



Enclosure Manual

A large, 3D geometric graphic composed of several overlapping, semi-transparent blue and grey planes, creating a complex, angular shape that resembles a stylized letter 'D' or a modern architectural element. The text is overlaid on the central blue portion of this graphic.

DDB Unlimited, Inc.

Manual for the 5G Enclosure

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1. INTRODUCTION

1.1 PURPOSE

This document is intended to describe the 5G Series (ACU Cooled/Closed Loop) enclosure.

1.2 CONTENT AND ORGANIZATION

This document consists of 6 chapters including appendices, figures and tables.

1.3 ETL CERTIFICATION

This document may contain excerpts from ETL Report No. 3081760DAL-001, issued on 15-NOV-2013. A copy of the ETL listing report can be obtained by contacting DDB Unlimited.

2. ENCLOSURE OVERVIEW

2.1 MATERIAL

The ASTM B209-04 is the material standard for our Aluminum class 5052-H32 manufacture. ASTM B209-04 can be sold and or used in special fire rated categories such as fire block between buildings or fire protection of critical supports.

The standard flash point of 5052-H32 is 606 degrees C. Aluminum 5052-H32 is considered RoHS compliant by both American and European Standards agencies.

Reference: ASTM B209-04 “standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate”

■ Aluminum temper designation

Aluminum is specified with a 4 digit alloy followed by a temper designation. For example, 5052-H32 indicates an aluminum/magnesium alloy that has been strain hardened and stabilized by low temperature heating and is 1/4 hard.

-H	Strain hardened (cold worked) with or without thermal treatment.
-H1	Strain hardened without thermal treatment.
-H2	Strain hardened and partially annealed.
-H3	Strain hardened and stabilized by low temperature heating.
2nd Digit	A second digit denotes the degree of hardness. -Hx2 = 1/4 hard. -Hx4 = 1/2 hard. -Hx6 = 3/4 hard. -Hx8 = full hard.

2.2 POWDER COAT SPECIFICATION -Provided by Diamond Vogel.

TECHNICAL DATA

PRODUCT CODE: PLX4372-09

DATE: March 23, 2009

PRODUCT DESCRIPTION: White Gloss Texture

POWDER CLASS: TGIC Polyester

POWDER PROPERTIES

Specific Gravity 1.86 Theoretical Coverage (ft²/lb) @ 1 mil: 103 ± 4

CURED POWDER PROPERTIES (1.8 TO 2.2 Mils DFT)

Cure Schedule (Time at Substrate Temperature)	<u>10' @ 390°F</u>
Substrate for testing	<u>B-1000 .032 in CRS</u>
Gloss	<u>40 +/- 10 @ 60°</u>
PCI Powder Smoothness	<u>Texture</u>
Pencil Hardness	<u>2H+</u>
Direct/Reverse Impact in. lbs.	<u>160+ / 160+</u>
Adhesion, Crosshatch	<u>5B</u>
Flexibility, Mandrel Bend	<u>1/8 in dia, no fracture</u>
Salt Spray ASTM-B117 1000 hrs.	<u>Pass</u>
Humidity ASTM-D2247 1000 hrs.	<u>Pass</u>

Additional Technical Data available upon request

2.3 CABINET CONFIGURATION

2.3.1 KEY FEATURES: 5G Enclosure

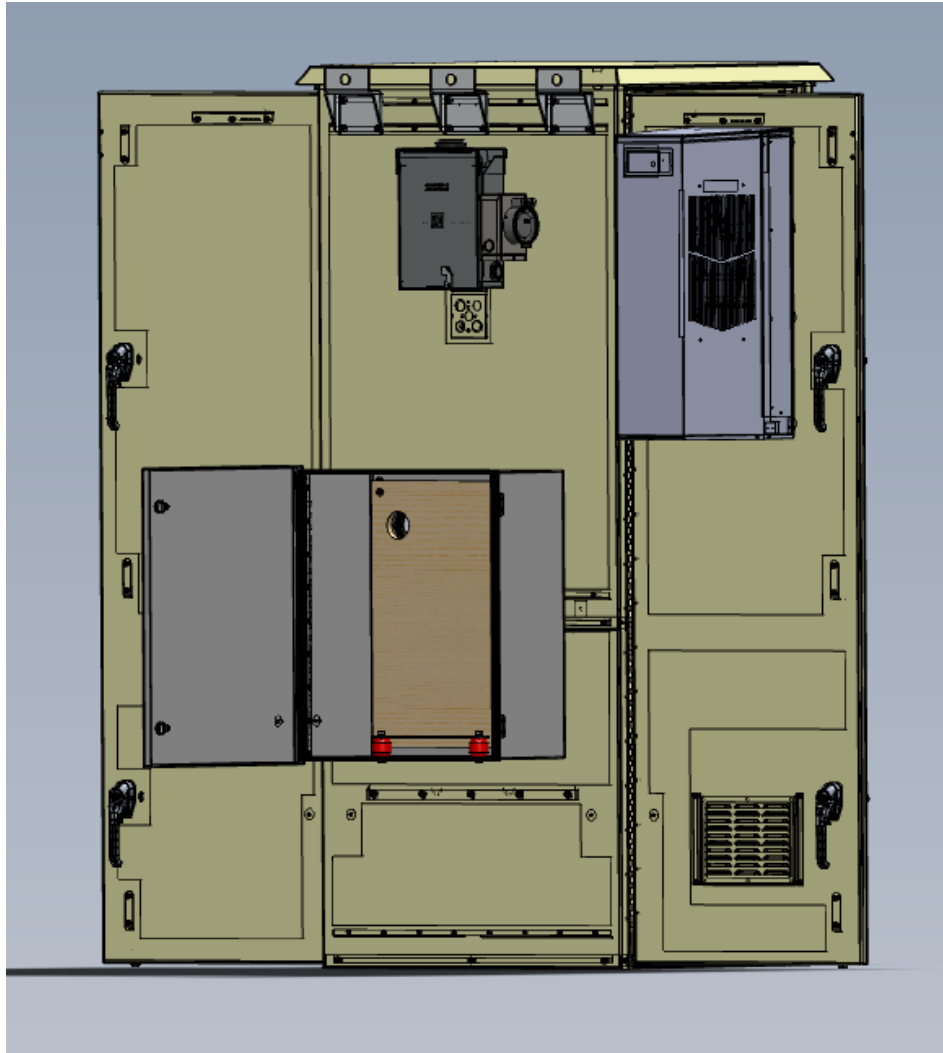


FIGURE 1: BASIC COMPONENT BREAKDOWN FOR THE 5G Enclosure

- Outdoor enclosure 81”H x 30”W x 34”D with front and rear access
- Reversible 19” and 23” racking and fully adjustable rails
- Powder baked white finish and Lifting Hooks
- Top compartment (3) point locking, battery compartment (2) point locking
- Dual compartment design, air-conditioned top compartment (NEMA 4) and fan cooled battery compartment (NEMA 3R) using (2) 5” 48V, 110cfm fans
- 26”H x 22”W x 10”D side box with removable plywood back plate including (3) 2” cable pass through openings: (2) main cabinet, (1) for battery cables with a 12” Copper ground bar mounted on isolators
- AC load center with 50amp backup generator plug, interior convenience outlet, a 220V supplied junction box for DC power systems and Interior LED lightbar. (See electrical layout)
- 4000 BTU AC unit, 110V including a 1300 watt built in heater

2.3.2 AIR CONDITIONER

The 5G Enclosure comes standard with a 110V, nVent/Pentair 4000 BTU adjustable air conditioning unit with 1300 watts of internal heat installed on the door. Controls for the cooling and heat are located inside the front door.

- Air conditioner manual is included with every enclosure. Please see the supplied air conditioner manual for detailed AC unit operation and set up. If there are operational issues with the AC unit, please contact DDB Unlimited: 800-753-8459.

A blue rectangular box with white text. The title 'Standard Features' is in a large, bold font. Below it is a list of seven bullet points, each preceded by a hyphen. The text is centered within the box.

Standard Features

- Adjustable heat and cooling set points
- Energy efficient reciprocating compressor
- Mechanical thermostat for added reliability
- Environmental friendly refrigerant
- UL /cUL listed
- Dust resistant condenser coil allows for filter less operation in most applications
- Cleanable, reusable aluminum mesh filter protects coils for maximum cooling

NOTE: AC unit set points are 55°F (heat) and 80°F (cooling) from factory. Controls are located inside of door.

FIGURE 2: nVent/PENTAIR N28 4000BTU

2.3.3 CUT SHEET FOR THE nVent/PENTAIR N28

N28 Models 4000 BTU/Hr. (1172 Watt)

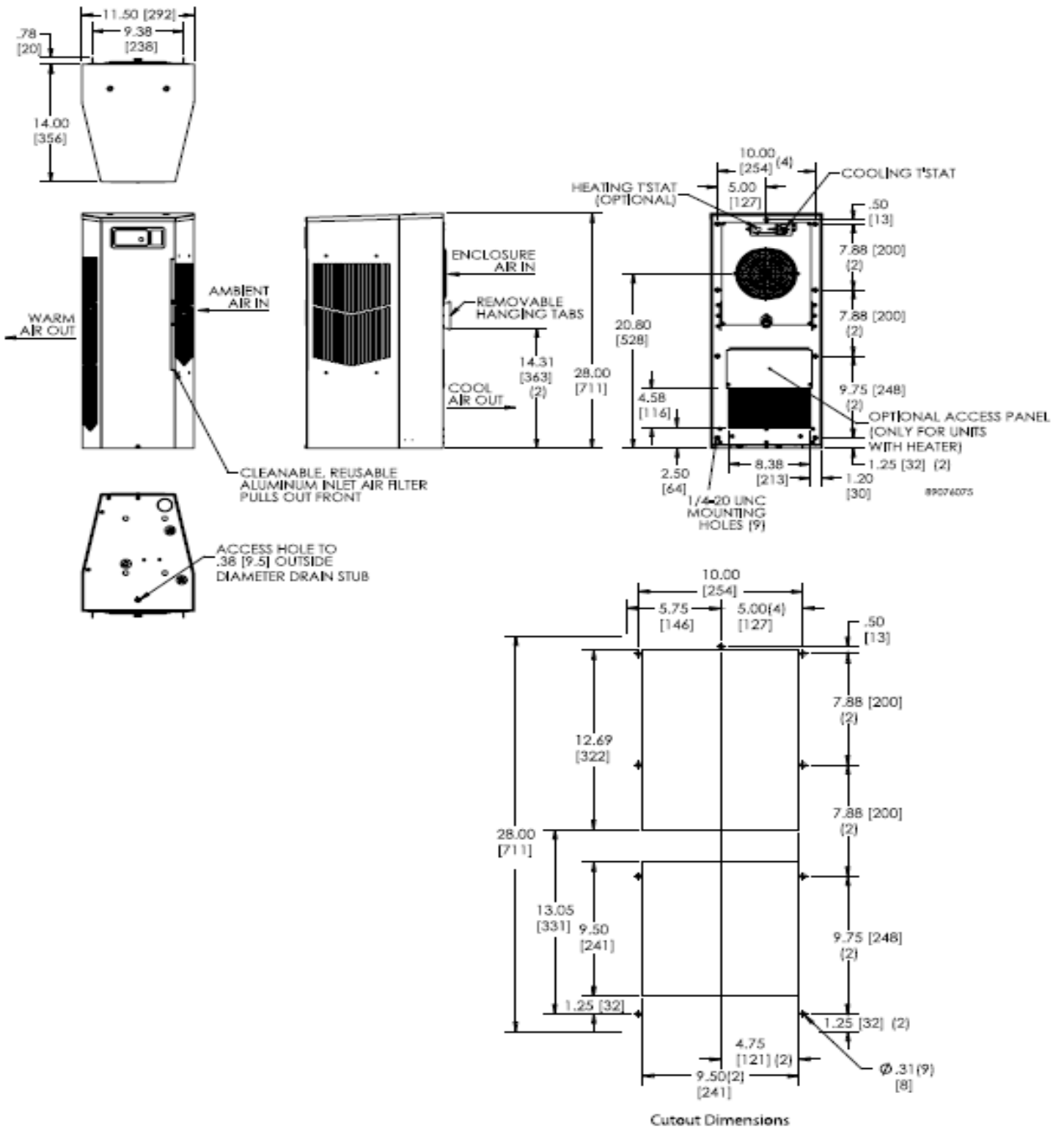


FIGURE 3: nVent /PENTAIR N28 CUT SHEET

2.3.4 SOUND LEVEL db (A)

Sound level at 1.5 meters 64.4db (110v unit)

2.3.5 CABINET VIEWS AND OVERALL DIMENSIONING FOR THE 5G Enclosure

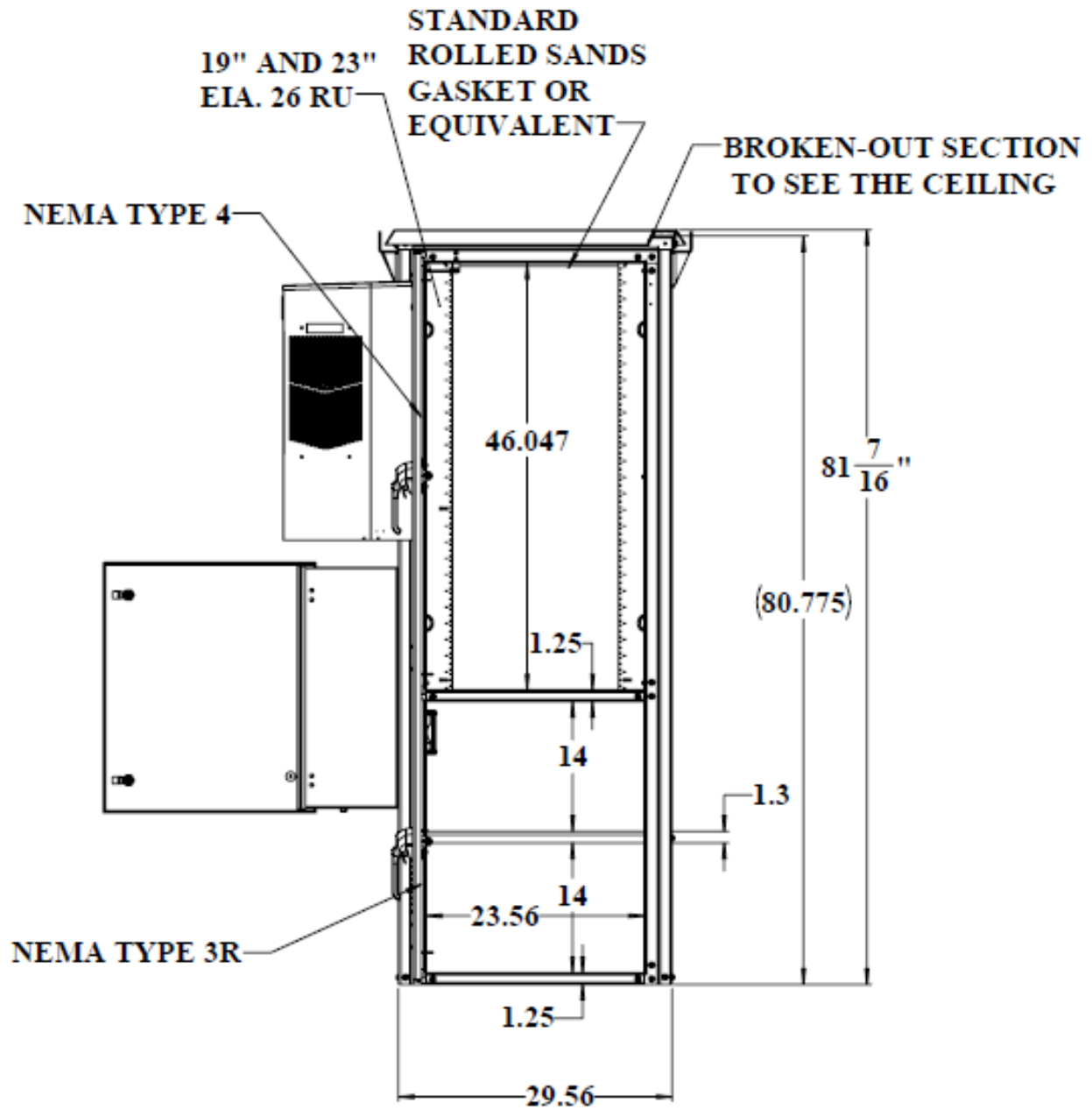


FIGURE 4: FRONT DIMENSIONAL VIEW OF 5G Enclosure

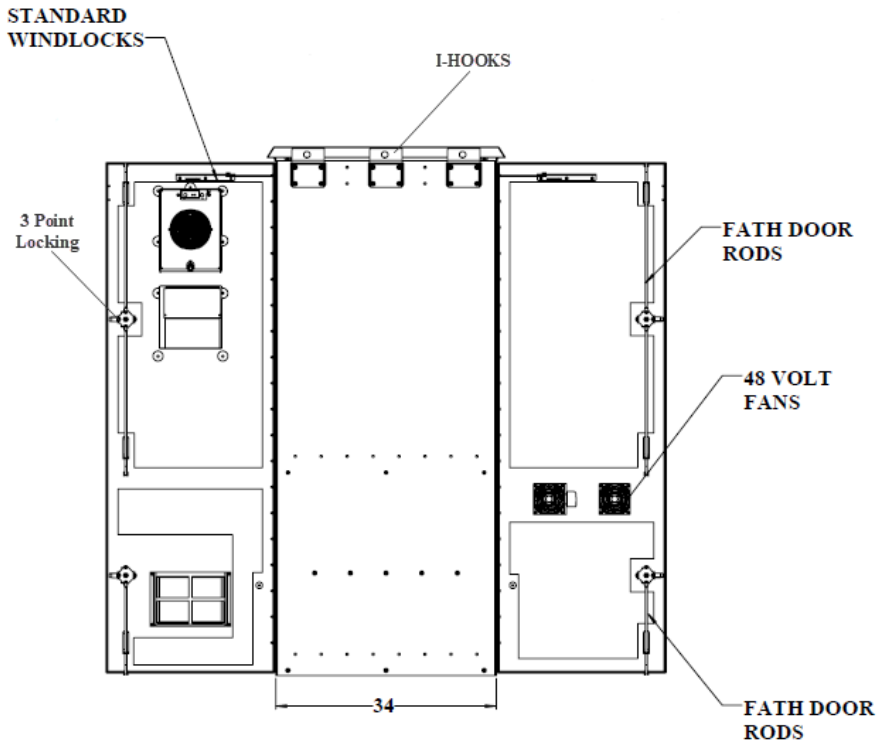


FIGURE 5: RIGHT SIDE VIEW OF 5G Enclosure

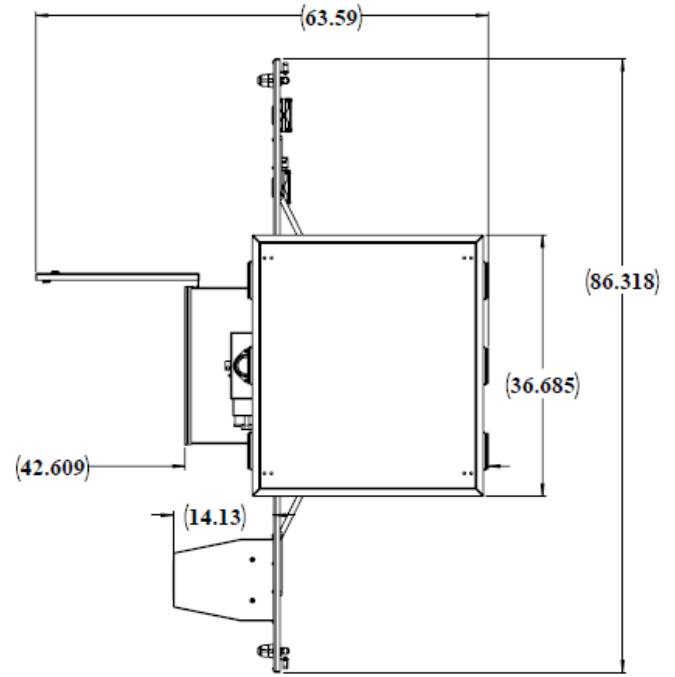


FIGURE 6: TOTAL OCCUPIED SPACE OF 5G Enclosure

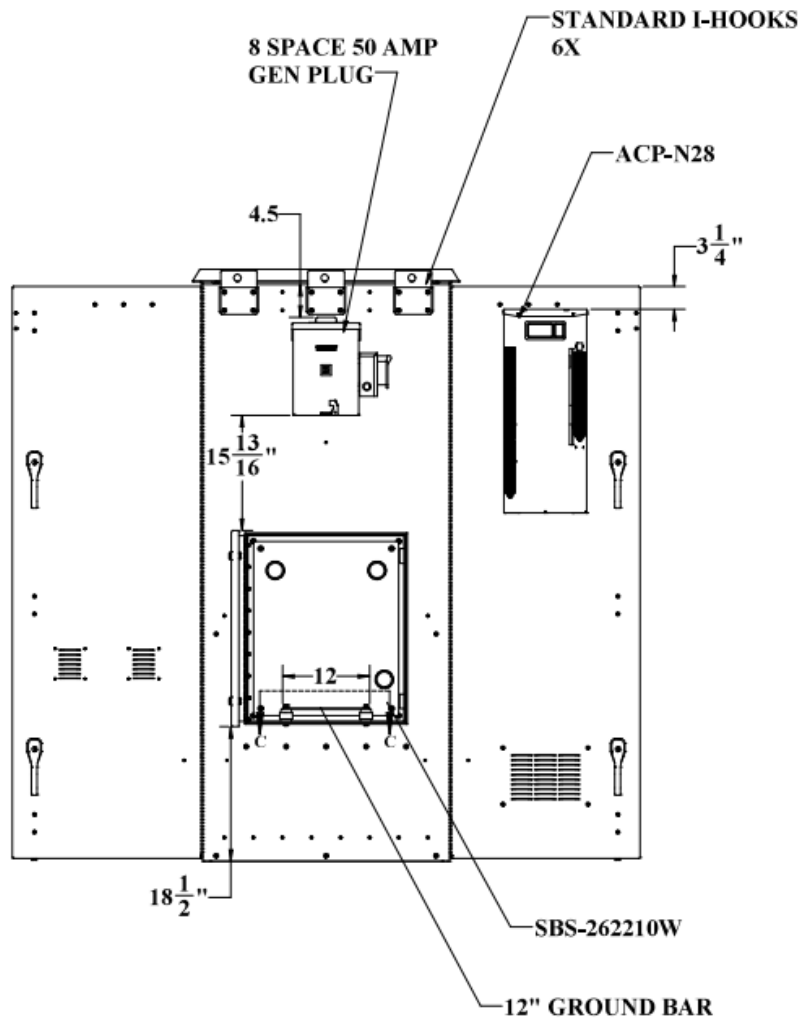


FIGURE 7: LEFT SIDE VIEW OF THE 5G Enclosure

2.3.6 PAD MOUNTING DETAILS

PAD MOUNT LAYOUT

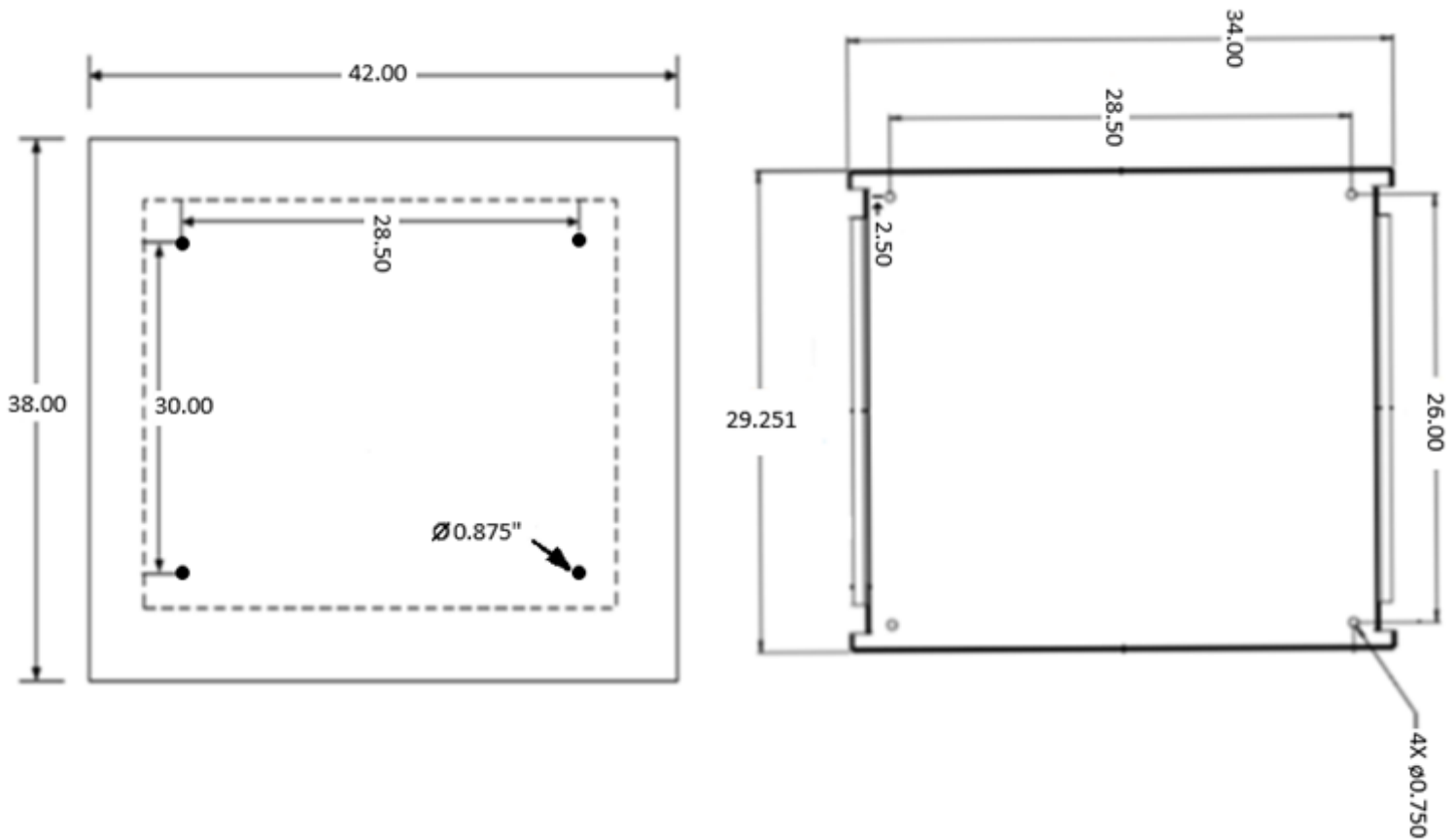


FIGURE 8: PAD MOUNTING DETAIL

RECOMMENDED PROCEDURE FOR PAD MOUNTING:

1. DRILL 4 HOLES 3" DEEP, DIA 0.875" (7/8) PER DRILL PATTERN IN CONCRETE PAD.
2. CLEAN HOLES OF DEBRIS.
3. USING A HAMMER, LIGHTLY TAP 3" LAG SLEEVE INTO HOLE UNTIL FLUSH WITH PAD SURFACE.
4. PLACE ENCLOSURE ON PAD WITH ALIGNMENT OF HOLES.
5. USE 2" FENDER WASHER, LOCK WASHER AND SECURE WITH 3" X 1/2" LAG BOLTS.

RECOMMENDED PAD LAYOUT 42" L X 38" W X 4" H 1/4 HARD (3000 PSI) CONCRETE

LOCAL CODES AND RESTRICTIONS OVERRULE ANY AND ALL DDB RECOMMENDATIONS.

3. RACK RAILS OVERVIEW

3.1 RACK RAILS

The rack rails for the 5G series are pictured below in Figure 12. They are made from 0.125" Aluminum. The mounting holes are tapped for a 10-32 mounting screw and are spaced according to EIA standard for 19" / 23" rack mounting.

The enclosure come with (2) sets of rails for front and rear mounting of equipment. Rails are fully adjustable through the length of the enclosure. Rails are also reversible between 19" and 23" racking to better suit all your mounting needs.

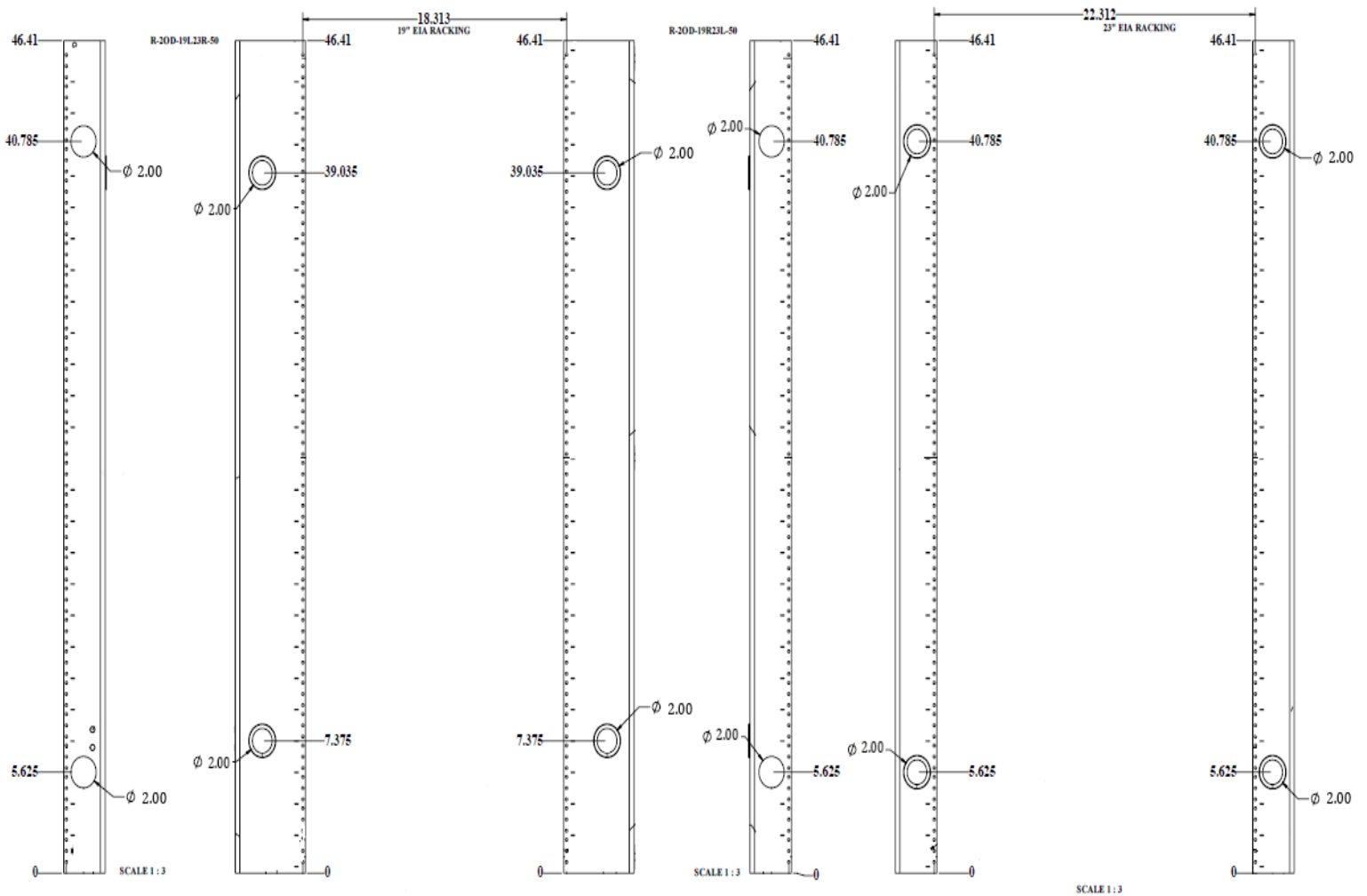


FIGURE 9: RACK RAIL DETAIL

4. ELECTRICAL & GROUNDING OVERVIEW

4.1 ELECTRICAL SCHEMATIC FOR THE 5G Enclosure

NOTE: SERVICE ENTRANCE POWER IS BACK FED IN THE BRANCH POSITION. UL APPROVED CONFIGURATION.

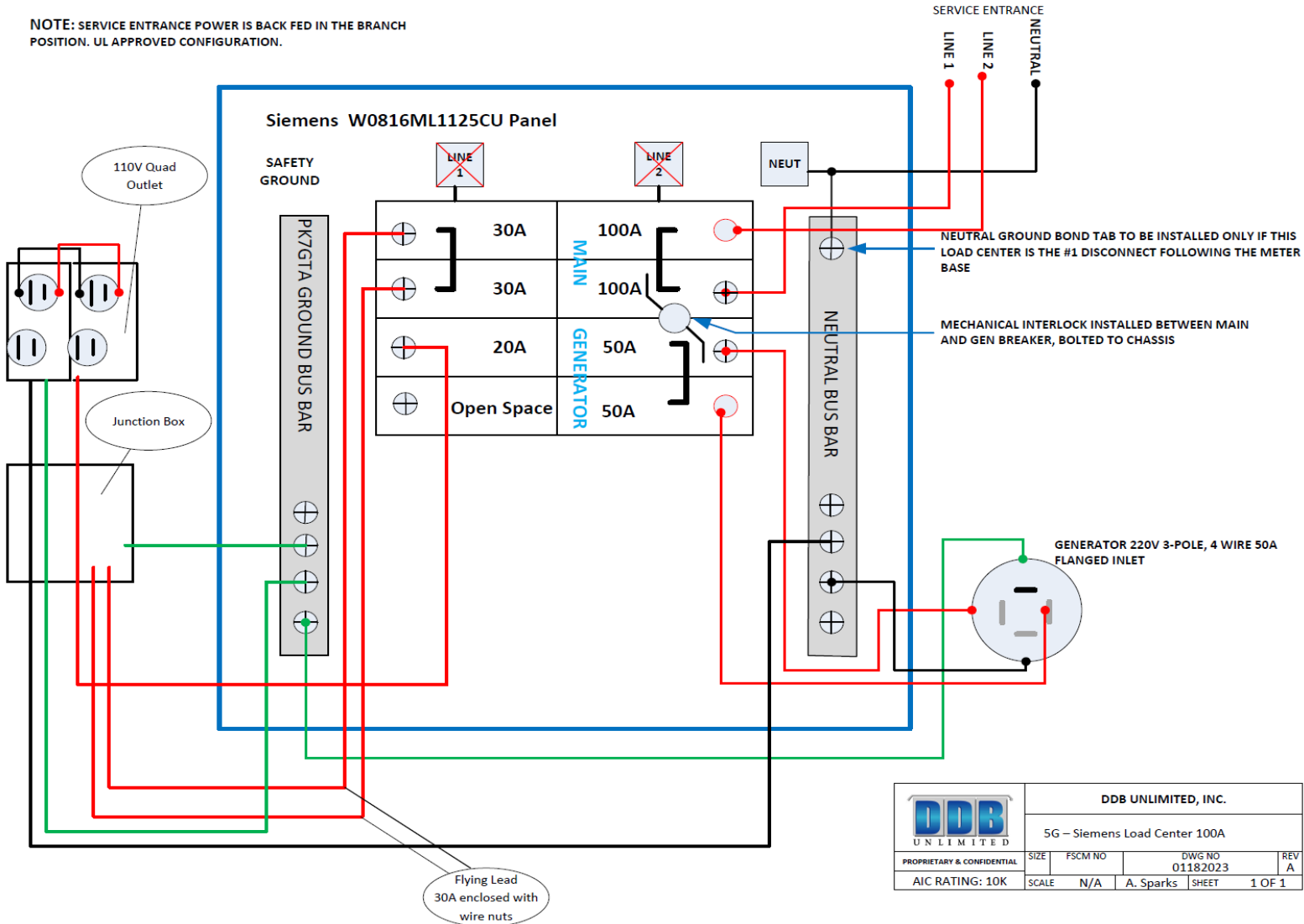


FIGURE 10: ELECTRICAL SCHEMATIC

4.2 GROUND BAR

The side box of the 5G Enclosure contains a 12" copper ground bar mounted on isolators. Please see the figure below.

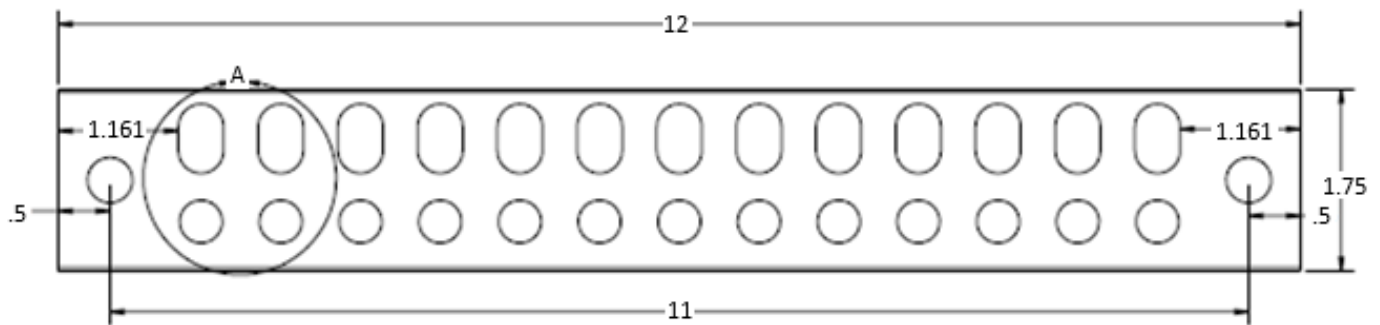
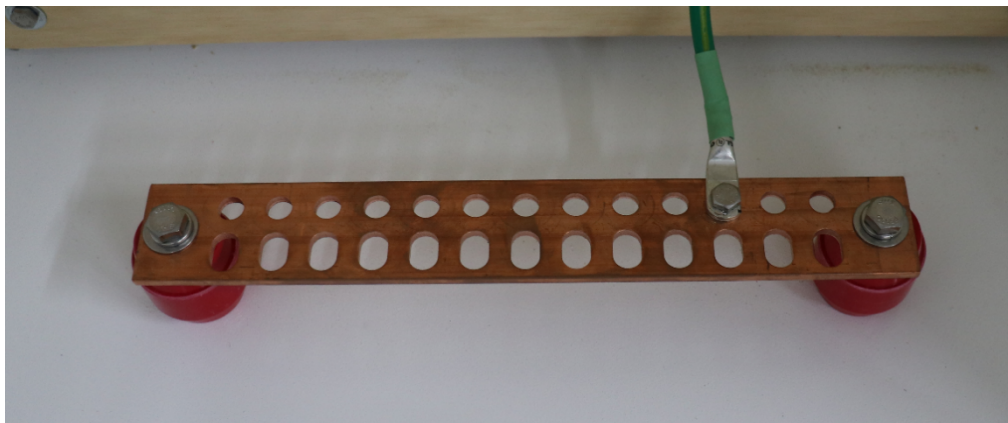
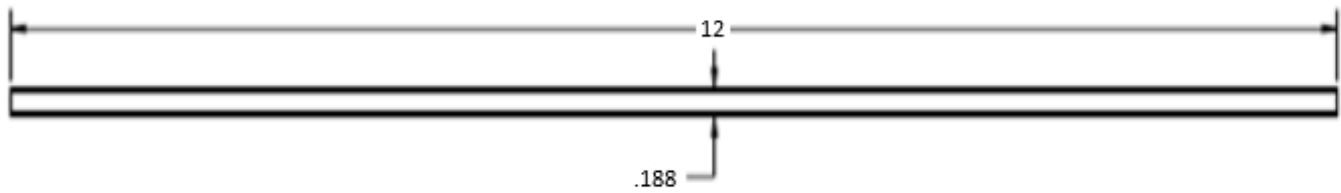
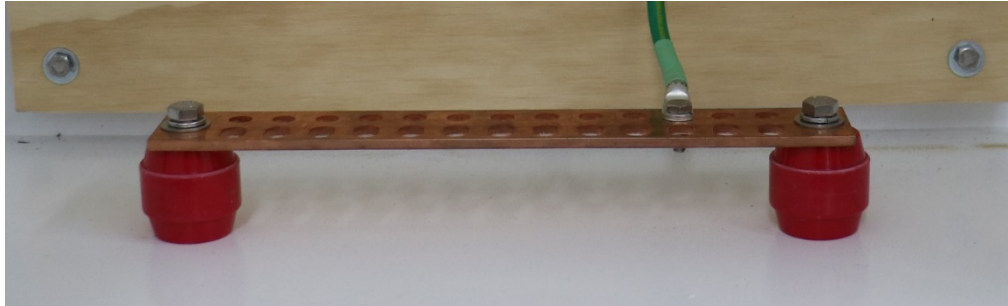


FIGURE 11: 12" GROUND BAR

4.3 GROUND BAR ASSEMBLY DETAIL & RAIL GROUNDING

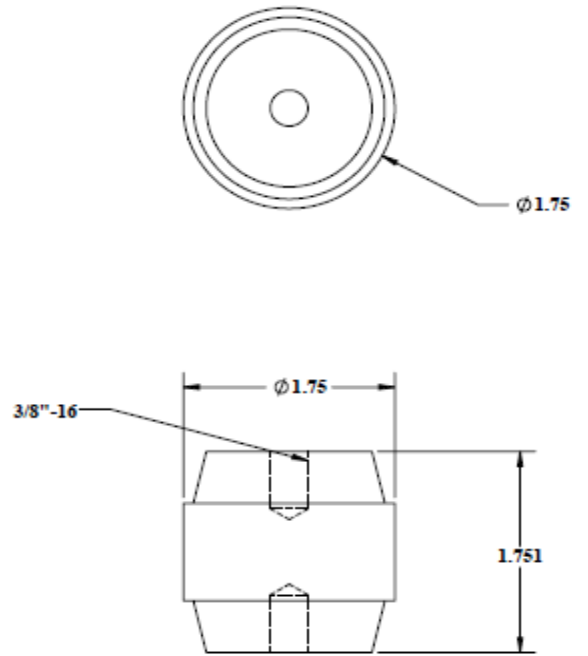
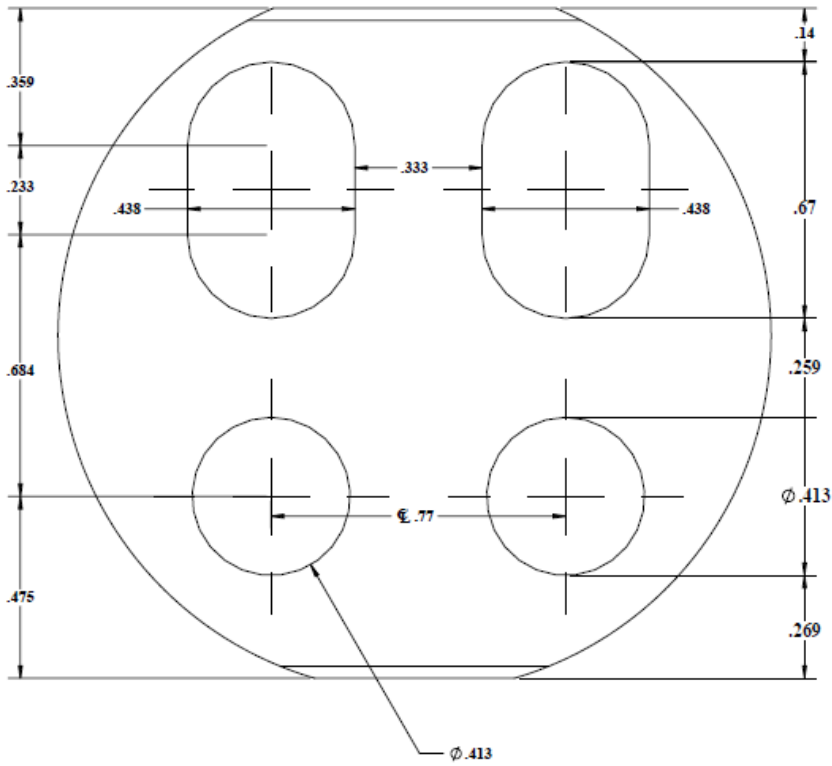


FIGURE 12: GROUND BAR ASSEMBLY DETAIL

DETAIL A
SCALE 4 : 1

SINGLE LUG RAIL GROUNDING MOUNTING

SINGLE LUG GROUND BAR MOUNTING



FIGURE 13: SINGLE LUG GROUNDING FOR RAILS

5. BATTERY BOX & SIDE BOX OVERVIEW

5.1 BATTERY BOX EXHAUST FANS



The 5G series has a direct air ventilated dual shelf battery compartment designed to hold up to strings of (4) 12v, 180ah VRLA Telecom batteries. The intake filter is mounted to the front door and the exhaust on the rear door. See FIGURE 18 for airflow detail. The battery compartment is ventilated with (2) 48v 110cfm fans. See fan detail below.

4400 Series Tubeaxial

119x119x38mm

- DC fans with electronically commutated external rotor motor. Fully integrated commutation electronics.
- With electronic protection against reverse polarity, locked rotor and overloading.
- Innovative impeller design with winglets.
- Fan of fiberglass reinforced plastic. PBTP housing, PBT impeller.
- Air exhaust over struts. Rotational direction CW looking at rotor.
- Electrical connection via 2 leads AWG 22, TR 64. Stripped and tinned ends.
- UL, CSA, VDE approvals on some models, please contact application engineering.

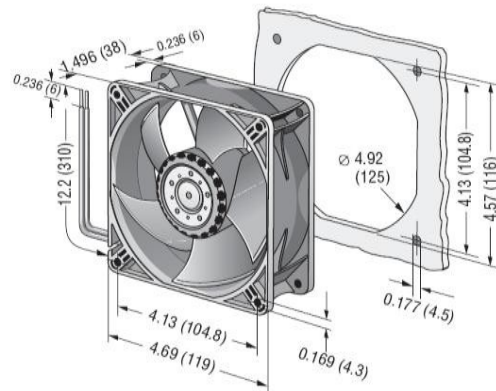
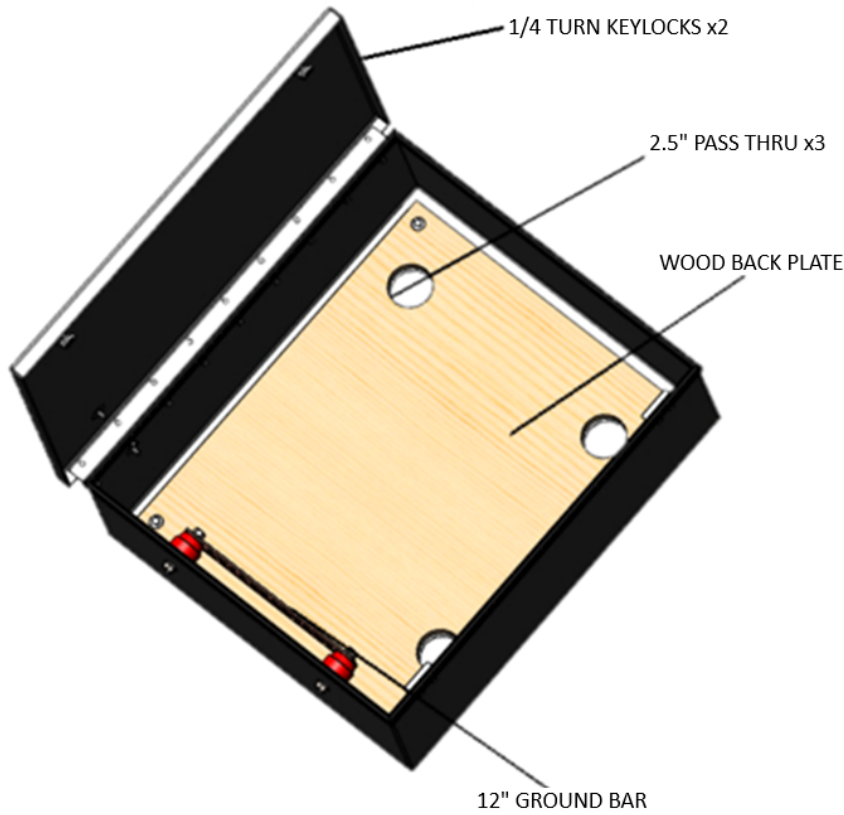


FIGURE 14: DC AXIAL EXHAUST FANS FOR THE BATTERY COMPARTMENT

5.2 SIDE BOX DETAIL



SIDE BOX DETAIL

- The side box is 26"H x 22"W x 10"D with a removable back plate, (3) 2.5" cable pass through openings and a 12" copper ground bar on isolators (1).
- The elevation of the spool box is 19" off the ground to allow for cable bend.

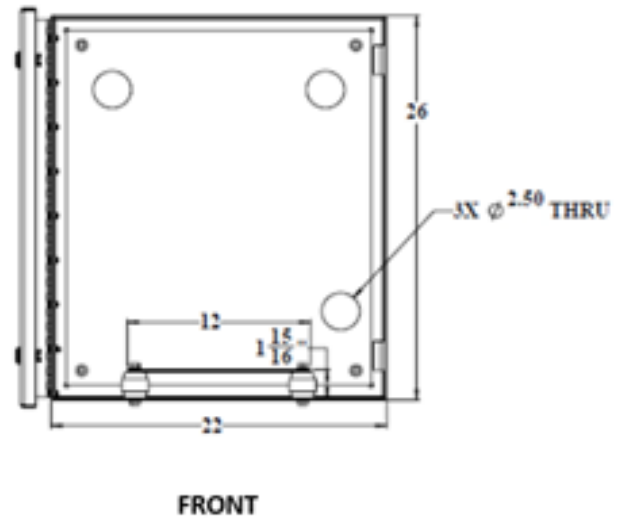
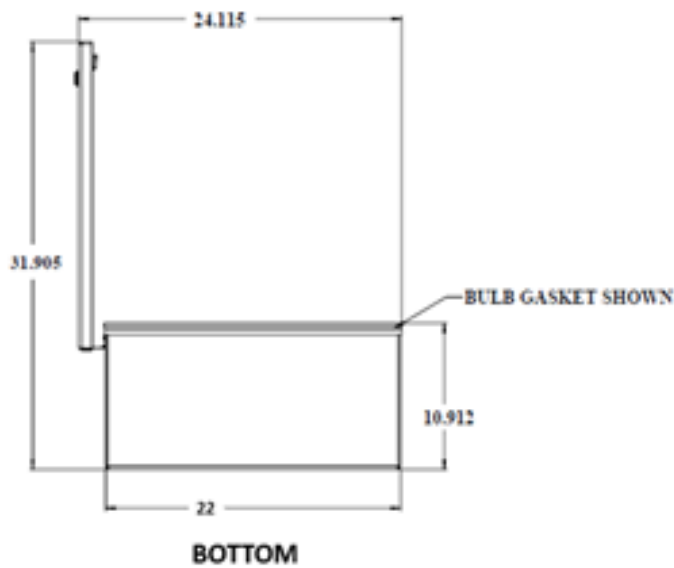


FIGURE 15: SIDE BOX DETAIL & DIMENSIONS

6. APPENDIXES

6.1 AIR CONDITIONER OPERATION MANUAL

See included material inside enclosure for most up to date manual or visit the nVent web site for more information.

N28-4000 BTU spec: [nVent N28](#)

6.2 DDB UNLIMITED WARRANTY

Warranty

DDB Unlimited manufactures NEMA rated weatherproof enclosures from high quality materials and warrants all enclosures for a period of (15) years from date of original purchase. This warranty covers workmanship and materials to include, but not limited to, the non-corrosive properties of the material and manufacturing defects. (WARRANTY DOES NOT COVER PRODUCTS NOT MANUFACTURED BY DDB UNLIMITED; THEY WILL HAVE THEIR OWN MANUFACTURE WARRANTY.)

DDB Unlimited warrants to Customer that DDB Unlimited manufactured products sold to Customer pursuant to this Contract will be free from defects in material and workmanship, will conform to DDB Unlimited's specifications or to Customer's specifications where agreed to in writing for a period of 15 years from the date of shipment to Customer, provided that:

DDB Unlimited is promptly notified (within the warranty period) of any warranty claim; and DDB will not issue OR allow RMA's, Refunds or Returns on orders past 45 days of Invoice date. DDB will not issue credit or warranty any non-stock item; items in which cutouts or non DDB standard products have been placed on enclosure. DDB will not allow RMA, Refund or Return for items that have been altered in any way from stock condition. RMA credit will be given based on a management approved basis with restocking fee.

The goods and merchandise are returned to DDB Unlimited, freight prepaid, after Customer has received a return merchandise authorization number from DDB Unlimited; and DDB Unlimited's examination of such items shall disclose to its reasonable satisfaction that the claimed defect in the DDB Unlimited manufactured product was not caused by abuse, improper handling, installation, unauthorized repair, alteration or accident. Modification of DDB Unlimited manufactured product by Customer, or at Customer's direction, shall invalidate the above warranty.

DDB Unlimited's liability under this warranty is limited to repairing, replacing or issuing a credit in the amount of the unit contract price, at its election, for any such claim. Any repair or replacement shall not extend the warranty period.

Discoloration of DDB Unlimited manufactured products from metal oxidization and/or severe/normal environmental atmospheric conditions due to exposure over a period of time is normal/anticipated and is not covered by this warranty.

This warranty is extended to Customer only and is not transferable to subsequent purchasers or users of goods and merchandise. This warranty is given in lieu of all other warranties, express or implied, including implied warranties of merchantability and fitness for a particular purpose.