ATTACHMENT 4

infinigy
engineering & surveying

New York Office
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Latham, NY 12110
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www.infinigy.com

February 6, 2012

Mr. Dan Shriver
Florida Tower Partners
1001 3rd Avenue West, Suite 420
Bradenton, FL 34205

Subject: North Atlantic Towers- Woodstock CT1182 – Generator Performance
Route 198, Woodstock, CT 06282
Proposed Telecommunications Tower Facility

Dear Mr. Shriver:

At the request of the Connecticut Siting Council (*CSC*), Infinigy Engineering, PLLC (*Infinigy*) is providing data regarding the performance of the proposed generator at the above referenced site.

The specified generator is a Generac, 50 KW, diesel powered in a level 2A enclosure, and is EPA emissions compliant as a Tier III.

1. In regard to whether the generator needs an Air permit, we offer the following:

   As per RCSA (Regulations of Connecticut State Agencies) Section 22a-174-42 (a), the proposed generator installation is designated as an "emergency generator." As such, under RCSA Section 22a-174-42 (b) (3) (D), the proposed generator is exempt from the new source review general permitting requirement. Moreover, air permitting is not required because, under RCSA Section 22a-174-42 (b) (1) (D), use of the generator is less than (300) hours per 12-month period; the use of diesel fuel that does exceed the sulfur content of federal motor vehicle diesel fuel; and, an annual potential emissions discharge of less than 15 tons.

   As such, North Atlantic Towers is only subject to the compliance plan of RCSA Section 22a-174-42 (h), which includes record keeping, maintenance and reporting requirements.

2. In regard to the run time of the generator, we offer the following:
   a. The tank capacity is 210 gallons.
   b. The fuel consumption rate at a 100% load is 4.15 gallons/minute.
   c. The generator has a remotely monitored "low-fuel level alarm".
   d. Assume the following scenario:
      i. Weekly exercise of (15) minutes at a 25% percent load (exercise is never done with a load on the generator. Rather, the exercise is simply to run the engine and assure no mechanical problems.) Load at 25% is 1.52 gallons per hour. Running the exercise for (6) months without refueling consumes:
         (4 exercises/month x 6 month x 15 minutes) = 6 hours
         (6 hours x 1.52 gph) = 9.12 gallons of diesel
      ii. Month 7 experiences a commercial power outage. The generator commences operation at 100% load and can run without re-fueling for:
         (210 – 9.12 gallons) = 200 gallons remaining
         (200 gallons)/4.15 gph = 48 hours or 2 days.

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The backup generator is designed to run for two (2) days without re-fueling. During those (2) days, the fuel level is remotely monitored. In an emergency situation, AT&T has local re-fueling resources under contract. Further, North Atlantic Tower is contractually obligated to ensure access is available to the site, whether that involves snowplowing or continual road maintenance.

Should you have any questions, comments or concerns regarding this issue, please feel free to contact me at 518-690-0790 at your convenience.

Sincerely,

Infinigy Engineering and Surveying, PLLC
John S. Stevens, P.E.
Principal

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February 6, 2012

Mr. Dan Shriver
Florida Tower Partners
1001 3rd Avenue West, Suite 420
Bradenton, FL 34205

Subject: North Atlantic Towers- Woodstock CT1182 – Noise Study
Route 198, Woodstock, CT 06282
Proposed Telecommunications Tower Facility

Dear Mr. Shriver:

At the request of the Connecticut Siting Council (*CSC*), Infinigy Engineering, PLLC (*Infinigy*) has completed a noise study to determine the noise generated by the proposed facility. The noise generating devices are the emergency backup generator and the HVAC units. The generator operates approximately fifteen minutes per week and then continually during emergency situations where commercial power is interrupted. The HVAC units operate during the summer hours when the interior building thermostat demands cooling.

The proposed facility is located within one hundred fifty feet (150 feet) of the eastern and southern property lines. It should be noted that the property line to the south is lands of Farley through which the proposed access and utility runs.

The closest residence is approximately one thousand eight hundred (1800) feet to the east. The distance consists of approximately one thousand one hundred (1100) feet of heavy woods and seven hundred (700) feet of field.

The specified generator is a Generac, 50 KW, diesel powered in a level 2A enclosure. Sound levels at a distance of twenty three (23) feet equals seventy one (71) dB. The generator produces comparatively more noise than the HVAC units so in calculating worst case sound levels, only the generator is considered.

Sound pressure level (L) is measured in decibels (dB) and is what is heard by the human ear. The following OSHA table compares known, everyday objects and is a good comparison to varying sound levels.

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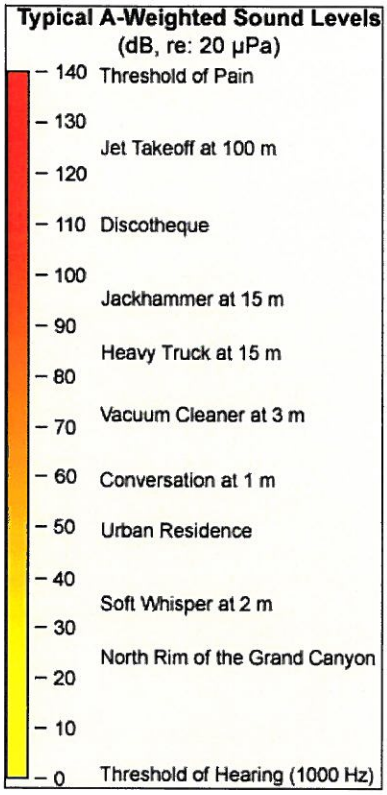

Sound level (L) decreases approximately six (-6) db for every doubling of distance. For example, at a distance of (2 x 23 feet = 46 feet), the dB level of the generator would decrease to (71 – 6 = 65 dB). This does not consider any additional sound attenuation such as the heavy woods surrounding the proposed site. The actual engineering calculation for sound level versus distance is:

$$L2 = L1 - 20\log (R2/R1)$$

L2 = Sound level at location 2
L1 = Sound level at original location
R2 = distance from generator at location 2
R1 = distance from generator at original location.

Per the engineering guidelines stated above, the following worst case decibel levels are calculated as follows. Again, it should be noted that no consideration was given to the heavy woods intervening between the proposed site and the calculated points of reference:

150-feet south and east to the closest property lines:	54.71 dB
1800-feet east to the closest residence:	33.13 dB

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Infinigy acknowledges the generator noise will be audible from both the property lines and closest residence. But the noise levels will only be in emergency situations and not considered significant when compared to existing ambient noise levels.

Should you have any questions, comments or concerns regarding this issue, please feel free to contact me at 518-690-0790 at your convenience.

Sincerely,

Infinigy Engineering and Surveying, PLLC
John S. Stevens, P.E.
Principal

SD050

CUSTOM MODEL

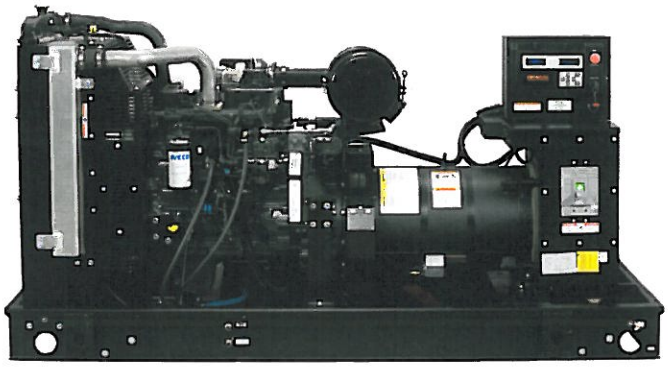
GENERAC® | INDUSTRIAL POWER

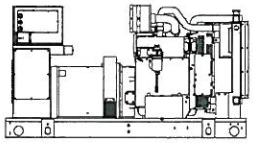
Industrial Diesel Generator Set

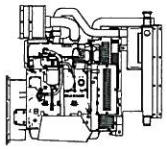
EPA Emissions Certification: Tier III

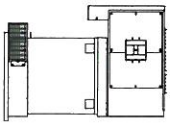
50 kW Diesel

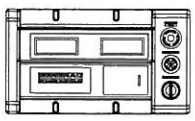
Standby Power Rating
50KW 60 Hz











features benefits

Generator Set

PROTOTYPE & TORSIONALLY TESTED	PROVIDES A PROVEN UNIT
UL2200 TESTED	ENSURES A QUALITY PRODUCT
RHINOCOAT PAINT SYSTEM	IMPROVES RESISTANCE TO ELEMENTS
SOUND LEVEL 2 ENCLOSURE	71dbA @ 7 METERS (23FT)

Engine

EPA TIER CERTIFIED	ENVIRONMENTALLY FRIENDLY
INDUSTRIAL TESTED, GENERAC APPROVED	ENSURES INDUSTRIAL STANDARDS
POWER-MATCHED OUTPUT	ENGINEERED FOR PERFORMANCE
INDUSTRIAL GRADE	IMPROVES LONGEVITY AND RELIABILITY

Alternator

TWO-THIRDS PITCH	ELIMINATES HARMFUL 3RD HARMONIC
LAYER WOUND ROTOR & STATOR	IMPROVES COOLING
CLASS H MATERIALS	HEAT TOLERANT DESIGN
DIGITAL 3-PHASE VOLTAGE CONTROL	FAST AND ACCURATE RESPONSE

Controls

ENCAPSULATED BOARD W/ SEALED HARNESS	EASY, AFFORDABLE REPLACEMENT
4-20mA VOLTAGE-TO-CURRENT SENSORS	NOISE RESISTANT 24/7 MONITORING
SURFACE-MOUNT TECHNOLOGY	PROVIDES VIBRATION RESISTANCE
ADVANCED DIAGNOSTICS & COMMUNICATIONS	HARDENED RELIABILITY

primary codes and standards

NEMA

SD050

application and engineering data

ENGINE SPECIFICATIONS

General

Make	Iveco / FPT	
EPA Emissions Compliance	Tier III	
EPA Emissions Reference	See Emissions Data Sheet	
Cylinder #	4	
Type	Diesel	
Displacement - L (cu. in.)	4.5	(274)
Bore - mm (in.)	105	(4.1)
Stroke - mm (in.)	132	(5.2)
Compression Ratio	17.5:1	
Intake Air Method	Turbocharged	
Cylinder Head Type	2 Valve	
Piston Type	Aluminum	
Crankshaft Type	Forged Steel	
Engine Block Type	Cast Iron / Wet Sleeve	

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	+/- 0.25%

Lubrication System

Oil Pump Type	Gear	
Oil Filter Type	Full Flow	
Crankcase Capacity - L (gal)(qts)	13.6	(3.6) (14.4)

Cooling System

Cooling System Type	Closed
Water Pump	Belt Driven Centrifugal
Fan Type	Pusher
Fan Blade Number	2538 (10)
Fan Diameter (in.)	26
Coolant Heater Wattage	1500
Coolant Heater Standard Voltage	120

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Specifications	ASTM
Fuel Filtering (microns)	5
Fuel Inject Pump Make	Standyne
Fuel Pump Type	Engine Driven Gear
Injector Type	Mechanical
Engine Type	Direct Injection
Fuel Supply Line - mm (in.)	1/4 inch Npt
Fuel Return Line - mm (in.)	1/4 inch Npt

Engine Electrical System

System Voltage	12VDC
Battery Charging Alternator	90 Amp
Battery Size (at 0 oC)	Optima Redtop
Battery Group	34
Battery Voltage	12VC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	390
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	< 3.5%
Telephone Interference Factor (TIF)	< 50
Standard Excitation	PMG
Bearings	Single Sealed Cartridge
Coupling	Direct, Flexible Disc
Load Capacity - Standby	100%
Load Capacity - Prime	100%
Prototype Short Circuit Test	Y

Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	+/- 0.25%

CODES AND STANDARDS COMPLIANCE (WHERE APPLICABLE)

NFPA 99
NFPA 110
ISO 8528-5
ISO 1708A.5
ISO 3046
BS5514
SAE J1349
DIN6271
IEEE C62.41 TESTING
NEMA ICS 1

Rating Definitions:
Standby – Applicable for a varying emergency load for the duration of a utility power outage with no overload capability. (Max. load factor = 70%)
Prime – Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (Max. load factor = 80%) A 10% overload capacity is available for 1 out of every 12 hours.

SD050

operating data (60Hz)

POWER RATINGS (kW)

	STANDBY		
Single-Phase 120/240VAC @1.0pf	50	Amps:	208
Three-Phase 120/208VAC @0.8pf	-	Amps:	-
Three-Phase 120/240VAC @0.8pf	-	Amps:	-
Three-Phase 277/480VAC @0.8pf	-	Amps:	-
Three-Phase 346/600VAC @0.8pf	-	Amps:	-

NOTE: Generator output limited to 200A.

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip

		480VAC						208/240VAC					
Alternator*	kW	10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	50	-	-	-	-	-	-	26	39	52	65	77	90
Upsize 1		-	-	-	-	-	-	-	-	-	-	-	-
Upsize 2		-	-	-	-	-	-	-	-	-	-	-	-

*All Generac industrial alternators utilize Class H insulation materials. Standard alternator provides less than or equal to Class B temperature rise. Upsize 1 provides less than or equal to Class B temperature rise. Upsize 2 provides less than or equal

FUEL

Fuel Consumption Rates

Fuel Pump Lift - in (m)
36(.9)

STANDBY		
Percent Load	gph	lph
25%	1.52	5.75
50%	2.33	8.82
75%	3.08	11.65
100%	4.15	15.71

COOLING

Coolant System Capacity - Gal (L)
4.5 (17.44)

Maximum Radiator Backpressure
1.5" H_2O Column

		STANDBY
Coolant Flow per Minute	gpm (lpm)	32.7(123.8)
Heat rejection to Coolant	BTU/min	123,000
Inlet Air	cfm (m3/min)	6,360 (180.0)
Max. Operating Radiator Air Temp	F° (C°)	122(50)
Max. Operating Ambient Temperature	F° (C°)	122(50)

COMBUSTION AIR REQUIREMENTS

		STANDBY	
Intake Flow at Rated Power	cfm (m3/min)	247	(7.00)

EXHAUST

Exhaust Outlet Size (Open Set)
3.0"

Maximum Backpressure (Post-Silencer)
1.5" Hg

		STANDBY
Exhaust Flow (Rated Output)	cfm (m3/hr)	534(906.7)
Maximum Backpressure	inHg (Kpa)	1.5 (5.1)
Exhaust Temp (Rated Output)	°F (°C)	930(498.8)

ENGINE

		STANDBY
Rated Engine Speed	rpm	1800
Horsepower at Rated kW	hp	93
Temperature Deration		Consult Factory
Altitude Deration		Consult Factory

* CA units include aftertreatment

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

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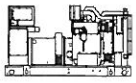
standard features and options

GENERATOR SET



● Genset Vibration Isolation	Std
● Factory Testing	Std
● Extended warranty	Std
● Padlockable Doors	Std
● Steel Enclosure (Enclosed Models)	Std
○ Remote Emergency Shutdown	Opt

ENGINE SYSTEM

General

● Oil Drain Extension	Std
● Air Cleaner	Std
● Industrial Exhaust Silencer (Open Sets, ship loose)	Std
● Critical Exhaust Silencer (Enclosed Sets)	Std
● Stainless steel flexible exhaust connection	Std

Fuel System

● Primary Fuel Filter with Water Separator	Std
● Flexible Fuel Lines	Std
● UL142 Fuel Tank, 48 Hr Runtime	Std
● 2 Gal Overflow Containment with Alarm	Std

Cooling System

● 120VAC Coolant Heater (3-wire connection cord)	Std
● 50%/50% Coolant	Std
● Level 1 Guarding (Open Sets)	Std
● Closed Coolant Recovery System	Std
● UV/Ozone resistant hoses	Std
● Factory-Installed Radiator	Std
● Radiator Drain Extension	Std
● Fan guard	Std
● Radiator duct adapter (Open Sets)	Std
●	

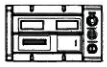
Engine Electrical System

● Battery charging alternator	Std
● Battery cables	Std
● Battery tray	Std
● 75W 120VAC Battery heater	Std
● Solenoid activated starter motor	Std
● 10A UL float/equalize battery charger	Std
● Weather Resistant electrical connections	Std
● Duplex GFCI Convenience Outlet	Std

ALTERNATOR SYSTEM

● UL2200 GENprotect™	Std
● 100% Rated 200A Main Line Circuit Breaker	Std

CONTROL SYSTEM



Control Panel

● Digital H Control Panel - Dual 4x20 Display	Std
● Programmable Crank Limiter	Std
● 7-Day Programmable Exerciser (requires H-Transfer Switch)	Std
● Special Applications Programmable PLC	Std
● RS-232	Std
● RS-485	Std
● All-Phase Sensing DVR	Std
● Full System Status	Std
● Utility Monitoring (Req. H-Transfer Switch)	Std
● 2-Wire Start Compatible	Std
● Power Output (kW)	Std
● Power Factor	Std
● Reactive Power	Std
● All phase AC Voltage	Std
● All phase Currents	Std
● Oil Pressure	Std
● Coolant Temperature	Std
● Coolant Level	Std
● Low Fuel Pressure Indication	Std
● Engine Speed	Std
● Battery Voltage	Std
● Frequency	Std
● Date/Time Fault History (Event Log)	Std
● UL2200 GENprotect™	Std
○ Low-Speed Exercise	Opt
● Isochronous Governor Control	Std
● -40deg C - 70deg C Operation	Std
● Weather Resistant Electrical Connections	Std
● Audible Alarms and Shutdowns	Std
● Not in Auto (Flashing Light)	Std
● On/Off/Manual Switch	Std
● E-Stop (Red Mushroom-Type)	Std
○ Remote E-Stop (Break Glass-Type, Surface Mount)	-
○ Remote E-Stop (Red Mushroom-Type, Surface Mount)	-
○ Remote E-Stop (Red Mushroom-Type, Flush Mount)	-
● NFPA 110 Level I and II (Programmable)	Std
● Remote Communication - RS232	Std

Alarms (Programmable Tolerances, Pre-Alarms and Shutdowns)

● Low Fuel	Std
● Oil Pressure (Pre-programmed Low Pressure Shutdown)	Std
● Coolant Temperature (Pre-programmed High Temp Shutdo	Std
● Coolant Level (Pre-programmed Low Level Shutdown)	Std
● Engine Speed (Pre-programmed Overspeed Shutdown)	Std
● Voltage (Pre-programmed Overvoltage Shutdown)	Std
● Battery Voltage	Std

Other Options

● Single Side Service

● _____

○ _____

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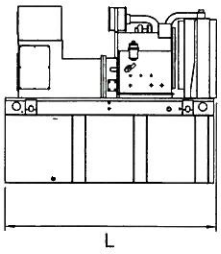
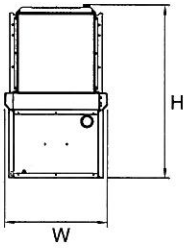
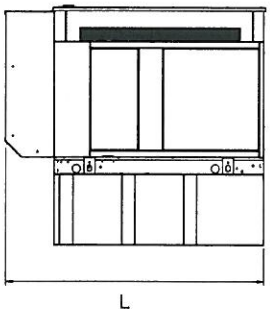
dimensions, weights and sound levels

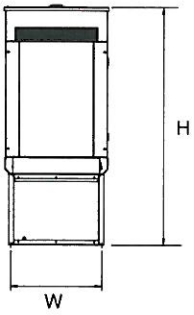




OPEN SET

	TANK SIZE							
	RUNTIME HOURS	CAPACITY (GAL)	TANK VOLUME	L	W	H	WT	dBA*
○	-	-	-	-	-	-	-	84
○	-	-	-	-	-	-	-	
○	-	-	-	-	-	-	-	
○	-	-	-	-	-	-	-	
○	-	-	-	-	-	-	-	
●	48	210	210	76	38	87	3400	
○	-	-	-	-	-	-	-	
○	-	-	-	-	-	-	-	





LEVEL 2 SOUND ENCLOSURE

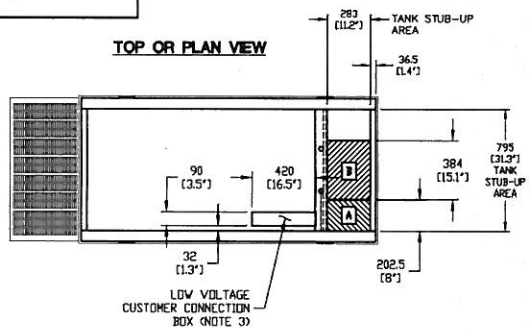
	TANK SIZE							
	RUNTIME HOURS	CAPACITY (GAL)	TANK VOLUME	L	W	H	WT	dBA*
○	-	-	-	-	-	-	-	71
○	-	-	-	-	-	-	-	
○	-	-	-	-	-	-	-	
○	-	-	-	-	-	-	-	
○	-	-	-	-	-	-	-	
●	48	210	210	94.8	38	99	3935	
○	-	-	-	-	-	-	-	
○	-	-	-	-	-	-	-	

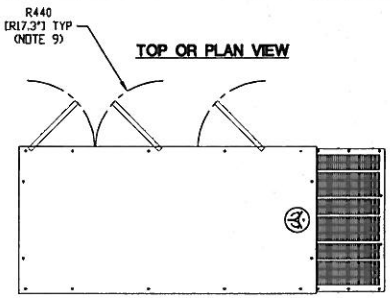
*Required gallons based on 100% of standby rating. Weights consider steel enclosure and are without fuel in tank. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

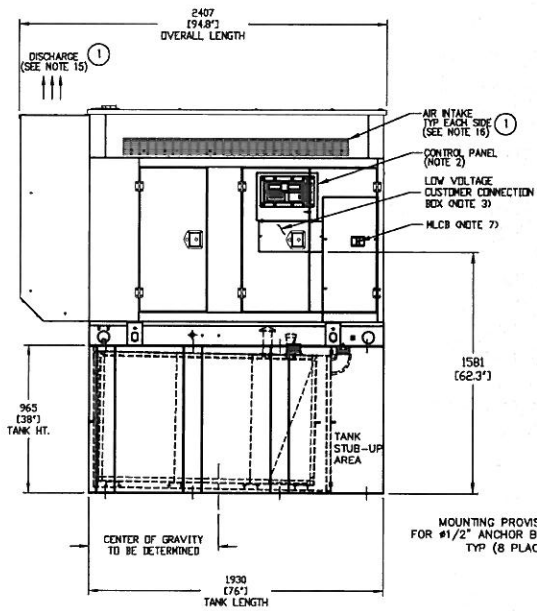
Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

0J2534

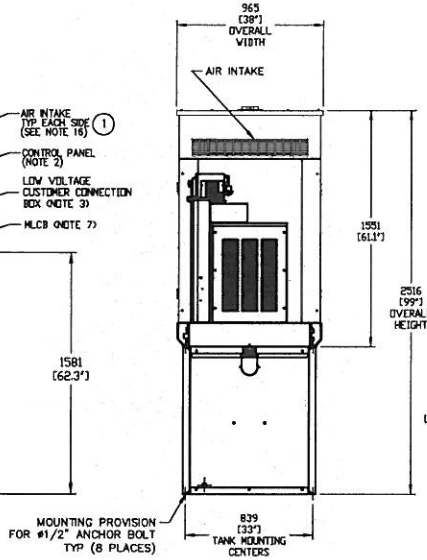




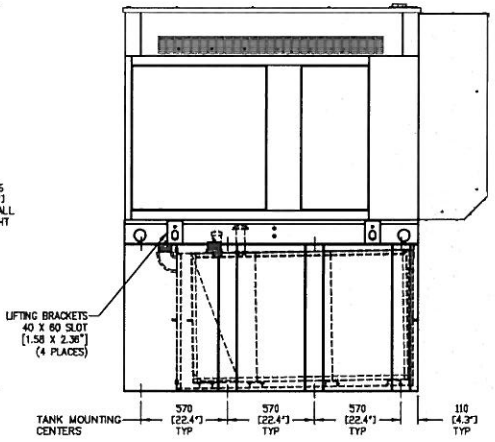
RECOMMENDED ELECTRICAL STUB-UPS (SEE TOP VIEW)	
DESCRIPTION	INSIDE BASE
AC LOAD LEAD CONDUIT GLAND AREA	A
1) LOW VOLTAGE CUSTOMER CONNECTION BOX FOR 120VAC GFCI OUTLET, (STANDARD BLOCK HEATER, BATTERY CHARGER AND OTHER 120 VAC OPTIONS). 2) TRANSFER SWITCH/ COMMUNICATION CONDUITS. COMMUNICATIONS AND 2-WIRE START MUST NOT BE RUN IN CONDUIT WITH AC WIRING.	B SEE NOTE 3



LEFT SIDE VIEW



REAR VIEW



RIGHT SIDE VIEW

NOTES:

1. THE LEFT SIDE OF THE GENERATOR IS SERVICE ACCESSIBLE.
2. 10 AMP BATTERY CHARGER ENCLOSED WITHIN CONTROL PANEL.
3. CONNECTION POINTS FOR CONTROL WIRES. BOTTOM OF LOW VOLTAGE CUSTOMER CONNECTION BOX HAS KNOCKOUTS FOR 1/2" AND 3/4" CONDUIT FITTINGS.
4. GENERATOR MUST BE GROUNDED.
5. 12 VOLT NEGATIVE GROUND SYSTEM.
6. OPTIONAL REMOTE EMERGENCY STOP SHIPPED LOOSE WITH GENERATOR.
7. MAIN LINE CIRCUIT BREAKER (MLCB), AC LOAD LEAD CONNECTION AND AUXILIARY 120/240V CONNECTION.
8. LEVEL 2A SOUND ATTENUATED ENCLOSURE STANDARD WITH GENERATOR.
9. DOORS MUST BE ABLE TO OPEN 90 DEG. TO BE REMOVED. DOORS ARE LOCATED ON THE LEFT SIDE OF THE GENERATOR ONLY.
10. STUB-UPS: BASE TANK REQUIRES ALL STUB-UPS TO BE IN THE REAR TANK STUB-UP AREA.
11. 'A' IS THE STUB UP AREA FOR THE MLCB AND NEUTRAL CONNECTION.
12. SEE DRAWING 0C3850 FOR DUCT REMOVAL. REMOVAL OF FRONT DUCT WILL PROVIDE ACCESS TO MUFFLER.
13. 120VAC ENGINE BLOCK HEATER.
14. 210 GALLON USEABLE CAPACITY BASETANK STANDARD WITH GENERATOR.
15. MUST ALLOW FREE FLOW OF DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
16. MUST ALLOW FREE FLOW OF INTAKE AIR. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
17. IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS.

WEIGHT DATA (INCLUDES WOODEN SHIPPING SKID)

ENCLOSED GENERATOR WITH EMPTY FUEL TANK – TO BE DETERMINED

UNITS: mm [INCHES]

PRELIMINARY

INSTALLATION DRAWING

INSTALLATION D4.5L G17 50KW

ENCLOSED LEVEL 2A

GENERAC POWER SYSTEMS
Waukesha
P.O. BOX 8
WAUKESHA, WIS. 53187

FILE NAME	0J2534.DWG	SIZE B
SCALE	NTS	FIRST USE AT&T
DWG NO.	0J2534	REV 1