

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK  
**CITY OF PORTLAND**

Please Read  
 Application And  
 Notes, If Any,  
 Attached

PERMIT ISSUED

Permit Number: 070127  
 FEB - 9 2007

CITY OF PORTLAND

This is to certify that IMMUCELL CORPORATION / Scott Arnold

has permission to Install Pad and Generator

AT 54 EVERGREEN DR

329 A003001

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of the State and of the Ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and when permission procured before this building or part thereof is laid or closed-in. **24 HOUR NOTICE IS REQUIRED.**

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

**OTHER REQUIRED APPROVALS**

Fire Dept. \_\_\_\_\_

Health Dept. \_\_\_\_\_

Appeal Board \_\_\_\_\_

Other \_\_\_\_\_

Department Name

*Jamie Bouke* 2/9/07  
 Director - Building & Inspection Services

**PENALTY FOR REMOVING THIS CARD**

**City of Portland, Maine - Building or Use Permit Application**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 07-0127	Issue Date:	CBL: 329 A003001
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Location of Construction: 54 EVERGREEN DR	Owner Name: IMMUCELL CORPORATION	Owner Address: 56 EVERGREEN DR	Phone:
Business Name:	Contractor Name: Scott Arnold	Contractor Address: 263 Town Farm Rd New Gloucester	Phone: 2078312991
Lessee/Buyer's Name	Phone:	Permit Type: Generator	Zone: IM

Past Use: Commercial / Office Warehouse	Proposed Use: Commercial / Office Warehouse Install Pad and Generator	Permit Fee:	Cost of Work: \$16,000.00	CEO District: 5
Proposed Project Description: Install Pad and Generator		FIRE DEPT: <input type="checkbox"/> Approved <input type="checkbox"/> Denied  N/A	INSPECTION: Use Group: u Type: Generator	
		Signature: <i>Craig</i>	Signature: <i>JMB 2/9/07</i>	

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

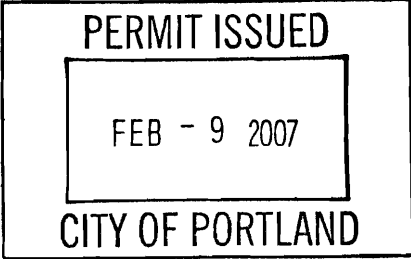
Action:  Approved  Approved w/Conditions  Denied

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Permit Taken By: dmartin	Date Applied For: 02/06/2007	<b>Zoning Approval</b>		
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- This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
- Building permits do not include plumbing, septic or electrical work.
- Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..

Special Zone or Reviews	Zoning Appeal	Historic Preservation
<input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/>	<input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied	<input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied <i>AFM</i>
Date: _____	Date: _____	Date: _____



**CERTIFICATION**

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

**City of Portland, Maine - Building or Use Permit**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

<b>Permit No:</b> 07-0127	<b>Date Applied For:</b> 02/06/2007	<b>CBL:</b> 329 A003001
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<b>Location of Construction:</b> 54 EVERGREEN DR	<b>Owner Name:</b> IMMUCELL CORPORATION	<b>Owner Address:</b> 56 EVERGREEN DR	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> Scott Arnold	<b>Contractor Address:</b> 263 Town Farm Rd New Gloucester	<b>Phone</b> (207) 831-2991
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Generator	

<b>Proposed Use:</b> Commercial / Office Warehouse Install Pad and Generator	<b>Proposed Project Description:</b> Install Pad and Generator
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**Dept:** Zoning      **Status:** Approved with Conditions      **Reviewer:** Ann Machado      **Approval Date:** 02/06/2007

**Note:** Section 14-252(a)(4)(b) exempts emergency devices from the maximum permissible sound levels. This generator is a emergency back up generator.      **Ok to Issue:**

1) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

**Dept:** Building      **Status:** Approved      **Reviewer:**      **Approval Date:**

**Note:**      **Ok to Issue:**

**Dept:** Fire      **Status:** Not Applicable      **Reviewer:** Cptn Greg Cass      **Approval Date:** 02/07/2007

**Note:**      **Ok to Issue:**

**Comments:**

2/6/2007-amachado: Applied for site plan exemption 2/6/07.

2/9/2007-gg: received site plan exemption as of 2/9/07. Put with permit. /gg



# General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: <u>54 Evergreen</u>		
Total Square Footage of Proposed Structure		Square Footage of Lot
Tax Assessor's Chart, Block & Lot Chart#      Block#      Lot# <u>329      A      3</u>	Owner: <u>Immucell Corp.</u>	Telephone:
Lessee/Buyer's Name (If Applicable)	Applicant name, address & telephone: <u>Scott Arnold Electric, Inc.</u> <u>263 Town Farm Rd.</u> <u>New Gloucester, ME 04260</u> <u>office - 926-5200</u> <u>cell - 831-2991</u>	Cost Of Work: \$ <u>16,000.00</u> Fee: \$ <u>180.00</u> C of O Fee: \$ _____
Current legal use (i.e. single family) <u>Immucell office/warehouse</u> If vacant, what was the previous use? _____ Proposed Specific use: _____ Is property part of a subdivision? <u>NO</u> If yes, please name _____ Project description: <u>Onan 75KW 480V, 3φ Generator</u> <u>Emergency Back up Power</u> <u>Installed on a cement Pad. see Attached</u>	Contractor's name, address & telephone: <u>Scott Arnold</u> <u>263 Town Farm Rd.</u> <u>New Gloucester, ME 04260</u> Who should we contact when the permit is ready: <u>Scott Arnold</u> Mailing address: _____ Phone: <u>831-2991</u>	

DEPT. OF BUILDING INSPECTION  
CITY OF PORTLAND, ME

FEB 6 2007

**RECEIVED**

Please submit all of the information outlined in the Commercial Application Checklist.  
Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information visit us on-line at [www.portlandmaine.gov](http://www.portlandmaine.gov), stop by the Building Inspections office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant: Scott Arnold Date: 2/6/07

This is not a permit; you may not commence ANY work until the permit is issued.

Notes: Plat Plan w/ location of generator  
DB of Generator. Spec. sheet  
(Noise level)

CC

Applicant: Scott Arnold Electric, Inc.

Date: 2/6/07

Address: 54 Evergreen Drive - Immucell Corp.

C-B-L: 329-A-003

Permit # 07-0127

CHECK-LIST AGAINST ZONING ORDINANCE

Date - existing building

Zone Location - IM

Interior or corner lot -

Proposed Use/Work - install 6' x 16' concrete pad for backup (emergency) generator

Sewage Disposal -

Lot Street Frontage -

Front Yard - ~~25'~~

Rear Yard - 25' - ~~40'~~<sup>35'</sup> s ceded.

Side Yard - 25' - ~~20'~~<sup>26'</sup> s ceded.

Projections -

Width of Lot -

Height -

Lot Area -

Lot Coverage Impervious Surface 100% OK

Area per Family -

Off-street Parking -

Loading Bays -

Site Plan - applied for site plan exemption

Shoreland Zoning/Stream Protection - N/A

Flood Plains -

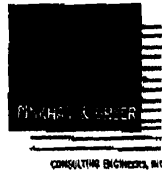
\* Noise - 14-252(a)(3)

- b. Impulse sounds are defined as sound events characterized by brief excursions of sound pressure, each with a duration of less than one (1) second.
2. *Measurement:* Sound levels shall be measured with a sound level meter with a frequency weighting network manufactured according to standards prescribed by the American National Standards Institute (ANSI) or its successor body. Measurements shall be made at all major lot lines of the site, at a height of at least four (4) feet above the ground surface. In measuring sound levels under this section, sounds with a continuous duration of less than sixty (60) seconds shall be measured by the maximum reading on a sound level meter set to the A weighted scale and the fast meter response (L maxfast). Sounds with a continuous duration of sixty (60) seconds or more shall be measured on the basis of the energy average sound level over a period of sixty (60) seconds (LEQ<sub>1</sub>).
3. *Maximum permissible sound levels:* The maximum permissible sound level of any continuous, regular or frequent source of sound produced by an activity shall be as follows:
  - a. Seventy (70) dBA between the hours of 7:00 a.m. and 10:00 p.m.
  - b. Fifty-five (55) dBA between the hours of 10:00 p.m. and 7:00 a.m., as measured at or within the boundaries of any residential zone.

In addition to the sound level standards established above, all uses located within this zone shall employ best practicable sound abatement techniques to prevent tonal sounds and impulse sounds or, if such tonal and impulse sounds cannot be prevented, to minimize the impact of such sounds in residential zones.

4. *Exemptions:*

- a. Noises created by construction and maintenance activities between 7:00 a.m. and 10:00 p.m. are exempt from the maximum permissible sound levels set forth in subsection (d)3 of this section. Construction activities on a site abutting any residential use between the hours of 10:00 p.m. of one (1) day and 7:00 a.m. of the following day shall not exceed fifty (50) dBA.
- b. The following uses and activities shall also be exempt from the requirements of subsection (d)3 of this section:
  - i. The noises of safety signals, warning devices, emergency pressure relief valves, and any other emergency devices.
  - ii. Traffic noise on public roads or noise created by airplanes and railroads.
  - iii. Noise created by refuse and solid waste collection, provided that the activity is conducted between 6:00 a.m. and 7:00 p.m.
  - iv. Emergency construction or repair work by public utilities, at any hour.
  - v. Noise created by any recreational activities which are permitted by law and for which a license or permit has been granted by the city, including but not limited to parades, sporting events, and fireworks displays.
- (b) *Electromagnetic interference*: There shall be no electromagnetic interference that adversely affects the operation of any equipment other than that belonging to the creator of such interference, or that does not conform to the regulations of the Federal Communications Commission.
- (c) *Vibrations*: Any use creating earthshaking vibrations



170 U.S. Route One  
Falmouth, Maine 04105  
(207) 781-5242  
FAX (207) 781-4245

JOB IMMUCELL

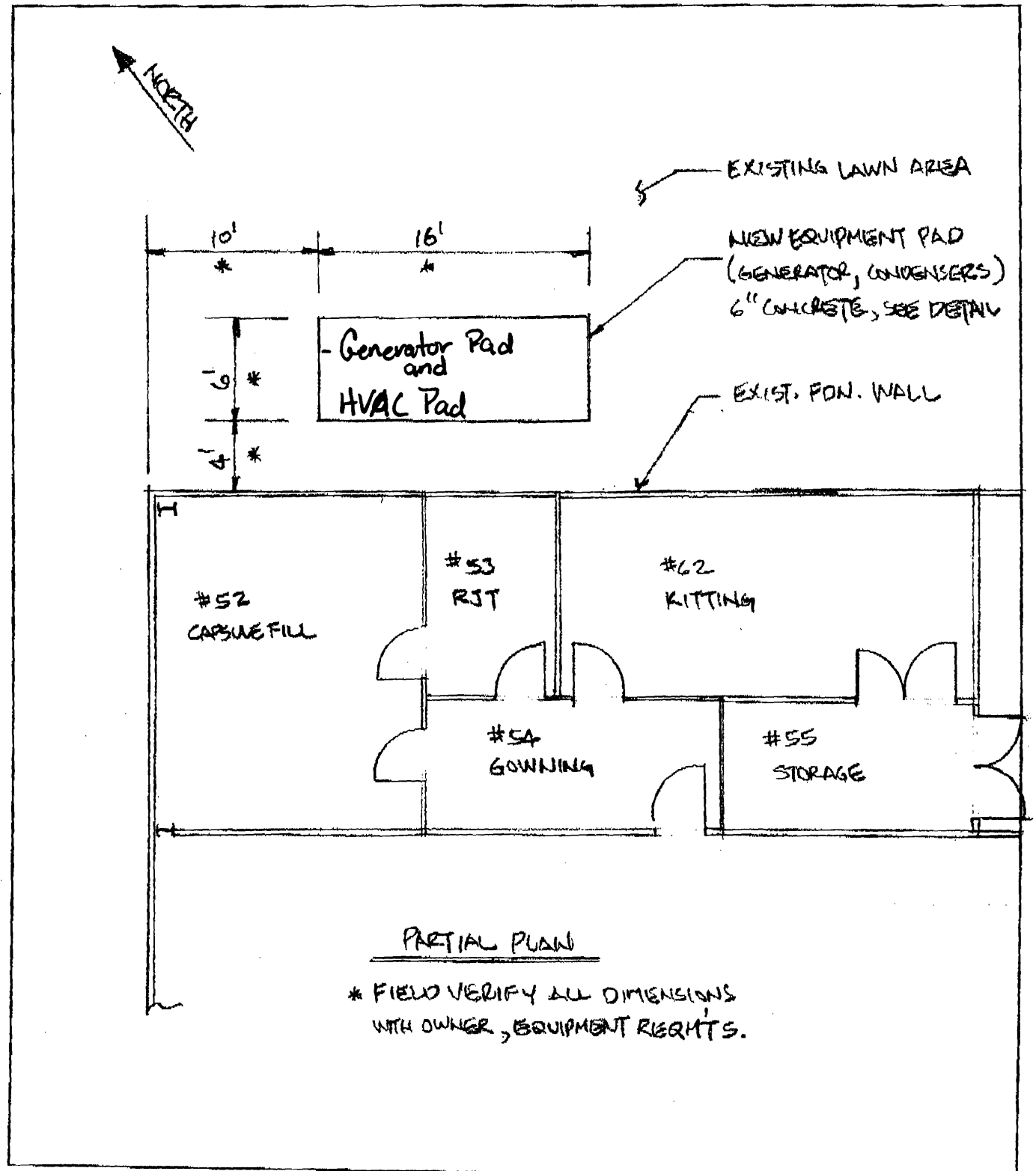
SHEET NO. 1 OF 3

CALCULATED BY JAM III DATE 10/27/06

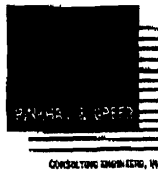
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

SCALE \_\_\_\_\_

CMP. # 441-01-07406014







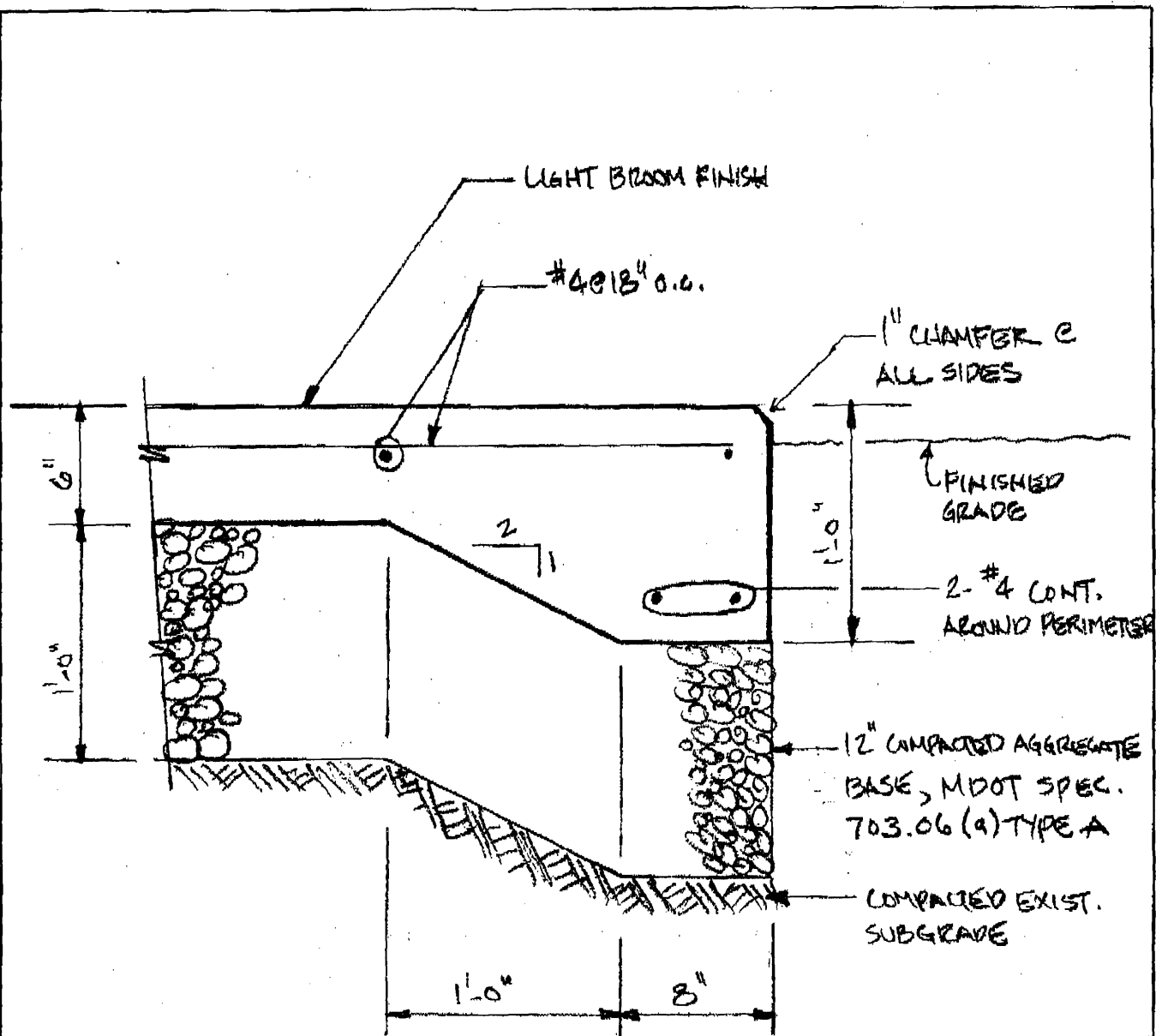
170 U.S. Route One  
Falmouth, Maine 04105  
(207) 781-5242  
FAX (207) 781-4245

JOB INMU02SHEET NO. 3OF 3CALCULATED BY JAMIEDATE 10/27/06

CHECKED BY \_\_\_\_\_

DATE \_\_\_\_\_

SCALE \_\_\_\_\_



### EQUIPMENT PAD DETAIL

- 4000 PSI CONCRETE, 6% AIR ENTRAINMENT, 4" SLUMP (MAX)
- 3/4" STONE (MAX).
- 7 DAY CURE WITH POLYETHYLENE SHEET / KRAFT PAPER COVER
- PROTECT FROM FREEZING WITH INSULATION DURING CURE TIME

Scott Arnold Electric

L MUCEL Inc.



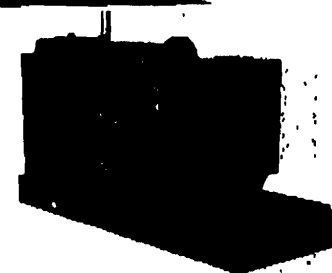
## Spark-Ignited Generator Set Model GGHF 60 Hz

Natural Gas - 70 kW, 87 kVA Standby

60 kW, 75 kVA Prime

Propane - 75 kW, 94 kVA, Standby ←

64 kW, 80 kVA, Prime



### Description

The Cummins Power Generation GG-series commercial generator set is a fully integrated power generation system providing optimum performance, reliability, and versatility for stationary standby or prime power applications.

A primary feature of the GG GenSet is strong motor-starting capability and fast recovery from transient load changes. The torque-matched system includes a heavy-duty Ford 4-cycle spark-ignited engine, an AC alternator with high motor-starting kVA capacity, and an electronic voltage regulator for precise regulation under steady-state or transient loads. The GG GenSet accepts 100% of the nameplate standby rating in one step, in compliance with NFPA 110 requirements.

LP vapor fuel system is standard with several options for natural gas and LP liquid as well as dual fuel.

The GG GenSet offers both user- and environment friendly operation. A low emissions option with NOx below 1.5 gm/hp-hr is available. The standard PowerCommand® digital electronic control is an integrated system that combines engine and alternator controls for high reliability and optimum GenSet performance, and meets NFPA 110 requirements.

A wide range of options, accessories, and services are available, allowing configuration to your specific power generation needs.

Every production unit is factory tested at rated load and power factor. This testing includes demonstration of rated power and single-step rated load pickup. Cummins Power Generation manufacturing facilities are registered to ISO9001 quality standards, emphasizing our commitment to high quality in the design, manufacture, and support of our products. The generator set is CSA certified and is available as UL2200 Listed. The PowerCommand control is UL508 Listed.

All Cummins Power Generation systems are backed by a comprehensive warranty program and supported by a worldwide network of 170 distributors and service branches to assist you with warranty, service, parts, and planned maintenance support.

### Features

- **UL Listed Generator Set** - The complete generator set assembly is available Listed to UL2200.
- **Low Exhaust Emissions** - An optional closed loop fuel control system and 3-way catalytic converter with less than 1.5 gm/hp-hr NOx is available.
- **Ford Heavy-Duty Gas Engine** - Rugged 4-cycle industrial spark-ignited engine delivers reliable power. The electronic governor provides fast response to load changes.
- **Alternator** - Several alternator sizes offer selectable motor-starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads, fault-clearing short-circuit capability, and class H insulation.
- **Control Systems** - The PowerCommand electronic control is standard equipment and provides total genset system integration, including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, AmpSentry™ protection, output metering, auto-shutdown at fault detection, and NFPA 110 compliance. PowerCommand control is Listed to UL508.
- **Cooling Systems** - Standard cooling package provides reliable running at up to 40°C ambient temperature. An optional 50°C cooling system is offered.
- **Integral Vibration Isolation** - Robust skid base supports the engine, alternator, and radiator on isolators, minimizing transmitted vibration.
- **E-Coat Finish** - Dual electro-deposition paint system provides high resistance to scratching, corrosion, and fading.
- **Housings** - Weather-protective and sound-attenuated housings are available.
- **Certifications** - Generator sets are designed, manufactured, tested, and certified to relevant UL, NFPA, ISO, IEC, and CSA standards.
- **Warranty and Service** - Backed by a comprehensive warranty and worldwide distributor service network.

## Generator Set

The general specifications provide representative configuration details. Consult the outline drawing for installation design.

See outline drawing 500-3447 for installation design specifications.

Unit Width, in. (mm)	40.0 (1016)
Unit Height, in. (mm)	49.8 (1265)
Unit Length, in. (mm)	62.8 (2103)
Unit Dry Weight, lb (kg)	2083 (945)
Unit Wet Weight, lb (kg)	2165 (982)
Rated Speed, rpm	1800
Voltage Regulation, No Load to Full Load	±1.0%
Random Voltage Variation	±1.0%
Frequency Regulation	Isynchronous
Random Frequency Variation	±0.6%
Radio Frequency Interference	Meets requirements of most industrial and commercial applications

Cooling	Natural Gas		Propane	
	Standby	Prime	Standby	Prime
Fan Load, HP (kW)	9.5 (7.1)	9.5 (7.1)	9.5 (7.1)	9.5 (7.1)
Coolant Capacity with radiator, US Gal (L)	8.5 (32.2)	8.5 (32.2)	8.5 (32.0)	8.5 (32.0)
Coolant Flow Rate, Gal/min (L/min)	28.0 (106.0)	28.0 (106.0)	28.0 (106.0)	28.0 (106.0)
Heat Rejection To Coolant, Btu/min (MJ/min)	2870.0 (3.0)	2580.0 (2.7)	2840.0 (3.1)	2580 (2.7)
Heat Radiated To Room, Btu/min (MJ/min)	1435.0 (1.5)	1325.0 (1.4)	1470.0 (1.6)	1350 (1.4)
Maximum Coolant Friction Head, psi (kPa)	2.0 (13.8)	2.0 (13.8)	2.0 (13.8)	2 (13.8)
Maximum Coolant Static Head, ft (m)	10.0 (3.0)	10.0 (3.0)	10.0 (3.0)	10 (3.0)
<b>Air</b>				
Combustion Air, scfm (m <sup>3</sup> /min)	180.6 (4.5)	143.0 (4.0)	180.2 (4.5)	142.5 (4.0)
Alternator Cooling Air, scfm (m <sup>3</sup> /min)	1308.0 (37.0)	1308.0 (37.0)	1308.0 (37.0)	1308.0 (37.0)
Radiator Cooling Air, scfm (m <sup>3</sup> /min)	6000.0 (169.8)	6000.0 (169.8)	6000.0 (169.8)	6000.0 (169.8)
Max. Static Restriction, in H <sub>2</sub> O (Pa)	0.50 (124.50)	0.50 (124.50)	0.5 (124.5)	0.5 (124.5)

### Rating Definitions

**Standby Rating based on:** Applicable for supplying emergency power for the duration of normal power interruption. No sustained overload capability is available for this rating. (Equivalent to Fuel Stop Power in accordance with ISO3046, AS2789, DIN6271 and BS5514). Nominally rated.

**Prime (Unlimited Running Time) Rating based on:** Applicable for supplying power in lieu of commercially purchased power. Prime power is the maximum power available at a variable load for an unlimited number of hours. A 10% overload capability is available for limited time. (Equivalent to Prime Power in accordance with ISO8528 and Overload Power in accordance with ISO3046, AS2789, DIN6271, and BS5514). This rating is not applicable to all generator set models.

**Base Load (Continuous) Rating based on:** Applicable for supplying power continuously to a constant load up to the full output rating for unlimited hours. No sustained overload capability is available for this rating. Consult authorized distributor for rating. (Equivalent to Continuous Power in accordance with ISO8528, ISO3046, AS2789, DIN6271, and BS5514). This rating is not applicable to all generator set models.

### Site Derating Factors

#### Natural Gas

Engine power available up to 1000 ft (305 m) at ambient temperatures up to 85°F (29°C). Above 1000 ft (305 m) derate at 4% per 1000 ft (305 m), and 1% per 10°F (2% per 11°C) above 85°F (29°C).

#### Propane

Engine power available up to 1000 ft (305 m) at ambient temperatures up to 85°F (29°C). Above 1000 ft (305 m) derate at 4% per 1000 ft (305 m), and 1% per 10°F (2% per 11°C) above 85°F (29°C).

## Engine

Rugged Ford® spark-ignited engines are designed to operate efficiently on gaseous fuels. Fuel system options available for natural gas, LP vapor, and LP liquid. In addition, for extra system reliability, combination natural gas/LP vapor or natural gas/LP liquid with automatic changeover are available.

Electronic governing provides precise speed regulation, especially useful for applications requiring constant (isochronous) frequency regulation such as Uninterruptible Power Supply (UPS) systems, non-linear loads, or sensitive electronic loads. Optional coolant heaters are recommended for all emergency standby installations or for any application requiring fast load acceptance after start-up.

### Specifications - Engine

<b>Base Engine</b>	Ford Model WSG-1068, naturally aspirated
<b>Displacement in<sup>3</sup> (L)</b>	412.5 (6.6)
<b>Overspeed Limit, rpm</b>	2250 ±50
<b>Regenerative Power, kW</b>	16.00
<b>Cylinder Block Configuration</b>	Cast iron, V 10 cylinder
<b>Battery Capacity</b>	200 amps minimum at ambient temperature of 32°F (0°C)
<b>Battery Charging Alternator</b>	65 amps
<b>Starting Voltage</b>	12-volt, negative ground
<b>Lube Oil Filter Types</b>	Single spin-on canister-combination full flow with bypass
<b>Standard Cooling System</b>	104°F (40°C) ambient radiator cooling system
<b>Standard Fuel</b>	LP vapor is standard. Optional LP liquid, natural gas, LP liquid/natural gas and LP vapor/natural gas

	Natural Gas		Propane						
	Standby	Prime	Standby	Prime					
<b>Power Output</b>									
Gross Engine Power Output, bhp (kWm)	115.0 (85.8)	98.0 (73.1)	126.0 (94.0)	107.0 (79.8)					
BMEP at Rated Load, psi (kPa)	121.0 (834.3)	104.0 (717.1)	129.0 (889.4)	111.0 (765.3)					
Bore, in. (mm)	3.55 (90.2)	3.55 (90.2)	3.55 (90.2)	3.55 (90.2)					
Stroke, in. (mm)	4.17 (105.9)	4.17 (105.9)	4.17 (105.9)	4.17 (105.9)					
Piston Speed, ft/min (m/s)	1250.0 (6.4)	1250.0 (6.4)	1250.0 (6.4)	1250.0 (6.4)					
Compression Ratio	9.0:1	9.0:1	9.0:1	9.0:1					
Lube Oil Capacity, qt. (L)	6.0 (5.7)	11.0 (10.4)	6.0 (5.7)	11.0 (10.4)					
<b>Fuel Flow</b>									
Minimum Operating Pressure, in. H <sub>2</sub> O (kPa)	7.0 (1.7)	7.0 (1.7)	7.0 (1.7)	7 (2)					
Maximum Operating Pressure, in. H <sub>2</sub> O (kPa)	13.6 (3.4)	13.6 (3.4)	13.6 (3.4)	14 (3)					
<b>Air Cleaner</b>									
Maximum Air Cleaner Restriction, in. H <sub>2</sub> O (kPa)	15.0 (3.7)	15.0 (3.7)	15.0 (3.7)	15.0 (3.7)					
<b>Exhaust</b>									
Exhaust Flow at Rated Load, cfm (m <sup>3</sup> /min)	500.0 (14.2)	435.0 (12.3)	600.0 (14.2)	495.0 (12.3)					
Exhaust Temperature, °F (°C)	1088.0 (588.7)	1043.0 (561.7)	1119 (604)	1060 (571)					
Max Back Pressure, in. H <sub>2</sub> O (kPa)	20.0 (5.0)	20.0 (5.0)	20.0 (5.0)	20.0 (5.0)					
<b>Fuel Consumption - Natural Gas</b>	Standby		Prime						
60 Hz Ratings, kW (kVA)	70 (87)		60 (75)						
	Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
	cfm	363.0	557.0	735.0	899.0	346.0	494.0	650.0	807.0
	m <sup>3</sup> /hr	10.3	15.8	20.8	25.4	9.8	14.0	18.4	22.8
<b>Fuel Consumption - Propane</b>	Standby		Prime						
60 Hz Ratings, kW (kVA)	75 (94)		64 (80)						
	Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
	cfm	145.0	214.0	289.0	366.0	138.0	193.0	253.0	320.0
	m <sup>3</sup> /hr	4.1	6.1	8.2	10.4	TBD	5.5	7.2	9.1

## Alternator

Several alternators are available for application flexibility, based on the required motor starting kVA and other requirements. Larger alternator sizes have lower temperature rise for longer life of the alternator insulation system. In addition, larger alternator sizes can provide a cost-effective use of engine power in across-the-line motor starting applications and can be used to reduce voltage waveform distortion caused by non-linear loads.

These single-bearing alternators couple directly to the engine flywheel with flexible discs, for drivetrain reliability and durability. No gear reducers or speed changers are used. Two-thirds pitch windings eliminate third-order harmonic content of the AC voltage waveform and provide the standardization desired for paralleling of generator sets. The standard excitation system is a self (shunt) excited system with the voltage regulator powered directly from the generator set output.

### Alternator Application Notes

**Separately Excited Permanent Magnet Generator (PMG) System** - This option uses an integral PMG to supply power to the voltage regulator. A PMG system generally has better motor starting performance, lower voltage dip upon load application, and better immunity from problems with harmonics in the main alternator output induced by non-linear loads. This option is recommended for use in applications that have large transient loads, sensitive electronic loads (especially UPS applications), harmonic content, or that require sustained short-circuit current (sustained 3-phase short circuit current at approximately 3 times rated for 10 seconds).

**Alternator Sizes** - On any given model, various alternator sizes are available to meet individual application needs. Alternator sizes are differentiated by maximum winding temperature rise, at the generator set standby or prime rating, when operated in a 40°C ambient environment. Available temperature rises range from 80°C to 150°C. Not all temperature rise selections are available on all models. Lower temperature rise is accomplished using larger alternators at lower current density. Lower temperature rise alternators have higher motor starting kVA, lower voltage dip upon load application, and they are generally recommended to limit voltage distortion and heating due to harmonics induced by non-linear loads.

**Alternator Space Heater** - is available and recommended, to inhibit condensation.

### Available Output Voltages

Three Phase	Single Phase
[ ] 110/190	[ ] 115/230
[ ] 115/200	[ ] 120/240
[ ] 120/208	
[ ] 110/220	
[ ] 127/220	
[ ] 115/230	
[ ] 120/240	
[ ] 139/240	
[ ] 220/380	
[ ] 230/400	
[ ] 240/416	
[ ] 255/440	
[ ] 277/240	
[ ] 347/600	

### Specifications – Alternator

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled by flexible disc
Insulation System	Class H per NEMA MG1-1.85
Standard Temperature Rise	150°C Standby
Exciter Type	Shunt
Phase Relation	A (U), B (V), C (W)
Alternator Cooling	Direct drive centrifugal blower
AC Waveform Total Harmonic Distortion	<5% total no load to full linear load
Telephone Influence Factor (TIF)	<3% for any single harmonic
Telephone Harmonic Factor (THF)	<50 per NEMA MG1-22.43
	<3

Natural Gas													
Three Phase Table	105° C	105° C	105° C	105° C	125° C	125° C	125° C	125° C	150° C	160° C	160° C		
Feature Code	B418	B415	B268	B304	B417	B414	B267	B303	B418	B413	B419		
Alternator Data Sheet Number	205	205	207	205	205	205	204	204	204	204	204		
Voltage Ranges	110/180 Thru 120/208 220/380 Thru 240/418	120/208 Thru 138/240 240/418 Thru 277/480	120/208 Thru 138/240 240/418 Thru 277/480	347/600	110/180 Thru 120/208 220/380 Thru 240/418	120/208 Thru 138/240 240/418 Thru 277/480	120/208 Thru 138/240 240/418 Thru 277/480	347/600	110/180 Thru 120/208 220/380 Thru 240/418	120/208 Thru 138/240 240/418 Thru 277/480	347/600		
Surge kW	71.4	71.3	72	71.8	71.4	71.3	72	71.4	70.6	70.5	71.4		
Motor Starting kVA (at 90% sustained voltage)	Shunt	260	260	360	260	260	360	231	231	231	231		
	PMG	306	306	423	306	306	423	272	272	272	272		
Full Load Current - Amps at Standby Rating	110/180 268	120/208 243	138/240 211	220/380 133	230/400 126	240/418 122	266/440 115	277/480 105	347/600 84				

Propane												
Three Phase Table	105° C	105° C	105° C	125° C	125° C	125° C	150° C	150° C	150° C	150° C		
Feature Code	B418	B415	B304	B417	B414	B267	B303	B418	B413	B419		
Alternator Data Sheet Number	205	205	205	205	205	207	204	205	205	204		
Voltage Ranges	110/180 Thru 120/208 220/380 Thru 240/418	120/208 Thru 138/240 240/418 Thru 277/480	347/600	110/180 Thru 120/208 220/380 Thru 240/418	120/208 Thru 138/240 240/418 Thru 277/480	120/208 Thru 138/240 240/418 Thru 277/480	347/600	110/180 Thru 120/208 220/380 Thru 240/418	120/208 Thru 138/240 240/418 Thru 277/480	347/600		
Surge kW	78.7	78.8	78.2	78.7	78.5	78.5	78.6	78.7	78.5	78.8		
Motor Starting kVA (at 90% sustained voltage)	Shunt	260	313	260	260	360	231	260	260	251		
	PMG	306	368	306	306	423	272	306	306	272		
Full Load Current - Amps at Standby Rating	110/180 265	120/208 261	138/240 228	220/380 143	230/400 135	240/418 130	266/440 123	277/480 113	347/600 90			

Notes:

1. Single phase power can be taken from a three phase generator set at up to 2/3 set rated 3-phase kW at 1.0 power factor. Also see Note 2 below.

Natural Gas										
Single Phase Table	105° C	105° C	105° C	105° C	125° C	125° C	125° C	125° C		
Feature Code	B418	B415	B274	B268	B417	B414	B273	B267		
Alternator Data Sheet Number	205	205	206	207	205	205	205	207		
Voltage Ranges	120/240	120/240	120/240	120/240	120/240	120/240	120/240	120/240		
Surge kW	69.9	69.9	71.1	70	68.8	68.9	70.7	70		
Motor Starting kVA (at 90% sustained voltage)	Shunt	165	155	185	215	155	155	165	215	
	PMG	183	183	220	250	183	183	183	260	

Full Load Current - Amps at Standby Rating	115/230 203	115/230 304	120/240 185	120/240 292					
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Propane									
Single Phase Table	105° C	105° C	105° C	125° C	125° C	125° C			
Feature Code	B418	B415	B274	B417	B414	B273	B267		
Alternator Data Sheet Number	205	205	207	205	205	205	207		
Voltage Ranges	120/240	120/240	120/240	120/240	120/240	120/240	120/240		
Surge kW	77.1	77.7	78.1	77.1	77.1	78.2	77		
Motor Starting kVA (at 90% sustained voltage)	Shunt	166	185	215	155	155	185	216	
	PMG	183	220	250	183	183	220	250	

Full Load Current - Amps at Standby Rating	115/230 218	115/230 325	120/240 208	120/240 313					
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Notes:

1. The broad range alternators can supply single phase output up to 2/3 set rated 3-phase kW at 1.0 power factor.  
 2. The extended stack (full single phase output) and 4 lead alternators can supply single phase output up to full set rated 3-phase kW at 1.0 power factor.

## Control System

			<b>PowerCommand Control with AmpSentry™ Protection</b> <ul style="list-style-type: none"> <li>The PowerCommand Control is an integrated generator set control system providing governing, voltage regulation, engine protection, and operator interface functions.</li> <li>PowerCommand Controls include integral AmpSentry protection. AmpSentry provides a full range of alternator protection functions that are matched to the alternator provided.</li> <li>Controls provided include Battery monitoring and testing features, and Smart-Starting control system.</li> <li>InPower PC-based service tool available for detailed diagnostics.</li> <li>Available with Echelon LonWorks™ network interface.</li> <li>NEMA 3R enclosure.</li> <li>Suitable for operation in ambient temperatures from -40C to +70C, and altitudes to 13,000 feet (5000 meters).</li> <li>Prototype tested; UL, CSA, and CE compliant.</li> </ul>		
<b>AmpSentry AC Protection</b> <ul style="list-style-type: none"> <li>Overcurrent and short circuit shutdown</li> <li>Overcurrent warning</li> <li>Single &amp; 3-phase fault regulation</li> <li>Over and under voltage shutdown</li> <li>Over and under frequency shutdown</li> <li>Overload warning with alarm contact</li> <li>Reverse power and reverse Var shutdown</li> <li>Excitation fault</li> </ul>		<b>Engine Protection</b> <ul style="list-style-type: none"> <li>Overspeed shutdown</li> <li>Low oil pressure warning and shutdown</li> <li>High coolant temperature warning and shutdown</li> <li>High oil temperature warning (optional)</li> <li>Low coolant level warning or shutdown</li> <li>Low coolant temperature warning</li> <li>High and low battery voltage warning</li> <li>Weak battery warning</li> <li>Dead battery shutdown</li> <li>Fail to start (overcrank) shutdown</li> <li>Fail to crank shutdown</li> <li>Redundant start disconnect</li> <li>Cranking lockout</li> <li>Sensor failure indication</li> </ul>		<b>Operator Interface</b> <ul style="list-style-type: none"> <li>OFF/MANUAL/AUTO mode switch</li> <li>MANUAL RUN/STOP switch</li> <li>Panel lamp test switch</li> <li>Emergency Stop switch</li> <li>Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls, and adjustments</li> <li>LED lamps indicating genset running, hot in auto, common warning, common shutdown</li> <li>(5) configurable LED lamps</li> <li>LED Bargraph AC data display (optional)</li> </ul>	
<b>Alternator Data</b> <ul style="list-style-type: none"> <li>Line-to-line and line-to-neutral AC volts</li> <li>3-phase AC current</li> <li>Frequency</li> <li>Total and individual phase kW and kVA</li> </ul>		<b>Engine Data</b> <ul style="list-style-type: none"> <li>DC voltage</li> <li>Lube oil pressure</li> <li>Coolant temperature</li> <li>Lube oil temperature (optional)</li> </ul>		<b>Other Data</b> <ul style="list-style-type: none"> <li>Genset model data</li> <li>Start attempts, starts, running hours</li> <li>KW hours (total and since reset)</li> <li>Fault history</li> <li>Load profile (hours less than 30% and hours more than 90% load)</li> <li>System data display (optional with network and other PowerCommand gensets or transfer switches)</li> </ul>	
<b>Governing</b> <ul style="list-style-type: none"> <li>Integrated digital electronic isochronous governor</li> <li>Temperature dynamic governing</li> <li>Smart idle speed mode</li> <li>Glow plug control (some models)</li> </ul>		<b>Voltage Regulation</b> <ul style="list-style-type: none"> <li>Integrated digital electronic voltage regulator</li> <li>3-phase line to neutral sensing</li> <li>PMG (Optional)</li> <li>Single and three phase fault regulation</li> <li>Configurable torque matching</li> </ul>		<b>Control Functions</b> <ul style="list-style-type: none"> <li>Data logging on faults</li> <li>Fault simulation (requires InPower)</li> <li>Time delay start and cooldown</li> <li>Cycle cranking</li> <li>(4) Configurable customer inputs</li> <li>(4) Configurable customer outputs</li> <li>(8) Configurable network inputs and (16) outputs (with optional network)</li> </ul>	
<b>Options</b>					
<input type="checkbox"/> Power Transfer Control <input type="checkbox"/> Analog AC Meter Display <input type="checkbox"/> Thermostatically Controlled Space Heater		<input type="checkbox"/> Key-type mode switch <input type="checkbox"/> Ground fault module <input type="checkbox"/> Auxiliary Relays (3)		<input type="checkbox"/> Echelon LonWorks interface <input type="checkbox"/> Digital input and output module(s) (loose) <input type="checkbox"/> Remote annunciator (loose)	

## Generator Set Options

### Engine

- 120/240 V, 1500 W coolant heaters

### Cooling System

- 122°F (50°C) ambient cooling system
- Remote radiator cooling

### Fuel System

- LP liquid
- Natural gas
- Natural gas/LP vapor with automatic changeover
- Natural gas/LP liquid with automatic changeover
- Low Emission 1.5grrvhp-hr NOx

### Alternator

- 105°C rise alternator
- 125°C rise alternator
- 150°C rise alternator
- 120/240 V, 100 W anti-condensation heater
- 12 lead, broad range, extended stack (full single phase output)
- Lower broad range
- PMG excitation
- Upper broad range
- Single phase (4 lead)

### Exhaust System

- Adapter NPT to Slip Fit
- Mounted residential muffler

### Generator Set

- AC entrance box
- Battery charger
- Battery rack
- Coolant drain extension
- Duct Adapter
- Export box packaging
- Main line circuit breaker
- Oil drain extension
- Quiet Site I housing with silencer
- Quiet Site II housing with silencer
- Remote annunciator panel
- UL2200 Listed
- Weather protective enclosure with silencer
- 2 year prime power, 5000 hours, warranty
- 2 year standby warranty
- 5 year basic power warranty
- 5 year comprehensive warranty

## Accessories and Services

A wide range of products and services is available to match your power generation system requirements. Cummins Power Generation products and services include:

- Diesel and Spark-Ignited Generator Sets
- Transfer Switches
- Bypass Switches
- Parallel Load Transfer Equipment
- Digital Paralleling Switchgear
- PowerCommand Network and Software
- Distributor Application Support
- Planned Maintenance Agreements



## Warranty

All components and subsystems are covered by an express limited one-year warranty. Other optional and extended factory warranties and local distributor maintenance agreements are available. Contact your distributor/dealer for more information.

## Certifications



ISO9001 - This generator set was designed and manufactured in facilities certified to ISO9001.



CSA - This generator set is CSA certified to product class 4215-01.



PTS - The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Products bearing the PTS symbol have been subjected to demanding tests in accordance to NFPA 110 Level 1 to verify the design integrity and performance under both normal and abnormal operating conditions including short circuit, endurance, temperature rise, torsional vibration, and transient response, including full load pickup.



UL - The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies. The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage.

**See your distributor for more information**



**Cummins Power Generation**  
 1400 73rd Avenue N.E.  
 Minneapolis, MN 55432  
 763.574.5000  
 Fax: 763.574.5298  
[www.cumminspower.com](http://www.cumminspower.com)

Cummins and PowerCommand are registered trademarks of Cummins Inc.  
 AmpSentry is a trademark of Cummins Inc.  
 LonWorks is a registered trademark of Echelon.  
 Ford is a registered trademark of the Ford Motor Company.

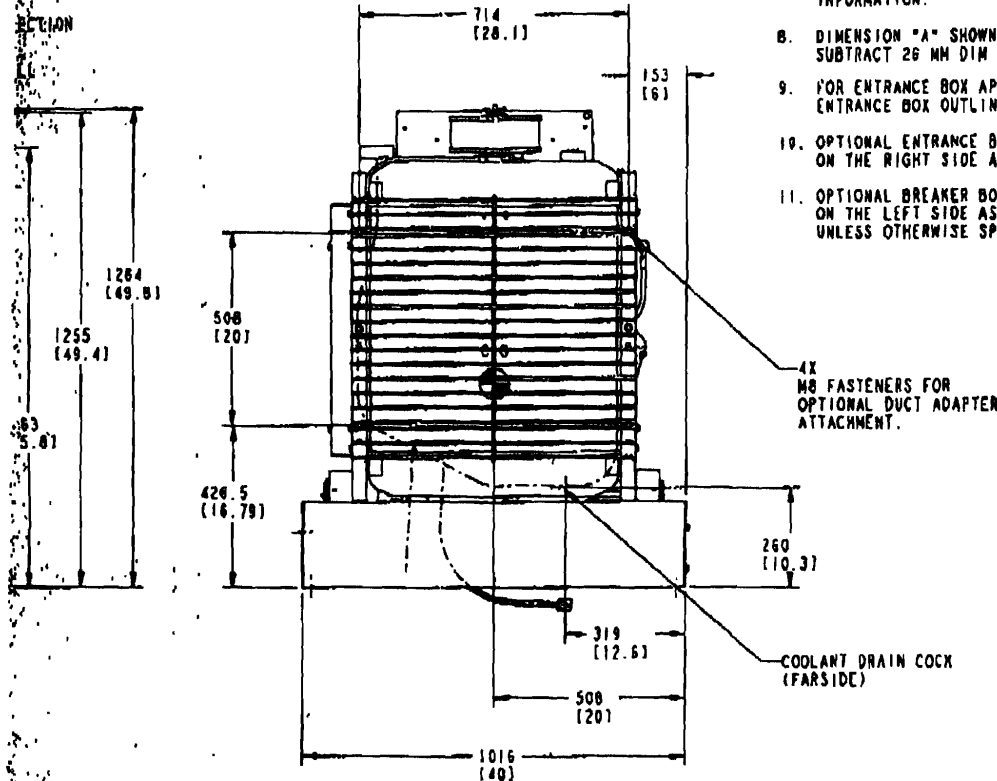
**Important:** Backfeed to a utility system can cause electrocution and/or property damage. Do not connect generator sets to any building electrical system except through an approved device or after building main switch is open.

REV. NO.	REV.	DESCRIPTION	DATE	BY	CHKD.	APPROVED	DATE
FR010050	A	PRODUCTION RELEASE	-	T. BERG	MLS		02-07-02
FR012171	B	ADDED NOTES 9, 10 & 11	-	M. SEPPANEN	MS		08-07-02

TABULATION			
ALTERNATOR DATA SHEET	DIM "A"	DIM "B"	GENERATOR SET WET WEIGHT kg lb
203	1962 (77.2)	1028.6 (40.5)	859 (1893)
204	1982 (77.2)	1043.3 (41.0)	879 (1937)
205	2007 (78.0)	1075.3 (43.3)	929 (2048)
206	1999 (78.7)	1101.6 (43.4)	958 (2112)
207	1999 (78.7)	1117.6 (44.0)	982 (2165)

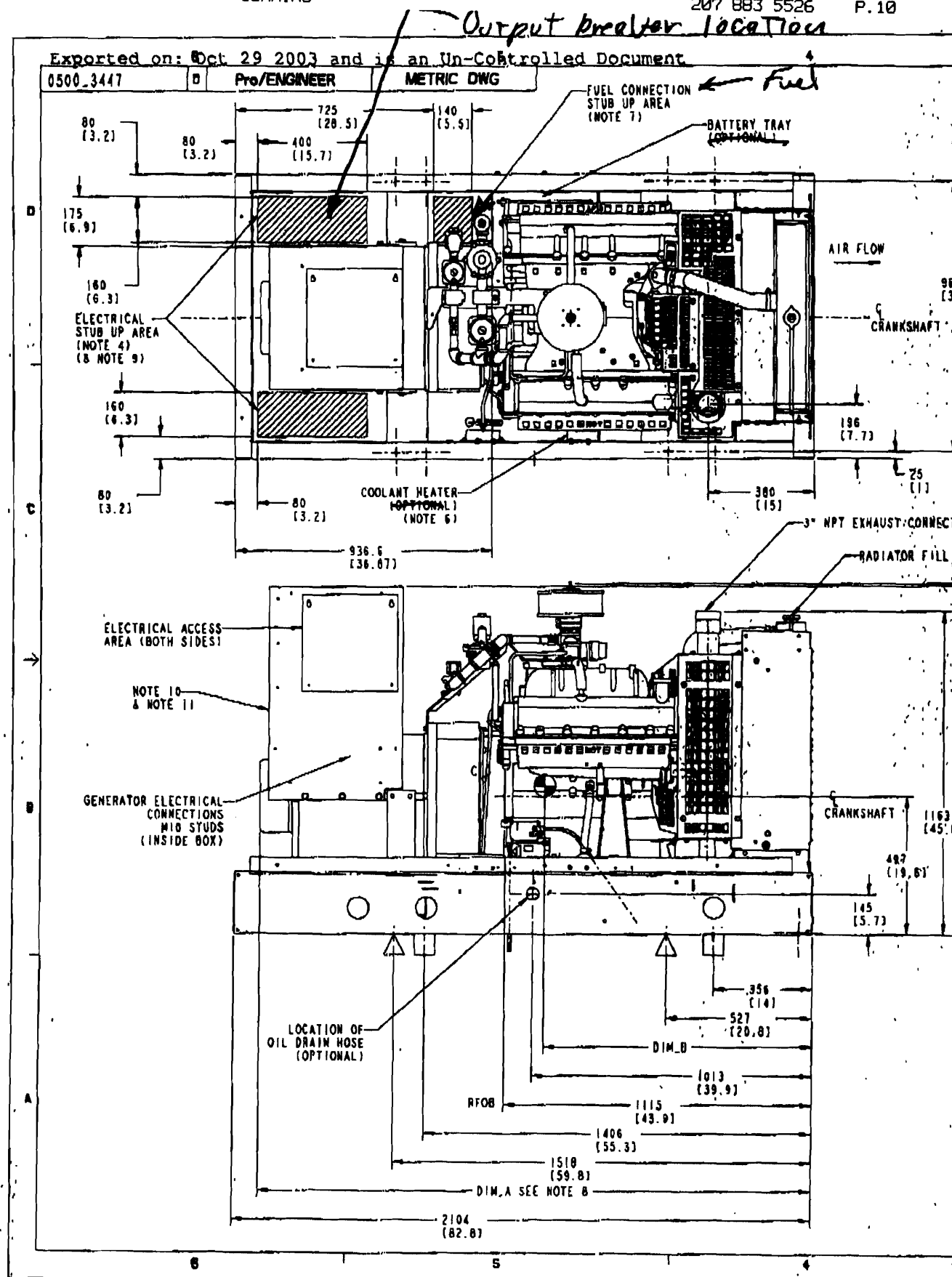
## NOTES:

- DIMENSIONS SHOWN IN ( ) ARE IN INCHES.
- $\varnothing 20.7$  (0.81) HOLES MARKED BY  $\triangle$  ARE FOR 4 POINT ISOLATION MOUNTING OR SECURING TO MOUNTING SURFACE.
- $\varnothing 25.4$  (1.0) HOLES MARKED WITH  $\square$  ARE FOR SECURING TO MOUNTING SURFACE.
- REFER TO CIRCUIT BREAKER OUTLINE DRAWING FOR ELECTRICAL STUB UP AREA FOR BREAKERS.
- TABULATED WEIGHT AND CG IS FOR GENERATOR SET WITH NO OPTIONS.
- REFER TO FEATURES OUTLINE DRAWING FOR HEATER LOCATION AND ELECTRICAL CONNECTIONS.
- REFER TO FEATURE OUTLINE DRAWING FOR FUEL CONNECTION INFORMATION.
- DIMENSION "A" SHOWN IS WITH PNG EXCITATION. SUBTRACT 26 MM DIM "A" FOR SHUNT EXCITATION.
- FOR ENTRANCE BOX APPLICATIONS SEE APPLICABLE ENTRANCE BOX OUTLINE DRAWING.
- OPTIONAL ENTRANCE BOX (NOT SHOWN) WILL BE MOUNTED ON THE RIGHT SIDE AS VIEWED FROM THE CONTROL.
- OPTIONAL BREAKER BOX (NOT SHOWN) WILL BE MOUNTED ON THE LEFT SIDE AS VIEWED FROM THE CONTROL UNLESS OTHERWISE SPECIFIED.

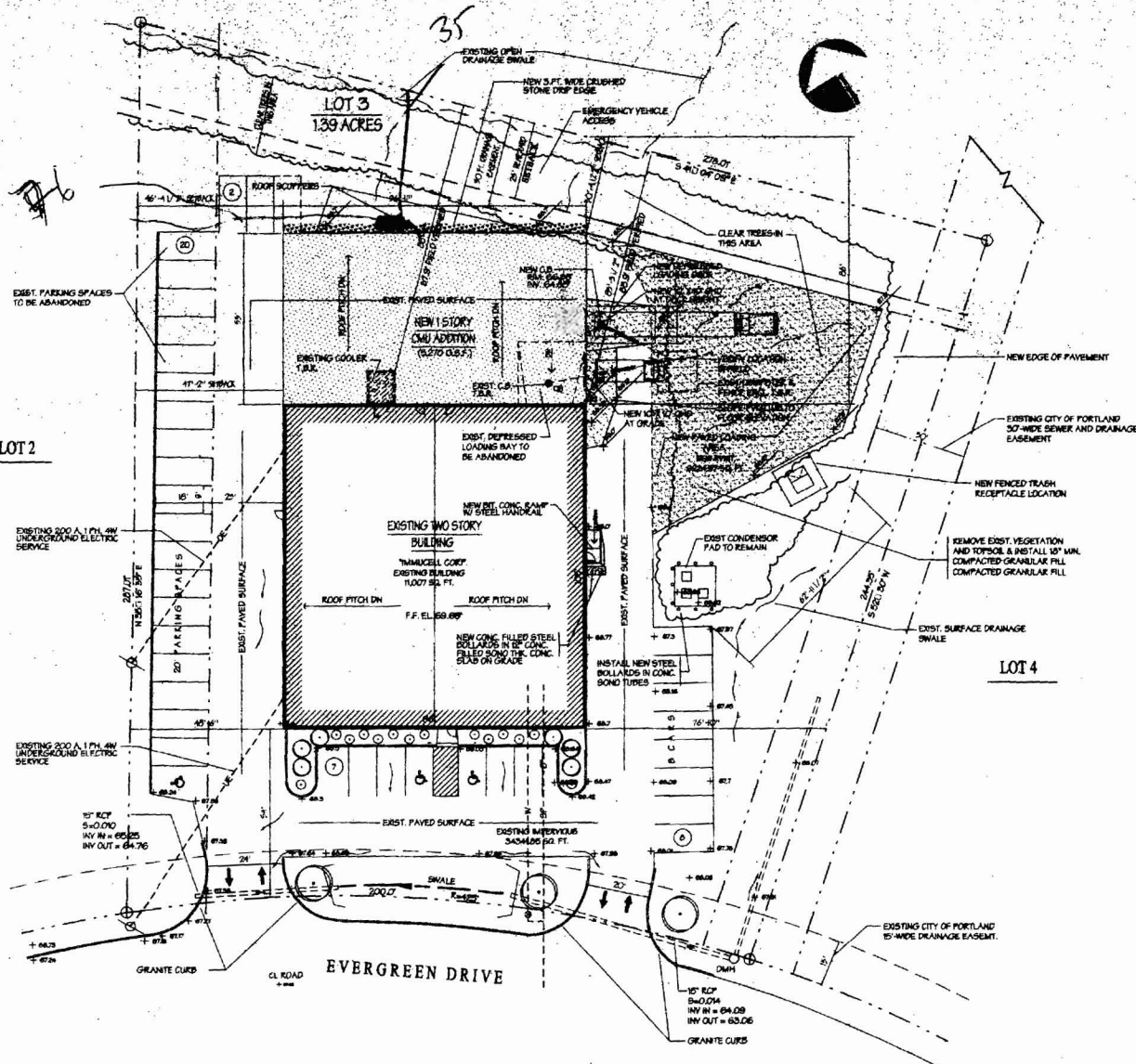


**F179**  
**SKID BASE-HOUSING READY**  
**HOUSING NOT INCLUDED**

DO NOT SCALE PRINT		DATE		REV.		DESCRIPTION OR MATERIAL	
1	12-10-01	T. BERG	12-10-01				CUMMINS POWER GENERATION
2	12-10-01	M. SEPPANEN	12-10-01				GENSET OUTLINE
3	12-10-01	M. SEPPANEN	12-10-01				GENSET OUTLINE
4		GGHE_HF				PGA	0500_3447







## PROPOSED SITE PLAN

1" = 20'-0"

### GENERAL NOTES:

- THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM A FIELD SURVEY AND EXISTING DRAWINGS. ARCHITECTURAL ASSOCIATES INC. MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. ARCHITECTURAL ASSOCIATES INC. FURTHER DOES NOT WARRANT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.
- THE GENERAL CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES THROUGH DIGSAFE PRIOR TO ANY EXCAVATION PROCEDURES.
- THE GENERAL CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO COMMENCING CONSTRUCTION.
- THE GENERAL CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL PEDESTRIAN AND VEHICULAR TRAFFIC CONTROL DEVICES DURING CONSTRUCTION, DELIVERIES, LOADING, AND ROAD OPENING PROCEDURES.
- NOTIFY ARCHITECT IMMEDIATELY IF FIELD CONDITIONS ENCOUNTERED DIFFER FROM THOSE SHOWN ON THE DRAWINGS.
- PROVIDE SILT FENCING AROUND MUNICIPAL AND ON-SITE CATCH BASINS DURING ALL EARTH DISTURBANCE PROCEDURES.
- PROVIDE SECONDARY PIPE SLEEVES OF SIMILAR MATERIAL WHERE PIPING AND CONDUIT PASS THRU FOUNDATION WALLS AND SLABS.
- THE GENERAL CONTRACTOR SHALL PERFORM ALL SITE WORK IN ACCORDANCE WITH THE NEPA FORMER BY RULE STANDARDS AND THE STATE OF MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION BEST MANAGEMENT PRACTICES; SECTION 1.6.1.3 - LATEST EDITION.
- ALL UNDERGROUND SITE LIGHTING CIRCUITRY SHALL BE INSTALLED IN 1" MIN. SCHEDULE 40 PVC AT 12" BELOW ROUGH GRADE ELEVATION.
- PROVIDE AND INSTALL SILTATION FENCES AND HAY BALE BARRIERS AROUND ANY DISTURBED SOIL AREAS TO PREVENT MOVEMENT OF SILT INTO SEAS, STREAMS, BROOKS, ROAD DITCHES, AND MUNICIPAL OR ON-SITE CATCH BASINS.
- ALL DISTURBED SOIL AREAS SHALL BE LOAMED, SEEDED AND COVERED WITH STRAW.
- ALL SITE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF PORTLAND STANDARDS.

### PLAN REFERENCES:

- "SITE PLAN, LOT 3, EVERGREEN INDUSTRIAL PARK, RIVERSIDE STREET, PORTLAND, MAINE," FOR D.V.W. CORP., P.O. BOX 1489, PORTLAND, ME, DATED 04/10/10, FILED 02, 1984, REVISED THROUGH APRIL 27, 1989, BY LAND USE CONSULTANTS, INC.
- "SUBDIVISION PLAN, EVERGREEN INDUSTRIAL PARK, RIVERSIDE STREET, PORTLAND, ME," PREPARED FOR DELTA REALTY CO. BY LAND USE CONSULTANTS, INC. DATED NOVEMBER 02, 1994, REVISED THRU FEB. 08, 1996, RECORDED AT C.C.R.D. PLAN BOOK 149, PAGE 87. APPROVED BY CITY OF PORTLAND PLANNING BOARD; FEB. 12, 1992.
- "SECOND AMENDED SUBDIVISION PLAN, EVERGREEN INDUSTRIAL PARK, PREPARED FOR DELTA REALTY CO. BY LAND USE CONSULTANTS, INC. DATED FEB. 03, 1997, REVISED THROUGH MARCH 23, 1997, RECORDED AT C.C.R.D. PLAN BOOK 150, PAGE 646.
- SITE INFORMATION AS SHOWN IS FROM A FIELD SURVEY BY LAND USE CONSULTANTS, INC. IN NOVEMBER 1994. TEMPORARY BENCHMARK (TBM-1), EL. 677.9 FROM ADJACENT PLANS OF EVERGREEN DRIVE, DATED AUGUST 28, 1993.

### SITE DATA

- RECORD OWNER OF PROPERTY: IMMUCELL CORP., 56 EVERGREEN DRIVE, PORTLAND, MAINE 04103
- PARCEL ZONING: INDUSTRIAL 2 (I-2)
- AREA OF PARCEL = APPROX 60,548 S.F. = 1.39 ACRES
- PERMETER BOUNDARY INFORMATION TAKEN FROM QUICK CLAIM DEED. THIS DRAWING IS SCHEMATIC AND NOT A SURVEY.
- CURRENT BUILDING USE: (BUSINESS & FACTORY) (FOOD PROCESSING)
- SPACE & BULK REQUIREMENTS: (INDUSTRIAL I-2)

ORDNANCE REQUIREMENT	PROPOSED
MIN STREET FRONTAGE = 60 FT. (PRINCIPAL BUILDING)	STREET FRONTAGE (EVERGREEN DRIVE) = 100 FT. MIN. FRONT YARD = 54 FT. (PRINCIPAL BUILDING)
MIN. FRONT YARD = 25 FT. (PRINCIPAL BUILDING)	MIN. FRONT YARD = 54 FT. (PRINCIPAL BUILDING)
MIN SIDE YARD (EAST) = 25 FT. COMPACTED GRANULAR FILL (PRINCIPAL BUILDING)	MIN SIDE YARD (EAST) = 76'-10" (PRINCIPAL BUILDING)
MIN SIDE YARD (WEST) = 25 FT. (PRINCIPAL BUILDING)	MIN SIDE YARD (WEST) = 48'-4 1/2" (PRINCIPAL BUILDING)
MIN. REAR YARD = 25 FT. (PRINCIPAL BUILDING)	MIN. REAR YARD = 30'-4 1/2" (PRINCIPAL BUILDING)
BUILDING HEIGHT - FOUR STOREYS (NOT TO EXCEED 45 FT)	BUILDING HEIGHT - 24 FT.

### 7. FACILITY UTILITIES:

- EXISTING BUILDING IS NOT SPRINKLERED.
- THE BUILDING IS SERVED BY MUNICIPAL WATER, SANITARY SEWER, STORM SEWER AND UTILITY CO. ELECTRICAL POWER AND NATURAL GAS. ALL NEW WORK ON RESPECTIVE UTILITIES SHALL BE COORDINATED BY OWNER WITH GOVERNING UTILITY CO.

### 8. BUILDING AREAS:

EXISTING OFFICE USE	= 4,497 G.S.F.
EXISTING FACTORY USE	= 5,948 G.S.F.
EXISTING STOR./MECH. USE	= 3,095 G.S.F.
EXISTING UNFINISHED AREA	= 8,000 G.S.F.
<b>TOTAL EXISTING</b>	<b>= 21,540 G.S.F.</b>
NEW OFFICE USE	= 0.0 G.S.F.
NEW FACTORY USE	= 5,230 G.S.F.
<b>TOTAL NEW</b>	<b>= 5,230 G.S.F.</b>
<b>TOTAL OFFICE USE</b>	<b>= 5,791 G.S.F.</b>
<b>TOTAL FACTORY USE</b>	<b>= 11,178 G.S.F.</b>
<b>TOTAL STOR./MECH. USE</b>	<b>= 3,095 G.S.F.</b>
<b>TOTAL UNFINISHED AREA</b>	<b>= 5,000 G.S.F.</b>
<b>TOTAL AFTER CONSTRUCTION</b>	<b>= 25,064 G.S.F.</b>

### 9. OFF STREET LOADING:

- ONE LOADING BAY REQUIRED (3,000 TO 40,000 S.F.)
- 2 LOADING BAYS PROVIDED (NEW)

### 10. OFF STREET PARKING:

4,497 S.F. OFFICES @ 1 CAR PER 400 S.F.	= 11.24 CARS REQUIRED
11,178 S.F. FACTORY @ 1 CAR PER 1000 S.F.	= 11.17 CARS REQUIRED
3,095 S.F. STORAGE @ 0 CARS PER 1000 S.F.	= 0.0 CARS REQUIRED
5,000 S.F. UNFINISHED AREA @ 0 CARS PER 1000 S.F.	= 0.0 CARS REQUIRED
<b>TOTAL PARKING SPACES REQUIRED</b>	<b>= 22.41 CARS REQUIRED</b>
<b>TOTAL PARKING SPACES PROVIDED</b>	<b>= 37.0 CARS PROVIDED</b>

### 11. SITE IMPERVIOUS AREAS:

STRUCTURES:	
EXISTING	= 10,160 S.F.
NEW ADDITION	= 5,276 S.F.
<b>TOTAL STRUCTURES</b>	<b>= 15,436 S.F.</b>

PAVED SURFACES:	
EXISTING PAVT. TO REMAIN	= 17,865 S.F.
EXISTING PAVT. TO BE REMOVED	= (5,376 S.F.)
NEW PAVT.	= 4,480 S.F.
<b>TOTAL PAVED (BEFORE CONSTR.)</b>	<b>= 25,244 S.F.</b>
<b>TOTAL PAVED (AFTER CONSTR.)</b>	<b>= 17,263 S.F.</b>

<b>TOTAL SITE IMPERVIOUS BEFORE CONSTRUCTION</b>	<b>= 33,504 S.F.</b>
<b>TOTAL SITE IMPERVIOUS AFTER CONSTRUCTION</b>	<b>= 33,911 S.F.</b>
<b>NET IMPERVIOUS AFTER CONSTRUCTION</b>	<b>= 407 S.F.</b>

### 12. SITE RATIO:

STRUCTURES:	
TOTAL LOT AREA	= 60,548 S.F. (1.39 ACRES)
TOTAL SITE IMPERVIOUS AREA (AFTER CONSTR.)	= 33,911 S.F.
<b>SITE RATIO</b>	<b>= .56</b>

- PROP. LINE BEARING
- EASEMENT LINE
- EXIST. EDGE OF VEGETATION
- SILT/HAYDALE BARRIER SWALE
- SURFACE SHEET FLOW
- CULVERT
- EDGE OF TRAVELED WAY
- EXISTING SPOT ELEVATION
- NEW SPOT ELEVATION
- NEW CONTOUR
- EXISTING CONTOUR
- BENCH MARK
- CONCRETE MONUMENT FOUND
- IRON PIPE FOUND
- UTILITY POLE
- MANHOLE
- HYDRANT
- CATCH BASIN
- CATCH BASIN [SOIL DISPERSION TYPE]
- WATER SERVICE CURB VALVE
- TRANSFORMER PAD
- DECIDUOUS TREE
- CONIFEROUS TREE
- NEW CONCRETE SURFACE
- NEW PLANTING BED
- NEW PEASTONE DRAINAGE CATCHMENT AREA
- NEW LOAM & SEED
- NEW PAVEMENT
- OVERHEAD ELEC. LINE
- OVERHEAD TELEPHONE
- OVERHEAD CATV
- UNDERGROUND ELEC.
- UNDERGROUND TEL.
- UNDERGROUND CATV
- STORM SEWER
- SANITARY SEWER
- WATER SERVICE
- SPRINKLER SERVICE
- PERIMETER FDN. DRAIN
- UNDERDRAIN
- UNDERGRD. ELEC. CIRCUIT (1" PVC CONDUIT)

PROPOSED SITE PLAN  
NOT FOR CONSTRUCTION

ADDITIONS AND  
IMMUCELL CORP.  
56 EVERGREEN DRIVE  
PORTLAND, MAINE