



1 INDUSTRIAL AVE,  
SUITE 3  
MIDWAH NJ 07430  
PHONE: 201.684.0055  
FAX: 201.684.0066

May 13th, 2022

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

RE: Notice of Exempt Modification  
126 Pioneer Heights, Somers, CT 06071  
Latitude: 41.565598  
Longitude: -72.293155  
T-Mobile Site#: CTHA534A - Hardening

Dear Ms. Bachman:

T-Mobile currently maintains twelve (12) antennas at the 113-foot level of the existing 161-foot self support tower at 126 Pioneer Heights, Somers, CT. The 161-foot self support tower is owned by Crown Castle and the property is owned by The Clarence and Lena Farnham Living Trust. T-Mobile now intends to add a 48Kw generator to a proposed concrete pad within the existing compound.

**Planned Modifications:**

**Ground:**

Install New:

(1) Generac RD048 48 Kw AC Diesel Generator. Requires (2) 12-minute run cycles by-weekly.

The facility was approved by the Connecticut Siting Council in Docket No. 58 on July 11, 1986. This approval included conditions which this exempt modification application comply with.

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.S.A. § 16-SOj-73, a copy of this letter is being sent to First Selectman Tim Keeney, Elected Official, and Jennifer Roy, Zoning Enforcement Officer, 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](mailto:ebreun@transcendwireless.com)

Attachments

cc: Tim Keeney - First Selectman of Somers

Jennifer Roy - Zoning Enforcement Officer

Crown Castle - Tower Owner

Lucille G. Lefebvre - Property Owner

ERIC BREUN  
2016587728  
1 INTERNATIONAL BLVD.  
MAHWAH NJ 07495

1 LBS

1 OF 1

**SHIP TO:**

ZEO  
JENNIFER ROY  
600 MAIN STREET  
**SOMERS CT 06071**

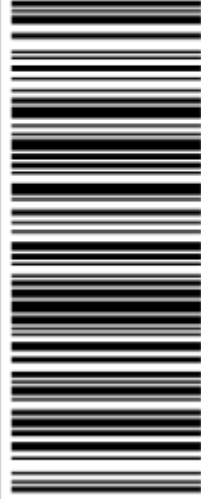


**CT 060 9-01**



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9689 8210



BILLING: P/P

Reference #1: CTHA534A

XOL 22.04.20 NV45 20.0A 05/2022\*



TM

ERIC BREUN  
2016587728  
1 INTERNATIONAL BLVD.  
MAHWAH NJ 07495

1 LBS

1 OF 1

**SHIP TO:**

FIRST SELECTMAN  
TIM KEENEY  
600 MAIN STREET  
**SOMERS CT 06071**

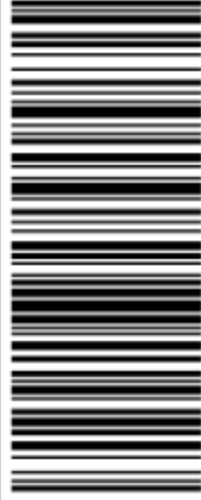


**CT 060 9-01**



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9546 8203



BILLING: P/P

Reference #1: CTHA534A

XOL 22.04.20 NV45 20.0A 05/2022\*



TM

ERIC BREUN  
2016587728  
1 INTERNATIONAL BLVD.  
MAHWAH NJ 07495

1 LBS

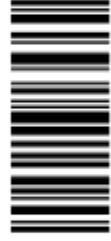
1 OF 1

**SHIP TO:**

CLARENCE & LENA FARNHAM LIVING TRUS  
126 PIONEER HEIGHTS  
**SOMERS CT 06071**

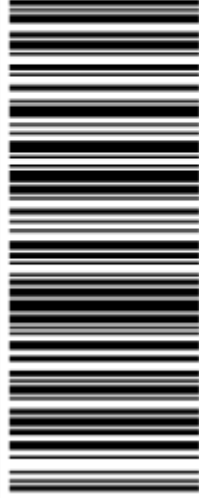


**CT 060 9-01**



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9981 8238



BILLING: P/P

Reference #1: CTHA534A

XOL 22.04.20 NV45 20.0A 05/2022\*



TM

ERIC BREUN  
2016587728  
1 INTERNATIONAL BLVD.  
MAHWAH NJ 07495

1 LBS

1 OF 1

**SHIP TO:**

CROWN CASTLE  
2000 CORPORATE DRIVE  
**CANONSBURG PA 15317**

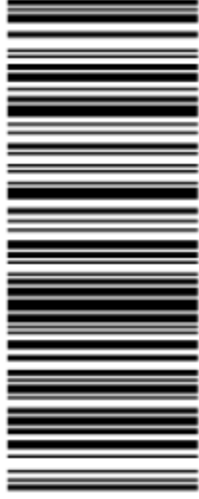


**PA 153 0-10**



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9834 8220



BILLING: P/P

Reference #1: CTHA534A

XOL 22.04.20 NV45 20.0A 05/2022\*



TM



**Hello, your package has been delivered.**

**Delivery Date:** Tuesday, 05/10/2022

**Delivery Time:** 10:32 AM

**Left At:** RECEPTION

**Signed by:** ROY

## TRANSCEND WIRELESS

**Tracking Number:** [1ZV257420396898210](#)

**Ship To:** JENNIFER ROY  
600 MAIN STREET  
SOMERS, CT 06071  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

**Package Weight:** 1.0 LBS

**Reference Number:** CTHA534A

**Hello, your package has been delivered.**

**Delivery Date:** Tuesday, 05/10/2022

**Delivery Time:** 10:32 AM

**Left At:** RECEPTION

**Signed by:** SELECTMAN

## TRANSCEND WIRELESS

**Tracking Number:** [1ZV257420395468203](#)

**Ship To:** TIM KEENEY  
600 MAIN STREET  
SOMERS, CT 06071  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

**Package Weight:** 1.0 LBS

**Reference Number:** CTHA534A

Hello, your package has been delivered.

Delivery Date: Tuesday, 05/10/2022

Delivery Time: 12:44 PM

Left At: REAR DOOR

### Experience UPS My Choice® Premium Today

Be in total control of how, when and where your packages are delivered.

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[View My Packages](#)

## TRANSCEND WIRELESS

Tracking Number:	<a href="#">1ZV257420399818238</a>
Ship To:	CLARENCE & LENA FARNHAM LIVING TRUS 126 PIONEER HEIGHTS SOMERS, CT 06071 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTHA534A

Your shipment

1ZV257420398348220

✓ Delivered On

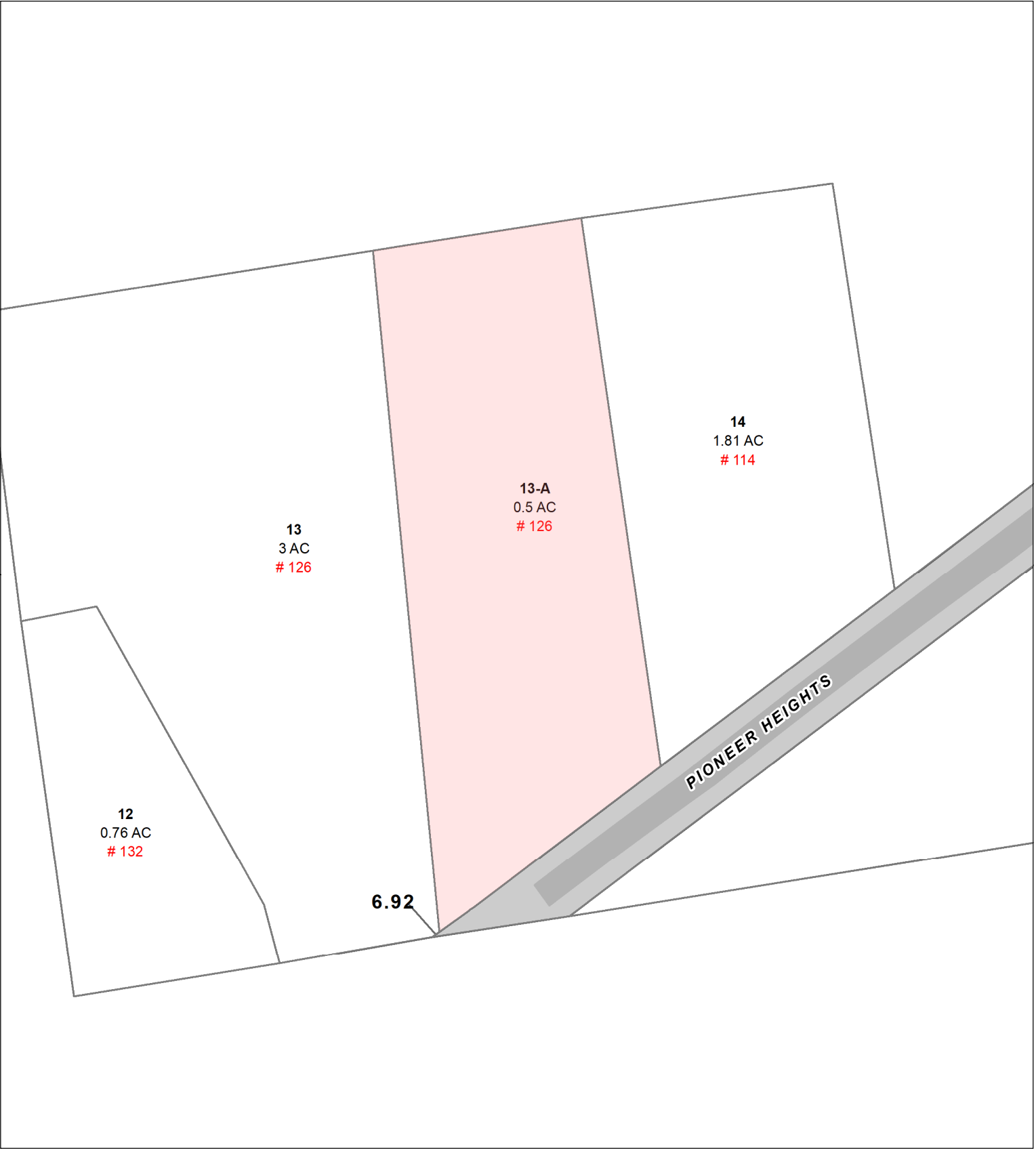
**Wednesday, May 11 at 10:43 A.M. at Residential**

Delivered To  
CANONSBURG, PA US

Received By:  
TODD  
[Proof of Delivery](#)

Town of Somers, Connecticut - Assessment Parcel Map

Parcel: 01-13-A      Address: 126 PIONEER HEIGHTS



Approximate Scale: 1 inch = 100 feet

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of Somers and its mapping contractors assume no legal responsibility for the information contained herein.

Map Produced June 2021



# Town of Somers, CT

## Property Listing Report

Map Block Lot

01-13-A

Building # 1

PID

1814

Account

00228200

### Property Information

Property Location	126 PIONEER HEIGHTS
Owner	FARNHAM LENA G & FAYE F GATELY
Co-Owner	C/O CROWN ATLANTIC CO LLC
Mailing Address	PMB 353 4017 WASHINGTON R MCMURRAY PA 15317
Land Use	299 Vac Comm Lnd
Land Class	C
Zoning Code	A-1
Census Tract	5382.01

Neighborhood	C
Acreage	0.5
Utilities	
Lot Setting/Desc	
Book / Page	0280/0125
Additional Info	

### Primary Construction Details

Year Built	0
Building Desc.	Vac Comm Lnd
Building Style	UNKNOWN
Building Grade	
Stories	
Occupancy	
Exterior Walls	
Exterior Walls 2	NA
Roof Style	
Roof Cover	
Interior Walls	
Interior Walls 2	NA
Interior Floors 1	
Interior Floors 2	NA

Heating Fuel	
Heating Type	
AC Type	
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	0
Fin Bsmt Quality	0
Bsmt Gar	0
Fireplaces	0

### Photo



### Sketch



(\*Industrial / Commercial Details)

Building Use	Vacant
Building Condition	
Sprinkler %	NA
Heat / AC	NA
Frame Type	NA
Baths / Plumbing	NA
Ceiling / Wall	NA
Rooms / Prtns	NA
Wall Height	NA
First Floor Use	NA
Foundation	NA

Report Created On

5/9/2022

**Valuation Summary** (Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Extras	0	0
Improvements		
Outbuildings	111600	78200
Land	335000	234500
Total	446600	312700

### Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	0	0

## Outbuilding and Extra Features

Type	Description
Fence, Chain	400 LF
PreCast Cell Shed	315 SF
PreCast Cell Shed	192 SF
Tower	160 LF
PreCast Cell Shed	200 SF

## Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
FARNHAM LENA G & FAYE F GATELY	0280/0125	2008-08-21	0
FARNHAM CLARENCE D JR ET AL	0255/0671	2005-11-28	0

DOCKET NO. 58

AN APPLICATION OF HARTFORD CELLULAR  
COMPANY FOR A CERTIFICATE OF  
ENVIRONMENTAL COMPATIBILITY AND PUBLIC  
NEED FOR THE CONSTRUCTION, MAINTENANCE,  
AND OPERATION OF FACILITIES TO PROVIDE  
CELLULAR SERVICE IN HARTFORD, TOLLAND AND  
MIDDLESEX COUNTIES.

CONNECTICUT SITING

COUNCIL

July 11, 1986.

D E C I S I O N A N D O R D E R

Pursuant to the foregoing opinion, the Connecticut Siting Council (Council) hereby directs that a Certificate of Environmental Compatibility and Public Need as provided by Section 16-50k of the General Statutes of Connecticut (CGS) be issued to the Hartford Cellular Company for the construction, maintenance, and operation of cellular mobile phone telecommunication towers and associated equipment in the towns of Glastonbury, Haddam, Hartford, Portland, Rocky Hill, Somers, Vernon, Windsor, and Willington subject to the conditions below.

1) The proposed Bloomfield and Middlefield sites are rejected without prejudice.

2) The antennas on the Glastonbury tower shall be mounted no higher than the 180' level of this existing tower.

3) The Portland and Rocky Hill towers shall be monopoles.

4) The towers shall be no taller than necessary to provide the proposed service, and in no event shall exceed total heights, including antennas, of

a) 193' at the Haddam site;

b) 173' at the Portland site;

- c) 153' at the Rocky Hill site;
- d) 173' at the Somers site;
- e) 173' at the Vernon site;
- f) 153' at the Willington site;
- g) 173' at the Windsor site.

5) The Hartford site receive antennas shall be mounted below the top of the high point of the building to preclude visibility.

6) Any future actions requiring the removal of the existing Glastonbury tower to be shared by the certificate holder shall also apply to the equipment mounted on that tower by the certificate holder, regardless of that equipment's status under Chapter 277a of the CGS.

7) The certificate holder shall submit a development and management (D&M) plan for the Haddam, Portland, Rocky Hill, Somers, Vernon and Windsor sites pursuant to Sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies (RSA), except that irrelevant items in Section 16-50j-76 need only be identified as such. In addition to the requirements of Section 16-50j-76, the D&M plan shall provide plans for evergreen screening around the fenced perimeter at the Haddam, Somers, Vernon, and Windsor sites. The D&M plan shall include a proposal for painting the approved monopole structures to blend with the sky. The D&M plan must be approved prior to facility construction. Any changes to specifications in the D&M plan must be approved by the Council prior to facility operation.

8) All certified facilities shall be constructed, operated, and maintained as specified in the Council's record and in the

site plan required by order number 7.

9) The certificate holder shall comply with any future radiofrequency (RF) standards promulgated by state or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facilities granted in this decision shall continue to be in compliance with such standards.

10) The certificate holder shall permit public or private entities to share space on the towers approved herein, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. In addition to complying with Section 16-50j-73 of the RSA, the certificate holder shall notify the Council of the addition of any equipment to any approved tower.

11) A fence not lower than 8' shall surround each tower and associated equipment.

12) Unless necessary to comply with order 13, no lights shall be installed on any of these towers.

13) The facilities' construction and any future tower sharing shall be in accordance with all applicable federal, state, and municipal laws and regulations. Shared uses by entities not subject to jurisdiction pursuant to Section 16-50k of the CGS shall be subject to all applicable federal, state, and municipal laws and regulations.

14) Construction activities shall take place during daylight working hours.



15) This decision and order shall be void and the towers and associate equipment shall be dismantled and removed, or reapplication for any new use shall be made to the Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction.

16) This decision and order shall be void if all construction authorized herein is not completed within three years of the issuance of this decision, or within three years of the completion of any appeal if appeal of this decision is taken, unless otherwise approved by the Council.

Pursuant to CGS Section 16-50p, we hereby direct that a copy of the decision and order shall be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, Middletown Press, Manchester Journal Inquirer, and the Willimantic Chronicle.

The parties to the proceeding are:

Metro Mobile (applicant)  
5 Eversley Avenue  
Norwalk, Connecticut 06855  
ATTN: Armand Mascioli  
General Manager

Howard L. Slater, Esq. (its attorneys)  
Scott A. Gursky, Esq.  
Byrne, Slater, Sandler,  
Shulman & Rouse, P.C.  
111 Pearl Street  
Hartford, Connecticut 06103

Richard Rubin, Esq.  
Fleischman and Walsh, P.C.  
1725 N Street, N.W.  
Washington, D. C. 20036

Mr. William Wamester  
1225 Randolph Road  
Middletown, Connecticut 06457

The Southern New England Telephone Company  
227 Church Street  
New Haven, Connecticut 06506  
ATTN: Peter J. Tyrrell, Esq.

Mr. James W. Tilney

represented by:  
Patricia A. Ayars  
Samuel Baily, Jr.  
Robinson & Cole  
One Commercial Plaza  
Hartford, CT. 06103-3597

Mr. Samuel DuBosar, Chairman  
Bessie Bennett, Esq.  
Town Plan & Zoning Commission  
P.O. Box 337  
Bloomfield, Connecticut 06002

Town of Somers

represented by:

Mr. Robert F. Peters  
Town Counsel  
Tatoian, Devline, Peters  
& Davis  
11 South Road  
P.O. Box 415  
Somers, CT. 06071

Town of Haddam  
represented by:

Lucy R. Petrella  
Chairperson  
Town Office Building  
Route 9A  
P.O. Box 87  
Haddam, CT. 06438

Midstate Regional Planning Agency

represented by:

Thomas M. Gilligan  
Regional Planner  
P.O. Box 139  
Middletown, CT. 06457

Dr. Donald P. LaSalle  
Director  
Talcott Mountain Science Center  
Montevideo Road  
Avon, Connecticut 06001

Barnard Tilson (service waived)  
Secretary  
Avon Planning and Zoning  
60 West Main Street  
Avon, Connecticut 06001

Alden Giddings  
33 Privelege Road  
Bloomfield, Connecticut 06002

Town of Bloomfield

represented by:

Joseph M. Suggs, Jr.  
Deputy Mayor  
Town Hall  
880 Bloomfield Avenue  
P.O. Box 337  
Bloomfield, CT. 06002  
(service waived)

Town of Middlefield

represented by:

David Silverstone, Esq.  
Silverstone & Koontz  
37 Lewis Street  
Hartford, CT. 06103

with a copy to:

Geoffrey Colegrove  
Midstate Regional Planning Agency  
100 DeKoven Drive  
Middletown, CT. 06457

Zoning Commission  
Town of Somers

represented by:

Joseph A. Paradis  
Chairman  
Town Hall  
600 Main Street  
P.O. Box 803  
Somers, CT. 06071

Barbara Sirwilo, Secretary (service waived)  
Planning & Zoning Commission  
Town of Rocky Hill  
600 Old Main Street  
P.O. Box 657  
Rocky Hill, Connecticut 06067

H. Robert Goodrich (service waived)  
Goodrich Lane  
Portland, Connecticut 06480

The Honorable Richard P. Antonetti  
State Representative (service waived)  
5 Sachem Circle  
Meriden, Connecticut 06450

John Hevrin  
R.D. #1 - Plains Road  
Haddam, Connecticut 06438

Norman and Darlene Manning (represented by)  
  
Elizabeth Allen, Esq.  
P.O. Box 467  
Higganum, CT. 06441  
(service waived)

C E R T I F I C A T I O N

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut, this 11th day of July, 1986.

<u>Council Members</u>	<u>Vote Cast</u>
_____ Gloria Dibble Pond Chairperson	Absent
_____ <i>Patricia J. Shea</i> Commissioner John Downey Designee: Patricia Shea	Yes
_____ <i>Stanley Pac</i> Commissioner Stanley Pac Designee: Christopher Cooper	Yes
_____ <i>Owen L. Clark</i> Owen L. Clark	Yes
_____ <i>Mortimer A. Gelston</i> Mortimer A. Gelston	Yes
_____ <i>James G. Horsfall</i> James G. Horsfall	Yes
_____ Pamela B. Katz	Absent
_____ <i>William H. Smith</i> William H. Smith	Yes
_____ <i>Colin C. Tait</i> Colin C. Tait	Yes


STATE OF CONNECTICUT  
COUNTY OF HARTFORD

)  
:  
)

ss. New Britain, July 11, 1986

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

  
\_\_\_\_\_  
Christopher S. Wood, Executive Director  
Connecticut Siting Council



Sheet No. 1 of 6



**DESIGN BASIS:**

1. DESIGN CRITERIA:

- ## SITE NOTES

- ## GENERAL NOTES

14. DRAWINGS INCLUDE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
15. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
16. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY COOTION PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
17. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED' ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE T-MOBILE CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTILL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
19. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
20. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
21. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUITS AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SYSTEMS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND CONFIRMED WITH THE PROJECT MANAGER AND OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK
22. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
23. THE CONTRACTOR SHALL CONTACT 'CALL BEFORE YOU DIG' AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
24. CONTRACTOR SHALL COMPLY WITH THE OWNER'S ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.
25. THE COUNTY/CITY/TOWN MAY MAKE PERIODIC FIELD INSPECTIONS TO ENSURE COMPLIANCE WITH THE DESIGN PLANS, SPECIFICATIONS, AND CONTRACT DOCUMENTS.
26. THE COUNTY/CITY/TOWN MUST BE NOTIFIED (2) WORKING DAYS PRIOR TO CONSENT/CONCURRENCE/IF ANY SYSTEM OR METHOD THAT WILL PREVENT THE DIRECT INSPECTION OF MATERIALS, METHODS OR WORKMANSHIP. EXAMPLES OF THESE PROCESSES ARE BACKFILLING A GROUND RING OR TOWER FOUNDATION, POURING TOWER FOUNDATIONS, BURYING GROUND RODS, PLATES OR GRIDS, ETC. THE CONTRACTOR MAY PROCEED WITH THE SCHEDULED PROCESS (2) WORKING DAYS AFTER PROVIDING NOTICE UNLESS NOTIFIED OTHERWISE BY THE COUNTY/CITY/TOWN.
27. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR SHALL VISIT THE 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 ENGINEER ON RECORD, PRIOR TO THE COMMENCEMENT OF ANY WORK.

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)

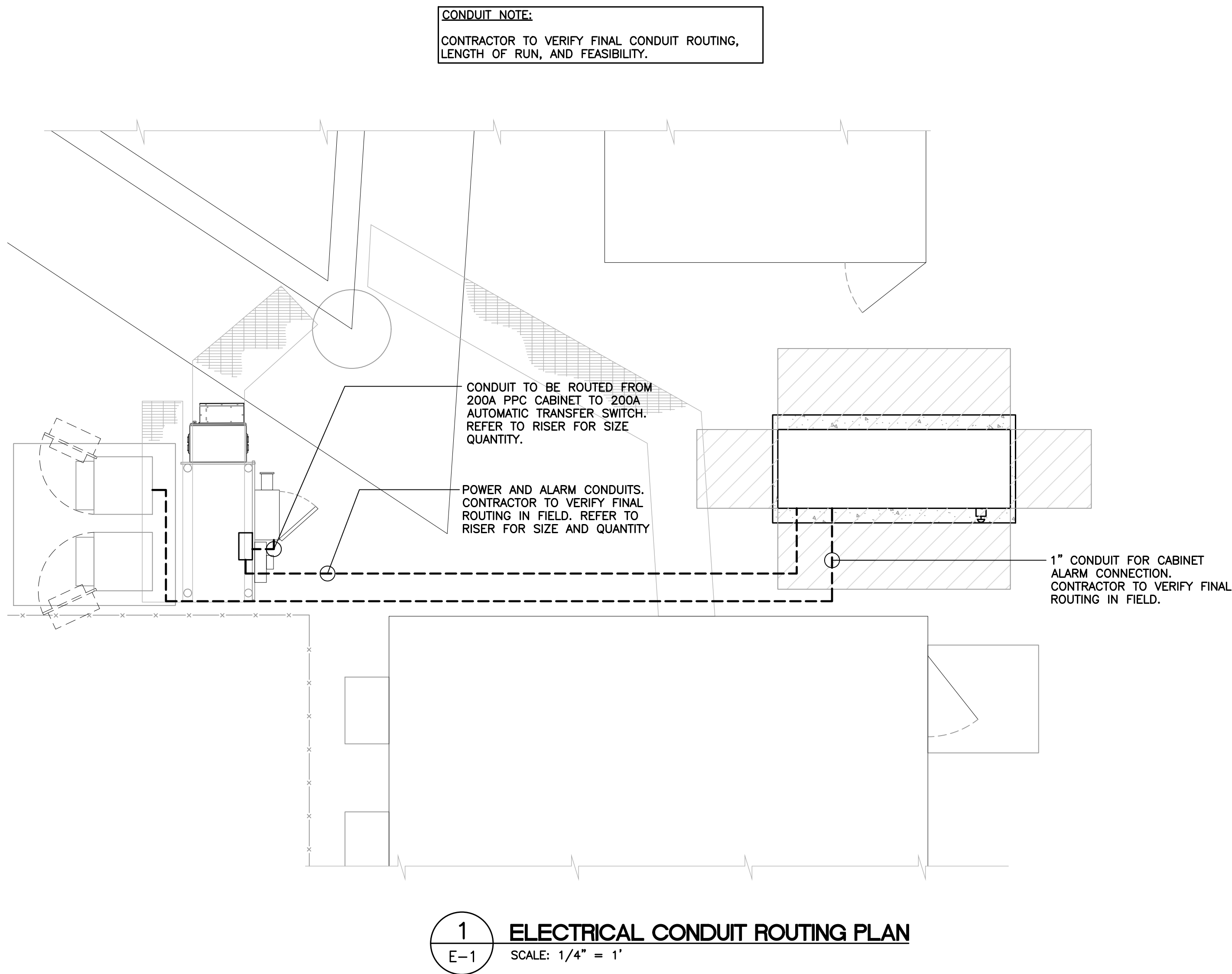
- |   |   |  |   |  |                   |                  |                 |                   |  |
|---|---|--|---|--|-------------------|------------------|-----------------|-------------------|--|
| <p><b>T-MOBILE NORTHEAST LLC</b></p> <p><b>SITE NAME: CROWN SOMERS LATTICE TOWER</b><br/> <b>SITE ID: CTHA534A</b><br/> <b>196 PIONEER HEIGHTS</b><br/> <b>SOMERS, CT 06071</b></p> | <p><b>CENTEK</b> engineering<br/> <i>Centered on Solutions</i></p> <p>(203) 488-0380<br/> (203) 488-8597 Fax<br/> 652 North Brantford Road<br/> Brantford, CT 06405<br/> <a href="http://www.CentekEng.com">www.CentekEng.com</a></p> |  | <p><b>T-Mobile</b></p> <p><i>Transcend MS-255-5</i></p> |  | 0<br>REV.         | 02/22/22<br>DATE | JLD<br>DRAWN BY | TUR<br>CHECKED BY | CONSTRUCTION DRAWINGS — ISSUED FOR CONSTRUCTION<br>DESCRIPTION |
|   | <p><b>GENERAL NOTES AND SPECIFICATIONS</b></p>  |  |   |  | <p><b>N-1</b></p> |                  |                 |                   |  |
| <p>Sheet No. <u>2</u> of <u>6</u></p>   |   |  |   |  |                   |                  |                 |                   |  |



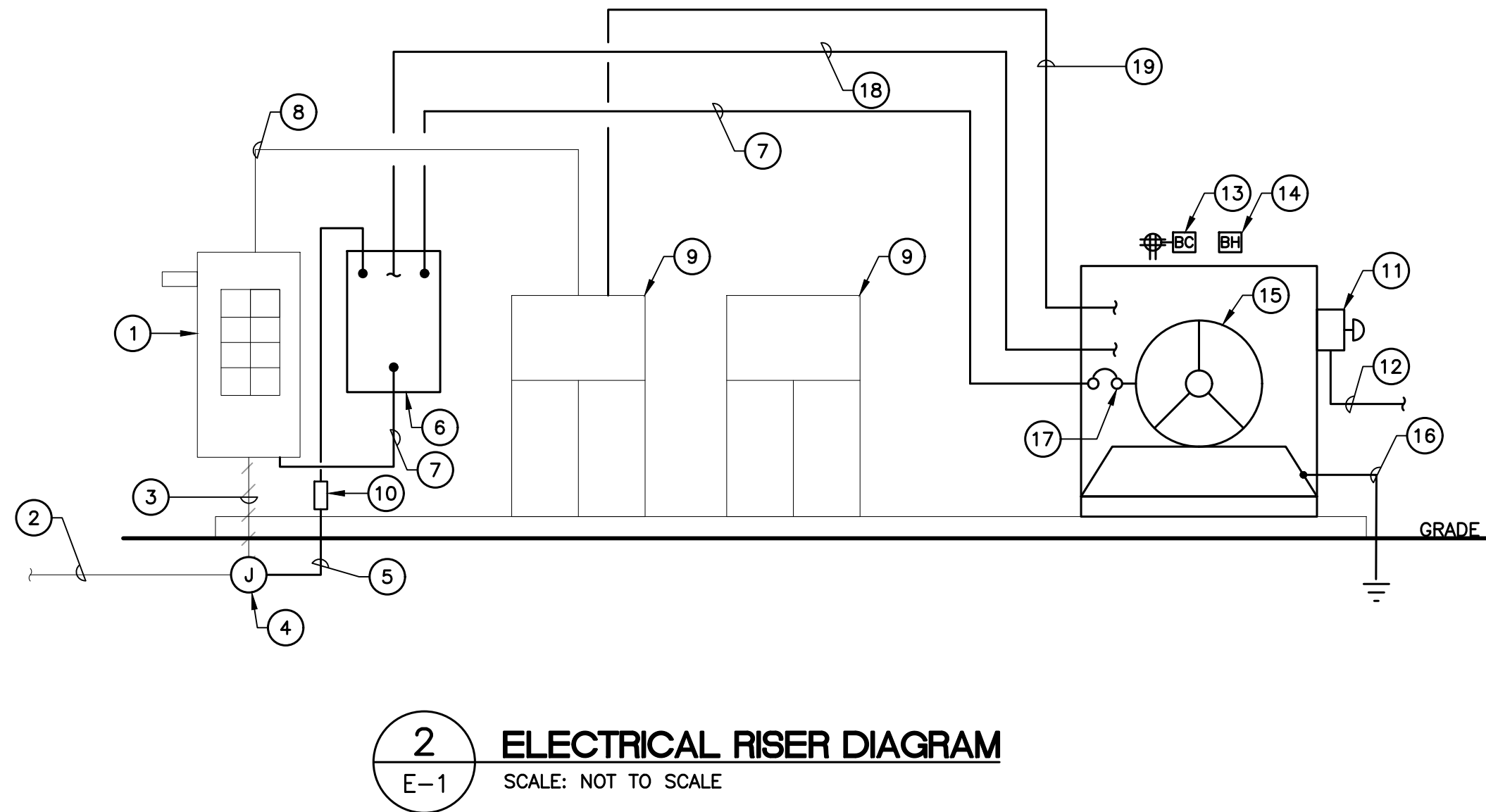
Sheet No. 3 of 6







RISER DIAGRAM NOTES	RISER DIAGRAM NOTES
1 EXISTING PPC CABINET TO REMAIN.	11 REMOTE GENERATOR SHUT OFF SWITCH IN BREAK GLASS ENCLOSURE MOUNTED TO EXTERIOR OF GENERATOR ENCLOSURE PER 2019 NFPA 110 5.6.5.6.1.
2 EXISTING POWER CONDUIT AND CONDUCTORS PREVIOUSLY SERVING EXISTING PANEL.	12 3/4" CONDUIT AND CONDUCTORS REQUIRED FOR PROPER OPERATION OF EMERGENCY GENERATOR SHUT OFF SWITCH.
3 SECTION OF CONDUIT AND CONDUCTORS TO BE REMOVED.	13 GENERATOR BATTERY CHARGER AND CONVENIENCE GFCI OUTLET WIRED TO EXISTING PANEL. OUTLET TO BE MOUNTED IN WEATHERPROOF ENCLOSURE.
4 JUNCTION BOX SIZED PER NEC.	14 GENERATOR BLOCK HEATER WIRED TO EXISTING PANEL SERVING T-MOBILE EQUIPMENT.
5 EXTEND EXISTING CONDUITS AND CONDUCTORS TO NEW ATS.	15 48KW DIESEL FUELED EMERGENCY BACK UP GENERATOR.
6 NEW 200A, 2 SOURCE AUTOMATIC TRANSFER SWITCH.	16 GENERATOR GROUNDING PER NEC AND MANUFACTURER'S REQUIREMENTS. BOND TO EXISTING GROUNDING SYSTEM. (MINIMUM OF (1) #2 AWG GROUND)
7 (3) #3/0 AWG, (1) #6 AWG GROUND, 2-1/2" CONDUIT.	17 GENERATOR OUTPUT CIRCUIT BREAKER.
8 EXISTING CONDUITS AND CONDUCTORS TO REMAIN	18 1" CONDUIT FOR GENERATOR CONTROL AND SIGNAL WIRING.
9 EXISTING EQUIPMENT CABINETS TO REMAIN.	19 1" CONDUIT FOR CABINET ALARM CONNECTION
10 EXPANSION COUPLING TYPICAL.	



T-MOBILE		CENTEK engineering <i>Centered on Solutions</i>		T-MOBILE NORTHEAST LLC SITE NAME: CROWN SOMERS LATTICE TOWER SITE ID: CTHA534A 196 PIONEER HEIGHTS SOMERS, CT 06071	
PROFESSIONAL ENGINEER SEAL		02/22/22 DATE		DATE: 01/28/22	
0 REV.		02/22/22 DATE		SCALE: AS NOTED	
CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION		TJB DRAWN BY		JOB NO. 22015.05	
DESCRIPTION		JLD DRAWN BY		ELECTRICAL RISER DIAGRAM AND CONDUIT ROUTING	
				E-1	
				Sheet No. 5 of 6	



**SECTION 16010**

- A. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.
- B. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNERS REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES THAT MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR THE SCHEDULING OF ALL INSPECTIONS THAT MAY BE REQUIRED BY THE LOCAL AUTHORITY.
- D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.
- E. NO MATERIAL OTHER THAN THAT CONTAINED IN THE "LATEST LIST OF ELECTRICAL FITTINGS" APPROVED BY THE UNDERWRITERS' LABORATORIES, SHALL BE USED IN ANY PART OF THE WORK. ALL MATERIAL FOR WHICH LABEL SERVICE HAS BEEN ESTABLISHED SHALL BEAR THE U.L. LABEL.
- F. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.
- G. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.
- H. THE ELECTRICAL CONTRACTOR SHALL SUPPLY THREE (3) COMPLETE SETS OF APPROVED DRAWINGS, ENGINEERING DATA SHEETS, MAINTENANCE AND OPERATING INSTRUCTION MANUALS FOR ALL SYSTEMS AND THEIR RESPECTIVE EQUIPMENT. THESE MANUALS SHALL BE INSERTED IN VINYL COVERED 3-RING BINDERS AND TURNED OVER TO OWNER'S REPRESENTATIVE ONE (1) WEEK PRIOR TO FINAL PUNCH LIST.
- I. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMAN LIKE MANNER AND WILL BE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
- J. ALL EQUIPMENT AND MATERIALS TO BE INSTALLED SHALL BE NEW, UNLESS OTHERWISE NOTED.
- K. BEFORE FINAL PAYMENT, THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF PRINTS (AS-BUILTS), LEGIBLY MARKED IN RED PENCIL TO SHOW ALL CHANGES FROM THE ORIGINAL PLANS.
- L. PROVIDE TEMPORARY POWER AND LIGHTING IN WORK AREAS AS REQUIRED.
- M. SHOP DRAWINGS:
  - 1. CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIALS PROPOSED FOR USE ON THIS PROJECT, GIVING ALL DETAILS, WHICH INCLUDE DIMENSIONS, CAPACITIES, ETC.
  - 2. CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF ALL TEST REPORTS CALLED FOR IN THE SPECIFICATIONS AND DRAWINGS
- N. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH OWNER'S SPECIFICATIONS, AND REQUIREMENTS OF ALL LOCAL AUTHORITIES HAVING JURISDICTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH APPROPRIATE INDIVIDUALS TO OBTAIN ALL SUCH SPECIFICATIONS AND REQUIREMENTS. NOTHING CONTAINED IN, OR OMITTED FROM, THESE DOCUMENTS SHALL RELIEVE CONTRACTOR FROM THIS OBLIGATION.

1.01. CONDUITS

- A. MINIMUM CONDUIT SIZE FOR BRANCH CIRCUITS, LOW VOLTAGE CONTROL AND ALARM CIRCUITS SHALL BE 3/4". CONDUITS SHALL BE PROPERLY FASTENED AS REQUIRED BY THE N.E.C.
- B. THE INTERIOR OF RACEWAYS/ENCLOSURES INSTALLED UNDERGROUND SHALL BE CONSIDERED TO BE WET LOCATION, INSULATED CONDUCTORS SHALL BE LISTED FOR USE IN WET LOCATIONS. PROVIDE WEATHERPROOF CONSTRUCTION IN WET LOCATIONS.
- C. CONDUIT INSTALLED UNDERGROUND SHALL BE INSTALLED TO MEET MINIMUM COVER REQUIREMENTS OF TABLE 300.5.
- D. PROVIDE RIGID GALVANIZED STEEL CONDUIT (RMC) FOR THE FIRST 10 FOOT SECTION WHEN LEAVING A BUILDING OR SECTIONS PASSING THROUGH FLOOR SLABS
- E. ONLY LISTED PVC CONDUIT AND FITTINGS ARE PERMITTED FOR THE INSTALLATION OF ELECTRICAL CONDUCTORS, SUITABLE FOR UNDERGROUND APPLICATIONS.

CONDUIT SCHEDULE SECTION 16111			
CONDUIT TYPE	NEC REFERENCE	APPLICATION	MIN. BURIAL DEPTH (PER NEC TABLE 300.5) <sup>1,2</sup>
EMT	ARTICLE 358	INTERIOR CIRCUITING, EQUIPMENT ROOMS, SHELTERS	N/A
RMC, RIGID GALV. STEEL	ARTICLE 344, 300.5, 300.50	ALL INTERIOR/ EXTERIOR CIRCUITING, ALL UNDERGROUND INSTALLATIONS.	6 INCHES
PVC, SCHEDULE 40	ARTICLE 352, 300.5, 300.50	INTERIOR/ EXTERIOR CIRCUITING AND GROUNDING SYSTEMS, UNDERGROUND INSTALLATIONS, WHERE NOT SUBJECT TO PHYSICAL DAMAGE. <sup>1</sup>	18 INCHES
PVC, SCHEDULE 80	ARTICLE 352, 300.5, 300.50	INTERIOR/ EXTERIOR CIRCUITING AND GROUNDING SYSTEMS, UNDERGROUND INSTALLATIONS, WHERE SUBJECT TO PHYSICAL DAMAGE. <sup>1</sup>	18 INCHES
LIQUID TIGHT FLEX. METAL	ARTICLE 350	SHORT LENGTHS (MAX. 3 FT.) WIRING TO VIBRATING EQUIPMENT IN WET LOCATIONS.	N/A
FLEX. METAL	ARTICLE 348	SHORT LENGTHS (MAX. 3 FT.) WIRING TO VIBRATING EQUIPMENT IN WET LOCATIONS.	N/A

<sup>1</sup> PHYSICAL DAMAGE IS SUBJECT TO THE AUTHORITY HAVING JURISDICTION.

<sup>2</sup> UNDERGROUND CONDUIT INSTALLED UNDER ROADS, HIGHWAYS, DRIVEWAYS, PARKING LOTS SHALL HAVE MINIMUM DEPTH OF 24".

<sup>3</sup> WHERE SOLID RIGID PREVENTS COMPLIANCE WITH MINIMUM COVER DEPTHS, WIRING SHALL BE INSTALLED IN PERMITTED RACEWAY FOR DIRECT BURIAL. THE RACEWAY SHALL BE COVERED BY A MINIMUM OF 2" OF CONCRETE EXTENDING DOWN TO ROCK.

A. ALL CONDUCTORS SHALL BE TYPE THWN (INT. APPLICATION) AND XHHW (EXT. APPLICATION), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED COPPER. #10 AWG AND SMALLER SHALL BE SPLICED USING ACCEPTABLE SOLDERLESS PRESSURE CONNECTORS. #8 AWG AND LARGER SHALL BE SPLICED USING COMPRESSION SPLIT-BOLT TYPE CONNECTORS. #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT CONDUCTOR SIZE(S). CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION:

<u>LINE</u>	<u>COLOR</u>	<u>COLOR</u>
A	BLACK	BROWN
B	RED	ORANGE
C	BLUE	YELLOW
N	CONTINUOUS WHITE	GREY
G	CONTINUOUS GREEN	GREEN WITH YELLOW STRIPE

B. MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.

A. FURNISH AND INSTALL OUTLET BOXES FOR ALL DEVICES, SWITCHES, RECEPTACLES, ETC.. BOXES TO BE ZINC COATED STEEL.

B. FURNISH AND INSTALL PULL BOXES IN MAIN FEEDERS RUNS WHERE REQUIRED. PULL BOXES SHALL BE GALVANIZED STEEL WITH SCREW REMOVABLE COVERS, SIZE AND QUANTITY AS REQUIRED. PROVIDE WEATHERPROOF CONSTRUCTION IN WET LOCATIONS.

A. THE FOLLOWING LIST IS PROVIDED TO CONVEY THE QUALITY AND RATING OF WIRING DEVICES WHICH ARE TO BE INSTALLED. A COMPLETE LIST OF ALL DEVICES MUST BE SUBMITTED BEFORE INSTALLATION FOR APPROVAL.

1. 15 MINUTE TIMER SWITCH – INTERMATIC #FF15M (INTERIOR LIGHTS)
2. DUPLEX RECEPTACLE – P&S #2095 (GFCI) SPECIFICATION GRADE
3. SINGLE POLE SWITCH – P&S #CSB20AC2 (20A-120V HARD USE) SPECIFICATION GRADE
4. DUPLEX RECEPTACLE – P&S #5362 (20A-120V HARD USE) SPECIFICATION GRADE

B. PLATES – ALL PLATES USED SHALL BE CORROSION RESISTANT TYPE 304 STAINLESS STEEL. PLATES SHALL BE FROM SAME MANUFACTURER AS SWITCHES AND RECEPTACLES. PROVIDE WEATHERPROOF HOUSING FOR DEVICES LOCATED IN WET LOCATIONS.

C. OTHER MANUFACTURERS OF THE SWITCHES, RECEPTACLES AND PLATES MAY BE SUBMITTED FOR APPROVAL BY THE ENGINEER.

A. FUSIBLE AND NON-FUSIBLE, 600V, HEAVY DUTY DISCONNECT SWITCHES SHALL BE AS MANUFACTURED BY SQUARE "D". PROVIDE FUSES AS CALLED FOR ON THE CONTRACT DRAWINGS. AMPERE RATING SHALL BE CONSISTENT WITH LOAD BEING SERVED. DISCONNECT SWITCH COVER SHALL BE MECHANICALLY INTERLOCKED TO PREVENT COVER FROM OPENING WHEN THE SWITCH IS IN THE "ON" POSITION. EXTERIOR APPLICATIONS SHALL BE NEMA 3R CONSTRUCTION WITH PADLOCK FEATURE.

A. ALL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH ZONE 2 SEISMIC REQUIREMENTS.

A. CONTRACTOR SHALL FURNISH AND INSTALL NON-METALLIC ENGRAVED BACK-LIT NAMEPLATES ON ALL PANELS AND MAJOR ITEMS OF ELECTRICAL EQUIPMENT.

B. LETTERS TO BE WHITE ON BLACK BACKGROUND WITH LETTERS 1-1/2 INCH HIGH WITH 1/4 INCH MARGIN.

C. IDENTIFICATION NOMENCLATURE SHALL BE IN ACCORDANCE WITH OWNER'S STANDARDS.

- A. ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.
- B. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.
- C. GROUNDING OF PANELBOARDS:
  - 1. PANELBOARD SHALL BE GROUNDED BY TERMINATING THE PANELBOARD FEEDER'S EQUIPMENT GROUND CONDUCTOR TO THE EQUIPMENT GROUND BAR KIT(S) LUGGED TO THE CABINET. ENSURE THAT THE SURFACE BETWEEN THE KIT AND CABINET ARE BARE METAL TO BARE METAL. PRIME AND PAINT OVER TO PREVENT CORROSION.
  - 2. CONDUIT(S) TERMINATING INTO THE PANELBOARD SHALL HAVE GROUNDING TYPE BUSHINGS. THE BUSHINGS SHALL BE BONDED TOGETHER WITH BARE #10 AWG COPPER CONDUCTOR WHICH IN TURN IS TERMINATED INTO THE PANELBOARD'S EQUIPMENT GROUND BAR KIT(S).
- D. EQUIPMENT GROUNDING CONDUCTOR:
  - 1. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250-122.
  - 2. THE MINIMUM SIZE OF EQUIPMENT GROUND CONDUCTOR SHALL BE #12 AWG COPPER.
  - 3. EACH FEEDER OR BRANCH CIRCUIT SHALL HAVE EQUIPMENT GROUND CONDUCTOR(S) INSTALLED IN THE SAME RACEWAY(S).
- E. CELLULAR GROUNDING SYSTEM:

CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 10 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3-POINT GROUNDING TEST. (REFER TO SECTION 16960).

PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

  - 1. GROUND BARS
  - 2. EXTERIOR GROUNDING (WHERE REQUIRED DUE TO MEASURED AC RESISTANCE GREATER THAN SPECIFIED).
  - 3. ANTENNA GROUND CONNECTIONS AND PLATES.
- F. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM BUT PRIOR TO CONCEALMENT/BURIAL OF SAME, SHALL NOTIFY OWNER'S PROJECT ENGINEER WHO WILL HAVE A DESIGN ENGINEER VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.
- G. ALL EQUIPMENT SHALL BE BONDED TO GROUND AS REQUIRED BY N.E.C., MFG. SPECIFICATIONS, AND OWNER'S SPECIFICATIONS.

A. REFER TO CONTRACT DRAWINGS FOR DETAILS AND SCHEDULES.

A. FUSES SHALL BE NONRENEWABLE TYPE AS MANUFACTURED BY "BUSSMAN" OR APPROVED EQUIV. FUSES RATED TO 1/10 AMPERE UP TO 600 AMPERES SHALL BE EQUIVALENT TO BUSSMAN TYPE LPN-RK (250V) UL CLASS RK1, LOW PEAK, DUAL ELEMENT, TIME-DELAY FUSES. FUSES SHALL HAVE SEPARATE SHORT CIRCUIT AND OVERLOAD ELEMENTS AND HAVE AN INTERRUPTING RATING OF 200 KAIC. UPON COMPLETION OF WORK, PROVIDE ONE SPARE SET OF FUSES FOR EACH TYPE INSTALLED.

A. CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:

TEST 1: THERMAL OVERLOAD AND MAGNETIC TRIP TEST, AND CABLE INSULATION TEST FOR ALL CIRCUIT BREAKERS RATED 100 AMPS OR GREATER.

TEST 2: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.

THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:

1. TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.
2. CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.
3. GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.

B. THESE TESTS SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNER'S CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION REPRESENTATIVE AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

C. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM'S REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.

D. CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

A. ALL TESTS AS REQUIRED UPON COMPLETION OF WORK, SHALL BE MADE BY THIS CONTRACTOR. THESE SHALL BE CONTINUITY AND INSULATION TESTS; TEST TO DETERMINE THE QUALITY OF MATERIALS, ETC. AND SHALL BE DONE IN ACCORDANCE WITH N.E.C. RECOMMENDATIONS. ALL FEEDERS AND BRANCH CIRCUIT WIRING (EXCEPT CLASS 2 SIGNAL CIRCUITS) MUST BE TESTED FREE FROM SHORT CIRCUIT AND GROUND FAULT CONDITIONS AT 500V IN A REASONABLY DRY AMBIENT OF APPROXIMATELY 70 DEGREES F.

B. CONTRACTOR SHALL PERFORM LOAD PHASE BALANCING TESTS. CIRCUITS SHALL BE CONNECTED TO THE PANELBOARDS SO THAT THE LOAD IS DISTRIBUTED AS EQUALLY AS POSSIBLE BETWEEN EACH LOAD AND NEUTRAL. 10% SHALL BE CONSIDERED AS A REASONABLE ACCEPTABLE ALLOWANCE. BRANCH CIRCUITS SHALL BE BALANCED ON THEIR OWN PANELBOARDS. FEEDER LOADS SHALL, IN TURN, BE BALANCED ON THE SERVICE EQUIPMENT. REASONABLE LOAD TEST SHALL BE ARRANGED TO VERIFY LOAD BALANCE IF REQUESTED BY THE ENGINEER.

C. ALL TESTS, UPON REQUEST, SHALL BE REPEATED IN THE PRESENCE OF OWNER'S REPRESENTATIVE. ALL TESTS SHALL BE DOCUMENTED AND TURNED OVER TO OWNER. OWNER SHALL HAVE THE AUTHORITY TO STOP ANY OF THE WORK NOT BEING PROPERLY INSTALLED. ALL SUCH DETECTED WORK SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL EXPENSE TO THE OWNER AND THE TESTS SHALL BE REPEATED.

[illegible]

## 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
- $\pm 1\%$  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)



**QUIET-TEST**



\*Built in the USA using domestic and foreign parts

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:**
  - ✓ PROTOTYPE TESTED
  - ✓ SYSTEM TORSIONAL TESTED
  - ✓ NEMA MG1-22 EVALUATION
  - ✓ 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®





GENERATOR SPECIFICATIONS

Type	Synchronous
Rotor Insulation Class	H (15 & 20 kW) or F (30, 48 & 50 kW)
Stator Insulation Class	H
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

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

GOVERNOR SPECIFICATIONS

Type	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

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

### WEIGHTS AND DIMENSIONS

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

### 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 6.8/6.4 - 30 kW 7.4/7 - 48 & 50 kW

### ENGINE COOLING SYSTEM

Type	Pressurized radiator - 15 & 20 kW Closed recovery - 30, 48 & 50 kW
Water Pump	Pre-lubed, self-sealing
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

15 • 20 • 30 • 48 • 50 kW

operating data

## GENERATOR OUTPUT VOLTAGE/kW - 60 Hz

		kW (Standby)	Amp (Standby)	CB Size
RD015	120/240 V, 1Ø, 1.0 pf	15	62	70
	120/208 V, 3Ø, 0.8 pf	15	52	60
	120/240 V, 3Ø, 0.8 pf	15	45	50
RD020	120/240 V, 1Ø, 1.0 pf	20	83	100
	120/208 V, 3Ø, 0.8 pf	20	69	80
	120/240 V, 3Ø, 0.8 pf	20	60	70
RD030	120/240 V, 1Ø, 1.0 pf	30	125	150
	120/208 V, 3Ø, 0.8 pf	30	104	125
	120/240 V, 3Ø, 0.8 pf	30	90	100
	277/480 V, 3Ø, 0.8 pf	30	45	50
RD048/ RD050	120/240 V, 1Ø, 1.0 pf	48	200	200
	120/208 V, 3Ø, 0.8 pf	50	173	200
	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%
RD015	120/240 V, 1Ø	53	129
	120/208 V, 3Ø	37	90
	120/240 V, 3Ø	32	78
	120/240 V, 1Ø	87	211
RD020	120/208 V, 3Ø	59	143
	120/240 V, 3Ø	51	124
	120/240 V, 1Ø	66	168
RD030	120/208 V, 3Ø	59	144
	120/240 V, 3Ø	51	125
	277/480 V, 3Ø	26	64
	120/240 V, 1Ø	69	189
RD048/ RD050	120/208 V, 3Ø	90	218
	120/240 V, 3Ø	78	189
	277/480 V, 3Ø	36	87
	120/240 V, 1Ø	69	189

## ENGINE FUEL CONSUMPTION

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

STANDBY RATING: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046-1. Design and specifications are subject to change without notice.



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	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

\*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	.....3% for every 5 °C above 25 °C or 1.7% for every 5 °F above 77 °F
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

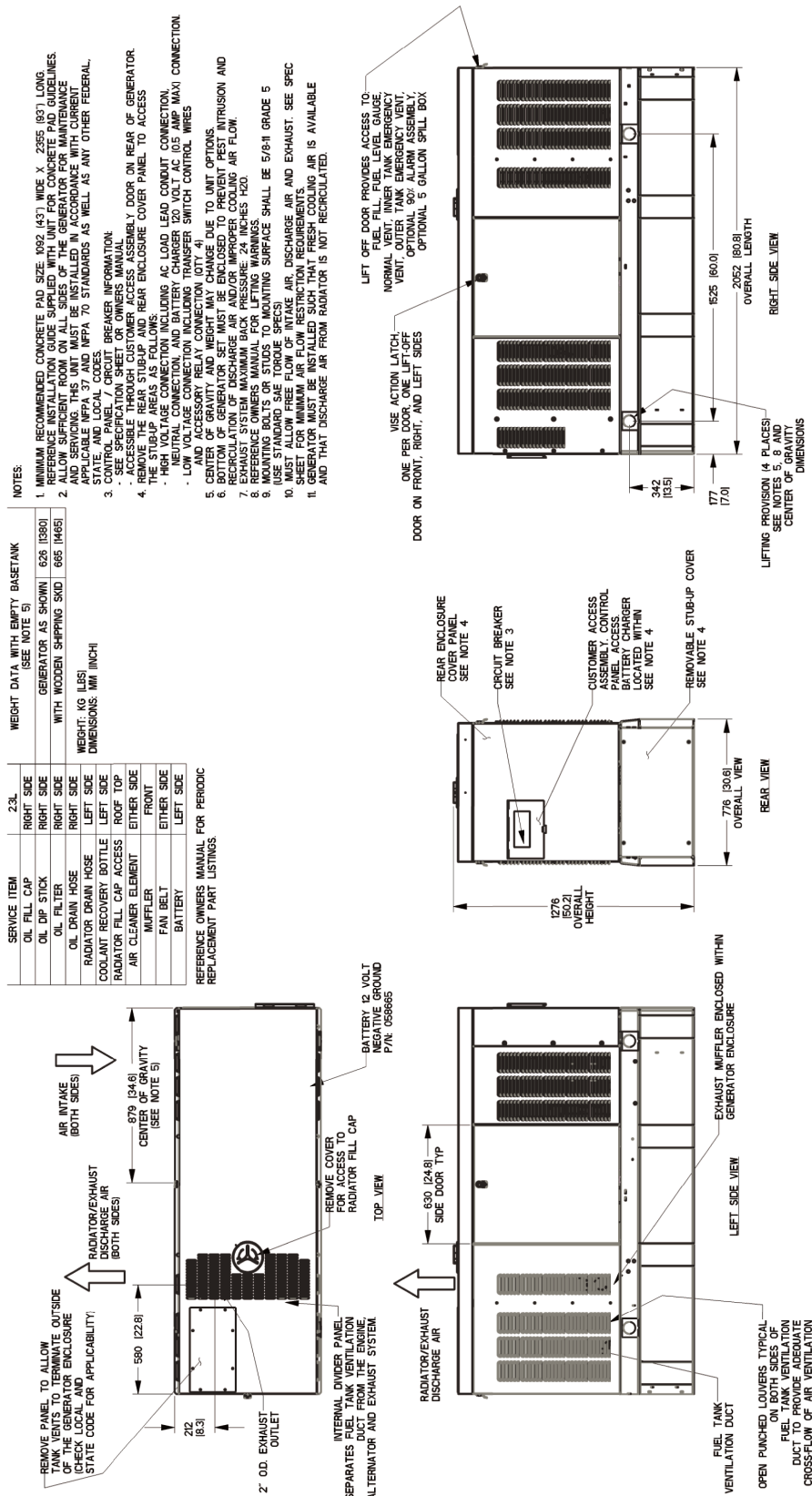
## CONTROLLER FEATURES

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 Messages	.....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 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	.....Standard
Safety Fused/Fuse Problem Protection	.....Standard
Automatic Low Oil Pressure/High Oil Temperature Shutdown	.....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

## installation layout

## 15 & 20 kW

Drawing #0K7025-C (1 of 2)



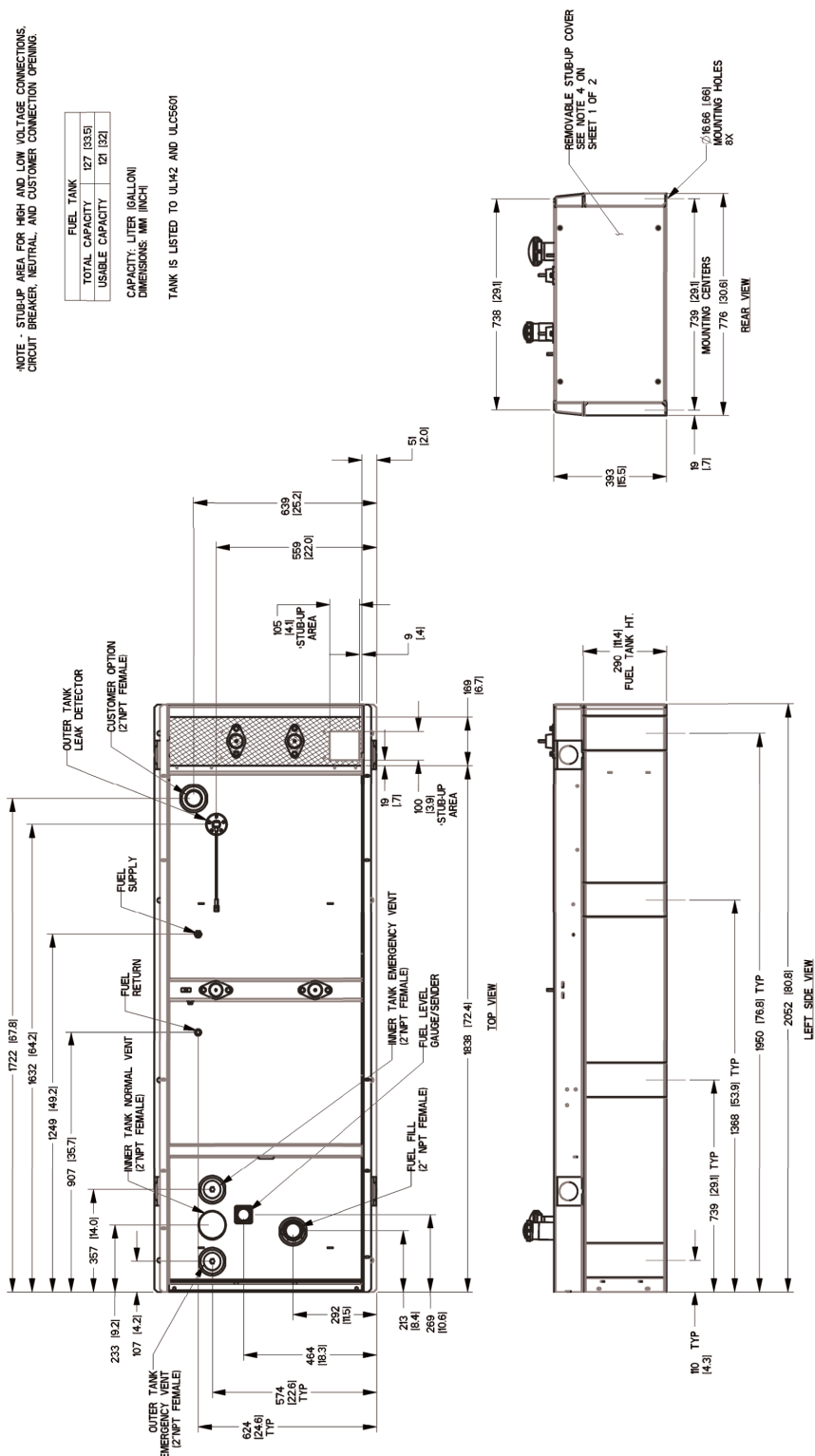
15 & 20 kW

NOTE: STUB-UP AREA FOR HIGH AND LOW VOLTAGE CONNECTIONS, CIRCUIT BREAKER, NEUTRAL, AND CUSTOMER CONNECTION OPENING.

FUEL TANK	
TOTAL CAPACITY	127 [33.5]
USABLE CAPACITY	121 [32]

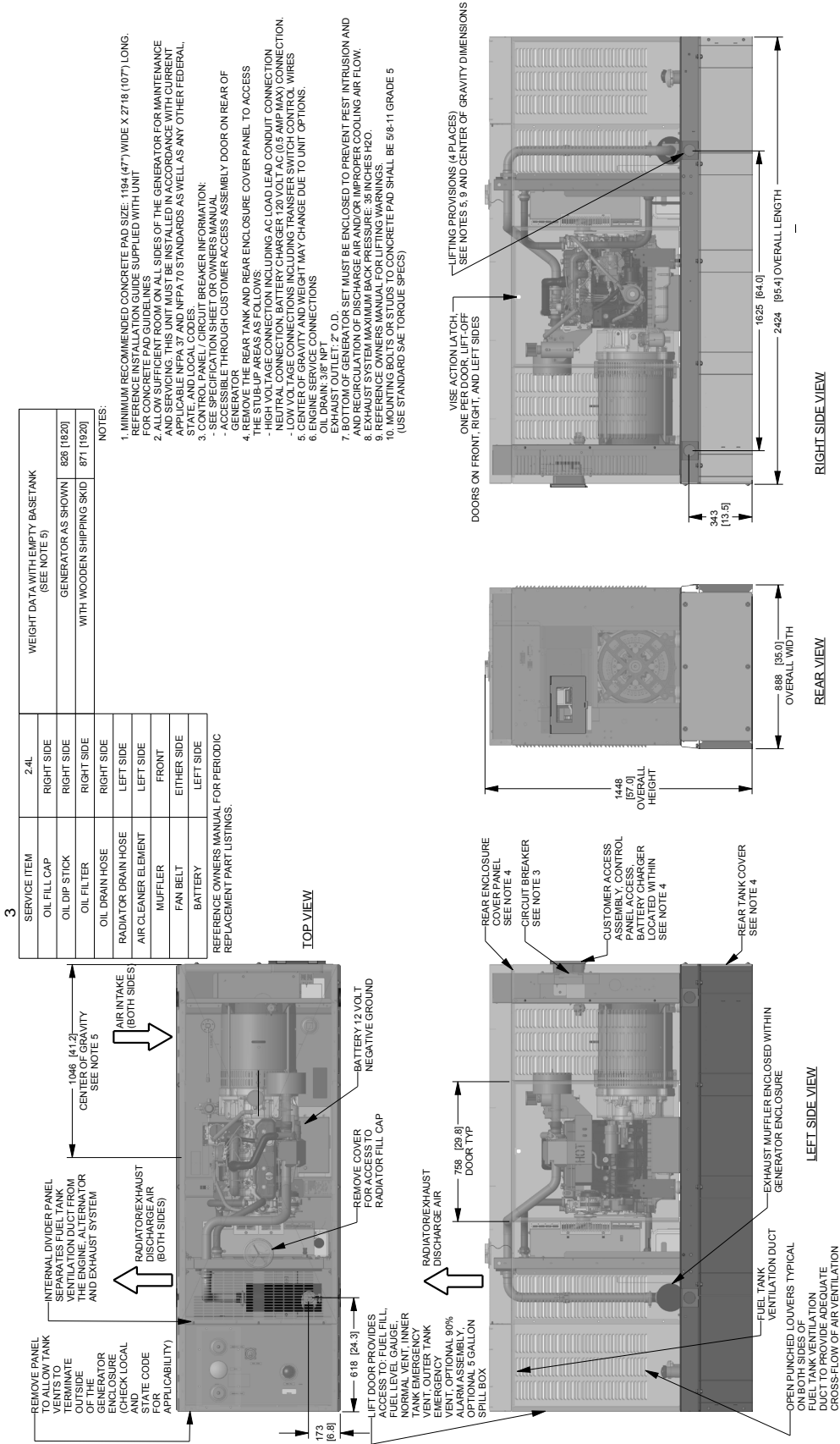
CAPACITY: LITER (GALLON)  
DIMENSIONS: MM (INCH)

TANK IS LISTED TO UL42 AND UL5601



30 kW

Drawing #0K7002-C (1 of 2)



# 30 kW

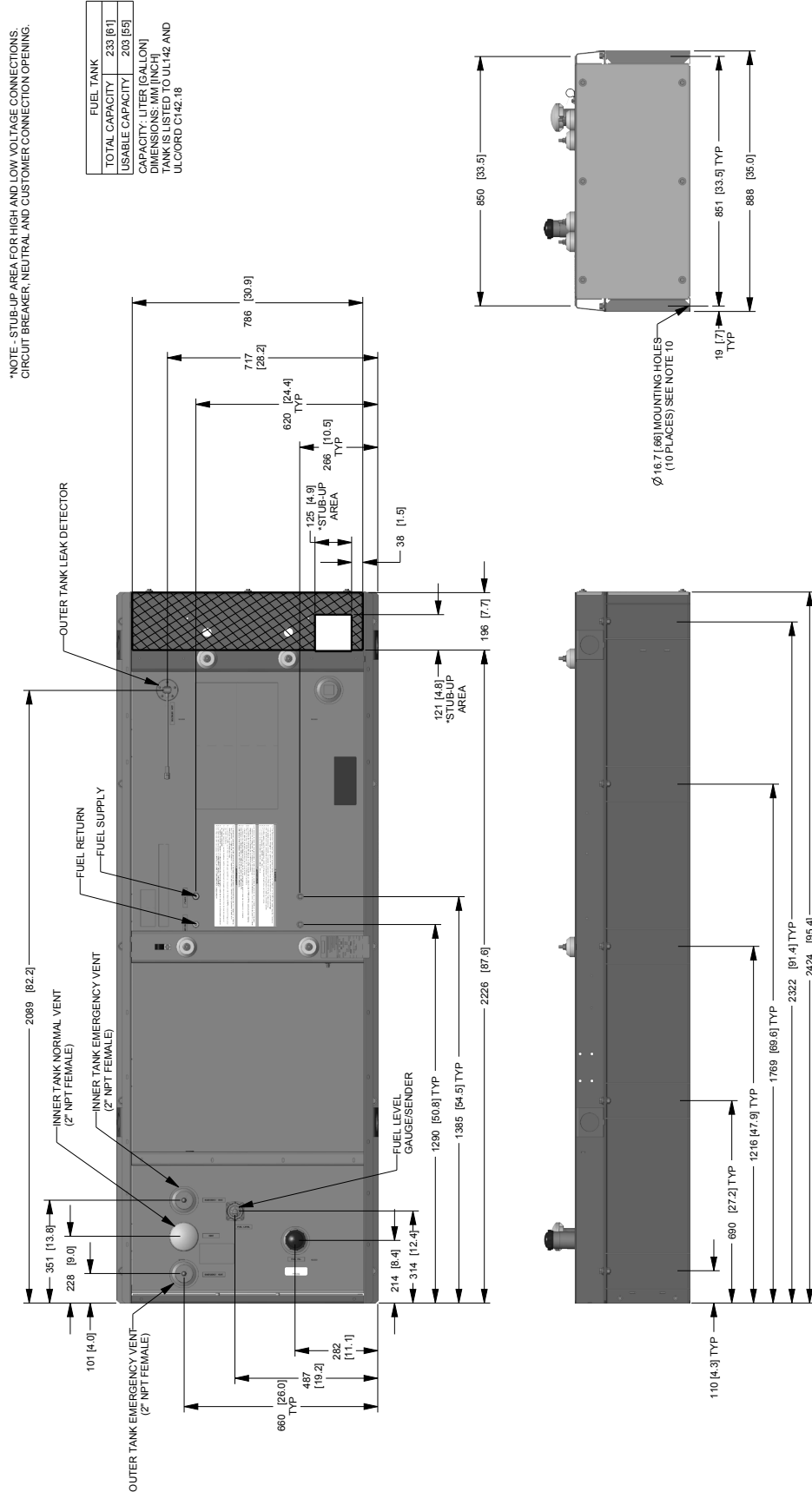
# GENERAC®

## installation layout

Drawing #0K7002-B (2 of 2)

Protector™ Series

9 of 12



## 48 & 50 kW

Drawing #0K6968-C (1 of 2)



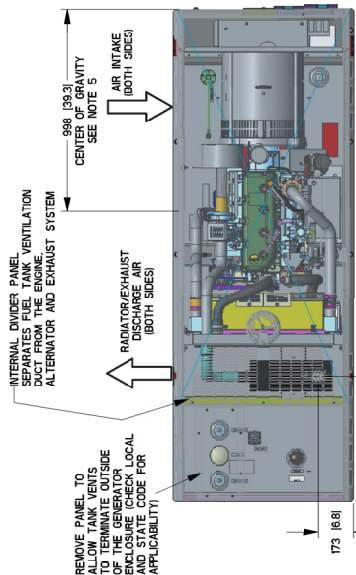
## installation layout

SERVICE ITEM	3-4L	WEIGHT DATA (SEE NOTE 5)
OIL FILL CAP	RIGHT SIDE	
OIL DIP STICK	RIGHT SIDE	GENERATOR AS SHOWN (STEEL ENCL) 997 [2197]
OIL FILTER	RIGHT SIDE	WITH WOODEN SHIPPING SKID 1042 [2297]

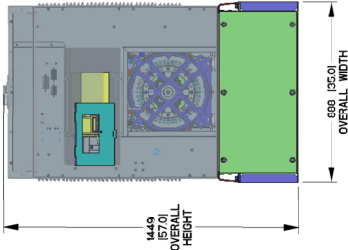
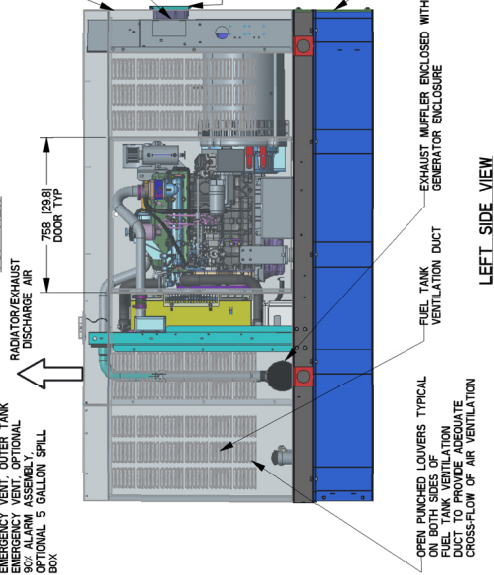
## NOTES:

1. MINIMUM RECOMMENDED CONCRETE PAD SIZE 104" (47") WIDE X 5' 2" (78") LONG. RECOMMEND INSTALLATION GUESS SUPPLIED WITH UNIT
2. CONCRETE PAD GUIDELINES:
  - CONCRETE PAD SHOULD BE 4" THICK
  - SIDES OF THE GENERATOR FOR MAINTENANCE AND SERVICE MUST BE EXPOSED
  - FOR CONCRETING THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE AND LOCAL CODES
3. SEE GENERATOR COVER INFORMATION  
- SEE SPECIFICATION SHEET OR OWNERS MANUAL
4. REAR ENCLOSURE MUST BE OPENED TO ACCESS GENERATOR  
- REAR ENCLOSURE HAS REAR DOOR ON REAR OF THE UNIT  
- THE STUB-UP REAR TANK AND REAR ENCLOSURE COVER PANEL TO ACCESS THE STUB-UP REAR AS FOLLOWS:
  - HIGH VOLTAGE CONNECTION INCLUDING A 120 VOLT AC 50 AMP MAX/1 CONNECTION
  - NEUTRAL CONNECTION, BATTERY CHARGER 120 VOLT AC 50 AMP MAX/1 CONNECTION
  - 120 VOLT AC 50 AMP MAX/1 CONNECTION FOR 120 VOLT AC POWER CORD WIRES
5. CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
  - ENGINE SERVICE CONNECTIONS
  - OIL DRAIN 3/8" NPT
  - OIL DRAIN 3/8" NPT
  - BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT INTRUSION AND RECOILGATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW
6. EXHAUST SYSTEM MAXIMUM BACK PRESSURE 35 INCHES H2O
7. MAINTAINING VIBRATION ON STUDS TO CONCRETE PAD SHALL BE 5/8-1" GRADE 5 (USE STANDARD SAE TORQUE SPECS)

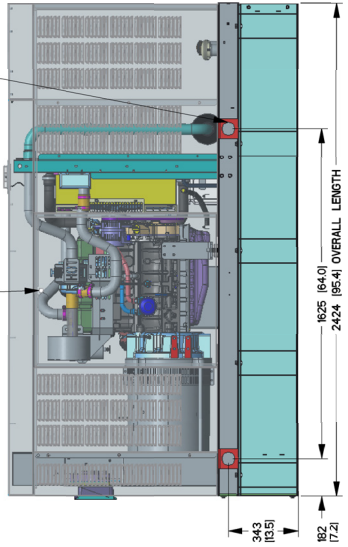
REFERENCE OWNERS MANUAL FOR PERIODIC  
REPLACEMENT PART LISTINGS.



TOP VIEW

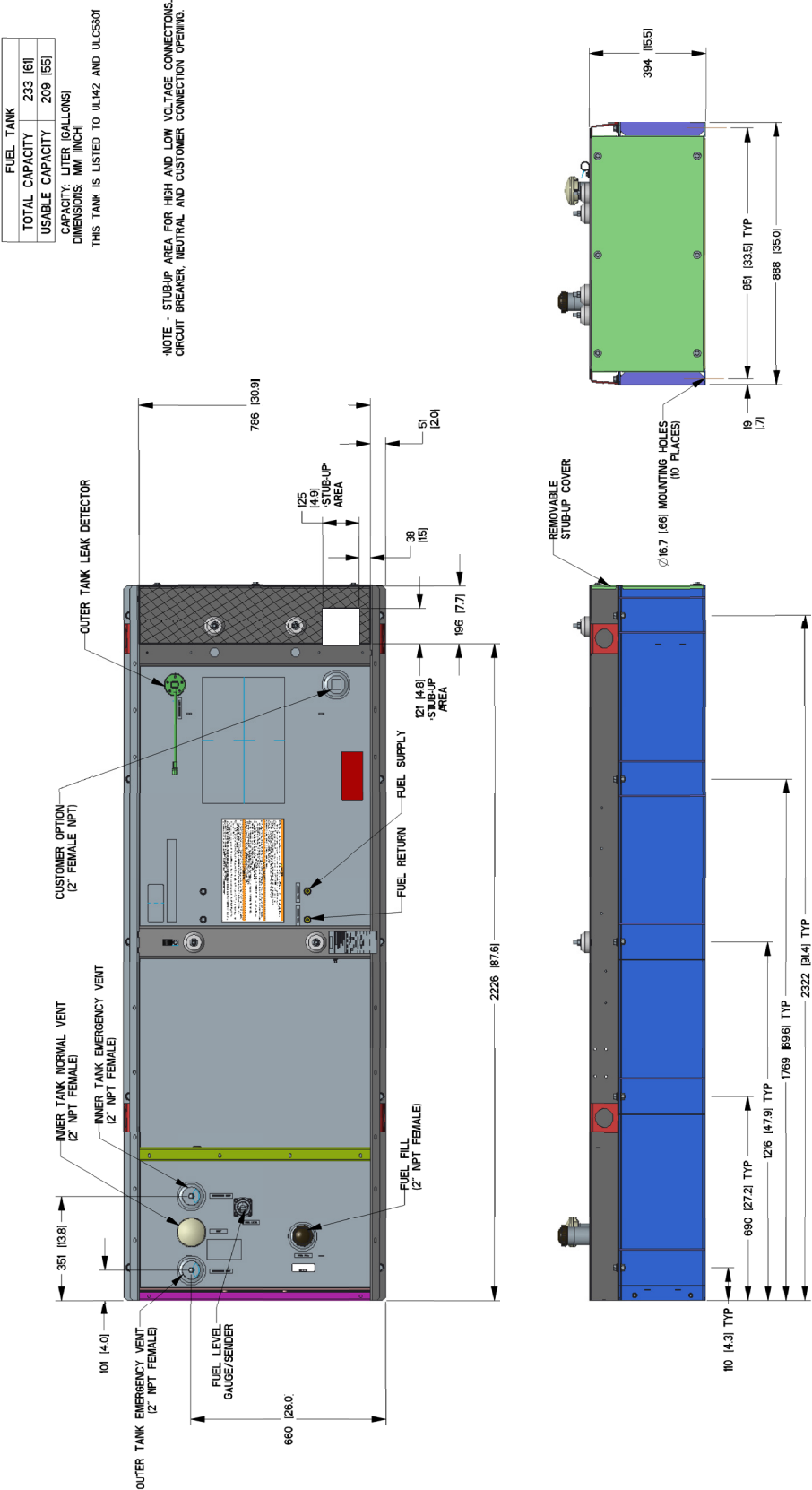


REAR VIEW



RIGHT SIDE VIEW

48 & 50 kW





**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™.
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.
G006511-0	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.