City of Belle Isle Job Site Card Electrical PERMIT 2019-08-029

PERMIT MUST BE POSTED ON SITE - A permit expires in 6 months if approved inspections are not recorded /scheduled within that time frame. You are responsible for scheduling and keeping track of all your inspections -

Permit Number: 2019- 09-029
Site Address: 2935 Nela Ave 32809
Class: □ Residential **Subdivision:**
Description of Work: Electrical –
ELECTRICAL ONLY FOR HONEYWELL HOME STANDBY GENERATOR & SWITCH.

Issue Date: 08/12/2019
Parcel #: 29-23-30-4389-01-031

Issued: Ferran Services & Contracting
Name: Shaun Boone
Payment Date & Method: 8 / 13 / 2019 □ Picked up or sent by _____ ■ Emailed
■ Visa □ Master Card □ Amex □ Discover □ Check / Money Order # 0837

Business Phone: 407 422-3551
Contractor License #: EC 13003653

Schedule Inspections via Email at: BIDscheduling@universalengineering.com BY 3:00 PM CUT OFF TIME
Inspection Results Will Be Sent Out the Following Business Day

ELECTRICAL	INSPECTOR	DATE	COMMENTS
300 Temp Pole			
310 TUG			
320 Underground			
325 Electrical Above – Ceiling			
330 Rough			
340 Footer Steel Bonding			
350 Pool Light			
360 PrePower			
370 Meter ReSet			
380 Final			

Inspection requests are to be emailed to BIDscheduling@UniversalEngineering.com; a confirmation email will be sent back to you upon scheduling. Next-Day Inspection requests must be made by 3pm. Please include the following in your request: Permit #, project address, type of inspection, date of the requested inspection, a contact name & a contact phone number. AM or PM may be requested but cannot be guaranteed.
Universal Engineering Sciences - 3532 Maggie Blvd., Orlando, FL 32811 Tel 407-581-8161 Fax 407-581-0313
www.universalengineering.com

"WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IYOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT."

City of Belle Isle

Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811
Tel 407-581-8161 * Fax 407-581-0313 * www.universalengineering.com

RECEIVED AUG 07 2019

APPLICATION FOR ELECTRICAL PERMIT

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

DATE OF APPLICATION: 08/07/19 **PERMIT NUMBER** 2019-08-029

The undersigned hereby applies for a permit to make electrical installations as indicated below. PLEASE PRINT

Project Address 2935 Nela Ave 2935 Nela Ave, Belle Isle FL ✓ 32809 ___ 32812

Property Owner Michael Donovan Donovan, Michael Phone 407-856-4666

Property Owner's Mailing Address 2935 Nela Ave Same City Belle Isle

State FL Zip Code 32809 **Parcel Id Number:** 29-23-30-4389-01-031 29-23-30-4389-01-031

To obtain this information, please visit http://www.ocpafl.org/Searches/ParcelSearch.aspx

Class of Building: Old ☑ New ☐ **Type of Building:** Residential ☑ Commercial ☐ Other ☐

Type of Work: New ☐ Alteration ☑ Addition ☐ Repair ☐ Low Voltage New ☐ Existing ☐

INDICATE THE QUANTITY OF ALL EQUIPMENT TO BE INSTALLED

Dishwasher ___	Exhaust Fan ___	Disposal ___	Water Heater ___
Hood Fan ___	Dryer ___	Paddle Fan ___	Outlets ___
Fixtures ___	Spa ___	Pool ___	Switches ___
Electric Signs ___	Meter Reset ___	Low Voltage ___	Stoves ___
Pumps ___	Motors ___	Air Conditioning (tons) ___	Furnace (KW) ___

1ST FL 37
3x5 15
52
÷2 26
78

Temporary Construction Pole ___ **One (1) New Meter Service** ___ Amperage/Voltage/Phase

Meter Service Upgrade from ___ (Amperage/Voltage/Phase) to ___ (Amperage/Voltage/Phase) = ___ (Difference in Size)

Relocate Existing Meter Service (No Service Size Change) ___

Other: Install electrical only for Honeywell home standy generator and transfer switch Electrical only for Honeywell Home Stanby Generator & Switch

☐ **PERMIT FEE BASED ON METER SERVICE SIZE SCHEDULE** ..... $ ___
(IF NO METER SERVICE WORK BEING DONE, USE VALUATION OF JOB FOR PERMIT FEE)

☑ **VALUATION OF JOB** (VALUATION OF ALL MATERIALS, LABOR, AND FIXTURES INSTALLED $3,727.00

Building Official: Rajendramhll **Date** 08/08/19

Verified Contractor's Licenses & Insurance are on file ✓ **Date** 8-8-19

Permit Fee = $ 52
Review Fee = $ 26
1% BCAIB Fee = $ 2 min
1.5% DCA Fee = $ 2 min
TOTAL Permit = $ 82.00

VISA 0893 8-13-19 PAID

I hereby certify that the above is true and correct to the best of my knowledge.

I hereby make Application for Permit as outlined above, and if same is granted I agree to conform to all Florida Building Code Regulations and City Ordinances regulating same and in accordance with plans submitted. The issuance of this permit does not grant permission to violate any applicable Town and/or State of Florida codes and/or ordinances.

LICENSE HOLDER SIGNATURE ___ LICENSE # EC13003653 EC13003653

LICENSE HOLDER NAME Shawn Boone COMPANY NAME Ferran Services

Street Address 530 Grand Street

City Orlando State FL Zip Code 32805 Phone Number 407-422-3551

Email Address sboone@ferran-services.com

NOTE: The Building Permit Number is required if the Electrical Installation is associated with any construction or alteration where a Building Permit has been issued.

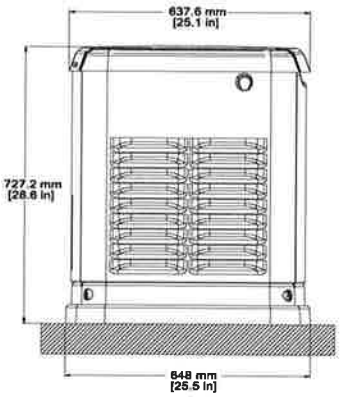
Building Permit Number 2019-07-077

154259

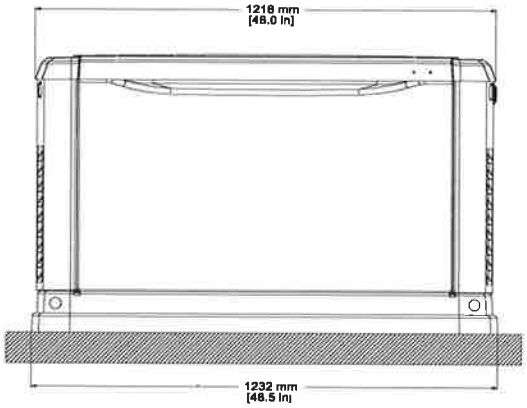
AVAILABLE ACCESSORIES

Model #	Product	Description
G005819-0	26R Wet Cell Battery	Every standby generator requires a battery to start the system. The recommended 26R wet cell battery is for use with all air-cooled standby product.
G007101-0	Battery Pad Warmer	The pad warmer rests under the battery and will warm the battery. Recommended for use if the temperature regularly falls below 0°F. (Not necessary for use with AGM-style batteries.)
G007102-0	Oil Warmer	Oil warmer slips directly over the oil filter. Recommended for use if the temperature regularly falls below 0°F.
G007103-0	Breather Warmer	The breather warmer is for use in extreme cold weather applications. For use with Sync 2.0 controllers only in climates where heavy icing occurs.
G005621-0	Auxillary Transfer Switch Contact Kit	The auxiliary transfer switch contact kit allows the transfer switch to lock out a single large electrical load you may not need.
G006160-0	Paint Kit	If the generator enclosure is scratched or damaged, it is important to touch-up the paint to protect from future corrosion. The paint kit includes the necessary paint to properly maintain or touch-up a generator enclosure.
G006485-0	Scheduled Maintenance Kit	Scheduled maintenance kits provide all the hardware necessary to perform complete routine maintenance on a Honeywell automatic standby generator.
G006874-0	Smart Management Module (50 Amps)	Manage large loads by utilizing up to 8 individual Smart Management modules. These devices are installed directly in line with existing appliance wiring for easy installation.
G006463-3	Mobile Link™	Mobile Link allows you to check the status of your generator from anywhere that you have access to an Internet connection from a PC or with any smart device. You will even be notified via e-mail or text message when a change in the generator's status occurs. Available in the U.S. only.

DIMENSIONS & UPCs



LEFT SIDE VIEW



FRONT VIEW

Model	UPC
G007059-0	696471070590
G007062-0	696471070620
G007065-0	696471070651
G007064-0	696471070644

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Generac Power Systems, Inc.
S45 W29290 Hwy. 59
Waukesha, WI 53187
Tel: 1-855-GEN-INFO
honeywellgenerators.com

10000000220-B
May 2016
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Specifications subject to change without notice.

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Honeywell

Honeywell

STANDBY GENERATORS

16 kW / 20 kW / 22 kW

AIR-COOLED GENERATOR SETS

Standby Power Rating

Model G007059-0 (Aluminum - Dark Gray) - 16 kW 60 Hz
Model G007062-0 (Aluminum - Dark Gray) - 20 kW 60 Hz
Model G007065-0 (Aluminum - Dark Gray) - 22 kW 60 Hz

INCLUDES

- PrecisionPower™ Electrical Technology
- Two Line LCD Multilingual Digital Controller (English/Spanish/French/Portuguese)
- Electronic Governor
- System Status & Maintenance Interval LED Indicators
- Flexible Fuel Line Connector
- WhisperCheck™ Exercise
- Direct-To-Dirt Composite Pad
- Aluminum Enclosure
- Base Fascia
- Natural Gas or LP Gas Operation
- 5 Year Premium Limited Warranty
- Capability to be installed within 18" (457 mm) of a building*

c UL us LISTED

USA ENGINEERED & BUILT*

*Built in the USA using domestic and foreign parts

* Only if located away from doors, windows and fresh air intakes, and unless otherwise directed by local codes.

FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of our success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose Honeywell generators with the confidence that these systems will provide superior performance.

- **TEST CRITERIA**
  - PROTOTYPE TESTED
  - SYSTEM TORSIONAL TESTED
  - NEMA MG1-22 EVALUATION
  - MOTOR STARTING ABILITY

- **PRECISIONPOWER™ ELECTRICAL TECHNOLOGY** Superior harmonics and sine wave form produce less than 5% Total Harmonic Distortion for utility quality power. This allows confident operation of sensitive electronic equipment and micro-chip based appliances, such as variable speed HVAC.

- **SOLID-STATE, FREQUENCY COMPENSATED VOLTAGE REGULATION** This state-of-the-art power maximizing regulation system is standard on all Honeywell models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine. Digital voltage regulation at +/- 1%.

- **SINGLE SOURCE SERVICE RESPONSE** from our extensive dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component.

- **HONEYWELL TRANSFER SWITCHES** The Honeywell generator line includes its own transfer systems and controls for total system compatibility.

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Universal Engineering Sciences

16 kW / 20 kW / 22 kW

AIR-COOLED GENERATOR SETS

ENGINE

• WhisperCheck	Greatly reduces sound output and fuel consumption during bi-weekly exercise.
• Generac OHVI® design	Maximizes engine "breathing" for increased fuel efficiency. Plateau honed cylinder walls and plasma moly rings help the engine run cooler, reducing oil consumption resulting in longer engine life.
• "Spiny-lok" cast iron cylinder walls	Rigid construction and added durability provide long engine life.
• Electronic ignition/spark advance	These features combine to assure smooth, quick starting every time.
• Full pressure lubrication system	Pressurized lubrication to all vital bearings means better performance, less maintenance and longer engine life. Now featuring up to a 2 year/200 hour oil change interval.
• Low oil pressure shutdown system	Shutdown protection prevents catastrophic engine damage due to low oil.
• High temperature shutdown	Prevents damage due to overheating.

GENERATOR

• Revolving field	Allows for smaller, light weight unit that operates 25% more efficiently than a revolving armature generator.
• Skewed stator	Produces a smooth output waveform for compatibility with electronic equipment.
• Displaced phase excitation	Maximizes motor starting capability.
• Automatic voltage regulation	Regulates the output voltage to ±1% prevents damaging voltage spikes.
• UL 2200 listed	For your safety.

TRANSFER SWITCH

Sold separately

SYNC™ 2.0 CONTROLS

• Auto/Manual/Off illuminated buttons	Selects the operating mode and provides easy, at-a-glance status indication in any condition.
• Two-line LCD multilingual display	Provides homeowners easily visible logs of history, maintenance and events up to 50 occurrences.
• Sealed, raised buttons	Smooth, weather-resistant user interface for programming and operations.
• Utility voltage sensing	Constantly monitors utility voltage, setpoints 65% dropout, 80% pick-up, of standard voltage.
• Generator voltage sensing	Constantly monitors generator voltage to ensure the cleanest power delivered to the home.
• Utility interrupt delay	Prevents nuisance start-ups of the engine, adjustable 2-1500 seconds from the factory default setting of 5 seconds by a qualified dealer.
• Engine warm-up	Ensures engine is ready to assume the load, setpoint approximately 5 seconds.
• Engine cool-down	Allows engine to cool prior to shutdown, setpoint approximately 1 minute.
• Programmable exerciser	Operates engine to prevent oil seal drying and damage between power outages by running the generator for 5 minutes every other week. Also offers a selectable setting for weekly or monthly operation providing flexibilty and lower fuel costs to the owner.
• Smart battery charger	Delivers charge to the battery only when needed at varying rates depending on outdoor air temperature. Compatible with lead acid and AGM-style batteries.
• Electronic governor	Maintains constant 60 Hz frequency.

UNIT

• SAE weather protective enclosure	Sound attenuated enclosures ensure quiet operation and protection against mother nature, withstanding winds up to 150 mph. Hinged key locking roof panel for security. Lift-out front for easy access to all routine maintenance items. Electrostatically applied textured epoxy paint for added durability.
• Enclosed critical grade muffler	Quiet, critical grade muffler is mounted inside the unit to prevent injuries.
• Small, compact, attractive	Makes for an easy, eye appealing installation, as close as 18" away from a building.

INSTALLATION SYSTEM

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Universal Engineering

• 1 ft (305 mm) flexible fuel line connector	Absorbs any generator vibration when connected to rigid pipe.
• Direct-to-dirt composite pad	Complex lattice design prevents settling or sinking of the generator system
• Integral sediment trap	Prevents particles and moisture from entering the fuel regulator and engine, prolonging engine life.

GENERATOR	Model G007059-0 (16 kW)	Model G007062-0 (20 kW)	Model G007065-0 (22 kW)
Rated Maximum Continuous Power Capacity (LP)	16,000 Watts*	20,000 Watts*	22,000 Watts*
Rated Maximum Continuous Power Capacity (NG)	16,000 Watts*	18,000 Watts*	19,500 Watts*
Rated Voltage	240	240	240
Rated Maximum Continuous Load Current – 240 V (LP/NG)	66.6/66.6	83.3/75	91.6/81.3
Total Harmonic Distortion	Less than 5%	Less than 5%	Less than 5%
Main Line Circuit Breaker	70 Amp	100 Amp	100 Amp
Phase	1	1	1
Number of Rotor Poles	2	2	2
Rated AC Frequency	60 Hz	60 Hz	60 Hz
Power Factor	1.0	1.0	1.0
Battery Requirement (not included)	12 Volts, Group 26R 540 CCA Minimum or Group 35AGM 650 CCA Minimum		
Unit Weight (lb/kg)	409/186	448/203	466/211
Dimensions (L x W x H) in/mm	48 x 25 x 29/1218 x 638 x 732		
Sound output in dB(A) at 23 ft (7 m) with generator operating at normal load**	66	66	67
Sound output in dB(A) at 23 ft (7 m) with generator in WhisperCheck™ low speed exercise mode**	58	58	58
Exercise duration	5 min	5 min	5 min

ENGINE				
Type of Engine		GENERAC OHVI V-TWIN	GENERAC OHVI V-TWIN	GENERAC OHVI
Number of Cylinders		2	2	2
Displacement		999 cc	999 cc	999 cc
Cylinder Block		Aluminum w/ Cast Iron Sleeve	Aluminum w/ Cast Iron Sleeve	Aluminum w/ Cast Iron Sleeve
Valve Arrangement		Overhead Valve	Overhead Valve	Overhead Valve
Ignition System		Solid-state w/ Magneto	Solid-state w/ Magneto	Solid-state w/ Magneto
Governor System		Electronic	Electronic	Electronic
Compression Ratio		9.5:1	9.5:1	9.5:1
Starter		12 Vdc	12 Vdc	12 Vdc
Oil Capacity Including Filter		Approx. 1.9 qt/1.8 L	Approx. 1.9 qt/1.8 L	Approx. 1.9 qt/1.8 L
Operating rpm		3,600	3,600	3,600
Fuel Consumption				
Natural Gas	ft^3/hr (m^3/hr)			
	1/2 Load	193 (5.7)	205 (5.8)	184 (5.21)
	Full Load	312 (8.83)	308 (8.72)	281 (7.96)
Liquid Propane	ft^3/hr (gal/hr) [l/hr]			
	1/2 Load	69 (1.90) [7.20]	81 (2.23) [8.45]	78 (2.16) [8.16]
	Full Load	116 (3.19) [12.07]	140 (3.85) [14.57]	134 (3.68) [13.94]

Note: **Fuel pipe must be sized for full load.** Required fuel pressure to generator fuel inlet - 3.5-7" water column (7-13 mm mercury) for natural gas, 10-12" water column (19-22 mm mercury) for LP gas. For Btu content, multiply ft^3/hr x 2500 (LP) or ft^3/hr x 1000 (NG). For Megajoule content, multiply m^3/hr x 93.15 (LP) or m^3/hr x 37.26 (NG).

CONTROLS		
2-Line Plain Text Multilingual LCD Display		Simple user interface for ease of operation.
Mode Buttons:	Auto	Automatic Start on Utility failure. Programmable exercise.
	Manual	Start with starter control, unit stays on. If utility fails, transfer to load takes place.
	Off	Stops unit. Power is removed. Control and charger still operate.
Ready to Run/Maintenance Messages		Standard
Engine Run Hours Indication		Standard
Programmable start delay between 2-1500 seconds		Standard (programmable by dealer only)
Utility Voltage Loss/Return to Utility Adjustable (Brownout Setting)		From 140-171 V/190-216 V
Future Set Capable Exerciser/Exercise Set Error Warning		Standard
Run/Alarm/Maintenance Logs		50 Events Each
Engine Start Sequence		Cyclic cranking: 16 sec on, 7 rest (90 sec maximum duration).
Starter Lock-out		Starter cannot re-engage until 5 sec after engine has stopped.
Smart Battery Charger		Standard
Charger Fault/Missing AC Warning		Standard
Low Battery/Battery Problem Protection and Battery Condition Indication		Standard
Automatic Voltage Regulation with Over and Under Voltage Protection		Standard
Underspeed/Overload/Stepper Overcurrent Protection		Standard
Safety Fused/Fuse Problem Protection		Standard
Automatic Low Oil Pressure/High Oil Temperature Shutdown		Standard
Overcrank/Overspeed (@ 72 Hz)/rpm Sense Loss Shutdown		Standard
High Engine Temperature Shutdown		Standard
Internal Fault/Incorrect Wiring Protection		Standard
Common External Fault Capability		Standard
Field Upgradable Firmware		Standard

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**Sound levels are taken from the front of the generator. Sound levels taken from other sides of the generator may be higher depending on installation parameters. Rating definitions - Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with BS5514, ISO3046 and DIN6271). * Maximum wattage and current are subject to and limited by such factors as fuel Btu/megajoule content, ambient temperature, altitude, engine power and condition, etc. Maximum power decreases about 3.5 percent for each 1,000 feet (304.8 meters) above sea level; and also will decrease about 1 percent for each 6 °C (10 °F) above 16 °C (60 °F).

2019-08-029

FERRAN

Generator Load Calculation Checklist
Per National Electrical Code, Article 702, Optional Standby Systems

Project Name: Michael Donovan Permit#:

Property Address: 2935 Nela Ave Orlando, FL 32809

SERVICE SIZE	200	AMPS
GENERATOR SIZE	20	KW
GENERATOR	100	AMPS
SWITCH TYPE	■ AUTOMATIC / MANUAL ▨	

EXAMPLE:

200 AMPS
20 KW
85 AMPS

Full Load: The stand by source shall be capable of supplying the full load that is transferred by the automatic transfer equipment.

Provide Load Calculations for review. (National Electrical Code 220.83 Existing Dwelling):

Square Feet of Living Area	2590 Sq. Ft.
Sq. Ft. of Living Area x 3va	7770
Kitchen Special @1500	3000
Refrigerator @ 1500	1500
Laundry @ 1500	1500
Range @ 8000	8000
Water Heater @4500	4500
Dishwasher @1440	1440
Garbage Disposal @ 960	960
Clothes Dryer @ 5000	Load Shed
AC/AHU	Load Shed
Other Loads	Garage Door 1100
Total	29770
First 8K @100%=	8000
Remaining @40%=	Remaining 21770 @40%= 8708
Total	16708 / 1000 = 16.708

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Provide Load shedding description and/or schematic

*The A/C systems are not included in these calculations because they will be added to the load shed portion of the transfer switch

Note: Manual Transfer Equipment National Electrical Code 702.5(B)(1)

Honeywell

Owner's Manual
For
Automatic Transfer Switch

100 - 200 Amp, Service Entrance/Non-Service Entrance

Model Numbers
RTSM100A3
RTSK100A3
RTSM150A3
RTSM200A3
RTSK200A3

MODEL NUMBER: _____

SERIAL NUMBER: _____

DATE PURCHASED: _____

WWW.HONEYWELLGENERATORS.COM
855-436-4636

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Para español , visita: http://www.generac.com/service-support/product-support-lookup

Pour le français, visiter : http://www.generac.com/service-support/product-support-lookup

SAVE THIS MANUAL FOR FUTURE REFERENCE

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⚠WARNING

California Proposition 65. This product contains or emits chemicals known to the state of California to cause cancer, birth defects, and other reproductive harm. (000005)

Table of Contents

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Section 1 Safety

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1.1 — General

Read the following information carefully before attempting to install, operate or service this equipment. Also read the instructions and information on tags, decals, and labels that may be affixed to the transfer switch. Replace any decal or label that is no longer legible.

⚠WARNING

Consult Manual. Read and understand manual completely before using product. Failure to completely understand manual and product could result in death or serious injury. (000100a)

The manufacturer cannot anticipate every possible circumstance that might involve a hazard. The warnings in this manual, and on tags and decals affixed to the unit are not all-inclusive. If using a procedure, work method or operating technique the manufacturer does not specifically recommend, ensure that it is safe. Also make sure the procedure, work method or operating technique used does not render the transfer switch unsafe.

Throughout this publication, and on tags and decals affixed to the generator, DANGER, WARNING, CAUTION and NOTE blocks are used to alert personnel to special instructions about a particular operation that may be hazardous if performed incorrectly or carelessly. Observe them carefully. Their definitions are as follows:

⚠DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

(000001)

⚠WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

(000002)

⚠CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

(000003)

NOTE:

Notes contain additional information important to a procedure and will be found within the regular text of this manual.

These safety warnings cannot eliminate the hazards that they indicate. Common sense and strict compliance with the special instructions while performing the action or service are essential to preventing accidents.

1.2 — General Hazards

- Any AC generator that is used for backup power if a NORMAL (UTILITY) power source failure occurs, must be isolated from the NORMAL (UTILITY) power source by means of an approved transfer switch. Failure to properly isolate the NORMAL and STANDBY power sources from each other may result in injury or death to electric utility workers, due to backfeed of electrical energy.
- Improper or unauthorized installation, operation, service or repair of the equipment is extremely dangerous and may result in death, serious personal injury, or damage to equipment and/or personal property.
- Extremely high power and dangerous voltages are present inside an installed transfer switch. Any contact with high voltage terminals, contacts or wires can result in LETHAL electric shock, while arc flash can cause blindness and severe burns. DO NOT WORK ON THE TRANSFER SWITCH UNTIL ALL POWER SUPPLIES TO THE SWITCH HAVE BEEN POSITIVELY TURNED OFF.
- Competent, qualified personnel should install, operate and service this equipment. Adhere strictly to local, state and national electrical and building codes. When using this equipment, comply with regulations the National Electrical Code (NEC), CSA Standard; C22.1 Canadian Electric Code and Occupational Safety and Health Administration (OSHA) have established.
- Never handle any kind of electrical device while standing in water, while barefoot, or while hands or feet are wet. DANGEROUS ELECTRICAL SHOCK MAY RESULT.
- Because jewelry conducts electricity, wearing it may cause dangerous electrical shock. Remove all jewelry (such as rings, watches, bracelets, etc.) before working on this equipment.
- If working on this equipment while standing on metal or concrete, place insulative mats over a dry wood platform. Work on this equipment only while standing on such insulative mats.
- Never work on this equipment while physically or mentally fatigued.

- Keep the transfer switch enclosure door closed and bolted at all times. Only qualified personnel should be permitted access to the switch interior.
- In case of an accident caused by electric shock, immediately shut down the source of electrical power. If this is not possible, attempt to free the victim from the live conductor but AVOID DIRECT CONTACT WITH THE VICTIM. Use a nonconducting implement, such as a dry rope or board, to free the victim from the live conductor. If the victim is unconscious, apply first aid and get immediate medical help.
- When an automatic transfer switch is installed for a standby generator set, the generator engine may crank and start at any time without warning. To avoid possible injury that might be caused by such sudden start-ups, the system's automatic start circuit must be disabled before working on or around the generator or transfer switch. Then place a "DO NOT OPERATE" tag on the transfer switch and on the generator.
- Any voltage measurements should be performed with a meter that meets UL3111 safety standards, and meets or exceeds overvoltage class CAT III.

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Universal Engineering Sciences

Section 2 General Information

2.1 — Introduction

Thank you for purchasing a Honeywell transfer switch. This manual has been prepared especially for the purpose of familiarizing personnel with the design, application, installation, operation and servicing of the applicable equipment. Read this manual carefully and comply with all instructions. This will help to prevent accidents or damage to equipment that might otherwise be caused by carelessness, incorrect application, or improper procedures.

Every effort has been expended to make sure that the contents of this manual are both accurate and current. The manufacturer, however, reserves the right to change, alter or otherwise improve the product or manual at any time without prior notice.

2.2 — Unpacking

Carefully unpack the transfer switch. Inspect closely for any damage that might have occurred during shipment. The purchaser must file with the carrier any claims for loss or damage incurred while in transit.

Check that all packing material is completely removed from the switch prior to installation.

2.3 — Equipment Description

The automatic transfer switch is used for transferring electrical load from a UTILITY (NORMAL) power source to a GENERATOR (STANDBY) power source. Such a transfer of electrical loads occurs automatically when the UTILITY power source has failed or is substantially reduced and the GENERATOR source voltage and frequency have reached an acceptable level. The transfer switch prevents electrical feedback between two different power sources (such as the UTILITY and GENERATOR sources) and, for that reason, codes require it in all standby electric system installations.

The transfer switch consists of a transfer mechanism, utility service disconnect circuit breaker (if equipped), a control relay, a Smart A/C module, fuses, terminal strip, and fuse holder for connection of sensing wires.

This transfer switch is suitable for use as service equipment if equipped with utility service circuit breaker.

2.3.1— Transfer Switch Mechanism

These switches (Figure 2-1) are used with a single-phase system, when the single-phase NEUTRAL line is to be connected to a neutral lug and is not to be switched.

Solderless, screw-type terminal lugs are standard.

The conductor size range is as follows:

Switch Rating	Wire Range	Conductor Tightening Torque
100A	#14-1/0 AWG (Cu/Al)	50 **in-lbs** (5.6 Nm)
150/200A	#6-250 MCM (Cu/Al)	275 **in-lbs** (31 Nm)

This transfer switch is suitable for control of motors, electric discharge lamps, tungsten filament and electric heating equipment where the sum of motor full load ampere ratings and the ampere ratings of other loads do not exceed the ampere rating of the switch and the tungsten load does not exceed 30 percent of the switch rating.

This UL listed transfer switch is for use in optional standby systems only (NEC article 702).

A 100A rated switch is suitable for use on circuits capable of delivering not more than 10,000 RMS symmetrical amperes, 250 VAC maximum, when protected by a 100A maximum circuit breaker (Siemens types QP or BQ) or 150A maximum circuit breaker (Square D Q2, Westinghouse CA-CAH, General Electric TQ2 and Siemens QJ2).

A 200A rated switch is suitable for use on a circuit capable of 10,000 RMS symmetrical amperes, 240 VAC when protected by a circuit breaker without an adjustable short time response or by fuses.

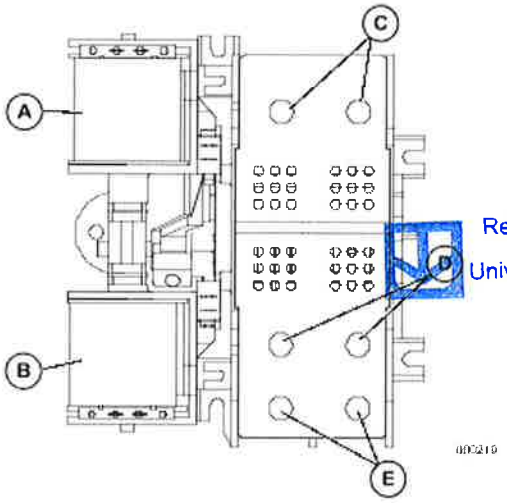

Figure 2-1. Typical Single-Phase ATS Transfer Mechanism

A	Utility Closing Coil
B	Generator Closing Coil
C	Utility Lugs (N1 & N2)
D	Generator Lugs (E1 & E2)
E	Load Lugs (T1 & T2)

2.3.2— Utility Service Circuit Breaker (if equipped)

The utility service and generator disconnect circuit breakers for 100 amp models are:

- Type BQ, 2-pole
- 120/240VAC, 100A
- 50/60 Hertz
- Wire range: #1 - #8 AWG (Cu/Al)
- The conductor tightening torque is 50 **in-lbs.** (5.6 Nm).

The utility service circuit breakers for 150/200 amp models are:

- Type 225AF, 2-pole
- 120/240VAC, 150A/200A
- 50/60 Hertz
- Wire range:
  - Line: 300 MCM - 6 STR (Cu/Al)
  - Load - ATS: 250 MCM - 6 STR (Cu/Al)
- The conductor tightening torque is:
  - Line: 375 **in-lbs** (42.4 Nm)
  - Load - ATS: 275 **in-lbs.** (31 Nm)

2.4 — Transfer Switch Data Decal

A data decal is permanently affixed to the transfer switch enclosure. Use this transfer switch only with the specific limits shown on the data decal and on other decals and labels that may be affixed to the switch. This will prevent damage to equipment and property.

When requesting information or ordering parts for this equipment, make sure to include all information from the data decal.

For future reference, record the Model and Serial numbers in the space provided on the front cover of this manual

2.5 — Transfer Switch Enclosure

The standard switch enclosure is a National Electrical Manufacturer's Association (NEMA) and UL 3R type. UL and NEMA 3R (indoor/outdoor rated) type enclosures primarily provide a degree of protection against falling rain and sleet; are undamaged by the formation of ice on the enclosure.

2.6 — Safe Use of Transfer Switch

⚠WARNING

Consult Manual. Read and understand manual completely before using product. Failure to completely understand manual and product could result in death or serious injury. (000100a)

Before installing, operating or servicing this equipment, read the SAFETY RULES carefully. Comply strictly with all SAFETY RULES to prevent accidents and/or damage to the equipment. The manufacturer recommends that a copy of the SAFETY RULES be posted near the transfer switch. Also, be sure to read all instructions and information found on tags, labels and decals affixed to the equipment.

Two publications that outline the safe use of transfer switches are the following:

- NFPA 70; National Electrical Code
- UL 1008, STANDARD FOR SAFETY-AUTOMATIC TRANSFER SWITCHES

NOTE: It is essential to use the latest version of any standard to ensure correct and current information.

2.7 — Load Management Options

Load management systems are designed to work together to prevent a generator from being overloaded by large appliance loads. A Smart A/C Module is standard in these switches. An optional Smart Management Module is also available.

2.7.1— Smart A/C Module

Up to four air conditioner loads can be managed by the Smart A/C Module. The Smart A/C Module manages the loads by "shedding" the connected loads in the event of a drop in generator frequency (overload). Loads to be "shed" are in 4 priority levels on the module.

Priorities A/C 1-4 (A in Figure 2-2) have connections for an air conditioner. To control an air conditioner, no additional equipment is required. Internal normally closed relays interrupt the 24 VAC thermostat control signal to disable the air conditioner load.

Four LEDs, located on the Smart A/C Module (B in Figure 2-2), illuminate when a load is connected and powered.

The Smart A/C Module has a test button used to simulate an overload condition. This button operates even when the transfer signal is inactive.

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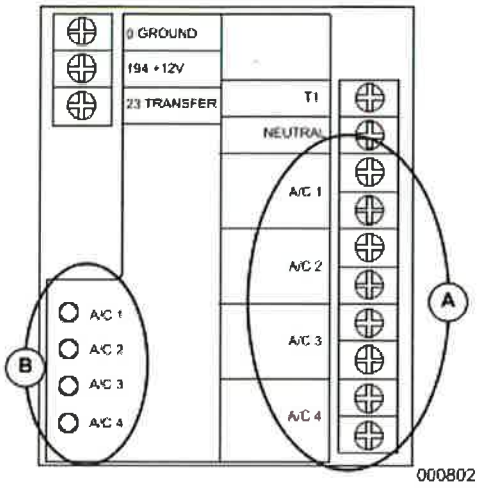

Figure 2-2. Smart A/C Module

2.7.2— Smart Management Module (Sold Separately))

Any loads, including central air conditioners, can be managed using a Smart Management Module (SMM). The system can accommodate up to eight individual SMM modules.

NOTE: The SMM modules are self-contained and have individual built-in controllers.

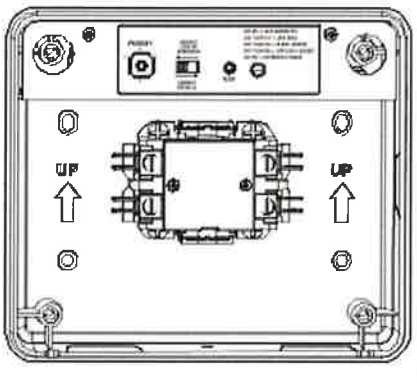

Figure 2-3. Smart Management Module

2.7.3— Application Considerations

Generator overload condition is determined by generator frequency. Loads are shed when frequency is less than 58 Hz for three seconds or less than 50 Hz for ½ second (for 60 Hz systems).

The Smart A/C Module can be used in conjunction with individual Smart Management Modules (SMM) to manage a combined total of eight loads.

- Use Priorities A/C 1-4 on the Smart A/C Module as the top priorities, then up to four Smart Management Modules as Priorities 5-8.
- Use only select A/C priorities on the Smart A/C Module as the top priorities, then use additional Smart Management Modules as the remaining priorities.
- A Smart Management Module can share a priority with an A/C priority on the Smart A/C Module provided the generator is sized to handle the combined surge load from both appliances. Sharing priorities can allow up to 12 loads to be managed in a properly sized system.

In any combination of modules, the recovery times after a loss of utility power or shutdown due to overload are shown in Table 1.

Table 1. Priority Settings

Priority	Recovery Time	Smart A/C Module	Smart Management Module
1	5 minutes	Yes	Yes
2	5 minutes 15 seconds	Yes	Yes
3	5 minutes 30 seconds	Yes	Yes
4	5 minutes 45 seconds	Yes	Yes
5	6 minutes	NA	Yes
6	6 minutes 15 seconds	NA	Yes
7	6 minutes 30 seconds	NA	Yes
8	6 minutes 45 seconds	NA	Yes

Refer to the SMM Owner's/Installation Manual for detailed characteristics and specifications of that product.

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Section 3 Installation

3.1 — Introduction to Installation

This equipment has been wired and tested at the factory. Installing the switch includes the following procedures:

- Mounting the enclosure.
- Connecting power source and load leads.
- Connecting the generator start and sensing circuit.
- Connecting any auxiliary contact (if needed).
- Testing functions.

3.2 — Mounting

Mounting dimensions for the transfer switch enclosure are in this manual. Enclosures are typically wall-mounted. See the "Installation Diagram" section.

⚠DANGER

Equipment malfunction. Installing a dirty or damaged transfer switch will cause equipment malfunction and will result in death or serious injury.

(000119)

This transfer switch is mounted in a UL type 3R enclosure. It can be mounted outside or inside and should be based on the layout of installation, convenience and proximity to the utility supply and load center.

Install the transfer switch as close as possible to the electrical loads that are to be connected to it. Mount the switch vertically to a rigid supporting structure. To prevent switch distortion, level all mounting points. If necessary, use washers behind mounting holes to level the unit.

3.3 — Connecting Power Source and Load Lines

⚠DANGER

Electrocution. Turn utility and emergency power supplies to OFF before connecting power source and load lines. Failure to do so will result in death or serious injury.

(000116)

Installation and interconnection diagrams are provided in this manual.

NOTE: All installations must comply with national, state and local codes. It is the responsibility of the installer to perform an installation that will pass the final electrical inspection.

The utility supply connection is made at the utility service disconnect circuit breaker terminals. The generator and customer load connections are made at the transfer switch mechanism, inside the switch enclosure.

Conductor sizes must be adequate to handle the maximum current to which they will be subjected, based on the 75°C column of tables, charts, etc. used to size conductors. The installation must comply fully with all applicable codes, standards and regulations.

All power cables can enter the enclosure through the knockouts provided. If not using the knockouts, conduit entry into the enclosure above the level of uninsulated live parts shall use fittings listed for use in wet locations to maintain the Type 3R rating. Conduits should be arranged to provide separation between the Utility and Generator supply conductors inside the enclosure.

NOTE: If aluminum conductors are used, apply corrosion inhibitor to conductors. After tightening terminal lugs, carefully wipe away any excess corrosion inhibitor.

Tighten terminal lugs to the torque values as noted on the decal located on the inside of the door. After tightening terminal lugs, carefully wipe away any excess corrosion inhibitor.

⚠CAUTION

Equipment damage. Verify all conductors are tightened to the factory specified torque value. Failure to do so could result in damage to the switch base.

(000120)

Connect power source and load conductors to clearly marked terminal lugs on transfer mechanism as follows:

1. Connect utility (normal) power source cables to utility service disconnect circuit breaker if equipped, or N1 and N2 lugs of the transfer switch. See Figure 2-1.
2. Connect the generator (standby) source power cables to transfer switch terminals E1, E2.
3. Connect customer LOAD leads to switch terminals T1, T2.

3.4 — Connecting Start Circuit Wires

Control system interconnections may consist of N1, N2, and T1, and leads 23 and 194. The generator control wiring is a Class 1 signaling circuit. Reference instruction manual of specific engine generator for wiring connection details. Recommended wire gauge sizes for this wiring depends on the length of the wire, as recommended in the following chart:

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Maximum Wire Length	Recommended Wire Size
1-115 ft (1-35m)	No. 18 AWG.
116-185 ft (36-56m)	No. 16 AWG.
186-295 ft (57-89m)	No. 14 AWG.
296-460 ft (90-140m)	No. 12 AWG.

Exception: Conductors of AC and DC circuits, rated 1000 volts nominal, or less, shall be permitted to occupy the same equipment, cable, or conduit. All conductors shall have an insulation rating equal to at least the maximum circuit voltage applied to any conductor within the equipment, cable, or conduit. See NEC 300.3(C)(1).

3.5 — Connecting Smart A/C Module

The Smart A/C Module can control an air conditioner (24 VAC) directly. See Figure 3.1.

3.5.1— Control of Air Conditioner Load

1. Route the thermostat cable (from the furnace/thermostat to the outdoor air conditioner unit) to the transfer switch.
2. Connect the wire to the terminal strip terminals (A/C 1) on the Smart A/C Module as shown in Figure 3.1. These are normally closed contacts which open upon load shed conditions. Route thermostat wire away from high voltage wires.
3. If required, connect additional air conditioners to the terminal strip terminals (A/C 2-4).

Contact Ratings	
A/C 1-4	24 VAC, 1.0 Amp Max

NOTE: These instructions are for a typical air conditioner installation. Control of certain heat pumps and 2-stage air conditioners may require special connections or the use of Smart Management Modules (SMM) to control the loads.

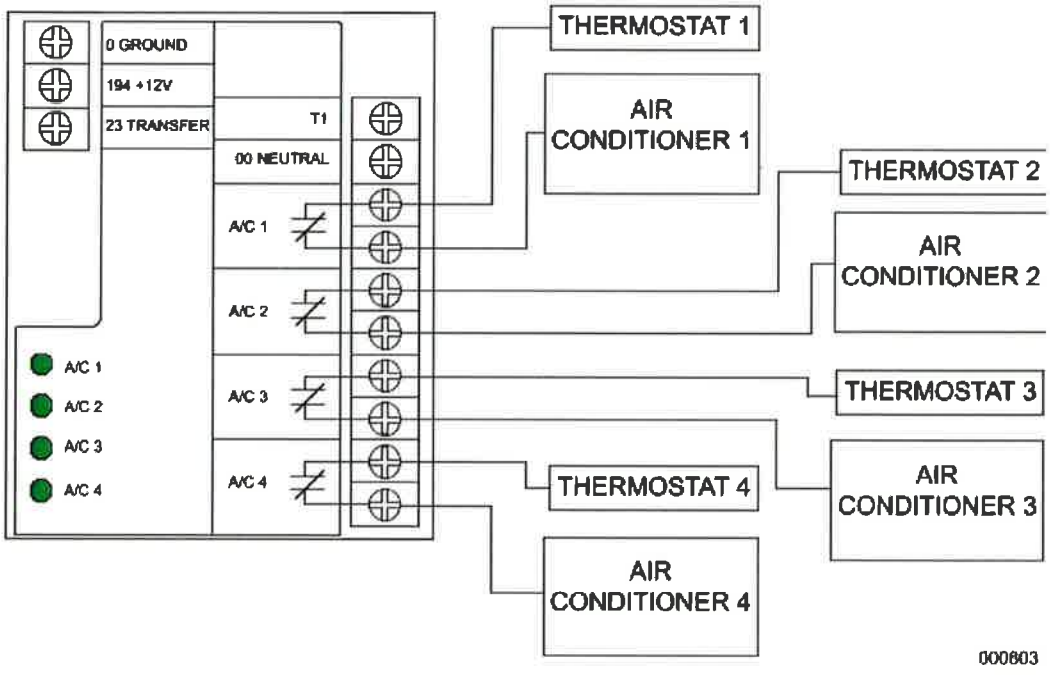

Figure 3-1. Typical Smart A/C Connections

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3.6 — Auxiliary Contacts

If desired, there are Auxiliary Contacts 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 (D). See Figure 3-2.

Contact operation is shown in the following chart:

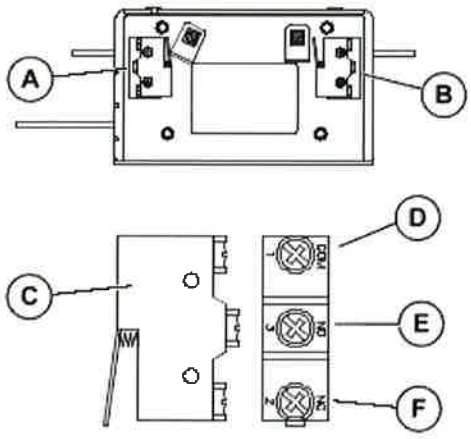
	Switch Position	
	Utility	**Standby**
Common to Normally Open	Open	Closed
Common to Normally Closed	Closed	Open

NOTE: Auxiliary Contacts are rated 10 amps at 125 or 250 volts AC.

⚠CAUTION

Equipment damage. Exceeding rated voltage and current will result in damage to the auxiliary contacts.

(000134)



000140

Figure 3-2. Auxiliary Contacts

A	Auxiliary Contact (Actuated)
B	Auxiliary Contact (Non-Actuated)
C	Single Contact (Utility Position)
D	Common Terminal
E	Normally Open Terminal
F	Normally Closed Terminal

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Section 4 Operation

4.1 — Functional Tests and Adjustments

Following transfer switch installation and interconnection, inspect the entire installation carefully. A competent, qualified electrician should inspect it. The installation should comply strictly with all applicable codes, standards, and regulations. When absolutely certain the installation is proper and correct, complete a functional test of the system.

⚠CAUTION

Equipment damage. Perform functional tests in the exact order they are presented in the manual. Failure to do so could result in equipment damage.

(000121)

IMPORTANT: Before proceeding with functional tests, read and make sure all instructions and information in this section is understood. Also read the information and instructions of labels and decals affixed to the switch. Note any options or accessories that might be installed and review their operation.

4.2 — Manual Operation

⚠DANGER

Electrocution. Do not manually transfer under load. Disconnect transfer switch from all power sources prior to manual transfer. Failure to do so will result in death or serious injury, and equipment damage.

(000132)

A manual handle is shipped with the transfer switch. See 1 in Figure 4-1. Manual operation must be checked BEFORE the transfer switch is operated electrically. To check manual operation, proceed as follows:

1. Ensure the generator is in the OFF mode.
2. Turn OFF both UTILITY (service disconnect circuit breaker) and EMERGENCY (generator main line circuit breaker) power supplies to the transfer switch.
3. Note position of transfer mechanism main contacts by observing the movable contact carrier arm. This can be viewed through the long narrow slot in the inside cover of the ATS. The top of the movable contact carrier arm is yellow to be easily identified.
   - Manual operation handle in the UP position - LOAD terminals (T1, T2) are connected to UTILITY terminals (N1, N2).
   - Manual operation handle in the DOWN position - LOAD terminals (T1, T2) are connected to EMERGENCY terminals (E1, E2).

⚠CAUTION

Equipment damage. Do not use excessive force while manually operating the transfer switch. Doing so could result in equipment damage.

(000122)

4.2.1— Close to Utility Source Side

Before proceeding, verify the position of the switch by observing the position of manual operation handle in Figure 4-1. If the handle is UP, the contacts are closed in the NORMAL (UTILITY) position, no further action is required. If the handle is DOWN, proceed with Step 1.

1. With the handle inserted into the movable contact carrier arm (see A in Figure 4-1), move handle UP. Be sure to hold on to the handle as it will move quickly after the center of travel.
2. Remove manual operating handle from movable contact carrier arm. Return handle to storage bracket (see B in Figure 4-1).

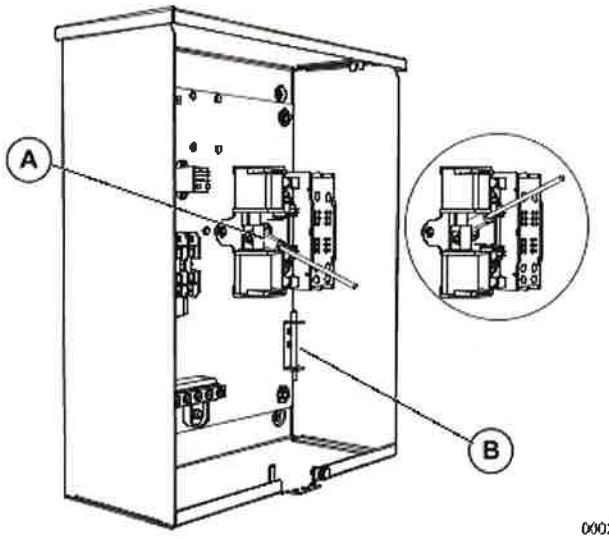

Figure 4-1

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4.2.2— Close to Generator Source Side

Before proceeding, verify the position of the switch by observing the position of the manual operation handle in Figure 4-1. If the handle is DOWN, the

contacts are closed in the GENERATOR (STANDBY) position. No further action is required. If the handle is UP, proceed with Step 1.

1. With the handle inserted into the movable contact carrier arm, move the handle DOWN. Be sure to hold on to the handle as it will move quickly after the center of travel.
2. Remove manual operating handle from movable contact carrier arm. Return handle to storage bracket.

4.2.3— Return to Utility Source Side

1. Manually actuate switch to return manual operating handle to the UP position.
2. Remove manual operating handle from movable contact carrier arm. Return handle to storage bracket.

4.3 — Voltage Checks

4.3.1— Utility Voltage Checks

1. Turn ON the UTILITY power supply to the transfer switch using the utility service disconnect circuit breaker.

⚠DANGER

Electrocution. High voltage is present at transfer switch and terminals. Contact with live terminals will result in death or serious injury.

(000129)

2. With an accurate AC voltmeter, check for correct voltage. Measure across ATS terminal lugs N1 and N2; N1 to NEUTRAL and N2 to NEUTRAL.

⚠DANGER

Electrocution. Turn utility supply OFF before working on utility connections of the transfer switch. Failure to do so will result in death or serious injury.

(000123)

4.3.2— Generator Voltage Checks

1. On the generator panel, select the MANUAL mode of operation. The generator should crank and start.
2. Let the generator stabilize and warm up at no-load for at least five minutes.

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3. Set the generator's main circuit breaker (CB1) to its ON or CLOSED position.

⚠DANGER

Electrocution. High voltage is present at transfer switch and terminals. Contact with live terminals will result in death or serious injury.

(000129)

4. With an accurate AC voltmeter and frequency meter, check the no-load, voltage and frequency. Measure across ATS terminal lugs E1 to E2; E1 to NEUTRAL and E2 to NEUTRAL.

Frequency	60-62 Hz
Terminals E1 to E2	240-246 VAC
Terminals E1 to NEUTRAL	120-123 VAC
Terminals E2 to NEUTRAL	120-123 VAC

5. When certain that generator supply voltage is correct and compatible with transfer switch ratings, turn OFF the generator supply to the transfer switch.
6. Set the generator main circuit breaker (CB1) to OFF or OPEN.
7. On the generator panel, select the OFF mode to shut down the generator.

NOTE: Do NOT proceed until generator AC output voltage and frequency are correct and within stated limits. If the no-load voltage is correct but no-load frequency is incorrect, the engine governed speed may require adjustment. If no-load frequency is correct but voltage is not, the voltage regulator may require adjustment.

4.4 — Generator Tests Under Load

1. Set the generator main circuit breaker to OFF or OPEN.
2. Set the utility service disconnect circuit breaker to OFF or OPEN.
3. Manually actuate the transfer switch main contacts to the emergency (Standby) position. See "Manual Operation".
4. To start the generator, select the MANUAL mode of operation. When engine starts, let it stabilize for a few minutes.
5. Set the generator main circuit breaker to ON or CLOSED. The generator now powers all LOAD circuits. Check generator operation under load as follows:

- Turn on electrical loads to the full rated wattage/amperage capacity of the generator. DO NOT OVERLOAD.

- With maximum rated load applied, check voltage and frequency across transfer switch terminals E1 and E2. Voltage should be greater than 230 VAC (240 VAC system); frequency should be greater than 59 Hz.
- Verify that the gas pressure remains within acceptable parameters (see the generator Installation Guidelines manual).
- Let the generator run under rated load for at least 30 minutes. With unit running, listen for unusual noises, vibration, overheating, etc., that might indicate a problem.

6. When checkout under load is complete, set main circuit breaker of the generator to the OFF or OPEN position.
7. Let the generator run at no-load for several minutes. Then, shut down by selecting the OFF mode.
8. Move the main switch contacts back to the utility position.

NOTE: See "Manual Operation". Handle and operating lever of transfer switch should be in down position.

9. Turn on the utility power supply to transfer switch, using whatever means provided (such as a utility main line circuit breaker). The utility power source now powers the loads.
10. The system is now set for fully automatic operation.

4.5 — Checking Automatic Operation

To check the system for proper automatic operation, proceed as follows:

1. Verify generator is in OFF mode.
2. Verify switch is de-energized.
3. Install front cover of the transfer switch.
4. Turn the utility power supply to the transfer switch ON, using the utility main line circuit breaker.
5. Set the generator main circuit breaker to ON.
6. On the generator panel, select AUTO. The system is now ready for automatic operation.
7. Turn utility power supply to the transfer switch OFF.

With the generator ready for automatic operation, the engine should crank and start when the utility source power is turned OFF after a ten second delay (factory default setting). After starting, the transfer switch should connect load circuits to the standby side after a five (5) second delay. Let the system operate through its entire automatic sequence of operation.

With the generator running and loads powered by generator AC output, turn ON the utility power supply to the transfer switch. The following should occur:

- After approximately 15 seconds, the switch should transfer loads back to the utility power source.
- Approximately one minute after re-transfer, the engine should shut down.

With the generator in the AUTOMATIC mode, the system is now set for fully automatic operation.

4.6 — Installation Summary

1. Verify the installation has been properly performed as outlined by the manufacturer and that it meets all applicable laws and codes.
2. Verify proper operation of the system as outlined in the appropriate installation and owner's manuals.
3. Educate the end-user on the proper operation, maintenance and service call procedures.

4.7 — Shutting Generator Down While Under Load

Important! To turn the generator off during utility outages to perform maintenance, or conserve fuel, follow these steps:

To turn the generator OFF (while running in AUTO and online):

1. Turn the main utility disconnect OFF.
2. Turn the main line circuit breaker (MLCB) on the generator to OFF (OPEN).
3. Turn the generator OFF.

To turn the generator back ON:

1. Put the generator back into AUTO and allow to start and warm-up for a few minutes.
2. Set the MLCB on the generator to ON.

The system will now be operating in automatic mode. The main utility disconnect can be turned ON (CLOSED).

If Utility returns, the transfer switch will return to utility mode and the generator will cycle off after it times out.

4.8 — Testing The Smart A/C Module

A Test pushbutton is provided on the bottom of the Smart A/C Module to test the operation of the load shed functions. The Test button will work when the ATS is in the Utility or the Generator position.

1. Turn on the Utility supply to the ATS.
2. Verify managed loads are powered and all LEDs illuminate on Smart A/C Module.
3. Press the TEST button on the Smart A/C Module.
4. Verify that all of the connected loads to be "shed" become disabled.

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5. After five (5) minutes verify A/C 1 is energized and Status LED A/C 1 is ON.
6. After another 15 seconds, verify A/C 2 is energized and Status LED A/C 2 is ON.
7. After another 15 seconds, verify Load A/C 3 is energized and Status LED Load A/C 3 is ON.
8. After another 15 seconds, verify A/C 4 is energized and Status LED A/C 4 is ON.

4.9 — Testing The Smart Management Module

Refer to the SMM Owner's/Installation Manual for testing that product.

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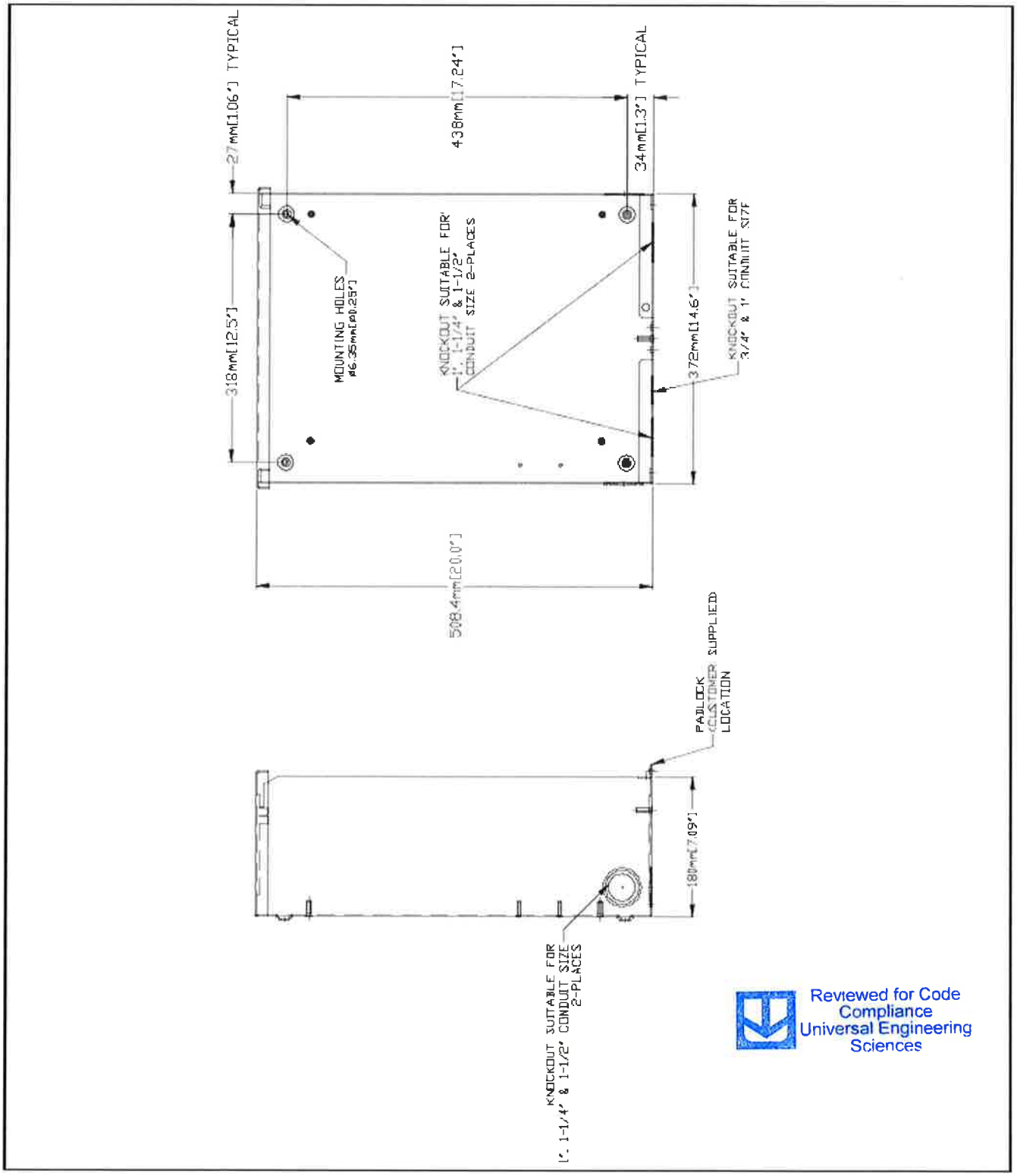
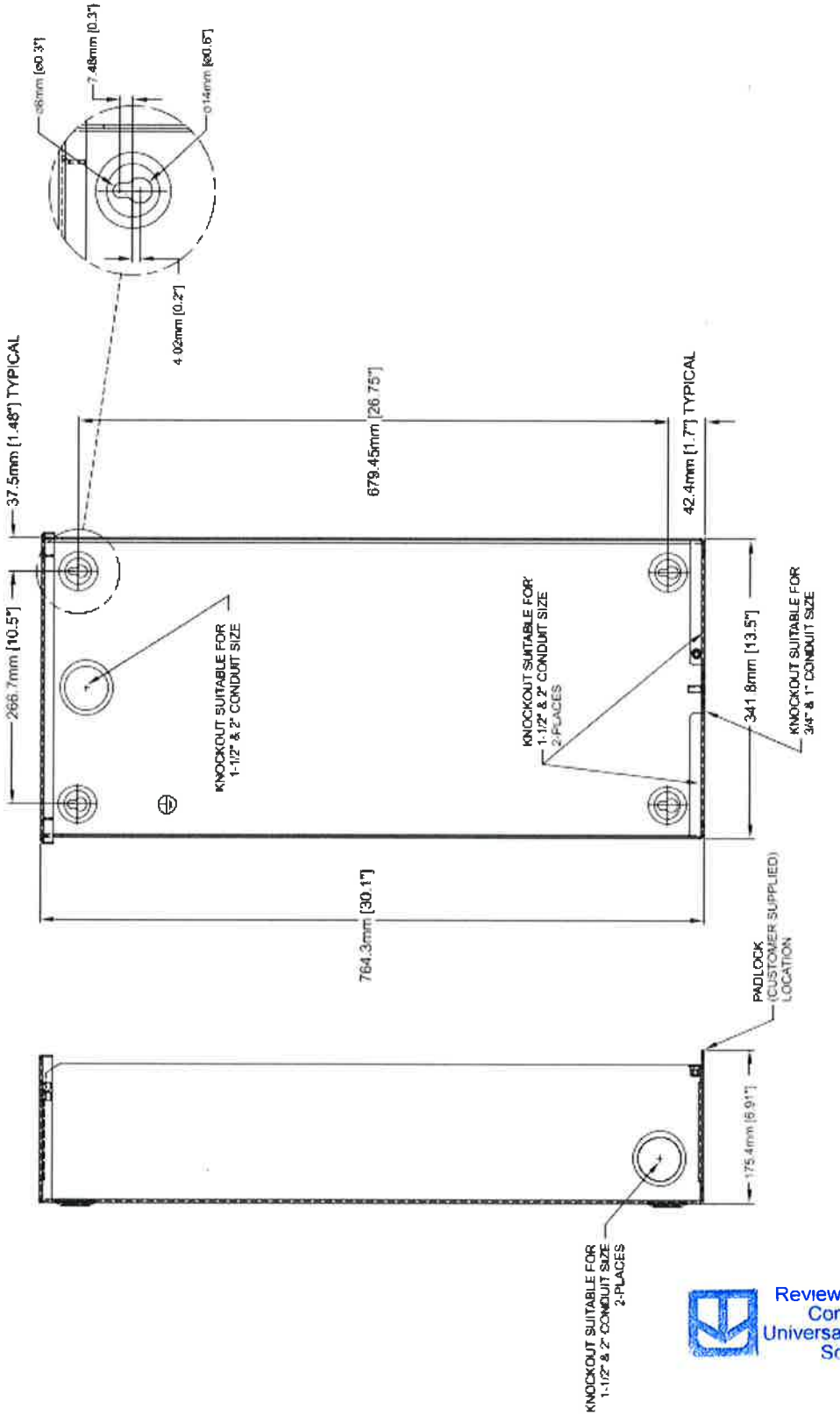
Section 5 Drawings and Diagrams

5.1 — Installation Drawing

5.1.1— No. 0G6832-A 100A SE & non-SE/150-200A non-SE



5.1.2— No. 0K2422-A 150/200A SE



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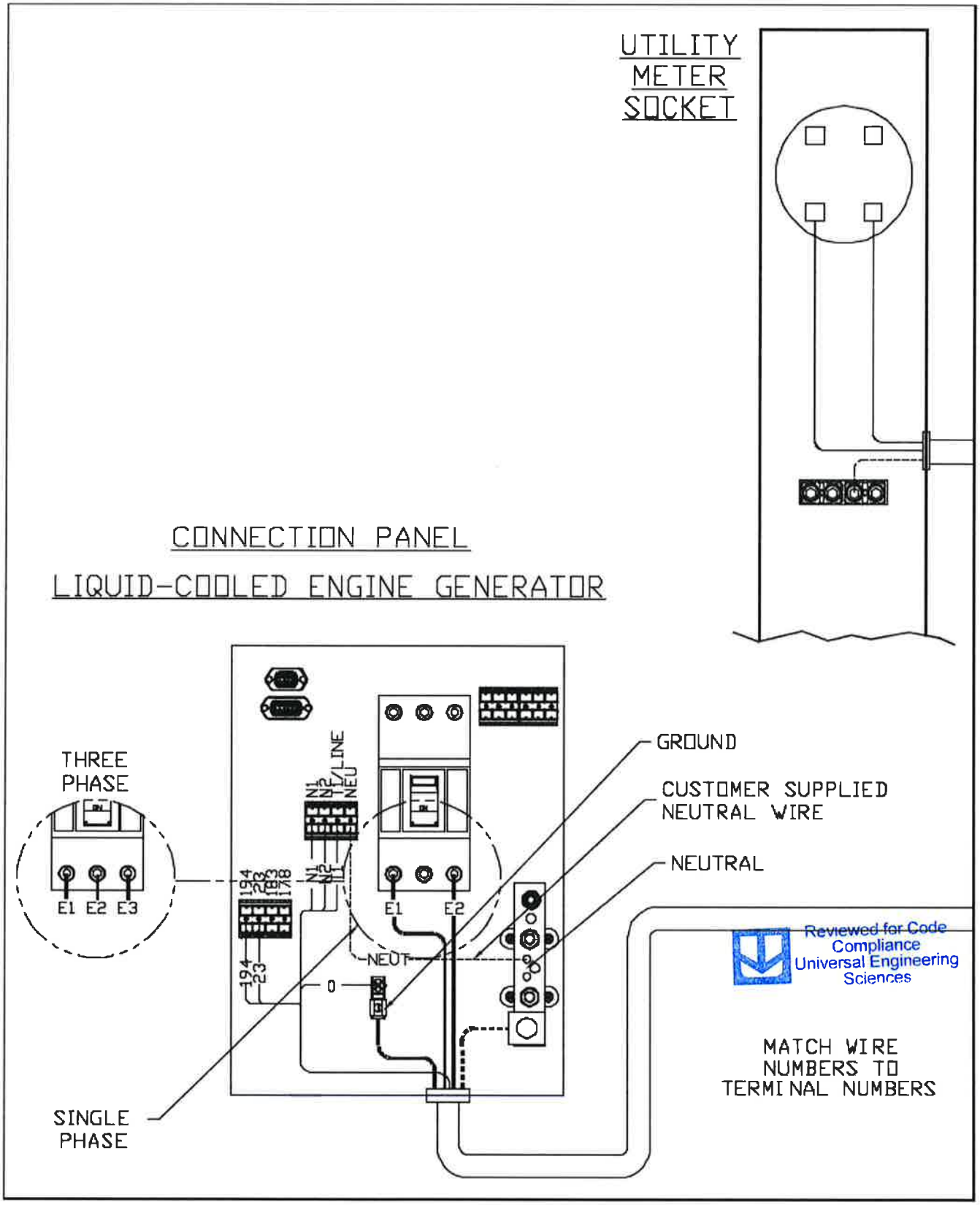
5.2 — Interconnection Drawing

5.2.1— No. 0L3240-A (Part 1 of 4) Liquid-cooled Generator



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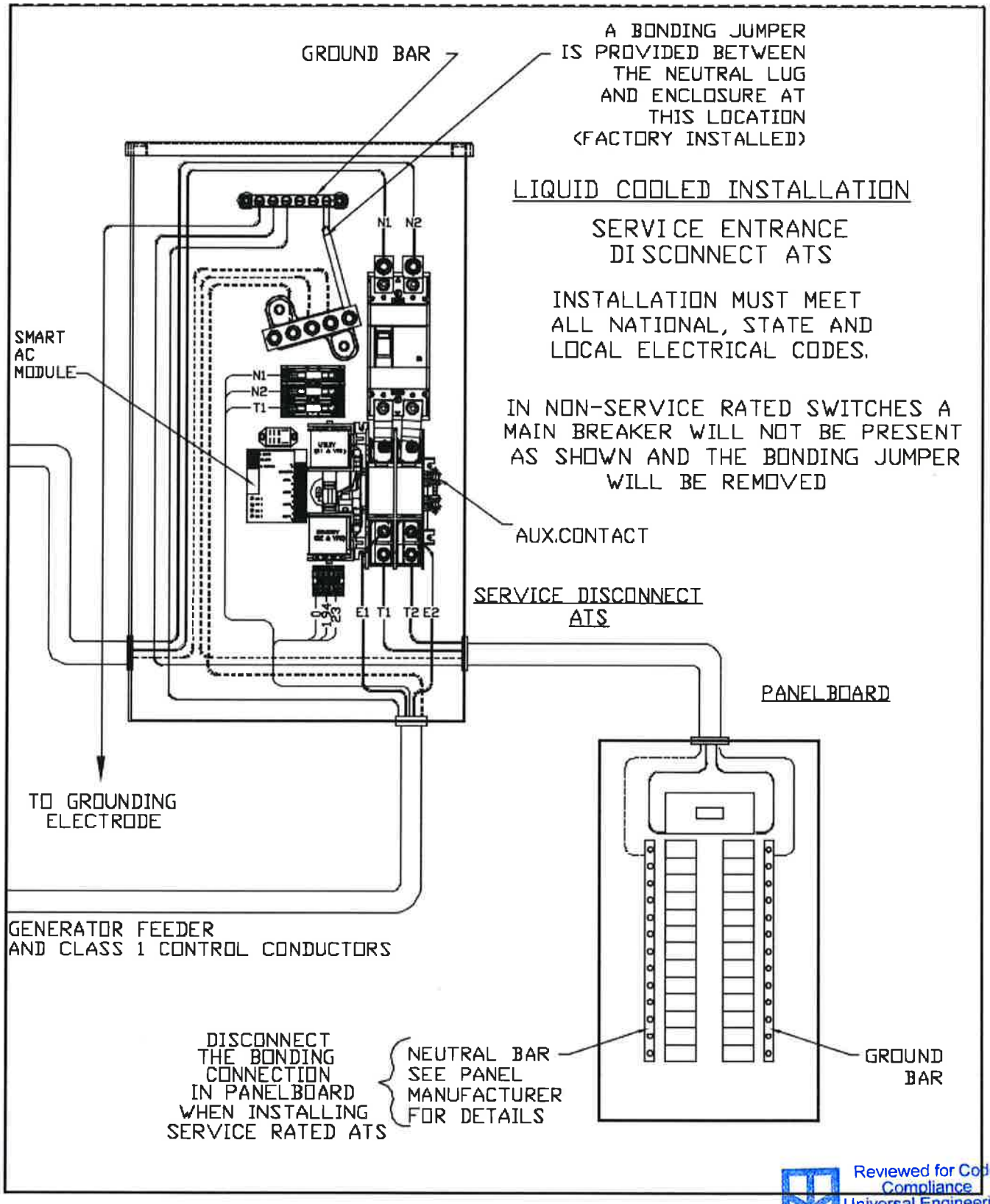
5.2.2— No. 0L3240-A (Part 2 of 4) Liquid-cooled Generator



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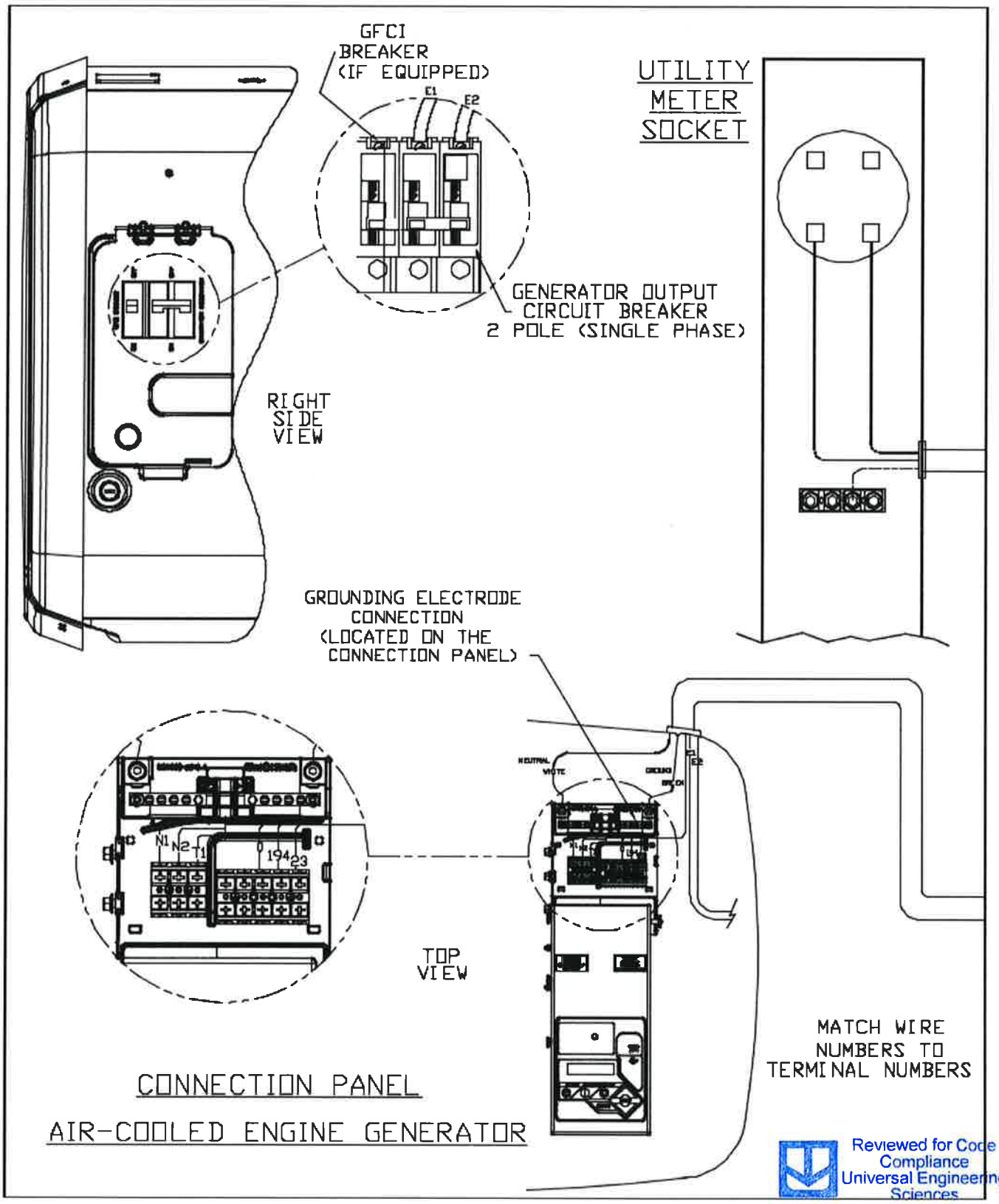
5.2.3— No. 0L3240-A (Part 3 of 4) Air-cooled Generator



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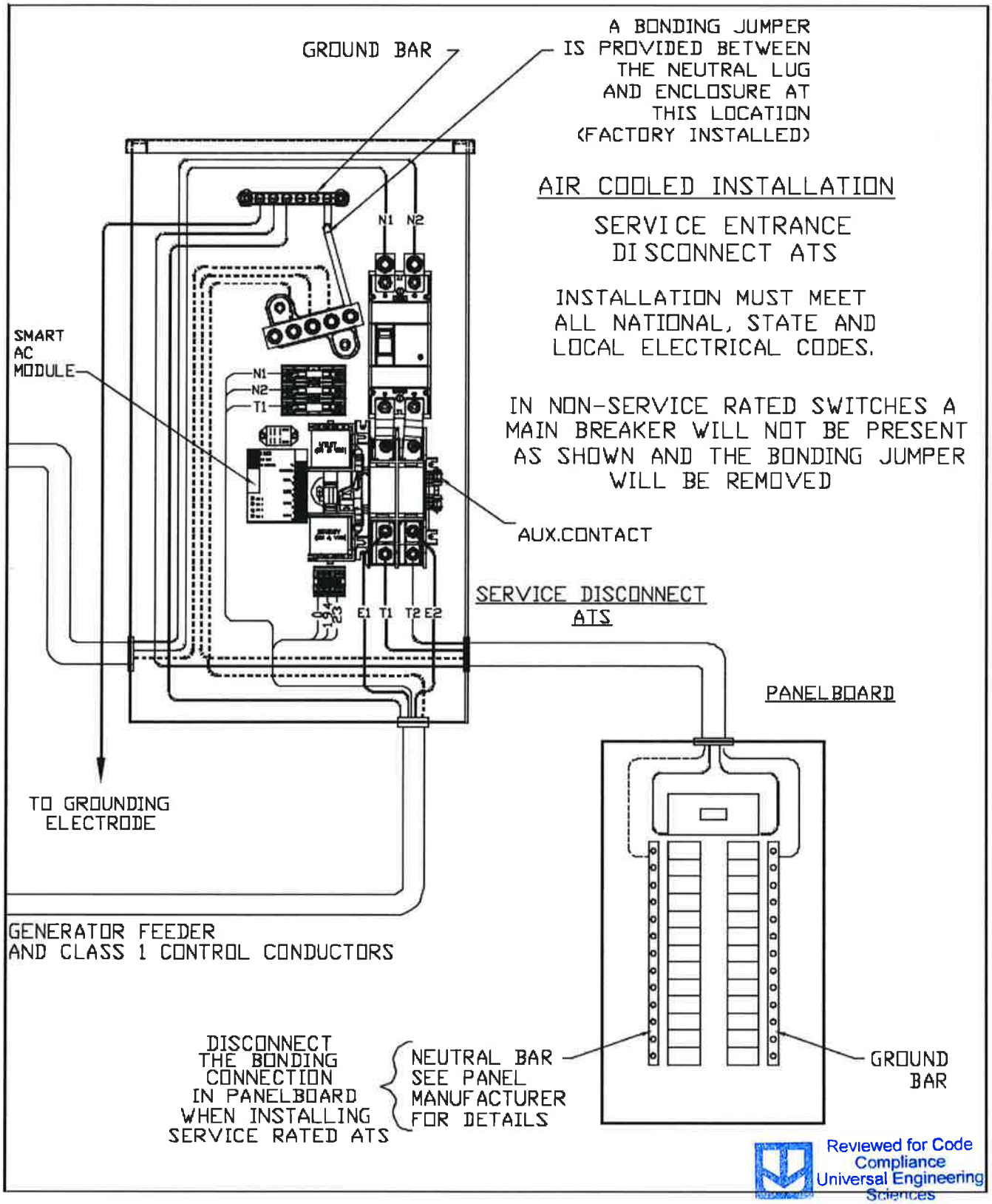
5.2.4— No. 0L3240-A (Part 4 of 4) Air-cooled Generator



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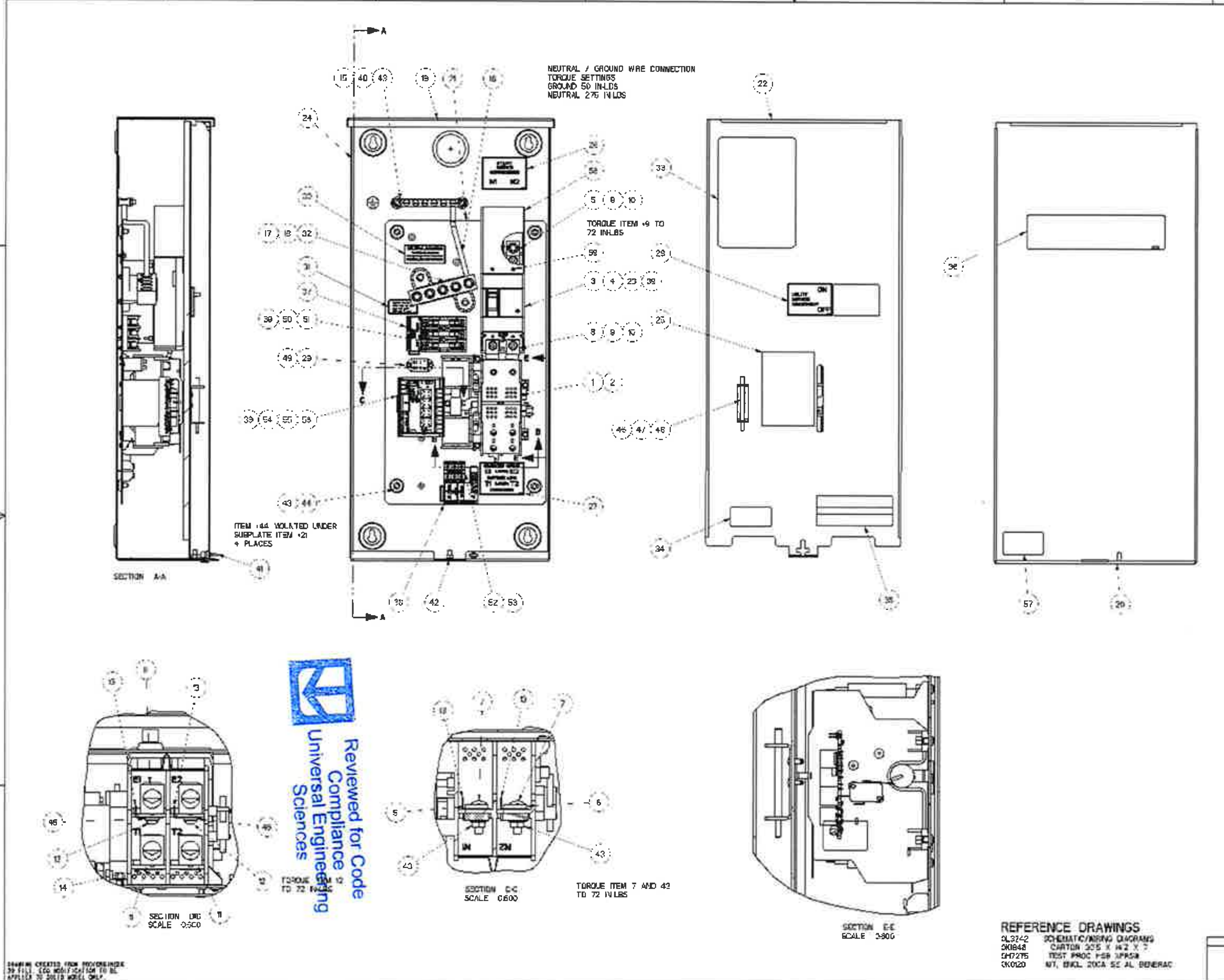

ITEM #	PART #	QTY	DESCRIPTION
1	[illegible]		[illegible]
2	[illegible]		[illegible]
3	[illegible]		[illegible]
4	[illegible]		[illegible]
5	[illegible]		[illegible]
6	[illegible]		[illegible]
7	[illegible]		[illegible]
8	[illegible]		[illegible]
9	[illegible]		[illegible]
10	[illegible]		[illegible]
11	[illegible]		[illegible]
12	[illegible]		[illegible]
13	[illegible]		[illegible]
14	[illegible]		[illegible]
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16	[illegible]		[illegible]
17	[illegible]		[illegible]
18	[illegible]		[illegible]
19	[illegible]		[illegible]
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23	[illegible]		[illegible]
24	[illegible]		[illegible]
25	[illegible]		[illegible]
26	[illegible]		DECALS, SERVICE ENTRANCE
27	[illegible]		[illegible]
28	[illegible]		DECALS, SERVICE ENTRANCE
29	[illegible]		[illegible]
30	[illegible]		[illegible]
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35	[illegible]		[illegible]
36	[illegible]		[illegible]
37	[illegible]		[illegible]
38	[illegible]		[illegible]
39	[illegible]		[illegible]
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43	[illegible]		[illegible]
44	[illegible]		[illegible]
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46	[illegible]		[illegible]
47	[illegible]		[illegible]
48	[illegible]		[illegible]
49	[illegible]		[illegible]
50	[illegible]		[illegible]
51	[illegible]		[illegible]
52	[illegible]		[illegible]
53	[illegible]		[illegible]
54	[illegible]		[illegible]
55	[illegible]		[illegible]
56	[illegible]		[illegible]
57	[illegible]		[illegible]
58	[illegible]		[illegible]
59	[illegible]		[illegible]
60	[illegible]		[illegible]
61	[illegible]		[illegible]

-SERIAL NUMBER AND FRONT DECAL PER MODEL
--SUPPLIED WITH HARNESS ITEM #51

PART NUMBER	DESCRIPTION	ITEM # 24	ITEM # 36
0L3216	ASSEMBLY 150A SERVICE ENTR GEN	0K7350	PER MODEL
0L3216A	EXPLODED VIEW DRAWING	N/A	N/A
0L3216B	ASSEMBLY 150A SERVICE ENTR GEN	0K17369	0K1098
0L3216C	ASSEMBLY 150A SERVICE ENTR HW/WL	0J3504B	0K274

REFERENCE DRAWINGS

0L3242 SCHEMATIC/WIRING DIAGRAMS
0K1848 CARTON 30.5 X 14.2 X 7
0H7275 TEST PROC FOR XFRSW
0K0120 MT, ENCL 200A SE AL GENERAC

Reviewed for Code Compliance
Universal Engineering Sciences

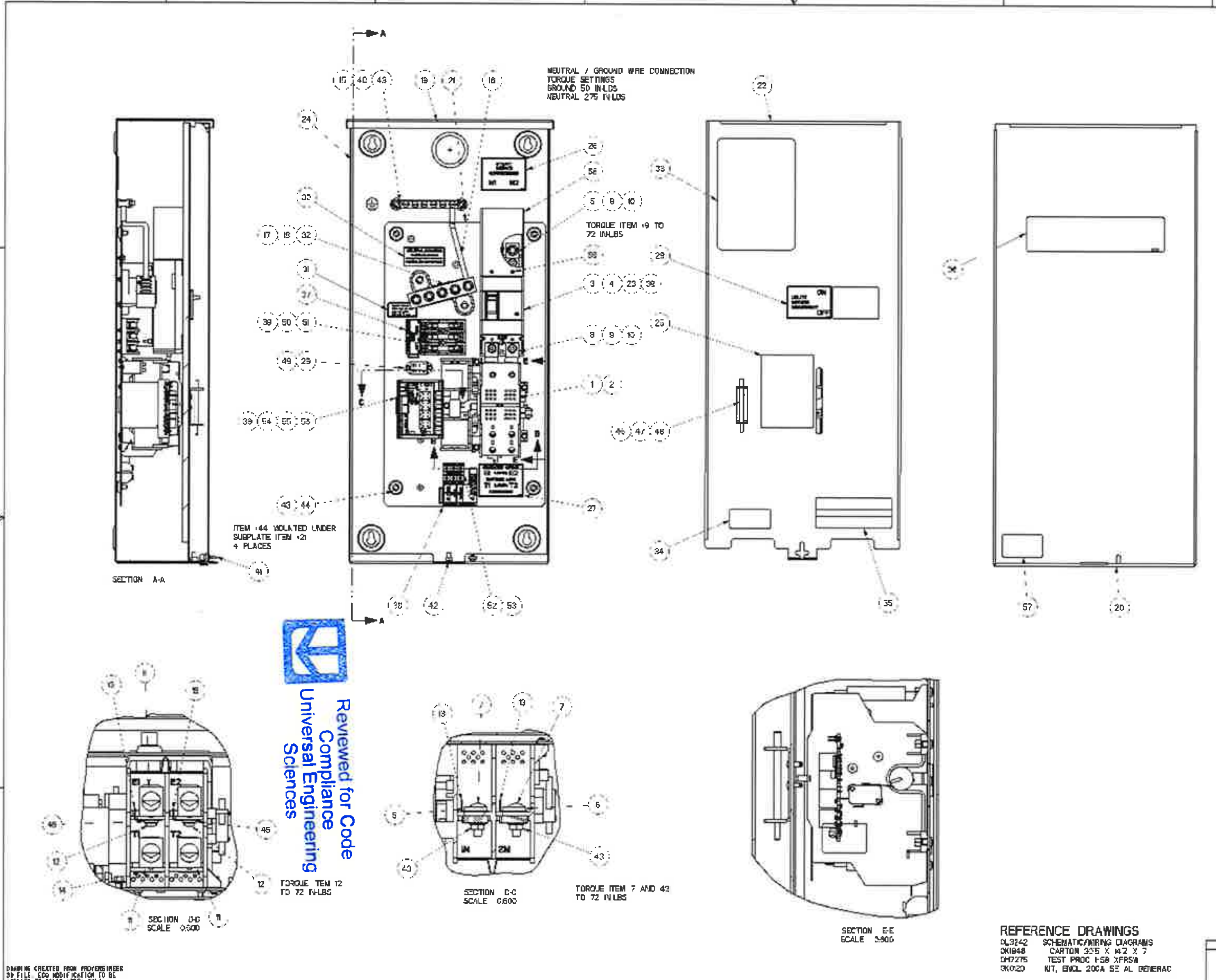
DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ANY MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

GENERAL ASSEMBLY DRAWING

GENERAC

ASSEMBLY 150A SERVICE ENTRANCE GENERAC CB

0L3216$



ITEM #	PART #	QTY	DESCRIPTION
[illegible]	[illegible]	[illegible]	[illegible]

-SERIAL NUMBER AND FRONT DECAL PER MODEL
-SUPPLIED WITH HARNESS ITEM 61

PART NUMBER	DESCRIPTION	ITEM 24	ITEM 35
0L3217	ASSEMBLY 200A SERVICE ENTR GEN	0K0736C	PER MODEL
0L3217A	EXPLODED VIEW DRAWING	N/A	N/A
0L3217B	ASSEMBLY 200A SERVICE ENTR GEN	0K0736C	0K1092
0L3217C	ASSEMBLY 200A SERVICE ENTR HNYWL	0L3504C	0K274
0L3217D	ASSEMBLY 200A SERVICE ENTR HNYWL	0L3504C	0K274

REFERENCE DRAWINGS

0L3242 SCHEMATIC/WIRING DIAGRAMS
0K1848 CARTON 33.5 X 14.2 X 7
0H7275 TEST PROC HSB XFRSW
0K0120 KIT, ENCL 200A SE AL GENERAC

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

GENERAL ASSEMBLY DRAWING

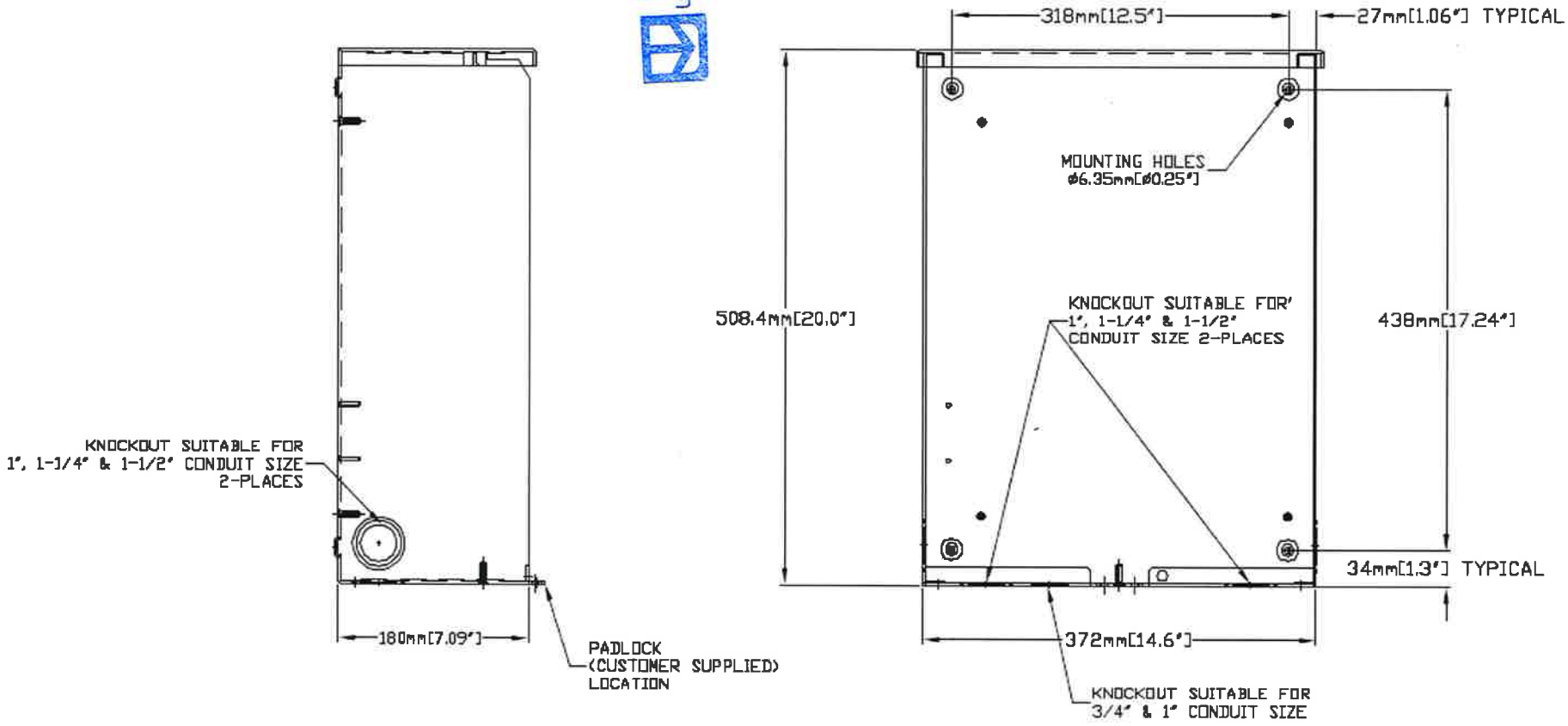
GENERAC

ASSEMBLY 200A SERVICE ENTRANCE GENERAC CB

SIZE D | CAGE NO N/A | DWG NO 0L3217$ | REV C

GROUP C

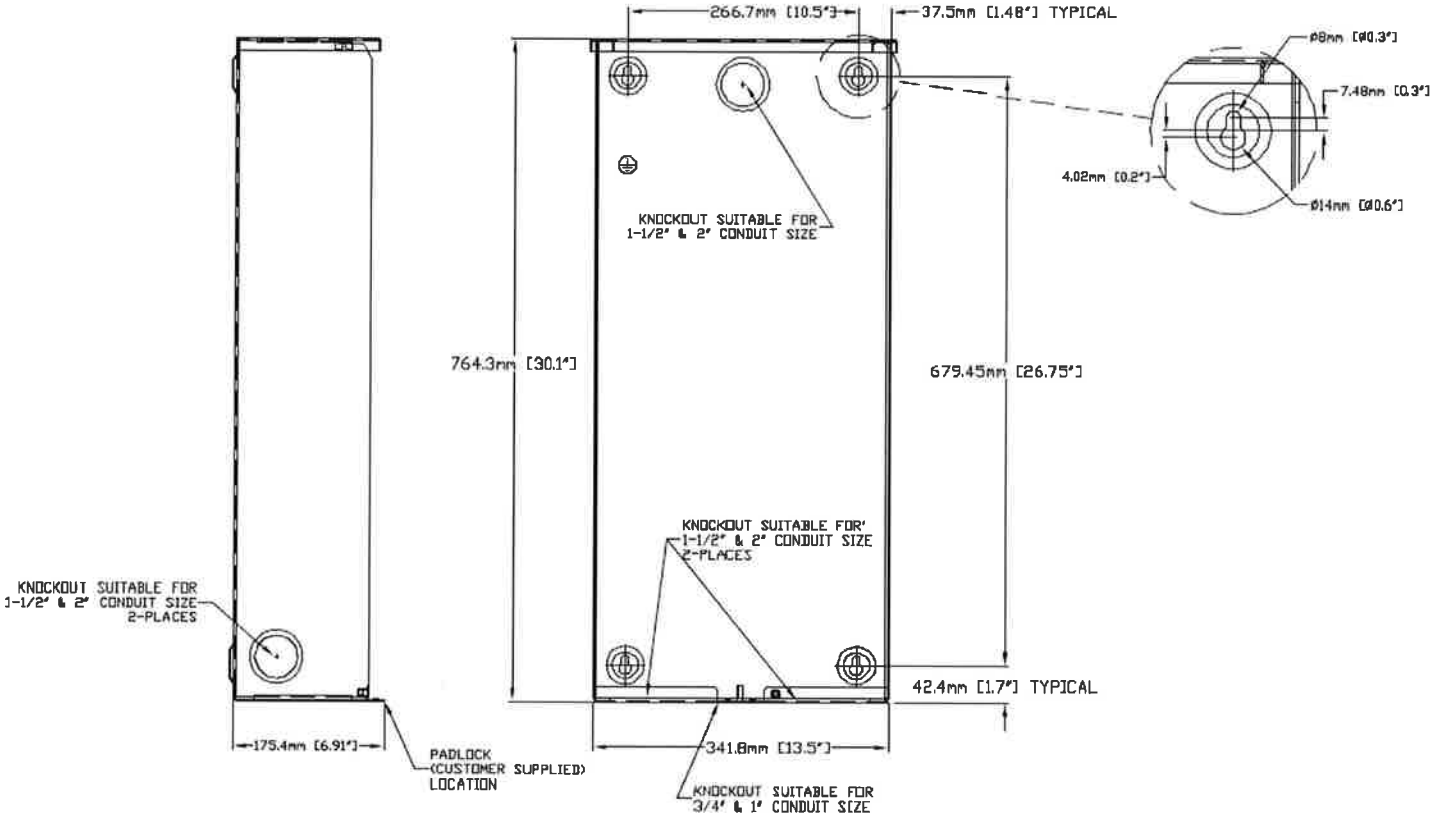
Reviewed for Code Compliance
Universal Engineering Sciences



REVISION: -A-
DATE: 9/12/07

EXPLODED VIEW:
HS TRANSFER SWITCH
DRAWING #: 0G6832

GROUP G



EXPLODED VIEW:
150/200A SE XFER SWITCH
DRAWING #0K2422

REVISION:-A-
DATE: 12/5/12

Reviewed for Code
Compliance
Universal Engineering
Sciences

GROUP G

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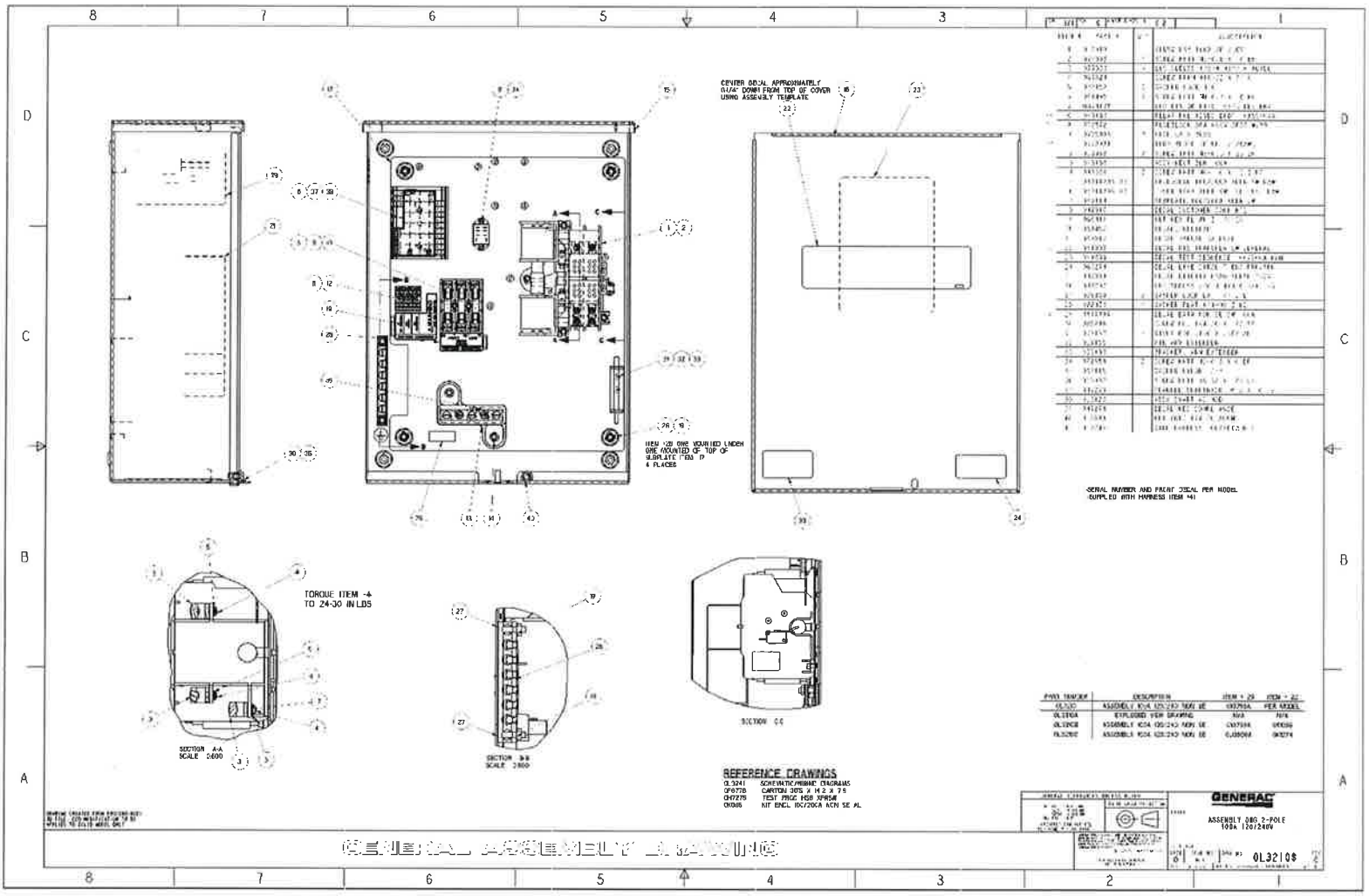
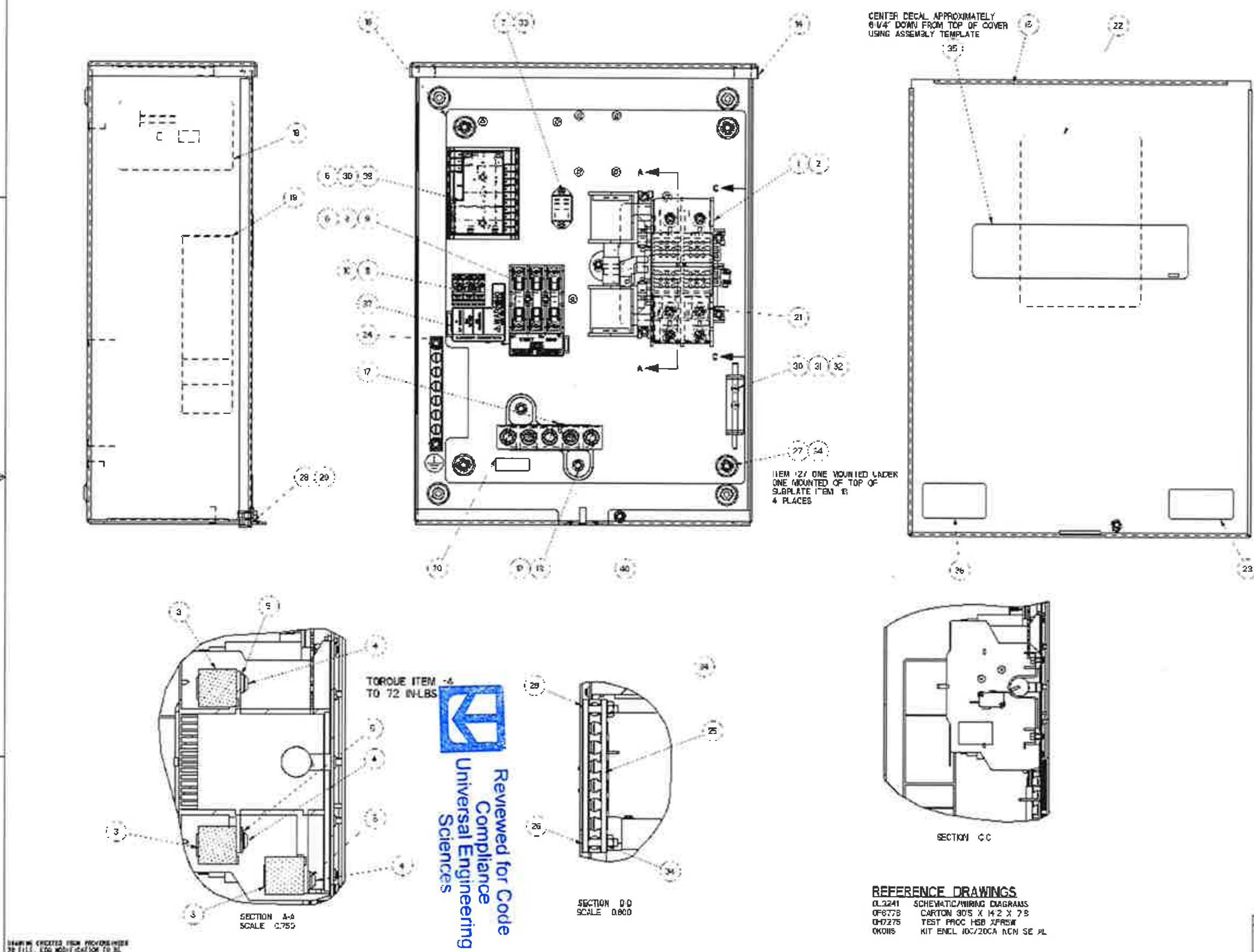
Reviewed for Code Compliance
Universal Engineering Sciences



Reviewed for Code Compliance
Universal Engineering Sciences

ITEM #	PART #	QTY	DESCRIPTION
[illegible]	[illegible]	[illegible]	[illegible]



SERIAL NUMBER AND FRONT DECAL PER MODEL SUPPLIED WITH HARNESS ITEM 41

PART NUMBER	DESCRIPTION	ITEM # 18	ITEM # 35
0L3211	ASSEMBLY 200A 120/240 NOV SE	0K7890	PER MODEL
0L3211A	EXPLODED VIEW DRAWING	N/A	N/A
0L3211B	ASSEMBLY 200A 120/240 NOV SE	0K1799B	0K1096
0L3211C	ASSEMBLY 200A 120/240 NOV SE	0J3806B	0K1274

Reviewed for Code Compliance
Universal Engineering Sciences

REFERENCE DRAWINGS

0L3241 SCHEMATIC/WIRING DIAGRAMS
0F6778 CARTON 30.5 X 14.2 X 7.8
0H7275 TEST PROC HSB XFRSW
0K0115 KIT ENCL 100/200A NON SE RL

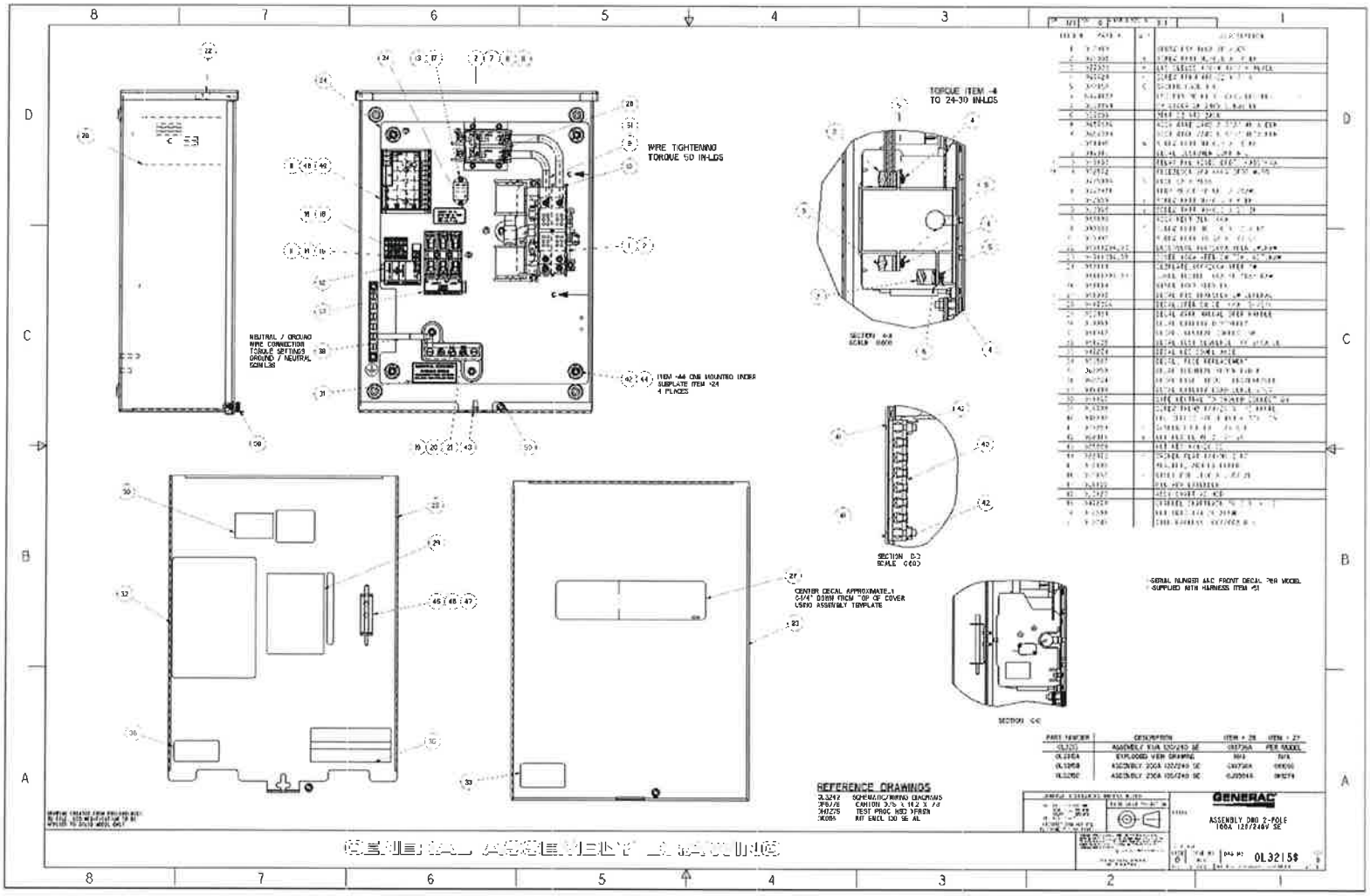
DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ANY MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

GENERAL ASSEMBLY DRAWING

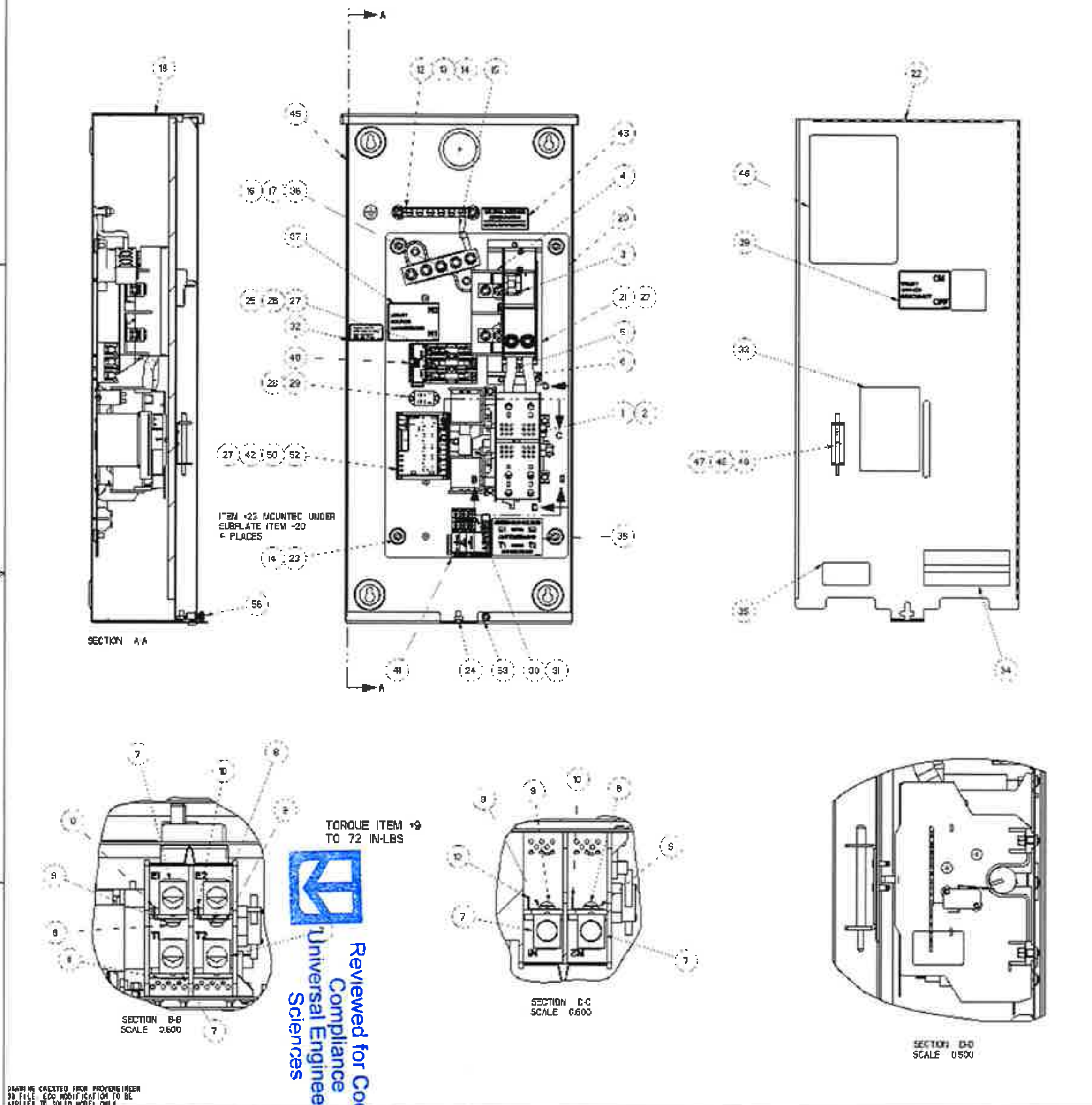
GENERAC

ASSEMBLY DWG 2-POLE 200A 120/240V

SIZE D | SCALE N/A | DWG NO 0L3211$ | REV C



Reviewed for Code Compliance
Universal Engineering Sciences



*SUPPLIED WITH HARNESS ITEM 55

PART NUMBER	DESCRIPTION
0L3218	ASSEMBLY 200A SERVICE ENTR SIEM
0L3218A	EXPLODED VIEW DRAWING

REFERENCE DRAWINGS

0L2242 SCHEMATIC/WIRING DIAGRAMS
0K1846 CARTON 30.5 X 18.2 X 7.8
0K7273 TEST PROC HSB XFRSW
0KC21 KIT, ENCL 200A SE AL SIEMENS

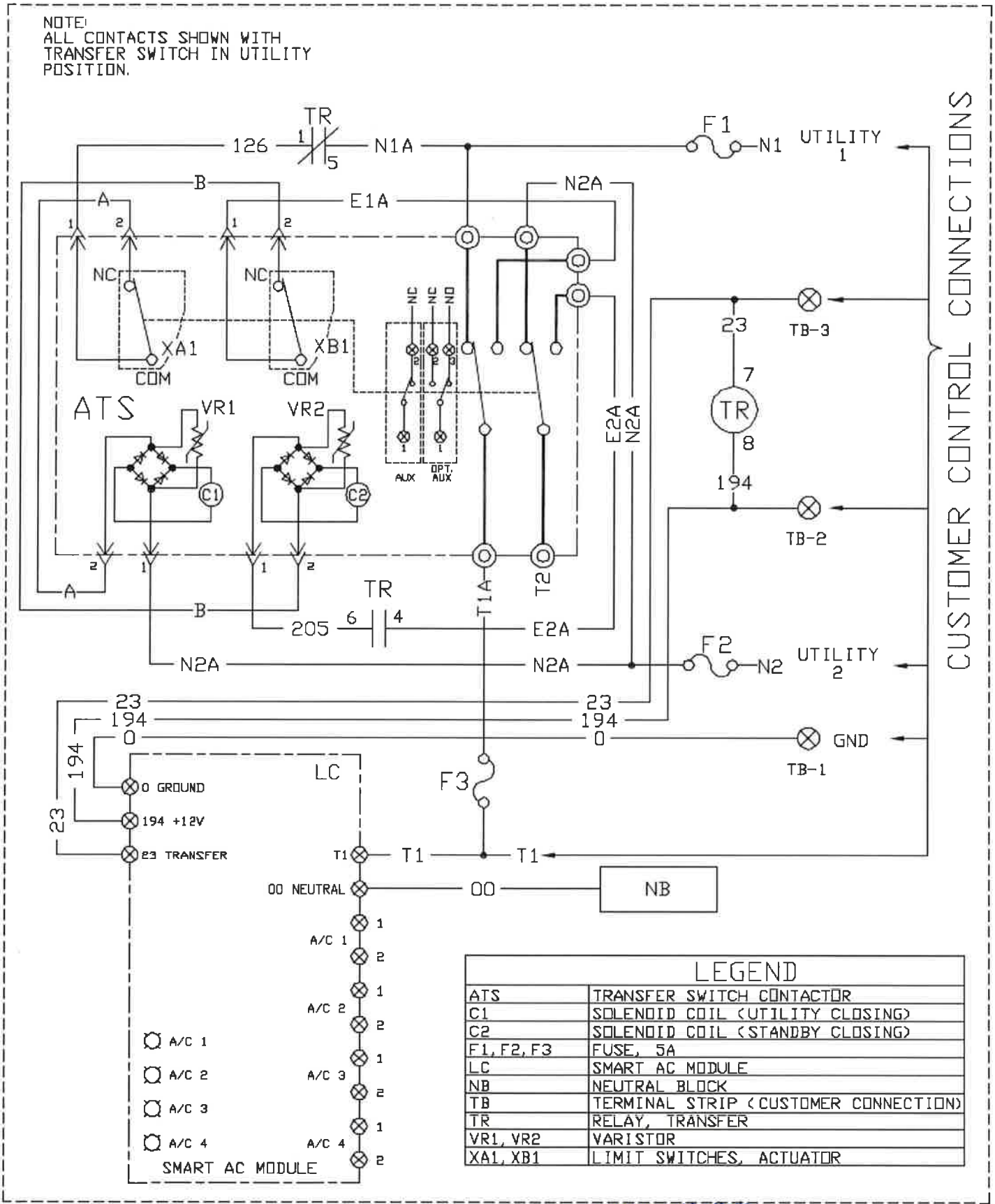
DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

GENERAC

ASSEMBLY 200A SERVICE ENTRANCE SIEMENS CB

0L3218S

GENERAL ASSEMBLY DRAWING



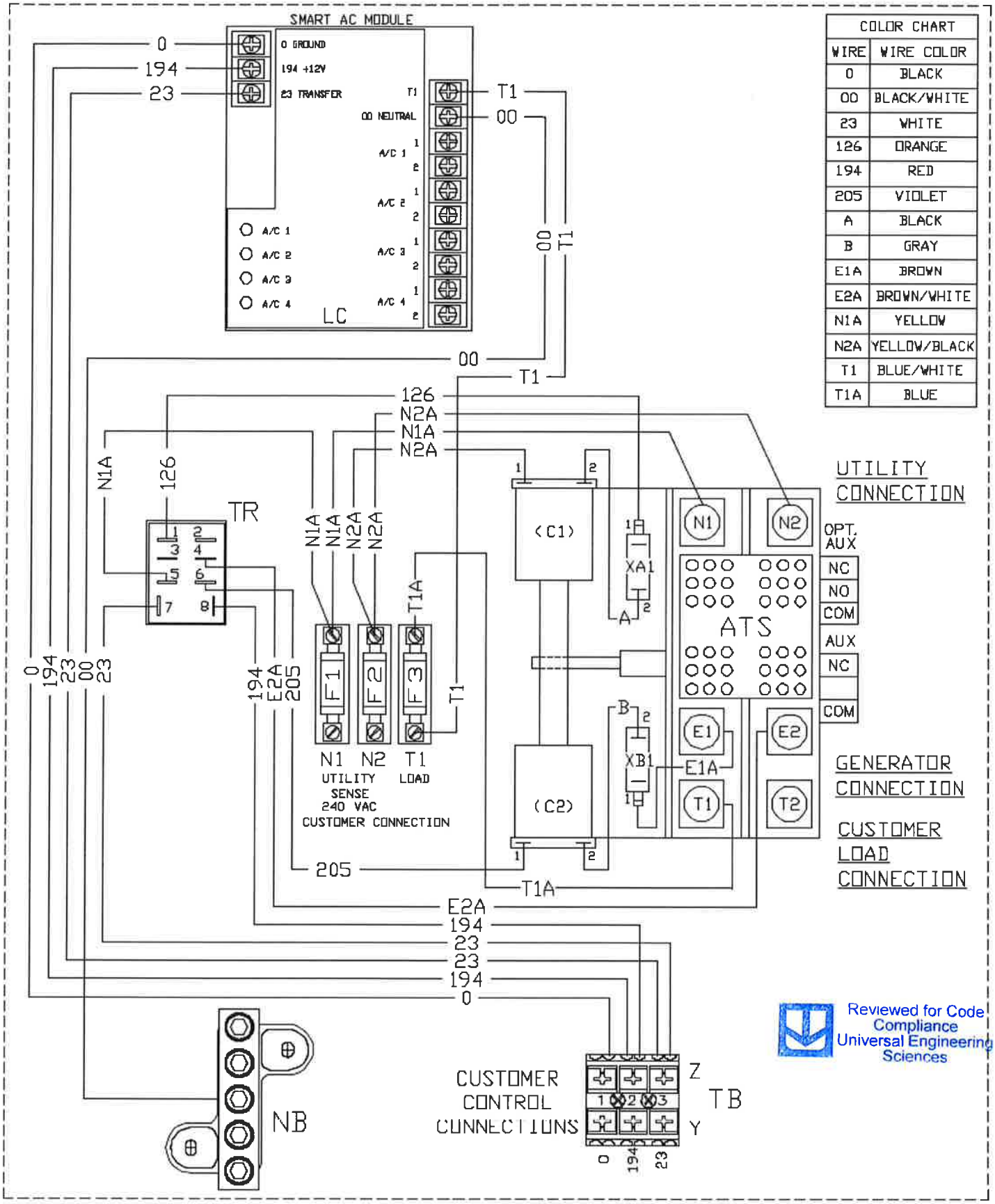
LEGEND	
ATS	TRANSFER SWITCH CONTACTOR
C1	SOLENOID COIL (UTILITY CLOSING)
C2	SOLENOID COIL (STANDBY CLOSING)
F1, F2, F3	FUSE, 5A
LC	SMART AC MODULE
NB	NEUTRAL BLOCK
TB	TERMINAL STRIP (CUSTOMER CONNECTION)
TR	RELAY, TRANSFER
VR1, VR2	VARISTOR
XA1, XB1	LIMIT SWITCHES, ACTUATOR

Reviewed for Code Compliance
Universal Engineering Sciences

SCHEMATIC - DIAGRAM
XFER SW. W/ SMART AC MOD.
DRAWING #: 0L3241

REVISION: "A"
DATE: 03/30/15

GROUP G

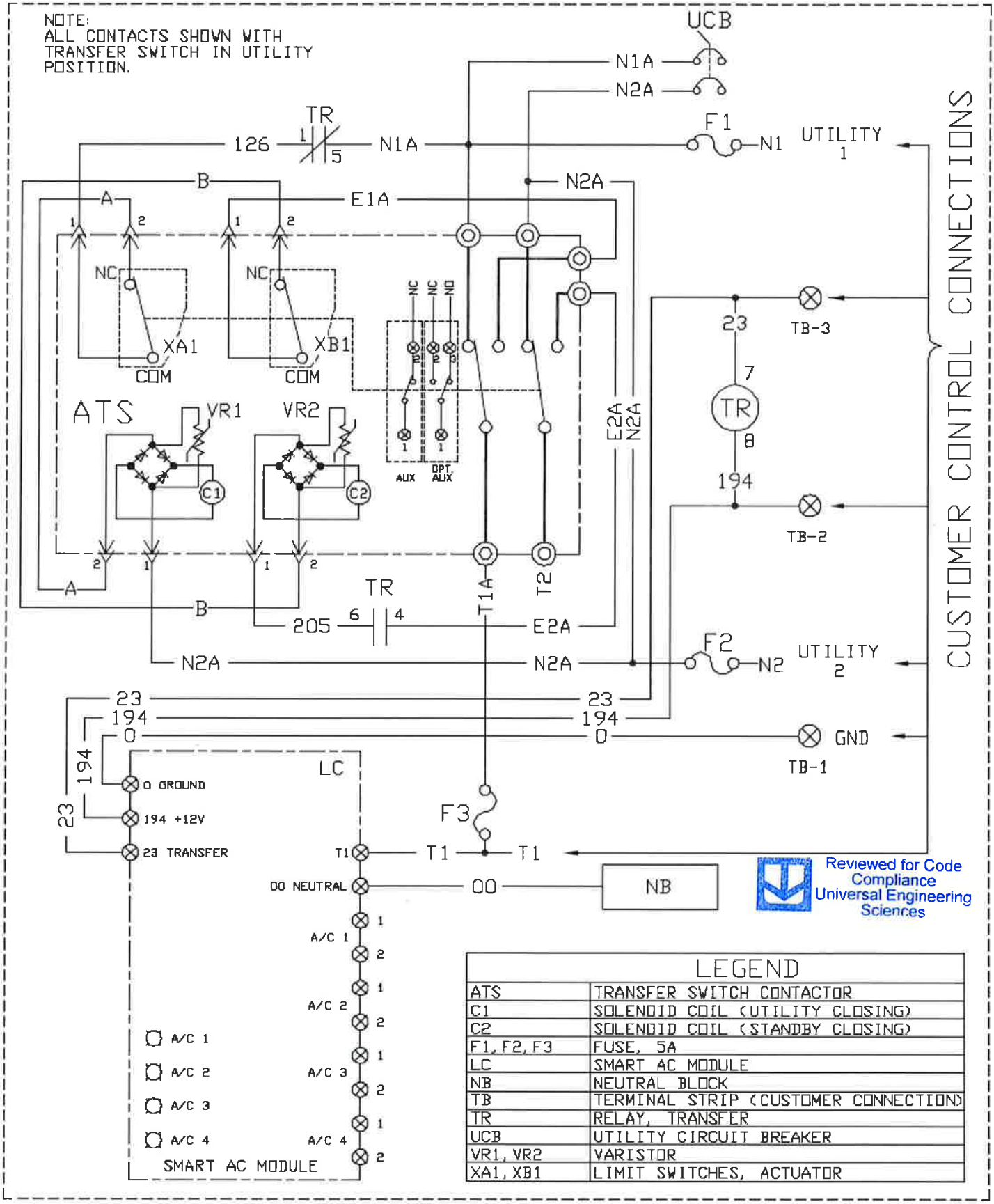


COLOR CHART	
WIRE	WIRE COLOR
0	BLACK
00	BLACK/WHITE
23	WHITE
126	ORANGE
194	RED
205	VIOLET
A	BLACK
B	GRAY
E1A	BROWN
E2A	BROWN/WHITE
N1A	YELLOW
N2A	YELLOW/BLACK
T1	BLUE/WHITE
T1A	BLUE

Reviewed for Code Compliance
Universal Engineering Sciences

WIRING - DIAGRAM
XFER SW. W/ SMART AC MOD.
DRAWING #: 0L3241

REVISION: "A"
DATE: 03/30/15



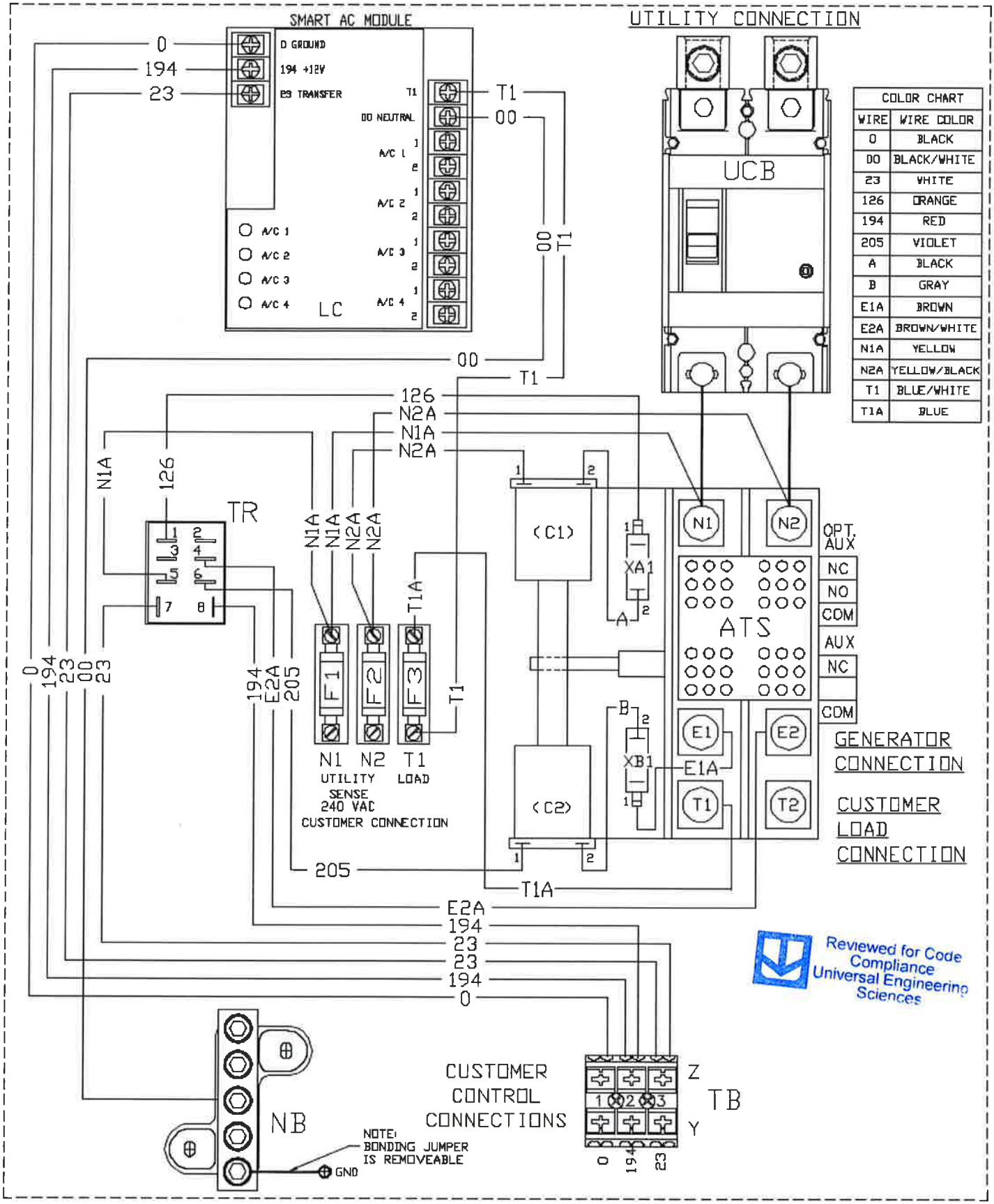
Reviewed for Code Compliance
Universal Engineering Sciences

LEGEND	
ATS	TRANSFER SWITCH CONTACTOR
C1	SOLENOID COIL (UTILITY CLOSING)
C2	SOLENOID COIL (STANDBY CLOSING)
F1, F2, F3	FUSE, 5A
LC	SMART AC MODULE
NB	NEUTRAL BLOCK
TB	TERMINAL STRIP (CUSTOMER CONNECTION)
TR	RELAY, TRANSFER
UCB	UTILITY CIRCUIT BREAKER
VR1, VR2	VARISTOR
XA1, XB1	LIMIT SWITCHES, ACTUATOR

REVISION: "A"
DATE: 03/30/15

SCHEMATIC - DIAGRAM
XFER SW W/SMART AC MOD.
DRAWING #: 0L3242

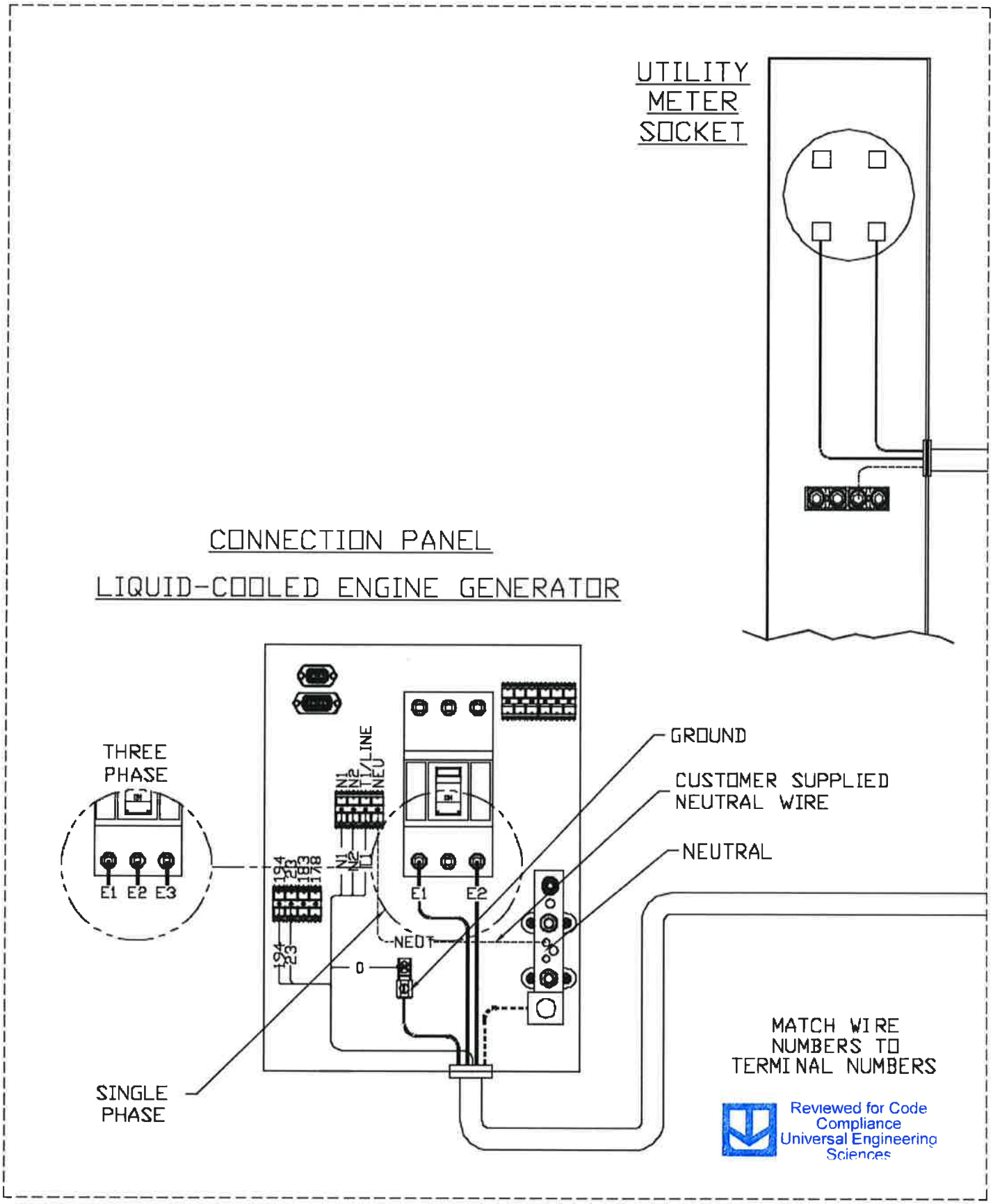
GROUP G



WIRING - DIAGRAM
XFER SW W/SMART AC MOD.
DRAWING #: 0L3242

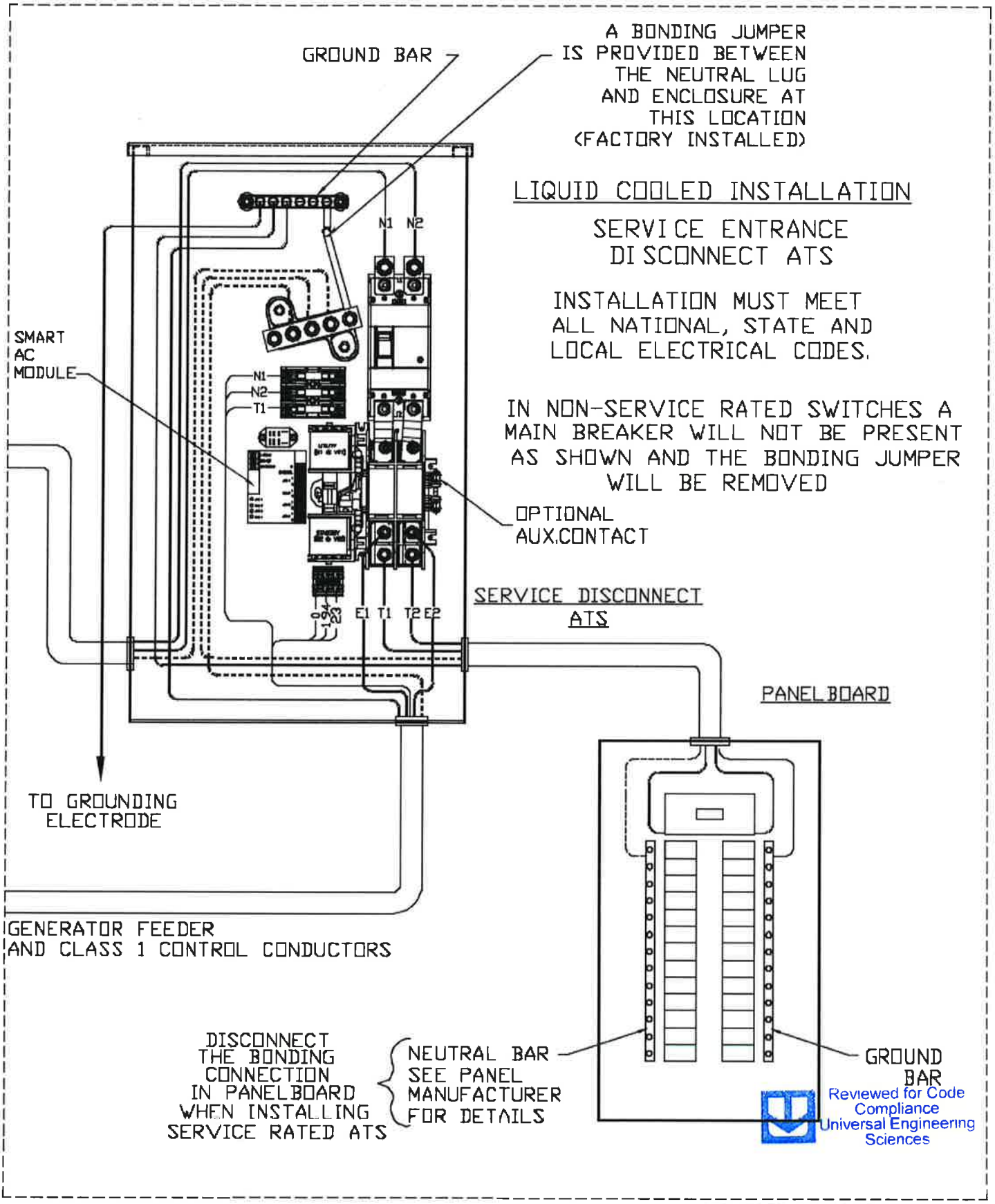
REVISION: "A"
DATE: 03/30/15

GROUP G

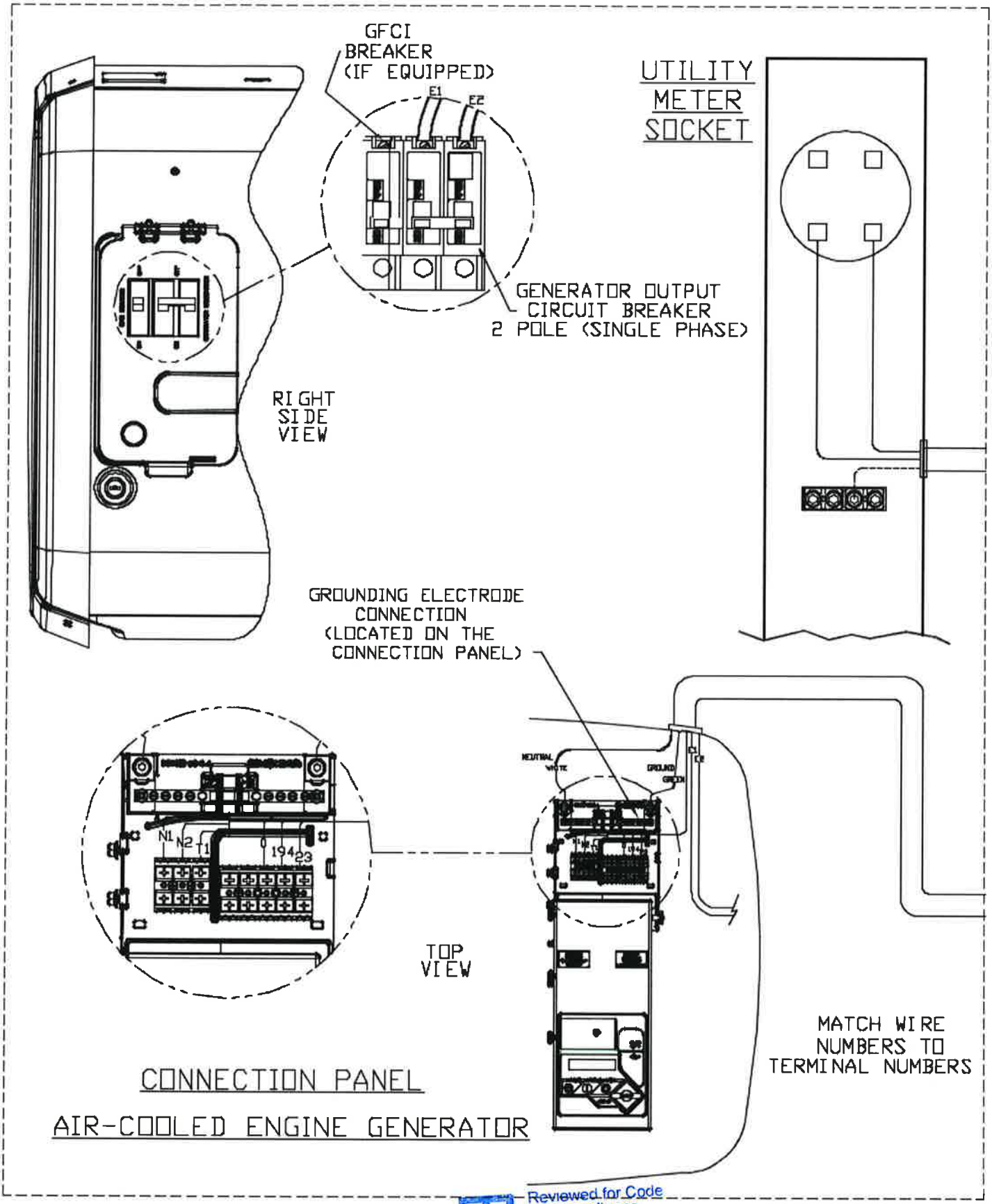


REVISION: "A"
DATE: 03/30/15

INTERCONNECTION DRAWING
SE/NSE W/SMART AC MODULE
DRAWING #: 0L3240


GROUND BAR
A BONDING JUMPER IS PROVIDED BETWEEN THE NEUTRAL LUG AND ENCLOSURE AT THIS LOCATION (FACTORY INSTALLED)
LIQUID COOLED INSTALLATION
SERVICE ENTRANCE DISCONNECT ATS
INSTALLATION MUST MEET ALL NATIONAL, STATE AND LOCAL ELECTRICAL CODES.
IN NON-SERVICE RATED SWITCHES A MAIN BREAKER WILL NOT BE PRESENT AS SHOWN AND THE BONDING JUMPER WILL BE REMOVED
N1
N2
SMART AC MODULE
N1
N2
T1
OPTIONAL AUX.CONTACT
E1 T1 T2 E2
SERVICE DISCONNECT ATS
PANEL BOARD
TO GROUNDING ELECTRODE
GENERATOR FEEDER AND CLASS 1 CONTROL CONDUCTORS
DISCONNECT THE BONDING CONNECTION IN PANELBOARD WHEN INSTALLING SERVICE RATED ATS
NEUTRAL BAR SEE PANEL MANUFACTURER FOR DETAILS
GROUND BAR
Reviewed for Code Compliance
Universal Engineering Sciences

GROUP G



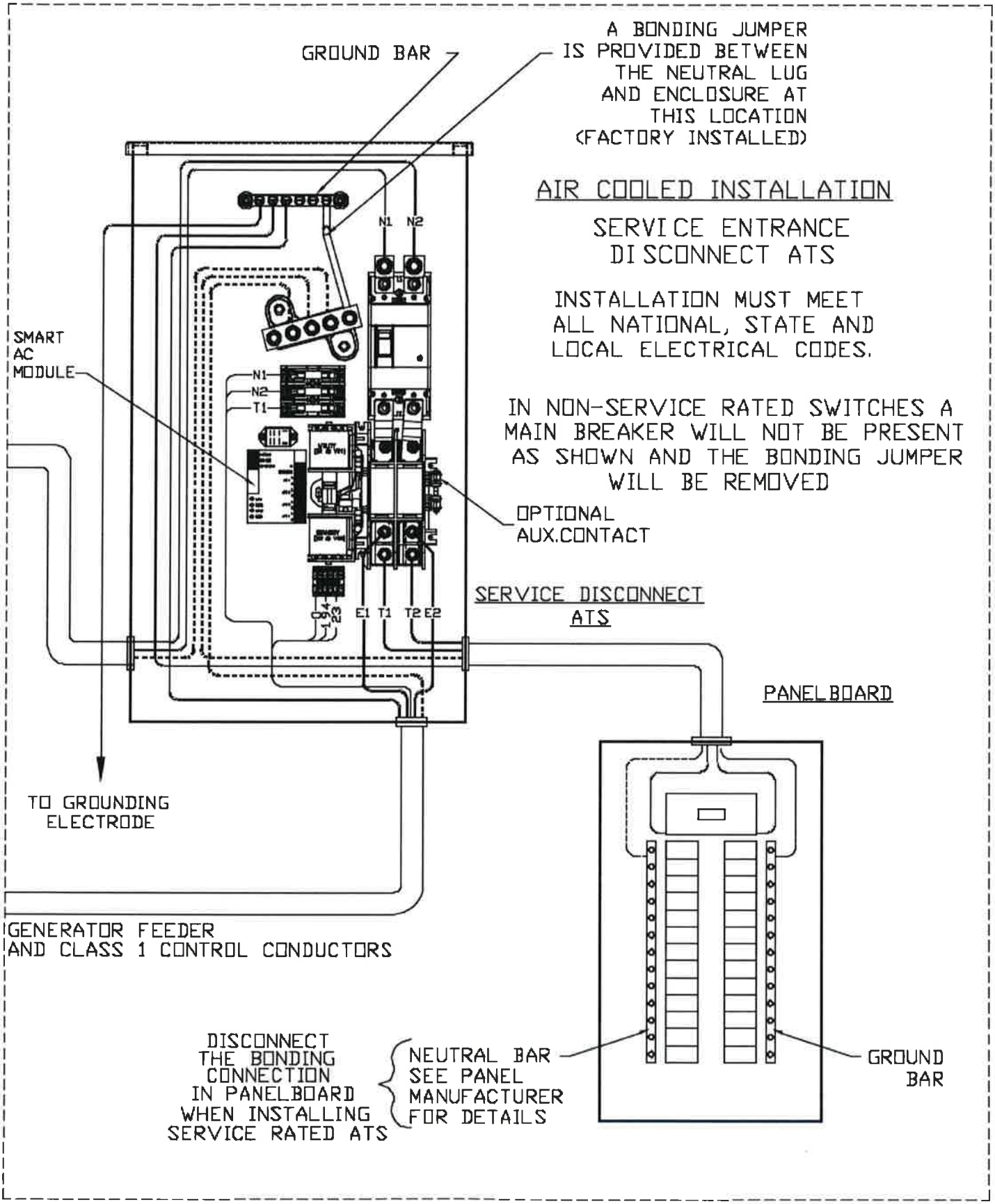
CONNECTION PANEL

AIR-COOLED ENGINE GENERATOR

Reviewed for Code Compliance
Universal Engineering Sciences

INTERCONNECTION DRAWING
SENSE W/SMART AC MODULE
DRAWING #: 0L3240

REVISION: "A"
DATE: 09/30/15



REVISION: "A"
DATE: 03/30/15

Reviewed for Code Compliance
Universal Engineering Sciences

INTERCONNECTION DRAWING
SE/NSE W/SMART AC MODULE
DRAWING #: 0L3240

Legal Description

*The West ½ of Lot 4 and that part 3, Block A, **LAKE CONWAY PARK**, according to the plat thereof, as recorded in Plat Book G, Page 138, of the Public Records of Orange County, Florida, and also a parcel of land lying between the Northerly lines of said Lot 3 and 4 and the 86.4 foot contour line of Lake Conway, described as follows: from the Southerly most corner of Lot 3; run North 30° East 119.09 feet along the Southeasterly boundary of said Lot 3 for the point of beginning; run thence North 28° 55' 39" West 164.12 feet; thence North 26° 50' 19" West 107.6 feet to a point on the 86.4 foot contour line of Lake Conway as established by the U.S.C. & G.S. Datum; thence return to the point of beginning and run North 30° East 51.31 feet to the Southerly most corner of aforesaid Lot 4; run thence 45° East 36.15 feet to the Southeasterly corner of aforesaid West ½ of Lot 4; run thence North 30° 34' West 246.3 feet along the Easterly boundary of said West ½ of Lot 4, and its Northwesterly prolongation to a point on the aforesaid 86.4 foot contour line of Lake Conway; run thence Southwesterly along the said contour line to the previously described point on the said contour line.*

***Community number:** 120179 **Panel:** 0400*
***Suffix:**C **F.I.R.M. date:** 8/05/86 **Flood Zone:** C*
***Date of field work:** 6/12/97 **Completion date:** 6/13/97*
Revised 6/16/97

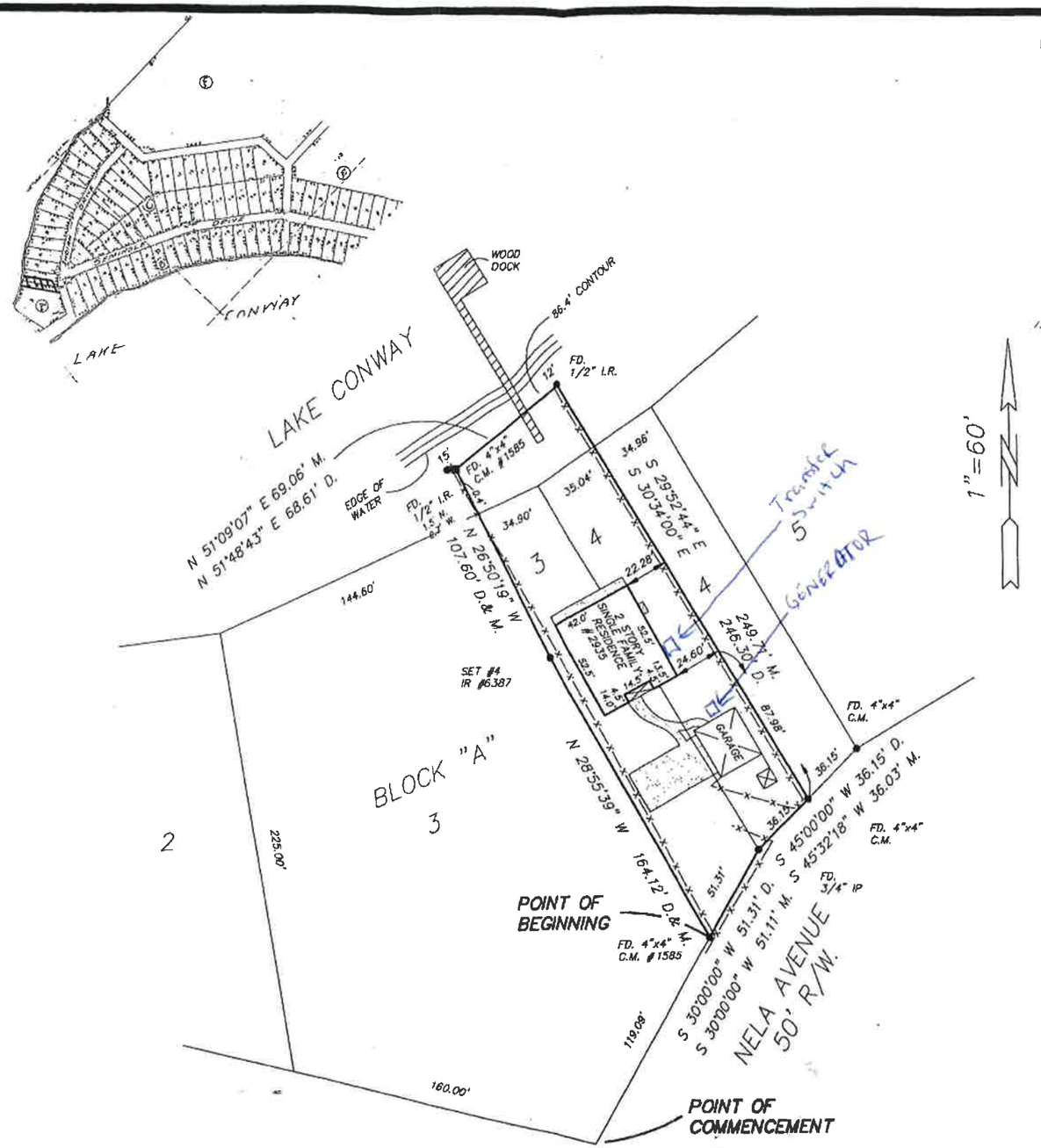
Certified to:
Michael T. Donavan; Rhonda L. Donavan; First Southwestern Title Company of Florida, Commonwealth Land Title Insurance; Countrywide Home Loans, Inc., its successors and/or assigns.

Property address:
2935 Nela Avenue
Orlando, Florida 32809

Survey number: Y-16959

Notes: _____

Accepted By: _____



1"=60'

LEGEND

~~	WOOD FENCE	D.B.	DEED BOOK
-x-x-	WIRE FENCE	D.	DESCRIPTION
F.N.	NAIL	D.E.	DRAINAGE EASEMENT
O	PROPERTY CORNER	D.H.	DRILL HOLE
R	RECORD	D/W	DRIVEWAY
M	FIELD MEASURED	ESMT	EASEMENT
C	CALCULATED	E.L.	ELEVATION
CL	CLEAR	F.F.	FINISHED FLOOR
ENCR	ENCROACHMENT	F.C.M.	FOUND CONCRETE MONUMENT
℄	CENTERLINE	F.P.K.	FOUND PARKER-KALON NAIL
	CONCRETE	L	LENGTH
P.	PROPERTY LINE	L.A.E.	LIMITED ACCESS EASEMENT
C.M.	CONCRETE MONUMENT	M.H.	MAN HOLE
F.I.R.	FOUND IRON ROD	N.T.S.	NOT TO SCALE
F.I.P.	FOUND IRON PIPE	O.R.	OFFICIAL RECORDS
R/W	RIGHT OF WAY	O.R.B.	OFFICIAL RECORD BOOK
N & D	NAIL & DISC	P.C.P.	PERMANENT CONTROL POINT
D.E.	DRAINAGE EASEMENT	P.R.M.	PERMANENT REFERENCE MONUMENT
U.E.	UTILITY EASEMENT	PG.	PAGE
FD.	FOUND	PVMT.	PAVEMENT
P	PLAT	P.B.	PLAT BOOK
	ASPHALT	P.O.B.	POINT OF BEGINNING
O.U.	OVERHEAD UTILITIES	P.O.C.	POINT OF COMMENCEMENT
P.P.	POWER POLE	P.O.L.	POINT ON LINE
TX	TRANSFORMER	P.C.	POINT OF CURVATURE
CATV	CABLE RISER	P.R.C.	POINT OF REVERSE CURVE
W.M.	WATER METER	P.T.	POINT OF TANGENCY
TEL	TELEPHONE FACILITIES	R.	RADIUS (RADIAL)
	COVERED AREA	R/W	RIGHT OF WAY
B.R.	BEARING REFERENCE	R.O.E.	ROOF OVERHANG EASEMENT
CH	CHORD	S.I.R.	SET IRON ROD & CAP
RAD	RADIAL	S/W	SIDEWALK
N.R.	NON RADIAL	T.B.M.	TEMPORARY BENCH MARK
A/C	AIR CONDITIONER	T.O.B.	TOP OF BANK
B.M.	BENCH MARK	TYP.	TYPICAL
C.B.	CATCH BASIN	W.C.	WITNESS CORNER
C.	CALCULATED	10.50	EXISTING ELEVATION
△	CENTRAL ANGLE/DELTA		

I HEREBY CERTIFY THAT THIS BOUNDARY SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 61g17-FLORID ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

SIGNED _____
RALPH SWERDLOFF
REGISTERED LAND SURVEYOR AND MAPPER NO. 3411
STATE OF FLORIDA

SIGNED _____
JOSEPH A. POLKOWSKI
REGISTERED LAND SURVEYOR AND MAPPER NO. 2965
STATE OF FLORIDA

NOTES

1) LEGAL DESCRIPTION PROVIDED BY OTHERS.
2) THE LANDS SHOWN HEREON WERE NOT ABSTRACTED FOR EASEMENT OR OTHER RECORDED ENCUMBERANCES NOT SHOWN ON THE PLAT.
3) UNDERGROUND PORTIONS OF FOOTINGS, FOUNDATIONS OR OTHER IMPROVEMENTS WERE NOT LOCATED.
4) ELEVATIONS ARE BASED ON NATIONAL GEODETIC DATUM.
5) FENCE OWNERSHIP NOT DETERMINED.
6) WALL TIES ARE TO THE FACE OF THE WALL.
7) NOT VALID UNLESS SEALED WITH AN EMBOSSED SURVEYORS SEAL
8) ONLY VISIBLE ENCROACHMENTS LOCATED.
9) NO IDENTIFICATION FOUND ON PROPERTY CORNERS UNLESS NOTED.
10) DIMENSIONS SHOWN ARE PLAT AND MEASURED UNLESS OTHERWISE SHOWN.
11) BEARINGS SHOWN (IF ANY) ARE BASED ON:

PLAT BEARING AS NOTED B.R.

First Financial Surveyors, Inc.
AND AFFILIATED COMPANIES
L.B. 6387

7700 North Kendall Drive
Suite 409
Miami, Florida 33156
(305) 271-3655 / Fax (305) 271-8499
800-227-2854
Fax 800-227-2860

2201 Lucien Way
Suite 402
Maitland, Florida 32751
(407) 875-1470 / Fax (407) 875-3195
800-787-8266
Fax 800-787-8260

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

ELECTRICAL CONTRACTORS LICENSING BOARD

THE ELECTRICAL CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

BOONE, SHAWN WILLIAM

FERRAN SERVICES & CONTRACTING, INC.
530 GRAND STREET
ORLANDO FL 32805

LICENSE NUMBER: EC13003653

EXPIRATION DATE: AUGUST 31, 2020

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Client#: 1405470 131FERRASER

ACORD. CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/10/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer any rights to the certificate holder in lieu of such endorsement(s).

PRODUCER McGriff Insurance Services PO Box 4927 Orlando, FL 32802-4927 407 691-9600	CONTACT NAME: PHONE (A/C, No, Ext): 407 691-9600 FAX (A/C, No): 888-635-4183 E-MAIL ADDRESS:
INSURED Ferran Services & Contracting Inc 530 Grand Street Orlando, FL 32805	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : Allied P&C Insurance Co — 42579 INSURER B : Travelers Property Casualty Co of Amer — 25674 INSURER C : FFVA Mutual Insurance Company — 10385 INSURER D : Depositors Insurance Company — 42587 INSURER E : INSURER F :

COVERAGES CERTIFICATE NUMBER: 18/20 MSTBAIWSPNC-UP REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE | X | OCCUR X BI/PD Ded:$5,000 GEN'L AGGREGATE LIMIT APPLIES PER: POLICY | X | PRO-JECT | | LOC OTHER:	X		ACPGLPO3007836743	09/30/2018	09/30/2019	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$1,000,000 $100,000 $5,000 $1,000,000 $2,000,000 $2,000,000 $
D	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY | SCHEDULED AUTOS X HIRED AUTOS ONLY | X NON-OWNED AUTOS ONLY		X	ACPBAPD3007836743	09/30/2018	09/30/2019	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) $	$1,000,000 $ $ $ $
B	X UMBRELLA LIAB | X | OCCUR EXCESS LIAB | | CLAIMS-MADE DED | X | RETENTION $10,000		X	ZUP71N0289918NF	09/30/2018	09/30/2019	EACH OCCURRENCE AGGREGATE $	$6,000,000 $6,000,000 $
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N | N | N/A (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		X	84000129362019A	01/01/2019	01/01/2020	X PER STATUTE | | OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$500,000 $500,000 $500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Additional Insured status is granted as respects to General Liability if required by written construction agreement per endorsement CG7246 11/15 and/or "Contractors Enhancement Plus Endorsement" CG7323 12/16 which includes Primary and Non-Contributory Status and Waiver of Subrogation.

Additional Insured and Waiver of Subrogation is provided on the auto if required by contract or agreement (See Attached Descriptions)

CERTIFICATE HOLDER	CANCELLATION
City of Belle Isle 1600 Nela Avenue Orlando, FL 32809	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE Jeffrey L. Johnson

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CLHO

This local Business Tax Receipt is in addition to and not in lieu of any other tax required by law or municipal ordinance. Businesses are subject to regulation of zoning, health and other lawful authorities. This receipt is valid from October 1 through September 30 of receipt year. **Delinquent penalty is added October 1.**

2018 **EXPIRES** **9/30/2019**

1802 CERT ELECTRICAL CON $70.00 31 EMPLOYEES

1802-0013318

TOTAL TAX	$70.00
PREVIOUSLY PAID	$70.00
TOTAL DUE	$0.00

530 GRAND ST
A - ORLANDO, 32805

PAID: $70.00 0098-00851828 8/20/2018

BOONE SHAWN WILLIAM QUALIFIER

FERRAN SERVICES & CONTRACTING INC
BOONE SHAWN WILLIAM
530 GRAND ST

ORLANDO FL 32805-4731

This receipt is official when validated by the Tax Collector.

Tax Collector Scott Randolph **Local Business Tax Receipt** **Orange County, Florida**

This local Business Tax Receipt is in addition to and not in lieu of any other tax required by law or municipal ordinance. Businesses are subject to regulation of zoning, health and other lawful authorities. This receipt is valid from October 1 through September 30 of receipt year. **Delinquent penalty is added October 1.**

2018 **EXPIRES** **9/30/2019**

1804 CERT AIR COND CONTR $50.00 21 EMPLOYEES

1804-0026294

TOTAL TAX	$50.00
PREVIOUSLY PAID	$50.00
TOTAL DUE	$0.00

530 GRAND ST
A - ORLANDO, 32805

PAID: $50.00 0098-00851815 8/20/2018

DOMINICCI HECTOR LUIS QUALIFIER

FERRAN SERVICES & CONTRACTING INC
DOMINICCI HECTOR LUIS
530 GRAND ST
ORLANDO FL 32805-4731

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2018 **EXPIRES** **9/30/2019**

1803 CERTIFIED PLUMBING C $30.00 1 EMPLOYEE

1803-0519239

TOTAL TAX	$30.00
PREVIOUSLY PAID	$30.00
TOTAL DUE	$0.00

530 GRAND ST
A - ORLANDO, 32805

PAID: $30.00 0098-00851819 8/20/2018

CRAWFORD JESSE LEE - QUALIFIER

FERRAN SERVICES & CONTRACTING INC
CRAWFORD JESSE LEE - QUALIFIER
530 GRAND ST

ORLANDO FL 32805-4731

This receipt is official when validated by the Tax Collector.

RICK SINGH, CFA - ORANGE COUNTY PROPERTY APPRAISER

Searches | Sales Search | Results | **Property Record Card** | My Favorites | Sign up for e-Notify...

2935 Nela Ave < 29-23-30-4389-01-031 >

Name(s)
Donovan Michael T
Donovan Rhonda L

Mailing Address On File
2935 Nela Ave
Belle Isle, FL 32809-6178
Incorrect Mailing Address?

Physical Street Address
2935 Nela Ave

Postal City and Zipcode
Orlando, Fl 32809

Property Use
0130 - Sfr - Lake Front

Municipality
Belle Isle

View 2018 Property Record Card

Property Features | Values, Exemptions and Taxes | Sales Analysis | Location Info | Market Stats | Update Information

2019 values will be available in August of 2019.

Property Description

View Plat

LAKE CONWAY PARK G/138 FROM SLY MOST COR OF LOT 3 RUN N 30 DEG E 119.09 FT FOR A POB TH N 28 DEG W 164.12 FT N 26 DEG W 107.6 FT RETURN TO POB N 30 DEG E 51.31 FT N 45 DEG E 36.15 FT N 30 DEG W 246.3 FT SWLY TO PREVIOUSLY DSCB LINE BLK A

Total Land Area 20,652 sqft (+/-) | 0.47 acres (+/-) GIS Calculated Notice

Land

Land Use Code	Zoning	Land Units	Unit Price	Land Value	Class Unit Price	Class Value
0130 - Sfr - Lake Front	R-1-AA	1 LOT(S)	working...	working...	working...	working...

Page 1 of 1 (1 total records)

Buildings

Important Information			Structure			
More Details	**Model Code:**	01 - Single Fam Residence	**Actual Year Built:**	1980	**Gross Area:**	3836 sqft
	Type Code:	0104 - Single Fam Class IV	**Beds:**	3	**Living Area:**	2590 sqft
	Building Value:	working...	**Baths:**	2.0	**Exterior Wall:**	Cedar/Redwood
	Estimated New Cost:	working...	**Floors:**	2	**Interior Wall:**	Drywall

Page 1 of 1 (1 total records)

Extra Features

Description	Date Built	Units	XFOB Value
BD3 - Boat Dock 3	11/03/1997	1 Unit(s)	working...
BC3 - Boat Cover 3	11/03/1997	1 Unit(s)	working...

Page 1 of 1 (2 total records)

This Data Printed on 08/07/2019 and System Data Last Refreshed on 08/06/2019