



**Permit Number:** Z0067-22

2. You may use the space provided below, mail a separate letter or e-mail the information. Please include the permit number, address the information to the staff member handling this matter, and focus your comments on the approval criteria for the application.

3. Return your mailed comments to: Clackamas County Planning and Zoning, 150 Beaver Creek Rd, Oregon City, OR 97045; FAX to (503) 742-4550.

**Community Planning Organization:** The following recognized Community Planning Organization (CPO) has been notified of this application. This organization may develop a recommendation on this application. You are welcome to contact this organization and attend their meeting. If this Community Planning Organization is currently inactive, and you are interested in becoming involved in Land Use Planning in your area, please contact the Citizen Involvement Office at (503) 655-8552.

REDLAND-VIOLA-FISCHER'S CPO  
WARD LANCE 503-631-2550  
LANCEWARD@AOL.COM

**Decision Process:** In order to be approved, this proposal must meet the approval criteria in the Zoning and Development Ordinance, Section(s)

202, 316, 835, 1307

The Ordinance criteria for evaluating this application can be viewed at [www.clackamas.us/planning/zdo.html](http://www.clackamas.us/planning/zdo.html). You may view the submitted application at the following link, <https://accela.clackamas.us/citizenaccess/>.

A decision on this proposal will be made and a copy will be mailed to you. If you disagree with the decision you may appeal to the Land Use Hearings Officer who will conduct a public hearing. There is a \$250 appeal fee.

Comments:

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Your Name/Organization

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Telephone Number

*Clackamas County is committed to providing meaningful access and will make reasonable accommodations, modifications, or provide translation, interpretation or other services upon request. Please contact us at 503-742-4545 or email [DRenhard@clackamas.us](mailto:DRenhard@clackamas.us).*

503-742-4545: ¿Traducción e interpretación? |Требуется ли вам устный или письменный перевод? | 翻译或口译? | Cần Biên dịch hoặc Phiên dịch? | 번역 또는 통역?



**Clackamas County Planning and Zoning Division  
Department of Transportation and Development**

Development Services Building  
150 Beaver Creek Road | Oregon City, OR 97045  
503-742-4500 | zoninginfo@clackamas.us  
www.clackamas.us/planning

**LAND USE APPLICATION**

**DEEMED COMPLETE**

ORIGINAL DATE SUBMITTED:	<input type="text" value="2/8/22"/>
FILE NUMBER:	<input type="text" value="Z0067-22"/>
APPLICATION TYPE:	<input type="text" value="LAND USE PERMIT TYPE II NOT OTHERWISE LISTED"/>

The Planning and Zoning Division staff deemed this application complete for the purposes of Oregon Revised Statutes (ORS) 215.427 on:

Staff Name

Title

**Comments:**

**Check one:**

The subject property is located inside an urban growth boundary. The 120-day deadline for final action on the application pursuant to ORS 215.427(1) is:

The subject property is not located inside an urban growth boundary. The 150-day deadline for final action on the application pursuant to ORS 215.427(1) is:



**Planning and Zoning**  
**Department of Transportation and Development**  
 Development Services Building  
 150 Beaver Creek Road | Oregon City, OR 97045  
 503-742-4500 | zoninginfo@clackamas.us  
 www.clackamas.us/planning

STAFF USE ONLY	
RECEIVED	
Feb 8 2022	
Clackamas County Planning & Zoning Division	Z0067-22
Staff Initials:	File Number:

# GENERAL LAND USE APPLICATION

Application Fee: \$ 960

APPLICANT INFORMATION			
Applicant name:	Applicant email:	Applicant phone:	
Applicant mailing address:	City:	State:	ZIP:
Contact person name (if other than applicant):	Contact person email:	Contact person phone:	
Contact person mailing address:	City:	State:	ZIP:

PROPOSAL
Brief description of proposal:

SITE INFORMATION		
Site address:	Comprehensive Plan designation:	Zoning district:
Map and tax lot #: <i>Township: _____ Range: _____ Section: _____ Tax Lot: _____</i> <i>Township: _____ Range: _____ Section: _____ Tax Lot: _____</i> <i>Township: _____ Range: _____ Section: _____ Tax Lot: _____</i>	Land area:	
Adjacent properties under same ownership: <i>Township: _____ Range: _____ Section: _____ Tax Lot: _____</i> <i>Township: _____ Range: _____ Section: _____ Tax Lot: _____</i>		

Printed names of all property owners:	Signatures of all property owners:	Date(s):
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<b><i>I hereby certify that the statements contained herein, along with the evidence submitted, are in all respects true and correct to the best of my knowledge.</i></b>	
Applicant signature: <i>Valerie Peterson</i>	Date: 2/7/2022

## A. Contact Planning and Zoning

This General Land Use Application form may be used to request County land use approval when Planning and Zoning has no other application form for the type of request.

To determine if you should use this form, and to know what to include with it, contact Planning and Zoning at **503-742-4500** or [zoninginfo@clackamas.us](mailto:zoninginfo@clackamas.us). You can also find information online at the Planning and Zoning website: [www.clackamas.us/planning](http://www.clackamas.us/planning).

## B. Turn in all of the following:

- Complete application:** Respond to all approval criteria relevant to your proposal and include it with this completed application form. Make sure all owners of the subject property sign the first page of this application. Applications without the signatures of *all* property owners are incomplete.
- Application fee:** Contact Planning and Zoning for the cost of this application. Payment can be made by cash, by check payable to “Clackamas County”, or by credit/debit card with an additional card processing fee using the [Credit Card Authorization Form](#) available from the Planning and Zoning website. Payment is due when the application is submitted. Refer to the adopted [Fee Schedule](#) for refund policies.
- Site plan:** Provide a site plan (also called a plot plan) if relevant to your proposal. A [Site Plan Sample](#) is available from the Planning and Zoning website. The site plan must be accurate and drawn to-scale on paper measuring no larger than 11 inches x 17 inches. The site plan must illustrate all of the following (when applicable):
  - Lot lines, lot/parcel numbers, and acreage/square footage of lots;
  - Contiguous properties under the same ownership;
  - All existing and proposed structures, fences, roads, driveways, parking areas, and easements, each with identifying labels and dimensions;
  - Setbacks of all structures from lot lines and easements;
  - Significant natural features (rivers, streams, wetlands, slopes of 20% or greater, geologic hazards, mature trees or forested areas, drainage areas, etc.); and
  - Location of utilities, wells, and all onsite wastewater treatment facilities (e.g., septic tanks, septic drainfield areas, replacement drainfield areas, drywells).
- Any additional information relevant to the application type**

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**503-742-4545:** ¿Traducción e interpretación? | Требуется ли вам устный или письменный перевод?  
翻译或口译? | Cần Biên dịch hoặc Phiên dịch? | 번역 또는 통역?



1505 Westlake Ave N, N  
Seattle, WA 98109

Phone: (206) 336-2863  
www.crowncastle.com

December 22, 2021

Clackamas County  
Development Services Building  
150 Beaver Creek Road  
Oregon City, OR 97045

Via Electronic Submittal

\*\*\*\*\*NOTICE OF ELIGIBLE FACILITIES REQUEST\*\*\*\*\*

RE: Request for Minor Modification to Existing Wireless Facility – Section 6409  
Site Address: 18281 S Fischers Mill Rd, Oregon City, 97045  
Crown Site Number: 826928 / Crown Site Name: Redland  
Customer Site Number: PO01412A / Application Number: 585093

Greetings:

On behalf of AT&T Wireless (“Applicant”), Crown Castle USA Inc. (“Crown Castle”) is pleased to submit this request to modify the existing wireless facility noted above through the collocation, replacement and/or removal of the Applicant’s equipment as an eligible facilities request for a minor modification under Section 6409<sup>1</sup> and the rules of the Federal Communications Commission (“FCC”).<sup>2</sup>

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. 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 60 day deadline 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. Please note that with the submission of this letter and enclosed items, the sixty day review period has started. Based on this filing, the deadline for issuance of approval is February 18, 2022.

The proposed scope of work for this project includes:

Installation of generator and related appurtenances as per plans for an existing carrier on an existing wireless communication facility. No tower height extension or compound expansion proposed.

<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>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).



1505 Westlake Ave N, N  
Seattle, WA 98109

Phone: (206) 336-2863  
www.crowncastle.com

At the end of this letter is a checklist of the applicable substantial change criteria under Section 6409. Additionally, please find enclosed the following information in support of this request:

- (1) Construction Drawings
- (2) Section 6409 Substantial Change Checklist.

As these documents indicate, (i) the modification involves the collocation, removal or replacement of transmission equipment; and (ii) such modification will not substantially change the physical dimensions of such tower or base station. As such, it is an “eligible facilities request” as defined in the FCC’s rules to which the 60 day deadline for approval applies. Accordingly, Applicant requests all authorization necessary for this proposed minor modification under Section 6409.

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,

*Valerie Peterson*

Valerie Peterson  
Site Acquisition Specialist  
Crown Castle  
Agent for Applicant  
(509) 714-7494  
vpeterson@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  <b>NO</b>	Does the modification increase the height of the tower by more than the greater of: (a) 10%; or (b) the height of an additional antenna array plus separation of up to 20 feet from the top of the nearest existing antenna?
YES/NO  <b>NO</b>	Does the modification add an appurtenance to the body of the tower that would protrude from the edge of the tower more than 20 feet or more than the width of the tower structure at the level of the appurtenance, whichever is greater?
YES/NO  <b>NO</b>	Does the modification involve the installation of more than the standard number of new equipment cabinets for the technology involved or add more than four new equipment cabinets?
YES/NO  <b>NO</b>	Does the modification entail any excavation or deployment outside the current site by more than 30 feet in any direction, not including any access or utility easements??
YES/NO  <b>NO</b>	Does the modification defeat the concealment elements of the eligible support structure?
YES/NO  <b>NO</b>	Does the modification violate conditions associated with the siting approval with the prior approval the 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 are area answered “NO,” then the modification does not constitute a substantial change to the existing tower under 47 C.F.R. § 1.6100.





# Building Codes Division Commercial Special Inspection Agreement

(Special inspection, testing and structural observation agreement)

**Permit Number:** B0748721

**Project Name:** PO01412A / 826928 Redland

**Project Address:** 18281 S. Fisher Mill Road, Oregon City, OR 97045

**Date:** 12/29/2021

**This agreement presents the requirements for special inspection, testing and structural observation for commercial, industrial, and multi-family construction designed following the 2014 Oregon Structural Specialty Code (the 2012 International Building Code with 2014 Oregon amendments)**

For a building permit to be issued, the owner or the owner's authorized agent shall complete and sign Sections C, D, and E of this agreement acknowledging their understanding, and intent to comply with, the requirements of the *Special Inspections and Structural Observations Program*.

In accordance with Oregon Structural Specialty Code (OSSC) Sections 107.1, 1704.2, 1704.3, and 1704.5, the structural observations and on-site special inspections have been identified in a program statement prepared by the registered design professional in responsible charge for all work that falls within the categories specifically identified in OSSC Chapter 17.

The program statement will be included within the approved construction documents, and the special inspections and structural observations will be determined and administered from this statement.

All special inspections identified within the statement presented in the approved construction documents shall be inspected or tested in accordance with the provisions of OSSC Section 1705. The special inspector shall comply with the duties and responsibilities presented in Sections II and V of the Oregon Building Officials Association (OBOA) Special Inspection Program and shall observe and document the work for conformance with the approved plans and specifications. All written results of these inspections or tests, including noncompliance lists and final summary letters, shall be provided to the Building Official and the registered design professional in responsible charge.

**Special inspections are in addition to, and do not replace, inspections required to be performed by County inspectors. Before proceeding with the project, County inspectors must approve all work after a report by the special inspector has been provided.** Example: Prior to placing concrete in a footing/foundation, approval by BOTH the special inspector and County inspector must be obtained.

The final special inspection and structural observation reports shall be submitted to the Building Codes Division a **minimum of two days prior to requesting a final inspection.** A final inspection request will not be granted until the final special inspection and structural observation reports have been deemed acceptable by the Building Codes Division.

**A - SPECIAL INSPECTION AND TESTING**

**The following inspections have been indicated within the program statement prepared by the design professional in responsible charge:**

- Inspection of Fabricators (OSSC 1704.2.5)
- Steel Construction (OSSC 1705.2)
- Concrete Construction (OSSC 1705.3)
- Masonry Construction (OSSC 1705.4)
- Wood Construction (OSSC 1705.5)
- Soils (OSSC 1705.6)
- Radon Mitigation (OSSC 1705.18)
- Post-Installed Anchors (OSSC 1705.1.1(3))
- In accordance with OSSC Section 1705.1.1, the building official has determined that the following *Special Case* inspections are required: \_\_\_\_\_
- Cast-in-Place Deep Foundations (OSSC 1705.8)
- Helical Pile Foundations (OSSC 1705.9)
- Sprayed Fire-Resistant Materials (OSSC 1705.13)
- Mastic & Intumescent Fire-Resistant Coating (OSSC 1705.14)
- EIFS (OSSC 1705.15)
- Fire-Resistant Penetrations and Joints (OSSC 1705.16)
- Smoke Control (OSSC 1705.17)
- Driven Deep Foundations (OSSC 1705.7)

**B - STRUCTURAL OBSERVATION (OSSC 1704.5)**

- Structural Observation Program is not required for this project.
- Structural observation shall be provided following the program noted in the Structural Drawings.
- The building official has determined that structural observation is required with the following frequency and extent:

\_\_\_\_\_  
\_\_\_\_\_

**C - NAMES OF PARTIES INVOLVED (To be completed by applicant)**

Please complete the following information by listing the general contractor responsible for construction and the design professionals involved in the project. **This information is provided for identification only, signatures are not required.**

Contractor: \_\_\_\_\_ Engineer of Record: Andrei Barba

Architect of Record: \_\_\_\_\_ Geotechnical Engineer: \_\_\_\_\_

**D – SELECTION OF SPECIAL INSPECTION AGENCY (To be completed by applicant)**

A special inspection agency may be chosen from any of the approved inspector lists accepted by the Building Codes Division. The Building Codes Division recognizes the agency lists published by OBOA and the Washington Association of Building Officials (WABO). The OBOA-approved agency list is provided for your convenience.

If multiple special inspections are required, and multiple agencies will be used, identify each agency and the special inspections they will perform.

- |   |   |
|---|---|
| <input type="checkbox"/> ACS Testing Inc. (503) 443-3799                  | <input type="checkbox"/> Northwest Geotechnical Inc. (503) 682-1880           |
| <input type="checkbox"/> Carlson Testing Inc. (503) 684-3460              | <input type="checkbox"/> Professional Service Industries, Inc. (503) 289-1778 |
| <input type="checkbox"/> Clair Company, Inc. (541) 758-1302               | <input type="checkbox"/> The Wallace Group, Inc. (541) 382-4707               |
| <input type="checkbox"/> Columbia West Engineering, Inc. (360) 823-2900   | <input type="checkbox"/> KE & Associates, Inc. (503)-853-9033                 |
| <input type="checkbox"/> FEI Testing and Inspections, Inc. (541) 757-4698 | <input checked="" type="checkbox"/> Krazan & Associates, Inc. (425) 485-5519  |
| <input type="checkbox"/> Materials Testing and Inspection (208) 376-4748  | <input type="checkbox"/> KPFF Special Inspection Group (503) 227-3251         |
| <input type="checkbox"/> Mayes Testing Engineers, Inc. (503) 281-7515     |   |

If the agency you desire to employ is not included within the approved lists, use the "Other" box to indicate the agency or inspector you intend to use. A written request to use this agency or individual shall be submitted to the Building Codes Division for review and approval by the Building Official. Include with this request qualifications and validations demonstrating the agency's or individual's competence to perform inspections for the types of construction in question.

Other: \_\_\_\_\_ Phone Number: \_\_\_\_\_

**E. SIGNATURE (To be completed by applicant)**

The owner/authorized agent has read the requirements of the Special Inspection and Structural Observation Program, as presented in the program statement prepared by the designer in responsible charge, and Chapter 17 of the 2014 OSSC, and agrees to comply with the terms and conditions of the program.

Owner/Authorized Agent:  Date: 12/29/2021

**F. ACCEPTED FOR THE BUILDING SERVICES DIVISION**

Plans Examiner: \_\_\_\_\_ Date: \_\_\_\_\_

For any questions pertaining to this agreement, please call (503) 742-4400.

# T-Mobile

**T-MOBILE SITE NUMBER:** PO01412A  
**T-MOBILE SITE NAME:** REDLAND  
**T-MOBILE PROJECT:** GENERATOR ADD

**BUSINESS UNIT #:** 826928  
**SITE ADDRESS:** 18281 S FISCHERS MILL ROAD  
 OREGON CITY, OR 97045  
**COUNTY:** CLACKAMAS  
**SITE TYPE:** MONOPOLE  
**TOWER HEIGHT:** 98'-0"

**T-Mobile**  
 8960 ALDERWOOD ROAD  
 PORTLAND, OR 97220

**CROWN CASTLE**  
 1505 WESTLAKE AVENUE NORTH, SUITE 800  
 SEATTLE, WA 98109

**PM&A**  
 P. MARSHALL & ASSOCIATES  
 6801 PORTWEST DR., SUITE 100  
 HOUSTON, TX 77024

**T-MOBILE SITE NUMBER:**  
**PO01412A**  
  
**BU #:** 826928  
**REDLAND**

18281 S FISCHERS MILL ROAD  
 OREGON CITY, OR 97045  
  
 EXISTING 98'-0" MONOPOLE

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DWG./QA
A	10/26/21	CS	PRELIMINARY	VT
0	10/26/21	CS	FINALS	VT
1	11/16/21	CS	CLIENT COMMENTS	VT
2	01/05/22	VT	GEN. ANCHOR CALCS.	VT

**SITE INFORMATION**

CROWN CASTLE USA INC. SITE NAME:	REDLAND
SITE ADDRESS:	18281 S FISCHERS MILL ROAD OREGON CITY, OR 97045
COUNTY:	CLACKAMAS
MAP/PARCEL #:	33E06B 01000
AREA OF CONSTRUCTION:	EXISTING
LATTITUDE:	45° 20' 42.50"
LONGITUDE:	-122° 29' 27.60"
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	357 FT
CURRENT ZONING:	SFR
JURISDICTION:	COUNTY OF CLACKAMAS, OR
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	EMMERT TERRY W 11811 SE HWY 212 CLACKAMAS, OR 97015
TOWER OWNER:	CROWN CASTLE USA, INC. 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 8960 ALDERWOOD ROAD PORTLAND, OR 97220
ELECTRIC PROVIDER:	PORTLAND GENERAL ELECTRIC 1 (800) 542-8818
TELCO PROVIDER:	FIBER APP TBD

**DRAWING INDEX**

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	OVERALL SITE PLAN
C-1.2	EXISTING PLAN
C-1.3	FINAL PLAN
C-2	EXISTING & FINAL ELEVATIONS
C-3 - C-8	EQUIPMENT SPECS <span style="border: 1px dashed red; border-radius: 50%; padding: 2px;">2</span>
E-1	ELECTRICAL SITE PLAN
E-2	ELECTRICAL ONE LINE & LOAD ANALYSIS PLAN
G-1	GROUNDING SITE PLAN
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
S-1	GENERATOR ANCHORAGE CALCULATION <span style="border: 1px dashed red; border-radius: 50%; padding: 2px;">2</span>

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.

**LOCATION MAP**

DRIVING DIRECTIONS:

**PROJECT TEAM**

A&E FIRM:	CROWN CASTLE USA INC. 2000 CORPORATE DRIVE CANONSBURG, PA 15317 CROWN.AE.APPROVAL@CROWNCastle.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS:	1505 WESTLAKE AVENUE NORTH, SUITE 800 SEATTLE, WA 98109
	ALICIA POWERS - PROJECT MANAGER (206) 336-3218
	ERIC OS Lund - CONSTRUCTION MANAGER (503) 867-0000

**NOTE:**  
 PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

**APPROVALS**

APPROVAL	SIGNATURE	DATE
PROJECT MGR	_____	_____
T-MOBILE RF ENGINEER	_____	_____
SITE ACQUISITION	_____	_____
CONSTRUCTION MGR	_____	_____
SITE OWNER	_____	_____
T-MOBILE DEVELOPMENT MGR	_____	_____
T-MOBILE CONSTRUCTION MGR	_____	_____
T-MOBILE OPS MGR	_____	_____
T-MOBILE REGULATORY REVIEW	_____	_____
T-MOBILE PROJECT MGR	_____	_____
T-MOBILE PERMITTING	_____	_____

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.

**PROJECT DESCRIPTION**

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

TOWER SCOPE OF WORK:

- NO CHANGES

GROUND SCOPE OF WORK:

- REMOVE EXISTING PPC
- REMOVE EXISTING DISCONNECT
- INSTALL NEW 48KW GENERAC RD048 DIESEL GENERATOR WITH UNDERBELLY 240 GALLON TANK ON NEW T-MOBILE 4'-0"x10'-0" GENERATOR PAD
- INSTALL SITE PRO 1 10'-0"x6'-0" ICE CANOPY OVER GENERATOR PAD WITH DIRECT BURIAL PIPES
- INSTALL NEW 200 AMP DISCONNECT ON EXISTING POLE
- INSTALL NEW H-FRAME
- INSTALL NEW 200 AMP ATS MOUNTED TO PROPOSED H-FRAME
- INSTALL 200 NEW AMP PPC CABINET W/ BUILT-IN CAM LOK BOX MOUNTED ON PROPOSED UTILITY H-FRAME
- INSTALL NEW FENCE EXTENSION TO MATCH EXISTING FENCE AROUND THE 10'-0"x16'-0" GENERATOR LEASE AREA
- INSTALL FIRE EXTINGUISHER AND ENCLOSURE

**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 TYPE	CODE
BUILDING	2019 OSSC
MECHANICAL	2019 OMSC
ELECTRICAL	2021 OESC
FIRE	2019 OREGON FIRE CODE

REFERENCE DOCUMENTS:

ORDER ID: 585093  
 REVISION: 0

**REGISTERED PROFESSIONAL ENGINEER**  
 92768PE  
 OREGON  
 CHAD WILHOIT  
 01/06/2022  
 EXPIRES: 6/30/2022

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.

**PM&A JOB #:**  
**21CCT7M-127**

<b>SHEET NUMBER:</b> <b>T-1</b>	<b>REVISION:</b> <b>2</b>
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**CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:**

- 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 ON-SITE 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).
- 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.
- 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.
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS. LATEST APPROVED REVISION.
- 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.
- 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.
- 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.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- 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.
- 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.
- 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 OWNER.
- 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- 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.

**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-POTENTIAL 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 TESTING RESULTS.
- METAL CONDUIT AND TRAY SHALL BE GROUNDING 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.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
- COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
- ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
- APPROVED ANTI-OXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
- 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.
- 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).
- 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).

**GENERAL NOTES:**

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION  
CARRIER: T-MOBILE  
TOWER OWNER: CROWN CASTLE USA INC.
- 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 WORK 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (F<sub>c</sub>) 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 PLACEMENT.
- 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 (F<sub>y</sub>) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:  
#4 BARS AND SMALLER..... 40 ksi  
#5 BARS AND LARGER..... 50 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..... 3"  
CONCRETE EXPOSED TO EARTH OR WEATHER:  
#6 BARS AND LARGER..... 2"  
#5 BARS AND SMALLER..... 1-1/2"  
CONCRETE NOT EXPOSED TO EARTH OR WEATHER:  
SLAB AND WALLS..... 3/4"  
BEAMS AND COLUMNS..... 1-1/2"
- 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.

**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.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- 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.  
4.2. 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. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADAPTED 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.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- ALL POWER AND CONTROL 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.
- 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.
- POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- 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 (190° F IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
- ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90S AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
- SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- 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.
- 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 BETTER) FOR EXTERIOR LOCATIONS.
- 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.
- NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (LATEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- 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.
- 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.
- INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "T-MOBILE".
- ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

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

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

**ABBREVIATIONS:**

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRI	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

**APWA UNIFORM COLOR CODE:**

	PROPOSED EXCAVATION
	TEMPORARY SURVEY MARKINGS
	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
	POTABLE WATER
	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
	SEWERS AND DRAIN LINES

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SEATTLE, WA 98109

**PM&A**  
P. MARSHALL & ASSOCIATES  
6801 PORTWEST DR., SUITE 100  
HOUSTON, TX 77024

T-MOBILE SITE NUMBER:  
**PO01412A**  
  
BU #: 826928  
**REDLAND**

18281 S FISCHERS MILL ROAD  
OREGON CITY, OR 97045

EXISTING 98'-0" MONOPOLE

**ISSUED FOR:**

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2	01/05/22	VT	GEN. ANCHOR CALCS.	VT

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PM&A JOB #:  
**21CCT7M-127**

SHEET NUMBER: <b>T-2</b>	REVISION: <b>2</b>
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**SITE PLAN DISCLAIMER:**  
 PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM GOOGLE EARTH. CROWN CASTLE USA INC. HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET.

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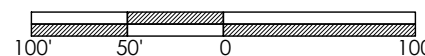


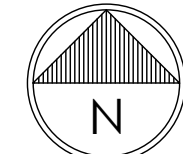
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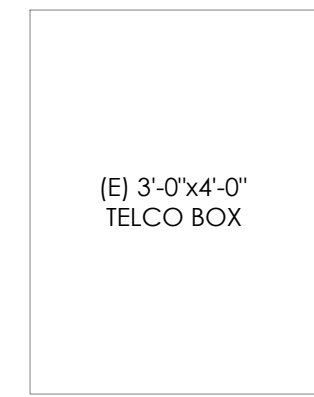
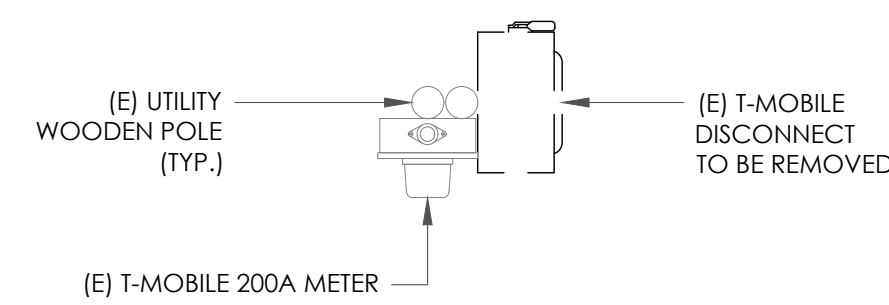
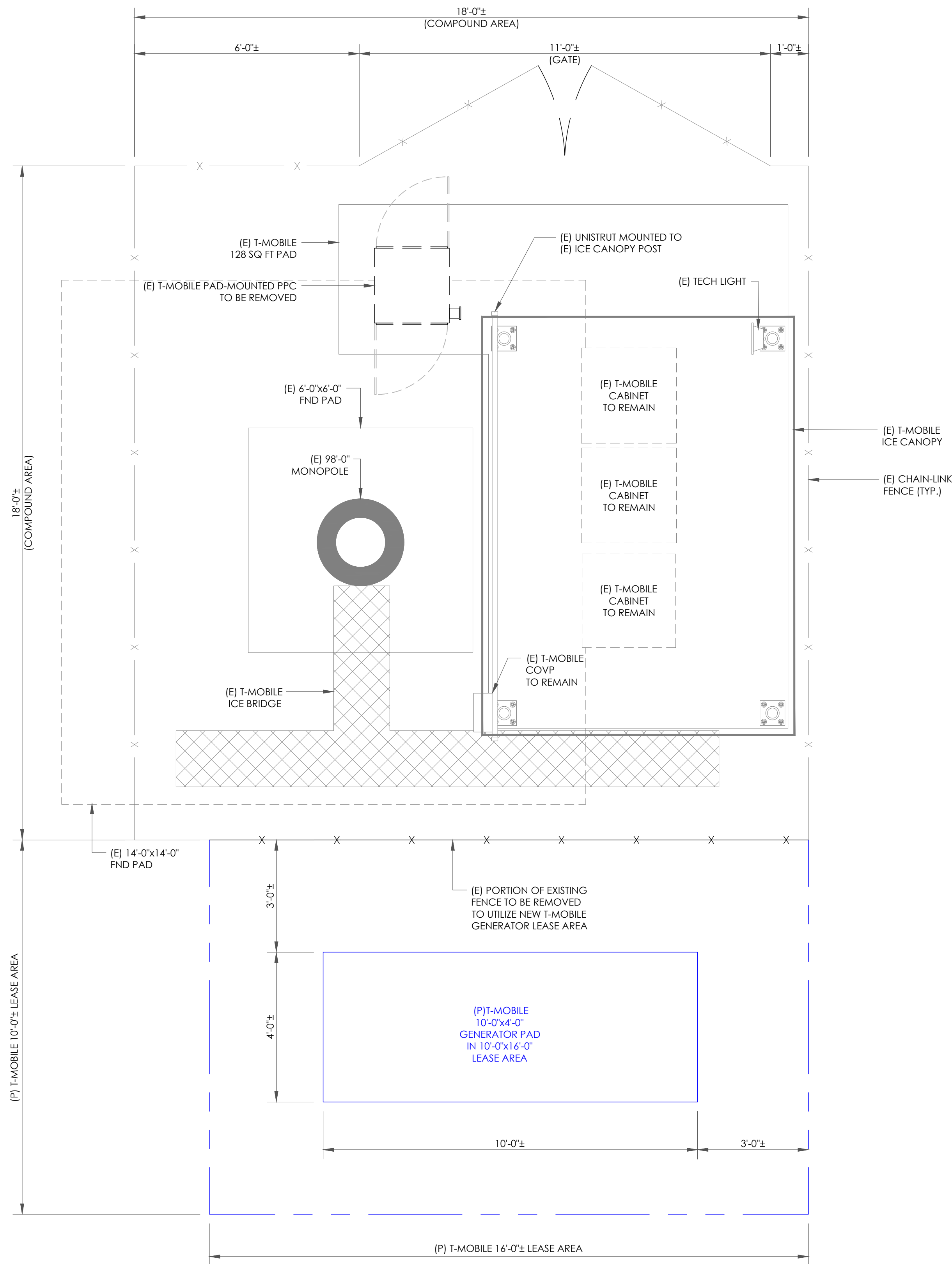
SHEET NUMBER: **C-1.1** REVISION: **2**



1 OVERALL SITE PLAN  
 SCALE:  1" = 100'-0" (FULL SIZE)  
 1" = 200'-0" (11x17)



DECOMMISSION OF WORK:  
 • REMOVE EXISTING PPC  
 • REMOVE EXISTING DISCONNECT



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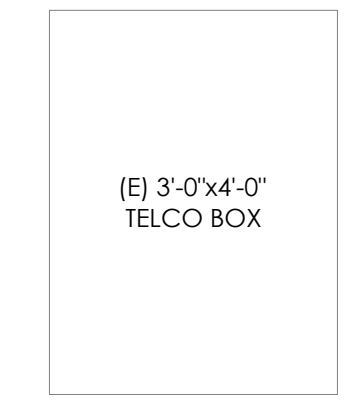
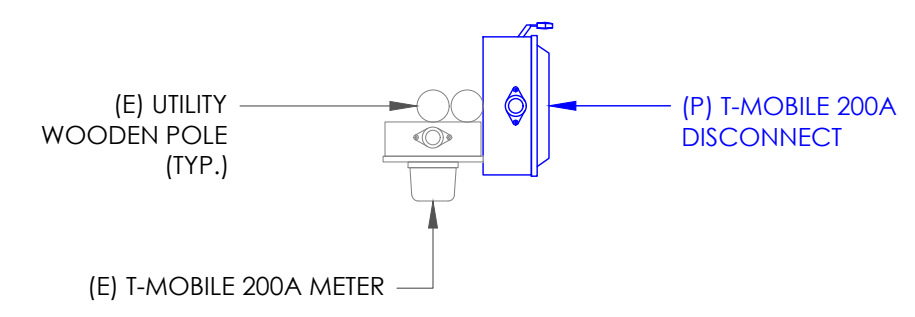
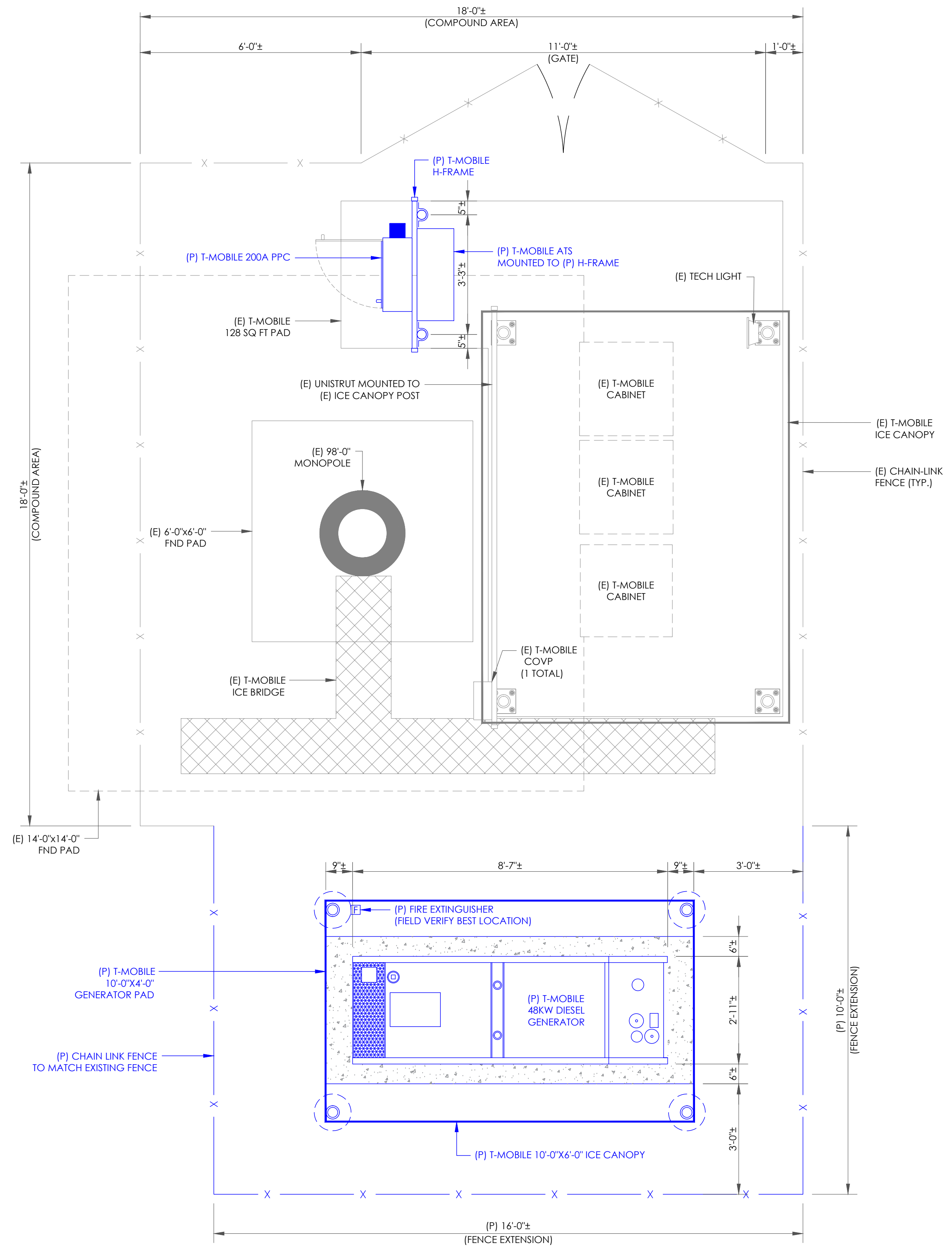
1 EXISTING PLAN  
 SCALE: 1/2"=1'-0" (FULL SIZE)  
 1/4"=1'-0" (11x17)



**GROUND SCOPE OF WORK:**

- INSTALL NEW 48KW GENERAC RD048 DIESEL GENERATOR WITH UNDERBELLY 240 GALLON TANK ON NEW T-MOBILE 4'-0"x10'-0" GENERATOR PAD
- INSTALL SITE PRO 1 10'-0"x6'-0" ICE CANOPY OVER GENERATOR PAD WITH DIRECT BURIAL PIPES
- INSTALL NEW 200 AMP DISCONNECT ON EXISTING POLE
- INSTALL NEW H-FRAME
- INSTALL NEW 200 AMP ATS MOUNTED TO PROPOSED H-FRAME
- INSTALL 200 NEW AMP PPC CABINET W/ BUILT-IN CAM LOCK BOX MOUNTED ON PROPOSED UTILITY H-FRAME
- INSTALL NEW FENCE EXTENSION TO MATCH EXISTING FENCE AROUND THE 10'-0"x16'-0" GENERATOR LEASE AREA
- INSTALL FIRE EXTINGUISHER AND ENCLOSURE

**NOTE:**  
NEW FENCE PLACEMENT LOCATION TO BE FIELD VERIFY BY GENERAL CONTRACTOR PRIOR TO CONSTRUCTION. EXISTING SHRUBS/TREES TO BE CLEARED OUT IF REQUIRED.



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REGISTERED PROFESSIONAL ENGINEER  
92768PE  
OREGON  
CHAD WILHOTT  
01/06/2022  
EXPIRES: 6/30/2022

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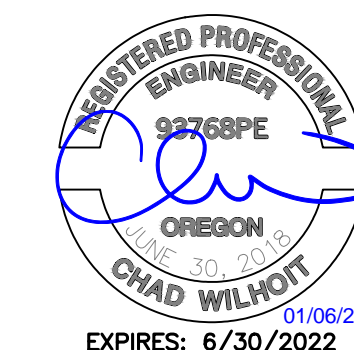
BU #: **826928**  
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EXISTING 98'-0" MONOPOLE

**ISSUED FOR:**

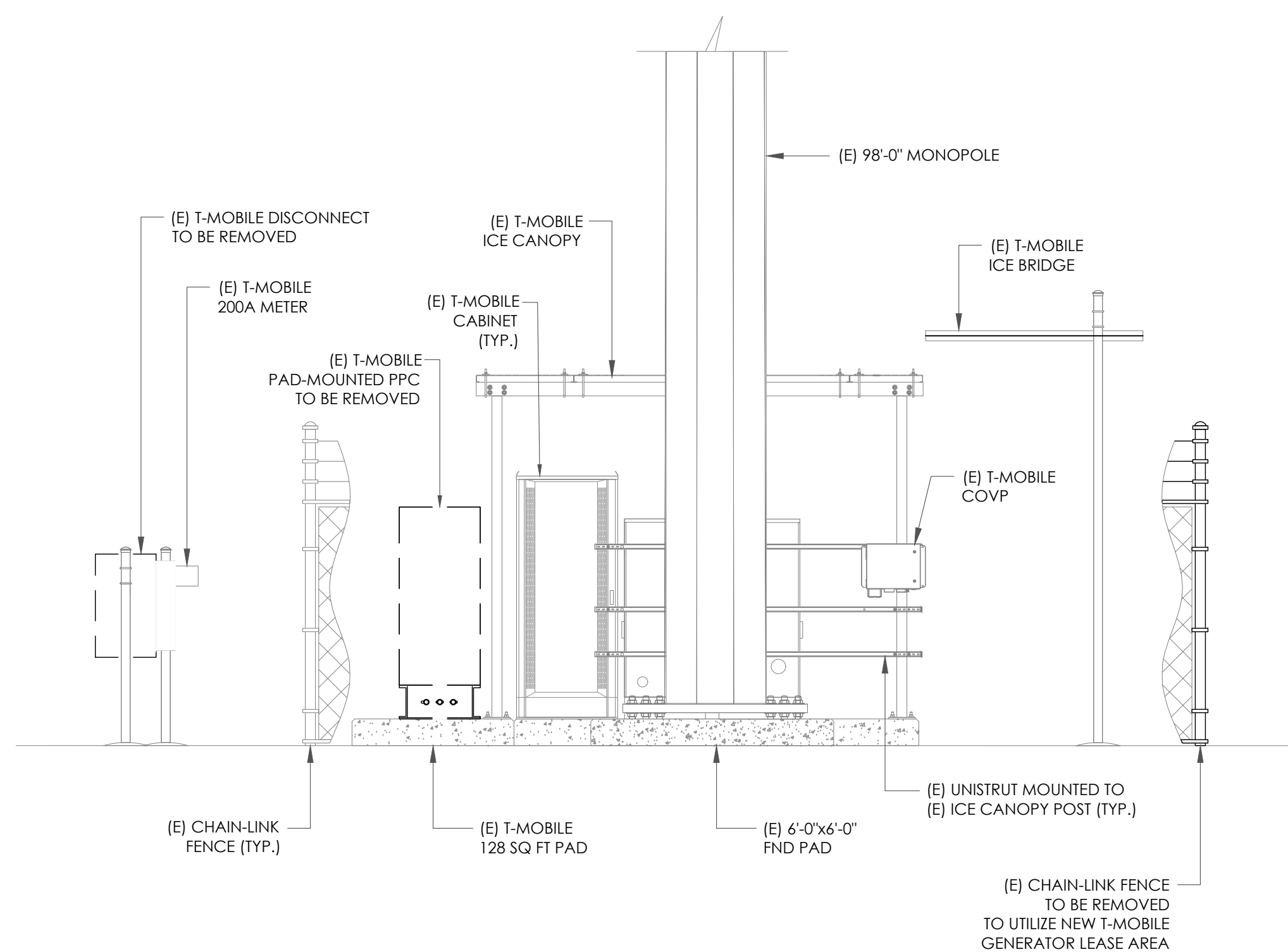
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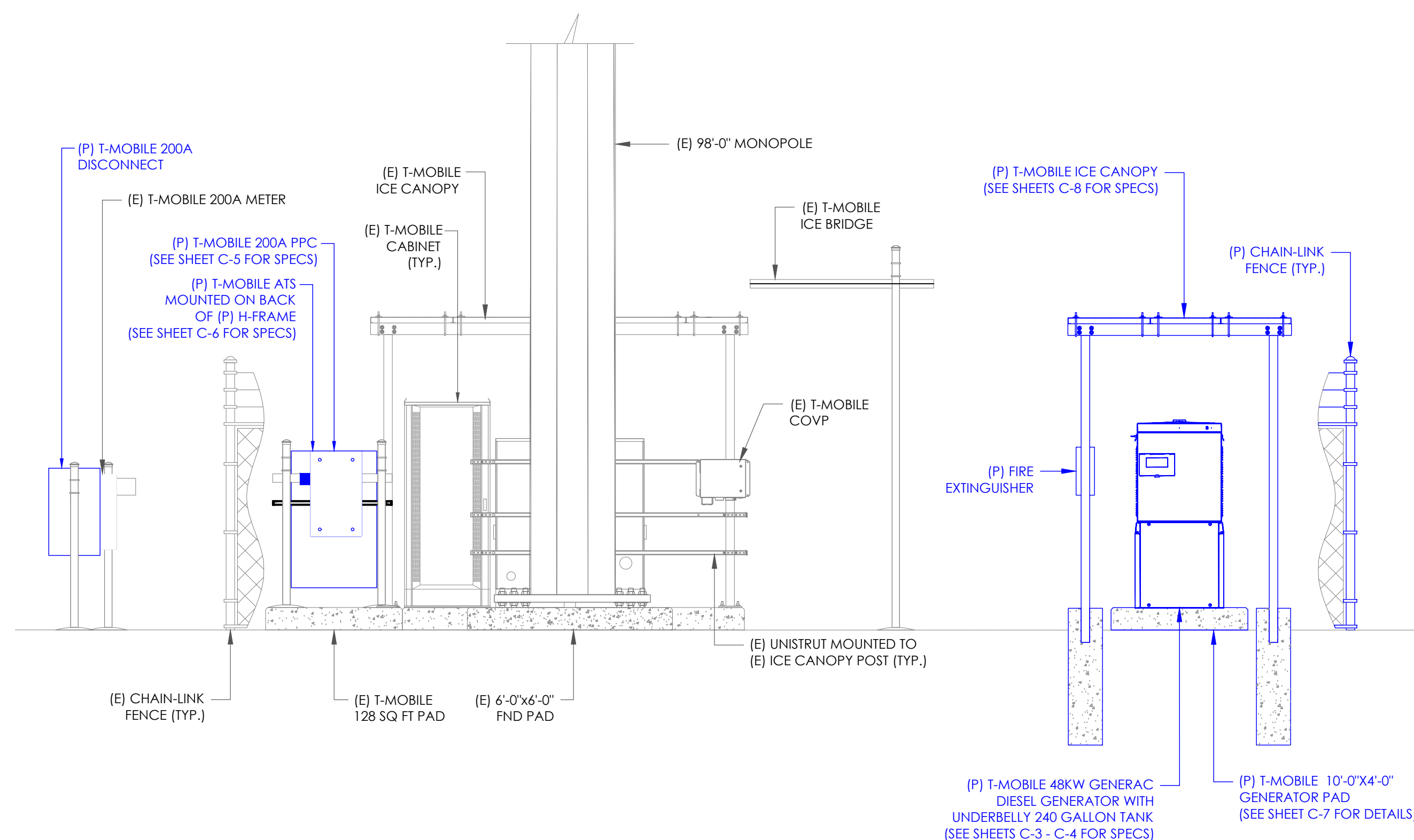
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SHEET NUMBER: **C-2** REVISION: **2**



**1** EXISTING EQUIPMENT ELEVATION (WEST VIEW)  
SCALE: 1"=3'-0" (FULL SIZE)  
1"=6'-0" (11x17)



**2** FINAL EQUIPMENT ELEVATION (WEST VIEW)  
SCALE: 1"=3'-0" (FULL SIZE)  
1"=6'-0" (11x17)

**"LOOK UP" - CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENTS**

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.

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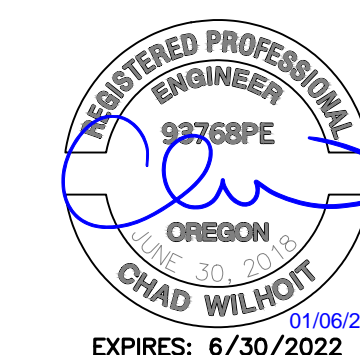
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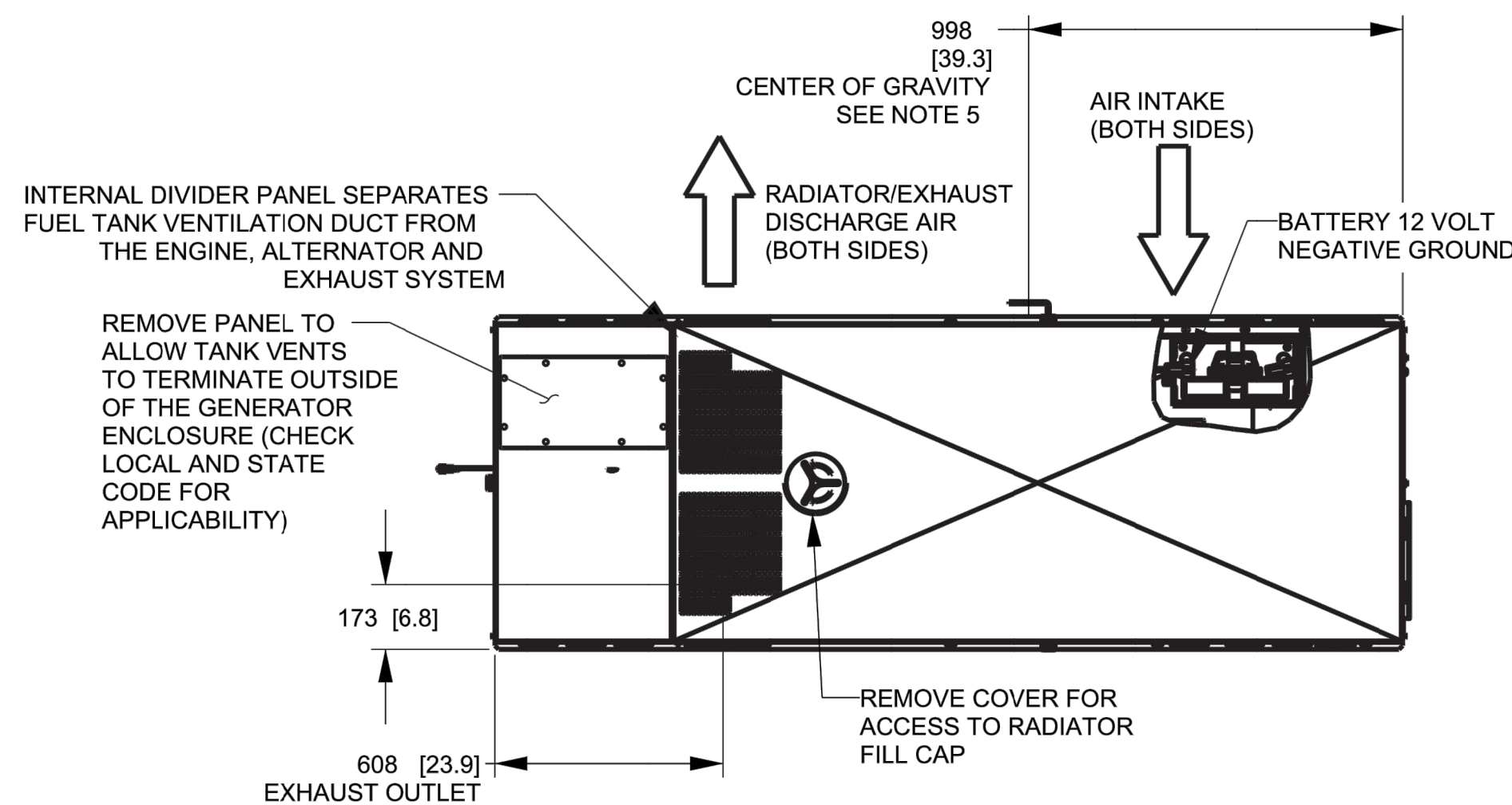
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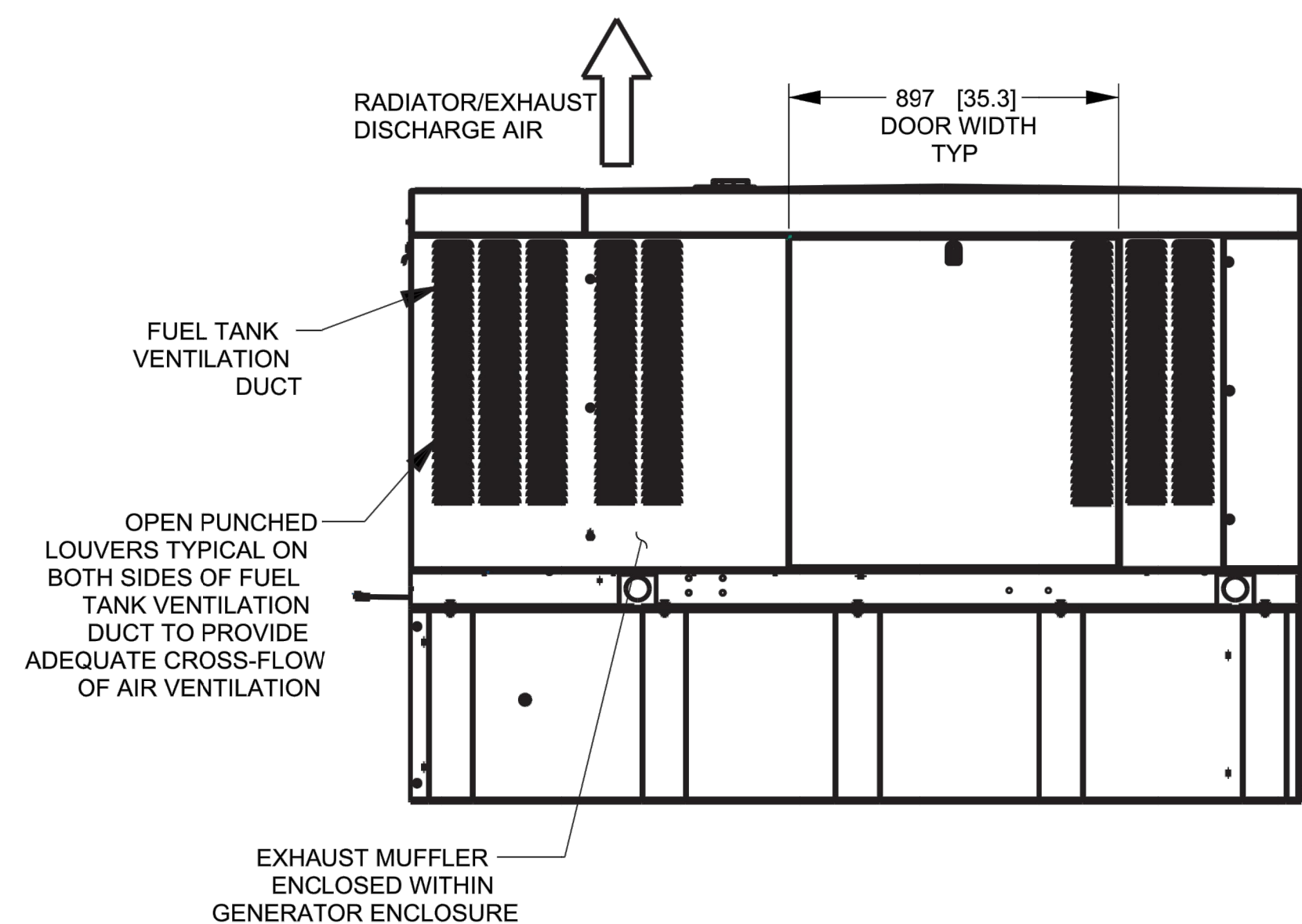
SHEET NUMBER: **C-3** REVISION: **2**

**15 • 20 • 30 • 48 • 50 KW**  
**D3.3L G16 132 Gal Tank (1 of 2)**

**GENERAC**  
**Installation Drawings**



TOP VIEW



LEFT SIDE VIEW

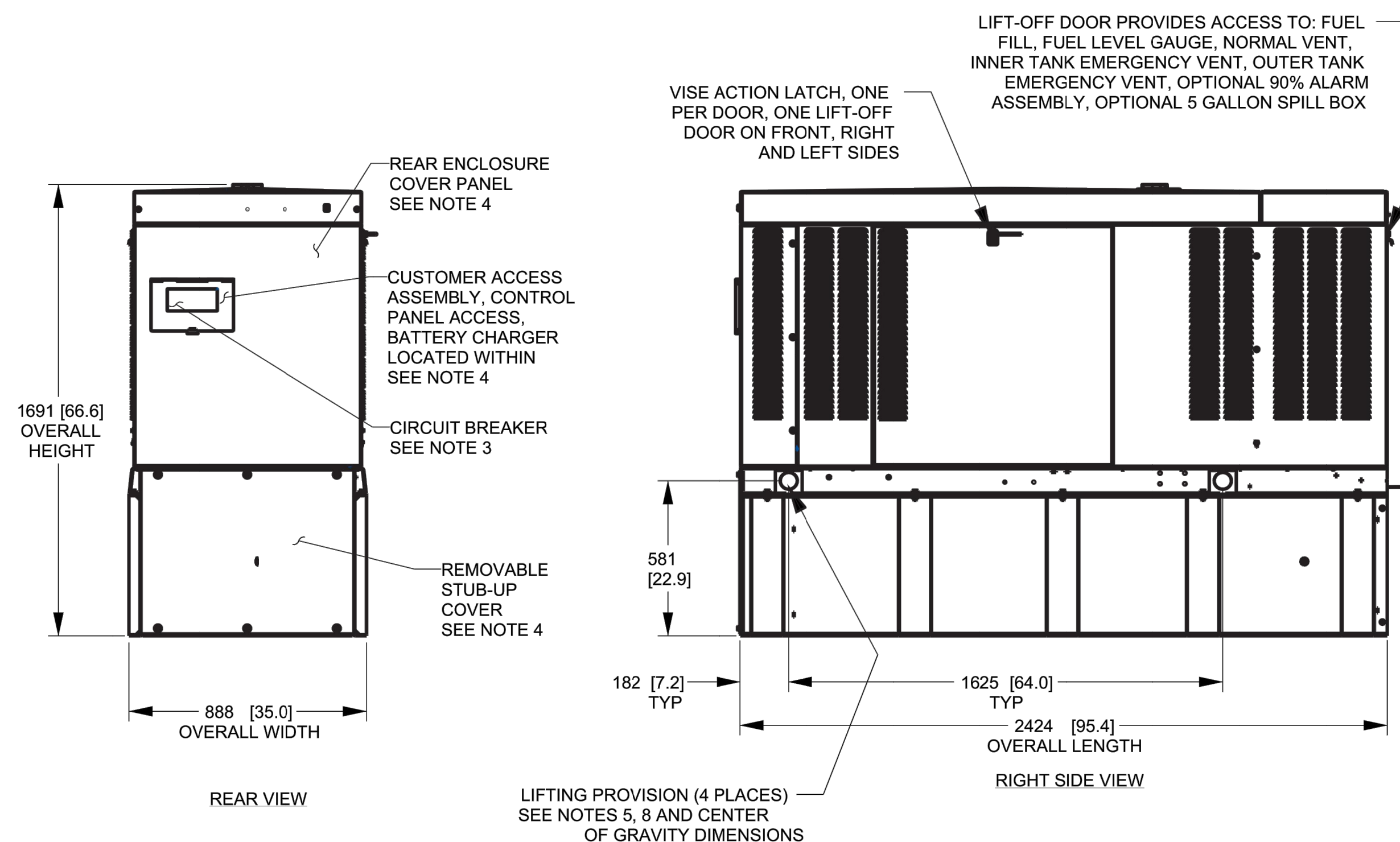
SERVICE ITEM	D3.3L	WEIGHT DATA WITH EMPTY BASETANK (SEE NOTE 5)
OIL FILL CAP	LEFT	
OIL DIP STICK	LEFT	GENERATOR AS SHOWN [1102 [2429]
OIL FILTER	LEFT	WITH WOODEN SHIPPING SKID [1147 [2529]
OIL DRAIN HOSE	RIGHT	
RADIATOR DRAIN HOSE	RIGHT	
COOLANT RECOVERY BOTTLE	RIGHT	
RADIATOR FILL CAP ACCESS	ROOF	
AIR CLEANER ELEMENT	RIGHT	
MUFFLER	FRONT	
FAN BELT	EITHER	
BATTERY	RIGHT	

WEIGHT: KG [LBS]  
DIMENSIONS: MM [INCH]

REFERENCE OWNERS MANUAL FOR PERIODIC REPLACEMENT PART LISTINGS

NOTES:

- MINIMUM RECOMMENDED CONCRETE PAD SIZE: 1194 (47") WIDE X 2718 (107") LONG. REFERENCE INSTALLATION GUIDE SUPPLIED WITH UNIT FOR CONCRETE PAD GUIDELINES
- ALLOW SUFFICIENT ROOM ON ALL SIDES OF THE GENERATOR FOR MAINTENANCE AND SERVICING. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
- CONTROL PANEL / CIRCUIT BREAKER INFORMATION:  
- SEE SPECIFICATION SHEET OR OWNERS MANUAL  
- ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR
- REMOVE THE REAR TANK AND REAR ENCLOSURE COVER PANEL TO ACCESS THE STUB-UP AREAS AS FOLLOWS:  
- HIGH VOLTAGE CONNECTION INCLUDING AC LOAD LEAD CONDUIT CONNECTION NEUTRAL CONNECTION, BATTERY CHARGER 120 VOLT AC (0.5 AMP MAX) CONNECTION.  
- LOW VOLTAGE CONNECTIONS INCLUDING TRANSFER SWITCH CONTROL WIRES
- CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
- ENGINE SERVICE CONNECTIONS  
OIL DRAIN: 3/8" NPT  
EXHAUST OUTLET: 2" O.D.
- BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
- REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
- MOUNTING BOLTS OR STUDS TO CONCRETE PAD SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)



REAR VIEW

RIGHT SIDE VIEW

LIFTING PROVISION (4 PLACES)  
SEE NOTES 5, 8 AND CENTER OF GRAVITY DIMENSIONS



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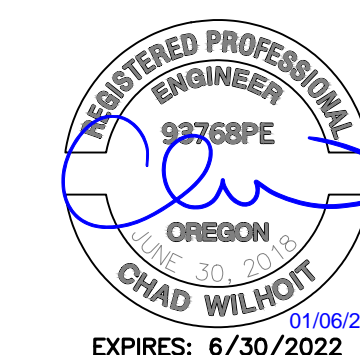
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**REDLAND**

18281 S FISCHERS MILL ROAD  
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EXISTING 98'-0" MONOPOLE

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**21CCT7M-127**

SHEET NUMBER:  
**C-4**

REVISION:  
**2**

**GENERAC**

**15 • 20 • 30 • 48 • 50 kW**

**Application and Engineering Data**

**ENGINE SPECIFICATIONS: 15 & 20 kW**

Make	Mitsubishi
Model	In-line
Cylinders	4
Displacement (Liters)	2.5
Bore (in / mm)	3.46 / 88
Stroke (in / mm)	4.06 / 103
Compression Ratio	22:1
Intake Air System	Naturally aspirated
Cylinder Head Type	Cast iron OHV
Piston Type	Aluminum

**ENGINE LUBRICATION SYSTEM**

Oil Pump Type	Gear
Oil Filter Type	Full flow spin-on canister
Crankcase Capacity (quarts / Liters)	6.87 / 6.5—15 & 20 kW 11.2 / 10.6—30 kW 11.6 / 11—48 & 50 kW

**ENGINE COOLING SYSTEM**

Water Pump	Pre-lubed, self-sealing
Fan Speed (rpm)	2376—15 & 20 kW 1980—30 kW 2340—48 & 50 kW
Fan Diameter (in / mm)	18.11 / 460 (15 & 20 kW) 18 / 457.2 (30 kW) 17 / 431.8 (48 & 50 kW)
Fan Mode	Pusher

**FUEL SYSTEM**

Fuel Type	Ultra low sulfur diesel fuel
Fuel Pump Type	Mechanical engine driven gear
Injector Type	Mechanical
Fuel Supply Line (mm / in)	7.94 / 0.31 (ID)
Fuel Return Line (mm / in)	N/A—15 & 20 kW 4.76 / 0.19 (ID)—30 kW 7.94 / 0.31 (ID)—48 & 50 kW
Fuel Specification	ASTM
Fuel Filtering (microns)	6—15 & 20 kW 25—30 kW 6—48 & 50 kW

**WEIGHTS AND DIMENSIONS**

kW size	Tank size	Weight (lb / kg)	Dimensions (L x W x H) (in / cm)	
			15%	30%
15 kW	32 Gal	1528 / 693	81 x 31 x 51 / 206 x 79 x 129	
	95 Gal	1757 / 797	81 x 31 x 61 / 206 x 79 x 165	
20 kW	32 Gal	1528 / 693	81 x 31 x 51 / 206 x 79 x 129	
	95 Gal	1757 / 797	81 x 31 x 61 / 206 x 79 x 165	
30 kW	57 Gal	1857 / 842	95 x 35 x 59 / 241 x 89 x 150	
	132 Gal	2070 / 939	95 x 35 x 68 / 241 x 89 x 173	
48 & 50 kW	57 Gal	2215 / 1102	95 x 35 x 57 / 241 x 89 x 145	
	132 Gal	2429 / 1102	95 x 35 x 66 / 241 x 89 x 168	

**ENGINE SPECIFICATIONS: 30 kW**

Make	Perkins
Model	In-line
Cylinders	4
Displacement (Liters)	2.2
Bore (in / mm)	3.30 / 84
Stroke (in / mm)	3.94 / 100
Compression Ratio	23.3:1
Intake Air System	Turbocharged / aftercooled
Cylinder Head Type	Cast iron OHV
Piston Type	Aluminum

**ENGINE SPECIFICATIONS: 48 & 50 kW**

Make	Mitsubishi
Model	In-line
Cylinders	4
Displacement (Liters)	3.3
Bore (in / mm)	3.70 / 94
Stroke (in / mm)	4.72 / 120
Compression Ratio	19:1
Intake Air System	Turbocharged / Aftercooled
Cylinder Head Type	Cast iron OHV
Piston Type	Aluminum

**GENERAC**

**15 • 20 • 30 • 48 • 50 kW**

**Application and Engineering Data**

**TANK SPECIFICATIONS**

kW size		Total Capacity		Usable Capacity		Run Time at 1/2 Load (hrs)
		gal / L	33.5 / 127	32 / 121	39	
15 kW	32 Gal Tank (gal / L)	32 / 121	33.5 / 127	32 / 121	39	
	95 Gal Tank (gal / L)	95 / 359.6	98.5 / 372.9	95 / 359.6	115.8	
20 kW	32 Gal Tank (gal / L)	32 / 121	33.5 / 127	32 / 121	31	
	95 Gal Tank (gal / L)	95 / 359.6	98.5 / 372.9	95 / 359.6	92.2	
30 kW	57 Gal Tank (gal / L)	57 / 215	61 / 233	57 / 215	41.6	
	132 Gal Tank (gal / L)	132 / 500	138.5 / 524	132 / 500	96.4	
48 & 50 kW	57 Gal Tank (gal / L)	57 / 215	62 / 234.7	57 / 215	28.2	
	132 Gal Tank (gal / L)	132 / 500	138.5 / 524	132 / 500	65.3	

**GENERATOR OUTPUT VOLTAGE / KW-60 HZ**

Model	Voltage	kW (standby)		kW (Prime)		CB Size
		Amp (standby)	Amp (Prime)	Amp (standby)	Amp (Prime)	
RD015	120/240 V, 1.0 pf	15	62	12	50	70
	120/208 V, 3.0, 0.8 pf	15	52	12	42	60
RD020	120/240 V, 3.0, 0.8 pf	15	45	12	36	50
	120/240 V, 1.0, 1.0 pf	20	83	16	67	100
RD030	120/240 V, 3.0, 0.8 pf	20	69	16	56	80
	120/240 V, 1.0, 1.0 pf	30	125	24	100	150
RD048	120/240 V, 3.0, 0.8 pf	30	104	24	83	125
	120/240 V, 1.0, 1.0 pf	30	90	24	72	100
RD050	120/240 V, 3.0, 0.8 pf	30	45	24	36	50
	120/240 V, 1.0, 1.0 pf	48	200	38.4	183	200
RD050	120/208 V, 3.0, 0.8 pf	50	173	40	153	200
	120/240 V, 3.0, 0.8 pf	50	150	40	132	175
RD050	120/240 V, 1.0, 1.0 pf	50	75	40	66	90
	277/480 V, 3.0, 0.8 pf	50	75	40	66	90

**SURGE CAPACITY IN AMPS**

Model	Voltage	Voltage Dip @ < 0.4 pf	
		15%	30%
RD015	120/240 V, 1.0	53	129
	120/208 V, 3.0	37	90
RD020	120/240 V, 3.0	32	78
	120/240 V, 1.0	87	211
RD030	120/240 V, 3.0	59	143
	120/240 V, 1.0	51	124
RD048	120/240 V, 1.0	66	168
	120/208 V, 3.0	59	144
RD050	120/240 V, 3.0	51	125
	277/480 V, 3.0	26	64
RD050	120/240 V, 1.0	69	189
	120/208 V, 3.0	90	218
RD050	120/240 V, 3.0	78	189
	277/480 V, 3.0	36	87

**ENGINE FUEL CONSUMPTION**

Model	Load	gal / hr		L / hr	
		0.60	2.27	0.60	2.27
RD015	25% of rated load	0.60	2.27	0.60	2.27
	50% of rated load	0.85	3.22	0.85	3.22
	75% of rated load	1.10	4.16	1.10	4.16
RD020	100% of rated load	1.46	5.53	1.46	5.53
	25% of rated load	0.77	2.9	0.77	2.9
	50% of rated load	1.03	3.90	1.03	3.90
RD030	75% of rated load	1.46	5.53	1.46	5.53
	100% of rated load	1.97	7.46	1.97	7.46
	25% of rated load	0.97	3.67	0.97	3.67
RD048	50% of rated load	1.37	5.19	1.37	5.19
	75% of rated load	1.97	7.46	1.97	7.46
	100% of rated load	2.77	10.49	2.77	10.49
RD050	25% of rated load	1.23	4.66	1.23	4.66
	50% of rated load	2.02	7.66	2.02	7.66
	75% of rated load	3.02	11.43	3.02	11.43
RD050	100% of rated load	4.02	15.22	4.02	15.22

**15 • 20 • 30 • 48 • 50 kW**

**GENERAC**

**Operating Data**

**ENGINE COOLING**

	15 kW	20 kW	30 kW	48 kW & 50 kW
Air flow (inlet air including alternator and combustion air in cfm / cmm)	2750 / 78	2750 / 78	2800 / 79	2824 / 80
System coolant capacity (gal / Liters)	3.0 / 11.4	3.0 / 11.4	2.5 / 9.5	3.0 / 11.4
Heat rejection to coolant (BTU per hr / MJ per hr)	95,220 / 100.5	95,220 / 100.5	128,638 / 135.7	135,900 / 143.4
Maximum operation air temperature on radiator (°C / °F)	50 / 122			
Maximum ambient temperature (°C / °F)	50 / 122			

**COMBUSTION REQUIREMENTS**

Flow at rated power (cfm / cmm)	86.3 / 2.4	86.3 / 2.4	88 / 2.5	190 / 5.38
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**SOUND EMISSIONS**

Sound output in dB(A) at 23 ft (7 m) with generator in exercise mode*	65
Sound output in dB(A) at 23 ft (7 m) with generator operating at normal load*	70

**EXHAUST**

Exhaust flow at rated output (cfm / cmm)	98.88 / 2.8	98.88 / 2.8	296.6 / 8.4	448 / 12.7
Exhaust temperature at rated output (°C / °F)	482 / 900	482 / 900	499 / 930	499 / 930

**ENGINE PARAMETERS**

Rated Synchronous Rpm	1800
HP at rated kW	26.4      33.5      49      85

**POWER ADJUSTMENT FOR AMBIENT CONDITIONS**

Temperature Deration .....3% for every 5 °C above 25 °C or 1.7% for every 5 °F above 77 °F  
 Altitude Deration (15, 30, 48, and 50 kW) .....1% for every 100 m above 915 m or 3% for every 1,000 ft above 3,000 ft  
 Altitude Deration (20 kW) .....1% for every 100 m above 305 m or 3% for every 1,000 ft above 1,000 ft

**CONTROLLER FEATURES**

2-Line Plain Text Multilingual LCD Display ..... Simple user interface for ease of operation  
 Mode Buttons: Auto ..... Automatic Start on Utility Failure. Programmable 7 day exerciser  
 Manual ..... Start with starter control, unit stays on. If utility fails, transfer to load takes place  
 Off ..... Stops unit. Power is removed. Control and charger still operate  
 Ready to Run/Maintenance Message ..... Standard  
 Engine Run Hours Indication ..... Standard  
 Programmable start delay between 2-1500 seconds ..... Standard (programmable by dealer only)  
 Utility Voltage Loss/Return to Utility Adjustable ..... From 140-171 V/190-216 V  
 Future Set Capable Exerciser/Exercise Set Error Warning ..... Standard  
 Run/Alarm/Maintenance Logs ..... 50 Events Each  
 Engine Start Sequence ..... Cyclic cranking: 16 sec on, 7 rest (90 sec maximum duration)  
 Starter Lock-out ..... Starter cannot re-engage until 5 seconds after engine has stopped  
 Smart Battery Charger ..... Standard  
 Charger Fault/Missing AC Warning ..... Standard  
 Low Battery/Battery Problem Protection and Battery Condition Indication ..... Standard  
 Automatic Voltage Regulation with Over and Under Voltage Protection ..... Standard  
 Under-Frequency/Overload/Stepper Overcurrent Protection ..... Standard  
 Safety Fused/Fuse Protection ..... Standard  
 Automatic Low Oil Pressure ..... Standard  
 Overcrank/Overspeed (@ 72 Hz)/rpm Sense Loss Shutdown ..... Standard  
 High Engine Temperature Shutdown ..... Standard  
 Internal Fault/Incorrect Wiring Protection ..... Standard  
 Common External Fault Capability ..... Standard  
 Field Upgradable Firmware ..... Standard  
 Low Coolant Level Shutdown ..... Standard

# MP Series

Power Transfer Centers (ICL Option)

The MP Series consolidates AC service entrance power components into a single enclosure. Integrated components include mechanically interlocked main breakers enabling manual transfer between the utility and emergency power sources, Strikesorb® surge protection, Square D load center, and an optional Cam-Lok style generator receptacle.

### Space-saving Power Transfer Center is Versatile and Built for Long-lasting, Reliable Performance

- Use as stand-alone service entrance panel or distribution sub-panel
- Install on an H-frame or wall
- Available with an optional pad mount or pad-lockable telco demarcation box
- Dead front switch board listed for 200 A, 1Ø or 3Ø
- Standard designs for 100 and 200 amp applications; custom designs available for 60 amps to 200 amps

### Manual Transfer Switch

- Mechanically interlocked – prevents the utility and generator sources from being closed at the same time
- Main source “utility” breaker is rated 65 kAIC, alternate “generator” source breaker is rated 10 kAIC. Both breakers offer the “push-to-trip” red dot test feature
- Transfer switch is constructed of 14-gauge steel

### Surge-Protected Loads from a 30- or 42-circuit Square D Panel Board

- Strikesorb protection
  - Protection characteristics remain unchanged throughout service life
  - Loads are never left unprotected, as Strikesorb operates to a short circuit and trips main disconnect breaker in the event of a long duration, catastrophic over-voltage event
- Load center accepts both bolt-on and plug-in branch circuit breakers

### NEMA 3R Enclosure

- A stainless steel reinforced gasket “grips” the metal flange inside of the panel to provide a three-point seal for strengthened weatherproofing
- Factory punched for ease of installation. Knockouts outline on back of panel simplify routing of power and grounding cables
- Ships with UL-recognized plugs to maintain the enclosure’s NEMA 3R rating

For more information contact Intersect at [solutions@intersectinc.com](mailto:solutions@intersectinc.com).



Actual product may vary from photograph. Please request product drawings from [solutions@intersectinc.com](mailto:solutions@intersectinc.com)

Product No	Product Configuration
MP1220030	120/240; 1Ø; 200 A; 1Ø; MTS; Strikesorb; 30-position load center
MP1220042	120/240; 1Ø; 200 A; 1Ø; MTS; Strikesorb; 42-position load center
MP3320042	120/208; 3Ø; 200 A; 3Ø; MTS; Strikesorb; 42-position load center
ICL	Cam-Lok style engine generator connection panel factory mounted on left (-C-L) or on right (-C-R) side of MP Series panel.

### General Data

Enclosure weight & dimensions  
Varies by service voltage, amperage and options. Please request specific panel dimensions for the MP Series.

### Enclosure

- NEMA 3R
- 0.125" thick aluminum

### Powder coat paint

UL Pantone (Cod Gray) TGIC polyester

### Door

- 3-point latching system with 3-point seal
- Pad-lockable

### UL certification

- UL 50 – Enclosure for electrical equipment
- UL 891 – Dead front switch boards
- Service entrance rated

Manufacturer’s warranty

### Suppression Technology

Technology type

Strikesorb 40mm, 120 V modules (one per phase, L-N)

UL certification

UL 1449 3rd Edition

Nominal operating voltage

120 V

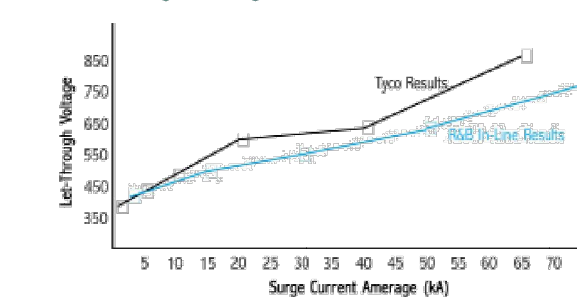
Suppressed voltage rating (SVR)

UL 1449, Feb 2007 tested <500 V

Maximum continuous operating voltage (MCOV)

150 V

Let through voltage



### Load Center

Load center type

Square D

Circuit breaker positions

30 or 42

Circuit breaker type

Square D – Bolt-on or plug-in branch devices

### Transfer Device

Type

Mechanical interlock

### Available interrupt current (AIC)

UL Recognized for direct installation behind any breaker in any circuit with an AIC rate of 85 kA rms without use of additional fusing. UL Recognized for direct installation in any circuit having an available fault current up to 200,000 A rms, when protected by a 4000 A Class L fuse.

### Remote alarming

Form “C” relay

### Multiple surge resilience

2,000 hits at 10 kA (8/20 µs) (Represents the ability to withstand multiple strikes with less than a 5% change in characteristics.)

### Long duration surge performance

250 hits at 500 A, 2 msec squared waveform (IEEE C62.11)

Intersect, Inc.

All specifications subject to change without notice. Strikesorb® is a registered trademark of Raycap Corporation. © Intersect, Inc. 2003-2015. Rev 041515.

P.O. Box 753 – Liberty Lake WA 9901 – USA  
Phone: 509.255.9570 or 800.910.3735 – Fax: 509.255.6034  
[www.intersectinc.com](http://www.intersectinc.com)

Intersect, Inc.

Quality products. Premium customer care. Integrated solutions.

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T-MOBILE SITE NUMBER:  
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BU #: **826928**  
**REDLAND**

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OREGON CITY, OR 97045

EXISTING 98'-0" MONOPOLE

### ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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0	10/26/21	CS	FINALS	VT
1	11/16/21	CS	CLIENT COMMENTS	VT
2	01/05/22	VT	GEN. ANCHOR CALCS.	VT



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**21CCT7M-127**

SHEET NUMBER:  
**C-5**

REVISION:  
**2**

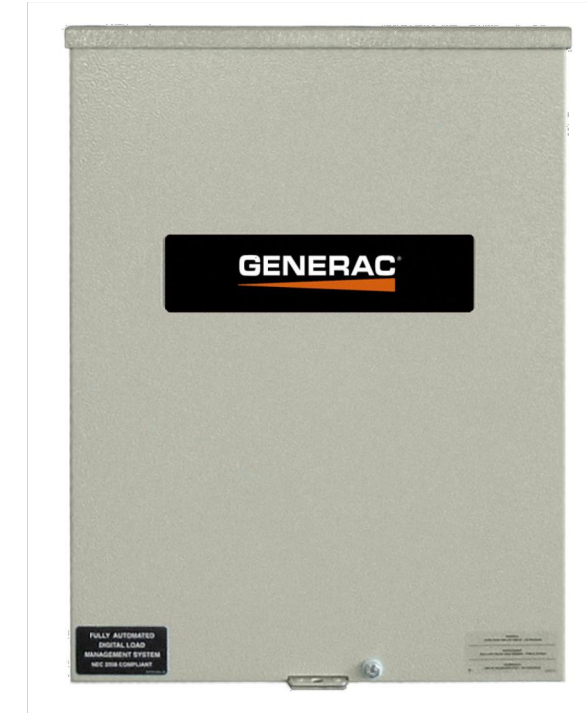
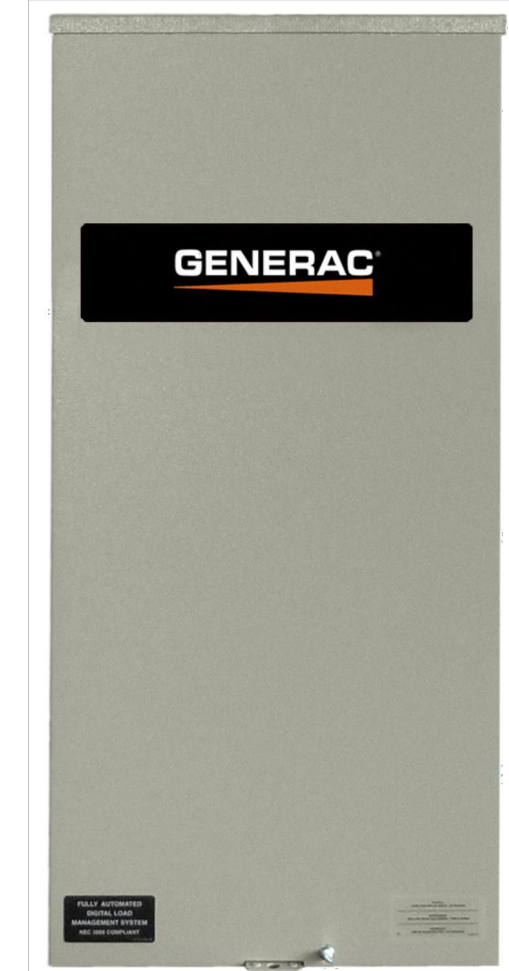
1 INTERSECT 200 AMP PPC W/ BUILT-IN CAM LOK BOX  
SCALE: NOT TO SCALE

# Automatic Transfer Switches



## Service and non-Service rated Automatic Smart Transfer Switches

100 - 400 Amps, Single Phase



\*CUL only applies to non-service rated switches

Automatic Transfer Switches

1 of 2

Automatic Transfer Switches

2 of 2

### Description

Generac Automatic Transfer Switches are designed for use with single phase generators that utilize an Evolution™ or Nexus™ Controller. The 100, 200, and 400 amp open transition switches are available in single phase in both service equipment rated and non-service equipment rated configurations. The 150 and 300 amp open transition switches are only available in a service rated equipment configuration.

### Standard Features

Service rated (RXSW) Generac Automatic Transfer Switches are housed in an aluminum NEMA/UL Type 3R enclosure\*, with electrostatically applied and baked powder paint. The Heavy Duty Generac Contactor is a UL recognized device, designed for years of service. The controller at the generator handles all the timing, sensing, exercising functions, and transfer commands. All switches are covered by a 5 year limited warranty.

\* Non-service rated (RXSC) switches are housed in a steel enclosure.

### DPM Technology

Through the use of digital power technology (DPM), these switches have the capability to manage up to 4 individual HVAC (24 VAC controlled) loads with no additional hardware. When used in tandem with Smart Management Modules, up to 8 more loads can be managed as well, providing the most installation efficient power management options available.



Generac Power Systems, Inc. • S45 W29290 HWY. 59, Waukesha, WI 53189 • generac.com  
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## 100-400 Amps, Single Phase

## Automatic Smart Transfer Switches

### Functions

All timing and sensing functions originate in the generator controller

Utility voltage drop-out.....	<65%
Timer to generator start.....	10 second factory set, adjustable between 2-1500 seconds by a qualified dealer*
Engine warm up delay.....	5 seconds
Standby voltage sensor.....	.65% for 5 seconds
Utility voltage pickup.....	> 80%
Re-transfer time delay.....	15 seconds
Engine cool-down timer.....	60 seconds
Exerciser.....	.5 or 12 minutes adjustable weekly/BI-weekly/Monthly**

The transfer switch can be operated manually without power applied.

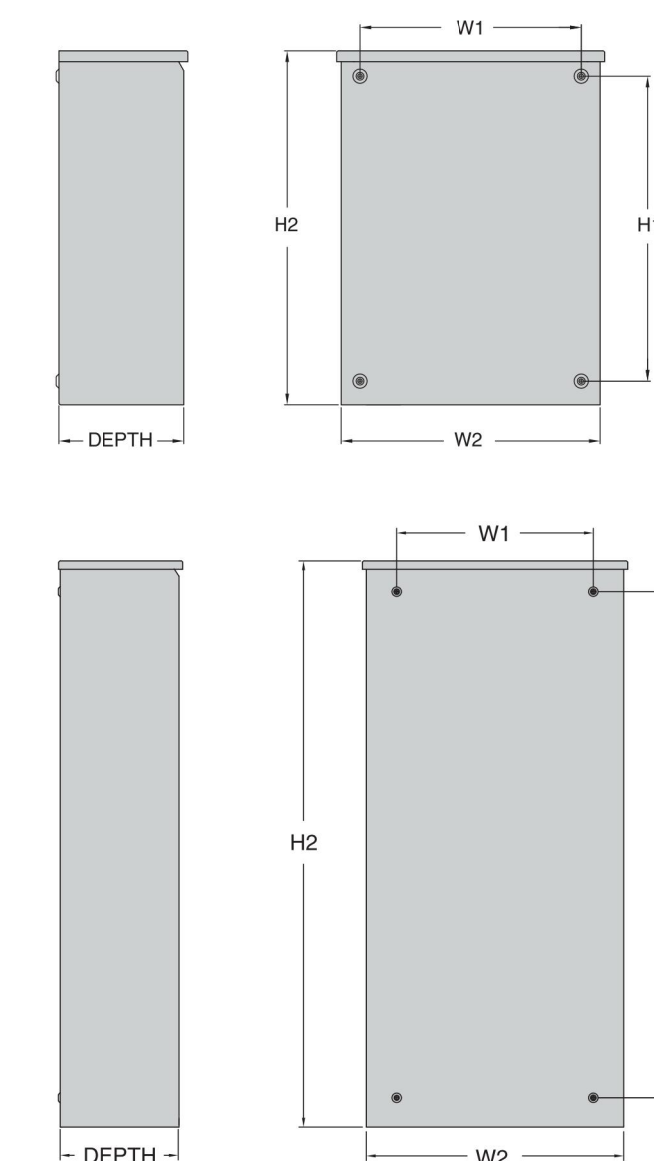
\*When used in conjunction with units utilizing Evolution™ controls \*\*Adjustable via the controller

### Specifications

Model	RXSC100A3	RXSW100A3	RXSW150A3	RXSC200A3	RXSW200A3	RXSW300A3	RXSC400A3	RXSW400A3
Amps	100	100	150	200	200	300	400	400
Voltage	120/240, 1Ø	120/240, 1Ø	120/240, 1Ø	120/240, 1Ø	120/240, 1Ø	120/240, 1Ø	120/240, 1Ø	120/240, 1Ø
Load Transition Type (Automatic)	Open Transition	Open Transition Service Rated	Open Transition Service Rated	Open Transition	Open Transition Service Rated	Open Transition Service Rated	Open Transition	Open Transition Service Rated
Enclosure Type	NEMA/UL 3R	NEMA/UL 3R	NEMA/UL 3R	NEMA/UL 3R	NEMA/UL 3R	NEMA/UL 3R	NEMA/UL 3R	NEMA/UL 3R
UL Rating	UL/CUL	UL	UL	UL/CUL	UL	UL	UL/CUL	UL
Withstand Rating (Amps)	10,000	10,000	22,000	10,000	22,000	22,000	22,000	22,000
Lug Range	1/0 - #14		250 MCM - #6			600 MCM - #4 or 1/0 - 250 MCM		

### Dimensions

Model	RXSC100A3	RXSW100A3	RXSW150A3	RXSC200A3	RXSW200A3	RXSW300A3	RXSC400A3	RXSW400A3
Height (in./mm)	H1	17.24/437.9	17.24/437.9	26.75/679.4	17.24/437.9	26.75/679.4	42.91/1089.9	31.25/793.8
	H2	20/508	20/508	30/762	20/508	30/762	48/1219.2	36/914.4
Width (in./mm)	W1	12.5/317.5	12.5/317.5	10.5/266.7	12.5/317.5	10.5/266.7	16.69/423.9	19.18/487.2
	W2	14.6/370.8	14.6/370.8	13.5/342.9	14.6/370.8	13.5/342.9	21.82/554.2	24/609.6
Depth (in./mm)	7.09/180.1	7.09/180.1	6.3/160.1	7.09/180.1	6.3/160.1	10.06/255.5	10.06/255.5	10.06/255.5
Weight (lbs./kilos)	20/9.07	22.5/10.21	39/17.69	20/9.07	39/17.69	140/63.5	133/60.33	140/63.5



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**PM&A**  
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6801 PORTWEST DR., SUITE 100  
HOUSTON, TX 77024

T-MOBILE SITE NUMBER:  
**PO01412A**

BU #: **826928**  
**REDLAND**

18281 S FISCHERS MILL ROAD  
OREGON CITY, OR 97045

EXISTING 98'-0" MONOPOLE

**ISSUED FOR:**

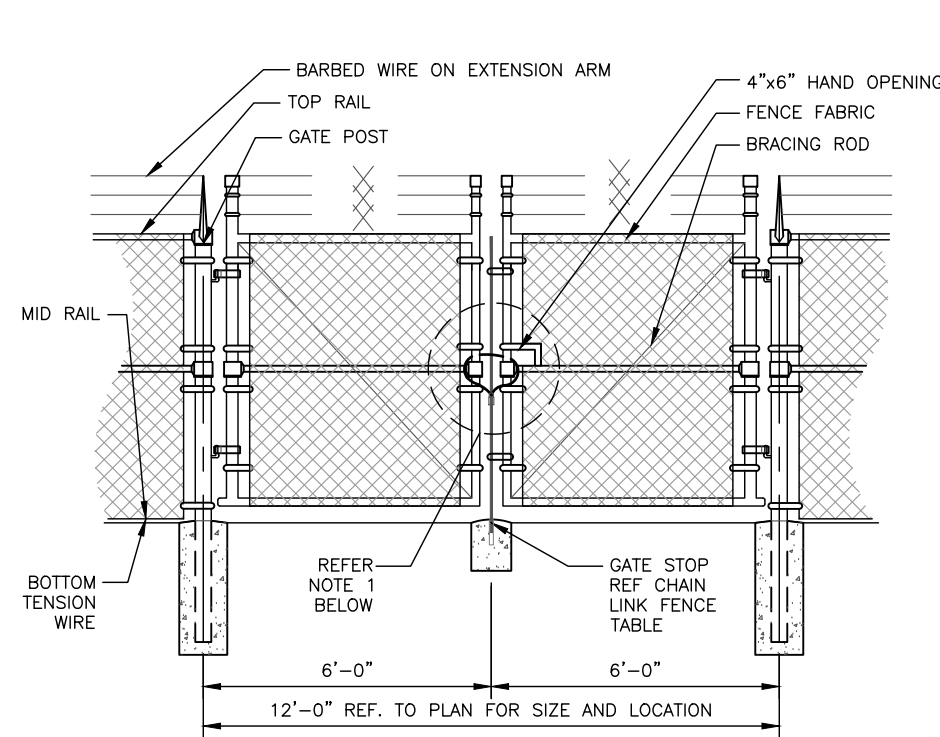
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0	10/26/21	CS	FINALS	VT
1	11/16/21	CS	CLIENT COMMENTS	VT
2	01/05/22	VT	GEN. ANCHOR CALCS.	VT

**REGISTERED PROFESSIONAL ENGINEER**  
92768PE  
OREGON  
CHAD WILHOIT  
01/06/2022  
EXPIRES: 6/30/2022

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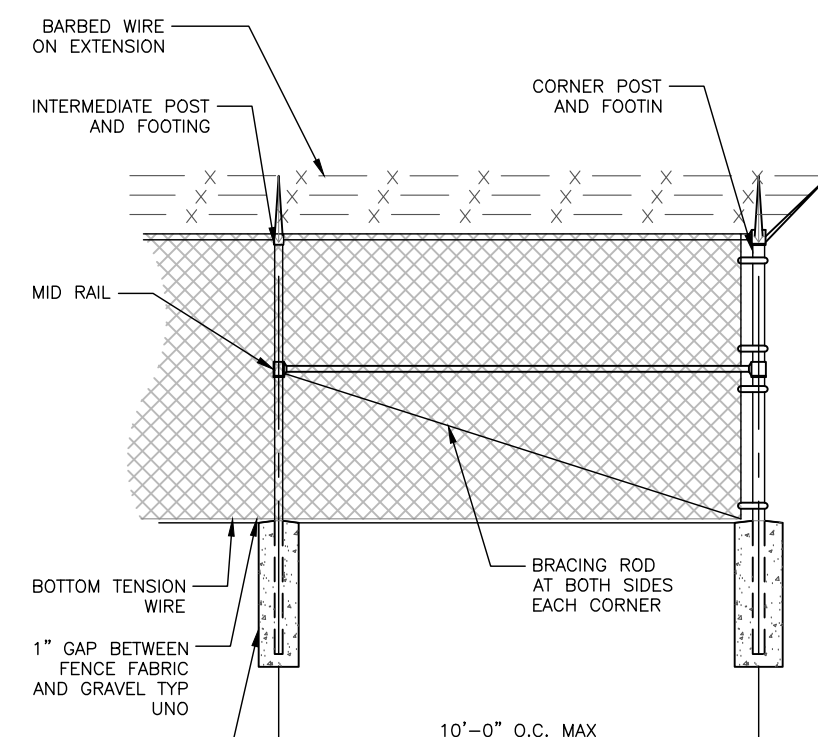
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**21CCT7M-127**

SHEET NUMBER: <b>C-6</b>	REVISION: <b>2</b>
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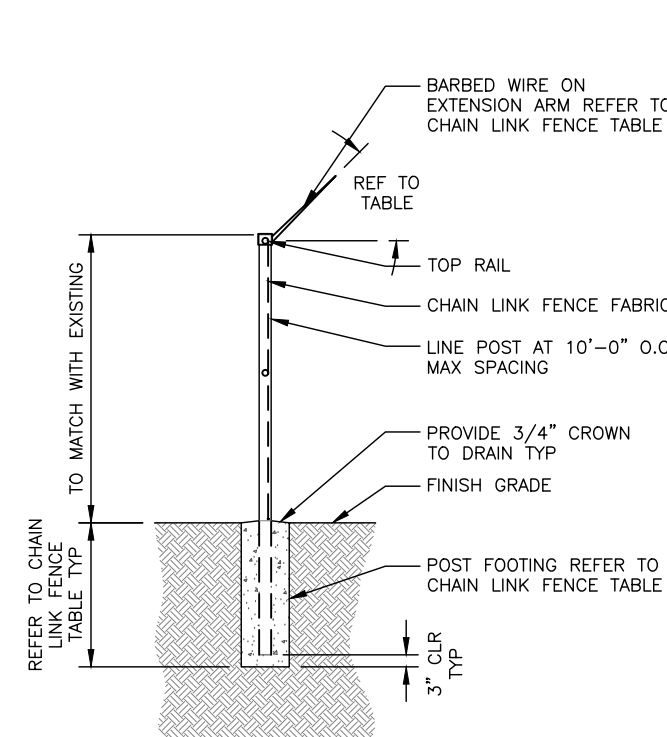


NOTE 3:  
CONTRACTOR TO SUPPLY AND INSTALL A 3/8" x 36" FORGED ZINC COATED CHAIN WITH A R DIGIT COMBINATION MASTER LOCK HAVING AN ELONGATED SHANK. SET COMBINATION AS DIRECTED BY CONSTRUCTION MANAGER.

1 TYPICAL GATE DETAIL  
SCALE: N.T.S.



2 TYPICAL FENCE CORNER DETAIL  
SCALE: N.T.S.



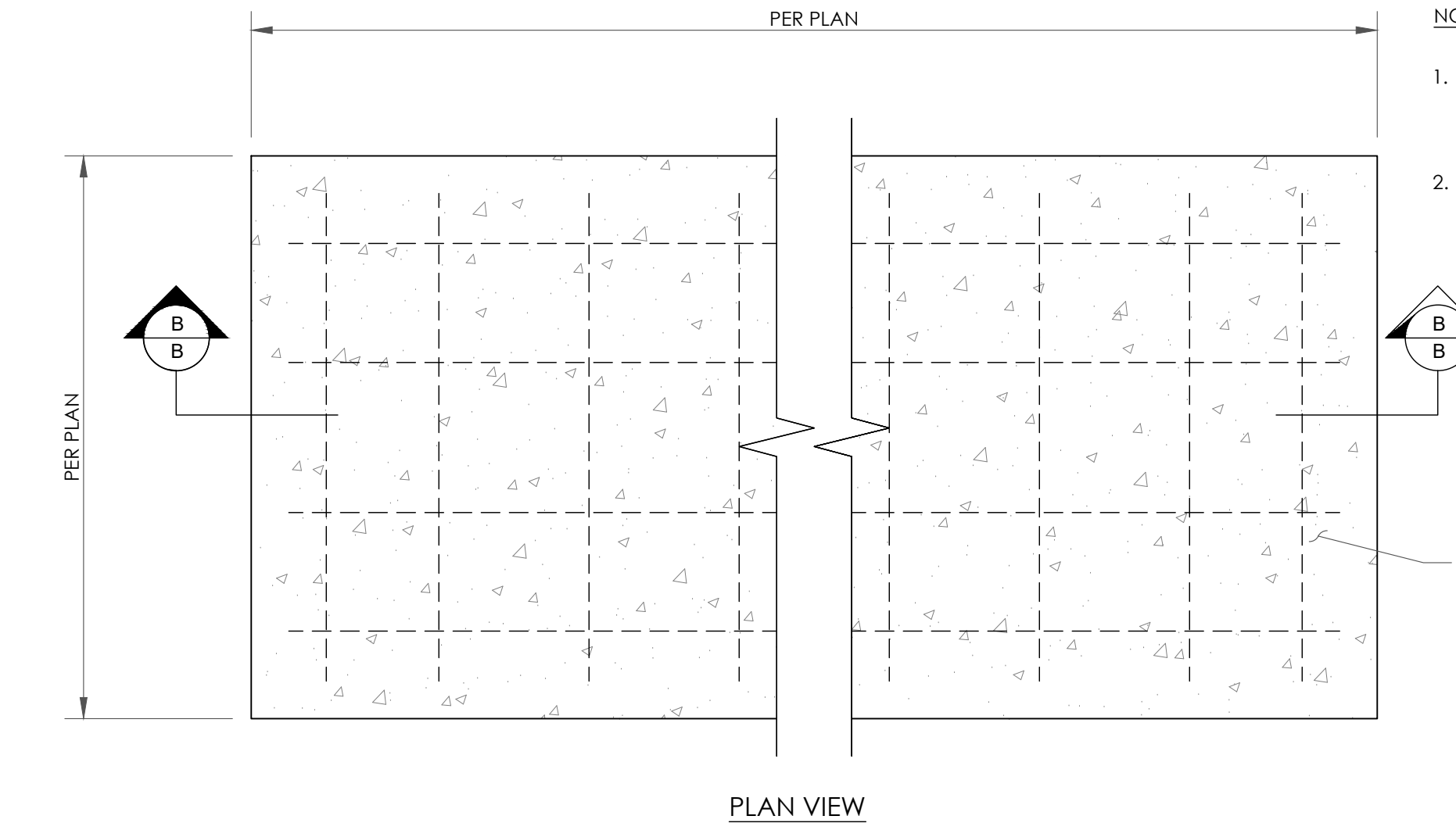
3 TYPICAL FENCE POST DETAIL  
SCALE: N.T.S.

COMPONENT	DIMENSIONS	HARDWARE AND FEATURES
FENCE FABRIC	6" HIGH, 9 GA, 2"x2" ZINC COATED MESH	SELVEDGE TOP AND BOTTOM
BARBED WIRE	BARBED WIRE WITH FOUR (4) POINT BARBS	THREE (3) RUNS
EXTENSION ARM	STAMPED STEEL WITH MALLEABLE IRON BASE	45 DEGREE, ANGLE OUTWARD
END AND CORNER POSTS	2" STD. GA. (SCH 40) PIPE	36"x10" CONCRETE FOOTING
LINE POSTS	2" STD. GA. (SCH 40) PIPE	36"x10" CONCRETE FOOTING, REF. NOTE 3
DRIVEWAY GATE POSTS	4" STD. GA. (SCH 40) PIPE	48"x12" CONCRETE FOOTING
WALKWAY GATE POSTS	3" STD. GA. (SCH 40) PIPE	36"x12" CONCRETE FOOTING
TOP RAILS	1 1/2" STD. GA. (SCH 40) PIPE	ATTACHED WITH PROPER FITTING
MID RAILS	1 1/2" STD. GA. (SCH 40) PIPE	ATTACHED WITH PROPER FITTING
BRACE RODS	3/8" CARBON STEEL	ATTACHED WITH PROPER FITTING
BOTTOM TENSION WIRE	7 GA. 180 LB. TENSILE STRENGTH	ALL SIDES
TENSION BARS	3/16" x 3/4" FULL HEIGHT OF FABRIC	SPACE TENSION BARS AT 15" +/- O.C.
TENSION WIRE	9 GA ALUMINUM	12" O.C. FOR LINE POSTS AND GATES 24" O.C. FOR RAILS AND TENSION WIRES
GATE FRAME	2" STD. GA. (SCH 40) PIPE	WELDED ASSEMBLY (COLD GA. AND SILVER PAINT WELDED AREAS)
POST CAPS	PER POST DIAMETER	ALL POSTS
POST RAIL AND GATE FITTINGS	AS REQUIRED	STAMPED STEEL OR MALLEABLE CASTING
GATE HINGES	AS REQUIRED	OFFSET TYPE WITH 180 DEGREE SWING
DOUBLE GATE LATCH	AS REQUIRED	DOUBLE LATCH ON ACTIVE LEAF - DROP BOLTS ON BOTH LEAVES
GATE STOPS (CLOSED POSITION)	AS REQUIRED	MUSHROOM STOP SET IN CONCRETE
GATE STOPS (OPEN POSITION)	AS REQUIRED	AS REQUIRED
LOCK CHAIN	3/8" SIZE, 36" LONG	HOT DIPPED GALVANIZED OR VINYL COATED

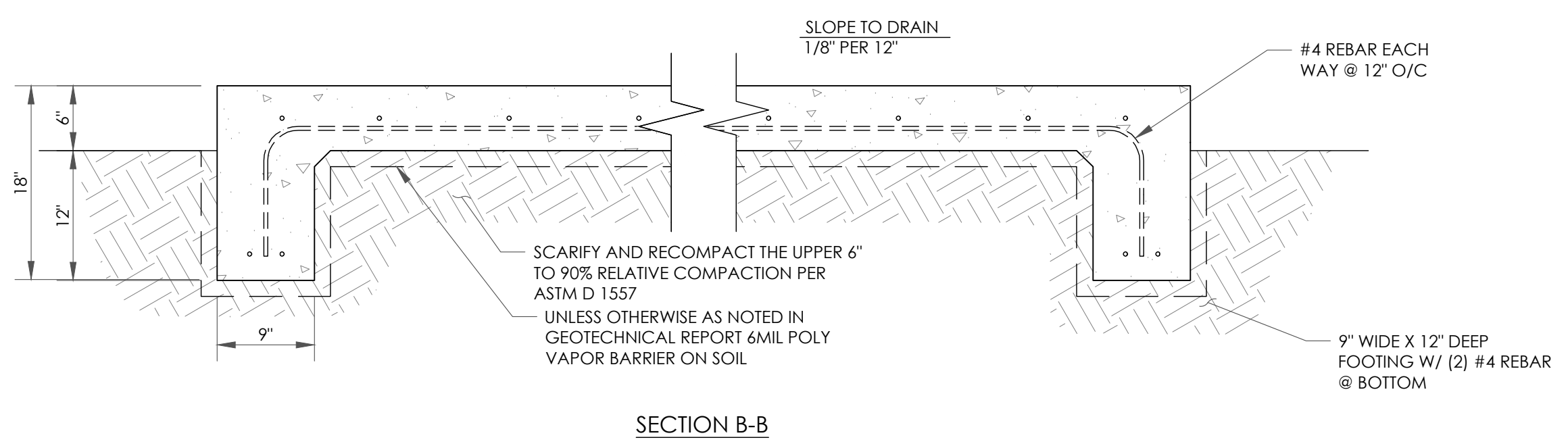
- NOTES:  
1. ABOVE INFORMATION SHOWN FOR REFERENCE ONLY. ACTUAL ENGINEERING OF FENCE SYSTEM SHALL BE COORDINATED WITH FENCE MANUFACTURER, CONTRACTOR AND VENDOR.  
2. ALL FENCE MATERIALS TO BE HOT-DIPPED GALVANIZED UNO.  
3. CONTRACTOR MAY USE 36"x12" IN LIEU OF 36"x10".  
4. DRILLED PIER FOOTING CONCRETE, F<sub>c</sub> OF 3000 PSI MIN.  
5. BRACING RODS TO BE TENSIONED PER INDUSTRY STANDARDS.

4 FENCE SPECIFICATION TABLE  
SCALE: N.T.S.

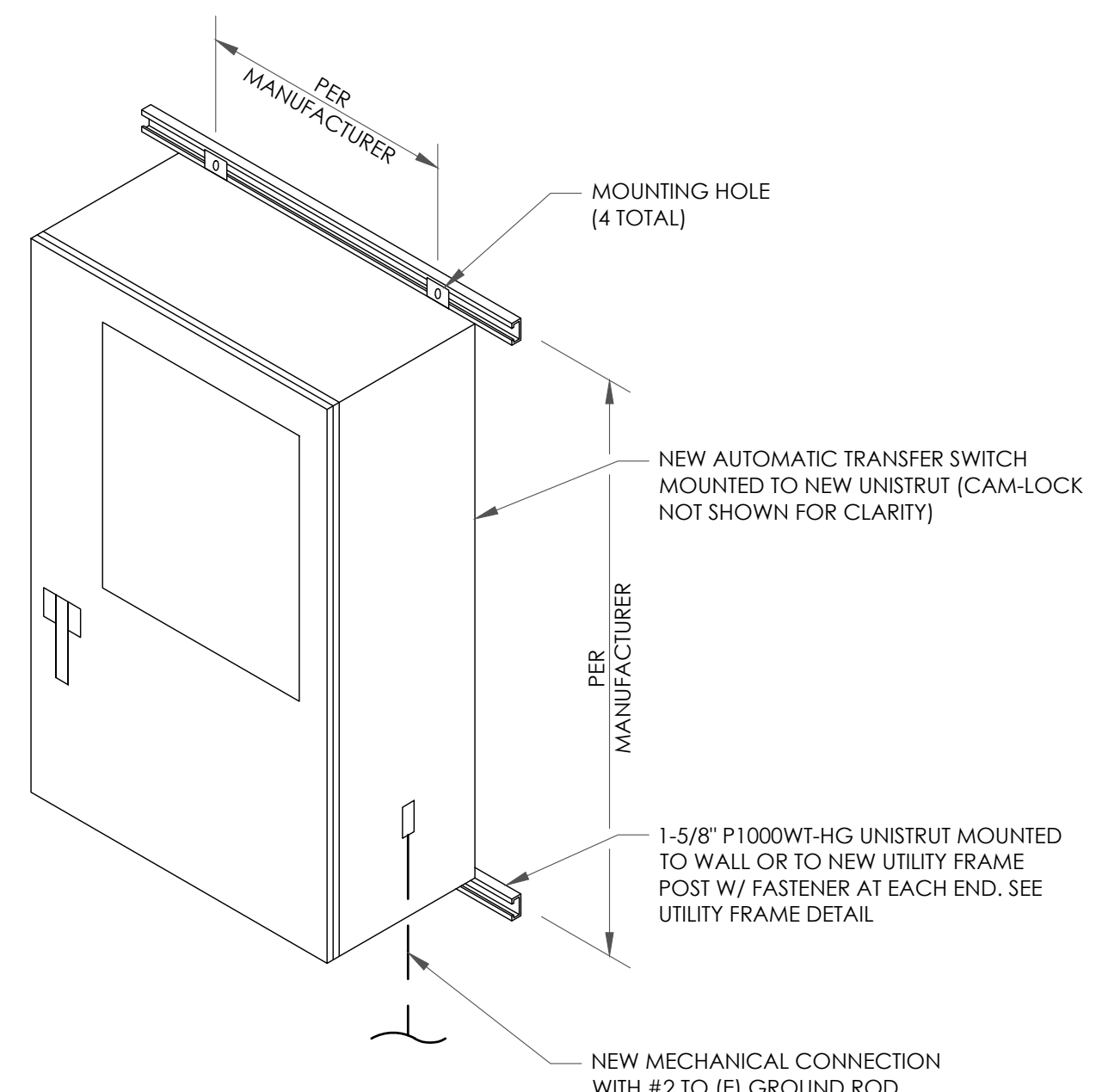
1 FENCE DETAILS  
SCALE: NOT TO SCALE



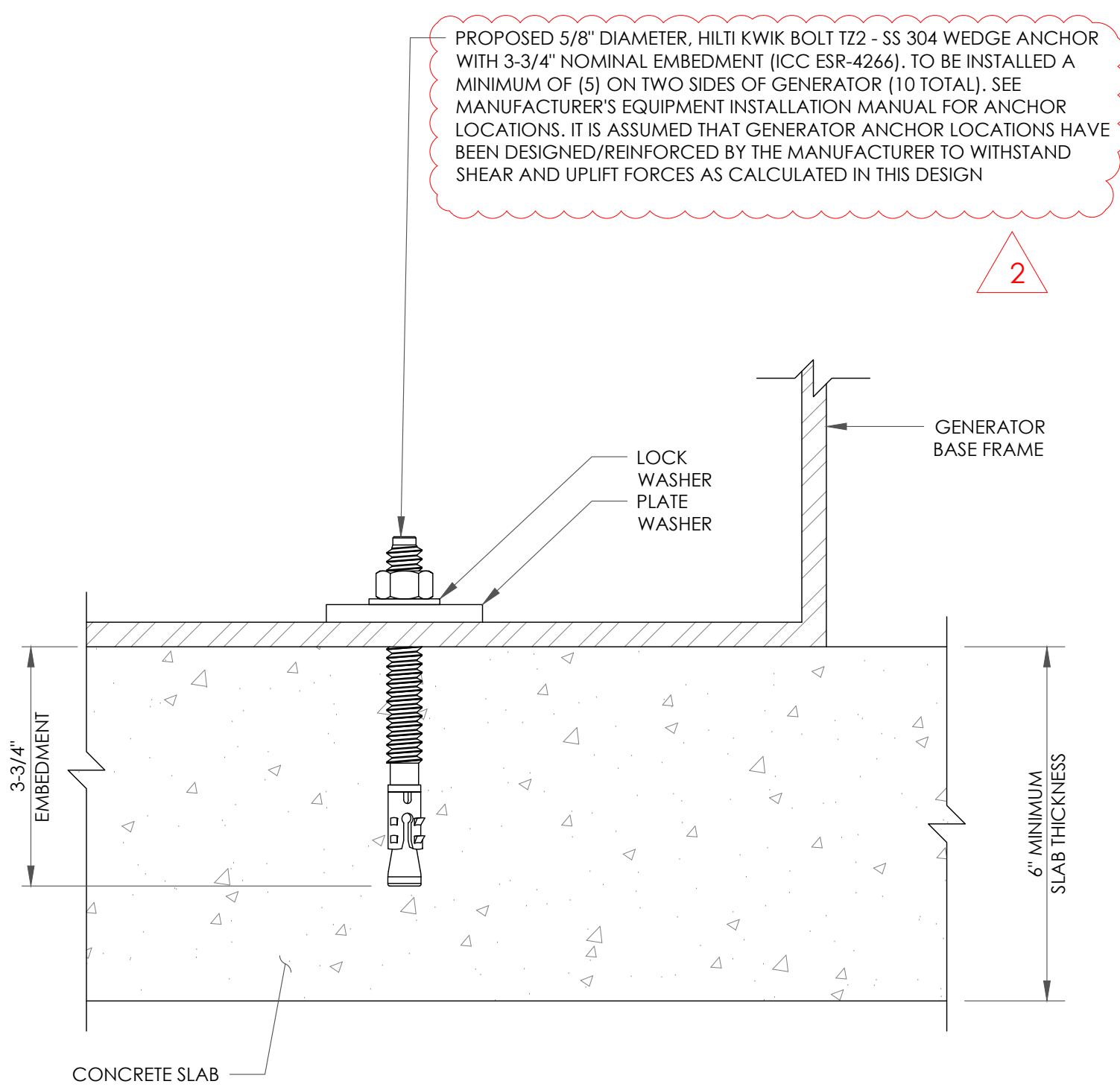
- NOTES:  
1. CONCRETE SHALL ATTAIN A COMPRESSIVE STRENGTH OF F<sub>c</sub>=3,000 PSI MINIMUM AT 28 DAYS.  
2. ALL REINFORCING STEEL SHALL COMPLY WITH ASTM A615, GRADE 40.



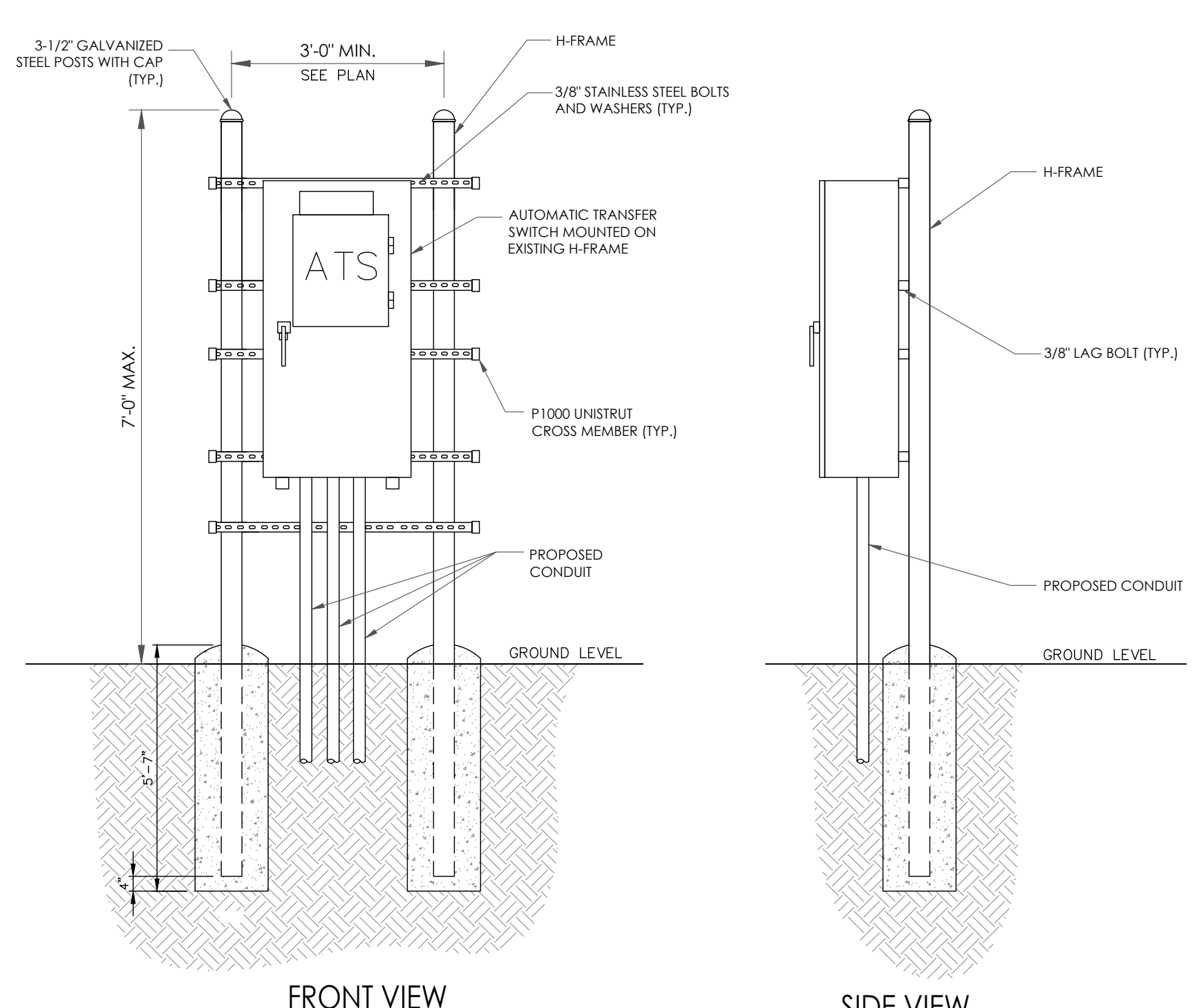
2 CONCRETE PAD DETAILS  
SCALE: NOT TO SCALE



3 ATS MOUNTING DETAIL  
SCALE: NOT TO SCALE



4 GENERATOR ANCHORAGE DETAIL  
SCALE: NOT TO SCALE



5 UTILITY FRAME ELEVATION  
SCALE: NOT TO SCALE

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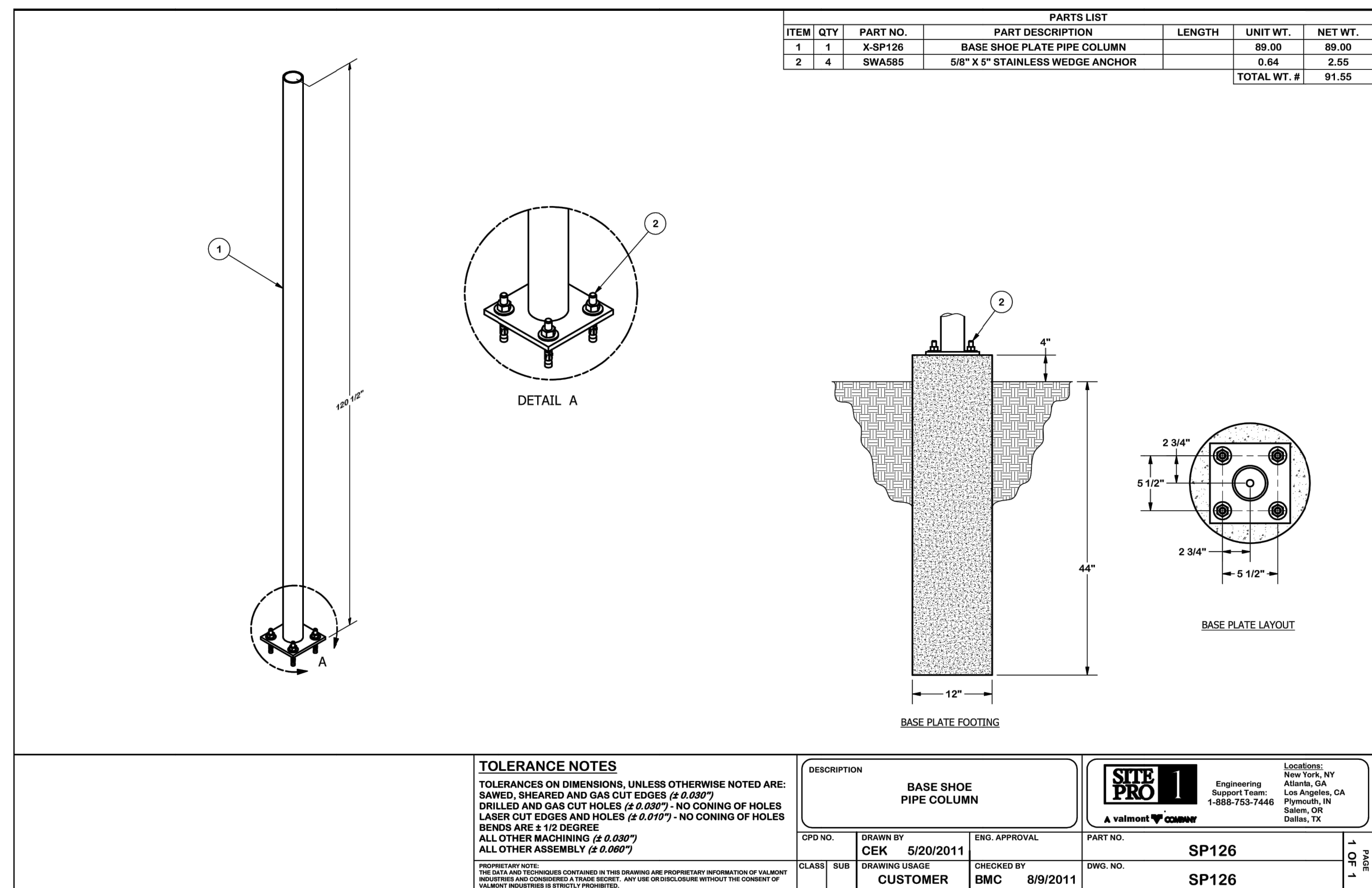
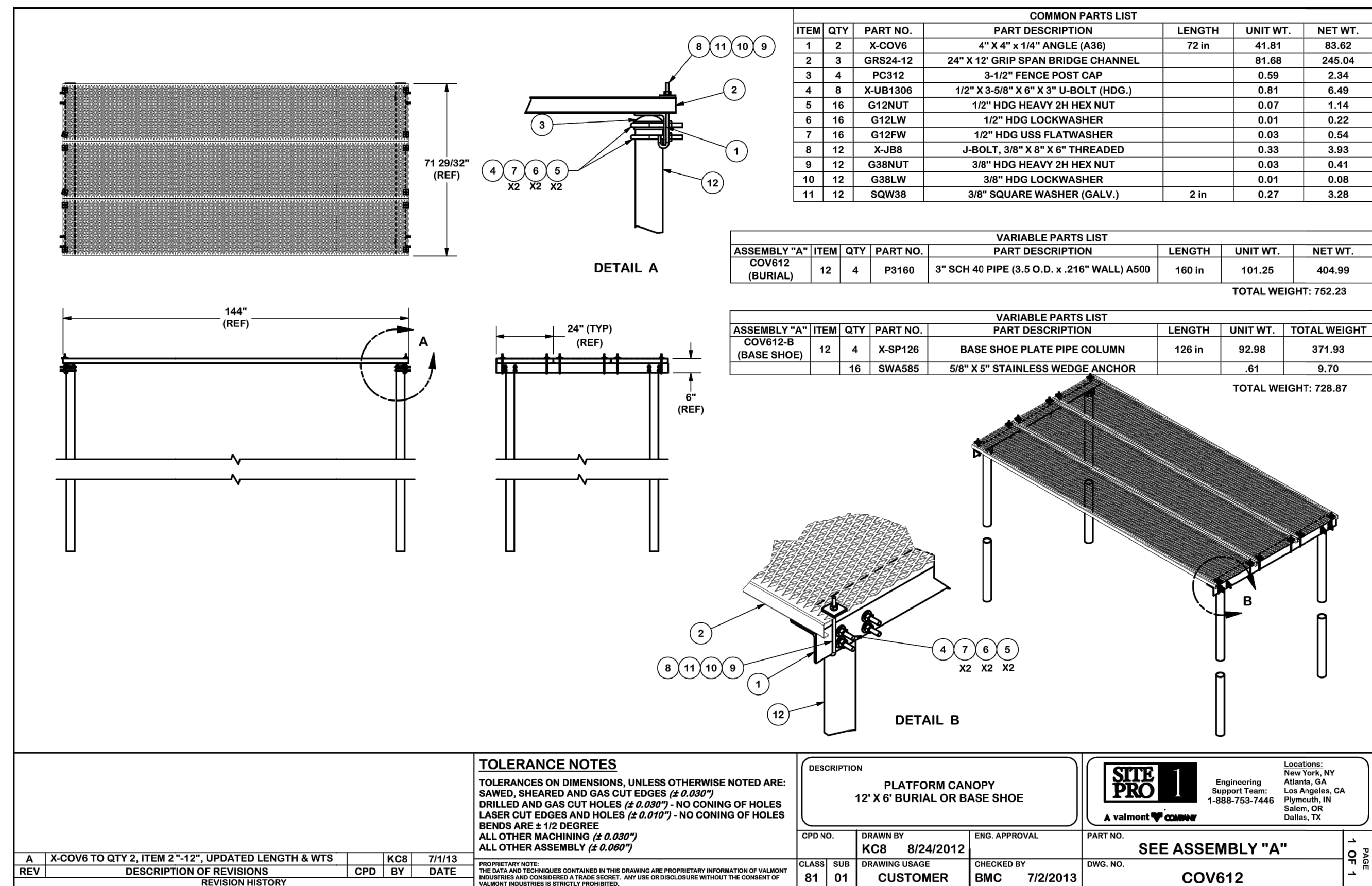
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REGISTERED PROFESSIONAL ENGINEER  
92768PE  
ORIGINEE  
CHAD WILHOIT  
01/06/2022  
EXPIRES: 6/30/2022

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SHEET NUMBER: **C-7** REVISION: **2**



1 ICE CANOPY SPECS  
SCALE: NOT TO SCALE

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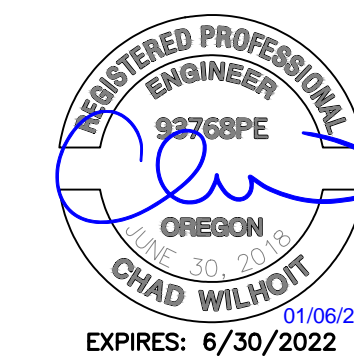
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1	11/16/21	CS	CLIENT COMMENTS	VT
2	01/05/22	VT	GEN. ANCHOR CALCS.	VT



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PM&A JOB #:  
**21CCT7M-127**

SHEET NUMBER:

**C-8**

REVISION:

**2**

# ELECTRICAL KEY NOTES:

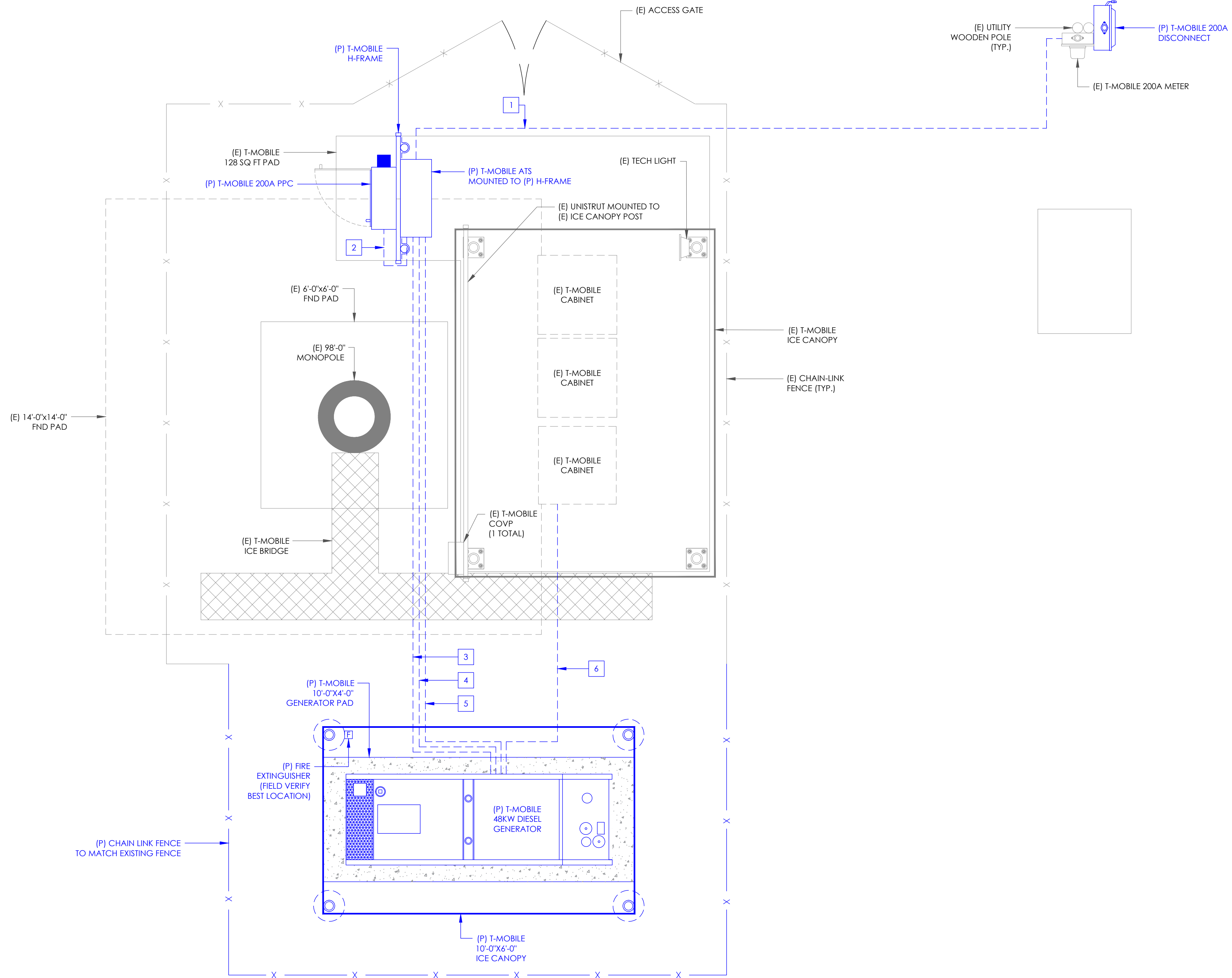
- 1 EXISTING (1) 2" RIGID CONDUIT FOR POWER REROUTED TO GO FROM EXISTING T-MOBILE METER TO PROPOSED ATS. [20+/- LF]
- 2 PROPOSED (1) 2" SCH. 40 PVC CONDUIT FOR POWER ROUTED FROM PROPOSED ATS TO PROPOSED PPC. [10+/- LF]
- 3 PROPOSED 2" SCH. 40 PVC CONDUIT FOR BACKUP POWER FROM PROPOSED 200A ATS TO PROPOSED GENERATOR. NEW CONDUIT WILL RUN OVERGROUND TO ATS FROM GENERATOR ABOVE THE TOP OF THE EXISTING MONOPOLE APRON. (TYP.) [30+/- LF].
- 4 PROPOSED 1" SCH. 40 PVC CONDUIT FOR REMOTE START WITH RELAY FROM PROPOSED 200A ATS TO PROPOSED GENERATOR. NEW CONDUIT WILL RUN OVERGROUND TO ATS FROM GENERATOR ABOVE THE TOP OF THE EXISTING MONOPOLE APRON. [30+/- LF].
- 5 PROPOSED 1" SCH. 40 PVC CONDUIT FOR HEATER BLOCK AND BATTERY CHARGER PROPOSED #2 AWG BARE TINNED SOLID COPPER WIRE: 2-HOLE FROM PROPOSED 200A ATS TO PROPOSED GENERATOR. NEW CONDUIT WILL RUN OVERGROUND TO ATS FROM GENERATOR ABOVE THE TOP OF THE EXISTING MONOPOLE APRON. [30+/- LF].
- 6 PROPOSED (1) 1" SCH.40 PVC CONDUIT FOR FOR GENERATOR ALARM FROM T-MOBILE GENERATOR TO EXISTING CABINET [10+/- LF].

**CLEARANCE NOTE:** MINIMUM GENERATOR CLEARANCE MUST BE PROVIDED IN ACCORDANCE WITH THE MOST STRINGENT GOVERNING ADOPTED BUILDING CODE AND/OR THE MANUFACTURER'S SPECIFICATIONS AND DETAILS, WHICHEVER CRITERIA IS GREATER.

**ACCESS NOTE:** PROVIDE 3'-0" MINIMUM NEC AND OSHA ACCESS CLEARANCE FOR ALL GENERATOR ACCESS DOORS AND AC POWER PANELS (TYP.)

**CONDUIT NOTE:** ALL BURIED CONDUIT SHALL BE PVC SCHEDULE 40. ALL EXPOSED CONDUIT AND ALL CONDUIT ROUTED ACROSS THE TOPS OF SLABS AND PLATFORMS SHALL BE SCH. 80 PVC ON 1-5/8" UNISTRUT OR EQUIVALENT.

**TRENCHING NOTE:** THE CONTRACTOR SHALL HAND DIG ALL CONDUIT TRENCHES LOCATED WITHIN THE EXISTING FENCED COMPOUND. MECHANICAL EXCAVATION IS NOT ALLOWED BY CROWN CASTLE USA, INC.



1 ELECTRICAL SITE PLAN  
SCALE: 1/2"=1'-0" (FULL SIZE)  
1/4"=1'-0" (11x17)



8960 ALDERWOOD ROAD  
PORTLAND, OR 97220



1505 WESTLAKE AVENUE NORTH, SUITE 800  
SEATTLE, WA 98109



P. MARSHALL & ASSOCIATES

6801 PORTWEST DR., SUITE 100  
HOUSTON, TX 77024

T-MOBILE SITE NUMBER:  
**PO01412A**

BU #: **826928**  
**REDLAND**

18281 S FISCHERS MILL ROAD  
OREGON CITY, OR 97045

EXISTING 98'-0" MONOPOLE

### ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DWG./QA
A	10/26/21	CS	PRELIMINARY	VT
0	10/26/21	CS	FINALS	VT
1	11/16/21	CS	CLIENT COMMENTS	VT
2	01/05/22	VT	GEN. ANCHOR CALCS.	VT



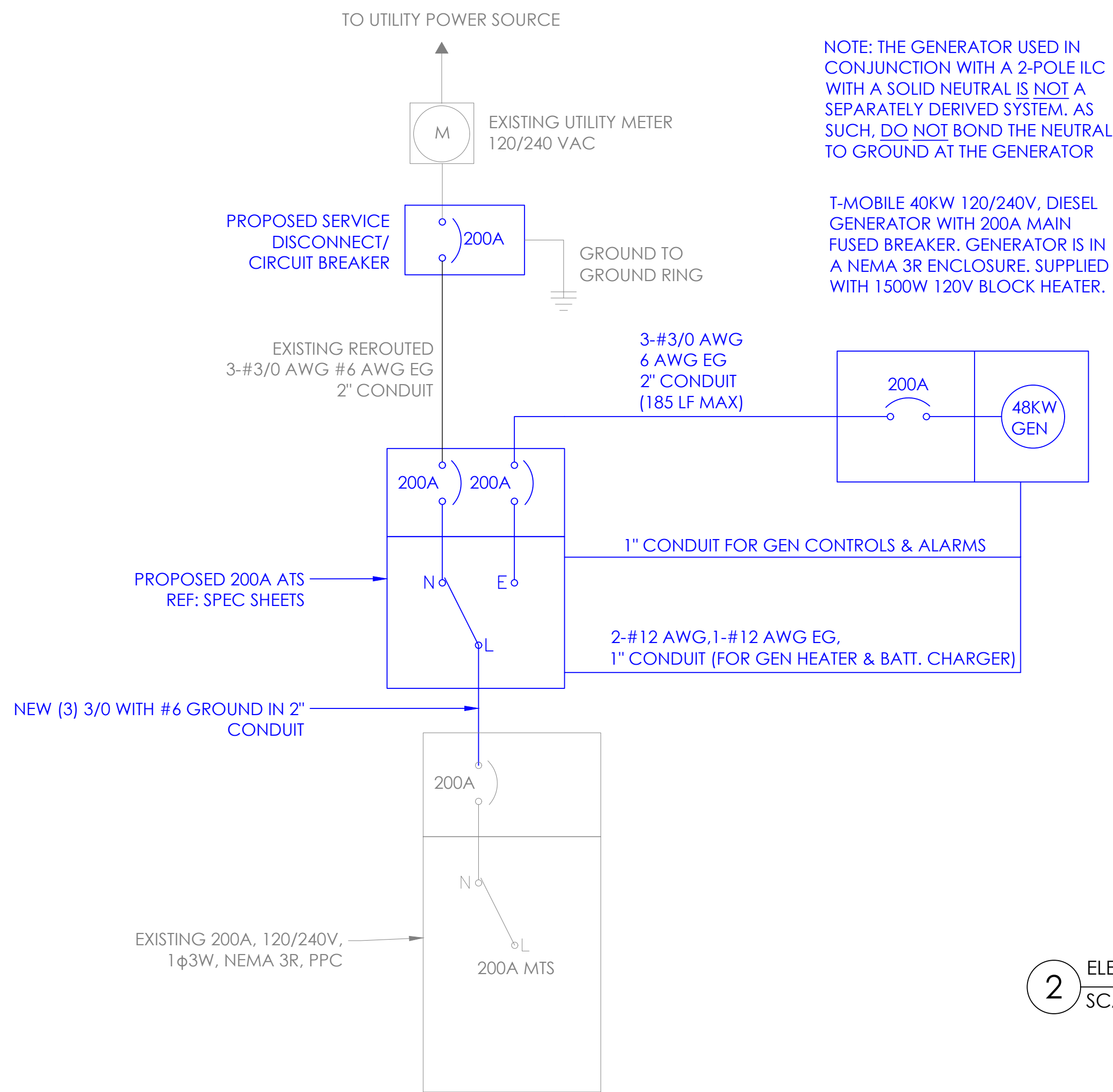
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PM&A JOB #:  
**21CCT7M-127**

SHEET NUMBER:  
**E-1**

REVISION:  
**2**





NOTE: THE GENERATOR USED IN CONJUNCTION WITH A 2-POLE ILC WITH A SOLID NEUTRAL IS NOT A SEPARATELY DERIVED SYSTEM. AS SUCH, DO NOT BOND THE NEUTRAL TO GROUND AT THE GENERATOR

T-MOBILE 40KW 120/240V, DIESEL GENERATOR WITH 200A MAIN FUSED BREAKER. GENERATOR IS IN A NEMA 3R ENCLOSURE. SUPPLIED WITH 1500W 120V BLOCK HEATER.

T-MOBILE SITE #:		LOCATION:		VOLTAGE: 240/120 1Ø				MOUNTING / ENCLOSURE: EXISTING /					
PO01412A (PROPOSED)		CONCRETE PAD MOUNTED PPC CABINET		MAIN C/B: 200 AMPS				AVAIL. FAULT CURRENT: EXISTING					
10/19/2021				BUS RATING: 200 AMPS				SHORT CIRCUIT RATING: EXISTING					
AMPS/POLES	WIRE & CONDUIT	TYPE	DESCRIPTION	KVA	CKT	A	B	CKT	KVA	DESCRIPTION	TYPE	WIRE & CONDUIT	AMPS/POLES
125/2	EXISTING	EQ	PURCELL CABINET	12.00	1	12.00		7		KNOCKOUT		-	
-	-	EQ	-	12.00	2		12.00	8		KNOCKOUT		-	
10/1	EXISTING	E	UNKNOWN	1.00	3	1.00		9		KNOCKOUT		-	
15/1	EXISTING	E	UNKNOWN	1.44	4		1.44	10		KNOCKOUT		-	
20/1	<b>2#12, 1#12G, 1/2" C</b>	H	<b>(P) GEN BLOCK HEATER</b>	<b>1.00</b>	<b>5</b>	<b>1.00</b>		<b>11</b>		<b>KNOCKOUT</b>		-	
20/1	<b>2#12, 1#12G, 1/2" C</b>	EQ	<b>(P) GEN BLOCK CHARGER</b>	<b>1.00</b>	<b>6</b>			<b>12</b>		<b>KNOCKOUT</b>		-	
				PHASE TOTAL		14.0		14.4		KVA			
TOTAL CONNECTED LOAD											28.4 KVA	119 A	
TOTAL DEMAND LOAD											29.1 KVA	121 A	

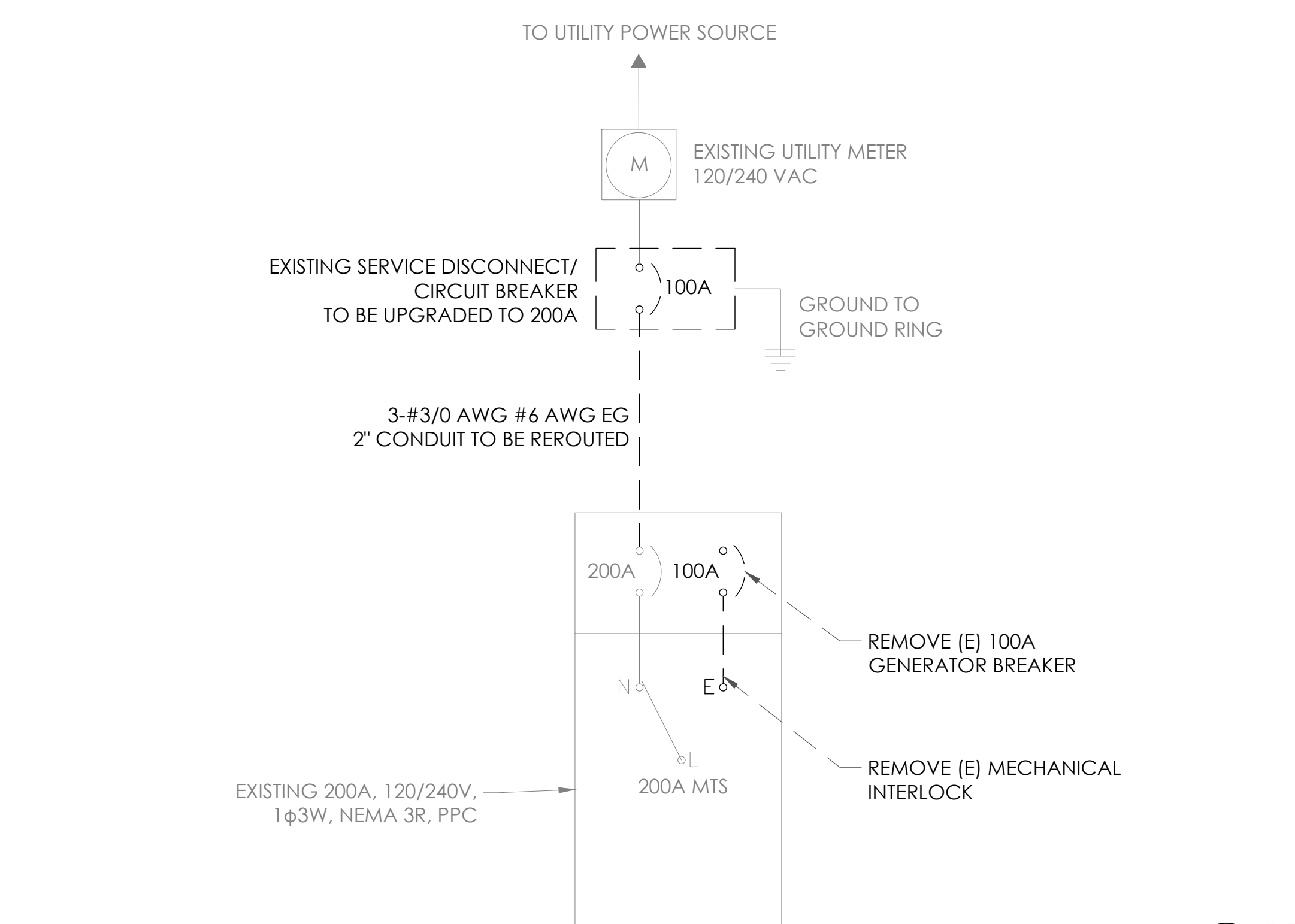
  

LOAD TYPE	DESCRIPTION	CONN. LOAD KVA	AMPS	DEMAND FACTOR	DESIGN LOAD KVA	AMPS
L	LIGHTING	0.0	0.0	1.25	0.0	0.0
R	RECEPTACLE	0.0	0.0	NEC	0.0	0.0
M	MOTOR	0.0	0.0	NEC	0.0	0.0
H	HEATING	1.0	4.2	1.00	1.0	4.2
AC	HVAC	0.0	0.0	1.00	0.0	0.0
EQ	EQUIPMENT	25.0	104.2	1.00	25.0	104.2
E	EXISTING	2.4	10.2	1.25	3.1	12.7

\* ALL EQUIPMENT LOADS CONSIDERED CONTINUOUS LOADS

NOTES:  
BOLD INDICATES PROPOSED BREAKER

2 ELECTRICAL ONE LINE & LOAD ANALYSIS PROPOSED PLAN  
SCALE: NOT TO SCALE



T-MOBILE SITE #:		LOCATION:		VOLTAGE: 240/120 1Ø				MOUNTING / ENCLOSURE: EXISTING / NEMA 3R					
PO01412A (EXISTING)		CONCRETE PAD MOUNTED PPC CABINET		MAIN C/B: 200 AMPS				AVAIL. FAULT CURRENT: EXISTING					
10/19/2021				BUS RATING: 200 AMPS				SHORT CIRCUIT RATING: EXISTING					
AMPS/POLES	WIRE & CONDUIT	TYPE	DESCRIPTION	KVA	CKT	A	B	CKT	KVA	DESCRIPTION	TYPE	WIRE & CONDUIT	AMPS/POLES
125/2	EXISTING	EQ	PURCELL CABINET	12.00	1	12.00		7		KNOCKOUT		-	
-	-	EQ	-	12.00	2		12.00	8		KNOCKOUT		-	
10/1	EXISTING	E	UNKNOWN	1.00	3	1.00		9		KNOCKOUT		-	
15/1	EXISTING	E	UNKNOWN	1.44	4		1.44	10		KNOCKOUT		-	
-	-		KNOCKOUT		5			11		KNOCKOUT		-	
-	-		KNOCKOUT		6			12		KNOCKOUT		-	
				PHASE TOTAL		13.0		13.4		KVA			
TOTAL CONNECTED LOAD											26.4 KVA	110 A	
TOTAL DEMAND LOAD											27.1 KVA	113 A	

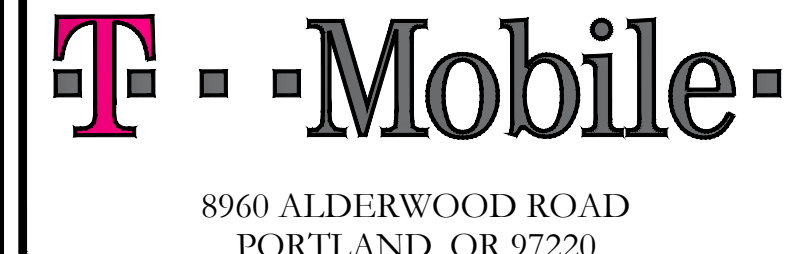
  

LOAD TYPE	DESCRIPTION	CONN. LOAD KVA	AMPS	DEMAND FACTOR	DESIGN LOAD KVA	AMPS
L	LIGHTING	0.0	0.0	1.25	0.0	0.0
R	RECEPTACLE	0.0	0.0	NEC	0.0	0.0
M	MOTOR	0.0	0.0	NEC	0.0	0.0
H	HEATING	0.0	0.0	1.00	0.0	0.0
AC	HVAC	0.0	0.0	1.00	0.0	0.0
EQ	EQUIPMENT	24.0	100.0	1.00	24.0	100.0
E	EXISTING	2.4	10.2	1.25	3.1	12.7

\* ALL EQUIPMENT LOADS CONSIDERED CONTINUOUS LOADS

NOTES:  
BOLD INDICATES EQUIPMENT TO BE REMOVED

1 ELECTRICAL ONE LINE & LOAD ANALYSIS DEMO PLAN  
SCALE: NOT TO SCALE



T-MOBILE SITE NUMBER:  
**PO01412A**

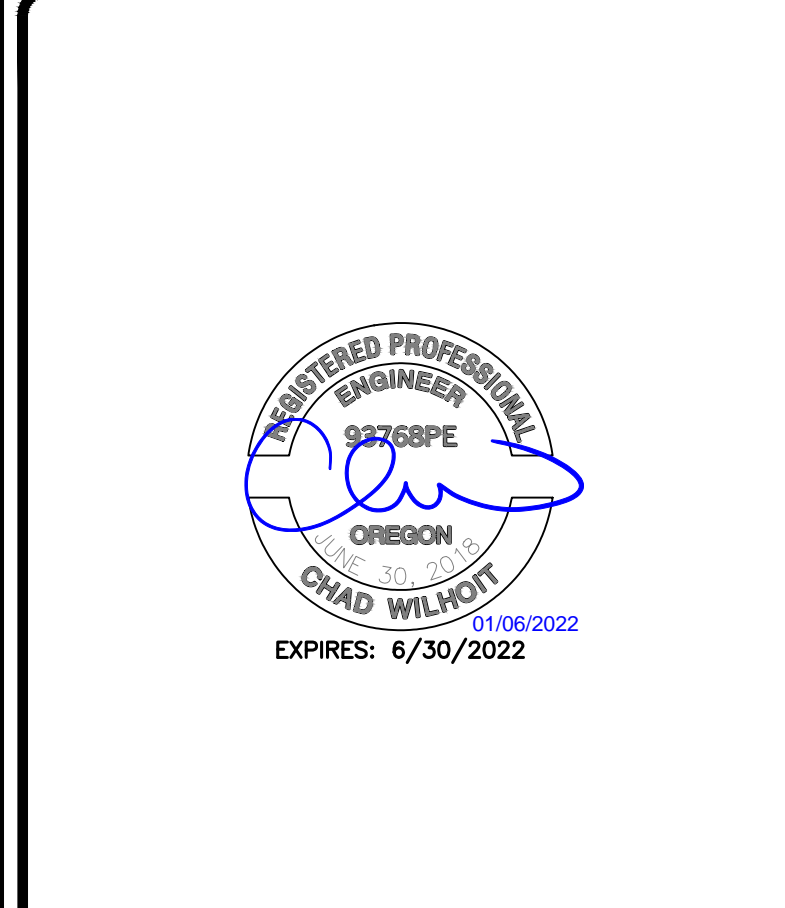
BU #: **826928**  
**REDLAND**

18281 S FISCHERS MILL ROAD  
OREGON CITY, OR 97045

EXISTING 98'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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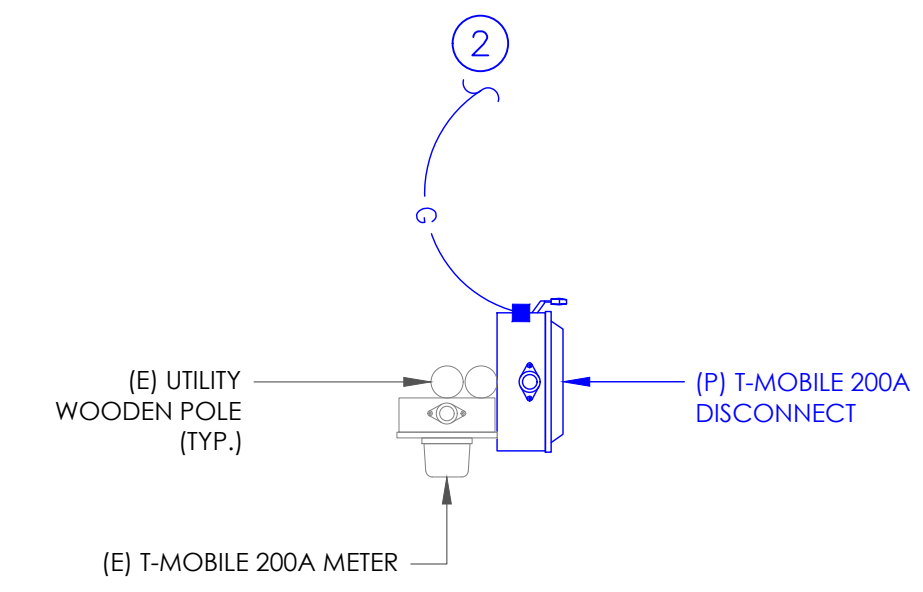
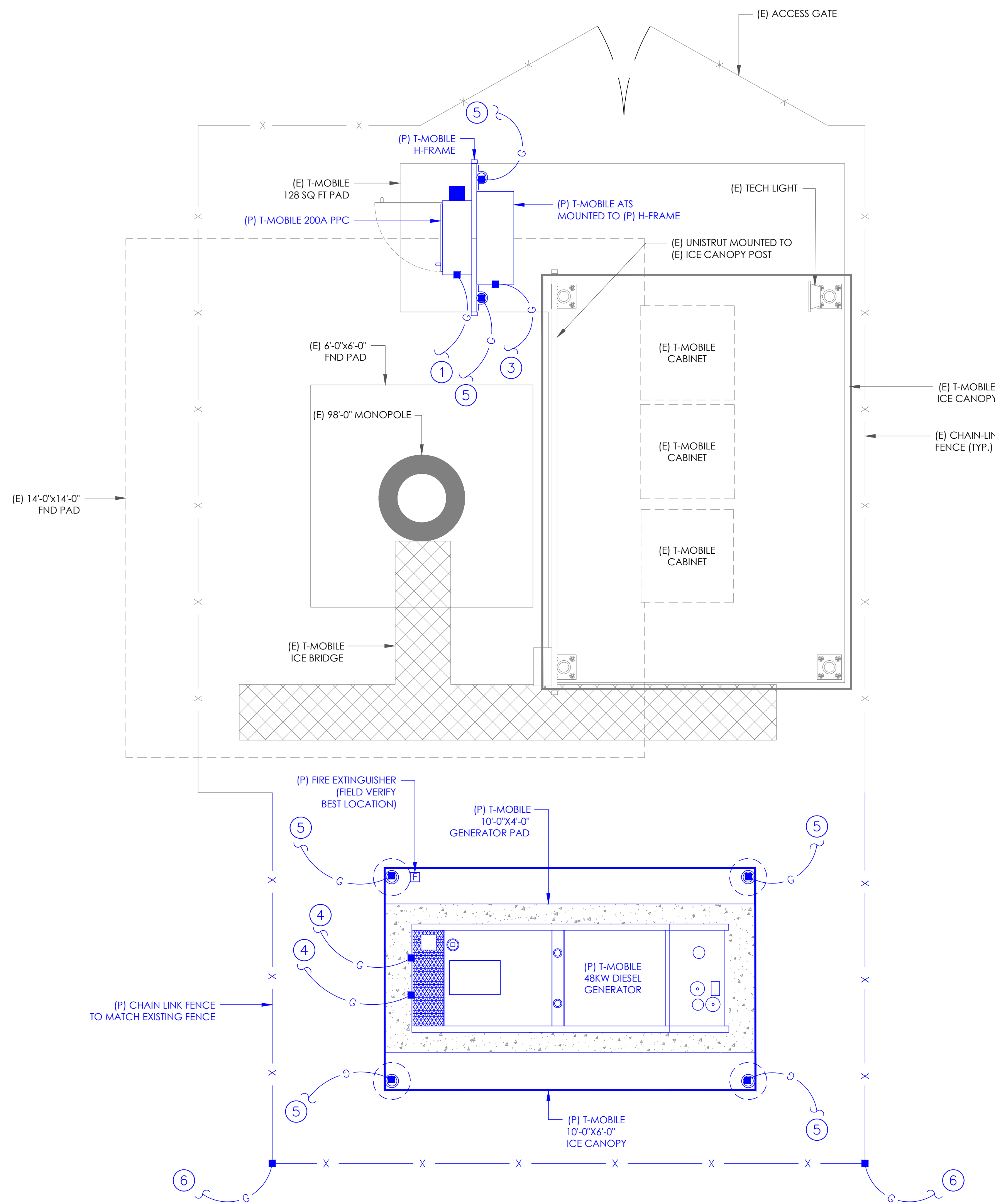
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PM&A JOB #:  
**21CCT7M-127**

SHEET NUMBER: **E-2**      REVISION: **2**

**GROUNDING KEY NOTES:**

- ① PROPOSED #2 AWG BARE TINNED SOLID COPPER WIRE: 2-HOLE LUG CONNECTION FROM PROPOSED 200A PPC TO EXISTING GROUND RING. GROUND PER MANUFACTURER SPECIFICATIONS (TYP.)
- ② PROPOSED #2 AWG BARE TINNED SOLID COPPER WIRE: 2-HOLE LUG CONNECTION FROM PROPOSED 200A DISCONNECT TO EXISTING GROUND RING. GROUND PER MANUFACTURER SPECIFICATIONS (TYP.)
- ③ PROPOSED #2 AWG BARE TINNED SOLID COPPER WIRE: 2-HOLE LUG CONNECTION FROM PROPOSED AUTOMATIC TRANSFER SWITCH TO EXISTING GROUND RING. GROUND PER MANUFACTURER SPECIFICATIONS (TYP.)
- ④ PROPOSED #2 AWG BARE TINNED SOLID COPPER WIRE: 2-HOLE LUG CONNECTION TO GENERATOR BASE FRAME. CADWELDED CONNECTION TO EXISTING GROUND RING (TYP.)
- ⑤ BOND ALL H-FRAME & ICE CANOPY POSTS TO GROUND RING
- ⑥ BOND FENCE POSTS TO GROUND RING WITH CADWELDED (E) ACCESS GATE CONNECTION (TYP.)



**1** GROUNDING SITE PLAN  
SCALE: 1/2"=1'-0" (FULL SIZE)  
1/4"=1'-0" (11x17)



8960 ALDERWOOD ROAD  
PORTLAND, OR 97220



1505 WESTLAKE AVENUE NORTH, SUITE 800  
SEATTLE, WA 98109



P. MARSHALL & ASSOCIATES  
6801 PORTWEST DR., SUITE 100  
HOUSTON, TX 77024

T-MOBILE SITE NUMBER:  
**PO01412A**

BU #: **826928**  
**REDLAND**

18281 S FISCHERS MILL ROAD  
OREGON CITY, OR 97045

EXISTING 98'-0" MONOPOLE

**ISSUED FOR:**

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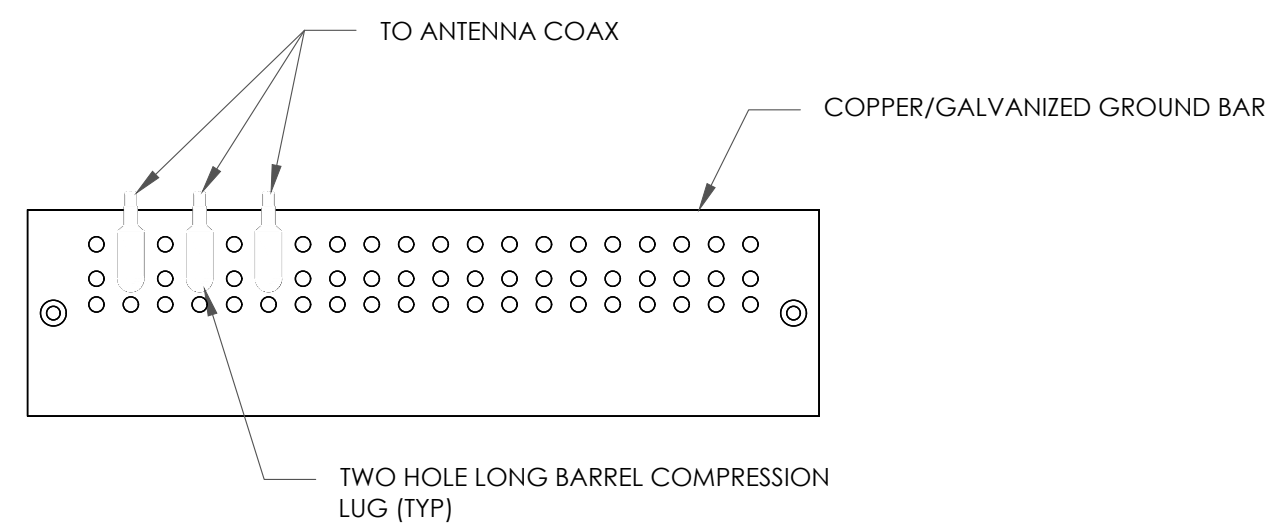


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PM&A JOB #:  
**21CCT7M-127**

SHEET NUMBER:  
**G-1**

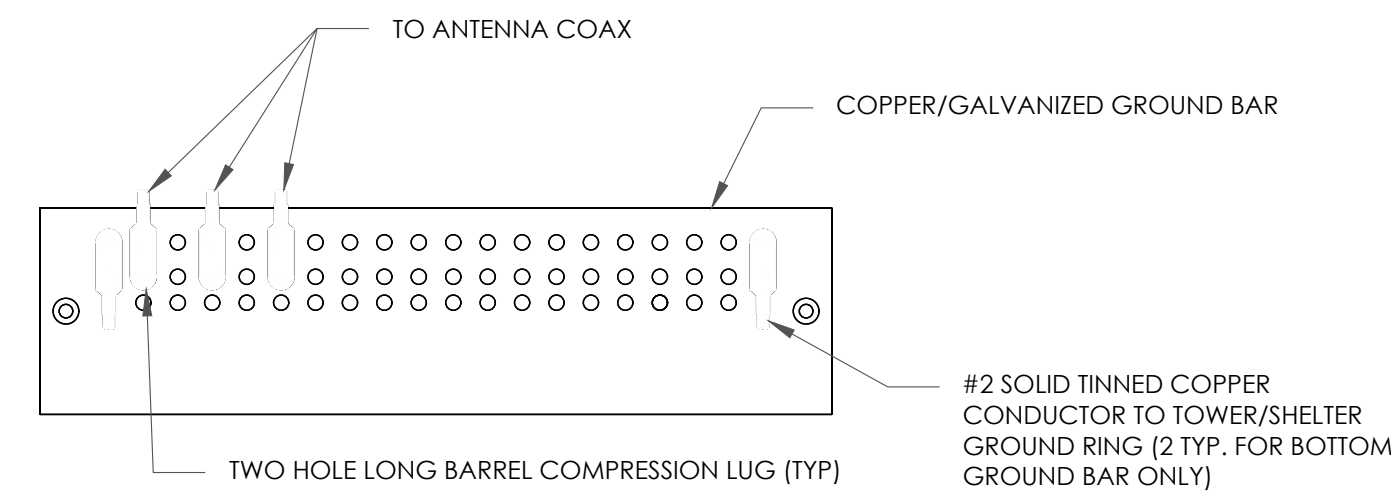
REVISION:  
**2**



**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.

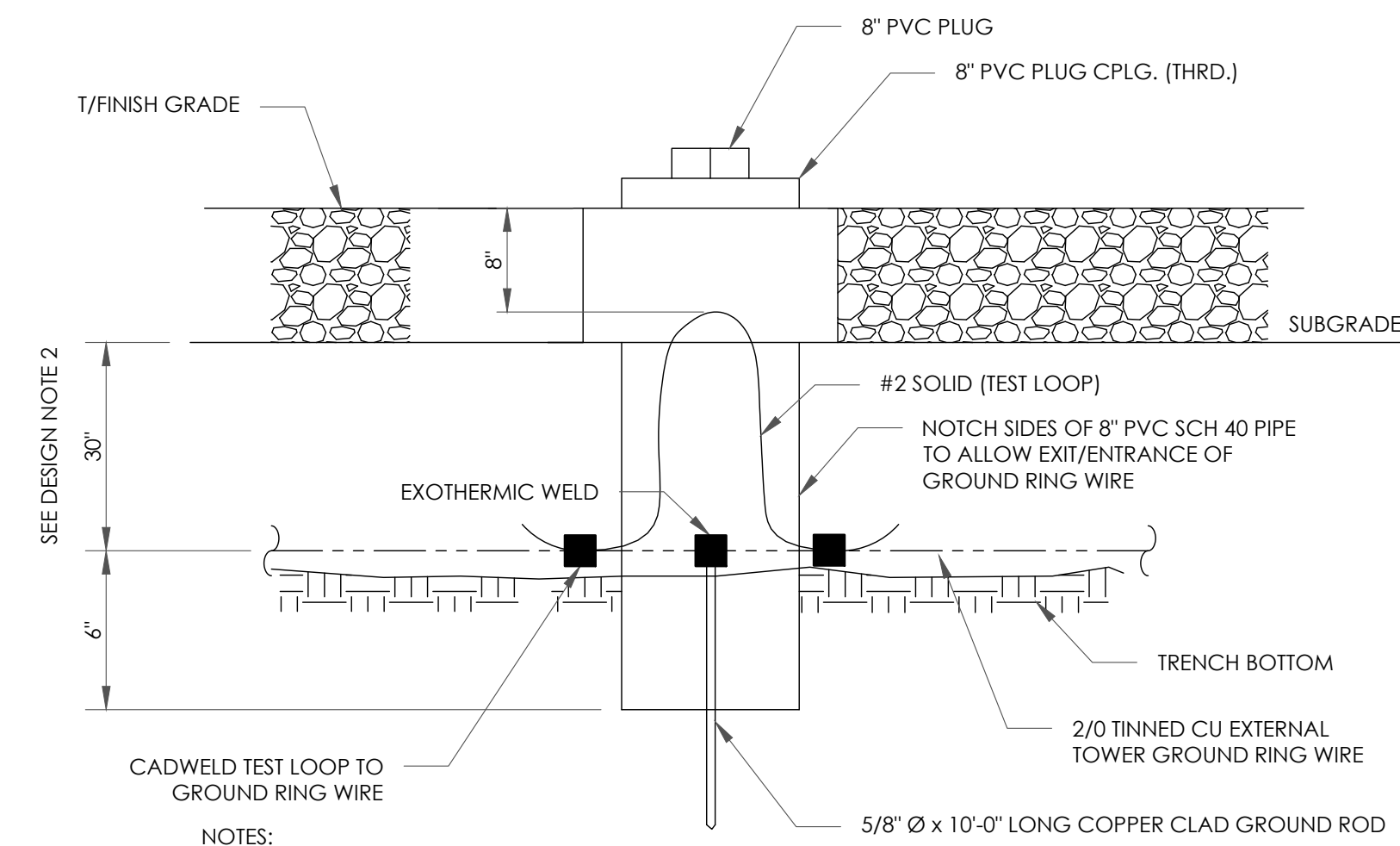
**1** ANTENNA SECTOR GROUND BAR DETAIL  
SCALE: NOT TO SCALE



**NOTES:**

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.

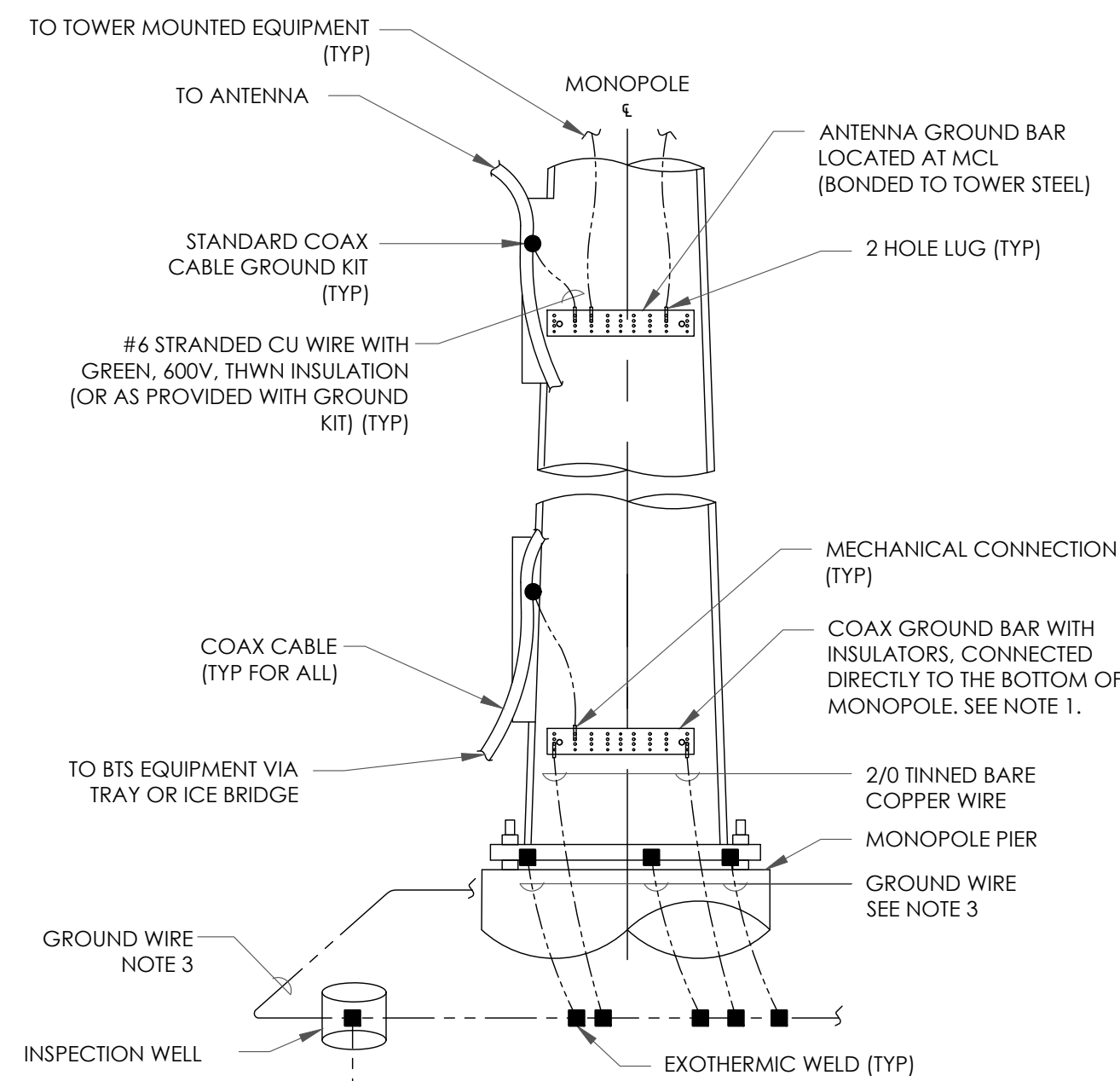
**2** TOWER/SHELTER GROUND BAR DETAIL  
SCALE: NOT TO SCALE



**NOTES:**

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)

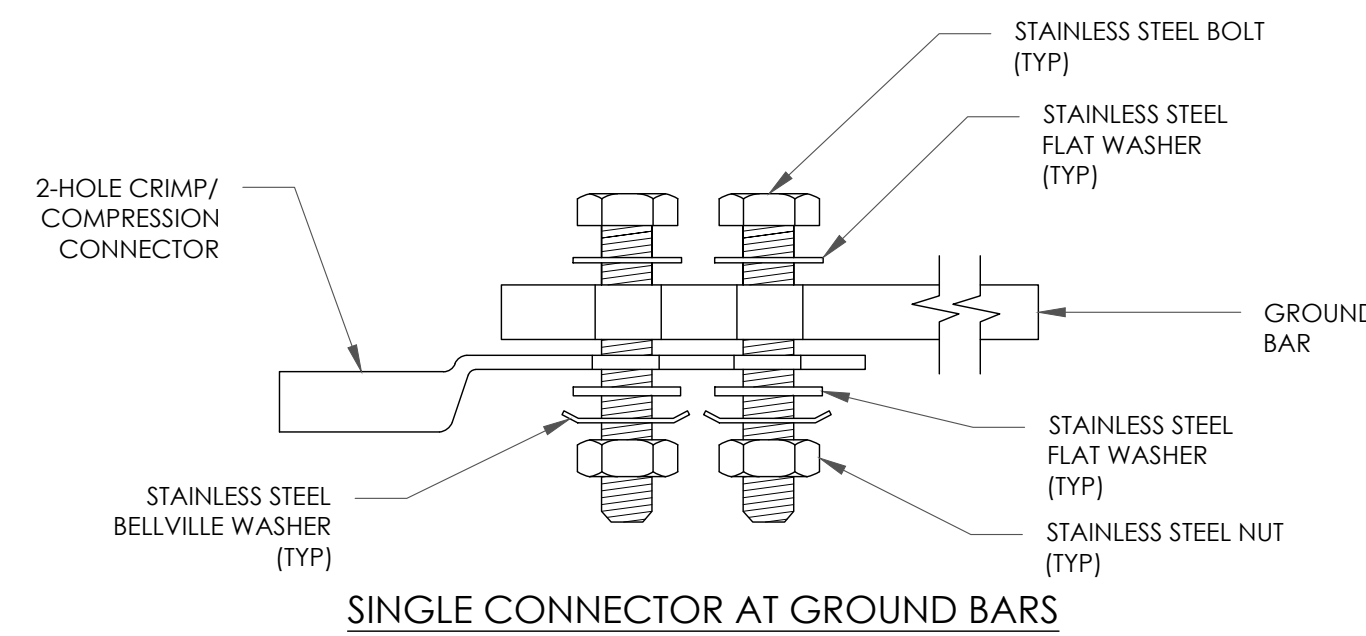
**3** INSPECTION WELL DETAIL  
SCALE: NOT TO SCALE



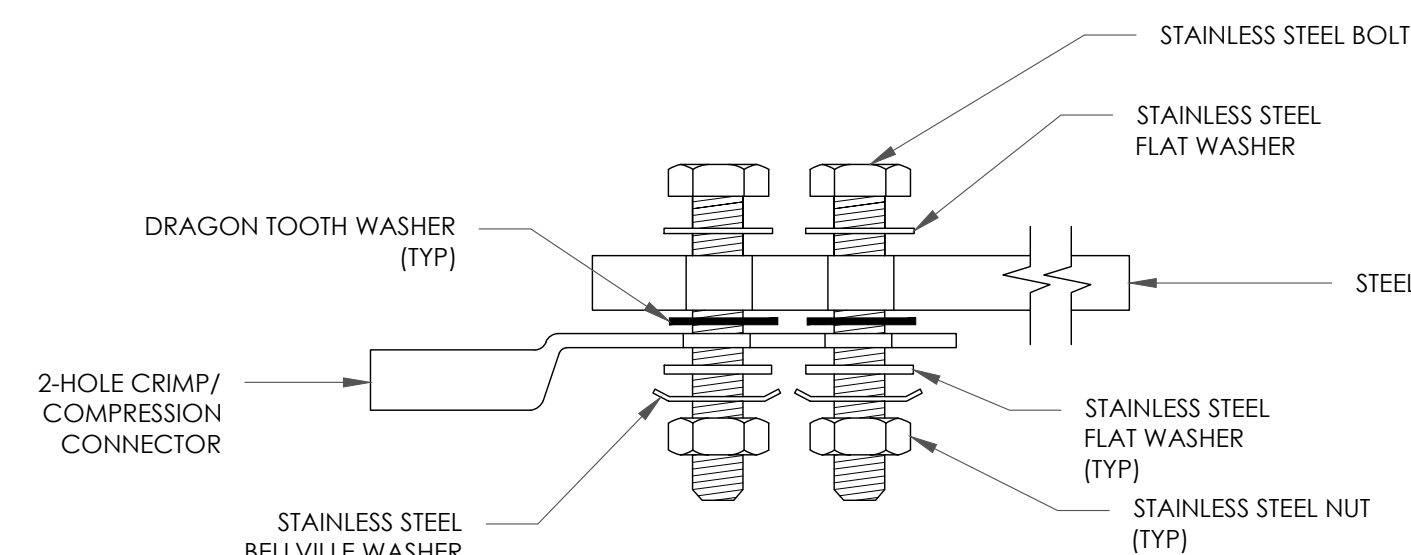
**NOTES:**

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.

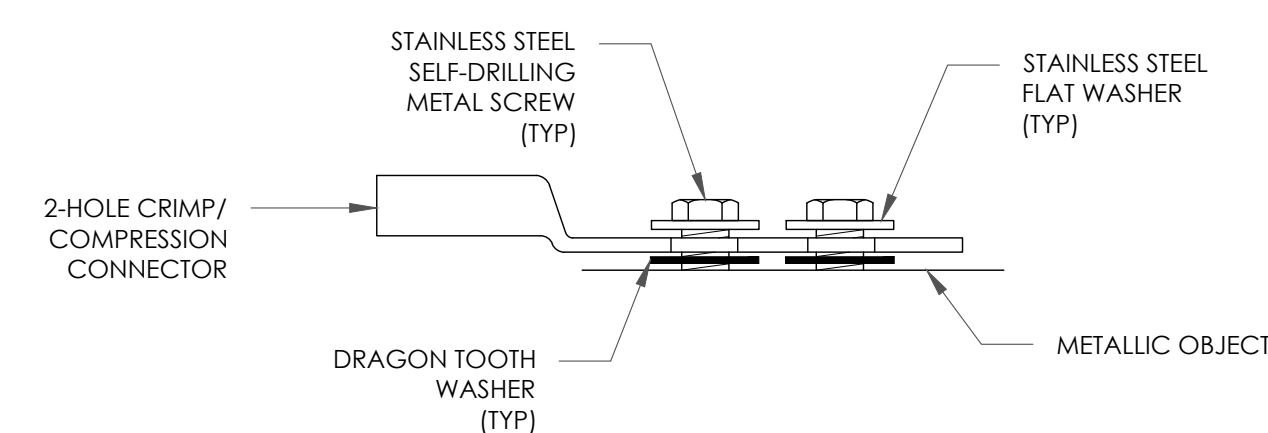
**4** TYPICAL ANTENNA CABLE GROUNDING  
SCALE: NOT TO SCALE



**SINGLE CONNECTOR AT GROUND BARS**

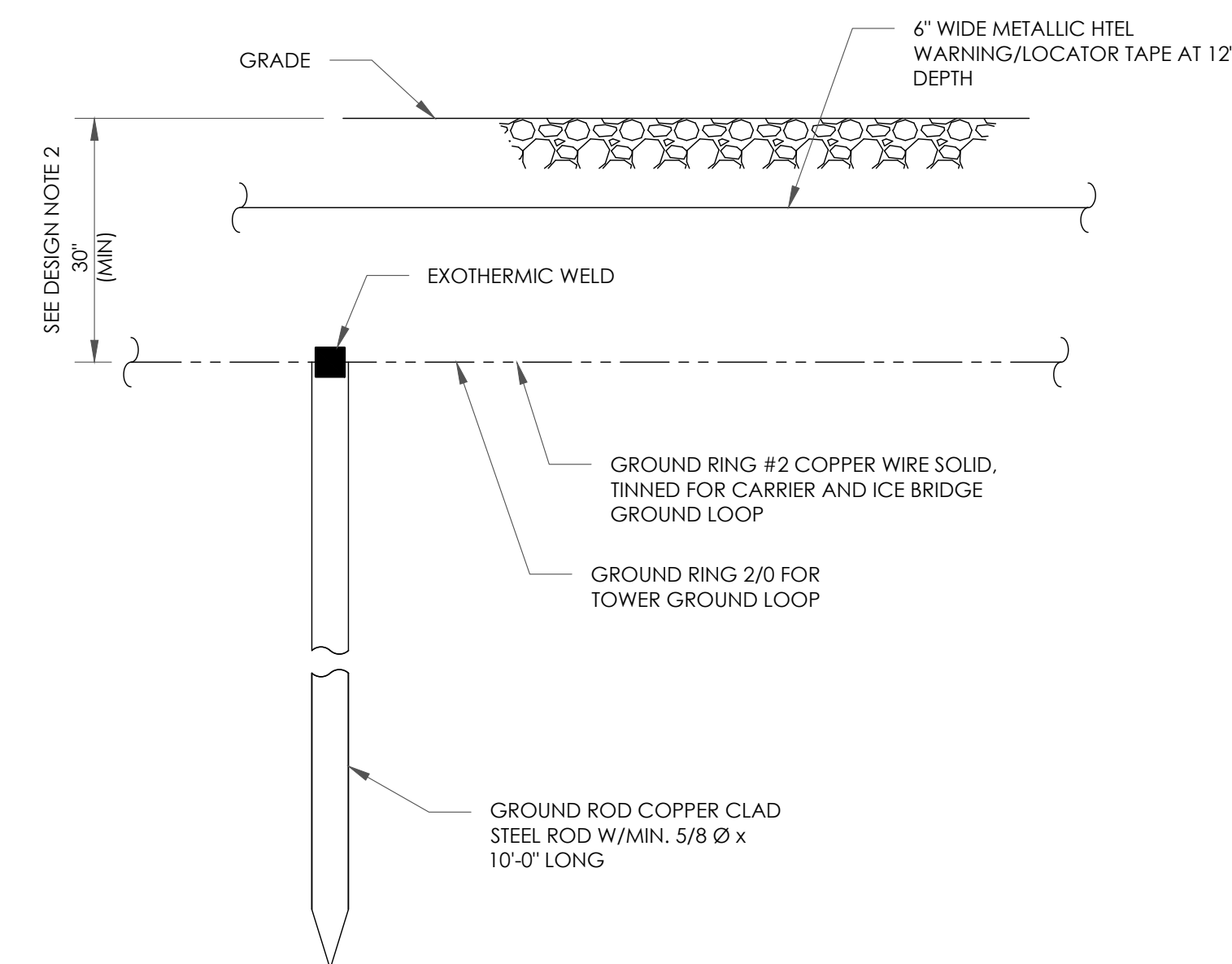


**SINGLE CONNECTOR AT STEEL OBJECTS**



**SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS**

**5** HARDWARE DETAIL FOR EXTERIOR CONNECTIONS  
SCALE: NOT TO SCALE



**NOTES:**

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)

**6** GROUND ROD DETAIL  
SCALE: NOT TO SCALE

**T-Mobile**  
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**CROWN CASTLE**  
1505 WESTLAKE AVENUE NORTH, SUITE 800  
SEATTLE, WA 98109

**PM&A**  
P. MARSHALL & ASSOCIATES  
6801 PORTWEST DR., SUITE 100  
HOUSTON, TX 77024

T-MOBILE SITE NUMBER:  
**PO01412A**  
  
BU #: 826928  
**REDLAND**

18281 S FISCHERS MILL ROAD  
OREGON CITY, OR 97045

EXISTING 98'-0" MONOPOLE

**ISSUED FOR:**

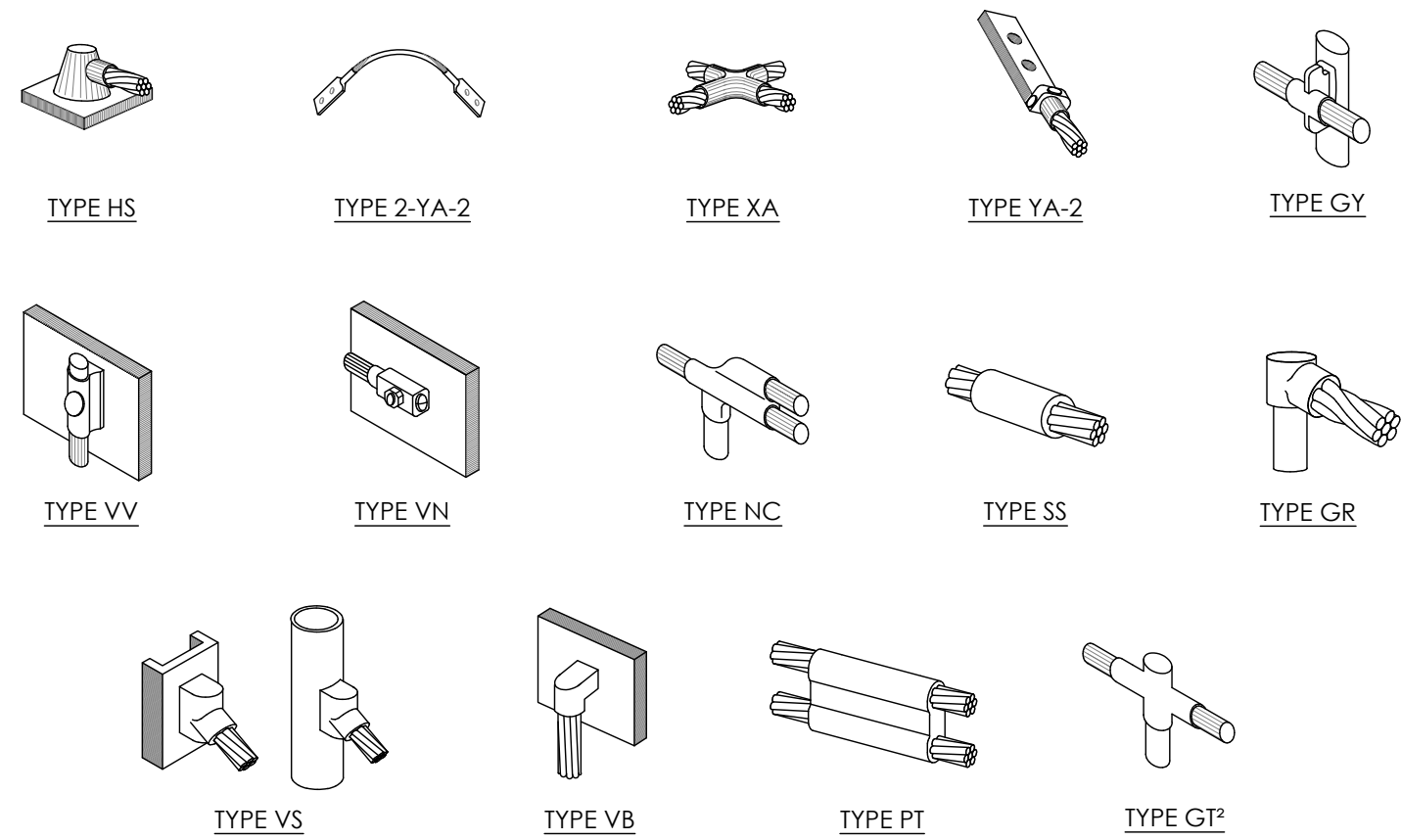
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**REGISTERED PROFESSIONAL ENGINEER**  
92768PE  
ORIG. DATE: 30, 2019  
**CHAD WILHOIT**  
01/06/2022  
EXPIRES: 6/30/2022

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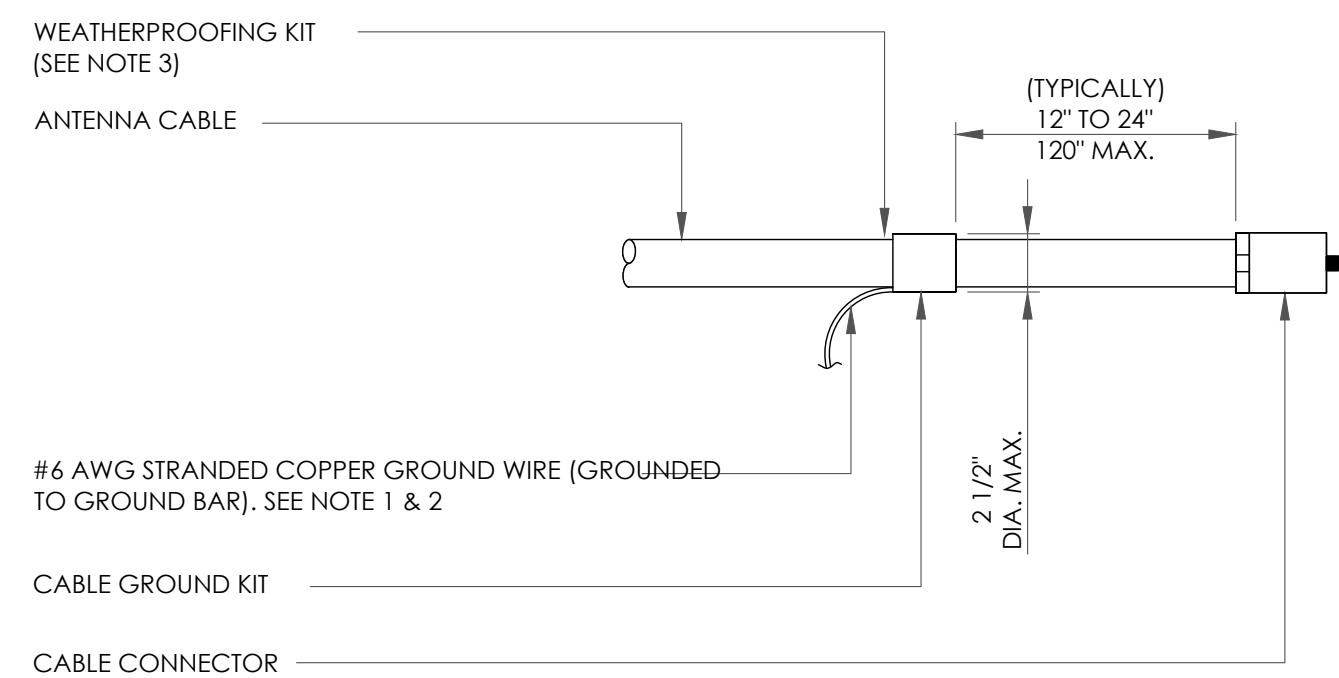
SHEET NUMBER: **G-2** REVISION: **2**



**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.

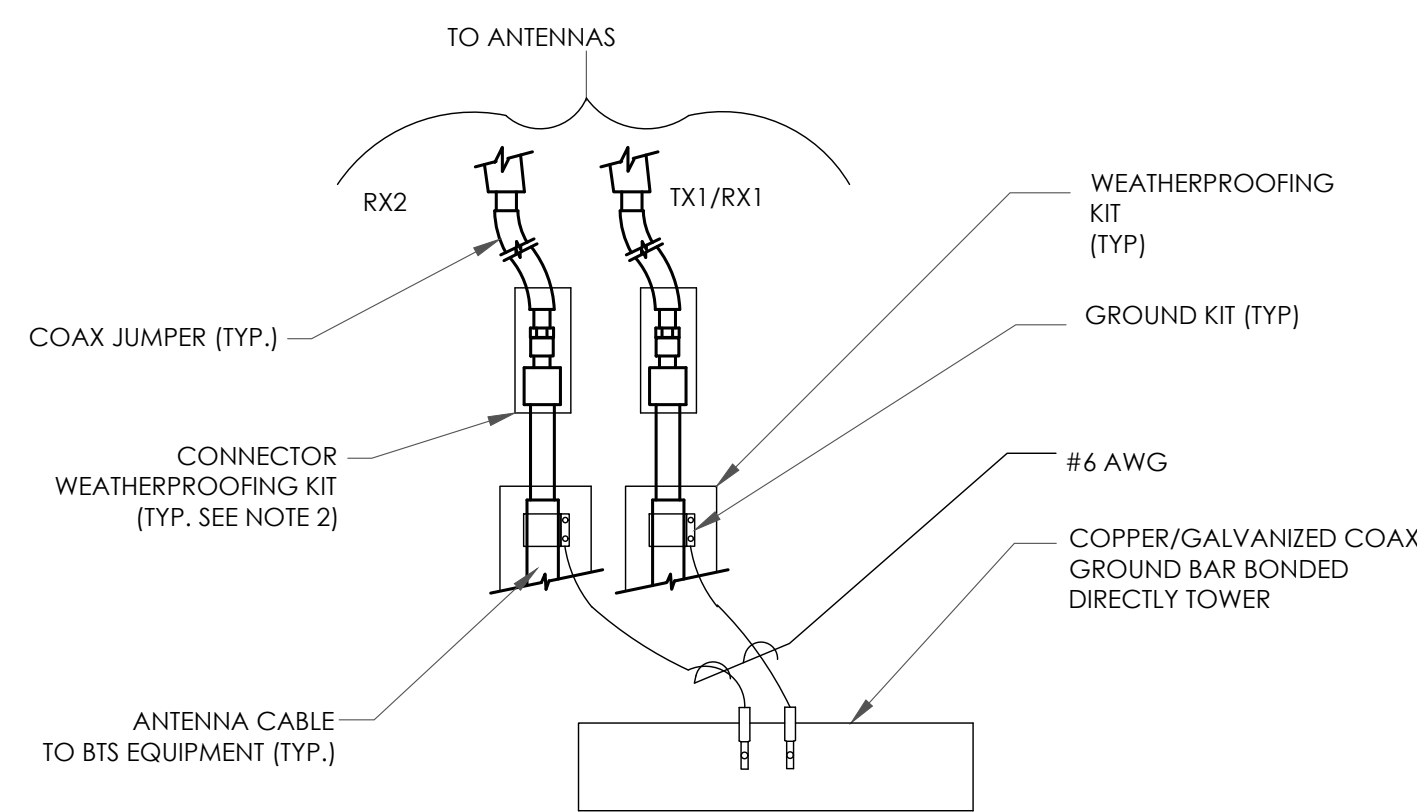
**1 CADWELD GROUNDING CONNECTIONS**  
SCALE: NOT TO SCALE



**NOTES:**

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

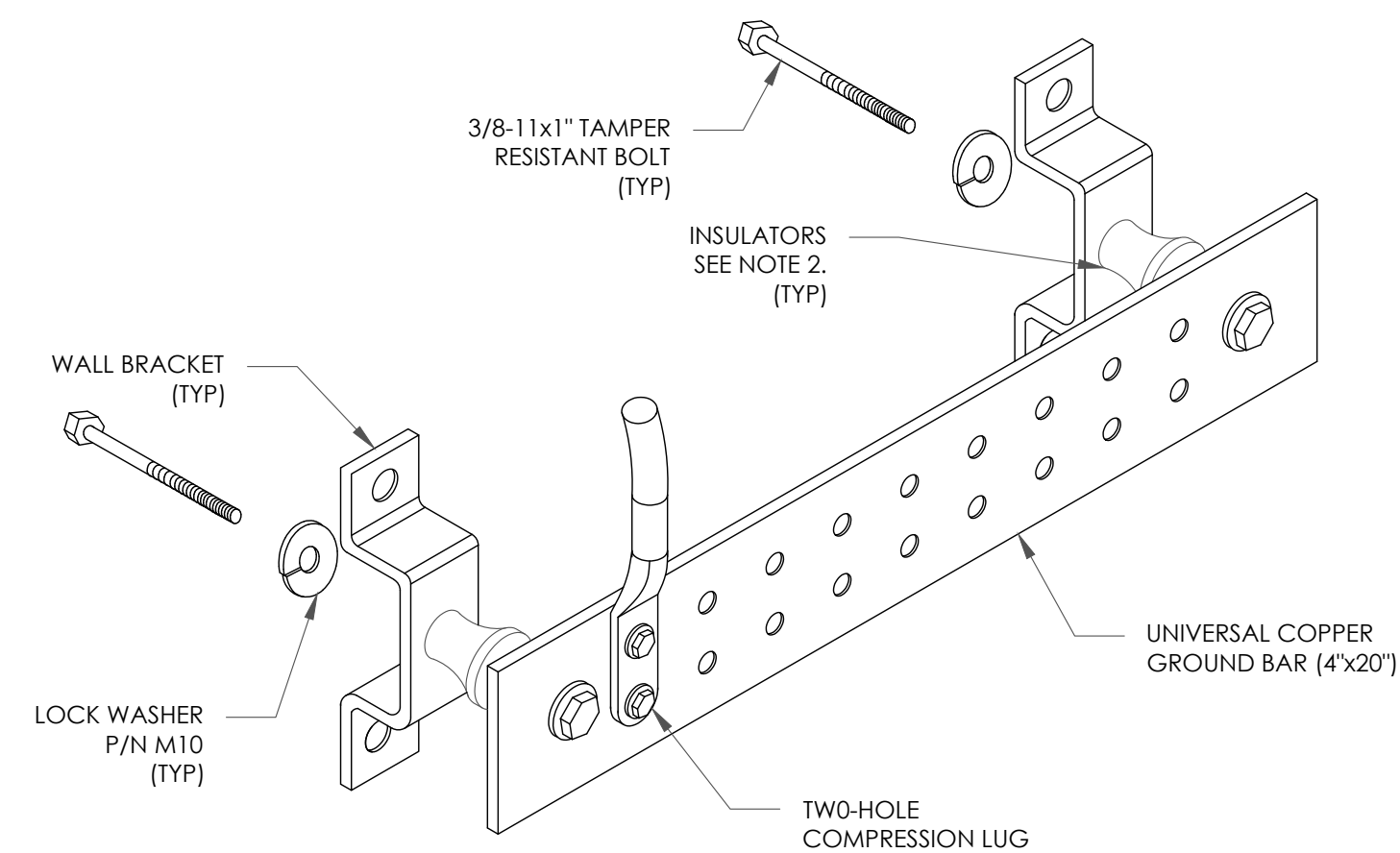
**3 CABLE GROUND KIT CONNECTION**  
SCALE: NOT TO SCALE



**NOTES:**

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 USED.

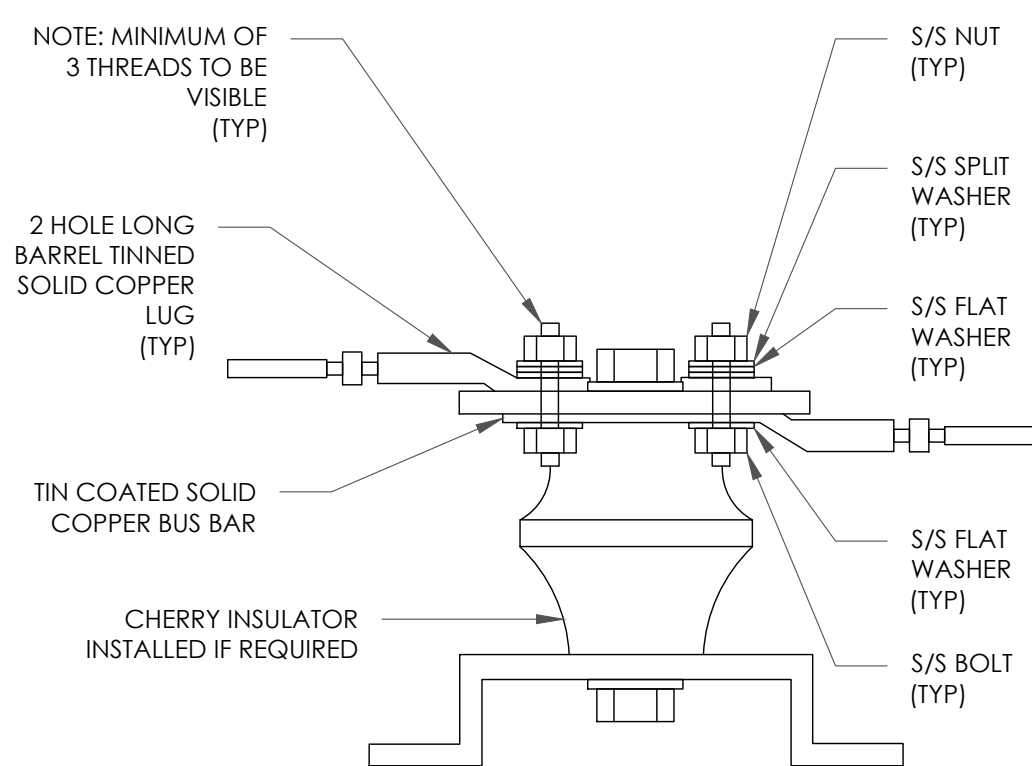
**4 GROUND CABLE CONNECTION**  
SCALE: NOT TO SCALE



**NOTES:**

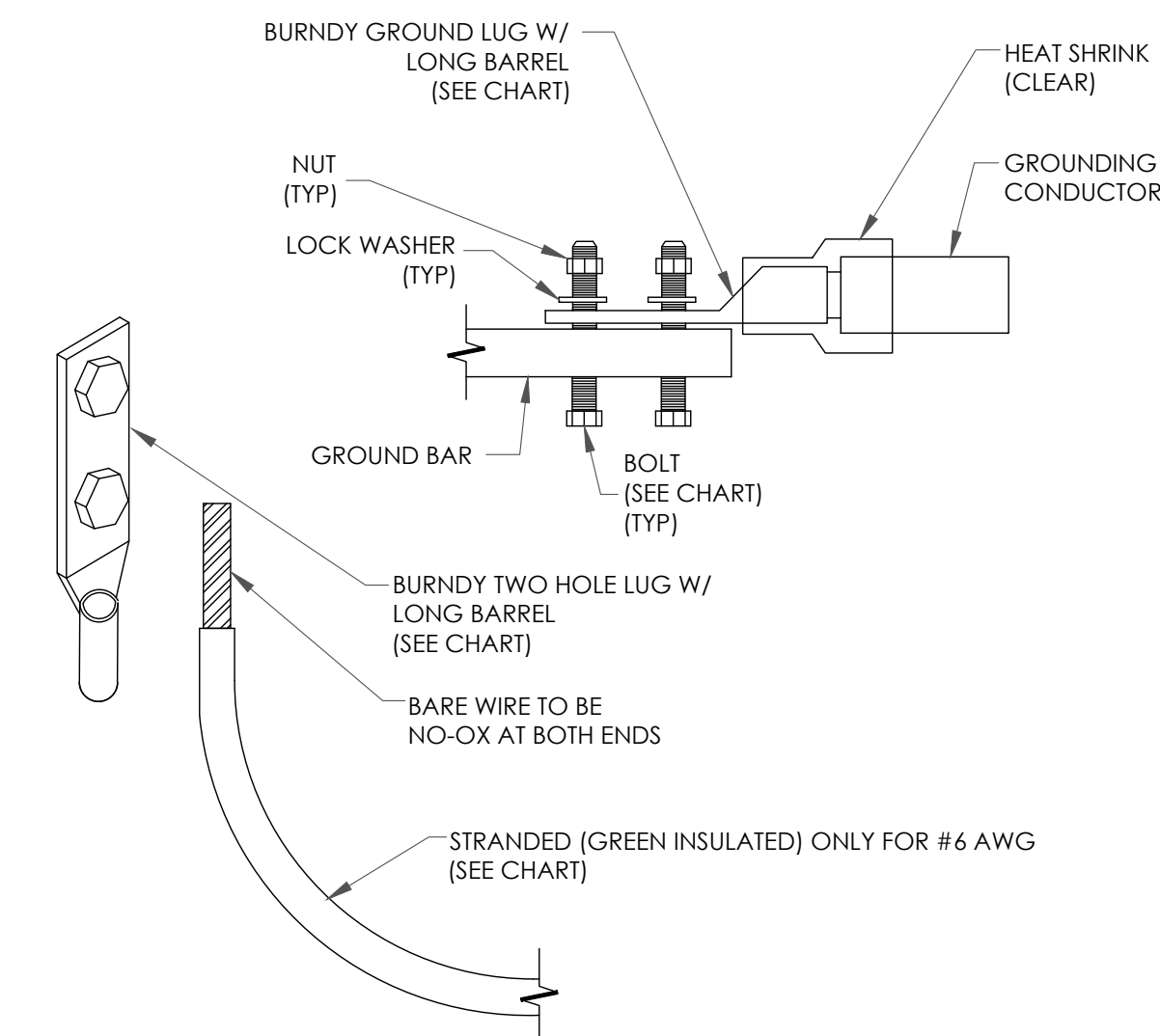
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR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

**6 GROUND BAR DETAIL**  
SCALE: NOT TO SCALE



**7 LUG DETAIL**  
SCALE: NOT TO SCALE

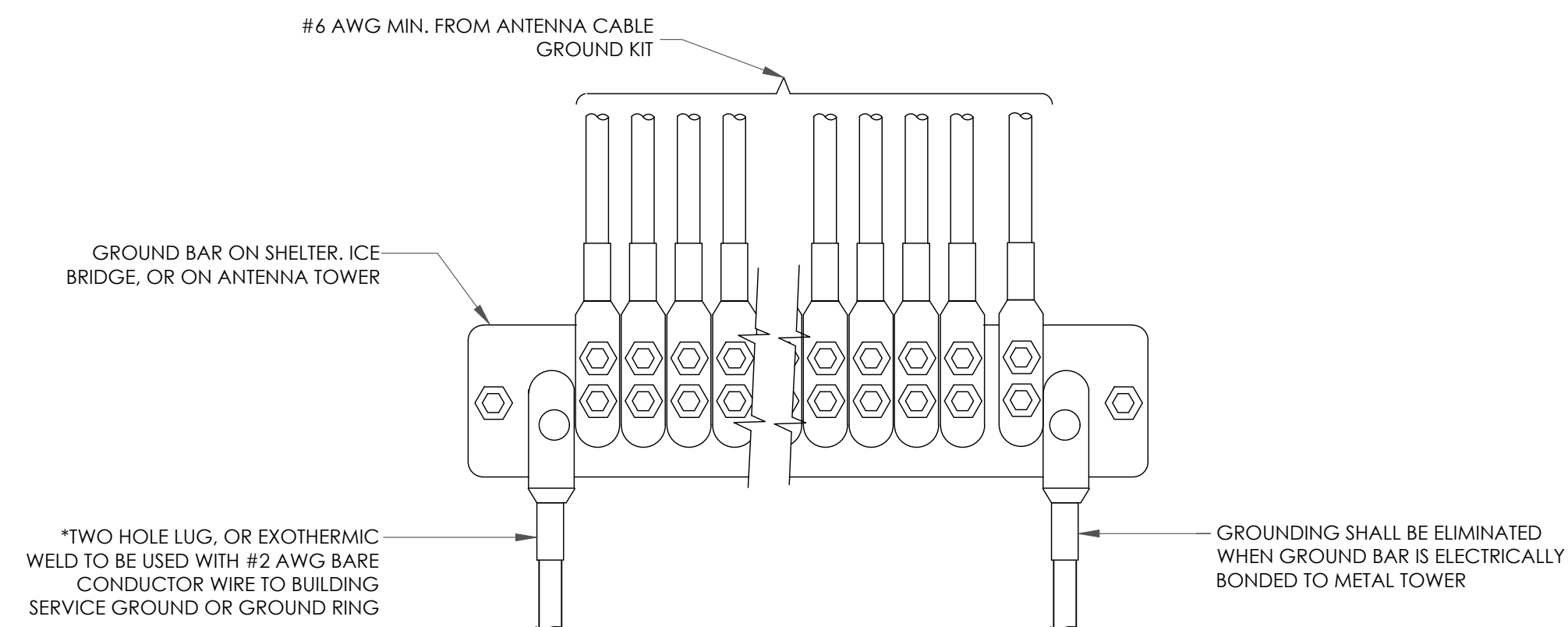
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



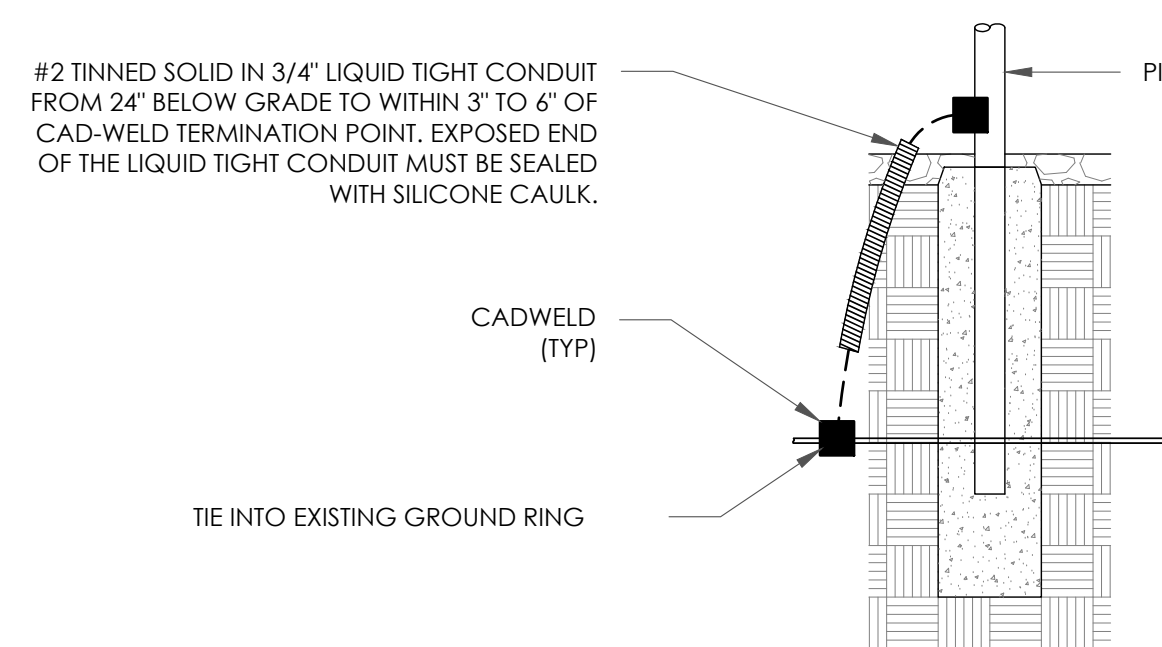
**NOTES:**

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.

**2 MECHANICAL LUG CONNECTION**  
SCALE: NOT TO SCALE



**5 GROUNDWIRE INSTALLATION**  
SCALE: NOT TO SCALE



**8 TRANSITIONING GROUND DETAIL**  
SCALE: NOT TO SCALE



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PORTLAND, OR 97220



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HOUSTON, TX 77024

T-MOBILE SITE NUMBER:  
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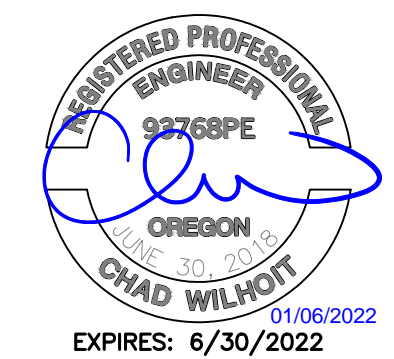
BU #: **826928**  
**REDLAND**

18281 S FISCHERS MILL ROAD  
OREGON CITY, OR 97045

EXISTING 98'-0" MONOPOLE

**ISSUED FOR:**

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A	10/26/21	CS	PRELIMINARY	VT
0	10/26/21	CS	FINALS	VT
1	11/16/21	CS	CLIENT COMMENTS	VT
2	01/05/22	VT	GEN. ANCHOR CALCS.	VT



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.

PM&A JOB #:  
**21CCT7M-127**

SHEET NUMBER:

**G-3**

REVISION:

**2**

**BASIS FOR DESIGN**

**CODES & STANDARDS FOR DESIGN AND CONSTRUCTION:**

BUILDING CODE \_\_\_\_\_ 2018 OSSC (2018 IBC)  
 DESIGN LOADS \_\_\_\_\_ ASCE 7-16  
 CONCRETE \_\_\_\_\_ ACI 318-14

RISK CATEGORY \_\_\_\_\_ II

**ANALYSIS METHODS USED**

SEISMIC DESIGN (ASCE 7, CHAPTER 13)

SITE CLASSIFICATION \_\_\_\_\_ D  
 SEISMIC IMPORTANCE FACTOR \_\_\_\_\_ 1.0  
 SEISMIC DESIGN CATEGORY \_\_\_\_\_  
 SPECTRAL RESPONSE ACCELERATION PARAMETERS:  
 $S_s$  \_\_\_\_\_ 0.7670  
 $S_1$  \_\_\_\_\_ 0.3460  
 $S_{DS}$  \_\_\_\_\_ 0.6136  
 $S_{D1}$  \_\_\_\_\_ 0.4507  
 AMPLIFICATION FACTOR ( $a_p$ ) \_\_\_\_\_ 1.0  
 RESPONSE MODIFICATION FACTOR ( $R_p$ ) \_\_\_\_\_ 2.5  
 OVERSTRENGTH FACTOR ( $\Omega$ ) \_\_\_\_\_ 2.0

**STRUCTURAL LOADS**

CABINET WEIGHTS:  
 48KW GENERAC 240 GALLON DIESAL GENERATOR \_\_\_\_\_ 4,595.0 lbs

**FASTENERS**

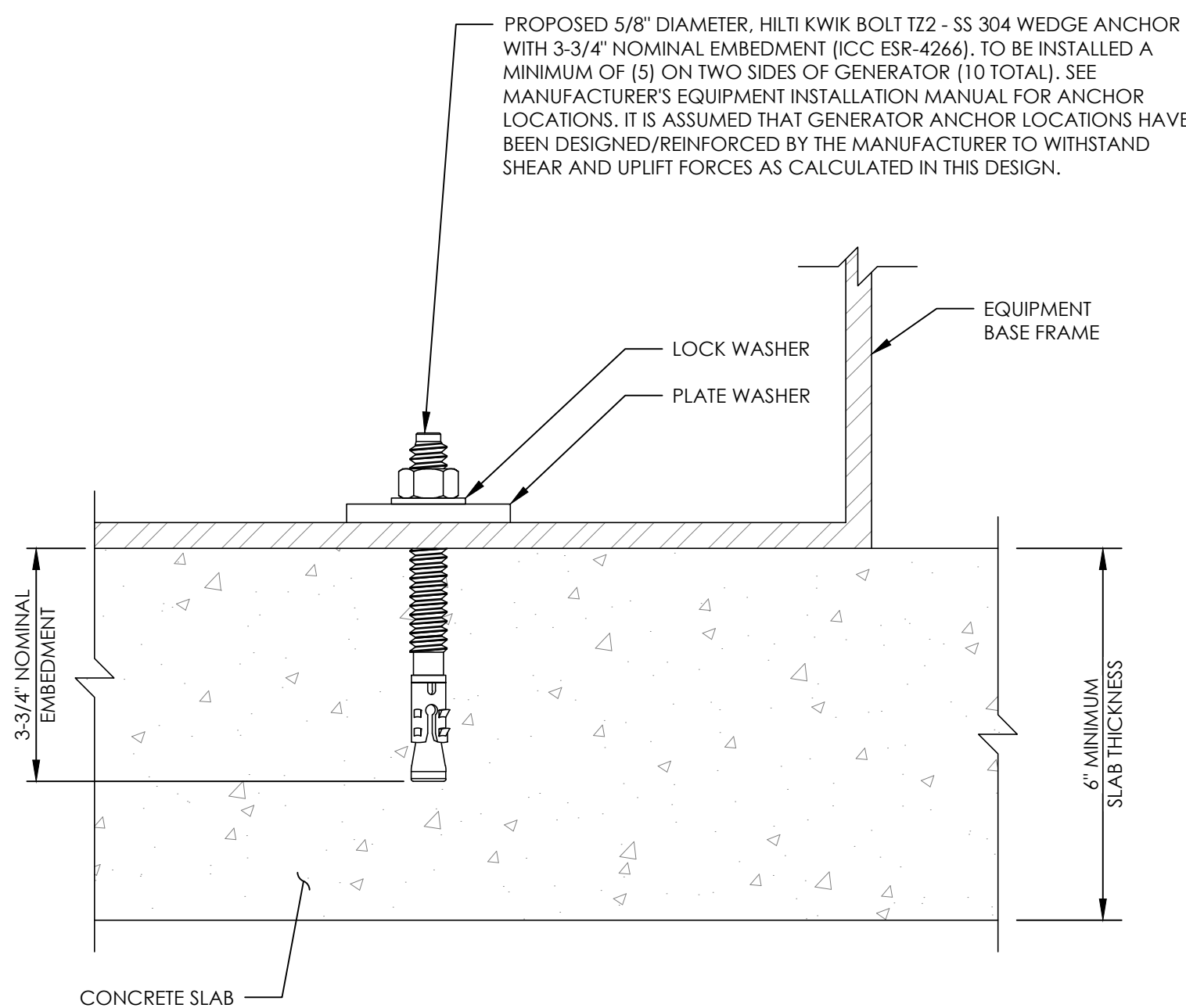
FASTENER USED \_\_\_\_\_ HILTI KWIK BOLT TZ2 - SS 304  
 ICC EVALUATION REPORT \_\_\_\_\_ ESR-4266  
 SIZE OF FASTENER \_\_\_\_\_ 5/8" DIAMETER  
 TENSION CAPACITY ( $0.75\Phi N_t$ ) \_\_\_\_\_ 10,599 lbs  
 SHEAR CAPACITY ( $\Phi V_n$ ) \_\_\_\_\_ 4,745 lbs  
 ASSUMED CONCRETE STRENGTH ( $f'_c$ ) \_\_\_\_\_ 3,000 psi  
 MINIMUM EDGE DISTANCE \_\_\_\_\_ 6 inches  
 MINIMUM SPACING \_\_\_\_\_ 18.9 inches

48KW GENERAC GENERATOR:  $(N_u/0.75\Phi N_t) + (V_u/\Phi V_n) = 0.43 \leq 1.2$

**FASTENER INSTALLATION**

ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS FOUND IN THE PRODUCT'S CORRESPONDING ICC EVALUATION REPORT AND IN THE PRODUCT INSTALLATION GUIDE. NO SUBSTITUTION IS ALLOWED WITHOUT PRIOR APPROVAL BY THE ENGINEER. SUBSTITUTION PRODUCTS ARE REQUIRED TO HAVE A CURRENT I.C.C. EVALUATION REPORT SHOWING APPROVED TESTING FOR THE APPLICATION USED.

**SPECIAL INSPECTION REQUIRED**



BU: 826928 Order: 585093  
 WO: 658020 Rev: 0  
 Description: 48KW Generac 240 gallon Diesel Generator

Location			
Lat:	45.3451 deg	+	45 20 42.50 deg, min, sec
Long:	-122.4910 deg	-	122 29 27.60 deg, min, sec

Cabinet Dimensions			
Weight (W):	4595.00 lbs	Width (A):	103.40 in 163.4 in.
Building Roof Height (h):	0.00 ft	Depth (B):	35.00 in 35 in.
Cabinet Base Height (z <sub>b</sub> ):	0.00 ft	Height (C):	90.00 in 90 in.
		Bolt Offset (D):	0.75 in (TY?)
		Mass Eccentricity	X: _____ in Y: _____ in Z: 67.50 in

Cabinet Plan

Cabinet Elevation

Code	
Design Code:	ASCE 7-16
Risk Category:	II (Table 1.5-1)

Seismic Parameters			
Site Soil:	D (Default) (20.3)	$I_a$ :	1 (Table 1.5-2)
$S_s$ (USGS):	0.7670 g	$S_{DS}$ :	0.6136 g
$S_1$ (USGS):	0.3460 g	$S_{D1}$ :	0.4507 g
$T_s$ (USGS):	16 s	SDC:	D (11.6)
		$a_p$ :	1 (Table 13.6-1)
		$R_p$ :	2.5 (Table 13.6-1)
		$\Omega$ :	2 (Table 13.6-1)

Wind Parameters			
Exposure Category:	C (26.7)	Topographic Factor, $K_{zt}$ :	1.000 (26.8.2)
Wind Speed, $V$ :	98.000 mph (26.5)	Directionality Factor, $K_d$ :	0.900 (Table 26.6-1)
Ground Elevation ( $z_g$ ):	362.49 ft (26.9)	Gust-effect factor, $G$ :	0.850 (26.11)

Weight Distribution			
Anchor 1:	1148.8 lbs	Anchor 3:	1148.8 lbs
Anchor 2:	1148.8 lbs	Anchor 4:	1148.8 lbs
Max:	1148.8 lbs	Min:	1148.8 lbs

Seismic Forces			
$F_p$ :	451.1 lbs (13.3-1)	$E_p$ :	563.9 lbs (12.4-4a)
$F_{pmax}$ :	451.2 lbs (13.3-2)	$E_{ph}$ :	1691.7 lbs (12.4-7)
$F_{pmix}$ :	845.8 lbs (13.3-3)	$M_{E2}$ :	114189.426 in-lbs

Wind Forces			
Center of Wind, $z_w$ :	3.75 ft	$C_f$ :	1.326 (Figure 29.4-1)
alpha:	9.5 (Table 26.11-1)	$C_{fe}$ :	1.300 (Figure 29.4-1)
$z_p$ :	900 ft (Table 26.11-1)	q:	18.539 lb/ft <sup>2</sup> (26.10-1)
$K_z$ :	0.85 (Table 26.10-1)		
$K_d$ :	0.986963582 (Table 26.9-1)		
$A_x$ :	21.9 ft <sup>2</sup>	$F_x$ :	457.1 lbs (29.4-1)
$A_y$ :	64.6 ft <sup>2</sup>	$F_y$ :	1323.9 lbs (29.4-1)
		$M_x$ :	20572 in-lbs
		$M_y$ :	59574 in-lbs

Max Anchor Rod Loads - Forces in X direction			
Strength Load Combination	1.2D + W	Uplift	0.0 lbs
	0.9D + W	Uplift	0.0 lbs
	1.2D + Ev + Eh	Uplift	0.0 lbs
	0.9D - Ev + Eh	Uplift	0.0 lbs
Allowable Stress Load Combination	1.0D + 0.6W	Uplift	0.0 lbs
	0.6D + 0.6W	Uplift	0.0 lbs
	1.0D + 0.7(Ev + Eh)	Uplift	0.0 lbs
	0.6D + 0.7(-Ev + Eh)	Uplift	0.0 lbs

Max Anchor Rod Loads - Forces in Y direction			
Strength Load Combination	1.2D + W	Uplift	0.0 lbs
	0.9D + W	Uplift	0.0 lbs
	1.2D + Ev + Eh	Uplift	59.0 lbs
	0.9D - Ev + Eh	Uplift	309.6 lbs
Allowable Stress Load Combination	1.0D + 0.6W	Uplift	0.0 lbs
	0.6D + 0.6W	Uplift	0.0 lbs
	1.0D + 0.7(Ev + Eh)	Uplift	0.0 lbs
	0.6D + 0.7(-Ev + Eh)	Uplift	230.5 lbs

**T-Mobile**  
 8960 ALDERWOOD ROAD  
 PORTLAND, OR 97220

**CROWN CASTLE**  
 1505 WESTLAKE AVENUE NORTH, SUITE 800  
 SEATTLE, WA 98109

**PM&A**  
 P. MARSHALL & ASSOCIATES  
 6801 PORTWEST DR., SUITE 100  
 HOUSTON, TX 77024

T-MOBILE SITE NUMBER:  
**PO01412A**

BU #: 826928  
**REDLAND**

18281 S FISCHERS MILL ROAD  
 OREGON CITY, OR 97045

**ANCHORAGE CALCULATIONS**

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	01/05/21	PEH	FINAL	ABT

REGISTERED PROFESSIONAL ENGINEER  
 94077PE  
 OREGON  
 SEPTEMBER 11, 2015  
 ANDREI BARBA  
 EXPIRES: 12/31/2023

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PM&A JOB #:  
**21CCT7M-127**

SHEET NUMBER: <b>S-1</b>	REVISION: <b>0</b>
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Clackamas County Official Records  
Sherry Hall, County Clerk

**2013-056323**

08/08/2013 01:04:21 PM

D-L                      Cnt=1 Stn=1 KARLYNWUN  
\$30.00 \$16.00 \$10.00 \$17.00

**\$73.00**

**MEMORANDUM OF MASTER PREPAID LEASE  
AND MANAGEMENT AGREEMENT**

**Recording Requested by and Return to:**

Crown Castle  
1220 Augusta Drive  
Houston, TX 77057  
Attention: PEP  
Phone: 713-570-3118

**Document Prepared by:**

Matt Barnes  
Burr & Forman LLP  
20 North 20th Street, Suite 3400  
Birmingham, AL 35203  
Phone: 205-458-5120

**Grantor/ Lessor / "T-Mobile Lessor"**

T-Mobile West Tower LLC, a Delaware limited liability company  
with an address of 12920 S.E. 38<sup>th</sup> Street, Bellevue, WA 98006  
By CCTMO LLC, a Delaware limited liability company, its Attorney in Fact

NOTE: Limited Power of Attorney, dated November 12, 2012, recorded on 6/17/2013  
at Instrument Number 2013-041773, of the official records of Clackamas County, OR

**Grantee / Lessee / "Crown"**

CCTMO LLC, a Delaware limited liability company,  
with an address of 1220 Augusta Drive, Houston TX 77057

826928 Clackamas OR

Recording Requested by  
and Return to:  
Old Republic Residential Information Services  
530 S. Main Street, Suite 1031  
Akron, Ohio 44311  
Attention: \_\_\_\_\_

All Tax Statements  
Should be Sent To:  
Crown Castle  
1220 Augusta Drive, Suite 500  
Houston, Texas 77057

STATE OF OREGON                    )  
  
COUNTY OF CLACKAMAS         )

Cross Reference to:  
Instrument No. 96-010407

**MEMORANDUM OF MASTER PREPAID LEASE  
AND MANAGEMENT AGREEMENT**

**THIS MEMORANDUM OF MASTER PREPAID LEASE AND MANAGEMENT AGREEMENT** (this "Memorandum") is made this 1 day of August, 2013, by and between **T-MOBILE WEST TOWER LLC**, a Delaware limited liability company ("T-Mobile Lessor"), having a mailing address of 12920 S.E. 38th Street, Bellevue, Washington 98006, and **CCTMO LLC**, a Delaware limited liability company ("Crown"), having a mailing address of 2000 Corporate Drive, Canonsburg, Pennsylvania 15317.

1. Selmer A. Bolkan and Dorothy Bolkan, Trustees of the Selmer and Dorothy Bolkan Living Trust and Western PCS I Corporation ("Original T-Mobile Tenant") entered into that certain Site Lease with Option dated November 9, 1995, a memorandum of which was recorded as Instrument Number 96-010407 in the Official Records of Clackamas County, Oregon, for certain real property as described on **Exhibit A** attached hereto and incorporated herein by reference (the "Land").

2. T-Mobile Lessor and Crown are parties to (a) a Master Prepaid Lease (the "MPL") and (b) a Management Agreement (the "MA"), each with an effective date of November 30, 2012, pursuant to which T-Mobile Lessor (as successor to Original T-Mobile Tenant) has granted to Crown and Crown has accepted, either (y) a leasehold or sub-leasehold interest in the Land, together with the telecommunications tower located thereon, and such other improvements as more fully set forth in the MPL or the MA, as applicable (collectively, the "Site"), or (z) an exclusive right to operate, manage and administer the Site, in either case, subject to the terms, conditions and reservations in the MPL or the MA, as applicable.

3. The MPL and the MA each have a term that commenced on November 30, 2012 and shall terminate or expire, with respect to the Site, on the Site Expiration Date or Technical Closing Date, as applicable, and as determined in accordance with the MPL and the MA, but in no event later than December 31, 2049.

4. Crown has an option to purchase T-Mobile Lessor's right, title and interest in the Site in accordance with Section 20 of the MPL.

5. Unless otherwise defined herein, capitalized terms shall have the meaning set forth in the MPL. The MPL and the MA and any and all amendments thereto contain terms and conditions in addition to those set forth in this Memorandum. This Memorandum is not intended to amend or modify the terms and conditions of the MPL or the MA or of any amendments thereto. The parties agree that the terms and conditions of the MPL and the MA, as applicable, shall govern the relationship of the parties under this Memorandum and the MPL and the MA are each incorporated herein by reference. In the event of a conflict or inconsistency between the terms of the MPL or the MA and this Memorandum, the applicable terms of the MPL and the MA shall govern and control.

6. This Memorandum shall not be amended, supplemented or modified in any respect, except pursuant to written agreement duly executed by the parties; provided, however, if the term of both the MPL and MA shall terminate or expire with respect to the Site, the parties shall execute and file a revocation of or amendment to this Memorandum to evidence such termination or expiration. If either party fails to timely execute a revocation of or amendment to this Memorandum promptly after the expiration or termination of both the MPL and MA, then the other party shall have the right to execute such revocation or amendment as attorney in fact for such failing party.

7. T-Mobile Lessor granted to Crown a Power of Attorney dated November 30, 2012 related to the leasing, management and operation of the Site, which Power of Attorney was recorded as Instrument Number 2013-041773 in the aforesaid recording office.

*[Remainder of page intentionally left blank. Signature and acknowledgments to follow.]*



IN WITNESS WHEREOF, the parties hereto have set their hands and seals as of the date first above written.

**T-MOBILE LESSOR:**

**T-MOBILE WEST TOWER LLC,**  
a Delaware limited liability company

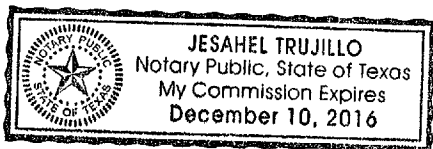
By: **CCTMO LLC,**  
a Delaware limited liability company  
Its: Attorney in Fact

By: *Lisa A. Sedgwick*  
Name: Lisa A. Sedgwick  
Its: RET Manager

STATE OF Texas )  
  ) )  
Harris COUNTY )

On this 1 day of August, 2013, before me personally appeared Lisa A Sedgwick, the RET Manager of CCTMO LLC, a Delaware limited liability company, as Attorney in Fact for T-MOBILE WEST TOWER LLC, who executed the foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said entity for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.



*J. Trujillo*  
Notary Public  
My Commission Expires: 12-10-16

Notary Seal

CROWN:

**CCTMO LLC,**  
a Delaware limited liability company

By: *Lisa A. Sedgwick*  
Name: Lisa A. Sedgwick  
Its: RET Manager

STATE OF Texas )  
Harris COUNTY )

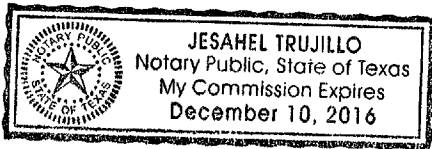
On this 1 day of August, 2013, before me personally appeared Lisa A Sedgwick the RET manager of CCTMO LLC, a Delaware limited liability company, who executed the foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said entity for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

*J. Trujillo*  
Notary Public

My Commission Expires: 12-10-16

Notary Seal



**EXHIBIT "A"**

A 400 square foot portion of the following described real property, together with easements for ingress, egress and utilities thereto:

A TRACT OF LAND LYING IN SECTION 6, TOWNSHIP 3 SOUTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN, IN THE COUNTY OF CLACKAMAS AND STATE OF OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN SECTION 6 AT THE INTERSECTION OF THE CENTERLINE OF THE EVERGREEN SCHOOL HOUSE ROAD, COUNTY ROAD NO. 105, AND A POINT IN THE WEST LINE OF THE WM. FOREDYCE DONATION LAND CLAIM NO. 57, SAID POINT BEING 240 FEET, MORE OR LESS, SOUTH OF THE NORTHWEST CORNER OF SAID FOREDYCE D.L.C.; THENCE RUNNING SOUTHEASTERLY ALONG THE CENTER LINE OF SAID SCHOOL HOUSE ROAD TO THE POINT OF INTERSECTION WITH THE CENTER LINE OF THE REDLAND-CARVER ROAD; THENCE RUNNING SOUTHERLY ALONG THE CENTER LINE OF THE REDLAND-CARVER ROAD TO THE POINT OF INTERSECTION WITH THE CENTER LINE OF MARKET ROAD NO. 8; THENCE RUNNING SOUTHWESTERLY ALONG THE CENTER LINE OF MARKET ROAD NO. 8 TO THE POINT OF INTERSECTION WITH THE SOUTH LINE OF A TRACT OF LAND DEEDED TO I. C. AND ROSA S. NEALEIGH ON MAY 3, 1927 IN DEED BOOK 188, PAGE 357; THENCE RUNNING WEST ALONG THE SOUTH LINE OF SAID NEALEIGH TRACT A DISTANCE OF 30.00 FEET TO A POINT ON THE WEST LINE OF THE W.H. FOREDYCE D.L.C., SAID POINT ALSO BEING THE SOUTHWEST CORNER OF THE NEALEIGH TRACT; THENCE RUNNING NORTH ALONG THE WEST LINE OF THE FOREDYCE D.L.C. TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO SCHOOL DISTRICT NO. 116, CLACKAMAS COUNTY, OREGON BY DEED RECORDED APRIL 27, 1948 IN BOOK 405, PAGE 560, CLACKAMAS COUNTY RECORDS.

FURTHER EXCEPTING THAT PORTION CONVEYED TO REDLAND GRANGE 796 BY DEED RECORDED MARCH 3, 1949 IN BOOK 417, PAGE 6, CLACKAMAS COUNTY RECORDS.



1505 Westlake Ave N, N  
Seattle, WA 98109

Phone: (206) 336-2886  
[www.crowncastle.com](http://www.crowncastle.com)

February 14, 2022

To whom it may concern,

This letter is to confirm that Lynx Consulting is working on behalf of Crown Castle USA Inc for permitting services in your area. The carrier (“T-Mobile”) is the Permit Applicant, Crown Castle USA Inc is the agent on behalf of “T-Mobile”, and Lynx Consulting is the agent on behalf of Crown Castle USA Inc.

Regards,

*Natasha Montalvo*

Natasha Montalvo  
Site Acquisition Specialist  
Crown Castle  
Agent for Applicant  
[Natasha.Montalvo@crowncastle.com](mailto:Natasha.Montalvo@crowncastle.com)  
(206) 336-2886