

1 INDUSTRIAL AVE,

SUITE 3

NEWARKWAH NJ 07430

PHONE: 201.684.0055

FAX: 201.684.0066



---

January 7, 2022

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

RE: Notice of Exempt Modification  
156 Bokum Road / Middlesex Turnpike, Old Saybrook, CT 06475  
Latitude: 41.194130  
Longitude: -72.231965  
T-Mobile Site#: CT11335B - Hardening

Dear Ms. Bachman:

T-Mobile currently maintains three (3) antennas at the 155' level and three (3) antennas at the 167' level of the 200' guyed tower located at 156 Bokum Road/Middlesex Turnpike in Old Saybrook, CT. The guyed tower and property are owned by Crossroads Communications of Old Saybrook. T-Mobile now intends to add a 48 Kw generator to a proposed 10'x4' concrete pad within the existing compound.

**Planned Modifications:**

**Ground:**

Install New:

- (1) Generac RD048 48 Kw AC Diesel Generator - 229 gallon double walled self-contained tank with fuel sensor.
- (1) 10' x 4' Concrete Pad

This tower was approved by the Town of Old Saybrook with no existing conditions given. There are no dockets or petitions on the Connecticut Siting Council website that approved this site. After visiting the jurisdiction there were no original permits or approval letters for the tower on file. This modification will not break any 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.S.A. § 16-SOj-73, a copy of this letter is being sent to First Selectwoman Carl Fortuna Jr., Elected Official, and Christina Costa, Town Planner of Old Saybrook, as well as the property and tower 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: Carl Fortuna Jr. - First Selectman of Old Saybrook  
Christina Costa - Town Planner  
Crossroads Communications of Old Saybrook - Property Owner

ERIC BREUN  
2016587728  
10 INDUSTRIAL AVE  
MAHWAH NJ 07430

1 LBS 1 OF 1

SHIP TO:  
CHRISTINA COSTA  
302 MAIN STREET  
OLD SAYBROOK CT 06475



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9292 1941



BILLING: P/P

Reference #: CT11335B

XOL 21.11.24

NU45 2.0A 01/2022\*



Reference #: CT11335B

XOL 21.11.24

NU45 2.0A 01/2022\*



ERIC BREUN  
2016587728  
10 INDUSTRIAL AVE  
MAHWAH NJ 07430

1 LBS 1 OF 1

SHIP TO:  
CARL FORTUNA JR  
302 MAIN STREET  
OLD SAYBROOK CT 06475



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9034 3936



BILLING: P/P



Reference #: CT11335B

XOL 21.11.24

NU45 2.0A 01/2022\*



ERIC BREUN  
2016587728  
10 INDUSTRIAL AVE  
MAHWAH NJ 07430

1 OF 1  
1 LBS

SHIP TO:  
CROSSROADS COMM OF OLD SAYBROOK  
157 NORTH SEIR HILL ROAD  
**NORWALK CT 06850**



**CT 069 9-04**



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9170 3956



BILLING: P/P



Reference #1: CT11335B

XOL 21.11.24

NWMS 2.0A 01/2022\*

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

**Delivery Date:** Thursday, 01/06/2022

**Delivery Time:** 12:27 PM

**Left At:** INSIDE DELIV

**Signed by:** KANE

## TRANSCEND WIRELESS

**Tracking Number:** [1ZV257420390343936](#)

CARL FORTUNA JR  
302 MAIN STREET  
OLD SAYBROOK, CT 06475  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

**Package Weight:** 1.0 LBS

**Reference Number:** CT11335B

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

**Delivery Date:** Thursday, 01/06/2022

**Delivery Time:** 12:27 PM

**Left At:** INSIDE DELIV

**Signed by:** KANE

## TRANSCEND WIRELESS

**Tracking Number:** [1ZV257420392921941](#)

CHRISTINA COSTA  
302 MAIN STREET  
OLD SAYBROOK, CT 06475  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

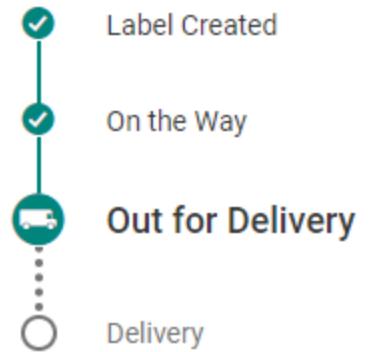
**Package Weight:** 1.0 LBS

**Reference Number:** CT11335B

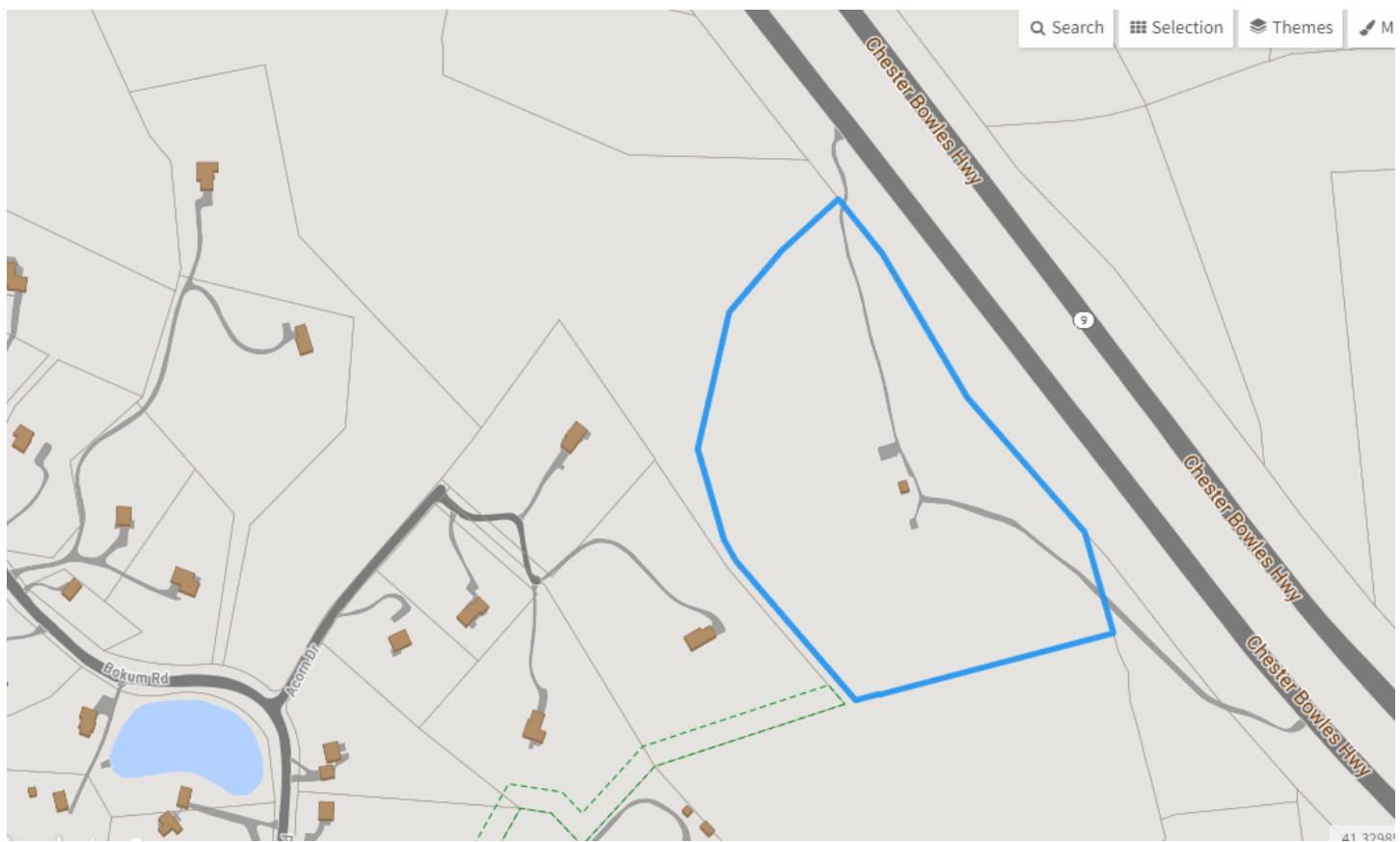
Your shipment  
1ZV257420391703956

Estimated delivery

**Thursday, January 06 by 9:00 P.M.**



Ship To  
NORWALK, CT US



**Location** MIDDLESEX TPKE**MBLU** 062/ 011// /**Acct#** 00638200**Owner** CROSSROADS  
COMMUNICATIONS OF OLD  
SAYBR**Assessment** \$288,100**Appraisal** \$411,500**PID** 4146**Building Count** 1**Current Value**

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$113,400	\$298,100	\$411,500
Assessment			
Valuation Year	Improvements	Land	Total
2018	\$79,400	\$208,700	\$288,100

**Owner of Record****Owner** CROSSROADS COMMUNICATIONS OF OLD SAYBR**Sale Price** \$134,170**Co-Owner****Certificate****Address** 157 NORTH SEIR HILL RD  
NORWALK, CT 06850**Book & Page** 0408/0993**Sale Date** 04/01/2002**Instrument** UNKQ**Ownership History**

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
RICE MICHAEL C & CAROLA A & TELESCO DON W	\$0		0199/0254		10/20/1981

**Building Information****Building 1 : Section 1**

Year Built:

Living Area:

0

Building Attributes	
Field	Description
Style	Vacant Land
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	

#### Building Photo



#### Building Layout

Building Sub-Areas (sq ft)	<a href="#">Legend</a>
No Data for Building Sub-Areas	

Bath Style:	
Kitchen Style:	
Num Kitchens	
Cndtn	
Usrfd 103	
Usrfd 104	
Usrfd 105	
Usrfd 106	
Usrfd 107	
Num Park	
Fireplaces	
Usrfd 108	
Usrfd 101	
Usrfd 102	
Usrfd 100	
Usrfd 300	
Usrfd 301	

#### Extra Features

Extra Features	<u>Legend</u>
No Data for Extra Features	

## Land

### Land Use

Use Code 1300  
Description RES ACLNDV MDL-00 ⓘ  
Zone AAA

### Land Line Valuation

Size (Acres) 13.69  
Depth 0  
Assessed Value \$208,700  
Appraised Value \$298,100

## Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
CELL	CELL TOWER			180.00 UNITS	\$56,700	1
CELL	CELL TOWER			180.00 UNITS	\$56,700	1

### Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$113,400	\$298,100	\$411,500
2018	\$113,400	\$298,100	\$411,500
2016	\$94,600	\$298,100	\$392,700

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$79,400	\$208,700	\$288,100
2018	\$79,400	\$208,700	\$288,100
2016	\$66,200	\$208,700	\$274,900



# SITE NAME: ROUTE 9 MIDDLESEX TURNPIKE

## SITE ID: CT11335B

### 156 BOKUM RD

### OLD SAYBROOK, CT 06475

#### GENERAL NOTES

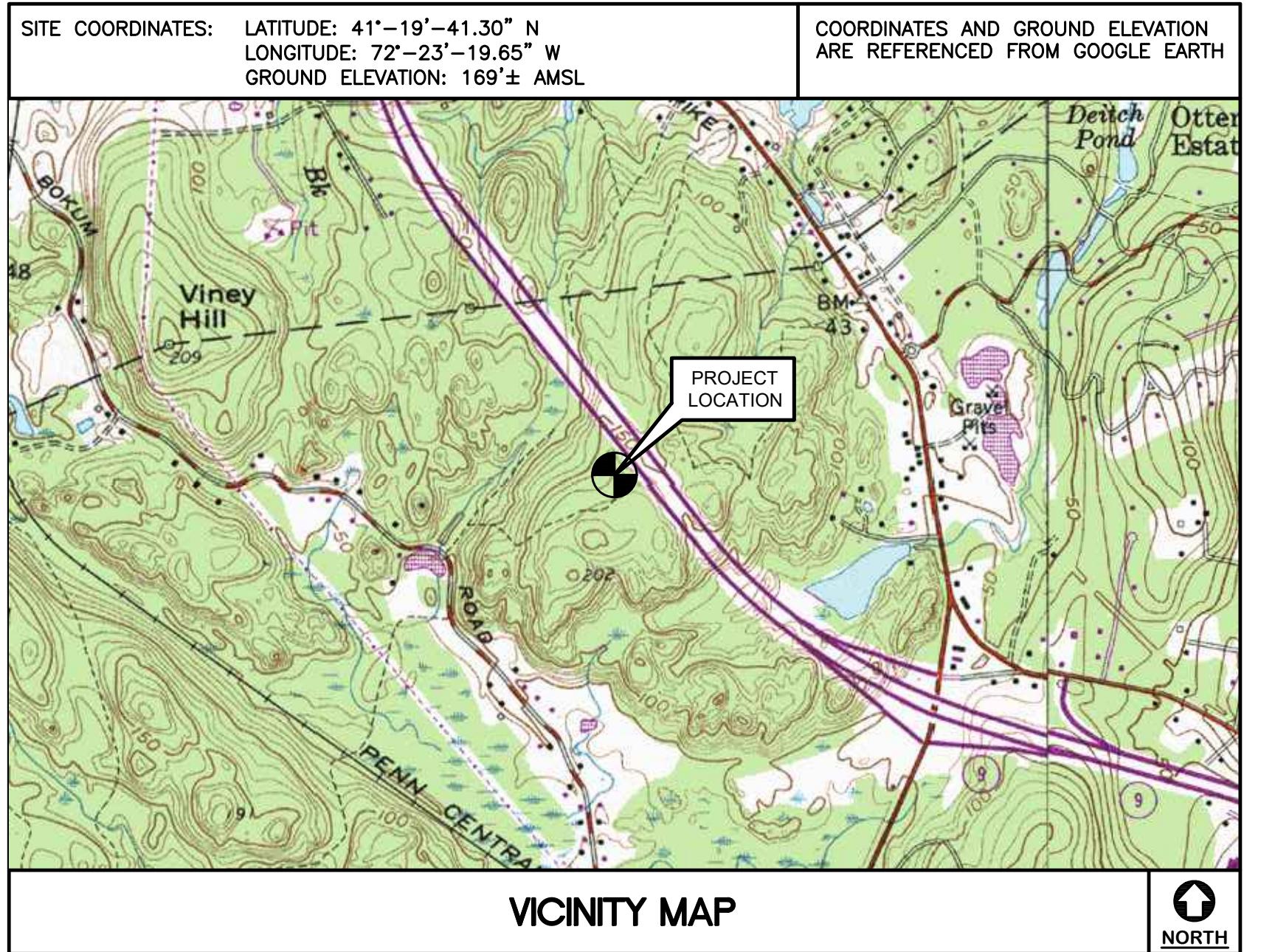
- ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "G" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2017 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
- CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
- CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
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- LOCATION OF EQUIPMENT AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS, SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
- DRAWINGS INDICATE 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.

#### SITE DIRECTIONS

**FROM:** 35 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002

**TO:** 156 BOKUM RD  
OLD SAYBROOK, CT 06475

- START OUT GOING NORTH ON GRIFFIN RD TOWARD HARTMAN RD 0.30 MI.
- TURN RIGHT ONTO DAY HILL RD. 0.41 MI.
- TAKE THE 1ST RIGHT ONTO BLUE HILLS AVENUE EXT/CT-187. CONTINUE TO FOLLOW CT-187. 0.64 MI.
- STAY STRAIGHT TO GO ONTO BLUE HILLS AVE/CT-187. 2.74 MI.
- TURN LEFT ONTO E WINTONBURY AVE/CT-178. CONTINUE TO FOLLOW CT-178. 1.77 MI.
- MERGE ONTO I-91 S TOWARD HARTFORD. 15.56 MI.
- MERGE ONTO CT-9 S VIA EXIT 22S ON THE LEFT TOWARD MIDDLETOWN/OLD SAYBROOK. 25.55 MI.
- TAKE THE CT-154 EXIT, EXIT 3, TOWARD ESSEX/WESTBROOK/CT-153 0.26 MI.
- GO STRAIGHT TOWARD WESTBROOK. 0.12 MI.
- TURN RIGHT ONTO PLAINS RD/CT-153. 0.84 MI.
- TURN LEFT ONTO BOKUM RD. 1.33 MI.
- 156 BOKUM RD, OLD SAYBROOK, CT 06475-1247, 156 BOKUM RD.



**NOTE:**  
PREVIOUS ELECTRICAL UPGRADE TO BE COMPLETED PRIOR TO THE PROPOSED GENERATOR INSTALLATION. (CENTEK ENGINEERING JOB #21022.34)

#### PROJECT SUMMARY

- THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
  - INSTALL (1) NEW 48 KW DIESEL FUELED BACK-UP GENERATOR ON A PROPOSED 10' x 4' CONCRETE PAD WITHIN THE EXISTING COMPOUND
  - INSTALL (1) 200A AUTOMATIC TRANSFER SWITCH

#### PROJECT INFORMATION

T-MOBILE NORTHEAST LLC	ROUTE 9 MIDDLESEX TURNPIKE SITE ID: CT11335B 156 BOKUM RD OLD SAYBROOK, CT 06475
APPLICANT:	T-MOBILE NORTHEAST, LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002
CONTACT PERSON:	DAN REID (PROJECT MANAGER) TRANSCEND WIRELESS, LLC (203) 592-8291
ENGINEER OF RECORD:	CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°-19'-41.30" N LONGITUDE: 72°-23'-19.65" W GROUND ELEVATION: 169'± AMSL COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

#### SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	GENERAL NOTES AND SPECIFICATIONS	0
C-1	COMPOUND AND EQUIPMENT PLANS	0
C-2	TYPICAL EQUIPMENT DETAILS	0
E-1	ELECTRICAL RISER DIAGRAM	0
E-2	ELECTRICAL SPECIFICATIONS	0

PROFESSIONAL ENGINEER SEAL	STATE OF CONNECTICUT LAW OFFICES OF THE ATTORNEY GENERAL PROFESSIONAL ENGINEER REGISTRATION BOARD
REV. DATE	0 12/29/21
RTS	ANC
DRAWN BY	CHKD BY
CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION	DESCRIPTION
 Hartman 142-2022	
<b>CENTEK</b> engineering Centred on Solutions™ (203) 488-0580 Fax 63-2 North Branford Road Branford, CT 06405 www.CentekEng.com	
<b>T-1</b> Sheet No. 1 of 6	

## NOTES AND SPECIFICATIONS

### DESIGN BASIS:

GOVERNING CODE: 2015 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2018 CONNECTICUT STATE BUILDING CODE.

#### 1. DESIGN CRITERIA:

- RISK CATEGORY II (BASED ON IBC TABLE 1604.5)
- NOMINAL/ULTIMATE DESIGN SPEED: 112 MPH (V<sub>asd</sub>) (EXPOSURE B/ IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-10).

### SITE NOTES

1. THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. ACTIVE EXISTING UTILITIES, WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY, PRIOR TO PROCEEDING, SHOULD ANY UNCOVERED EXISTING UTILITY PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. THE AREAS OF THE COMPOUND DISTURBED BY THE WORK SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
4. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
5. IF ANY FIELD CONDITIONS EXIST WHICH PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL PROCEED WITH AFFECTED WORK AFTER CONFLICT IS SATISFACTORILY RESOLVED.

### GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "G" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2017 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
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10. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
11. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
12. ANY AND ALL ERRORS, DISCREPANCIES, AND "MISSED" ITEMS, ARE TO BE BROUGHT TO THE ATTENTION OF THE SITE OWNER'S 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.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
14. 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.
15. 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.
16. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
17. 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.
18. 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.
19. CONTRACTOR SHALL COMPLY WITH 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.
20. THE COUNTY/CITY/TOWN MUST BE NOTIFIED (2) WORKING DAYS PRIOR TO CONCEALMENT/BURIAL OF ANY SYSTEM OR MATERIAL 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.

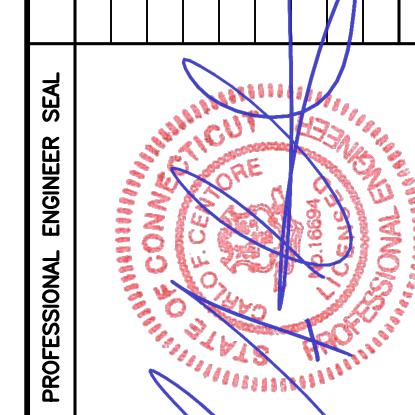
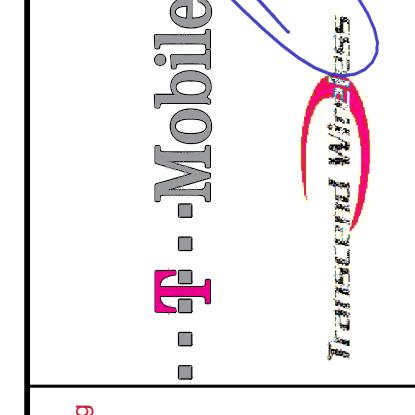
ROUTE 9 MIDDLESEX TURNPIKE  
SITE ID: CT11335B  
156 BOKUM RD  
OLD SAYBROOK, CT 06475

DATE: 08/31/21  
SCALE: AS NOTED  
JOB NO. 21003.28

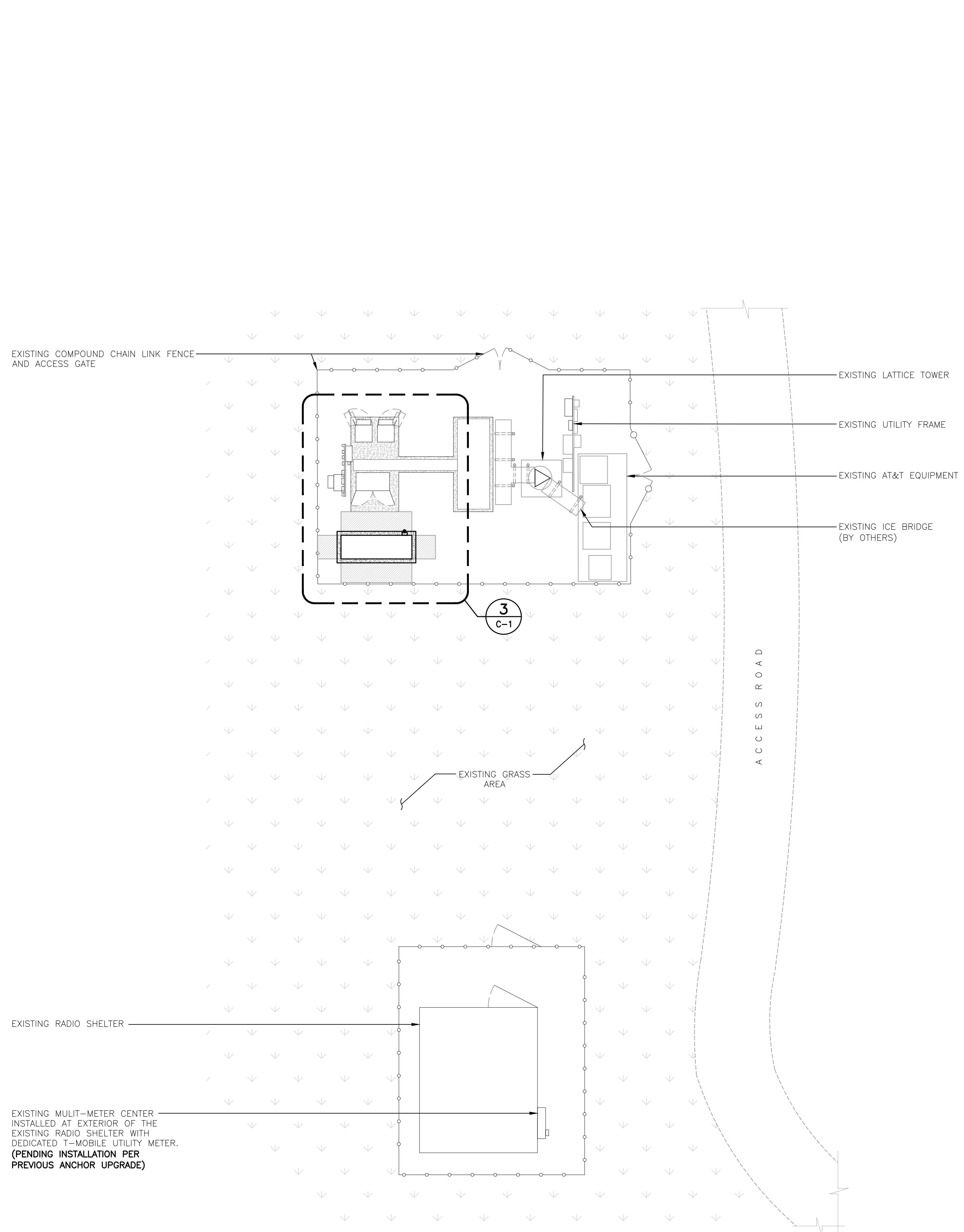
GENERAL NOTES  
AND  
SPECIFICATIONS

N-1

Sheet No. 2 of 6

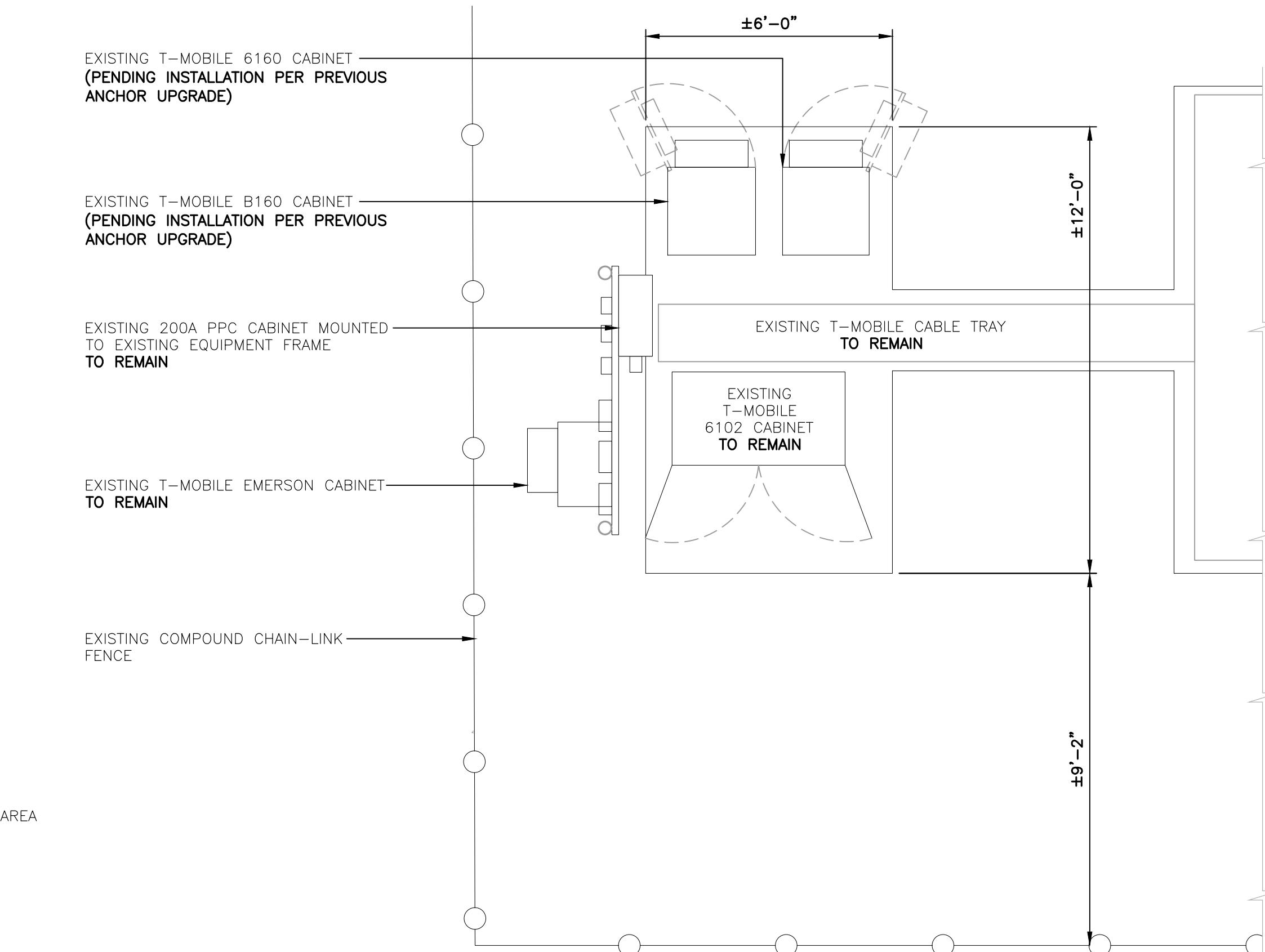
PROFESSIONAL ENGINEER SEAL	
Mobile	
12/29/21	RTS
0	ANC
CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION	DESCRIPTION
REV. DATE	

CENTEK engineering  
Centered on Solutions™  
(203) 484-5380 Fax  
632 North Branford Road  
Branford, CT 06405  
www.CentekEng.com

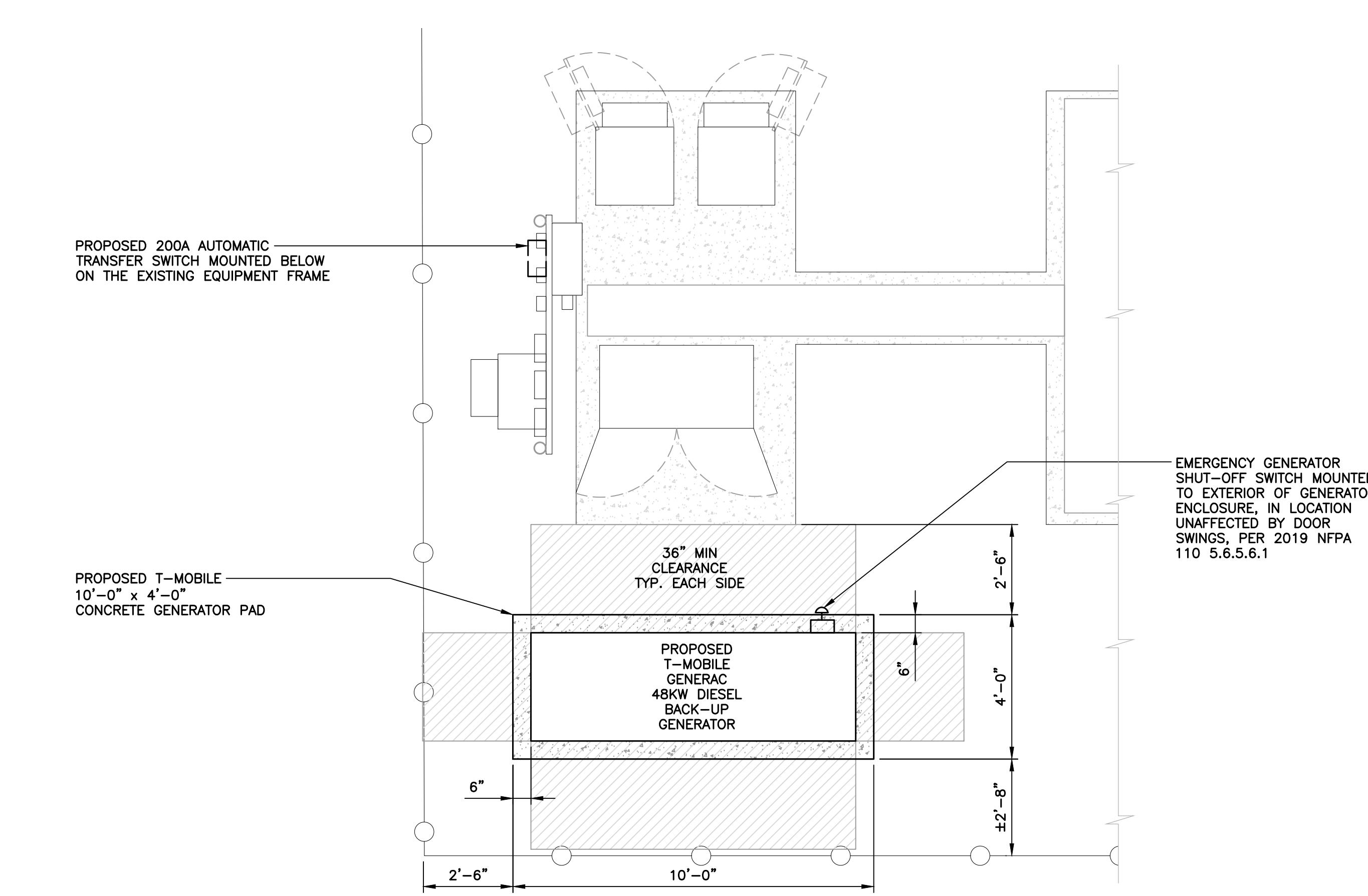


**1** **C-1** **COMPOUND PLAN - PROPOSED**  
SCALE: 1" = 8'

The logo consists of a circular emblem with a stylized 'N' shape inside, followed by the words 'TRUE NORTH' in a bold, sans-serif font.

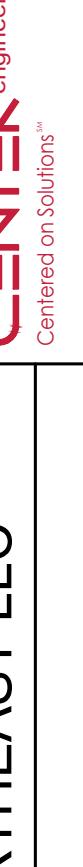


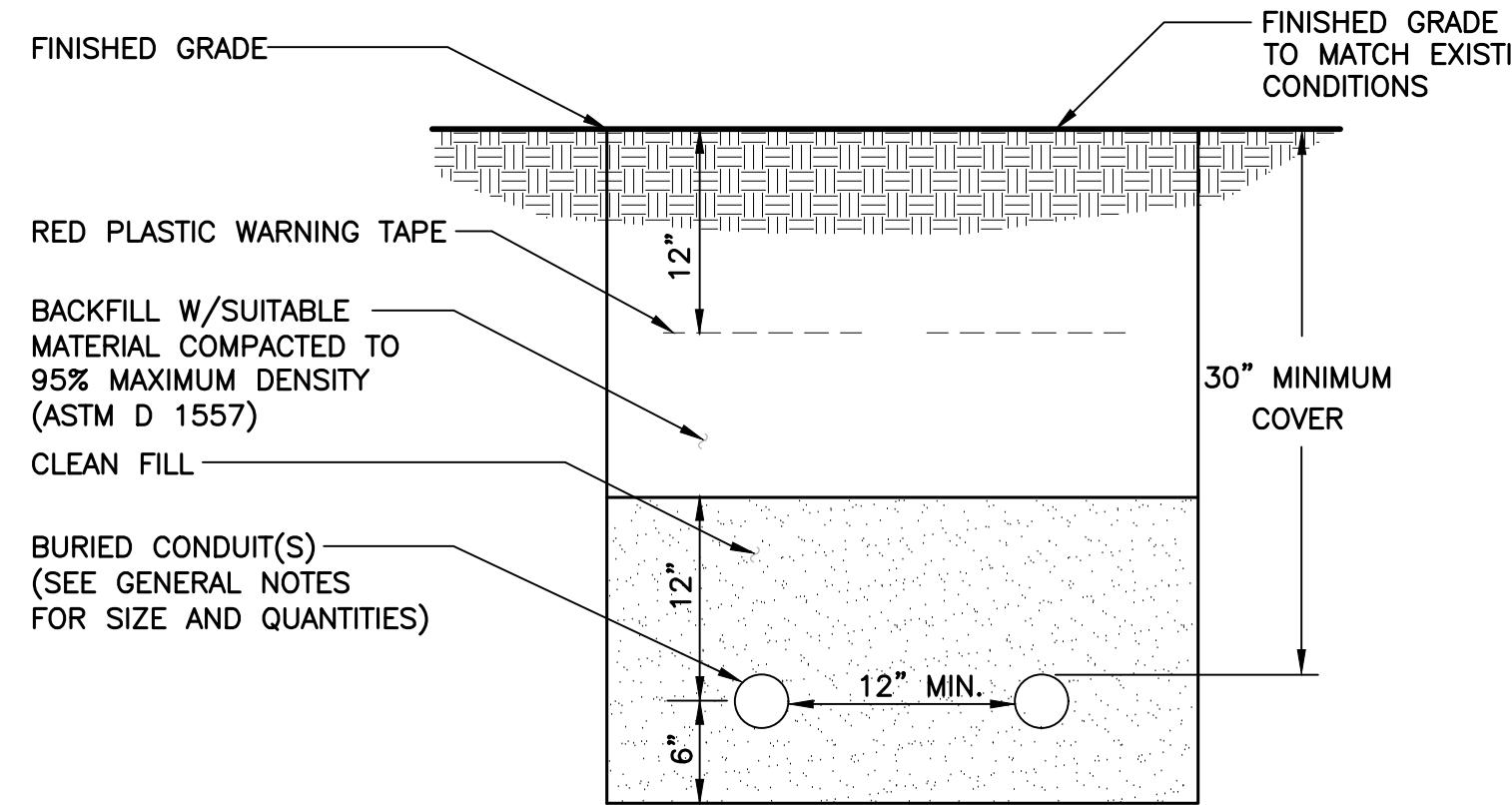
**2** C-1 **EQUIPMENT PLAN - EXISTING**  
SCALE:  $3/8"$  = 1'



3 C-1 EQUIPMENT PLAN - PROPOSED  
SCALE: 3/8" = 1'

The logo consists of a stylized white arrow pointing upwards and to the right, enclosed within a circular frame. Below the arrow, the words "TRUE NORTH" are written in a bold, sans-serif font.

T-MOBILE NORTHEAST LLC		PROFESSIONAL ENGINEER SEAL	
<b>ROUTE 9 MIDDLESEX TURNPIKE</b> <b>SITE ID: CT11335B</b> <b>156 BOKUM RD</b> <b>OLD SAYBROOK, CT 06475</b>			
DATE:	08/31/21	RTS	ANC
SCALE:	AS NOTED	DRAWN BY	CHK'D BY
JOB NO.	21003.28	REV.	DESCRIPTION
<b>COMPOUND AND EQUIPMENT PLANS</b>			
<b>C-1</b> Sheet No. 3 of 6		<b>CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION</b>	
<b>CENTEK engineering</b> <small>Centered on Solutions</small>			
<b>• T • Mobile •</b> 			
(203) 488-0580 (203) 488-8587 Fax 63-2 North Branford Road Branford, CT 06405 <a href="http://www.CentekEng.com">www.CentekEng.com</a>			

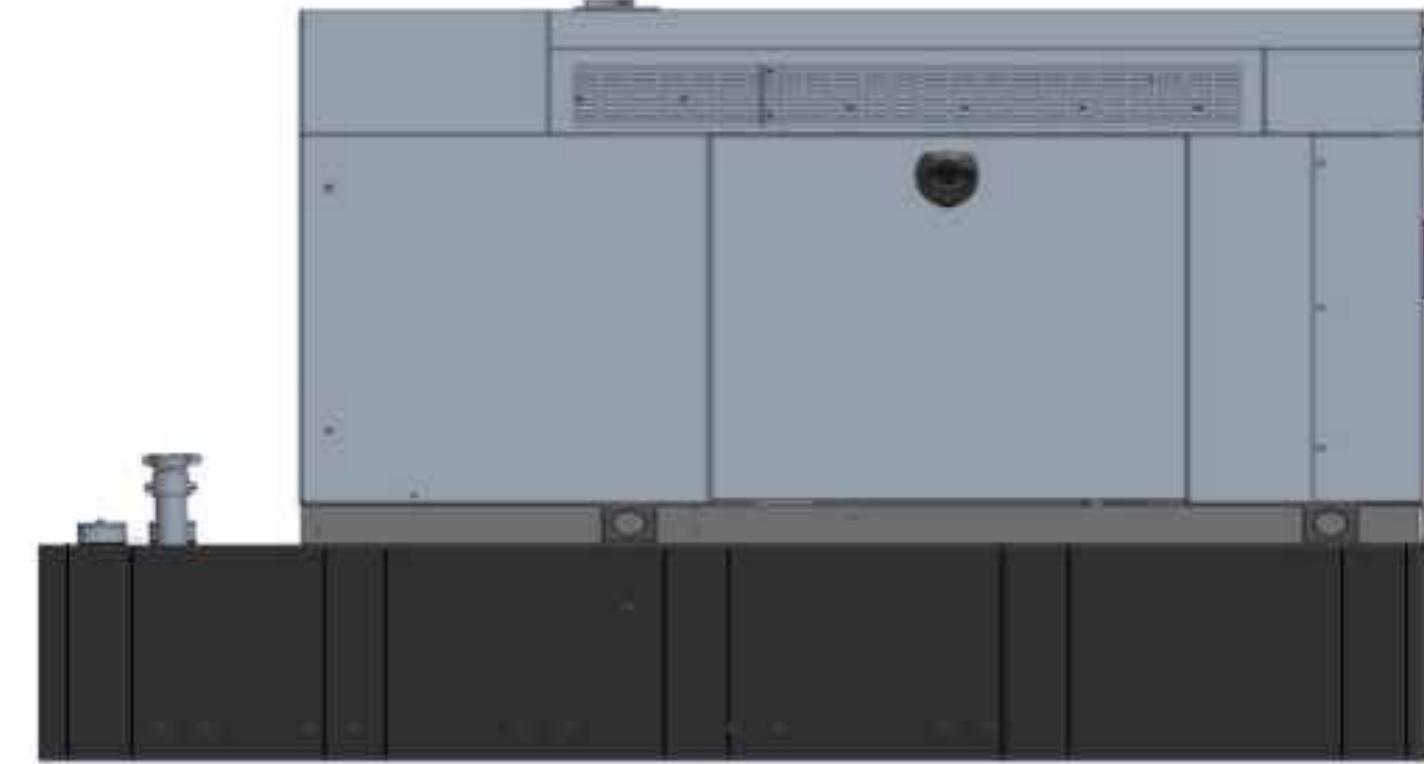


1 TYPICAL ELECTRICAL/TEL TRENCH DETAIL  
C-2 SCALE: NOT TO SCALE



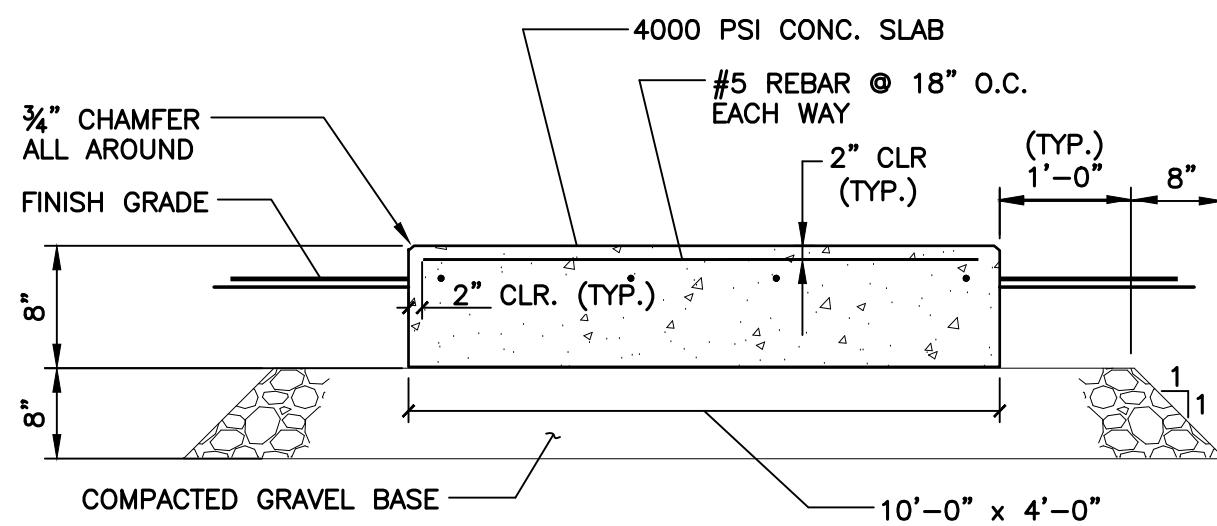
AUTOMATIC TRANSFER SWITCH					
EQUIPMENT	PHASE	VOLTAGE	ENCLOSURE	AMP	DIMENSIONS
MAKE: GENERAC MODEL: RXSC200A3	1-PHASE	120/240	NEMA-3R	200	17.3" L x 12.5" W

2 AUTOMATIC TRANSFER SWITCH DETAIL  
C-2 SCALE: NOT TO SCALE

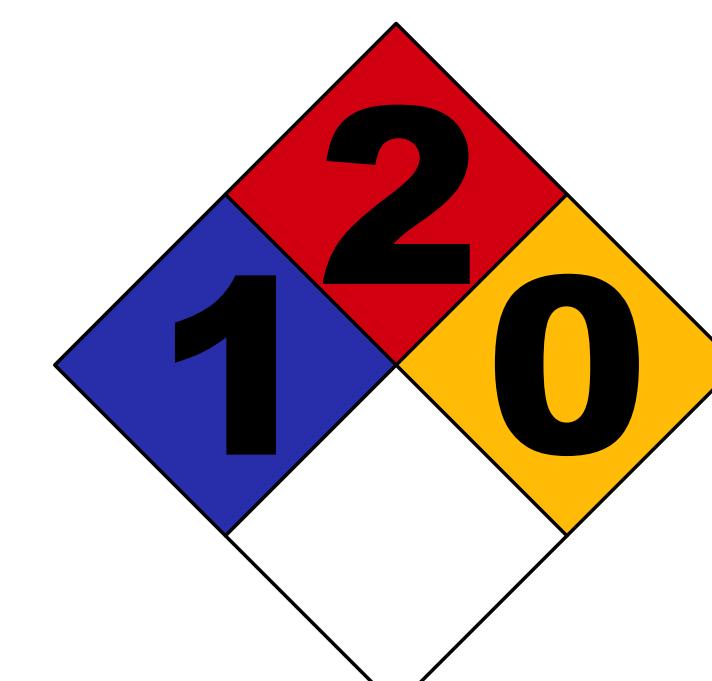


BACKUP POWER GENERATOR						
EQUIPMENT	POWER GENERATED	FUEL	MODEL NUMBER	FUEL TANK SIZE (GAL)	DIMENSIONS	WEIGHT
MAKE: GENERAC MODEL: RD48	48 KW, AC	DIESEL	7960-0	229	103.4" L x 35.0" W x 91.7" H	2915 LBS.
NOTES:						
1. FUEL LEVEL/SECONDARY CONTAINMENT SHALL BE ALARMED AND IN COMMUNICATION WITH T-MOBILE'S NOC. 2. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION AND ALL OPTIONAL FEATURES WITH T-MOBILE'S CONSTRUCTION MANAGER PRIOR TO ORDERING.						

3 PROPOSED GENERATOR DETAIL  
C-2 SCALE: NOT TO SCALE



4 TYPICAL CONCRETE PAD DETAIL  
C-2 SCALE: NOT TO SCALE

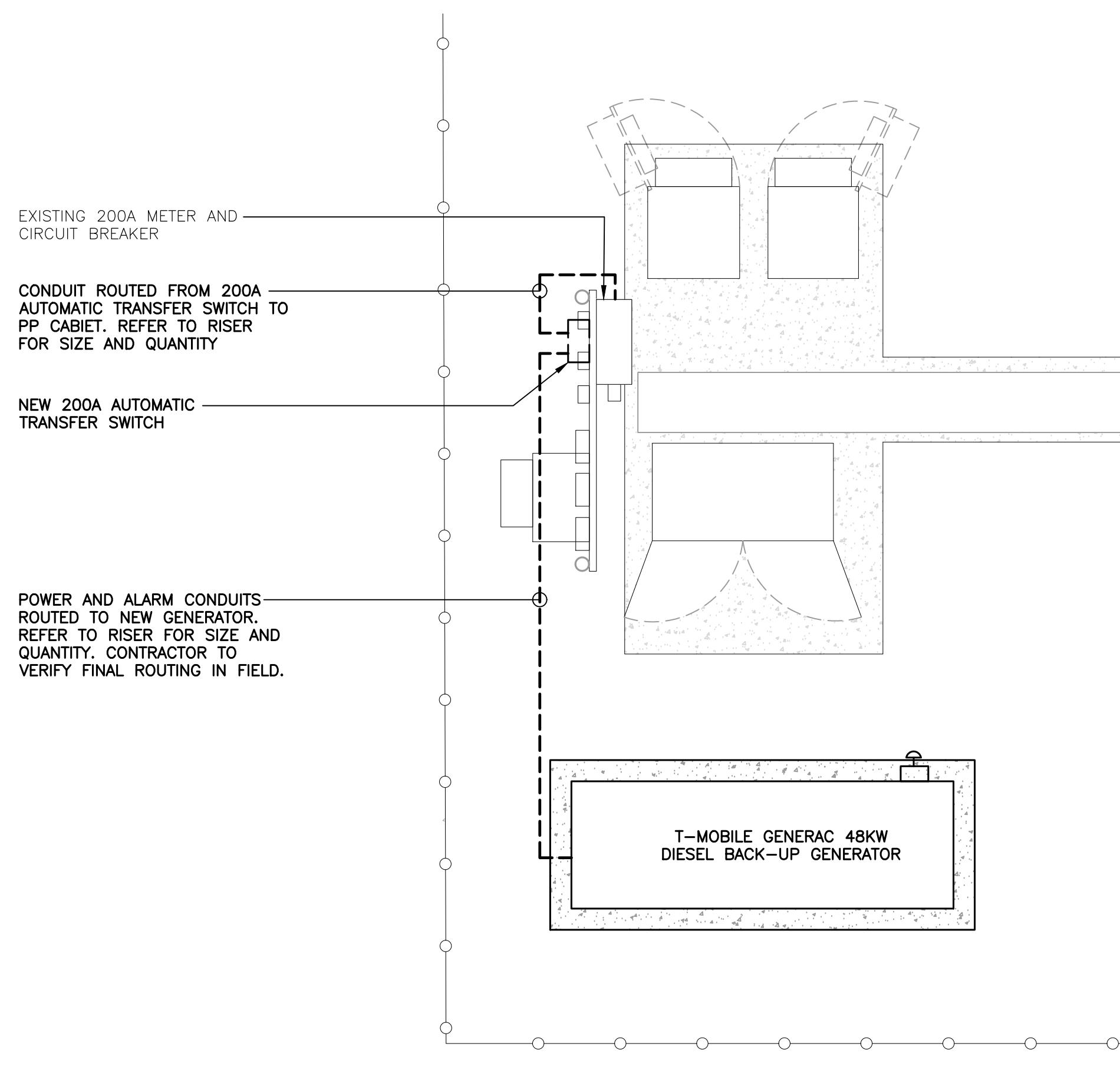


NFPA 704 HAZARD ID LEGEND:  
RED: FLAMMABILITY  
BLUE: HEALTH  
YELLOW: REACTIVITY  
WHITE: BLANK

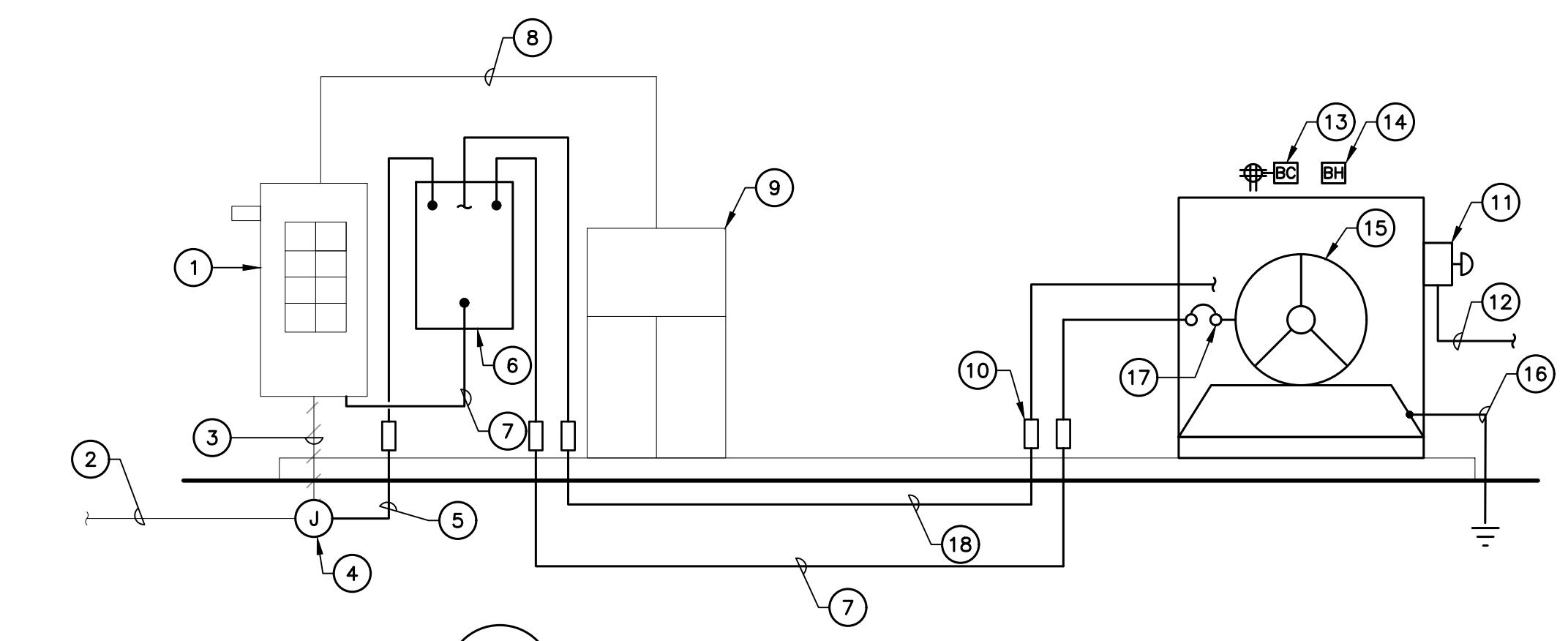
SIGN NAME:	REGULATORY, NFPA 704 HAZARD ID
DESCRIPTION:	MOUNT ON GENERATOR ACCESS DOOR. CONSULT WITH GENERATOR MANUFACTURER MSDS SHEET FOR BLUE AND RED POSITIONS
NOTES:	<ol style="list-style-type: none"> <li>1) SIGNS EXPOSED TO WEATHER SHOULD BE CHECKED ANNUALLY FOR READABILITY.</li> <li>2) SIGNS MUST BE UPDATED IF CHEMICAL STORAGE OR HAZARD INFORMATION FOR THE LOCATION CHANGES.</li> <li>3) THE GC MUST REVIEW WITH LOCAL JURISDICTION WHEN FILLING FOR PERMITS, AS EACH JURISDICTION MAY HAVE DIFFERENT REQUIREMENTS AND COMPLY WITH POSTING REQUIREMENTS OR DIRECTIVES FROM THE LOCAL JURISDICTION.</li> </ol>

5 NFPA 704 DIAMOND SIGNAGE DETAIL  
C-2 SCALE: NOT TO SCALE

PROFESSIONAL ENGINEER SEAL	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION					
	0	12/29/21	RTS	ANC	DRAWN BY	DESCRIPTION
ST. JOSEPH CONSTRUCTION CO., INC.	1					
1100 BROADWAY						
BRONX, NY 10451						
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FAX: (718) 322-1101						
E-MAIL: info@sjcny.com						
WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	2					
1100 BROADWAY						
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ST. JOSEPH CONSTRUCTION CO., INC.	3					
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WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	5					
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FAX: (718) 322-1101						
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WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	6					
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WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	7					
1100 BROADWAY						
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PHONE: (718) 322-1100						
FAX: (718) 322-1101						
E-MAIL: info@sjcny.com						
WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	8					
1100 BROADWAY						
BRONX, NY 10451						
PHONE: (718) 322-1100						
FAX: (718) 322-1101						
E-MAIL: info@sjcny.com						
WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	9					
1100 BROADWAY						
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FAX: (718) 322-1101						
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WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	10					
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WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	11					
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BRONX, NY 10451						
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FAX: (718) 322-1101						
E-MAIL: info@sjcny.com						
WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	12					
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BRONX, NY 10451						
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FAX: (718) 322-1101						
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WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	13					
1100 BROADWAY						
BRONX, NY 10451						
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WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	14					
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PHONE: (718) 322-1100						
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WEBSITE: www.sjcny.com						
ST. JOSEPH CONSTRUCTION CO., INC.	15					
1100 BROADWAY						
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ST. JOSEPH CONSTRUCTION CO., INC.	16					
1100 BROADWAY						
BRONX, NY 10451						
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WEBSITE: www.sjcny.com			</td			



**1** **ELECTRICAL CONDUIT ROUTING PLAN**  
E-1      SCALE:  $1/4"$  = 1'



**2** **ELECTRICAL RISER DIAGRAM**  
E-1 SCALE: NOT TO SCALE

RISER DIAGRAM NOTES	RISER DIAGRAM NOTES
<ul style="list-style-type: none"> <li data-bbox="3490 1866 4167 1893">① EXISTING 200A PPC CABINET TO REMAIN</li> <li data-bbox="3490 1921 4762 1949">② EXISTING POWER CONDUIT AND CONDUCTORS PREVIOUSLY SERVING EXISTING PANEL.</li> <li data-bbox="3490 1981 4423 2004">③ SECTION OF CONDUIT AND CONDUCTORS TO BE REMOVED.</li> <li data-bbox="3490 2036 4029 2059">④ JUNCTION BOX SIZED PER NEC.</li> <li data-bbox="3490 2092 4451 2115">⑤ EXTEND EXISTING CONDUITS AND CONDUCTORS TO NEW ATS.</li> <li data-bbox="3490 2147 4368 2170">⑥ NEW 200A, 2 SOURCE AUTOMATIC TRANSFER SWITCH.</li> <li data-bbox="3490 2202 4396 2225">⑦ (3) #3/0 AWG, (1) #6 AWG GROUND, 2-1/2" CONDUIT.</li> <li data-bbox="3490 2257 4313 2280">⑧ EXISTING CONDUITS AND CONDUCTORS TO REMAIN</li> <li data-bbox="3490 2313 4195 2336">⑨ EXISTING EQUIPMENT CABINETS TO REMAIN.</li> <li data-bbox="3490 2368 4029 2391">⑩ EXPANSION COUPLING TYPICAL.</li> </ul>	<ul style="list-style-type: none"> <li data-bbox="4852 1866 6179 1921">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.</li> <li data-bbox="4852 1953 6068 2004">⑫ 3/4" CONDUIT AND CONDUCTORS REQUIRED FOR PROPER OPERATION OF EMERGENCY GENERATOR SHUT OFF SWITCH.</li> <li data-bbox="4852 2036 6151 2092">⑬ GENERATOR BATTERY CHARGER AND CONVENIENCE GFCI OUTLET WIRED TO EXISTING PANEL. OUTLET TO BE MOUNTED IN WEATHERPROOF ENCLOSURE.</li> <li data-bbox="4852 2124 5674 2147">⑭ GENERATOR BLOCK HEATER WIRED TO EXISTING PANEL</li> <li data-bbox="4852 2179 5501 2202">⑮ 48KW EMERGENCY BACK UP GENERATOR.</li> <li data-bbox="4852 2234 6179 2290">⑯ GENERATOR GROUNDING PER NEC AND MANUFACTURER'S REQUIREMENTS. BOND TO EXISTING GROUNDING SYSTEM. (MINIMUM OF (1) #2 AWG GROUND)</li> <li data-bbox="4852 2322 5474 2345">⑰ GENERATOR OUTPUT CIRCUIT BREAKER.</li> <li data-bbox="4852 2377 5757 2400">⑱ 1" CONDUIT FOR GENERATOR CONTROL AND SIGNAL WIRING.</li> </ul>

T-MOBILE NORTHEAST LLC		CENTEK engineering Centered on Solutions™		ROUTE 9 MIDDLESEX TURNPIKE SITE ID: CT11335B 156 BOKUM RD OLD SAYBROOK, CT 06475		(203) 488-0580 (203) 488-8587 Fax 63-2 North Branford Road Branford, CT 06405		www.CentekEng.com	
DATE:	08/31/21	SCALE:	AS NOTED	JOB NO.	21003.28	PROFESSIONAL ENGINEER SEAL			
ELECTRICAL RISER DIAGRAM		Sheet No. 5 of 6		T-1		REV.	DATE	DRAWN BY	CHK'D BY
						0	12/28/21	RTS	ANC
								CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION	DESCRIPTION

## ELECTRICAL SPECIFICATIONS

### SECTION 16010

#### 1.02. GENERAL REQUIREMENTS

- A. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY 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 SUBMITAL 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.

### SECTION 16111

#### 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>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. 3FT.) WIRING TO VIBRATING EQUIPMENT IN WET LOCATIONS.	N/A
FLEX. METAL	ARTICLE 348	SHORT LENGTHS (MAX. 3FT.) 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 ROCK 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.

### SECTION 16123

#### 1.01. CONDUCTORS

- 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:

LINE	COLOR	COLOR
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.

### SECTION 16130

#### 1.01. BOXES

- 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.

### SECTION 16140

#### 1.01. WIRING DEVICES

- 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.

### SECTION 16170

#### 1.01. DISCONNECT SWITCHES

- 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.

### SECTION 16190

#### 1.01. SEISMIC RESTRAINT

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

### SECTION 16195

#### 1.01. LABELING AND IDENTIFICATION NOMENCLATURE FOR ELECTRICAL EQUIPMENT

- 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.

### SECTION 16450

#### 1.01. GROUNDING

- 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.

### SECTION 16470

#### 1.01. DISTRIBUTION EQUIPMENT

- A. REFER TO CONTRACT DRAWINGS FOR DETAILS AND SCHEDULES.

### SECTION 16477

#### 1.01. FUSES

- A. FUSES SHALL BE NONRENEWABLE TYPE AS MANUFACTURED BY "BUSSMAN" OR APPROVED EQUAL 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.

### SECTION 16960

#### 1.01. TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

- 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.

### SECTION 16961

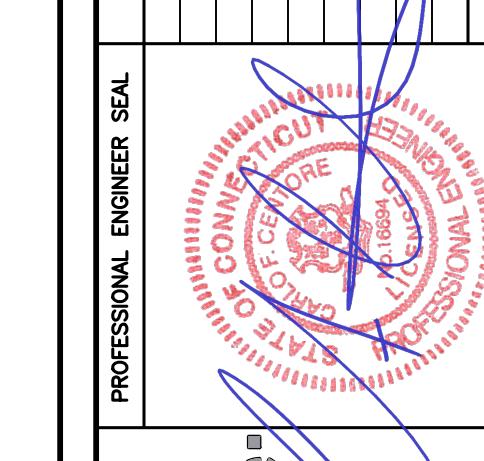
#### 1.01. TESTS BY CONTRACTOR

- 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 MADE 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 NEW LOAD IS DISTRIBUTED AS EQUALLY AS POSSIBLE BETWEEN EACH LOAD AND NEUTRAL. 10% SHALL BE CONSIDERED AS A REASONABLE AND 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.

ROUTE 9 MIDDLESEX TURNPIKE  
SITE ID: CT11335B  
156 BOKUM RD  
OLD SAYBROOK, CT 06475

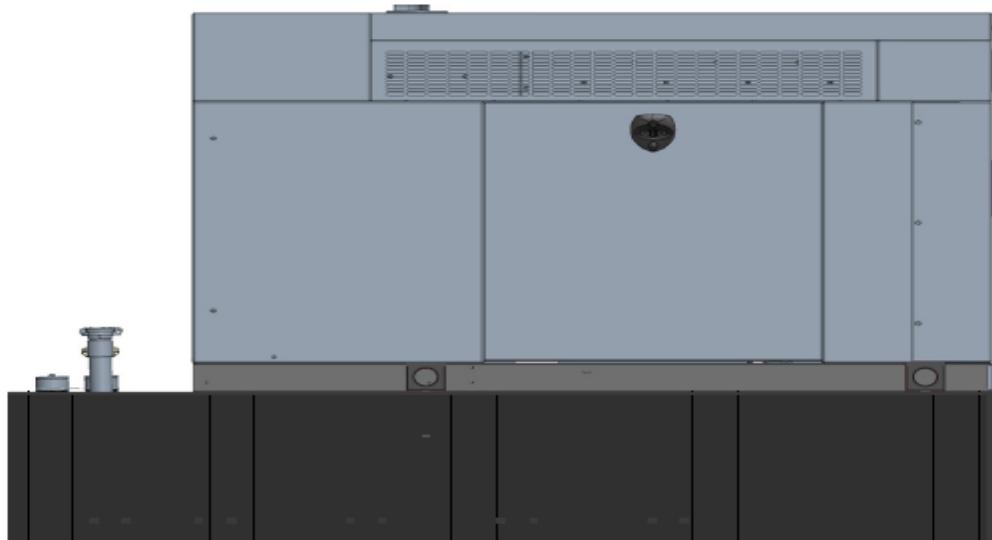
DATE: 08/31/21  
SCALE: AS NOTED  
JOB NO.: 21003.28  
ELECTRICAL  
SPECIFICATIONS

E-2  
Sheet No. 6 of 6

PROFESSIONAL ENGINEER SEAL			
CONTRACTOR'S SIGNATURE	CONTRACTOR'S NAME	CONTRACTOR'S ADDRESS	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION
DATE: 08/29/21	RTS	AMC	DESCRIPTION
REV.	DATE	CHKD BY	

# **Generac RD025 Design Document**

Diesel, AC, 25kW External Fill Tank Model#7192-0 SKU#33651



The following are responsible for this project document:

Kevin Smith

SR. Engineer (770) 256-3594

Project Design Spec Revision	1.0	Last Date:08/23/2018	5/14/2018
Final doc URL (~Dnnnnn):			
Location	Use the InfoRouter Search (Advanced) putting the Document ID (nnnnnn without the D) to find the location of the master document.		
Template URL:	<a href="http://docs.eng.t-mobile.com/InfoRouter/docs/~D423750">http://docs.eng.t-mobile.com/InfoRouter/docs/~D423750</a> Slightly updated 1/2011		

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# 1 Introduction / Project Summary

## 1.1 Purpose of Project

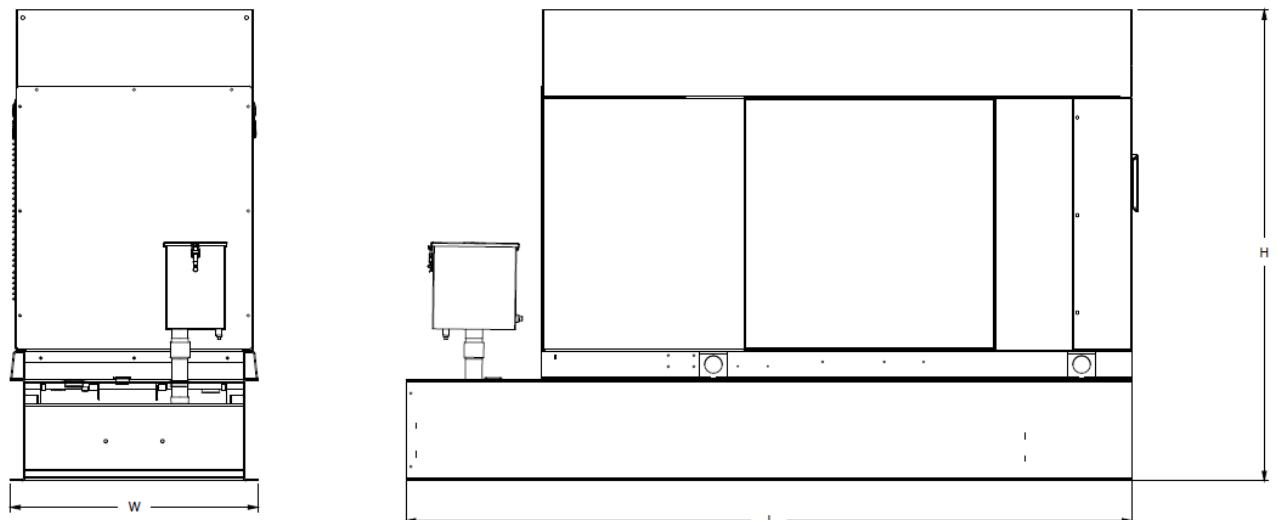
T-Mobile's nationwide cell site hardening plan is providing a refuelable backup power system capable of powering a site for a minimum of 48 hours before refueling is required. The purpose of this project is to give T-Mobile customers reliable service during power outages and provide a sufficient layer of coverage. This design document is for Generac's RD025 model#7192-0, which is a Diesel AC generator with a capacity of 25kW.

## 1.2 Feature Description

The Generac RD025 is a 25kW AC, diesel generator is one of the generators selected as part of the T-Mobile RFP in support of the nationwide cell site hardening plan. The RD025 has a Level 2 acoustic enclosure, 3 phase sensing, and  $\pm 0.25\%$  digital voltage regulation. It is equipped with RS232, RS485 and canbus remote ports and Evolution control panel. It is also equipped with a automatic transfer switch, the RXSC200A3 (Automatic Transfer Switch) Controls the process of transferring commercial AC power and generator power. The RXSC200A3 is a 200Amp, switch that is programmed to perform engine test runs and also has adjustable engine run time capabilities. For RXSC200A3 Owners Manual and full feature descriptions [LINK](#)

## 1.3 Dimensions

The dimensions of a level 2 Acoustic Enclosure L x W x H in inches 103.4 x 35 x 91.7. T-Mobile requires a 36-inch radius around the generator that will cover the 18" door swing on the generator.

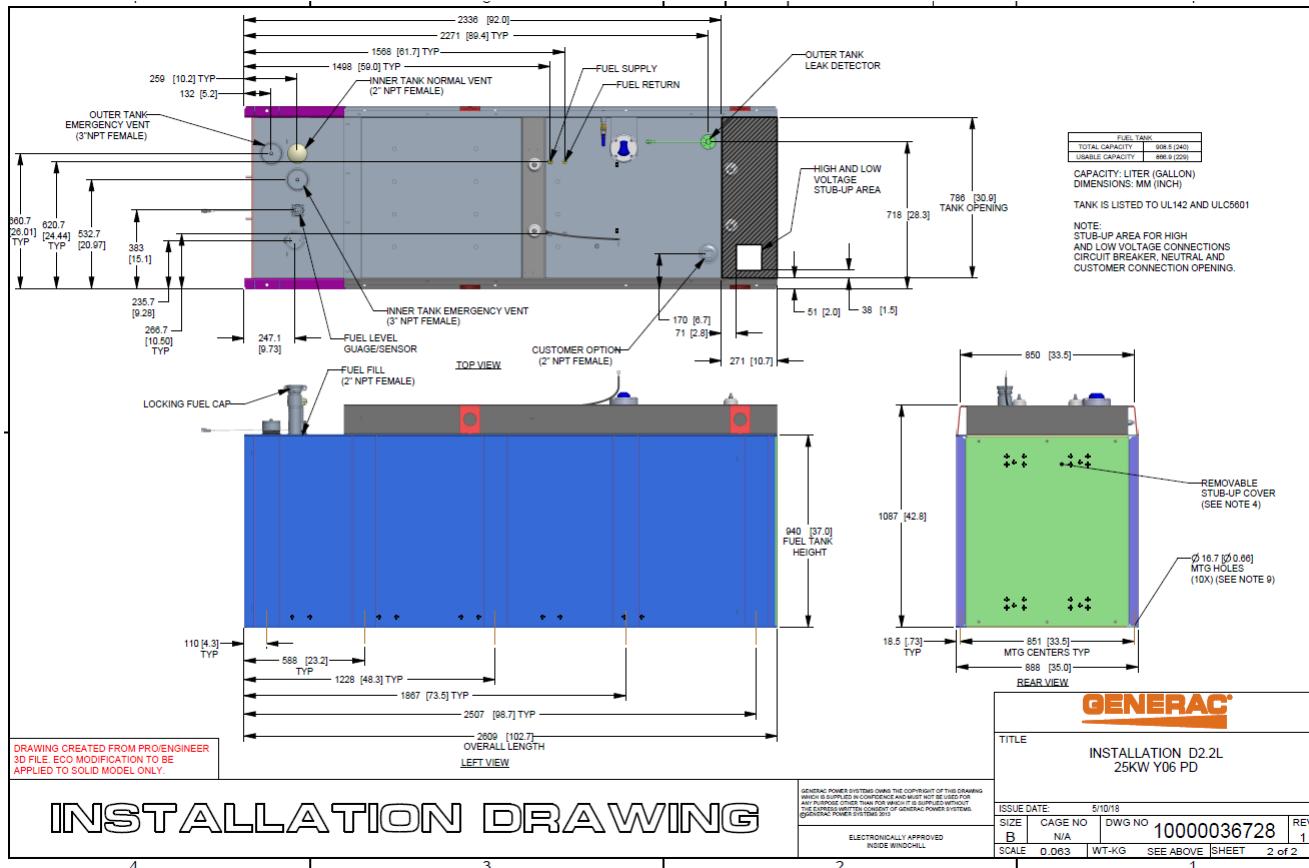


Weights and Dimensions

Unit Weight - lbs	Unit Weight with Skid - lbs	Dimensions (L x W x H) - in
2,123	2,161	103.4 x 35.0 x 73.8

## 2 Fuel Tanks

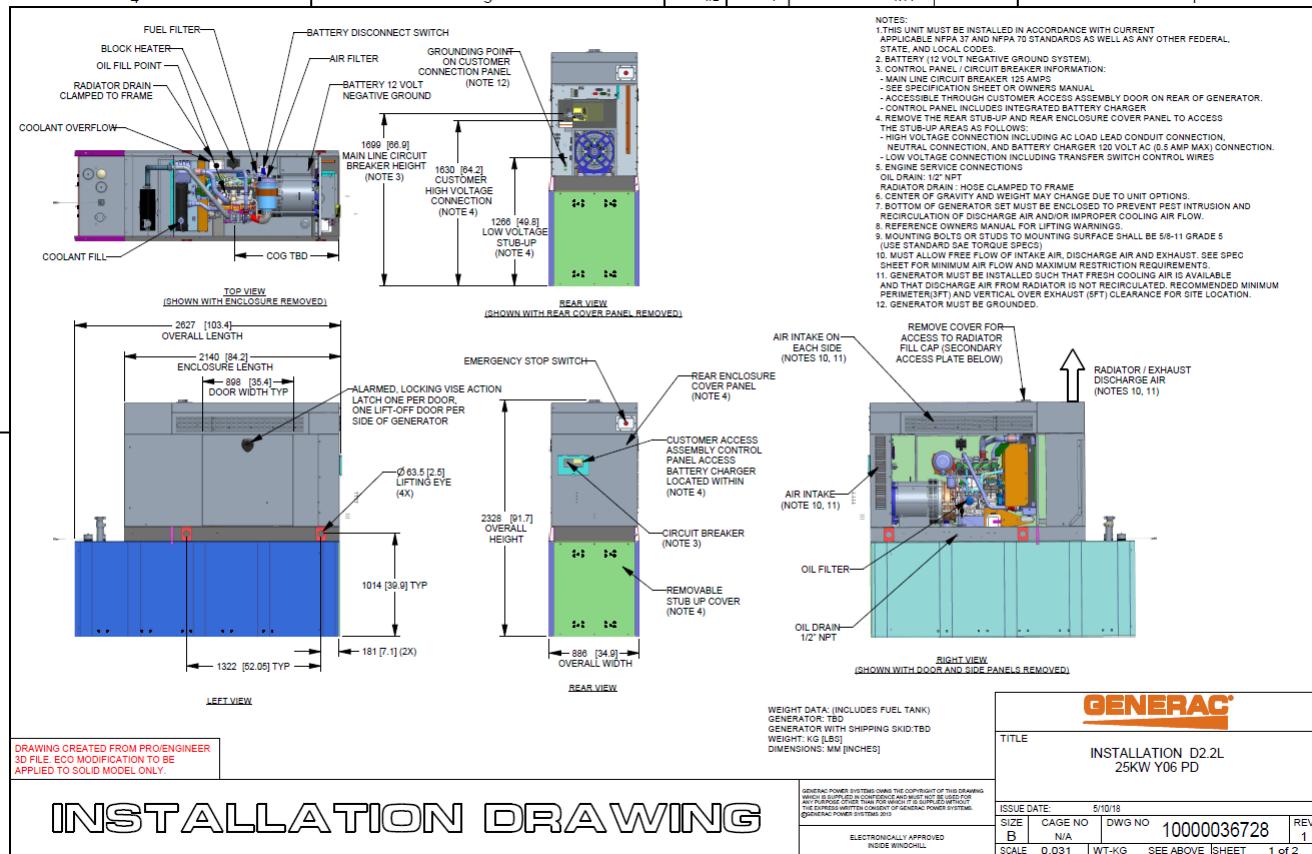
The RD025 has a 102.7" 240 Gallon Double-Wall UL142 Base tank to provide 98 hours of backup power at full load deployed on site. Below is the Install drawing for the 240-gallon tank for the RD025kW.



## 3 RXSC200A3 ATS/ Controller

### 3.1 Hardware

The RD025 will come with a RXSC200A3 and an Evolution controller. The sites considered for the RD025 should not have a DC power consumption above 20kW

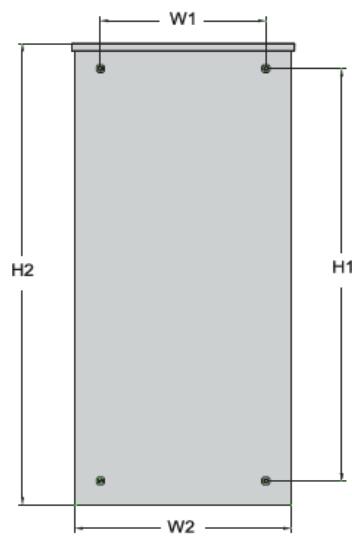
RXSC200A3 [Link](#)RXSC200A3 install drawing [Link](#)Evolution controller spec sheet [Link](#)RD025 installation drawings and supporting documentation [Link](#)

### 3.2 RXSC200A3 Automatic Transfer Switch

The RXSC200A3 (Automatic Transfer Switch) is equipped with the following functions. Utility voltage drop-out <65%. Timer to Generator start: 10 second factory set, adjustable between 2-1500 seconds. Engine Warm up delay: 5 seconds. Standby Voltage Sensor: 65% for 5 seconds. Utility Voltage Pickup >80%. Re-Transfer Time Delay: 15 seconds. Engine Cool-Down Timer: 60 seconds. Exerciser: 5 or 12 minute adjustable weekly/by-weekly/monthly. The transfer switch can also be operated manually without power applied.

**RXSC200A3 Dimensions**

Model		RXSC200A3
Height (in./mm)	H1	17.24/437.9
	H2	20/508
Width (in./mm)	W1	12.5/317.5
	W2	14.6/370.8
Depth (in./mm)		7.09/180.1
Weight (lbs./kilos)		20/9.07



## 4 Architecture/Alarms

### 4.1 Interfaces and Alarming

The generator will be monitored by external alarms, conduit and cat five cables have to be installed from the Evolution Controllers Low Voltage Box located in the Generac generator to the appropriate cell site equipment. Nokia FSEB or FSEE and in Ericsson the SAU.

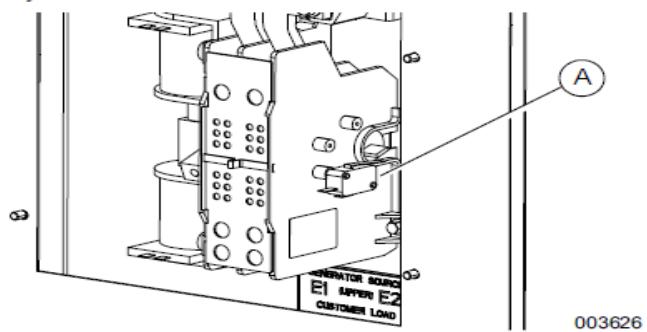
At a Nokia site, this connection is at the FSEB or an FSEE module. For the wiring diagram and instructions for the FSEB click the [Link](#) (The FSEE is the Nokia module that will be replacing the FSEB. For details on the FSEE contact: HQNokiaCellsiteDesigns@T-Moblie.com)

Ericsson sites will connect to the SAU module via OVP Expansion Kit for 8 External Alarms. Product number: UTOVP-ALM8EXP. For the wiring diagram and instructions for this click the [link](#)

The RXSC200A3 has auxiliary contacts that will facilitate the *ATS in Emergency position* alarm and will be a Normally Closed contact. Below is the wiring schematic for this contact and it can be found in the RXSC200A3 owners manual.

#### Auxiliary Contact

See [Figure 3-4](#). If desired, there is one normally-closed Auxiliary Contact (A) on the transfer switch to operate customer accessories, remote advisory lights, or remote annunciator devices. A suitable power source must be connected to the common terminal. If needed, an extra auxiliary contact can be added.



**Figure 3-4. Auxiliary Contact**

The auxiliary contact is normally closed when the transfer switch is in utility mode. The contacts will open when the transfer switch is in the standby power mode.

**NOTE:** Auxiliary Contact is rated 10 amps at 125 or 250 volts AC, and 0.6 amps at 125 volts DC.

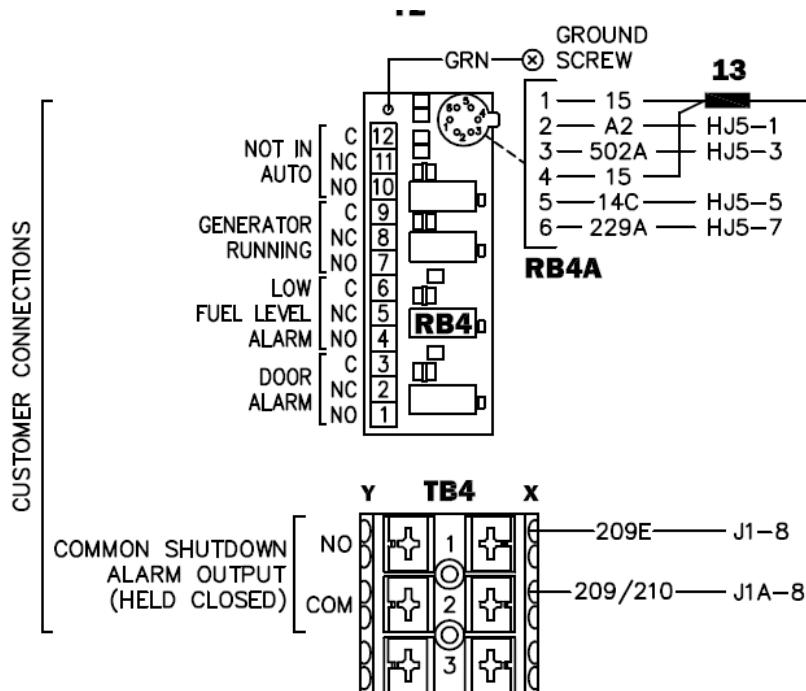
#### CAUTION

Equipment damage. Exceeding rated voltage and current will damage the auxiliary contacts. Verify that voltage and current are within specification before energizing this equipment.

(000134a)

T-Mobile has four relays available from the Generac controller that are user-defined. T-Mobile can have four-alarm categories and a limitless number of subcategories. T-Mobile will utilize Normally Closed (NC) dry contacts for alarms in Low Voltage Connection box in the spare outputs section. Ericsson cabinets need to be equipped with the alarm expansion kit (UTOVP-ALM8EXP) to handle external alarms.

Customer Connections Inside the RD025



Ericsson UTOVP- ALM8EXP



UTOVP-ALM8EXP	OVP Expansion Kit for 8 External Alarms	Qty
<b>Product no</b>	<b>Denomination</b>	
UTOVP-ALM8EXP	OVP Expansion Kit for 8 External Alarms	1
NFD30234/08	OVERVOLTAGE ARRESTER/OVP-ALM 8	1
RPM777143/01200	CABLE WITH CONNECTOR/SIGNAL CABLE	2

Evolution Controller Customer Connections	Nokia FSEB Alarm Connections 13-24	T-Mobile Standard Alarms
NC#8-Gen Running	NC 4110 grd 4111 pin 13	Generator Running
NC#11-Not In Auto	NC 4110 grd 4111 pin 14	Generator Alarm Critical
NC#2-Door Alarm	NC 4110 grd 4111 pin 15	Generator Alarm NSI
NC#5-Low Fuel	NC 4110 grd 4111 pin 16	Low Fuel
RXSC200A3-Auxiliary Contacts	NC 4110 grd 4111 pin 17	ATS in Emergency Position

Evolution Controller Customer Connections	Ericsson Alarm 8expConnections	T-Mobile Standard Alarms
NC#8- Gen. Running	NC - A5	Generator Running
NC#11-Not In Auto	NC - A6	Generator Alarm Critical
NC#2-Door Alarm	NC - A7	Generator Alarm NSI
NC#5-Low Fuel	NC - A8	Low Fuel
RXSC200A3-Auxiliary Contacts	NC - A9	ATS in Emergency Position

## 5 Regulatory Requirements

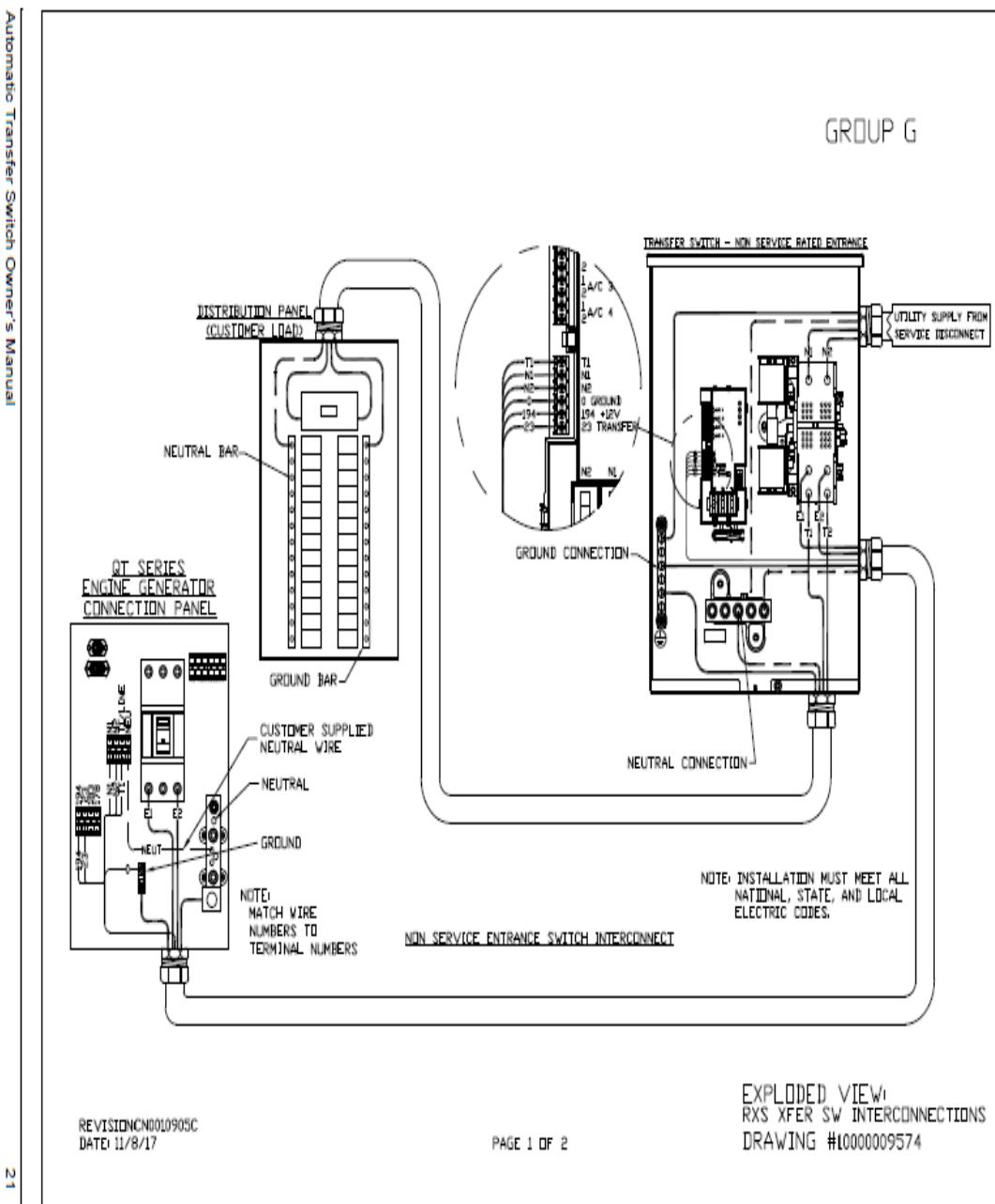
Level 2 Acoustic Enclosure provides a noise level of 67.5dBA. It is EPA certified and meets NFPA 99 and 110 requirements(NFPA National Fire Protection Association). The RD025 generator engines is a tier 4 engine and meets the EPA final standards.

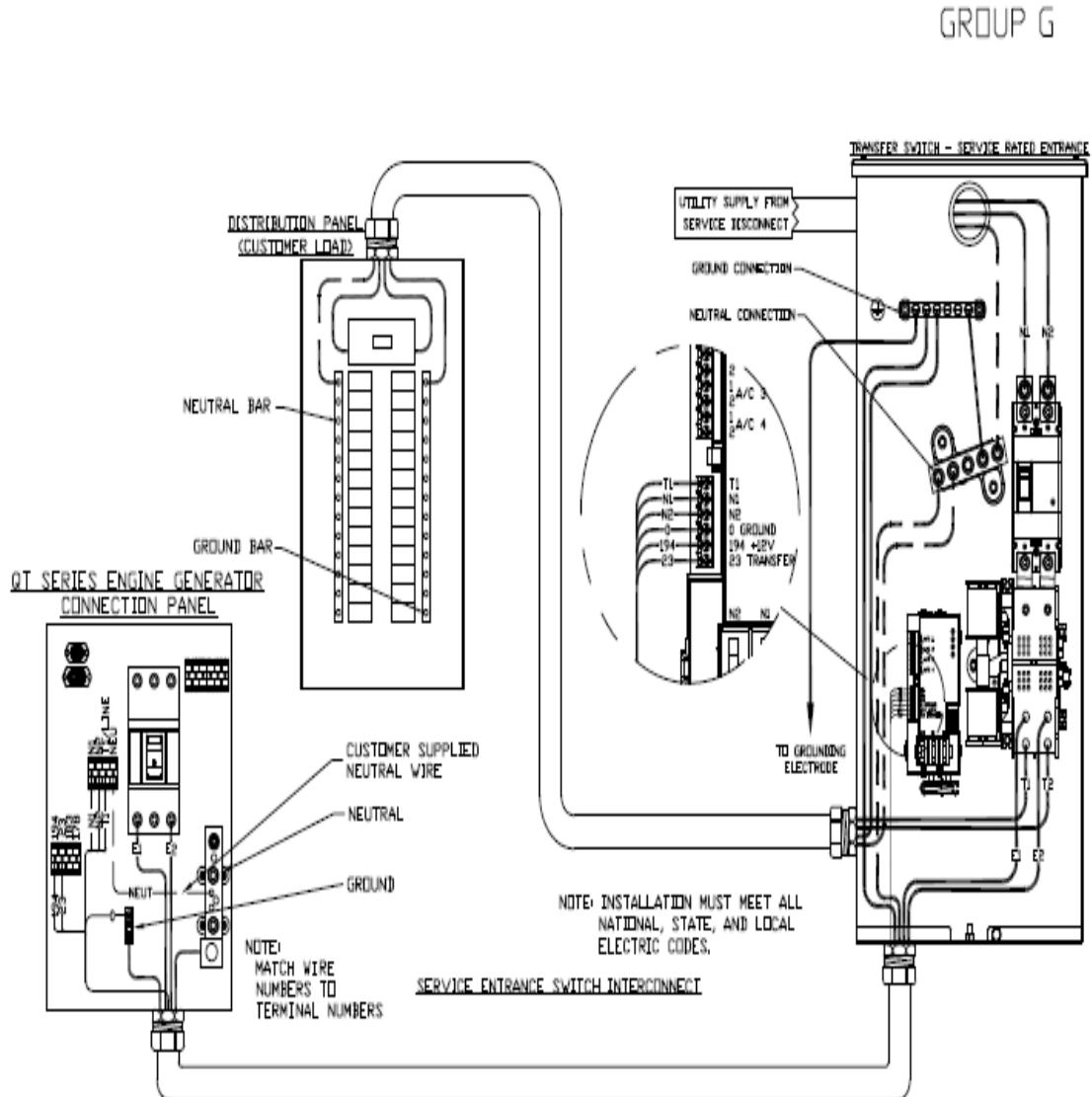
## 6 Configuration/Diagrams

The physical configuration of the Generator and the RXSC200A3 is, ATS before the PPC to ensure overcurrent protection when commercial power is restored. The RD025 and the RXSC200A3 has to be wired to Commercial AC power.

Commercial Power Connection Points  
On The RXSC200A3

**Interconnection Drawings**  
**No. 10000009574 (Part 1 of 2)—Liquid-Cooled Generator**



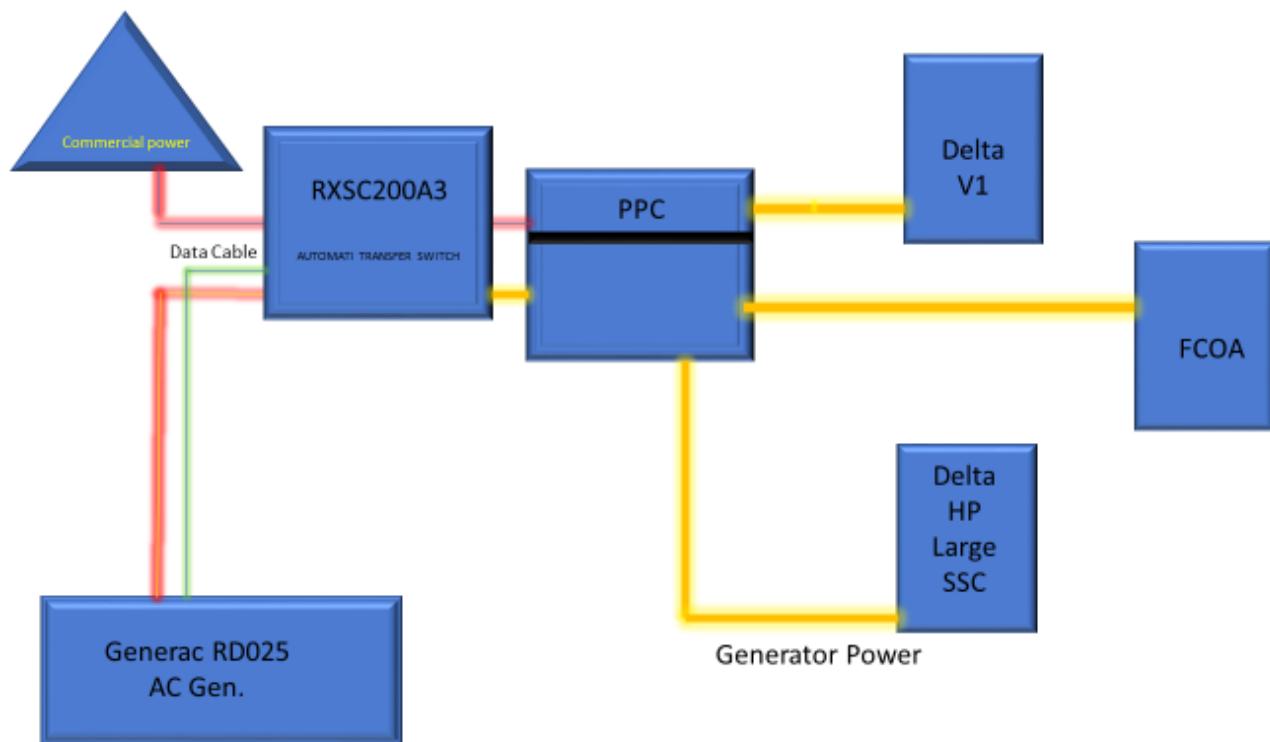


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PAGE 2 OF 2

EXPLODED VIEW:  
RXS XFER SW INTERCONNECTIONS  
DRAWING #10000009574

## Compound Diagram:



## 7 Maintenance

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T-Mobile is recommending preventive maintenance to be performed every 250 hours of run-time or every 12 months, whichever comes first.

T-Mobile requires this minimum service checklist for the generator engine:

- Check engine mounts and support. Tighten fasteners.
- Check all the engine hoses and clamps for proper fit, and any signs of cracking and fatigue from wear.
- Inspect all belts for signs of cracking and fatigue from wear and adjust for proper tension.
- Inspect the exhaust system for leaks, burns and wet stacking. Drain exhaust line and tighten any clamps and flange bolts.
- Inspect silencer and plumbing for leaks, cracks or any other signs of wear.
- Inspect the system for fuel, oil and coolant leaks and signs of corrosion.
- Replace water separator.
- Replace water filter/ conditioner.
- Check Anti-Freeze (Spector-Analysis).
- Check coolant level and add, if needed.
- Inspect radiator mounting for signs or wear and cracking.
- Inspect/ clean air filter and change per manufacturer specifications.
- Inspect air intakes and outlets and tighten clamps and brackets, if applicable.
- Replace fuel filter.
- Inspect the carburetor fuel injection system, fuel injection pump and choke, if equipped. Adjust to manufacturers specifications.
- Change engine oil, oil filter and record the date on the filter casing.
- Check engine heater operation, if equipped.
- Check and adjust the battery charger operations, and charge rate within the manufacturer's recommended operating specifications.

- Inspect the battery housing, hardware connections, and cables for corrosion and wear.
- Check the battery electrolyte levels and specific gravity levels.
- Load test generator battery.
- Check, adjust and record generator output voltage, as necessary.
- Check and record the alternator charge rate.
- During inspection run the generator for 30 minutes under load. During this time, and after the engine is at full operational speed and has reached engine operating temperature; determine and record the condition of all inspection points: oil pressure, water/ coolant temperature, Fuel pressure, generator gauge, indicator operations, generator battery.
- Check the engine timing and adjust to manufacturers specifications, if necessary.
- Inspect, adjust and record governor and frequency, if necessary.
- Verify that the low fuel alarm is operational and configured correctly to trigger when the fuel tank reaches 50% of fuel tank capacity.

Check fuel level and refuel the generator during the preventive/ corrective maintenance visit.