0 Industrial Ave, Suite 3 Mahwah NJ 07430

PHONE: 201.684.0055 FAX: 201.684.0066



July 7, 2023

Members of the Siting Council Connecticut Siting Council 10 Franklin Square New Britain, CT 06051

RE: Notice of Exempt Modification

201 Granite Road, Guilford, CT 06437

Latitude: 41.291900 Longitude: -72.7327800

T-Mobile Site#: CTNH510A - Hardening

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 84-foot level of the existing 110-foot Monopole at 201 Granite Road, Guilford, CT. The 110-foot Monopole is owned and operated by the Crown Castle. The property is owned by Winterfell Gables (CT) Owner LLC. T-Mobile now intends to add a 48Kw generator to a proposed 9'x4' concrete pad within the existing compound.

Planned Modifications:

Ground:

Install New:

(1) Generac RD048 48 Kw AC Diesel Generator

(1) 9' x 4' Concrete Pad

This facility was approved by the Connecticut Siting Council in Docket No. 252 on October 14, 2003. A copy of the decision attached. This modification complies with the exempt conditions.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to First Selectman Matthew T. Hoey III, Elected Official, and Jamie Stein, Town Planner, as well as the tower and property owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S;A. § 16-50j-72(b)(2).

- 1. The proposed modifications will not result in an increase in the height of the existing structure.
- 2. The proposed modifications will not require the extension of the site boundary.
- 3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
- 4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
- 5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
- 6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

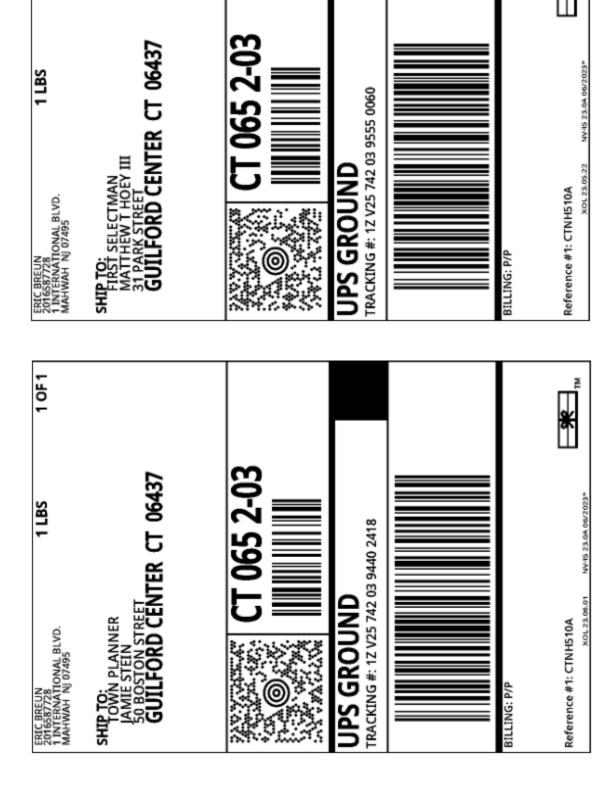
Eric Breun

Transcend Wireless Cell: 201-658-7728

Email: ebreun@transcendwireless.com

Attachments

cc: Matthew T. Hoey III - First Selectman of Guilford Jamie Stein - Town Planner Crown Castle - Tower Owner DDR Guilford LLC - Property Owner



10F1

10F1 PA 153 0-10 **1LBS** TRACKING #: 1Z V25 742 03 9037 2422 JPS GROUND Reference #1: CTNH510A ERIC BREUN 2016587728 1 INTERNATIONAL BLVD. MAHWAH NJ 07495 BILLING: P/P 10F1 NY 100 9-44 SHIP TO:
WINTERFELL GABLES (CT) OWNER LLC
FLOOR 34
590 MADISON AVENUE
NEW YORK NY 10022 **1LBS** TRACKING #: 1Z V25 742 03 9434 6435 **UPS GROUND** Reference #1: CTNH510A ERIC BREUN 2016587728 1 INTERNATIONAL BLVD. MAHWAH NJ 07495 BILLING: P/P

Hello, your package has been delivered.

Delivery Date: Friday, 06/09/2023

Delivery Time: 10:26 AM Left At: FRONT DESK Signed by: TODD

TRANSCEND WIRELESS

Tracking Number: <u>1ZV257420390372422</u>

CROWN CASTLE USA

Ship To: 2000 CORPORATE DRIVE CANONSBURG, PA 15317

US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: CTNH510A

Hello, your package has been delivered.

Delivery Date: Thursday, 06/08/2023

Delivery Time: 4:35 PM **Signed by:** FRONTDOOR

TRANSCEND WIRELESS

Tracking Number: <u>1ZV257420394346435</u>

WINTERFELL GABLES (CT) OWNER LLC

590 MADISON AVENUE

Ship To: FLOOR 34

NEW YORK, NY 10022

US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: CTNH510A

Hello, your package has been delivered.

Delivery Date: Thursday, 06/08/2023

Delivery Time: 10:49 AM

Signed by: CARLE

TRANSCEND WIRELESS

Tracking Number: <u>1ZV257420395550060</u>

MATTHEW T HOEY III

Ship To: 31 PARK STREET

GUILFORD CENTER, CT 06437

US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: CTNH510A

Hello, your package has been delivered.

Delivery Date: Thursday, 06/08/2023

Delivery Time: 10:43 AM

Signed by: HOK

TRANSCEND WIRELESS

Tracking Number: <u>1ZV257420394402418</u>

JAMIE STEIN

Ship To: 50 BOSTON STREET

GUILFORD CENTER, CT 06437

US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: CTNH510A

Town of Guilford, CT

Property Listing Report

Map Block Lot

071011

Building #

Unique Identifier

6477

Property Information

Property Location	201 GRANITE RD	
	399 PARK AVENUE 18TH FL	
Mailing Address	NEW YORK NY 10022	
Land Use	Nursing Home	
Zoning Code	R-8	
Neighborhood	E	

Owner	WINTERFELL GABLES (CT) OWNER LLC
Co-Owner	
Book / Page	0884/0672
Land Class	Commercial
Census Tract	1902
Acreage	58.31

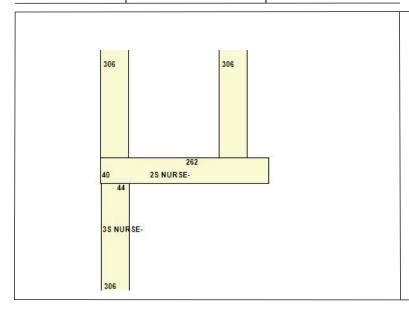
Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	1.51925e+007	1.06348e+007
Outbuildings	311200	217840
Land	1.008e+006	705600
Total	15655400	10958780

Utility Information

Cunty Inform	
Electric	
Gas	
Sewer	
Public Water	
Well	



Primary Construction Details

Year Built	1993
Building Desc.	COMMERCIAL
Building Style	
Stories	2
Exterior Walls	STUCCO
Exterior Walls 2	
Interior Walls	DRYWALL
Interior Walls 2	
Interior Floors 1	CARPET
Interior Floors 2	

Heating Fuel	GAS
Heating Type	FHA
AC Type	CENTRAL
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	
Total Rooms	0
Bath Style	
Kitchen Style	
Occupancy	

Building Use	NURSING HOME
Building Condition	AVERAGE
Frame Type	
Fireplaces	
Bsmt Gar	
Fin Bsmt Area	
Fin Bsmt Quality	
Building Grade	
Roof Style	HIP
Roof Cover	METAL
eport Created On	6/7/2023

Report Created On

Town of Guilford, CT

Map Block Lot	071011 Bu	ilding # 1 Unique Ide	entifier 6477
Description	Area (sq ft)	Condition	Year Built
PAVING	8000	AVERAGE	1993
Description	Area (sq ft)	Condition	Year Built
	Book/ Page	Sale Date	Sale Price
RLLC	0884/0672	5/26/2015	32535600
:	0741/1146	3/23/2007	15751149
	PAVING	PAVING 8000 Description Area (sq ft) Book/ Page RLLC 0884/0672	Description Area (sq ft) Condition



DOCKET NO. 252 - AT&T Wireless PCS, LLC d/b/a AT&T Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at one of two sites at 201 Granite Road, Guilford, Connecticut.

- } Connecticut
- } Siting
- } Council

October 14, 2003

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to AT&T Wireless PCS d/b/a AT&T Wireless for the construction, maintenance and operation of a wireless telecommunications facility at Site B, located at 201 Granite Road, Guilford, Connecticut. The Council denies certification of Site A, also located at 201 Granite Road, Guilford, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

- 1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T Wireless and other entities, both public and private, but such tower shall not exceed a height of 100 feet above ground level. The tower and foundation shall be designed and constructed capable of being extended from 100 feet above ground level to 140 feet above ground level, subject to Council approval by a Petition for a Declaratory Ruling pursuant to Sections 16-50j-38 through 16-50j-40 of the Regulations of Connecticut State Agencies.
 - 2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
- a. a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment building, access road, utility line, and landscaping, methods to reduce tree clearing at the site compound and access road; and
- construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended
- 3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
- Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

- 5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. The Certificate Holder shall provide space on the tower for no compensation for any municipal antennas, provided such antennas are compatible with the structural integrity of the tower.
- 6. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
- 7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
- 8. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Hartford Courant, the New Haven Register, the Shoreline Times, and the Guilford Courier.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

<u>Applicant</u>	<u>Its Representative</u>
------------------	---------------------------

AT&T Wireless PCS, LLC d/b/a AT&T Wireless (AT&T)

Christopher B. Fisher, Esq. Cuddy & Feder LLP 90 Maple Avenue White Plains, New York 10601 (914) 761-1300

Intervenor Its Representative

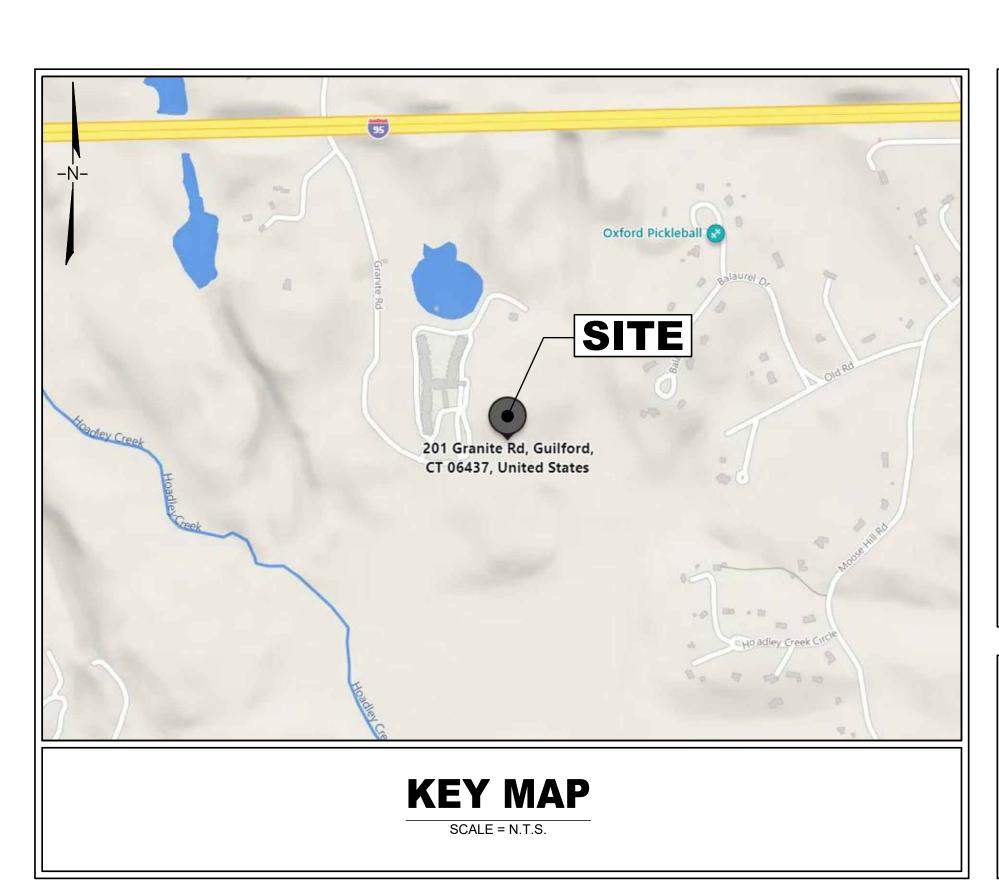
Guilford Land Conservation Trust, Inc.

William M. Bloss, Esq. Jacobs, Grudberg, Belt & Dow, P.C. 350 Orange Street PO Box 606 New Haven, Connecticut 06503 (203) 772-3100

CONSTRUCTION DRAWINGS
ALL SCALES RELATIVE TO 24"X36" PAGE SIZE

T-MOBILE NORTHEAST LLC GENERATOR ADD

SITE #: CTNH510A SITE NAME: AT&T GUILFORD MONOPOLE 201 GRANITE ROAD GUILFORD, CT 06437 NEW HAVEN COUNTY



SITE LOCATION INFORMATION	
SITE NUMBER:	CTNH510A
SITE ADDRESS:	201 GRANITE ROAD GUILFORD, CT 06437
COUNTY:	NEW HAVEN COUNTY
MAP/PARCEL#:	071011
CROWN CASTLE BU#: CROWN CASTLE SITE NAME:	842864 GUILFORD SW
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
PROPERTY OWNER:	WINTERFELL GABLES (CT) OWNER LLC 590 MADISON AVE, 34TH FLOOR NEW YORK, NY 10022
APPLICANT:	T-MOBILE NORTHEAST LLC 4 SYLVAN WAY PARSIPPANY, NJ 07054

SITE CHA	RACTERISTICS
LATITUDE:	41.29190000°
LONGITUDE:	-72.73278000°
STRUCTURE TYPE:	MONOPOLE TOWER
LOCATION OF PROPOSED EQUIPMENT:	EXISTING COMPOUND

SHEET DESCRIPTION T-1 TITLE SHEET GN-1 GENERAL NOTES C-1 COMPOUND PLAN C-2 EQUIPMENT PLANS C-3 EQUIPMENT DETAILS E-1 ONE-LINE DIAGRAM E-2 ELECTRICAL NOTES G-1 GROUNDING PLAN & NOTES	SHEET INDEX	
GN-1 GENERAL NOTES C-1 COMPOUND PLAN C-2 EQUIPMENT PLANS C-3 EQUIPMENT DETAILS E-1 ONE-LINE DIAGRAM E-2 ELECTRICAL NOTES		SHEET DESCRIPTION
C-1 COMPOUND PLAN C-2 EQUIPMENT PLANS C-3 EQUIPMENT DETAILS E-1 ONE-LINE DIAGRAM E-2 ELECTRICAL NOTES	T-1	TITLE SHEET
C-2 EQUIPMENT PLANS C-3 EQUIPMENT DETAILS E-1 ONE-LINE DIAGRAM E-2 ELECTRICAL NOTES	GN-1	GENERAL NOTES
C-3 EQUIPMENT DETAILS E-1 ONE-LINE DIAGRAM E-2 ELECTRICAL NOTES	C-1	COMPOUND PLAN
E-1 ONE-LINE DIAGRAM E-2 ELECTRICAL NOTES	C-2	EQUIPMENT PLANS
E-2 ELECTRICAL NOTES	C-3	EQUIPMENT DETAILS
	E-1	ONE-LINE DIAGRAM
G-1 GROUNDING PLAN & NOTES	E-2	ELECTRICAL NOTES
	G-1	GROUNDING PLAN & NOTES



T - Mobile

ELEVATED ENGINEERING

976 TABOR ROAD, UNIT 6 MORRIS PLAINS, NJ 07950 862-242-8050

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	SCHEDULE OF REVISIONS	
7		
6		
5		
4	05/12/23	PER UPDATED CODE
3	09/26/22	REVISED GENERATOR LOCATION
2	08/22/22	REVISED PER CLIENT COMMENTS
1	08/16/22	ISSUED FOR CONSTRUCTION
0	08/03/22	INITIAL SUBMISSION
REV. NO.	DATE	DESCRIPTION OF CHANGES

DRAWN BY:	НММ	
CHECKED BY:	NDB	
SCALE:	AS NOTED	
JOB NO:	22005-TRN	

INFORMATION ON THIS SET OF DRAWINGS IS
NOT FOR OFFICIAL USE UNLESS
ACCOMPANIED BY THE STAMPED SEAL &
SIGNATURE OF A PROFESSIONAL ENGINEER



NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

SITE ID: CTNH510A AT&T GUILFORD MONOPOLE 201 GRANITE ROAD GUILFORD, CT 06437 NEW HAVEN HOUNTY

DRAWING TITLE:

TITLE SHEET

DRAWING SHEET:

T-1

GENERAL NOTES

- 1. FOR THE PURPOSE OF THE CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 - CONTRACTORS TO BE DETERMINED SUBCONTRACTOR — GENERAL CONTRACTOR (CONSTRUCTION) OWNER — T—MOBILE
- 2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR 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 THE CONTRACTOR.
- 3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. SUBCONTRACTOR 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.
- 4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- 5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- 6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE PROVIDED BY THE SUBCONTRACTOR.
- 7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- 8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSED AND ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY CONTRACTOR.

- 9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
- 10. THE SUBCONTRACTOR SHALL PROTECT THE EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTORS EXPENSE TO THE SATISFACTION OF OWNER.
- 11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIAL SUCH AS COAXIAL CABLE AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNERS DESIGNATED LOCATION.
- 12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- 13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
- 14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR—ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
- 15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHED AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
- 16. CONSTRUCTION SHALL COMPLY WITH UMTS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."
- 17. SUBCONTRACTORS SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

- 18. THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
- 19. APPLICABLE BUILDING CODES:

SUBCONTRACTORS WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

- BUILDING CODE: 2022 CONNECTICUT STATE BUILDING CODE
- ELECTRICAL CODE: NFPA 70 NATIONAL ELECTRICAL CODE, 2020 EDITION
- LIGHTNING CODE: NFPA 780-2014 LIGHTNING PROTECTION CODE

SUBCONTRACTORS WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

- AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENT FOR STRUCTURAL CONCRETE
- AMERICAN INSTITUTE FOR STEEL CONSTRUCTION (AISC)
- MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
- TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEFI
- ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS A CONFLICT BETWEEN A GENERAL REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ELECTRICAL & GROUNDING NOTES

- 1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
- 2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO LIGHTNING PROTECTION AND AS POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC
- 3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL—OF—POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
- 4. 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 THE BTS EQUIPMENT.
- 5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
- 6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- 7. APPROVED ANTIOXIDANT COATING (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- 8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
- 9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- 10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

- 11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- 12. ALL NEW STRUCTURE WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.
- 13. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- 14. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- 15. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- 16. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- 17. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- 18. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
- 19. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN OR THIN INSULATION.
- 20. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- 21. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-1. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- 22. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.

- 23. GROUNDING SHALL COMPLY WITH NEW ART. 250.
- 24. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
- 25. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON DRAWING.
- 26. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- 27. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- 28. CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON—SURGING OBJECTS (EGB GROUND IN BTS UNIT)
- 29. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- 30. BOND ANTENNA MOUNTING BRACKETS. COAXIAL CABLE GROUND KITS AND ALNA TO EGB PLACES NEAR THE ANTENNA LOCATION.
- 31. BOND ANTENNA EGB'S AND MGB TO WATER MAIN.
- 32. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE—OUT DOCUMENTATION.
- 33. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- 34. VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.

ABBREVIATIONS ABOVE GRADE LEVEL GENERAL CONTRACTOR RADIO FREQUENCY AMERICAN WIRE GAUGE MGB MASTER GROUND BUS BARE COPPER WIRE TO BE DETERMINED MIN MINIMUM TBD PROPOSED BASE TRANSCEIVER STATION TO BE REMOVED TBRR TO BE REMOVED EXISTING EXISTING N.T.S. NOT TO SCALE AND REPLACED EQUIPMENT GROUND REF REFERENCE TYP TYPICAL EQUIPMENT GROUND RING REQ REQUIRED

T·-Mobile-

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SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
0	08/03/22	INITIAL SUBMISSION
1	08/16/22	ISSUED FOR CONSTRUCTION
2	08/22/22	REVISED PER CLIENT COMMENT
3	09/26/22	REVISED GENERATOR LOCATION
4	05/12/23	PER UPDATED CODE
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SCALE:	AS NOTED

JOB NO:

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22005-TRN



NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

SITE ID: CTNH510A
AT&T GUILFORD MONOPOLE
201 GRANITE ROAD
GUILFORD, CT 06437
NEW HAVEN HOUNTY

DRAWING TITLE:

GENERAL NOTES

DRAWING SHEET:

GN-1

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7		
6		
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NICHOLAS D. BARILE

PROFESSIONAL ENGINEER, CT LIC. No. 28643

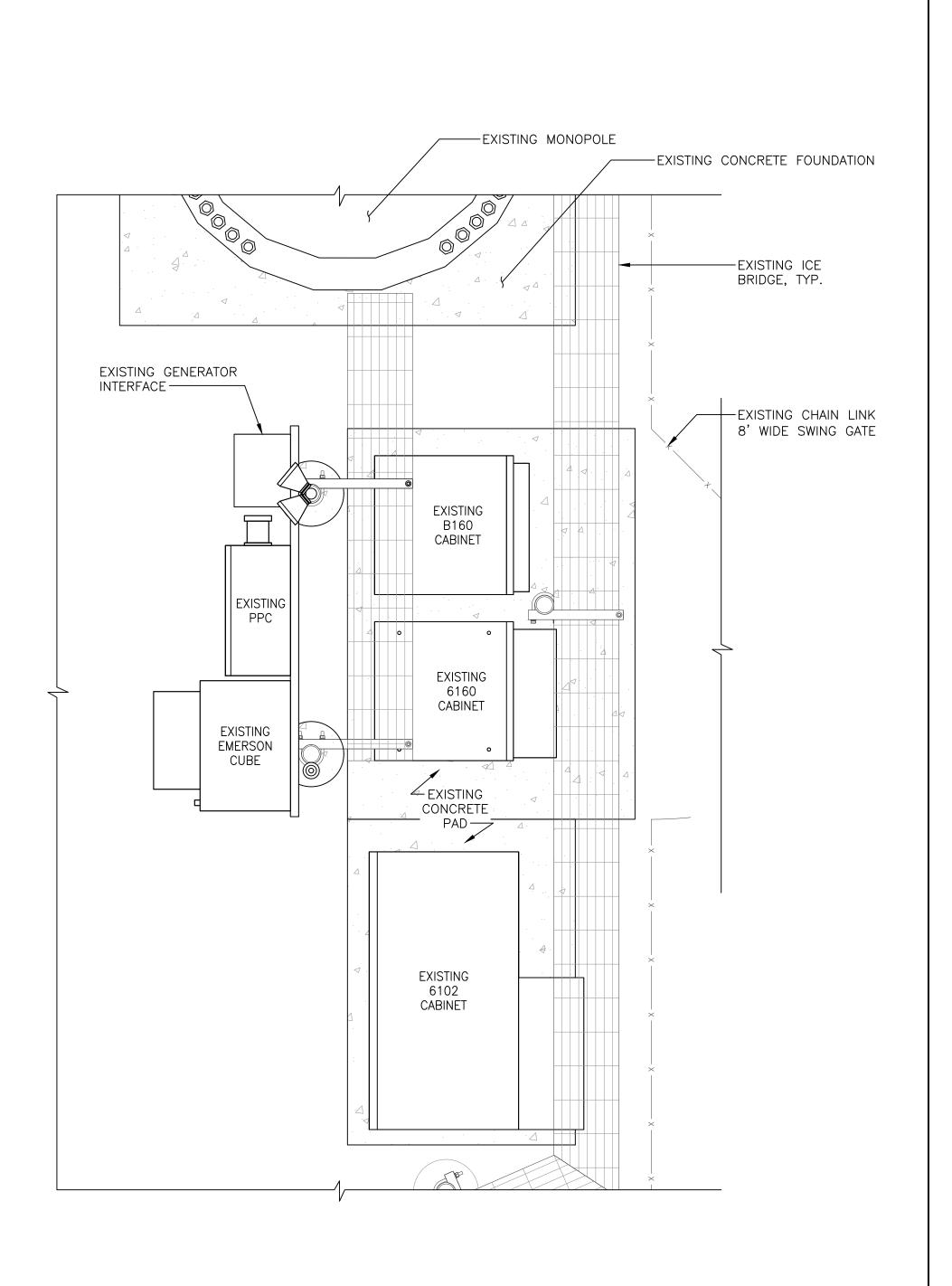
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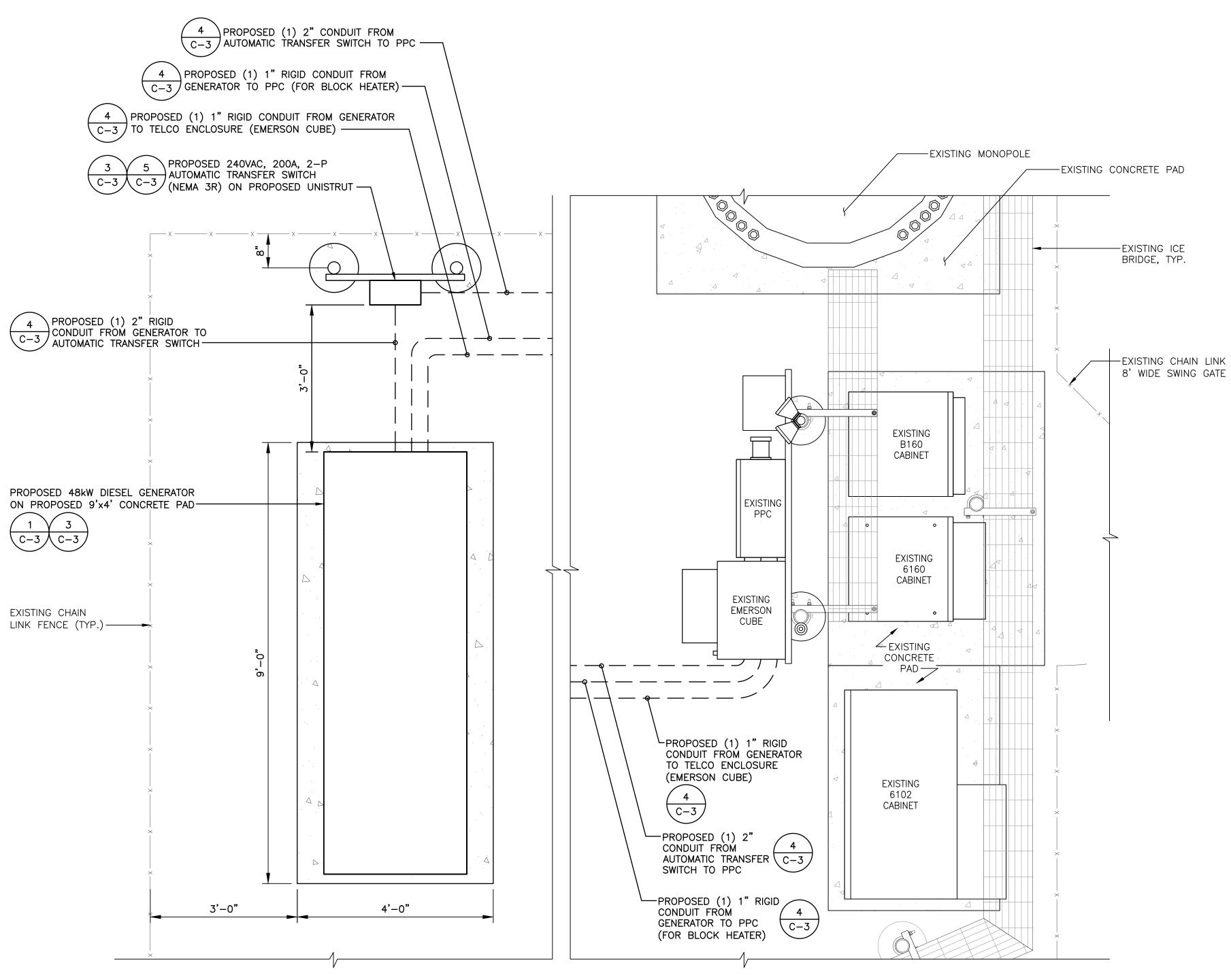
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COMPOUND PLAN

DRAWING SHEET:

C-1





1 EXISTING EQUIPMENT PLAN
C-2 SCALE: 3/4"=1'-0" (24"x36" SHEET)

2 PROPOSED EQUIPMENT PLAN C-2 SCALE: 3/4"=1'-0" (24"x36" SHEET) T--Mobile-

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PROFESSIONAL ENGINEER, CT LIC. No. 28643

SITE ID: CTNH510A AT&T GUILFORD MONOPOLE 201 GRANITE ROAD GUILFORD, CT 06437 NEW HAVEN HOUNTY

DRAWING TITLE:

EQUIPMENT PLANS

DRAWING SHEET:

C-2

3.4L | 48kW RD048

GENERAC INDUSTRIAL POWER

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

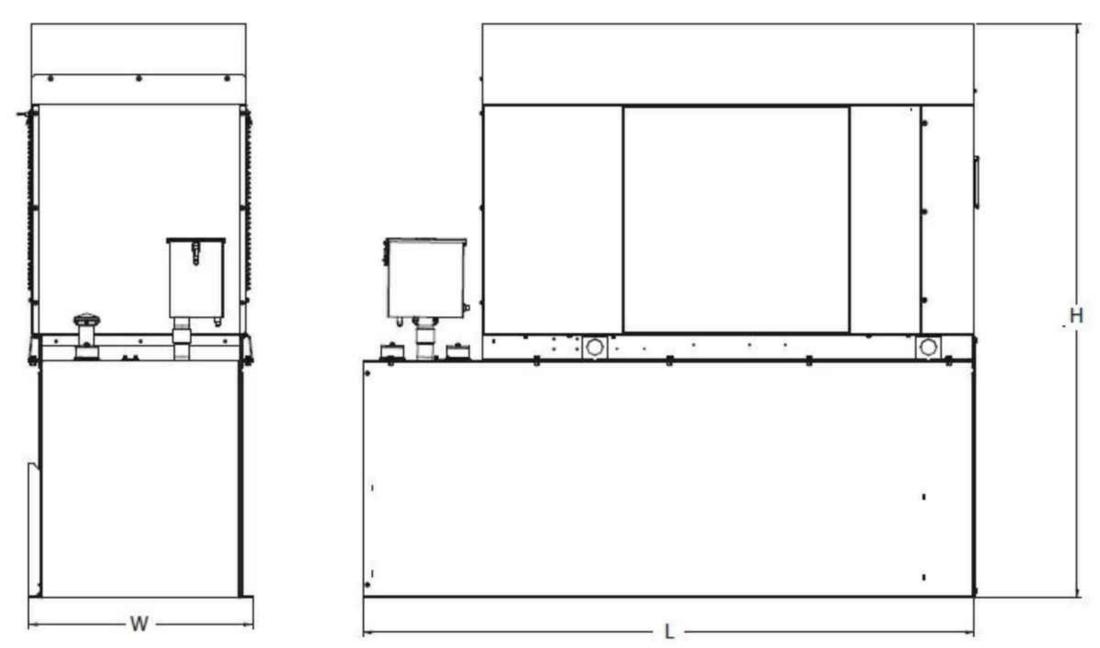
Weights and Dimensions

2,915

Unit Weight - Ibs Unit Weight with Skid - Ibs

2,954

Model Number 48kW: G0071940



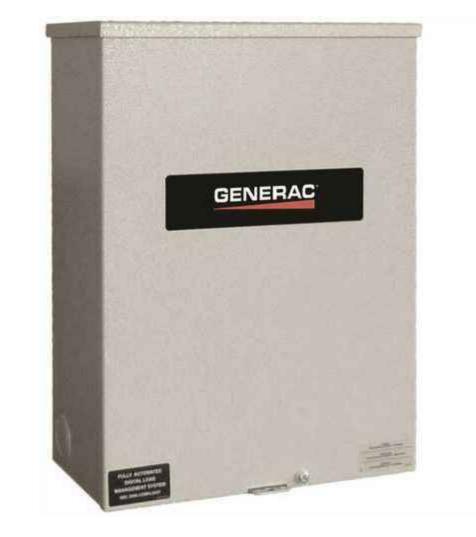
Dimensions (L x W x H) - in

103.4 (2,625) x 35.0 (888) x 90.0 (2,286)

48kW Fuel Consumption	
Fuel Tank Gross Total Capacity	240
Fuel Tank Gross Usable Capacity	229
Fuel Tank Net Usable Capacity (Run Hours Based on Net Usable Capacity)	206
Run Hours 100% Load	52
Run Hours 75% Load	67
Run Hours 50% Load	96

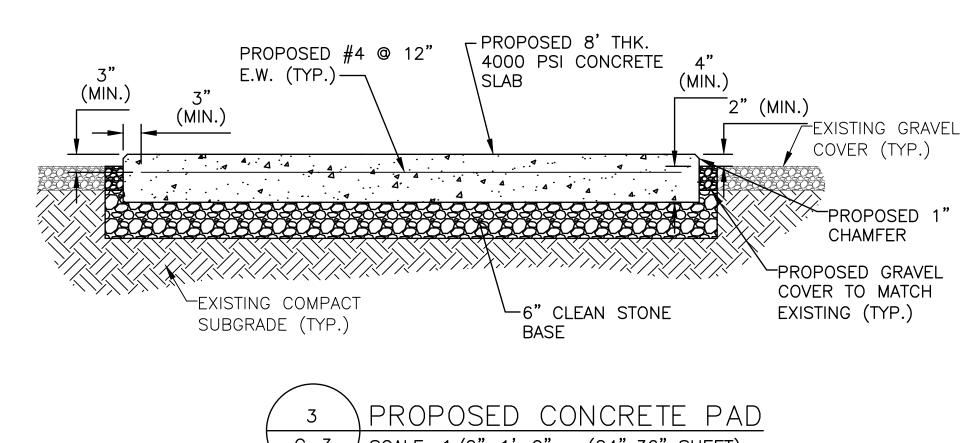
Sound Emission Data Rated Load Sound Output at 23ft - dB(A)

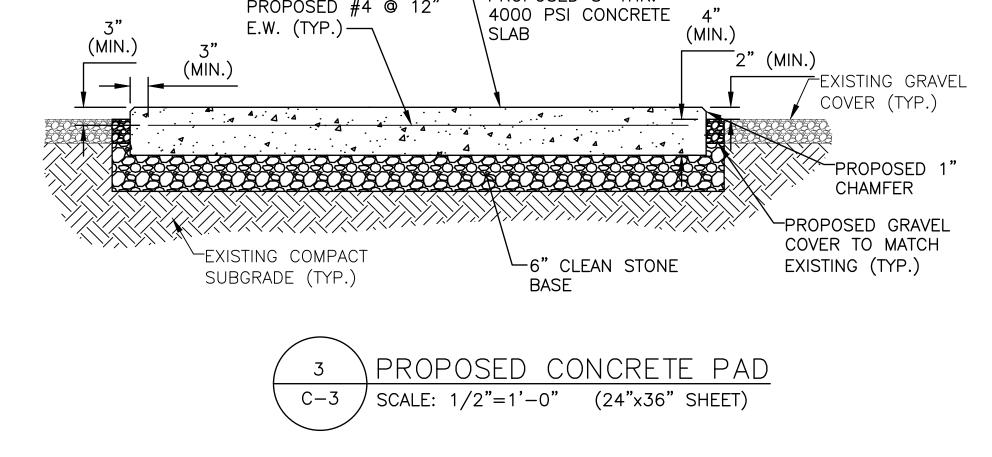
* All measurements are approximate and for estimation purposes only.

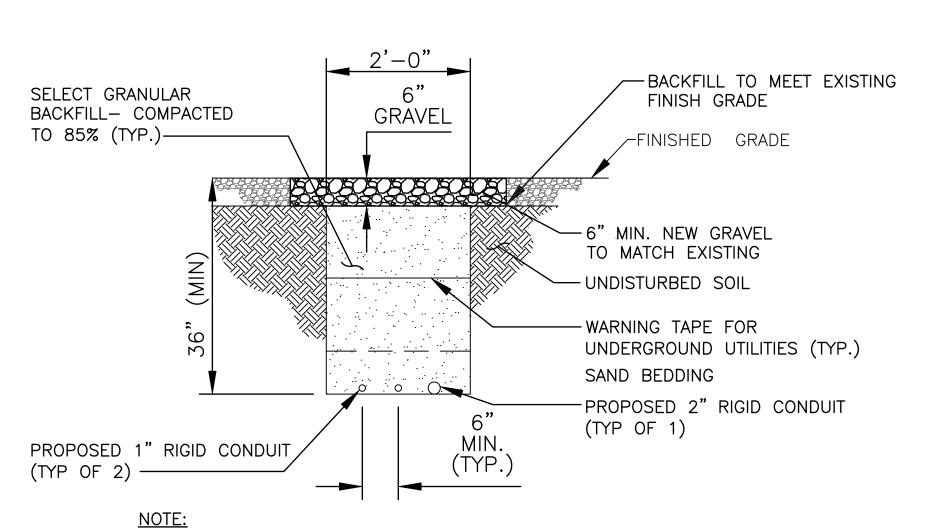


AUTOMATIC TRANSFER SWITCH			
PHASE 1-PHASE			
VOLTAGE 120/240			
ENCLOSURE TYPE NEMA 3R			
AMPS 200			
DIMENSIONS 17.3"(L) x 12.5"(W)			

PROPOSED ATS $\int SCALE: 1/2"=1'-0" (24"x36" SHEET)$





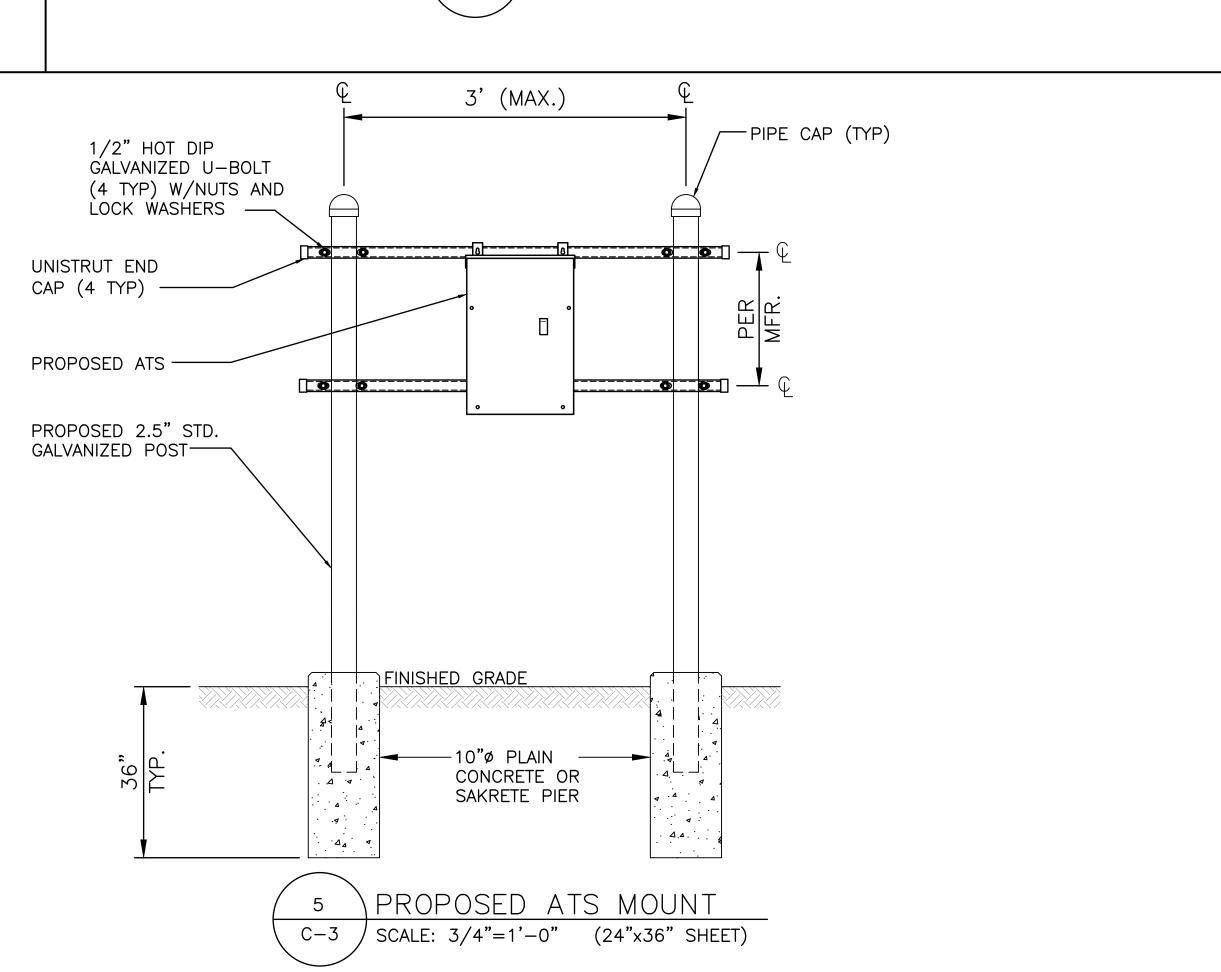


GENERATOR DETAILS

C-3 | SCALE: 1/2"=1'-0" (24"x36" SHEET)

1. EXCAVATE EXISTING SUBGRADE AS REQUIRED TO INSTALL CONDUITS IN ACCORDANCE WITH OSHA AND ALL APPLICABLE CODES.

> PROPOSED TRENCH DETAIL $\int SCALE: 1/2"=1'-0" (24"x36" SHEET)$



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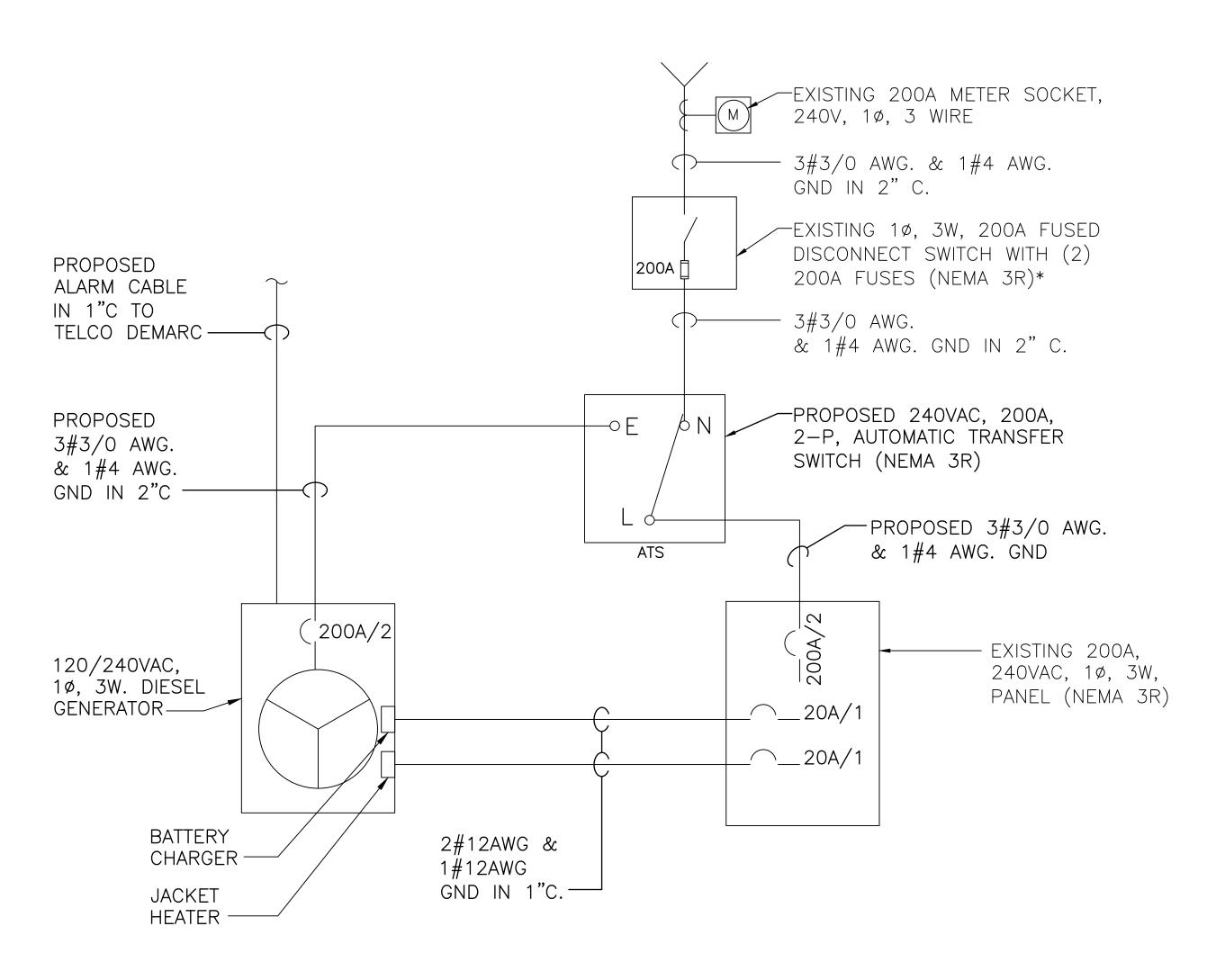
NICHOLAS D. BARILE PROFESSIONAL ENGINEER, CT LIC. No. 28643

SITE ID: CTNH510A AT&T GUILFORD MONOPOLE **201 GRANITE ROAD GUILFORD, CT 06437 NEW HAVEN HOUNTY**

DRAWING TITLE:

EQUIPMENT DETAILS

DRAWING SHEET:



	1	ONE-LINE	DIAGRAM
	E-1	SCALE: N.T.S.	

	ELECTRICAL POWER SYMBOLS		
SYMBOL DESCRIPTION			
		ELECTRICAL PANELBOARD/ENCLOSURE	
	G GENERATOR		
d	ζ CIRCUIT BREAKER		

	ABBREVIATIONS
Α	AMPERE
AC	ALTERNATING CURRENT
AFCI	ARC FLASH CIRCUIT INTERRUPTER
AWG	AMERICAN WIRE GAUGE
С	CONDUIT, CORRIDOR
CT	CURRENT TRANSFORMER
EX	EXISTING
GND	GROUND
GFI	GROUND FAULT INTERRUPTER
KW	KILOWATT
MSB	MAIN SWITCHBOARD
N.T.S.	NOT TO SCALE
	OVERCURRENT PROTECTIVE DEVICE
P	POLE(S)
РН, ф	PHASE
PNL	PANEL
SE	SERVICE ENTRANCE
SW	SWITCH TYPICAL
TYP UON	UNLESS OTHERWISE NOTED
V	VOLT
W	WATT, WIRE
WP	WATERPROOF
G	GENERATOR
М	METER
СВ	CIRCUIT BREAKER

NOTES:

- 1. CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE—LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- 2. ALL NEW WIRING SHALL BE COPPER. ALL CONDUCTORS LARGER THAN #10 AWG SHALL BE THWN-2, THW-2, RHW-2, OR XHHW-2 WIRE UNLESS NOTED OTHERWISE.

FINAL ELECTRICAL SERVICE LAYOUT SUBJECT TO UTILITY COORDINATION

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AT&T GUILFORD MONOPOLE
201 GRANITE ROAD
GUILFORD, CT 06437
NEW HAVEN HOUNTY

DRAWING TITLE:

ONE-LINE DIAGRAM

DRAWING SHEET:

E-1

1. GENERAL REQUIREMENTS:

- 1.1 THE WORK TO BE DONE UNDER THIS PROJECT INCLUDES PROVIDING ALL EQUIPMENT, MATERIALS, LABOR AND SERVICES, AND PERFORMING ALL OPERATIONS FOR COMPLETE AND OPERATING SYSTEMS. ANY WORK NOT SPECIFICALLY COVERED BUT NECESSARY TO COMPLETE THIS INSTALLATION, SHALL BE PROVIDED. ALL EQUIPMENT AND WIRING TO BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS OTHERWISE NOTED.
- 1.2 ENTIRE INSTALLATION, INCLUDING MATERIALS, EQUIPMENT AND WORKMANSHIP, SHALL CONFORM TO THE 2014 EDITION OF THE NATIONAL ELECTRIC CODE (NEC) AS WELL AS ALL APPLICABLE LAWS AND REGULATIONS AND REGULATORY BODIES HAVING JURISDICTION OVER THIS WORK:
- 1.3 THE TERM "FURNISH" SHALL MEAN TO OBTAIN AND SUPPLY TO THE JOB SITE. THE TERM "INSTALL" SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL. THE TERM "CONTRACTOR" SHALL MEAN ELECTRICAL CONTRACTOR.
- 1.4 ONLY WRITTEN CHANGES AND/OR MODIFICATIONS APPROVED BY THE ENGINEER, CONSULTING ENGINEER OR OWNER'S REPRESENTATIVE WILL BE RECOGNIZED.
- 1.5 THE ELECTRICAL CONTRACTOR SHALL SUBMIT, FOR THE ENGINEER'S APPROVAL, DETAILED SHOP DRAWINGS OF ALL EQUIPMENT SPECIFIED.
- 1.6 CONTRACTOR SHALL COORDINATE WITH SPECIFICATIONS PROVIDED BY OTHER TRADES.
- 1.7 PROVIDE OPERATING AND MAINTENANCE MANUALS, PER SPECIFICATIONS, AND GIVE INSTRUCTIONS TO USER FOR ALL EQUIPMENT AND SYSTEMS PROVIDED UNDER THIS CONTRACT
- 1.8 KEEP PREMISES FREE FROM RUBBISH. REMOVE ALL ELECTRICAL RUBBISH FROM SITE.
- 1.9 ALL WORK SHALL BE INSTALLED CONCEALED UNLESS OTHERWISE NOTED.

AFTER ALL ARE CLEANED AND OPERATING.

- 1.10 THE WORK SHALL INCLUDE ALL PANELS, DEVICES, FEEDERS AND BRANCH CIRCUIT WIRING AS REQUIRED FOR THE DISTRIBUTION SYSTEM INDICATED AND CALLED FOR ON THE DRAWINGS, REQUIRED BY SPECIFICATIONS AND AS NECESSARY FOR COMPLETE FUNCTIONAL SYSTEMS PRESENTED AND INTENDED.
- 1.11 THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, TOOLS, EQUIPMENT, CONSUMABLES AND SERVICES REQUIRED FOR OBTAINING, DELIVERY, INSTALLATION, CONNECTION, DISCONNECTION, REMOVAL, RELOCATION, REPAIR, REPLACEMENT, TESTING AND COMMISSIONING OF ALL EQUIPMENT AND DEVICES INCLUDED IN OR NECESSARY FOR THE WORK, AS APPLICABLE. THIS INCLUDES SCAFFOLDING, LADDERS, RIGGING, HOISTING, ETC.
- 1.12 ELECTRICAL WORK SHALL INCLUDE ALL REQUIRED CUTTING, PATCHING AND THE FULL RESTORATION OF WALL AND FLOOR STRUCTURE AND SURFACES. ALL EQUIPMENT, WALLS, FLOORS, ETC., DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER, AT THE CONTRACTORS EXPENSE.
- 1.13 BEFORE SUBMITTING HIS BID, THE CONTRACTOR SHALL FULLY ACQUAINT HIMSELF/HERSELF WITH THE JOB CONDITIONS AND DIFFICULTIES THAT WILL PERTAIN TO THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
- 1.14 THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING UTILITIES.
- 1.15 UPON COMPLETION OF THE ELECTRICAL WORK, THE CONTRACTOR SHALL TEST THE COMPLETE ELECTRICAL SYSTEM FOR SHORTS, GROUNDS, AND PROPER OPERATION, IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE.
- 1.16 UPON COMPLETION OF WORK, THE CONTRACTOR SHALL CLEAN AND ADJUST ALL EQUIPMENT AND LIGHTING AND TEST SYSTEMS TO THE SATISFACTION OF OWNER AND ENGINEER. RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- 1.17 THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF FINISHED CONSTRUCTION PRIOR TO FABRICATION AND INSTALLATION OF FIXTURES AND EQUIPMENT.
- 1.18 EXACT ROUTING OF CONDUITS AND "MC" CABLES SHALL BE DETERMINED IN THE FIELD.
- 1.19 IF THE OWNER AND/OR HIS REPRESENTATIVE CONSIDERS ANY WORK TO BE INFERIOR, THE RESPECTIVE CONTRACTOR SHALL REPLACE SAME WITH CONTRACT STANDARD WORK WITHOUT ADDITIONAL CHARGE. ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE MANNER, LEFT CLEAN AND FREE FROM DEFECTS, AND COMPLETELY OPERABLE.
- 1.20 THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AS SHOWN ON THE DRAWINGS AND/OR AS SPECIFIED. ALL MATERIALS SHALL BE NEW, AND BEAR THE UL LABEL. ALL WORK SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER.
- 1.21 DRAWINGS ARE TO BE CONSIDERED DIAGRAMMATIC, AND SHALL BE FOLLOWED AS CLOSELY AS CONDITIONS ALLOW TO COMPLETE THE INTENT OF THE CONTRACT. THE DRAWINGS AND SPECIFICATIONS COMPLIMENT ONE ANOTHER, AND WHAT IS SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, AND VICE VERSA, IS TO BE INCLUDED IN THE SCOPE OF WORK.
- 1.22 ALL EQUIPMENT CONNECTIONS SHALL BE INSTALLED PER APPLICABLE SEISMIC REQUIREMENTS.
- 1.23 ENGINEER WILL MAKE A FINAL INSPECTION WITH THE OWNER AND CONTRACTOR AND WILL NOTIFY THE CONTRACTOR IN WRITING OF ALL PARTICULARS IN WHICH THIS INSPECTION REVEALS THAT THE WORK IS INCOMPLETE OR DEFECTIVE. THE CONTRACTOR SHALL IMMEDIATELY TAKE SUCH MEASURES AS ARE NECESSARY TO COMPLETE SUCH WORK OR REMEDY SUCH DEFICIENCIES.
- 1.24 THE CONTRACTOR SHALL PERFORM ALL EXCAVATION, TRENCHING AND BACKFILL REQUIRED FOR ELECTRICAL WORK. BACKFILL SHALL BE SUITABLE MATERIAL PROPERLY COMPACTED TO 95% DENSITY IN EACH LAYER OF SIX (6) INCH DEPTH. CONDUIT SHALL BE MINIMUM 36" BELOW FINISHED GRADE.

2. PROJECT COORDINATION:

- 2.1 THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS AT THE SITE AND NOTIFY THE OWNER OF ANY DISCREPANCIES, PRIOR TO COMMENCING WITH THE WORK.
- 2.2 THE CONTRACTOR SHALL REVIEW AND COORDINATE WITH THE DOCUMENTS OF ALL TRADES.
- 2.3 THE CONTRACTOR SHALL FURNISH A SCHEDULE INDICATING HIS PORTION OF TIME, WITHIN THE OVERALL SCHEDULE, REQUIRED TO COMPLETE THE WORK, IN CONJUNCTION WITH ALL TRADES. ALL WORK THAT MAY AFFECT OPERATION OF BUILDING SYSTEMS SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE.
- 2.4 REFER TO THE CONSTRUCTION DRAWINGS AND APPROPRIATE VENDORS APPROVED DIMENSIONED LAYOUT DRAWINGS FOR THE LOCATIONS OF ALL ELECTRICAL DEVICES AND EQUIPMENT.

 A. EXTERIOR, BUILDING MOUNTED LUMINARIES
- 2.5 REFER TO THE PLUMBING DRAWINGS FOR THE LOCATIONS OF THE FOLLOWING:
 A. GENERATOR
- 2.6 SHUT DOWN OF POWER SHALL BE COORDINATED WITH THE OWNER, ARCHITECT AND PROJECT MANAGER AT LEAST 14 WORKING DAYS PRIOR TO SHUT DOWN. SHUT DOWNS LONGER THAN 2 DAYS SHALL BE COORDINATED WITH THE ABOVE PERSONNEL AT LEAST ONE MONTH IN ADVANCE. TEMPORARY POWER FOR CONSTRUCTION SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR FOR SHUT DOWNS OVER 2 DAYS.
- 2.7 ALL CONDUITS AND DEVICE BOXES SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR, INCLUDING ALL TECHNOLOGY CONDUITS AND BOXES.
- 2.8 EXACT LOCATIONS OF OUTLETS AND EQUIPMENT SHALL BE COORDINATED WITH ARCHITECTURAL AND MILLWORK PLANS. ALL OUTLET AND EQUIPMENT LAYOUTS SHALL BE VERIFIED AND COORDINATED WITH WORK OF OTHER TRADES.
- 2.9 PROVIDE TEMPORARY LIGHTING AND POWER IN ACCORDANCE WITH ARTICLE 305 OF THE NEC. TEMPORARY LIGHTING FIXTURES IN UNFINISHED AREAS SHALL REMAIN CONNECTED UNTIL REMOVAL IS REQUESTED BY THE CONTRACTOR.
- 2.10 COLORS AND FINISHES OF ALL LIGHTING FIXTURES SHALL BE AS DETERMINED BY THE PROPERTY OWNER WHO SHALL SELECT SAME FROM THOSE AVAILABLE AS STANDARD OF THE EQUIPMENT SPECIFIED. PROVIDE CUSTOM ENGRAVING FOR ALL DIMMER SWITCHES.
- 2.11 THE CONTRACTOR SHALL CONTACT THE BUILDING MANAGER TO OBTAIN A COPY OF THE GENERAL REQUIREMENTS AND/OR CONDITIONS TO BE USED FOR THIS PROJECT.
- 2.12 INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. TEMPORARY SHUT DOWNS OF ANY SYSTEM SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER AND ARCHITECT.
- 2.13 CONTRACTOR SHALL VERIFY ALL EQUIPMENT POWER REQUIREMENTS AND REQUIRED OUTLET TYPES WITH EQUIPMENT MANUFACTURER AND OWNER PRIOR TO POWER DISTRIBUTION AND RECEPTACLE INSTALLATION.

3. PROTECTION OF WORK:

3.1 EFFECTIVELY PROTECT ALL MATERIALS AND EQUIPMENT FROM ENVIRONMENTAL AND PHYSICAL DAMAGE UNTIL FINAL ACCEPTANCE. CLOSE AND PROTECT ALL OPENINGS DURING CONSTRUCTION. PROVIDE NEW MATERIALS AND EQUIPMENT TO REPLACE ITEMS DAMAGED.

4. WARRANTIES AND BONDS:

- 4.1 ALL MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL BE GUARANTEED IN WRITING FOR A MINIMUM OF ONE YEAR AFTER FINAL ACCEPTANCE BY OWNER.
- 4.2 OBTAIN AND DELIVER TO THE OWNER'S REPRESENTATIVE ALL GUARANTEES AND CERTIFICATES OF COMPLIANCE.

5. PERMITS:

5.1 CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTION FEES FOR ELECTRICAL WORK.

6. RACEWAYS:

- 6.1 ALL CONDUIT SHALL BE MINIMUM SIZE OF 3/4" FOR POWER CIRCUITS AND CONTROL CIRCUITS EXCEPT WHERE FLEXIBLE CONDUIT IS CALLED FOR ON PROJECT DOCUMENTS. ALL EXTERIOR EXPOSED CONDUIT SHALL BE GRC (GALVANIZED RIGID METAL CONDUIT). ALL UNDERGROUND, IN SLAB OR UNDER SLAB SHALL BE RNC (RIGID NONMETALLIC CONDUIT). CHANGE TO RIGID METALLIC CONDUIT OR INTERMEDIATE METALLIC CONDUIT BEFORE EXITING OUT OF CONCRETE OR PENETRATING A WALL, FLOOR OR ROOF. EMT IS ALLOWED IN INTERIOR DRY LOCATIONS WHERE NOT SUBJECT TO DAMAGE.
- 6.2 ALL FLEXIBLE CONDUIT IN WET OR DRY AREAS SHALL BE LIQUID TIGHT CONDUIT. NONMETALLIC FLEXIBLE CONDUIT IS SPECIFICALLY PROHIBITED.
- 6.3 CONDUIT SHALL BE RUN AT RIGHT ANGLES AND PARALLEL TO BUILDING LINES, SHALL BE NEATLY RACKED AND SECURELY FASTENED. JUNCTION BOXES SHALL BE PROVIDED WHERE REQUIRED TO FACILITATE INSTALLATION OF WIRES.
- 6.4 ALL CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN AN APPROVED MANNER.
- 6.5 ALL EMPTY RACEWAYS SHALL BE FURNISHED WITH A 200 LB. TEST NYLON DRAG LINE.
- 6.6 ARRANGEMENT OF CONDUIT AND EQUIPMENT SHALL BE AS INDICATED, UNLESS MODIFICATION IS REQUIRED TO AVOID INTERFERENCES.
- 6.7 ALL RACEWAY AND WIRING SHALL BE CONCEALED IN FINISHED AREAS. RACEWAY IN MECHANICAL ROOMS. BASEMENTS AND CRAWL SPACES MAY BE SURFACE MOUNTED.
- 6.8 FOR CONDUITS CROSSING EXPANSION JOINTS, PROVIDE EXPANSION FITTINGS FOR SIZE 1-1/4", AND LARGER. PROVIDE SECTIONS OF FLEXIBLE CONDUIT WITH GROUNDING JUMPERS FOR SIZES 1" AND SMALLER.
- 6.9 THE CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH FIRE RATED WALLS AND FLOORS WITH APPROVED FIRE RATED SEALANT. ALL PENETRATIONS THROUGH ALL WALLS AND FLOORS SHALL BE SEALED. FOR ALL SLAB PENETRATIONS THE METHOD, DEPTHS AND LOCATIONS SHALL BE PRE—APPROVED BY THE BUILDING ENGINEER PRIOR TO THE START OF WORK.
- 6.10 THE CONTRACTOR SHALL INSTALL DETECTABLE UNDERGROUND TAPES FOR THE PROTECTION, LOCATION AND IDENTIFICATION OF UNDERGROUND CONDUIT INSTALLATION.
- 6.11 EXACT ROUTING OF CONDUITS AND CABLES SHALL BE DETERMINED IN FIELD.
- 6.12 ALL PENETRATIONS THROUGH FLOORS SHALL BE FIRE STOPPED AND SEALED WITH APPROVED SEALANT.
- 6.13 ELECTRICAL RACEWAY CONNECTIONS TO VIBRATING EQUIPMENT AND MACHINERY SUCH AS MOTORS, TRANSFORMERS, ETC., SHALL BE MADE WITH FLEXIBLE LIQUID TIGHT METALLIC CONDUIT.
- 6.14 SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS IN HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK. MACHINE SCREWS IN METAL, BEAM CLAMPS IN FRAMEWORK AND WOOD SCREWS IN WOOD. NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO BUILDING LINES.
- 6.15 DO NOT RUN RACEWAYS CLOSER THAN 6 INCHES WHEN PARALLEL TO HOT WATER OR STEAM PIPES. WHEN CROSSING WATER OR STEAM PIPES CROSS A MINIMUM OF 3 INCHES ABOVE. IF CROSSING BELOW IS UNAVOIDABLE, PROVIDE DRIP SHIELDS EXTENDING 6 INCHES BEYOND THE WATER OR STEAMPIPE. BOXES INSTALLED IN PROXIMITY TO WATER OR STEAM PIPE SHALL BE RATED NEMA 4X.

<u>7. BOXES</u>:

- 7.1 INTERIOR OUTLET BOXES SHALL BE METALLIC, EXCEPT AS NOTED. FAN MOUNTING BOXES SHALL BE RATED FOR THE APPLICATION AND FOR THE WEIGHT OF THE FAN. EXTERIOR OUTLET BOXES SHALL BE CAST ALUMINUM AND SHALL BE MADE WEATHERTIGHT.
- 7.2 INTERIOR JUNCTION BOXES SHALL BE SHEET STEEL. EXTERIOR JUNCTION BOXES SHALL BE NONMETALLIC, WITH SCREW COVERS. BOXES SHALL BE SUPPORTED INDEPENDENTLY OF CONDUITS.
- 7.3 MOUNTING HEIGHTS OF EQUIPMENT AND DEVICES SHALL BE AS FOLLOWS:
 - A. RECEPTACLES (WALL MOUNTED) 18" A.F.F.
 B. RECEPTACLES (COUNTER HEIGHT) 9" ABOVE COUNTER
 - C. RECEPTACLES (EXTERIOR) 24" ABOVE FINISHED GRADE
 D. COMMUNICATION OUTLETS SAME AS RECEPTACLES
 - . LIGHTING SWITCHES AND CONTROLS 44" A.F.F.
- 7.4 WHERE MULTIPLE SWITCHES AND RECEPTACLES ARE INDICATED AT THE SAME LOCATION, THEY SHALL BE MOUNTED BEHIND A COMMON FACEPLATE. TECHNOLOGY OUTLETS SHALL BE SEPARATED FROM AND BE PROVIDED WITH SEPARATE FACEPLATES FROM THE ASSOCIATED POWER RECEPTACLES.

PANELBOARDS AND CABINETS - 78" TO TOP OF ENCLOSURE

- 7.5 RECEPTACLES SHALL BE ACCESSIBLE EXCEPT A DEDICATED RECEPTACLE MAY BE OBSTRUCTED BY THE REMOVABLE EQUIPMENT IT SERVES.
- 7.6 OUTLET BOXES IN EXISTING CONCRETE FLOORS WITH ACCESS FROM BELOW SHALL BE FIRE RATED, POKE—THROUGH TYPE FOR POWER AND LOW TENSION SERVICE. SERVICE FITTING HEADS SHALL BE ANODIZED ALUMINUM AND SHALL CONTAIN DEVICES AS SHOWN ON THE DRAWINGS. BOXES SHALL BE AS MANUFACTURED BY STEEL CITY OR HUBBELL.
- 7.7 SET BOXES SQUARE AND TRUE WITH BUILDING FINISH. INSTALL RECEPTACLE AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. SECURE TO BUILDING STRUCTURE IN ACCORDANCE WITH NEC REQUIREMENTS.
- 7.8 FURNISH OUTLET BOXES WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED. WHERE NO FIXTURE OR DEVICE IS INSTALLED, PROVIDE OUTLET BOX WITH BLANK COVER. OFFSET BACK—TO—BACK OUTLETS WITH MINIMUM 6 INCH HORIZONTAL SEPARATION.

8. WIRING:

- 8.1 ALL WIRE SHALL BE COPPER WITH TYPE THNN/THWN 600 VOLT INSULATION, MINIMUM #12 AWG FOR POWER AND LIGHTING CIRCUITS AND #16 AWG FOR CONTROL CIRCUITS.
- 8.2 UNDER NO CIRCUMSTANCES SHALL FEEDERS BE SPLICED.
- 8.3 ALL COMPUTER CIRCUITS SHALL HAVE SEPARATE NEUTRAL CONDUCTORS. ALL OTHER CIRCUITS MAY SHARE GROUND AND NEUTRAL CONDUCTORS.
- 8.4 WHERE EQUIPMENT, LIGHTING FIXTURES AND WIRING DEVICES ARE SHOWN WITH CIRCUIT NUMBERS ONLY, THE MINIMUM BRANCH CIRCUITING REQUIREMENTS SHALL BE AS FOLLOWS:
 - A. LIGHTING FIXTURES (2)#12 & #12 GND.
 - B. RECEPTACLES (2)#12 & #12 GND.
 - C. BRANCH CIRCUIT BREAKERS (120 VOLT) 1P, 20A
 D. HOMERUNS TO PANEL BOARDS SHALL CONTAIN NO MORE THAN THREE CIRCUITS.
 E. WHERE LIGHTING SWITCH INDICATIONS ARE NOT SHOWN
- 8.5 CONTRACTOR SHALL INCREASE SIZE OF CIRCUIT WIRING/CONDUCTORS TO COMPENSATE FOR VOLTAGE DROP.
- 8.6 WIRE SIZES SHALL BE INCREASED TO COMPENSATE FOR VOLTAGE DROP AS FOLLOWS:

SWITCHES SHALL BE CONNECTED TO CONTROL ALL SWITCHED

FIXTURES WITHIN THE CORRESPONDING SPACE.

A. 120V AND 208V CIRCUITS LONGER THAN 80' SHALL UTILIZE MIN. #10 AWG.
 B. 208V CIRCUITS LONGER THAN 150' SHALL UTILIZE MIN. #10 AWG.

9. GROUNDING:

- 9.1 PROVIDE A COMPLETE EQUIPMENT GROUND SYSTEM FOR THE ELECTRICAL SYSTEM AS REQUIRED BY ARTICLE 250, OF THE NEC, AND AS SPECIFIED HEREIN.
- 9.2 ALL BRANCH CIRCUITS FOR POWER WIRING SHALL CONTAIN A COPPER GROUND WIRE. NO FLEXIBLE METAL CONDUIT OF ANY KIND OR LENGTH SHALL BE USED AS THE EQUIPMENT GROUNDING CONDUCTOR.

10. DEVICES:

- 10.1 THE CONTRACTOR SHALL VERIFY COLOR, LOCATION AND MOUNTING HEIGHT OF ALL DEVICES WITH ARCHITECT PRIOR TO INSTALLATION.
- 10.2 RECEPTACLES SHALL BE DUPLEX TYPE, 20 AMP, 125 VOLT RATING, WITH SIDE AND BACK WIRING. HUBBELL 5362 OR APPROVED EQUAL.
- 10.3 GROUND FAULT INTERRUPTERS SHALL BE SPECIFICATION GRADE. HUBBELL GF5362 OR APPROVED EQUAL.
- 10.4 SWITCHES SHALL BE SPECIFICATION GRADE, 20 AMP AT 120/277 VOLTS, QUIET, AC, SINGLE OR DOUBLE POLE, THREE OR FOUR WAY AS REQUIRED, ROCKER STYLE WITH BACK AND SIDE
- 10.5 ALL RECEPTACLES MARKED WP SHALL BE GROUND FAULT PROTECTED AND WEATHER TIGHT
- 10.6 THE COLOR OF FACEPLATES SHALL MATCH COLOR OF DEVICE WHICH IT COVERS. ALL PLATES SHALL BE METALLIC.

11. PANELBOARDS:

- 11.1 PANELBOARDS: SWITCHING UNITS SHALL BE 120/240V, 1-PHASE, 3-WIRE, 200A, 45KAIC CIRCUIT BREAKER TYPE UNLESS OTHERWISE NOTED ON PANEL SCHEDULES. BUS BARS SHALL BE HARD DRAWN COPPER, MINIMUM 98% CONDUCTIVITY, AND SILVER OR TIN-PLATED JOINTS. CABINETS SHALL BE GALVANIZED SHEET STEEL BACK BOX, WITH DOOR AND TRIM AND LAPPED AND WELDED CORNERS. HARDWARE SHALL BE CHROME-PLATED WITH FLUSH LOCK/LATCH HANDLE ASSEMBLY (UP TO 48 IN. HIGH DOORS) OR VAULT HANDLE, LOCK AND 3-POINT CATCH (LARGER THAN 48 IN. HIGH DOORS). HINGES SHALL BE SEMI-CONCEALED, 5-KNUCKLE STEEL WITH NONFERROUS PINS, 180-DEG OPENING, LOCATED A MAXIMUM 26 IN. ON CENTERS PROVIDE DOOR-IN-DOOR CONSTRUCTION. MINIMUM GUTTER SPACES FOR LIGHTING PANELS SHALL BE 5- BOTTOM. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER.
- 11.2 PROVIDE A NEW TYPE WRITTEN CIRCUIT DIRECTORY FOR EACH PANEL AFFECTED BY THIS PROJECT.
- 11.3 WHEREVER POSSIBLE, PANELBOARDS SHALL BE RECESSED IN WALL. SURFACE MOUNTED PANELBOARDS SHALL BE MOUNTED ON A PLYWOOD BACKBOARD. PLYWOOD SHALL BE MOUNTED ON TOP OF GYMPSUM BOARD. PLYWOOD SHALL BE PAINTED ON ALL SIDES AND EDGES. COORDINATE WITH OWNER FOR COLOR.
- 11.4 PROVIDE LIGHTNING SURGE PROTECTION FOR MAIN SWITCHBOARD OR MAIN SERVICE PANEL BOARD. PROVIDE GROUNDING OF SURGE DEVICE PER THE NEC.
- 11.5 CIRCUIT NUMBERS SHOWN SHALL BE GENERALLY FOLLOWED. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR BALANCING LOADS ON ALL PHASES AND MAY ALTER ASSIGNMENT OF CIRCUITS FOR BALANCING PHASES.
- 11.6 CIRCUIT SCHEDULES ARE INTENDED TO REPRESENT THE GENERAL WIRING NEEDS OF THE EQUIPMENT SERVICED FROM THE PANEL. THE EXACT CIRCUIT ARRANGEMENT WILL BE DETERMINED BY PANEL SHOP DRAWING AND ARRANGEMENT WILL BE DETERMINED BY PANEL SHOP DRAWING AND PANELS ACTUALLY FURNISHED.

12 LIGHTING

12.4 PROVIDE LIGHTING FIXTURES AS SHOWN ON THE CONSTRUCTION DRAWINGS, COMPLETE WITH ALL STEMS, RODS, SUPPORTS, PLASTER FRAMES, ETC., NECESSARY FOR AN INSTALLATION IN OR ON THE MATERIAL FINISHES PROVIDED. PROVIDE ALL LAMPS FOR LIGHTING FIXTURES. FIXTURES SHALL HAVE ENERGY SAVING LAMPS, AND WHERE APPLICABLE, ENERGY SAVING BALLASTS WITH HIGH POWER FACTOR.

12.5 SEE DRAWINGS AND SPECIFICATIONS FOR FIXTURE REQUIREMENTS.

13. IDENTIFICATION:

- 13.1 PROVIDE BLACK PHENOLIC IDENTIFICATION PLATES, WITH WHITE LETTERS ON ALL ELECTRICAL EQUIPMENT FURNISHED IN THIS CONTRACT. ATTACH WITH SUITABLE ADHESIVE.
- 13.2 INSTALL NAMEPLATES ON ALL MAJOR EQUIPMENT, INCLUDE STARTERS, TRANSFORMERS, PANELBOARDS, DISCONNECT SWITCHES AND OTHER ELECTRICAL BOXES AND CABINETS INSTALLED UNDER THIS CONTRACT.
- 13.3 APPLY CABLE/CONDUCTOR IDENTIFICATION MARKERS ON EACH CABLE AND CONDUCTOR IN EACH BOX, ENCLOSURE OR CABINET.

14. RECORD DRAWINGS:

- 14.1 THE CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF SHOP DRAWINGS. THE APPROVAL OF SHOP DRAWINGS SHALL ONLY BE CONSTRUED TO APPLY TO THE GENERAL LAYOUT AND CONFORMANCE TO THE DESIGN CONCEPT OF THE PROJECT AND FOR THE COMPLIANCE WITH THE GENERAL REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL RETAIN THE RESPONSIBILITY FOR ANY DEVIATIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- 14.2 PROVIDE SHOP DRAWINGS FOR THE LIGHTING FIXTURES, PANEL BOARDS, CIRCUIT BREAKERS, WIRING DEVICES, FIRE ALARM DEVICES AND SEALS FOR FIRE AND WATER STOPPING
- 14.3 DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN A RECORD SET OF INSTALLATION PRINTS. HE SHALL NEATLY AND CLEARLY RECORD ON THESE PRINTS ALL DEVIATIONS FROM THE CONTRACT DRAWINGS IN SIZES, LOCATIONS AND DETAILS.
- 14.4 UPON PROJECT COMPLETION, THE CONTRACTOR SHALL COMPLETE THE MARK UP OF ALL PROJECT DRAWINGS TO RECORD INSTALLED CONDITIONS.
- 14.5 REPRODUCIBLE "RECORD" DRAWINGS PREPARED IN CAD (AUTOCAD 2002) FORMAT SHALL BE PROVIDED TO *T-MOBILE* INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. A FULL SIZE PRINT OUT OF THE "RECORD" DRAWING FILE SHALL BE PROVIDED TO *T-MOBILE* AFTER COMPLETION OF THE INSTALLATION.
- 14.6 UPON COMPLETION AND ACCEPTANCE OF WORK, THE CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO *T-MOBILE* THE PROPER OPERATIONS AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

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MORRIS PLAINS, NJ 07950

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SCHEDULE OF REVISIONS

6 5 4 05/12/23 PER UPDATED CODE 3 09/26/22 REVISED GENERATOR LOCATION 2 08/22/22 REVISED PER CLIENT COMMENTS 1 08/16/22 ISSUED FOR CONSTRUCTION 0 08/03/22 INITIAL SUBMISSION REV. NO. DATE DESCRIPTION OF CHANGES

DRAWN BY:

JOB NO:

CHECKED BY:

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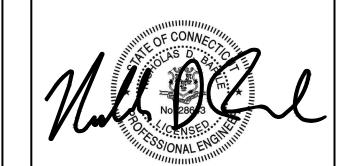
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AS NOTED

22005-TRN



NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

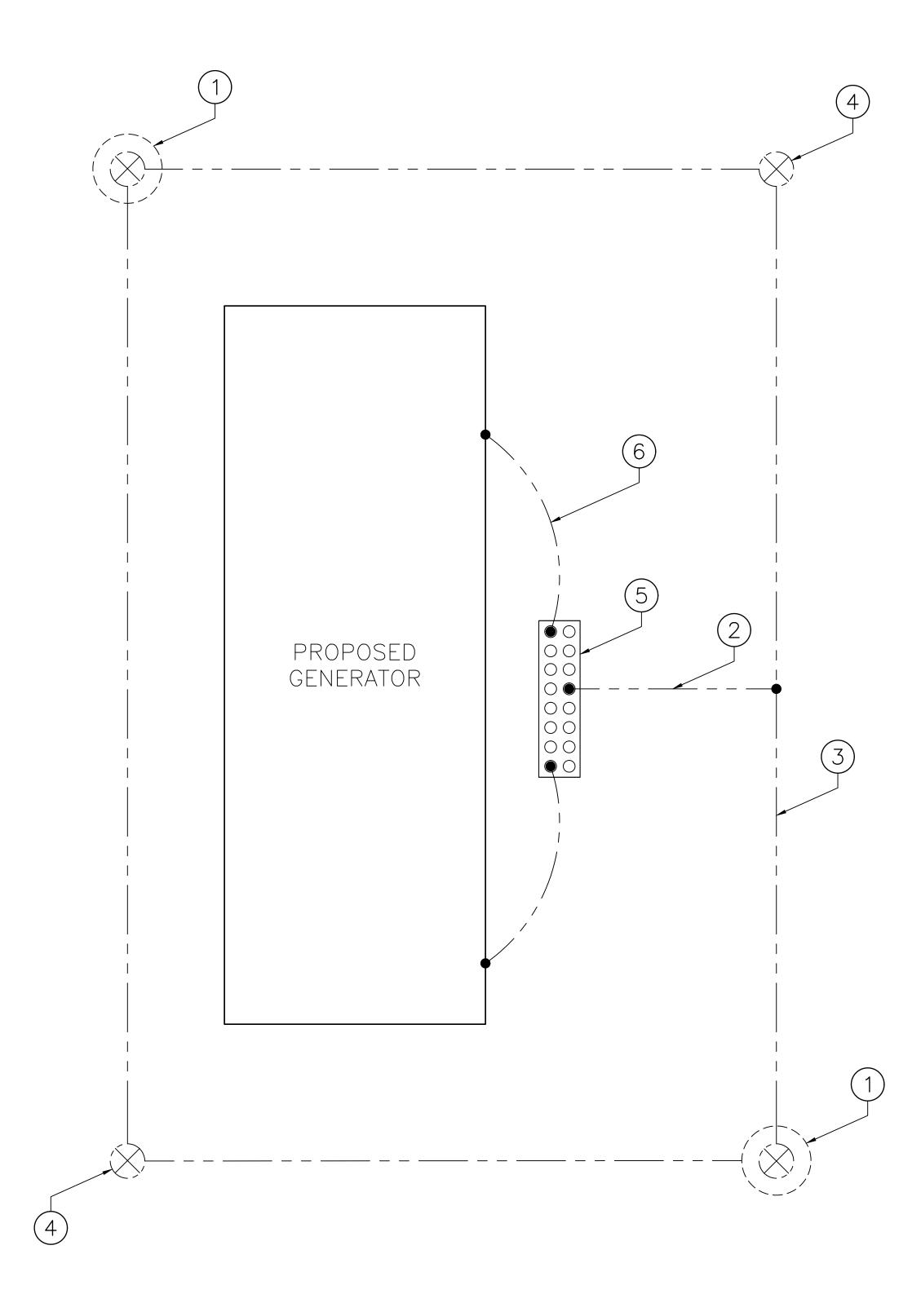
SITE ID: CTNH510A
AT&T GUILFORD MONOPOLE
201 GRANITE ROAD
GUILFORD, CT 06437
NEW HAVEN HOUNTY

DRAWING TITLE:

ELECTRICAL NOTES

DRAWING SHEET:

E-2



GROUNDING PLAN

G-1 SCALE: NTS

GROUNDING NOTES:

- (1) GROUND ROD INSPECTION WELL (TYP. 2)
- 2 #2 AWG. SOLID TINNED CU. TO BOND MAIN GROUND BAR TO GROUND RING
- (3) #2 AWG. SOLID TINNED CU. 30" BELOW GRADE (GROUND RING)
- (4) 5/8" ϕ x 10' CU. CLAD GROUND ROD (TYP. 6)
- (5) MAIN GROUND BAR INSTALLED ON EQUIPMENT FRAME
- (6) #2 AWG. STRANDED INSULATED CU. TO BOND GENERATOR TO MAIN GROUND BAR (TYP.)
- (7) #2 AWG. SOLID TINNED CU. TO BOND EQUIPMENT STEEL

GROUNDING NOTES:

- 1. THE EQUIPMENT BONDING JUMPER SHALL BE PERMITTED TO BE INSTALLED INSIDE OR OUTSIDE OF A RACEWAY OR ENCLOSURE. WHERE INSTALLED ON OUTSIDE, THE LENGTH OF THE EQUIPMENT BONDING JUMPER SHALL NOT EXCEED 6 FEET AND SHALL BE ROUTED WITH THE RACEWAY OR ENCLOSURE. REFER TO NEC 2008 - 250.102 (E)
- 2. ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
- 3. ALL WIRES SHALL BE AWG THHN/THWN COPPER UNLESS NOTED OTHERWISE.
- 4. GROUNDING CONNECTIONS TO GROUND RODS, GROUND RING WIRE, TOWER BASE AND FENCE POSTS SHALL BE EXOTHERMIC ("CADWELDS") UNLESS NOTED OTHÉRWISE. CLEAN SURFACES TO SHINY METAL. WHERE GROUND WIRES ARE CADWELDED TO GALVANIZED SURFACES, SPRAY CADWELD WITH GALVANIZING PAINT.
- 5. GROUNDING CONNECTIONS TO GROUND BARS ARE TO BE TWO-HOLE BRASS MECHANICAL CONNECTORS WITH STAINLESS STEEL HARDWARE (INCLUDING SCREW SET.) CLEAN GROUND BAR TO SHINY METAL. AFTER MECHANICAL CONNECTION, TREAT WITH PROTECTIVE ANTIOXIDANT
- 6. GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH MANUFACTURER'S GROUNDING KITS.
- 7. ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12' RADIUS.
- 8. INSTALL #2 AWG GREEN-INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 BARE TINNED COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
- 9. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CADWELDS") TO ANTENNA MOUNTS AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
- 10. EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH ERICO PRODUCTS BULLETIN A-AT.
- 11. CONSTRUCTION OF GROUND RING AND CONNECTIONS TO EXISTING GROUND RING SYSTEM SHALL BE DOCUMENTED WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PROVIDE PHOTOS TO CARRIER'S CONSTRUCTION MANAGER.
- 12. ALL GROUND LEADS EXCEPT THOSE TO THE EQUIPMENT ARE TO BE #2/0 TINNED. ALL EXTERIOR GROUND BARS TINNED COPPER.
- 13. PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPR-SHIELD (TM OF JET LUBE INC.). PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPR-SHIELD OR EQUAL.
- 14. ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED FIVE OHMS TO GROUND BY MEANS OF "FALL OF POTENTIAL TEST". TEST SHALL BE WITNESSED BY CARRIER REPRESENTATIVE, AND RECORDED ON CARRIER'S "GROUND RESISTANCE TEST" FORM.
- 15. WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN 3/4" PVC SLEEVE, FROM 1' BELOW GRADE AND SEAL TOP
- 16. PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL. FOLLOWING CONNECTION, APPLY APPROPRIATE ANTI-OXIDIZATION PAINT.
- 17. ANY SITE WHERE THE EQUIPMENT (BTS, CABLE BRIDGE, PPC, GENERATOR, ETC.) IS LOCATED WITHIN 6 FEET OF METAL FENCING, THE BGR SHALL BE BONDED TO THE NEAREST FENCE POST USING (2) RUNS OF #2 BARE TINNED COPPER WIRE.

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	SCHEDULE OF REVISIONS		
7			
6			
5			
4	05/12/23	PER UPDATED CODE	
3	09/26/22	REVISED GENERATOR LOCATION	
2	08/22/22	REVISED PER CLIENT COMMENTS	
1	08/16/22	ISSUED FOR CONSTRUCTION	
0	08/03/22	INITIAL SUBMISSION	
REV. NO.	DATE	DESCRIPTION OF CHANGES	

DRAWN BY: HMM**CHECKED BY:** NDB SCALE: AS NOTED 22005-TRN

JOB NO:

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NICHOLAS D. BARILE

PROFESSIONAL ENGINEER, CT LIC. No. 28643

SITE ID: CTNH510A AT&T GUILFORD MONOPOLE **201 GRANITE ROAD GUILFORD, CT 06437 NEW HAVEN HOUNTY**

DRAWING TITLE:

GROUNDING PLAN & NOTES

DRAWING SHEET:

Protector[™] **Series**

GENERAC

Diesel Generator Set

INCLUDES:

- Two Line LCD Multilingual Digital Evolution™ Controller (English/Spanish/French/ Portuguese) with external viewing window for easy indication of generator status and breaker position.
- Isochronous Electronic Governor
- Sound Attenuated Aluminum Enclosure
- Smart Battery Charger
- UV/Ozone Resistant Hoses
- ±1% Voltage Regulation
- Integrated Base Tank Provides Up to 40 Hours of Run Time
- 5 Year Limited Warranty*
- UL 2200 / UL142 / ULC S601 Listed
- Meets code requirements for External Vent and Fill

Standby Power Rating

Model RD015 - 15 kW 60 Hz Model RD020 - 20 kW 60 Hz Model RD030 - 30 kW 60 Hz

Model RD048 - 48 kW 60 Hz (single phase only) Model RD050 - 50 kW 60 Hz (three phase only)





Meets EPA Emission Regulations CA/MA Emissions Compliant

* 5 year warranty applicable to U.S. and Territories/Canada. International warranty is 3 year limited.

FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.
- TEST CRITERIA:
 - **V** PROTOTYPE TESTED
 - **√** SYSTEM TORSIONAL TESTED
- **√ NEMA MG1-22 EVALUATION V** MOTOR STARTING ABILITY

SOLID-STATE. FREQUENCY COMPENSATED VOLTAGE REGULATION.

This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine. Digital voltage regulation at $\pm 1\%$.

- SINGLE SOURCE SERVICE RESPONSE from Generac's extensive dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component.
- GENERAC TRANSFER SWITCHES. Long life and reliability are synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems and controls for total system compatibility.





GENERAC

15 • 20 • 30 • 48 • 50 kW

application & engineering data

GENERATOR SPECIFICATIONS

Туре	Synchronous
Rotor Insulation Class	H (15 & 20 kW) or F (30, 48 & 50 kW)
Stator Insulation Class	Н
Telephone Interference Factor (TIF)	<50
Alternator Output Leads 1-Phase	3 wire
Alternator Output Leads 3-Phase	6 wire
Bearings	Single Sealed Cartridge
Coupling	Direct, Flexible Disc
Excitation System	Direct

VOLTAGE REGULATION

Туре	Electronic
Sensing	Single Phase
Regulation	± 1%
Features	Adjustable Voltage & Gain

GOVERNOR SPECIFICATIONS

Туре	Electronic Isochronous
Steady State Regulation	± 0.25%

ELECTRICAL SYSTEM

Battery Charge Alternator	50 Amp (15 & 20 kW) or 70 Amp (30, 48 & 50 kW)
Smart Battery Charger	2 Amp
Recommended Battery (battery not included)	Group 27F, 700 CCA
System Voltage	12 Volts

GENERATOR FEATURES

Revolving field heavy duty generator Directly connected to the engine

Operating temperature rise 120°C above a 40°C ambient

Class H insulation is NEMA rated

Class F insulation is NEMA rated

All models fully prototype tested

ENCLOSURE FEATURES

Aluminum weather protective enclosure	Ensures protection against mother nature. Electrostatically applied textured epoxy paint for added durability.
Enclosed critical grade muffler	Quiet, critical grade muffler is mounted inside the unit to prevent injuries and maximize sound dampening.
Small, compact, attractive	Makes for an easy, eye appealing installation.
SAE	Sound attenuated enclosure ensures quiet operation.

(All ratings in accordance with BS5514, ISO3046, ISO8528, SAE J1349 and DIN6271)

15 • 20 • 30 • 48 • 50 kW

application & engineering data

ENGINE SPECIFICATIONS: 15 & 20 kW

Make	Generac
Model	In-line
Cylinders	4
Displacement (Liters)	2.28
Bore (in./mm)	3.46/88
Stroke (in./mm)	3.70/94
Compression Ratio	21.3:1
Intake Air System	Naturally Aspirated
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum
EPA Emissions Compliance	Emergency Stationary

ENGINE SPECIFICATIONS: 30 kW

ENGINE OF EOI TOATIONS. SO KW		
Make	Generac	
Model	In-line	
Cylinders	4	
Displacement (Liters)	2.4	
Bore (in/mm)	3.54/90	
Stroke (in/mm)	3.70/94	
Compression Ratio	21.3:1	
Intake Air System	Turbocharged	
Cylinder Head Type	Cast Iron OHV	
Piston Type	Aluminum	
EPA Emissions Compliance	Emergency Stationary	

ENGINE SPECIFICATIONS: 48/50 kW

Make	Generac
Model	In-Line
Cylinders	4
Displacement (Liters)	3.4
Bore in/mm	3.86/98
Stroke in/mm	4.45/113
Compression Ratio	18.5:1
Intake Air System	Turbocharged/Aftercooled
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum
EPA Emissions Compliance	Emergency Stationary

ENGINE LUBRICATION SYSTEM

Oil Pump Type	Gear
Oil Filter Type	Full flow spin-on canister
	6.87/6.5 - 15 & 20 kW
Crankcase Capacity (quarts/liters)	6.8/6.4 - 30 kW
	7.4/7 - 48 & 50 kW

ENGINE COOLING SYSTEM

Туре	Pressurized radiator - 15 & 20 kW Closed recovery - 30, 48 & 50 kW
Water Pump	Pre-lubed, self-seating
Fan Speed (rpm)	1800 - 15 & 20 kW 2061 - 30 kW 2029 - 48 & 50 kW
Fan Diameter (in/mm)	18.11/460 (15 & 20 kW) 22/559 (30, 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)	7.94/0.31(ID)
Fuel Specification	ASTM
Fuel Filtering (microns)	5 - 15, 20 & 30 kW 10 - 48 & 50 kW

TANK SPECIFICATIONS

Total Size (gallons/liters)	34/128.7 - 15 & 20 kW 62/234.7 - 30, 48 & 50 kW
Usable Size (gallons/liters)	32/121.1 - 15 & 20 kW 57/215.8 - 30, 48 & 50 kW
Run Time @ 1/2 Load (hrs)	41 - 15 kW 31 - 20 kW 38 - 30 kW 25 - 48 & 50 kW
Listings	UL142 ULC-S601

WEIGHTS AND DIMENSIONS

	15 kW	20 kW	30 kW	48 kW	50 kW
Weight (lb/kg)	1380)/626	1927/874	2197	7/997
Dimensions (LxWxH) (in/cm)	81 x 31 x 50/205 x 78 x 128			95 x 35 x 57/242 x 89 x 145	5

GENERAC

15 • 20 • 30 • 48 • 50 kW

operating data

GENERATOR OUTPUT VOLTAGE/kW - 60 Hz

		kW (Standby)	Amp (Standby)	CB Size
	120/240 V, 1Ø, 1.0 pf	15	62	70
RD015	120/208 V, 3Ø, 0.8 pf	15	52	60
	120/240 V, 3Ø, 0.8 pf	15	45	50
	120/240 V, 1Ø, 1.0 pf	20	83	100
RD020	120/208 V, 3Ø, 0.8 pf	20	69	80
	120/240 V, 3Ø, 0.8 pf	20	60	70
	120/240 V, 1Ø, 1.0 pf	30	125	150
RD030	120/208 V, 3Ø, 0.8 pf	30	104	125
ND030	120/240 V, 3Ø, 0.8 pf	30	90	100
	277/480 V, 3Ø, 0.8 pf	30	45	50
	120/240 V, 1Ø, 1.0 pf	48	200	200
RD048/	120/208 V, 3Ø, 0.8 pf	50	173	200
RD050	120/240 V, 3Ø, 0.8 pf	50	150	175
	277/480 V, 3Ø, 0.8 pf	50	75	90

SURGE CAPACITY IN AMPS

Voltage Dip @ < .4 pf 15% 30%

120/240 V, 1Ø	53	129
120/208 V, 3Ø	37	90
120/240 V, 3Ø	32	78
120/240 V, 1Ø	87	211
120/208 V, 3Ø	59	143
120/240 V, 3Ø	51	124
120/240 V, 1Ø	66	168
120/208 V, 3Ø	59	144
120/240 V, 3Ø	51	125
277/480 V, 3Ø	26	64
120/240 V, 1Ø	69	189
120/208 V, 3Ø	90	218
120/240 V, 3Ø	78	189
277/480 V, 3Ø	36	87
	120/208 V, 3Ø 120/240 V, 3Ø 120/240 V, 1Ø 120/208 V, 3Ø 120/240 V, 1Ø 120/240 V, 1Ø 120/240 V, 3Ø 120/240 V, 3Ø 277/480 V, 3Ø 120/240 V, 1Ø 120/208 V, 3Ø 120/240 V, 1Ø	120/208 V, 3Ø 37 120/240 V, 3Ø 32 120/240 V, 1Ø 87 120/208 V, 3Ø 59 120/240 V, 1Ø 66 120/240 V, 1Ø 66 120/208 V, 3Ø 59 120/240 V, 3Ø 59 120/240 V, 3Ø 51 277/480 V, 3Ø 51 277/480 V, 3Ø 26 120/240 V, 1Ø 69 120/208 V, 3Ø 90 120/240 V, 3Ø 78

ENGINE FUEL CONSUMPTION

		gal/hr	L/hr
	25% of rated load	0.51	1.93
RD015	50% of rated load	0.79	2.99
כוטעח	75% of rated load	1.14	4.31
	100% of rated load	1.48	5.58
	25% of rated load	0.67	2.6
RD020	50% of rated load	1.05	3.97
NDUZU	75% of rated load	1.52	5.32
	100% of rated load	1.98	7.48
	25% of rated load	0.92	3.5
RD030	50% of rated load	1.45	5.5
טפטעח	75% of rated load	1.96	7.4
	100% of rated load	2.74	10.4
	25% of rated load	1.35	5.11
RD048/	50% of rated load	2.15	8.14
RD050	75% of rated load	3.06	11.58
	100% of rated load	3.98	15.07

GENERAC®

15 • 20 • 30 • 48 • 50 kW

operating data

ENGINE COOLING

	15 kW	20 kW	30 kW	48/50 kW
Air flow (inlet air including alternator and combustion air in cfm/cmm)	2824/80	2824/80	3038/86	2824/80
System coolant capacity (gal/liters)	2.8/10.6	2.8/10.6	2.8/10.6	2.8/10.6
Heat rejection to coolant (BTU per hr/MJ per hr)	63,535/67	63,535/67	111,000/117.1	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) 84.76/2.4 84.76/2.4 90/2.55 1

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

^{*}Sound levels are taken from the front of the generator. Sound levels taken from other sides of the generator may be higher depending on installation parameters.

EXHAUST

Exhaust flow at rated output (cfm/cmm)	98.88/2.8	98.88/2.8	230/6.51	448/12.7
Exhaust temperature at rated output (°C/°F)	604.4/1120	604.4/1120	454.4/850	604.4/1120

ENGINE PARAMETERS

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

POWER ADJUSTMENT FOR AMBIENT CONDITIONS

Temperature Deration	
Altitude Deration (15, 30, 48 & 50 kW)	1% for every 100 m above 915 m or 3% for every 1000 ft above 3000 ft
Altitude Deration (20 kW)	1% for every 100 m above 305 m or 3% for every 1000 ft above 1000 ft

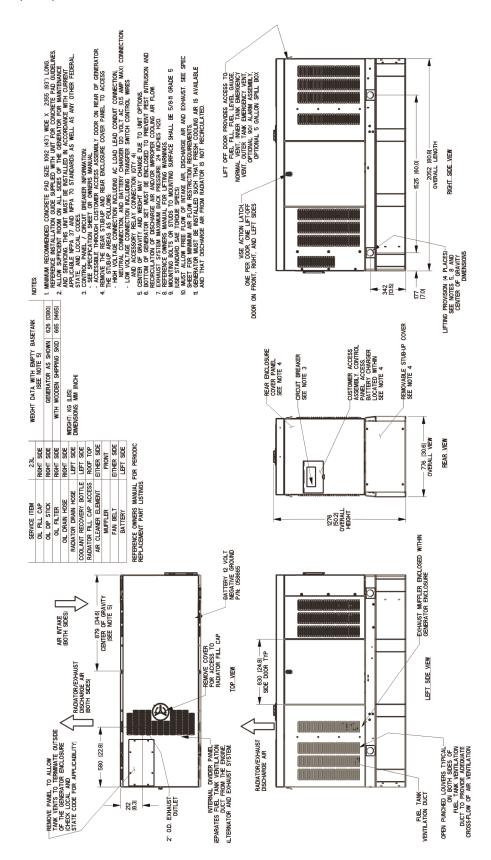
CONTROLLER FEATURES

CONTROLLER I LATORLO	
2-Line Plain Text Multilingual LCD Display	Simple user interface for ease of operation.
Mode Buttons: Auto	
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.
	Standard
Engine Run Hours Indication	
Programmable start delay between 2-1500 seconds	Standard (programmable by dealer only)
	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	
Starter Lock-out	Starter cannot re-engage until 5 sec 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	
Safety Fused/Fuse Problem Protection	Standard
Automatic Low Oil Pressure/High Oil Temperature Shutdown	Standard
	Standard
High Engine Temperature Shutdown	Standard
	Standard
Common External Fault Capability	Standard
Field Upgradable Firmware	Standard

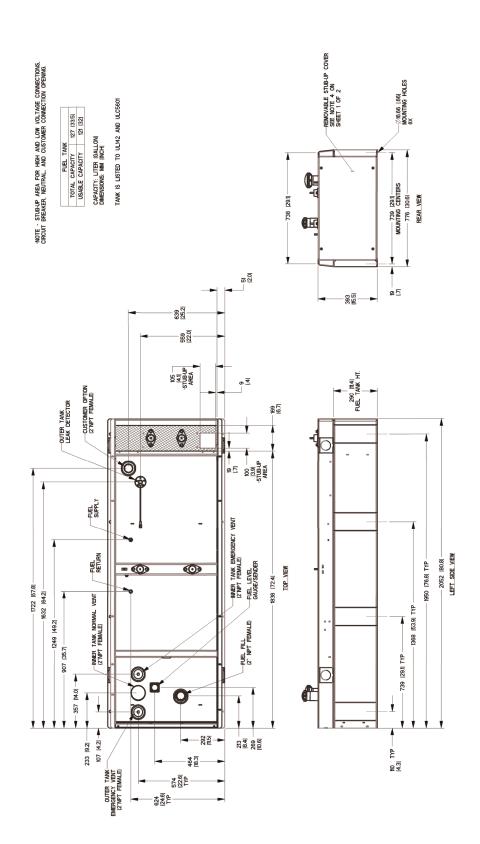
6 of 12

GENERAC

Drawing #0K7025-C (1 of 2)



Drawing #0K7025-C (2 of 2)



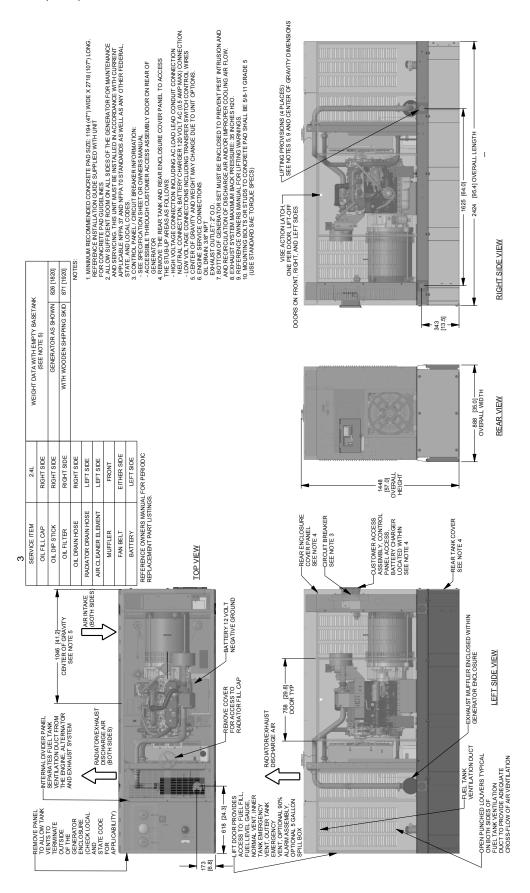
7 of 12

8 of 12

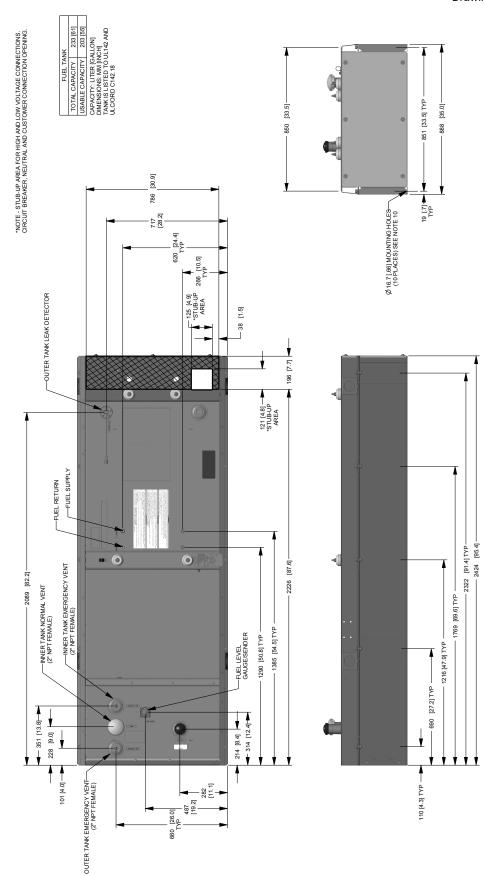
installation layout

GENERAC

Drawing #0K7002-C (1 of 2)



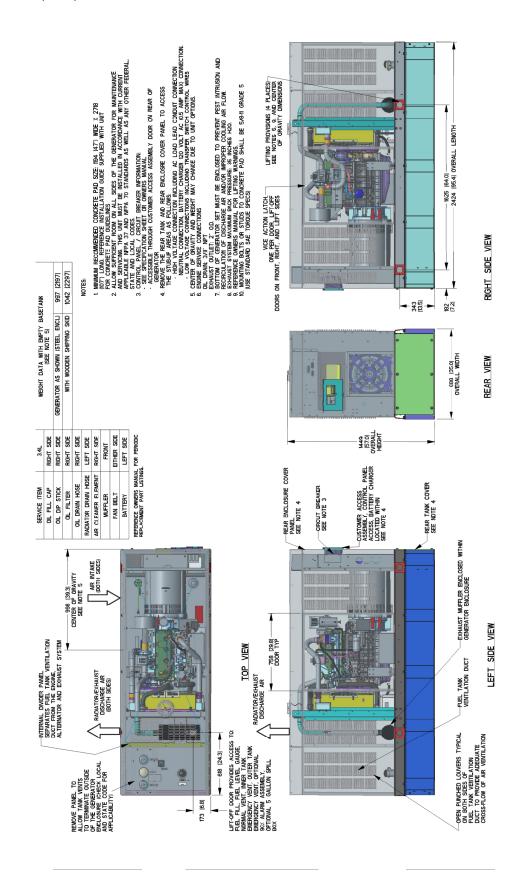
Drawing #0K7002-B (2 of 2)



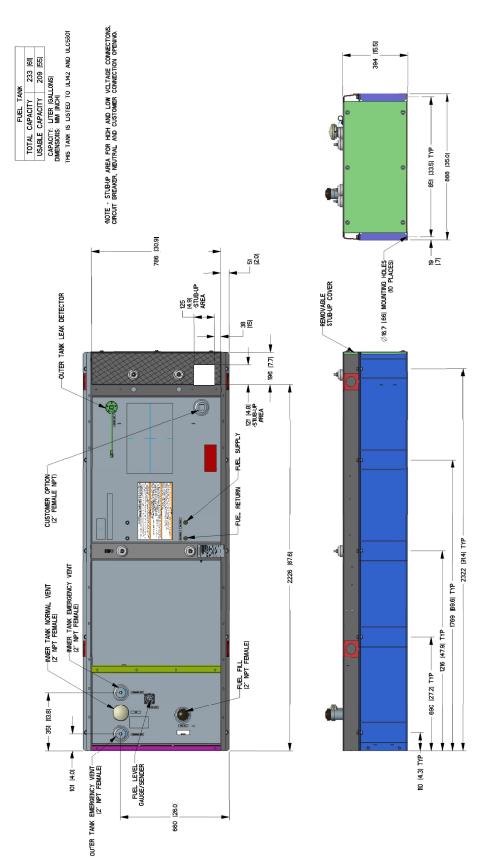
9 of 12

10 of 12

Drawing #0K6968-C (1 of 2)



Drawing #0K6968-A (2 of 2)



11 of 12

12 of 12

GENERAC

15 • 20 • 30 • 48 • 50 kW

available accessories

Model #	Product	Description	
G006463-4	Mobile Link™	Generac's Mobile Link allows you to check the status of your generator from anywhere that you have access to an Internet connection from a PC or with any smart device. You will even be notified when a change in the generator's status occurs via e-mail or text message. Note: Harness Adapter Kit required. Available in the U.S. only.	
G006478-0	Harness Adapter Kit	The Harness Adapter Kit is required to make liquid-cooled units compatible with Mobile $Link^{TM}.$	
G006502-0	Spill Box	The 5-gallon spill box screws into the existing fuel fill port of the base tank. It captures and contains fuel if over fueling or spilling occurs during the fill process.	
G006504-0	90% Fuel Level Alarm	The 90% fuel level alarm alerts the fuel fill operator when the tank reaches a 90% fill level by sounding an audible alarm and triggering an LED warning light.	
G006505-0 - 15 & 20 kW G006506-0 - 30, 48 & 50 kW	Tank Risers	Tank risers are required in some municipalities to help avoid potential base tank corrosion caused by mounting on rough surfaces.	
G006507-0	Fuel Fill Drop Tube	A powder coat painted, steel fuel fill drop tube is required in some municipalities to prevent sparking due to static electricity buildup, which can be caused by the fuel dropping into the tank from the fill area. Using a drop tube also results in submerged filling, which increases the fuel delivery flow rate and reduces vapors, foam and potential tank evaporation.	
G006513-0 - 15 & 20 kW G006517-0 - 30 kW G006516-0 - 48 & 50 kW	Stainless Steel Fuel Lines	Some municipalities require the use of stainless steel fuel lines instead of the standard hoses provided with the diesel generator products. These stainless steel lines are fire resistant for additional safety.	
G006510-0	E-Stop	E-stop allows for immediate fuel shutoff and generator shutdown in the event of an emergency.	
006511-0	Spill Box Drainback Kit	The spill box drainback kit allows fuel that was captured in the 5-gallon spill box to be drained directly back into the fuel tank to avoid vapors.	
G006588-1	Vent Extension Support Kit	The vent extension support kit consists of two aluminum plates with the appropriate pipe cutouts to secure the vent extension pipes coming through the top of the generator enclosure. It helps to minimize stress on the NPT fittings integrated on the tank and also helps protect against pests.	
G006512-0	Lockable Fuel Cap	The cast iron, lockable fuel cap provides the ability to lock the fuel system to prevent unwanted fuel tampering or fuel siphoning.	
G006572-0 - 15 & 20 kW G006571-0 - 30 kW G006570-0 - 48 & 50 kW	Maintenance Kits	The Protector Maintenance Kits offer all the hardware necessary to perform complete maintenance on Generac Protector generators.	
G006560-0 - 15 & 20 kW G006559-0 - 30 kW G006558-0 - 48 & 50 kW	Cold Weather Kits	Recommended for generators installed in regions where the temperature regularly falls below 32 °F (0 °C). The Cold Weather Kits consist of a block heater with all necessary mounting hardware and a battery warmer with a thermostat built into the battery wrap.	
G005704-0	Paint Kit	If the generator enclosure is scratched or damaged, it is important to touch-up the paint to protect from future corrosion. The paint kit includes the necessary paint to properly maintain or touch-up a generator enclosure.	
G006664-0	Local Wireless Remote	Completely wireless and battery powered, Generac's wireless remote monitor provides you with instant status information without ever leaving the house.	
G006665-0	Wireless Remote Extension Harness	Recommended for use with the Wireless Remote on units up to 60 kW, required for use on units 70 kW or greater.	
G006873-0	Smart Management Module (50 Amps)	Manage large loads by utilizing up to 8 individual Smart Management modules. These devices are installed directly in line with existing appliance wiring for easy installation.	

