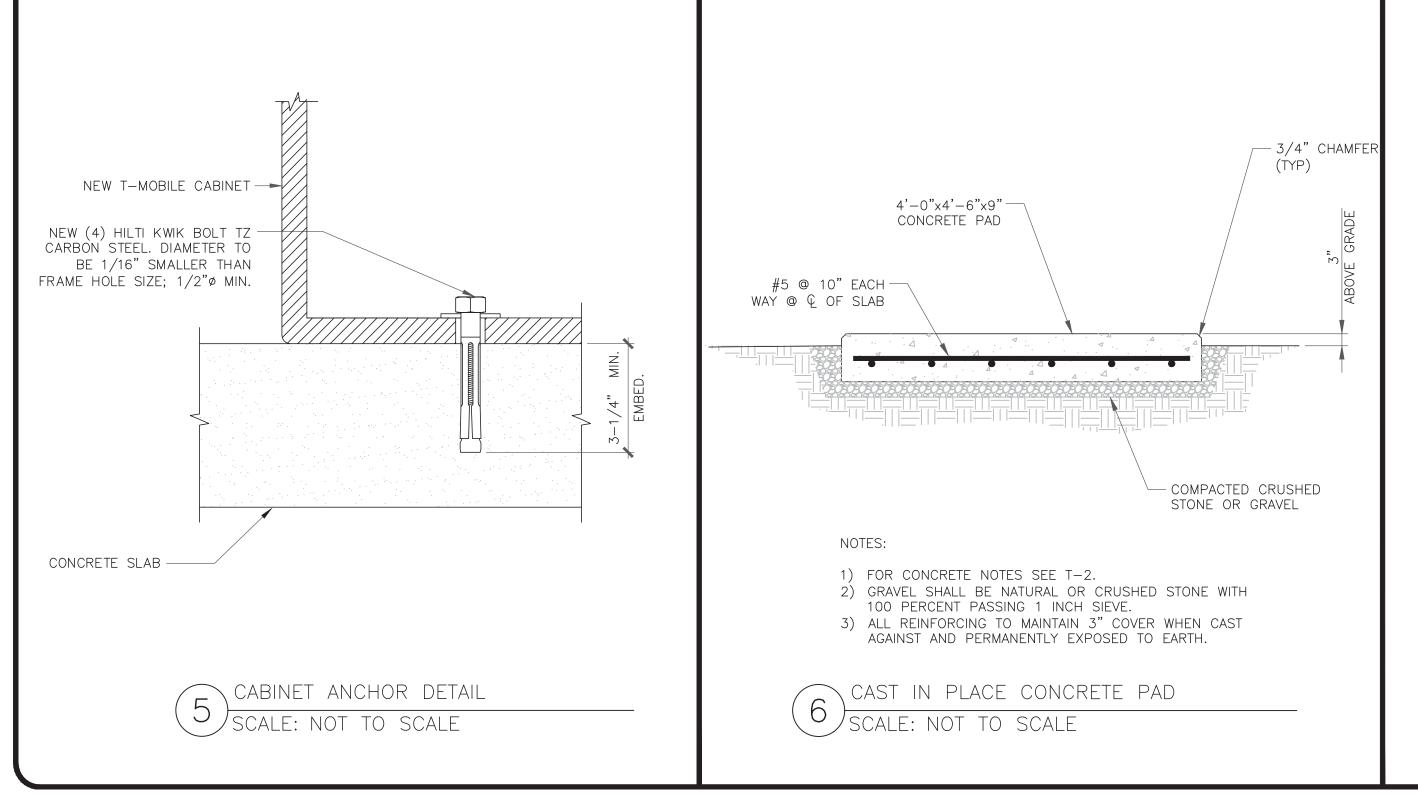


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SHEET NUMBER:

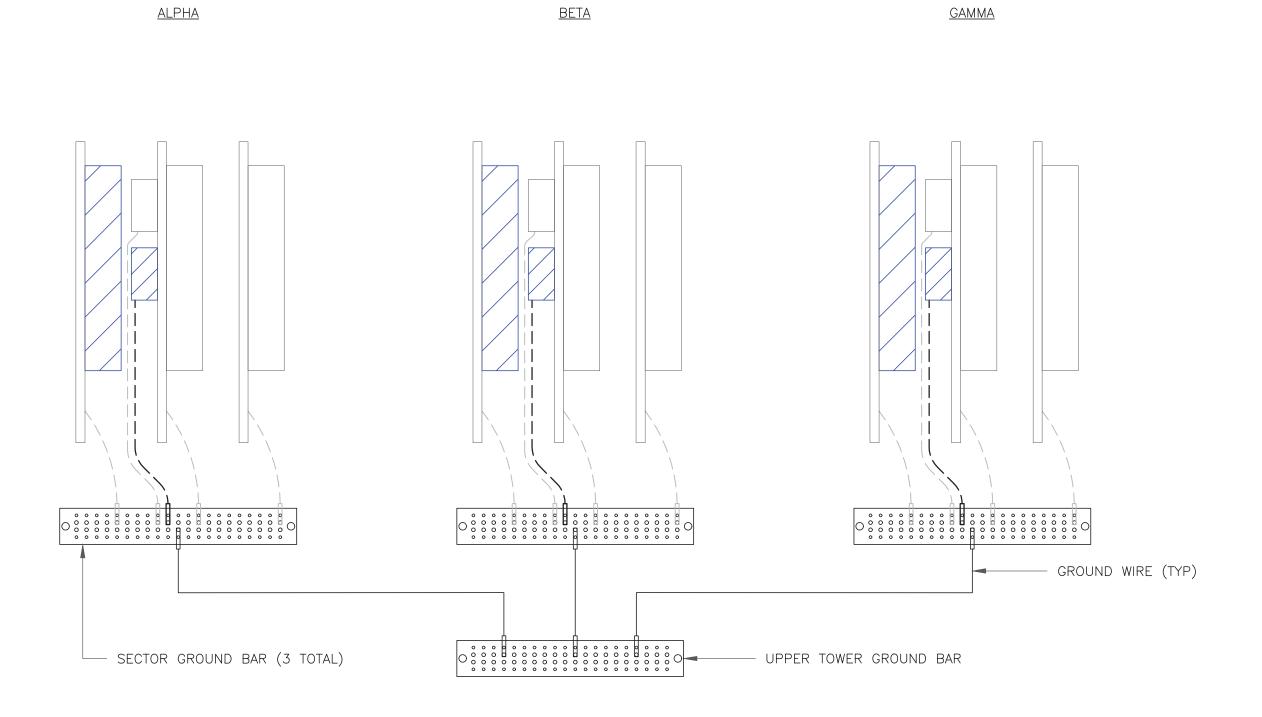
REVISION:



NOT USED

SCALE: NOT TO SCALE

8 NOT USED
SCALE: NOT TO SCALE



NOTE:

ALL NEW GROUNDS TO BE #6 STRANDED COPPER WITH GREEN INSULATION UNLESS NOTED OTHERWISE.

ANTENNA GROUNDING DIAGRAM

SCALE: NOT TO SCALE





3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065



T-MOBILE SITE NUMBER: **CT11269B** 

BU #: **876317 Waterbury** 

150 MATTATUCK HEIGHTS WATERBURY, CT 06705

> EXISTING 143'-0" MONOPOLE

	ISSUED FOR:								
REV	REV DATE DRWN DESCRIPTION DES./Q								
Α	6/2/22	GAC	PRELIMINARY REVIEW	LR					
0	6/17/22	GAC	CONSTRUCTION	LR					

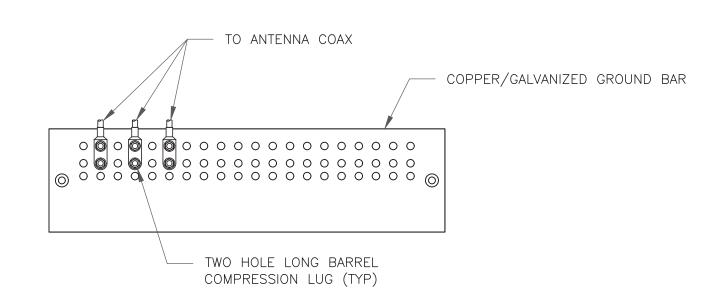


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SHEET NUMBER:

G-1

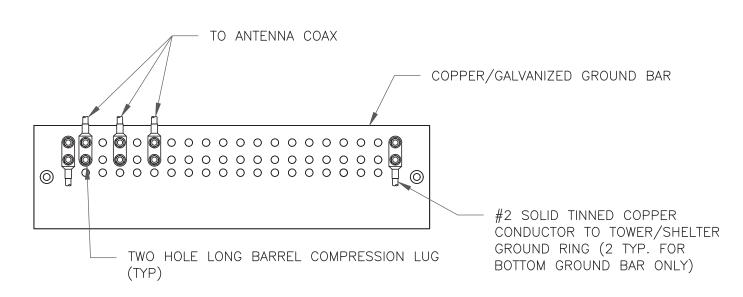


### NOTES:

- 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.

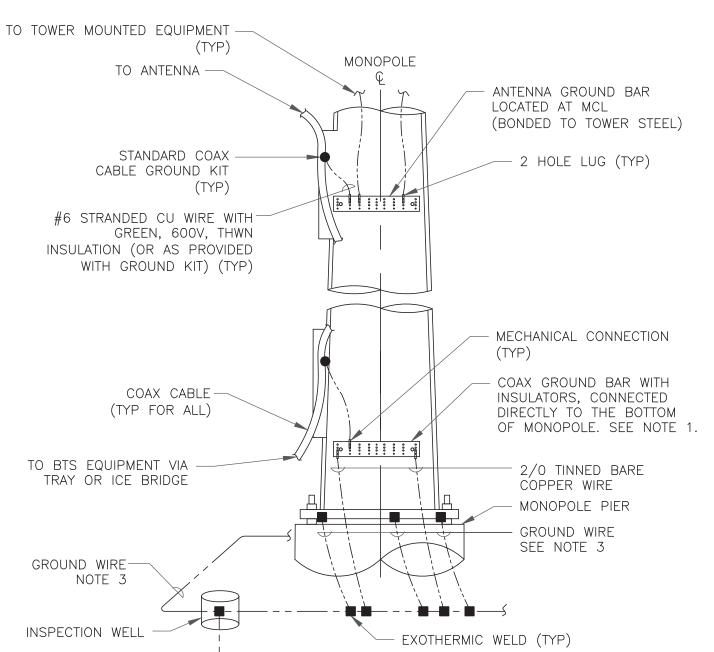
# ANTENNA SECTOR GROUND BAR DETAIL

SCALE: NOT TO SCALE



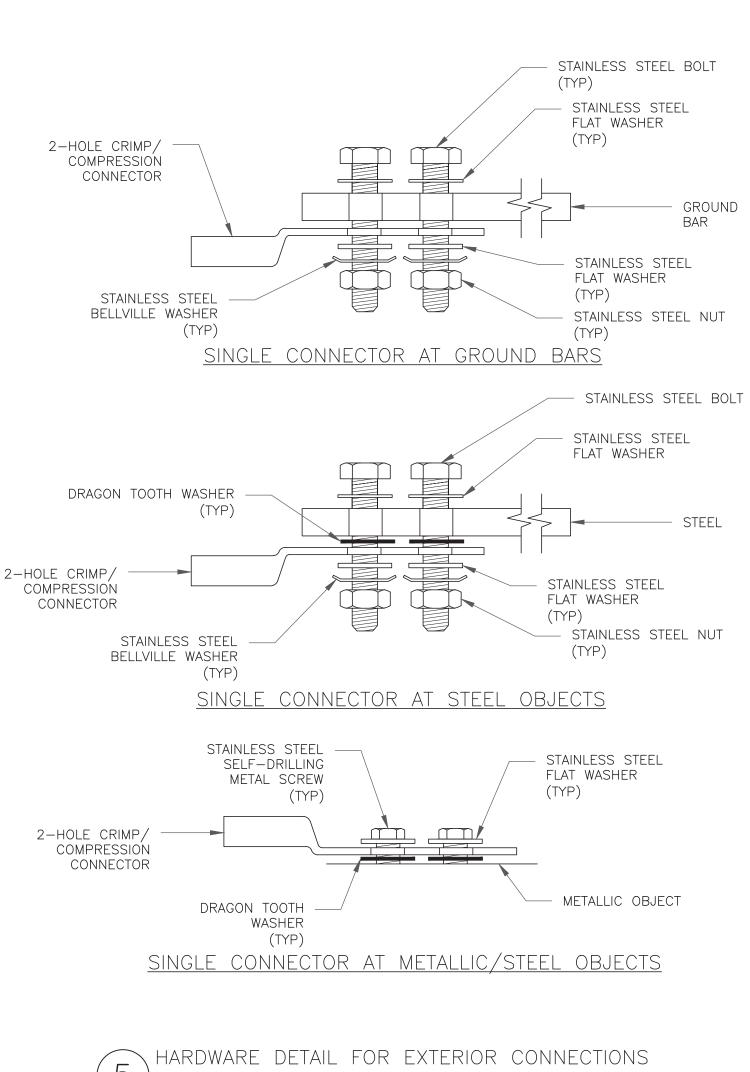
- 1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
- 2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
- 3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

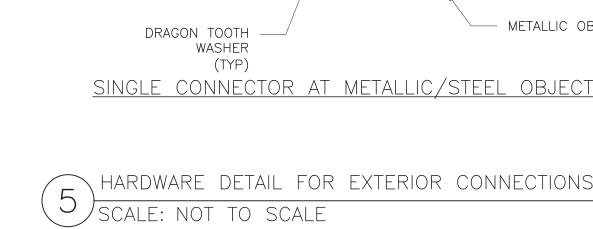


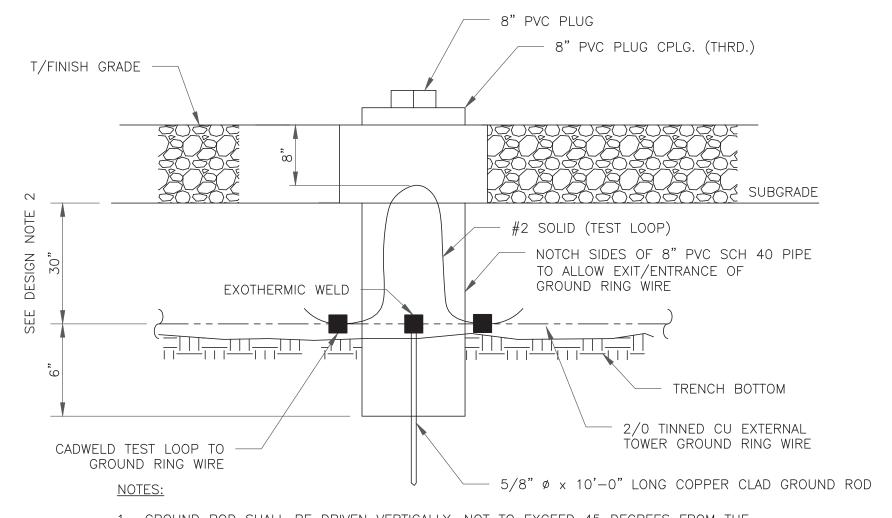


- NOTES:
- 1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
- 2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
- 3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

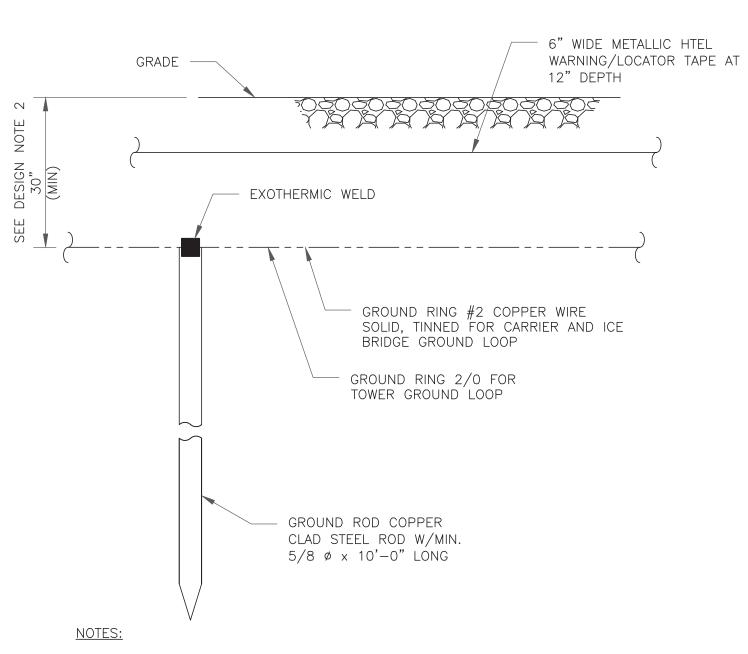








- 1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE
- 2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)
- INSPECTION WELL DETAIL SCALE: NOT TO SCALE



- 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)









### T-MOBILE SITE NUMBER: CT11269B

BU #: **876317** WATERBURY

150 MATTATUCK HEIGHTS WATERBURY, CT 06705

> EXISTING 143'-0" MONOPOLE

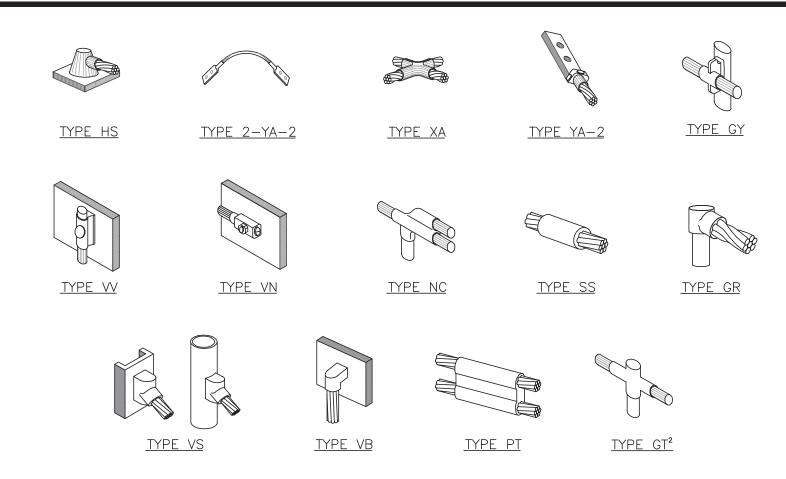
	ISSUED FOR:							
REV	DATE	DRWN	DESCRIPTION	DES./QA				
A	6/2/22	GAC	PRELIMINARY REVIEW	LR				
0	6/17/22	GAC	CONSTRUCTION	LR				



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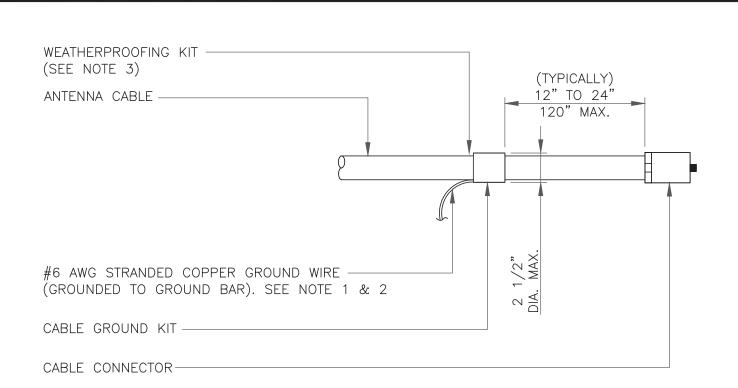
**SHEET NUMBER:** 



### NOTE:

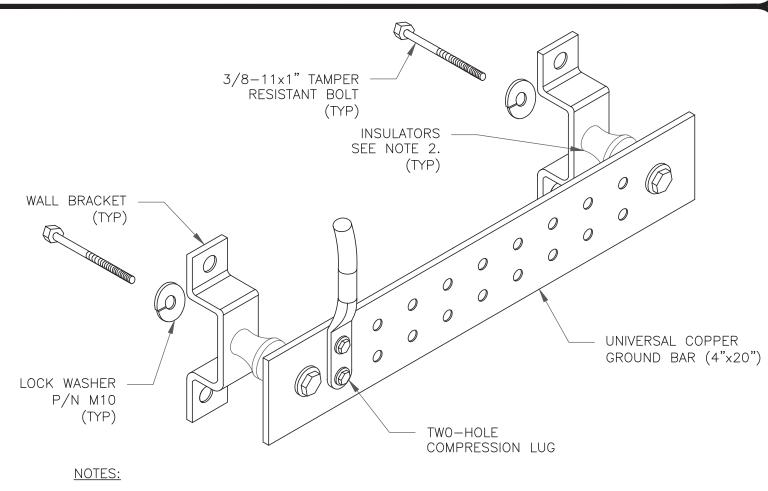
- 1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC
- MOLDS TO BE USED FOR THIS PROJECT. 2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

## CADWELD GROUNDING CONNECTIONS SCALE: 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

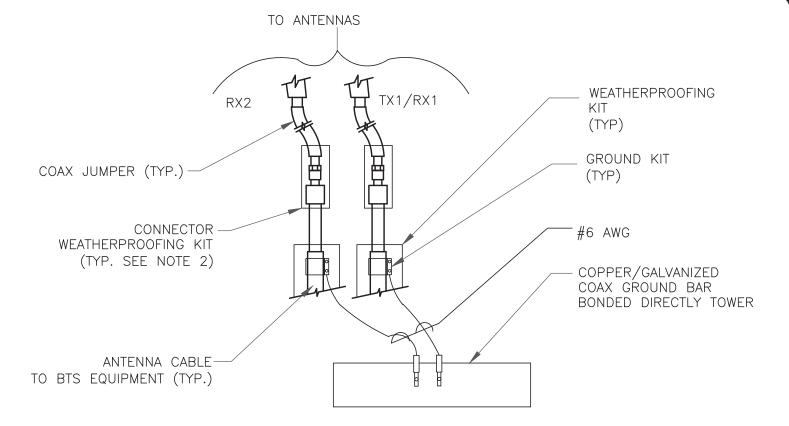
CABLE GROUND KIT CONNECTION SCALE: NOT TO SCALE



1. 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.

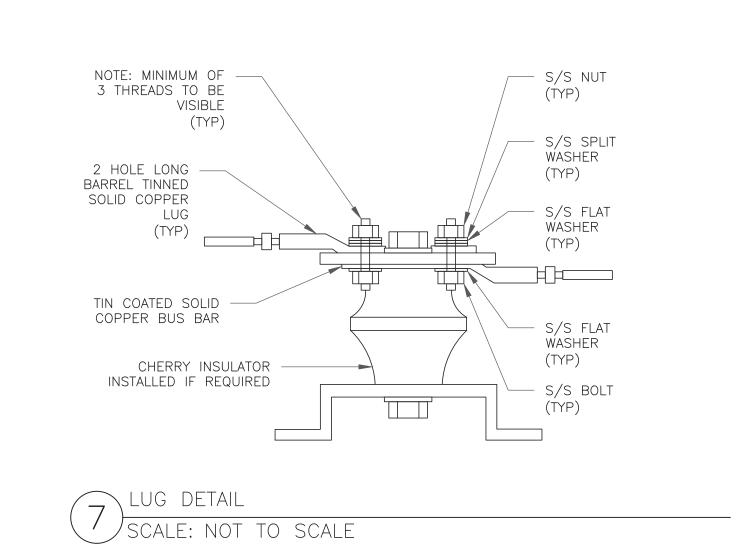
2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

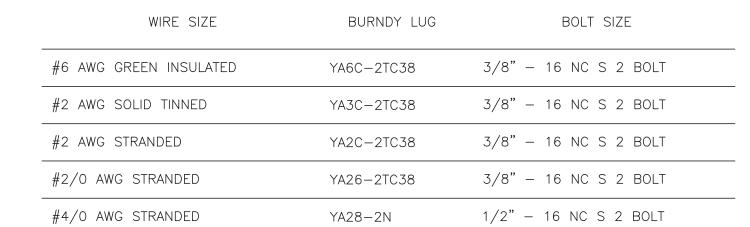
GROUND BAR DETAIL SCALE: NOT TO SCALE

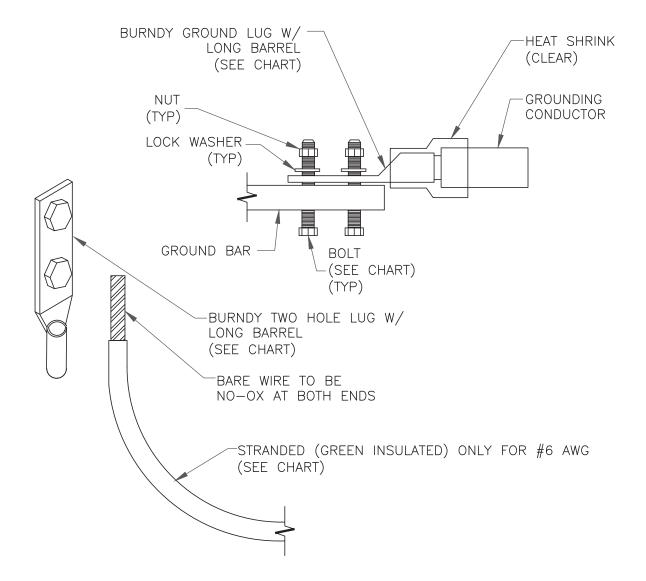


- 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
- 2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE

GROUND CABLE CONNECTION SCALE: NOT TO SCALE



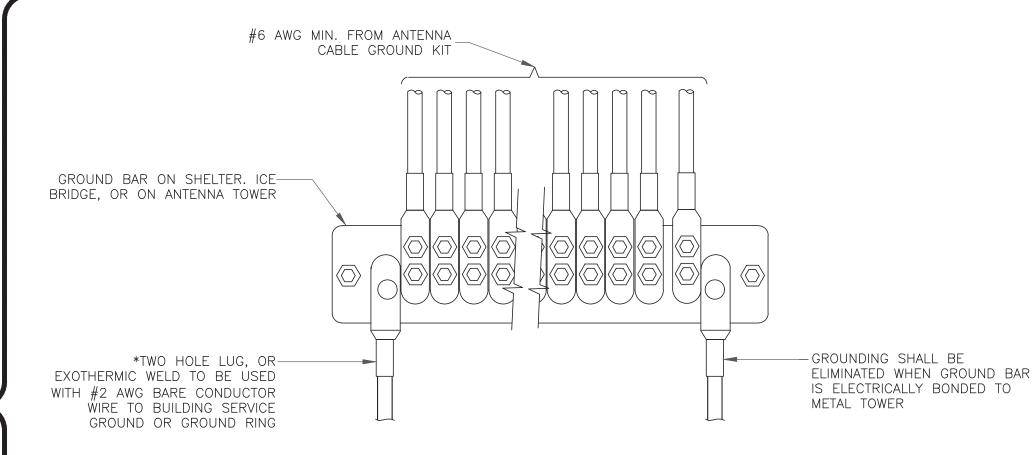




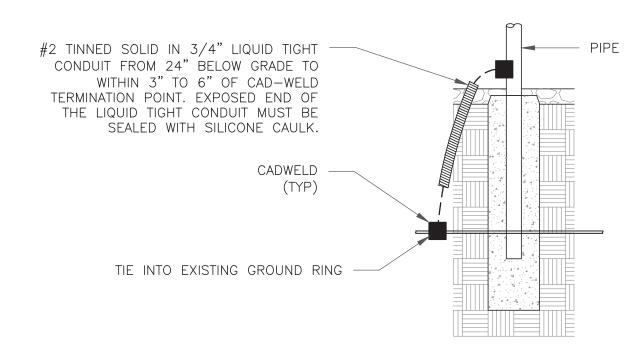
### NOTES:

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





CLIFTON PARK, NY 12065



### T-MOBILE SITE NUMBER: CT11269B

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150 MATTATUCK HEIGHTS WATERBURY, CT 06705

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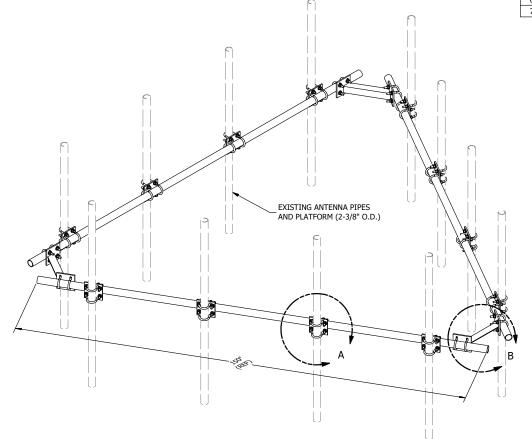
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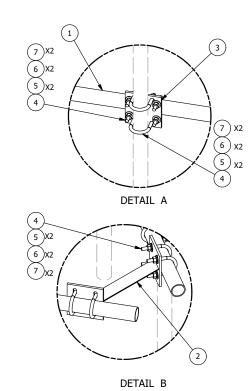
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**SHEET NUMBER:** 



	PARTS LIST								
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.			
1	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31			
2	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76			
3	12	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"	6 in	3.71	44.50			
4	60	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	37.51			
5	120	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	4.09			
6	120	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	1.67			
7	120	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	8.60			
					TOTAL WT. #	272.43			



T	o	LE	R/	١N	CE	N	OT	ES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE: SAWED, SHEARED AND GAS CUT EDGES (\$ 0.030") DRILLED AND GAS CUT HOLES (\$ 0.030") - NO CONING OF HOLES LASER CUT EDGES AND HOLES (\$ 0.010") - NO CONING OF HOLES BENDS ARE ± 1/2 DEGREE

ALL OTHER MACHINING (± 0.030") ALL OTHER ASSEMBLY (± 0.060")

PROPRIETARY NOTE:
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INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF
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HANDRAIL KIT FOR 12'-6" FACE

DESCRIPTION



Engineering Support Team: 1-888-753-7446

Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX

CPE	CPD NO. DRAWN BY KC8 5/30/2012		CPD NO.		5/30/2012	ENG. APP	ROVAL	PART NO. HRK12	10
81 81		suв <b>01</b>	DRAWING USAGE CUSTOMER		BMC	7/13/2014	DWG. NO. HRK12	F 1	

A REPLACED HCP WITH X-AHCP
REV DESCRIPTION CEK 7/10/2014 DESCRIPTION OF REVISIONS
REVISION HISTORY CPD BY DATE