

TO: CITY OF CAMAS
 Attn:
 Phone:
 Email:
 Project: Camas City Hall

Date: 9/4/2024
 From: Dan Molyneux
 Phone: 206-348-6538
 Email: DMOLYNEUX@pacificpowergroup.com
 Quote #: 37773-2

mtu a Rolls-Royce solution Generator Set is rated at: **200 208 Volt 3 ph**

Engine		Genset Digital Controller	
<input checked="" type="checkbox"/> Unit mounted radiator	<input checked="" type="checkbox"/> Lube oil & antifreeze	<input checked="" type="checkbox"/> Overcurrent protection	<input type="checkbox"/> Analog meters
<input checked="" type="checkbox"/> Battery	<input checked="" type="checkbox"/> Engine block heater 120 volt	<input checked="" type="checkbox"/> Auxiliary contacts	<input type="checkbox"/> Load shed provisions
<input checked="" type="checkbox"/> Battery charger	<input checked="" type="checkbox"/> Alarms	<input checked="" type="checkbox"/> Remote annunciator	<input type="checkbox"/> FCC remote
Fuel System		<input checked="" type="checkbox"/> RS 485	<input checked="" type="checkbox"/> Ethernet
<input type="checkbox"/> Nat gas	<input type="checkbox"/> LP gas	<input type="checkbox"/> LP liquid	<input checked="" type="checkbox"/> Modbus comm
<input checked="" type="checkbox"/> Diesel	<input type="checkbox"/> Auto change NG/LP gas	Indoor/Outdoor Application	
<input checked="" type="checkbox"/> Sub-base tank 400 gal	<input checked="" type="checkbox"/> UL 142	<input checked="" type="checkbox"/> Outdoor enclosure, dBA: 73 @ 23 feet	
<input type="checkbox"/> Free standing tank gal	<input type="checkbox"/> UL 2085	Silencer: <input type="checkbox"/> External <input checked="" type="checkbox"/> Internal	
<input type="checkbox"/> Remote fuel fill station	<input type="checkbox"/> Tank pumps & controls	<input type="checkbox"/> Indoor: Silencer & flexible exhaust connector	
Circuit Breaker		Miscellaneous	
<input checked="" type="checkbox"/> Breaker 1	<u>600</u> Amps	<input checked="" type="checkbox"/> UL 2200	<input checked="" type="checkbox"/> Spare parts
<input checked="" type="checkbox"/> GFI	<input checked="" type="checkbox"/> Shunt trip	<input checked="" type="checkbox"/> Seismically certified to Ip 1.5	1 O&M manuals
<input type="checkbox"/> Breaker 2	_____ Amps	<input checked="" type="checkbox"/> Integral vibration isolation	<input checked="" type="checkbox"/> Training
<input type="checkbox"/> GFI	<input type="checkbox"/> Shunt trip	<input type="checkbox"/> Loose spring isolators	<input checked="" type="checkbox"/> Alternator heater
<input type="checkbox"/> Breaker 3	_____ Amps	<input checked="" type="checkbox"/> Warranty 2/3000 years/ hours	
<input type="checkbox"/> GFI	<input type="checkbox"/> Shunt trip	<input checked="" type="checkbox"/> Jobsite start up with load bank	
	<input type="checkbox"/> Aux contacts	<input type="checkbox"/> Preventative maintenance	

Additional Genset Items: PMG, Remote Emergency Stop, WA code extended length tank

Automatic Transfer Switch	
Qty: <u>1</u> Poles: <u>4</u> NEMA: <u>3</u>	<input checked="" type="checkbox"/> Standard open transition
Volts: <u>208</u> Amps: <u>800</u>	<input type="checkbox"/> Delayed transition
WCR nominal amps with coordinated breaker	<input type="checkbox"/> Closed transition
WCR nominal amps .05 sec time based	<input checked="" type="checkbox"/> Service entrance rated
WCR nominal amps with current limiting fuse	<input type="checkbox"/> Bypass isolation switch
	<input checked="" type="checkbox"/> In-phase monitor
	<input checked="" type="checkbox"/> Exerciser
	<input checked="" type="checkbox"/> Auxiliary contacts
	<input type="checkbox"/> Power meter

Additional ATS options:

Quick connects:	<input checked="" type="checkbox"/> Camlock panel _____ Amp
	<input type="checkbox"/> Manual transfer switch 600 Amp
	<input type="checkbox"/> Temp gen camlocks
	<input checked="" type="checkbox"/> Load bank camlock

Clarifications:

Generator and ATS quoted per specification sections: **263213, 263600 and dwg E601**
 Genset lead time is 24 weeks, ATS/Docking Station lead time is 12 weeks ARO
 263213; 3.02: Installation by others
 - Trystar TATS-3 includes: Kirk Key Interlock, pad mount enclosures, 600A temp load breaker, 800A permanent load breaker, temp gen battery charger and block heater receptacles, shunt trip on temp load breaker
 - Maintenance Adder Estimate: Yr 1 - \$3,620, Yr 2 - \$3,801. Detailed and binding maintenance proposal to be provided during start up.
 - Proposal quoted as per Sourcwell Contract #092222-RYC

Price Breakdown:

Genset:	\$ 82,713.14
ATS/Docking Station:	\$ 61,611.76
Subtotal:	\$144,324.90
Sales Tax (8.5%):	\$ 12,276.62
Total:	\$156,592.52

Note: Mechanical and electrical installation, off-engine piping, exhaust insulation, ducting, mounting hardware, fuel, required permits and independent testing are not included unless specifically listed. Results of coordination studies (by others) may affect our scope and pricing.

Quoted Price: \$156,592.52

Taxes included. FOB: Job site, unloading by others. **Current lead time 24 weeks after submittal approval and release for production.**

Terms: Net 30 OAC subject to standard PPG credit terms and conditions of sale. **Quote is only valid for 30 days.**

This transaction is governed by and subject to the Terms of Agreement and Conditions of Sale and Service (the "Terms and Conditions") of Pacific Power Group Company ("Seller") that are in effect as of the date of this quote. The Terms and Conditions are available online at www.pacificpowergroup.com/terms and they are incorporated in full by this reference and made part of this transaction. Customer acknowledges that Customer has read the Terms and Conditions. By purchasing goods and/or services from Seller, Customer agrees to be bound by the Terms and Conditions that are set forth on the Seller's website; Customer's payment for and acceptance of the products and/or services described in this quote will confirm Customer's acceptance of the Terms and Conditions. Upon Customer's request, Seller will provide Customer with a hard copy of the Terms and Conditions. This quote is valid for 30 days unless otherwise stated. Unless otherwise noted, services are to be completed during normal business hours.

Submittal Review

Project Name: Camas Facilities Improvement – City Hall
Project Number: 23196
Date: 08/26/24
Attn: Marcus Korotkih

Dear Dan,

Submittal sections listed below have been received and reviewed by this office. Further actions or recommendations are listed below.

Section #	Section Name	No Exceptions Taken	Make Corrections Noted	Revise and Resubmit	Not Reviewed	Notes & Clarifications
263216	Engine Generators – Fuel Tank	X				
263216	Engine Generators – Genset	X				
263216	Engine Generators – Enclosure	X				
263600	Transfer Switches	X				

Reviewed By: Marcus Korotkih

Note: The above submittal data has been reviewed only for general conformance and compliance with project requirements. Corrections or comments made on this submittal review do not relieve the Contractor or Subcontractor from compliance with the contract documents. Contractor is responsible for all means, methods, techniques, dimensions, and fabrication to be confirmed and correlated at the job site.



Diesel Generator Set

mtu 6R0120 DS200

200 kWe/60 Hz/Standby/208 - 600V

Reference **mtu 6R0120 DS200 (180 kWe)** for Prime Rating Technical Data

System ratings

Voltage (L-L)	240V †	240V †	208V †	240V †	380V †	480V †	600V
Phase	1	1	3	3	3	3	3
PF	1	1	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	200	200	200	200	200	200	200
kVA	200	200	250	250	250	250	250
Amps	833	833	694	601	380	301	241
skVA@30% voltage dip	268	366	433	433	373	577	512
Generator model	432CSL6210	432PSL6228	431CSL6206	431CSL6206	431CSL6208	431CSL6206	431PSL6243
Temp rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD DOUBLE DELTA	4 LEAD	12 LEAD WYE	12 LEAD DELTA	12 LEAD WYE	12 LEAD WYE	4 LEAD WYE

† UL 2200 offered

Certifications and standards

- Emissions
 - EPA Tier 3 certified
 - South Coast Air Quality Management District (SCAQMD)
- Generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004
- Seismic certification – optional
 - 2021 IBC certification
 - HCAI pre-approval
- Power rating
 - Accepts rated load in one step per NFPA 110
- UL 2200 – optional (refer to *System ratings* for availability)
- CSA – optional
 - CSA C22.2 No. 100
 - CSA C22.2 No. 14
- CE marking provided
- Performance Assurance Certification (PAC)
 - Generator set tested to ISO 8528-5 for transient response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested

Standard features*

- Single source supplier
- Global product support
- Two (2) Year/3,000 Hour Basic Limited Warranty
- OM926LA diesel engine
 - 7.2 liter displacement
 - 4-cycle
- Engine-generator resilient mounted
- Complete range of accessories
- Cooling system
 - Integral set-mounted
 - Engine-driven fan
- Generator
 - Brushless, rotating field generator
 - 2/3 pitch windings
 - 300% short circuit capability with optional Permanent Magnet Generator (PMG)
- Digital control panel(s)
 - UL recognized, CSA certified, NFPA 110
 - Complete system metering
 - LCD display

Standard equipment*

Engine

- Air cleaners
- Oil pump
- Oil drain extension and shut-off valve
- Full flow oil filter
- Fuel filter with water separator
- Jacket water pump
- Thermostat
- Blower fan and fan drive
- Radiator - unit mounted
- Electric starting motor - 12V
- Governor - electronic isochronous
- Base - formed steel
- SAE flywheel and bell housing
- Charging alternator - 12V
- Battery box and cables
- Flexible fuel connectors
- Flexible exhaust connection
- EPA certified engine

Generator

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting
- Self-ventilated and drip-proof
- Superior voltage waveform
- Solid state, volts-per-hertz regulator
- $\pm 1\%$ voltage regulation no load to full load
- Brushless alternator with brushless pilot exciter
- 4 pole, rotating field
- 130 °C maximum standby temperature rise
- 1-bearing, sealed
- Flexible coupling
- Full amortisseur windings
- 125% rotor balancing
- 3-phase voltage sensing
- 100% of rated load - one step
- 5% maximum total harmonic distortion

Digital control panel(s)

- Digital metering
- Engine parameters
- Generator protection functions
- Engine protection
- SAE J1939 Engine ECU Communications
- Windows®-based software
- Multilingual capability
- Communications to remote annunciator
- Programmable input and output contacts
- UL recognized, CSA certified, CE approved
- Event recording
- IP 54 front panel rating with integrated gasket
- NFPA 110 compatible

Application data

Engine

Manufacturer	Mercedes-Benz
Model	OM926LA
Type	4-cycle
Arrangement	6-inline
Displacement: L (in ³)	7.2 (439)
Bore: cm (in)	10.6 (4.17)
Stroke: cm (in)	13.6 (5.35)
Compression ratio	17.5:1
Rated rpm	1,800
Engine governor	MR2 / CPC4-ECAN
Maximum power: kWm (bhp)	247 (331)
Steady state frequency band	± 0.25%
Air cleaner	dry

Liquid capacity

Total oil system: L (gal)	29 (7.7)
Engine jacket water capacity: L (gal)	10 (2.6)
System coolant capacity: L (gal)	24.1 (6.4)

Electrical

Electric volts DC	12
Cold cranking amps under -17.8 °C (0 °F)	950
Batteries: group size	31
Batteries: quantity	1

Fuel system

Fuel supply connection size	-6 JIC
Fuel supply hose size	3/8" ID
Fuel return connection size	-6 JIC
Fuel return hose size	3/8" ID
Maximum fuel lift: m (ft)	2.6 (8.5)
Recommended fuel	diesel #2
Total fuel flow: L/hr (gal/hr)	330.5 (87.3)

Fuel consumption*

At 100% of power rating: L/hr (gal/hr)	55.3 (14.6)
At 75% of power rating: L/hr (gal/hr)	40.5 (10.7)
At 50% of power rating: L/hr (gal/hr)	26.5 (7)

* Based on 431CSL6206 480 volt generator set

Cooling - radiator system

Ambient capacity of radiator: °C (°F)	50 (122)
Maximum restriction of cooling air: intake and discharge side of radiator: kPa (in. H ₂ O)	0.12 (0.5)
Water pump capacity: L/min (gpm)	143 (37)
Heat rejection to coolant: kW (BTUM)	95.5 (5,431)
Heat rejection to air to air: kW (BTUM)	55.3 (3,145)
Heat radiated to ambient: kW (BTUM)	40.8 (2,322)
Fan power: kW (hp)	15.6 (22.1)

Air requirements

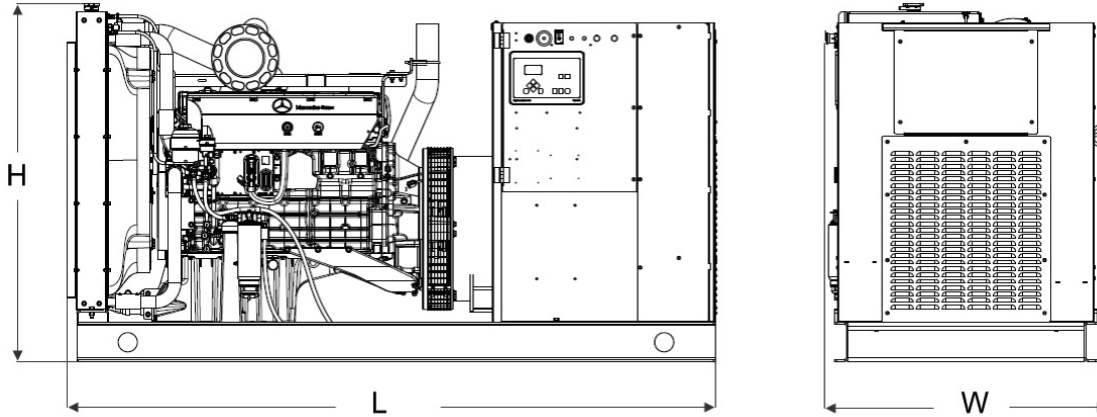
Aspirating: *m ³ /min (SCFM)	14.8 (523)
Air flow required for radiator cooled unit: *m ³ /min (SCFM)	408 (14,408)
Remote cooled applications; air flow required for dissipation of radiated generator set heat for a maximum of 25 °F rise: *m ³ /min (SCFM)	149.2 (5,269)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

Exhaust system

Gas temperature (stack): °C (°F)	520 (968)
Gas volume at stack temperature: m ³ /min (CFM)	44.8 (1,582)
Maximum allowable back pressure at outlet of engine, before piping: kPa (in. H ₂ O)	10.5 (42)

Weights and dimensions



Drawing above for illustration purposes only, based on standard open power 480 volt generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight
Open Power Unit (OPU)	2,580 x 1,121 x 1,422 mm (101.6 x 44.1 x 56 in)	1,632-2,120 kg (3,598-4,674 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific generator set.

Sound data

Unit type	Standby full load
Level 0 (OPU): dB(A)	88.9

Sound data is provided at 7 m (23 ft). Generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

Emissions data

NO _x + NMHC	CO	PM
3.93	1.2	0.06

- All units are in g/hp-hr and shown at 100% load (not comparable to EPA weighted cycle values). Emission levels of the engine may vary with ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data was obtained in compliance with US EPA regulations. The weighted cycle value (not shown) from each engine is guaranteed to be within the US EPA standards.

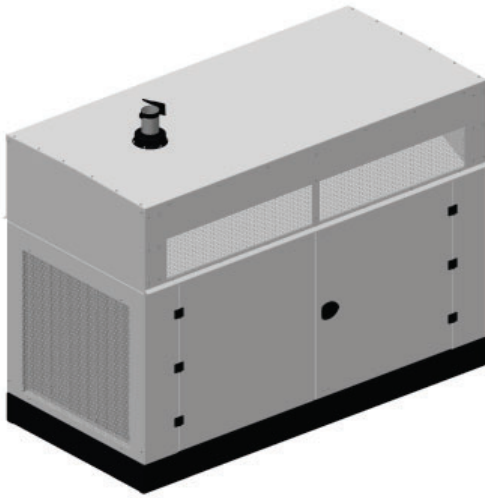
Rating definitions and conditions

- Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, and AS 2789. Average loadfactor: ≤ 85%.
- Nominal ratings at standard conditions: 25 °C and 300 meters (77 °F and 1,000 feet).
- Deration factor:
 - Consult your local **mtu** Distributor for altitude derations.
 - Consult your local **mtu** Distributor for temperature derations.

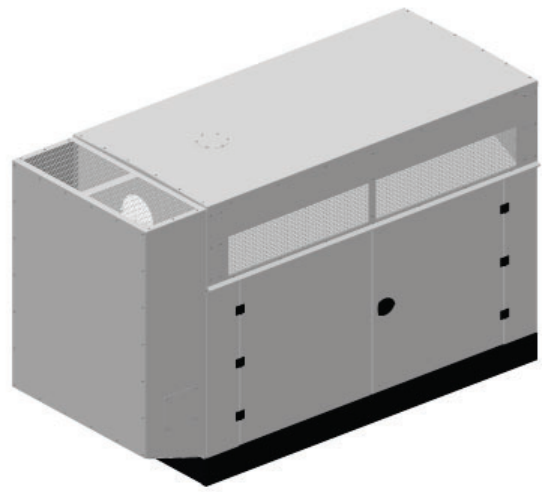


Enclosure and Sound Data Sheet - Diesel, Open Field

60 Hz: 80-200 kW Standby / 72-180 kW Prime



Level 1 Enclosure (pictured)*



Level 3 Enclosure (pictured)*

Enclosure Level Identification

Level 1	Skid-mounted weather-protective enclosure constructed of heavy gauge steel or aluminum with fixed stormproof panels designed for 195 mph wind load rating. Enclosure consists of a bolted and welded construction with unit-mounted internal silencer. Hinged, lockable double-door access on both sides of the enclosure.
Level 2	Level 1 enclosure with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed inside enclosure walls.
Level 3	Level 2 enclosure with air exhaust scoop. UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed in scoop.

CERTIFICATIONS AND STANDARDS

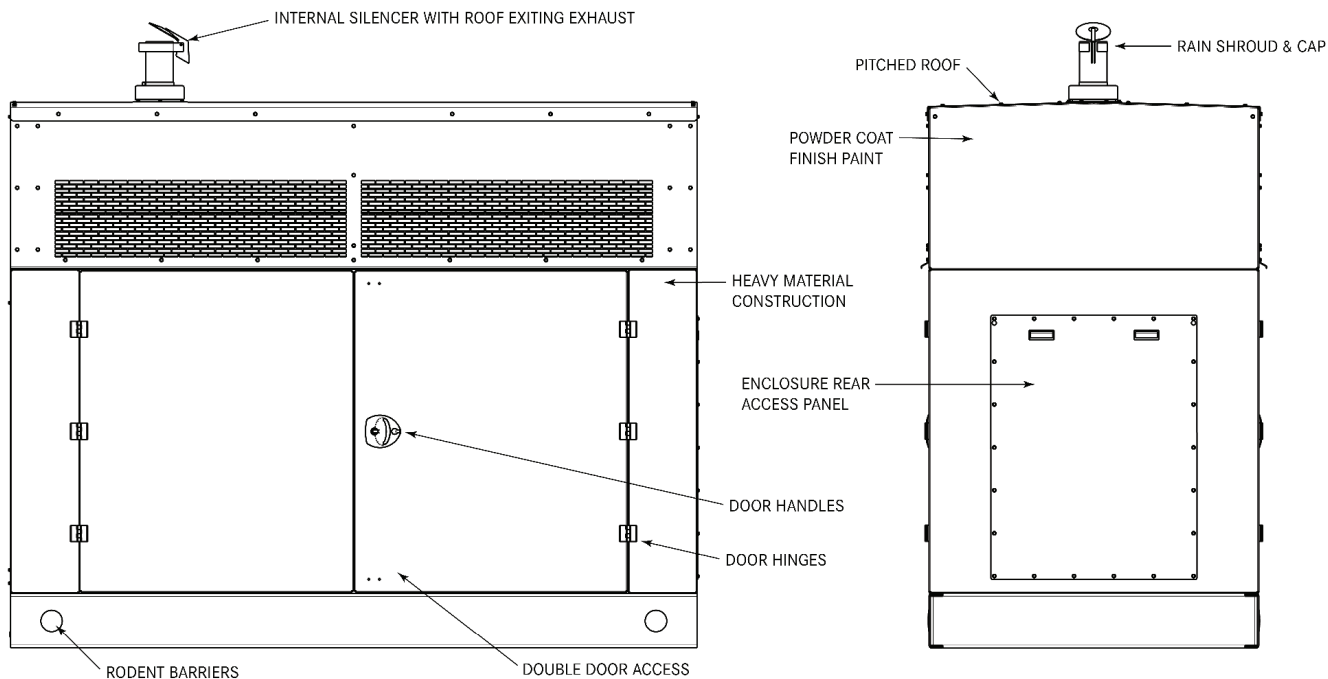
- UL 2200
- CE Marking Provided
- CSA C22.2 No. 100
- CSA C22.2 No. 14
- High Velocity Hurricane Zone (HVHZ)
 - Miami Dade NOA
- Florida Building Code
- IBC Wind

Enclosure and Sound Data Sheet - Diesel, Open Field

60 Hz: 80-200 kW Standby / 72-180 kW Prime

STANDARD FEATURES FOR ALL LEVELS

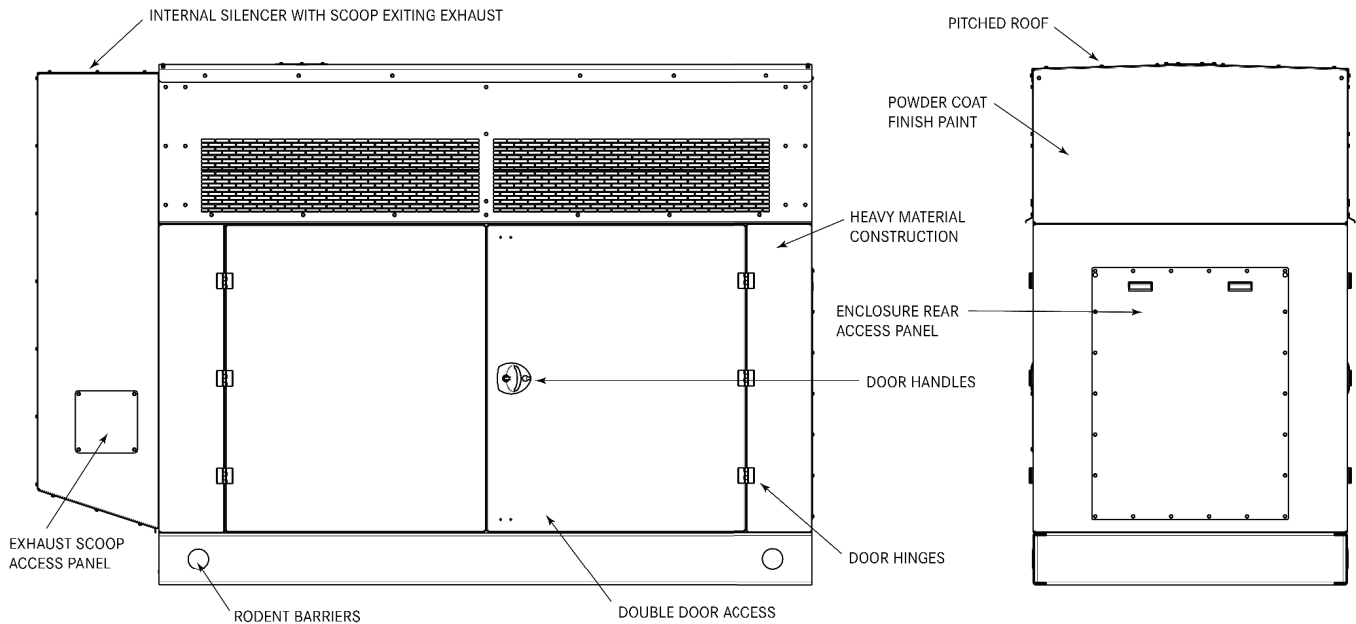
- Heavy material construction
 - Steel enclosure: 1.9 mm (0.075 in) - 14 gauge or greater thickness
 - Aluminum enclosure: 2.3 mm (0.09 in) or greater thickness
- 195 mph wind rating
- Service access
 - Double door access gives ease of service to all components
- Pitched roof
- Rain shroud
- Rain cap (Level 1 and 2 only)
- Rodent barriers
- Exhaust scoop access panel and drain
- Hardware
 - Powder coated hinges with stainless steel pins
 - Key-lockable and pad-lockable powder coated door handles
- Powder coat finish paint: RAL 7001 Silver Grey standard
 - Custom colors available upon request
- Internal silencer (Hospital Grade)
 - Insulated silencer
 - Stainless steel flexible exhaust connections (where applicable)



Level 1 Enclosure (pictured)*

Enclosure and Sound Data Sheet - Diesel, Open Field

60 Hz: 80-200 kW Standby / 72-180 kW Prime



Level 3 Enclosure (pictured)*

OPTIONAL FEATURES

- Door restraints
- LED light package
- Enclosure space heater
- Motorized intake louvers
- Distribution panel
- Gravity exhaust louvers
- For other custom options, please consult factory.

OPTIONAL HIGH VELOCITY HURRICANE ZONE (HVHZ) ENCLOSURE

- TAS 201-94 (impact test procedures)
 - Level E = 9 lbs at 80 ft/sec
- TAS 202-94 (static air pressure)
 - Static testing up to 153 pounds per square foot (psf)
- TAS 203-94 (cyclic pressure loading)
 - Cyclical tests up to ±126 psf over 671 cycles
- ASTM E72-15 (racking strength test)
- Simulated 195 mph wind at Exposure D
- Meets Florida Building Code (FBC) Section 1626 requirements

Enclosure and Sound Data Sheet - Diesel, Open Field
60 Hz: 80-200 kW Standby / 72-180 kW Prime

ENGINE EXHAUST SOUND RATINGS dB(A) AT 1 METER
OPU SOUND RATINGS dB(A) AT 1 METER
ENCLOSURE SOUND RATINGS dB(A) AT 7 METERS

Application	Model	Power Node	1 Meter		7 Meters		
			Engine Exhaust ⁽¹⁾	OPU ⁽²⁾	Level 1	Level 2	Level 3
60 Hz Standby	<i>mtu</i> 4R0120 DS80	80 kW	105.2	93.6	82.2	81.5	73.7
	<i>mtu</i> 4R0120 DS100	100 kW	108.3	93.6	82.2	81.3	74.4
	<i>mtu</i> 4R0120 DS125	125 kW	112.4	93.8	82.2	81.8	74.5
	<i>mtu</i> 6R0120 DS150	150 kW	109.1	99.6	91.2	88.4	72.8
	<i>mtu</i> 6R0120 DS180	180 kW	110.8	99.6	91.2	88.7	73
	<i>mtu</i> 6R0120 DS200	200 kW	111.5	99.7	91.2	88.7	73.1
Application	Model	Power Node	Engine Exhaust ⁽¹⁾	OPU ⁽²⁾	Level 1	Level 2	Level 3
60 Hz Prime	<i>mtu</i> 4R0120 DS80	72 kW	104.4	93.9	82	81.7	73.6
	<i>mtu</i> 4R0120 DS100	90 kW	106.7	94.2	82.1	81.8	74.1
	<i>mtu</i> 4R0120 DS125	111 kW	110.0	94.2	82.7	81.8	74.4
	<i>mtu</i> 6R0120 DS150	135 kW	108.8	99.5	91.1	88.7	72.5
	<i>mtu</i> 6R0120 DS180	163 kW	109.7	99.6	91.1	88.7	72.7
	<i>mtu</i> 6R0120 DS200	180 kW	110.8	99.6	91.1	88.7	73

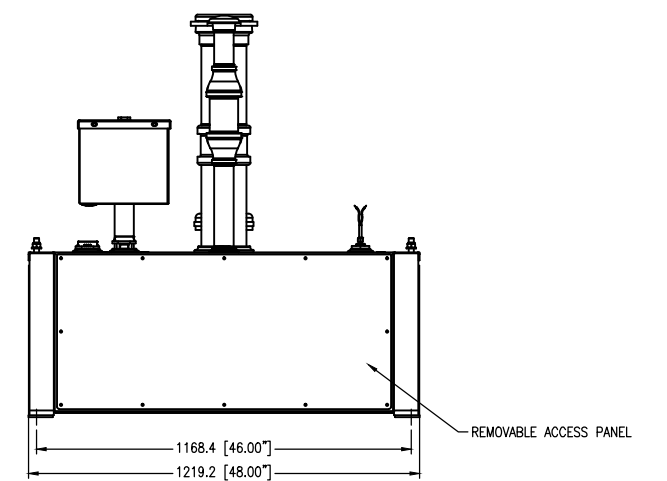
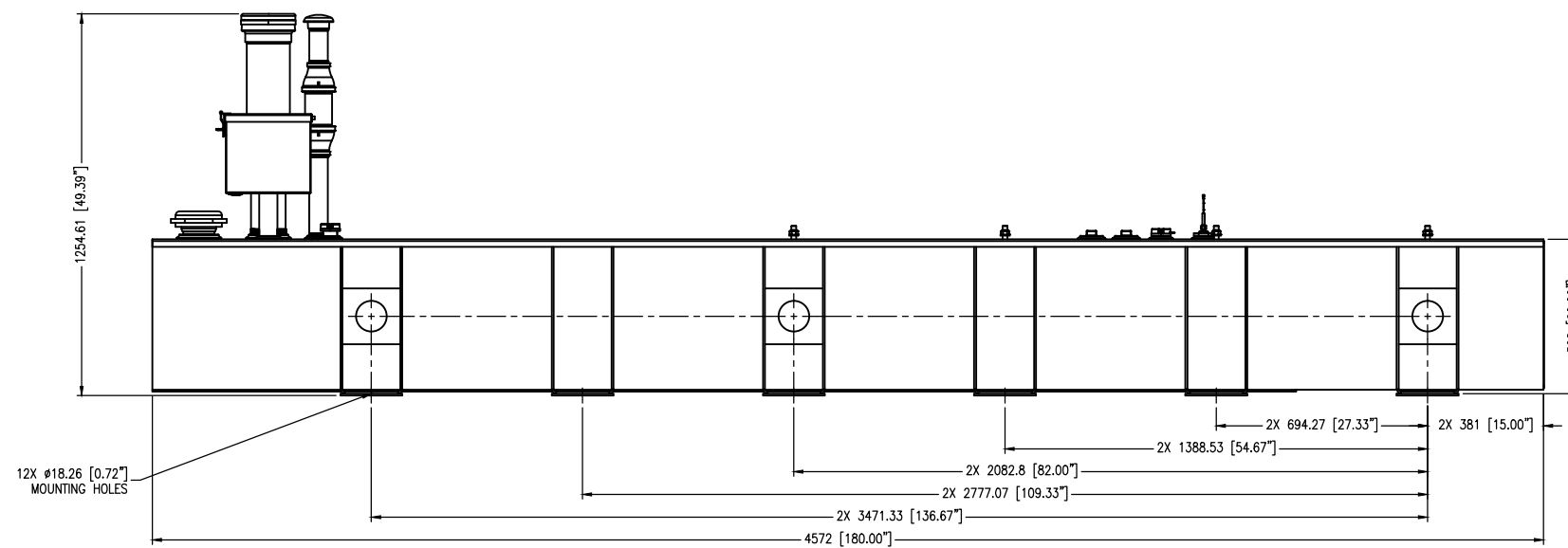
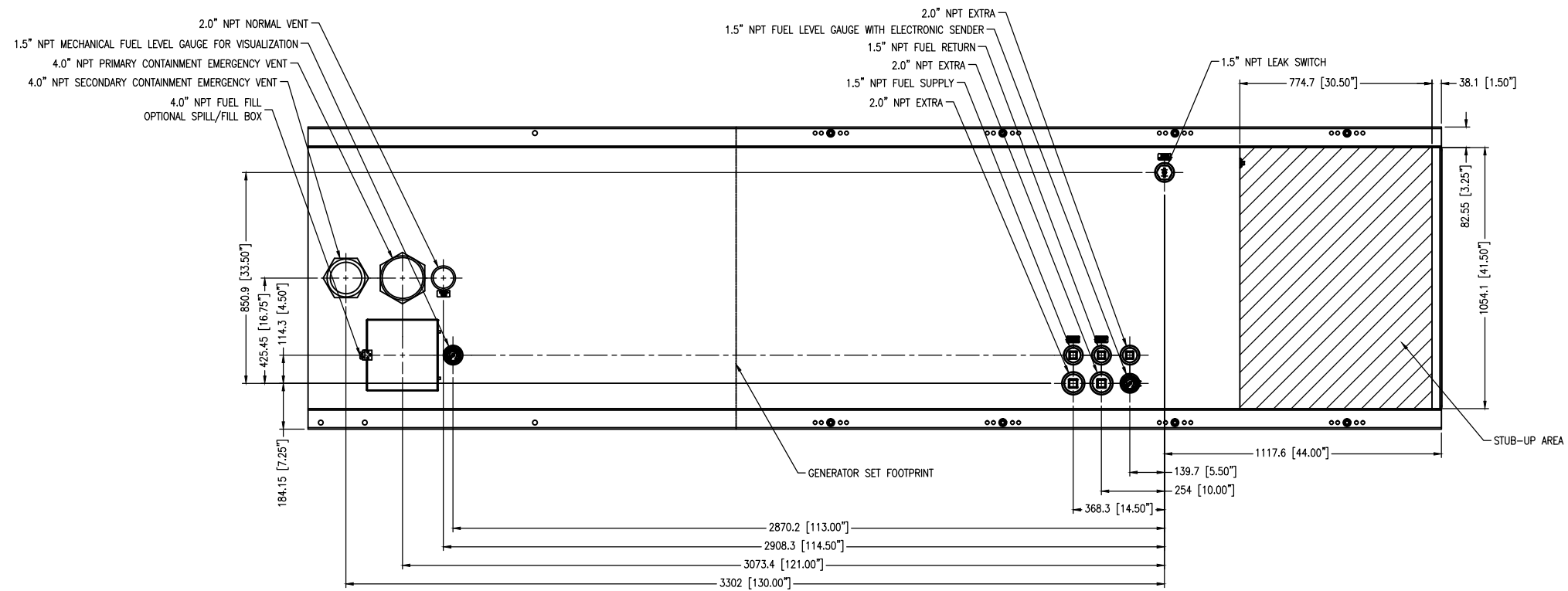
⁽¹⁾ Undampened engine exhaust noise

⁽²⁾ Measurement with infinite exhaust connection

NOTE:

- Measurements include exhaust noise.
- Aluminum enclosure sound levels are approximately 2 dB(A) higher than listed sound levels for steel enclosures.
- For installation within 50 miles of the coast, aluminum enclosures are recommended to prevent accelerated corrosion.
- Sound pressure levels subject to environment, instrumentation, measurement, installation, and generator set variability.
- Generator set is tested on level ground without spring isolators installed.
- Sound power levels per ISO 8528-10 and ANSI S1.13-2005
- Sound data measured with:
 - Full-rated load
 - Standard radiator package

* Note: Visual appearance may differ between power nodes.



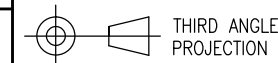
REVISION	DATE	DESCRIPTION
B	2020-04-03	UPDATE TITLE BLOCK
A	2019-08-28	MOUNTING HOLE WIDTH CHANGED FROM 45" TO 46"



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APPLICABLE MODELS:

MTU 6R0120 DS150
 MTU 6R0120 DS180
 MTU 6R0120 DS200



THIRD ANGLE PROJECTION

DIMENSIONAL LAYOUT

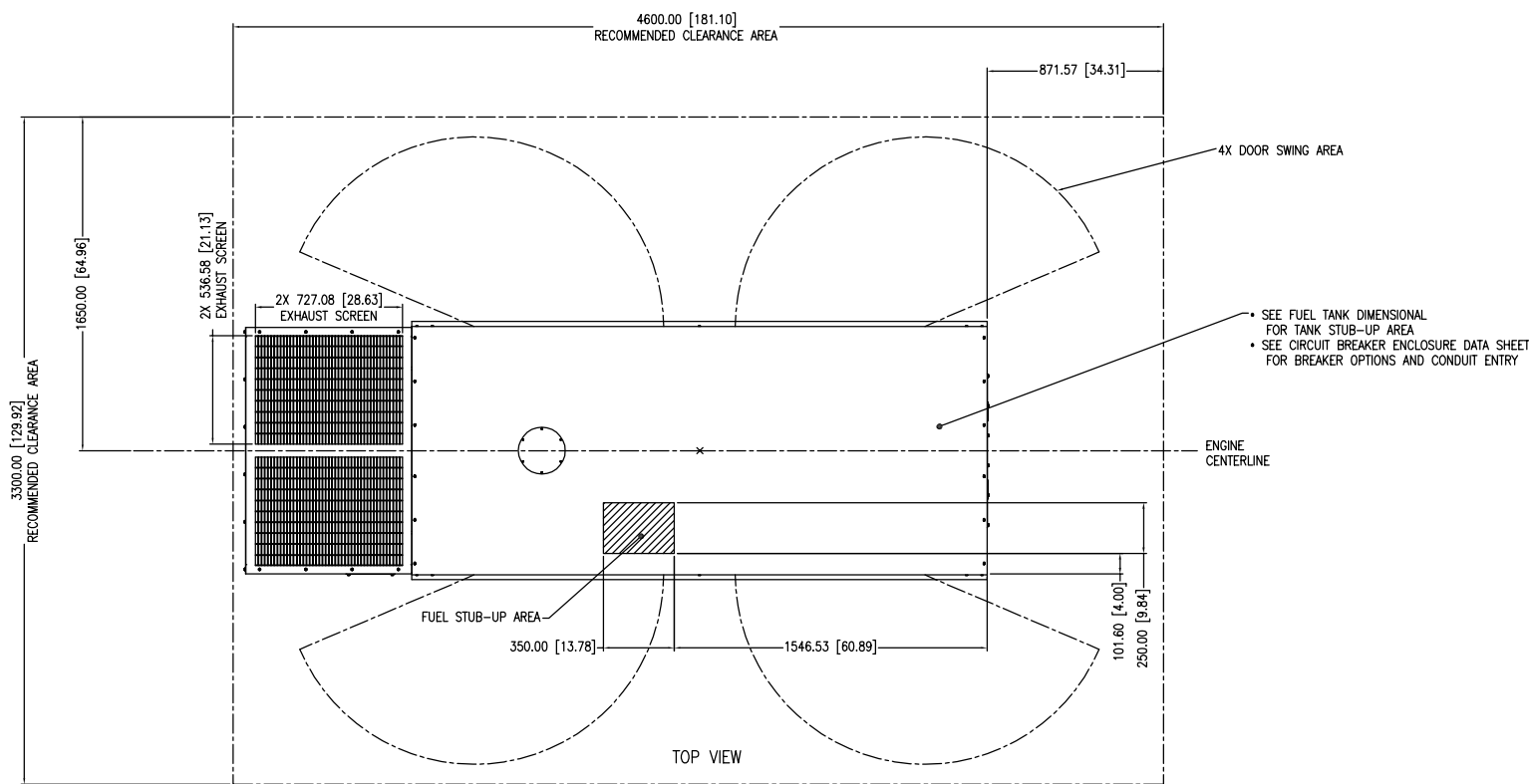
DESCRIPTION:
 150-200kW 24Hr 400Gal IBC Extended Tank

ENGINE: Mercedes, OM926
 WEIGHT (MIN-MAX): 952 KG / 2099 LB

DRAWN TO SCALE
 DIMENSIONS: MM [INCH]

DATE CREATED: 2018-02-08

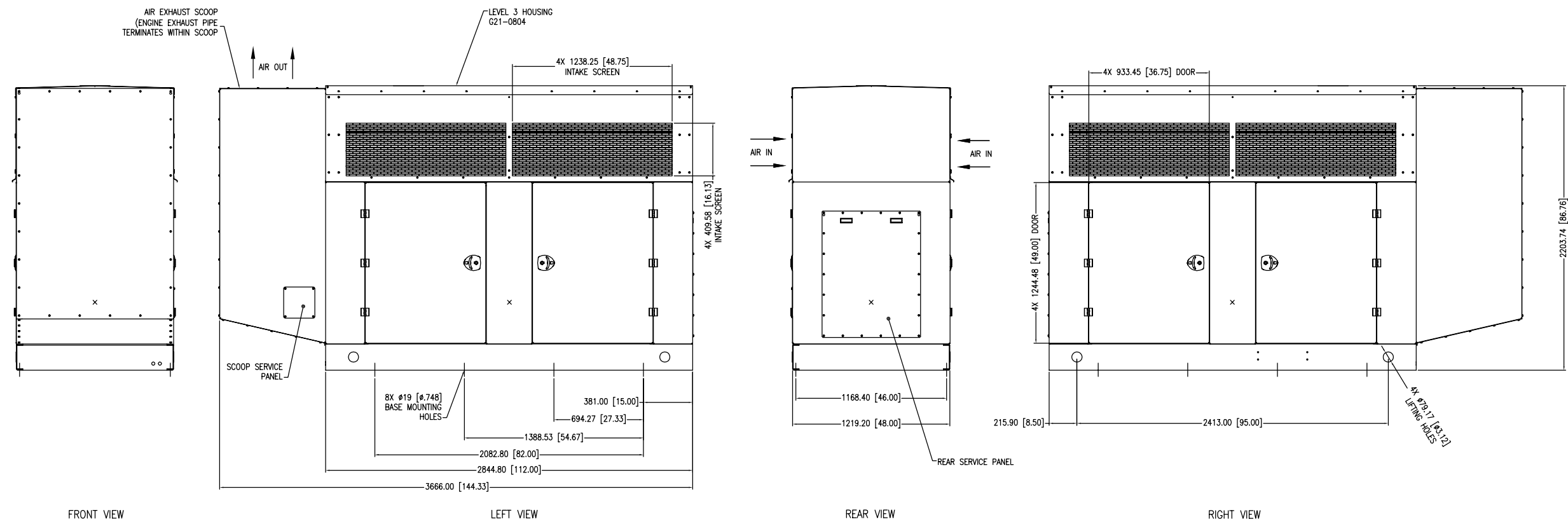
DRAWING NUMBER: XZG2100100047
 SHEET: 9 of 11




DRAWING OPTIONS 150-200 kW OM926		
Group	Drawing Code	Description
	G21-0803	Level 1 & 2 Housing
Housing Options, Exterior	G21-0804	Level 3 Housing w/ Exhaust Scoop
	G21-0806	Air Exhaust Gravity Louver
Housing Options, Interior	G21-0902	Air Intake Motorized Louver
	G21-0903	Interior Housing Lights

Reference the Drawing Options table and within the Layer Properties turn on/off the Drawing Codes that may or may not apply to your configuration.

Note: Some options may not be referenced. Only options which visibly change the drawing are selectable.



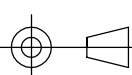
REVISION	DATE	DESCRIPTION
C	2020-04-03	UPDATED TITLE BLOCK
B	2019-03-27	ADDED INTAKE SCREEN, EXHAUST SCREEN, & DOOR DIMENSIONS
A	2018-12-27	CHANGED WEIGHT TO BE CUMULATIVE GENSET W/ HOUSING



A Rolls-Royce solution

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APPLICABLE MODELS: MTU 6R0120 DS150 MTU 6R0120 DS180 MTU 6R0120 DS200


THIRD ANGLE PROJECTION

DRAWN TO SCALE
 DIMENSIONS: MM [INCH]

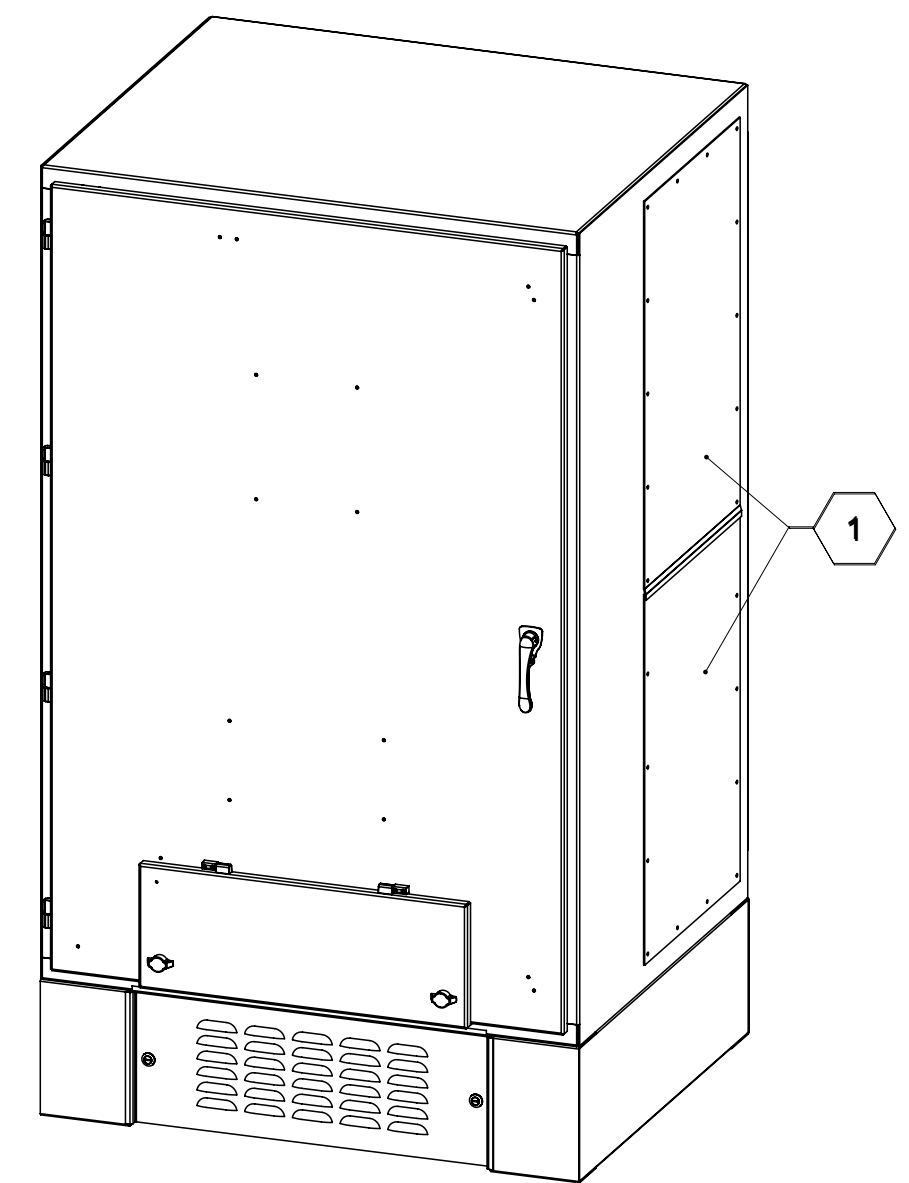
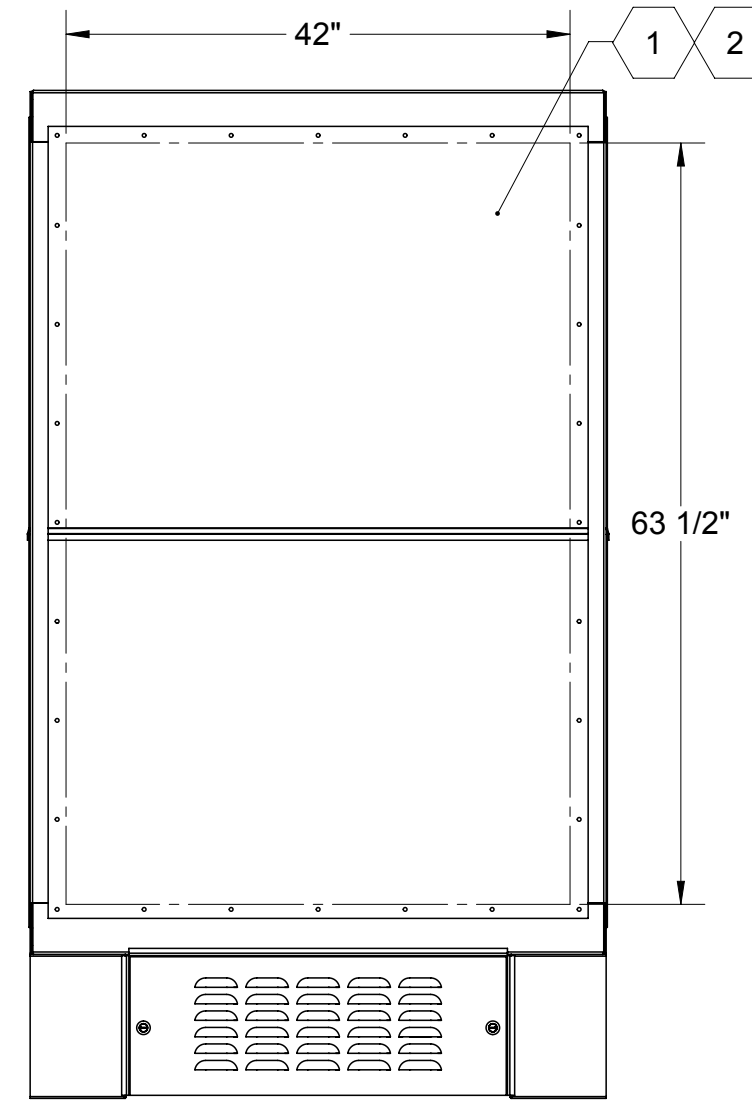
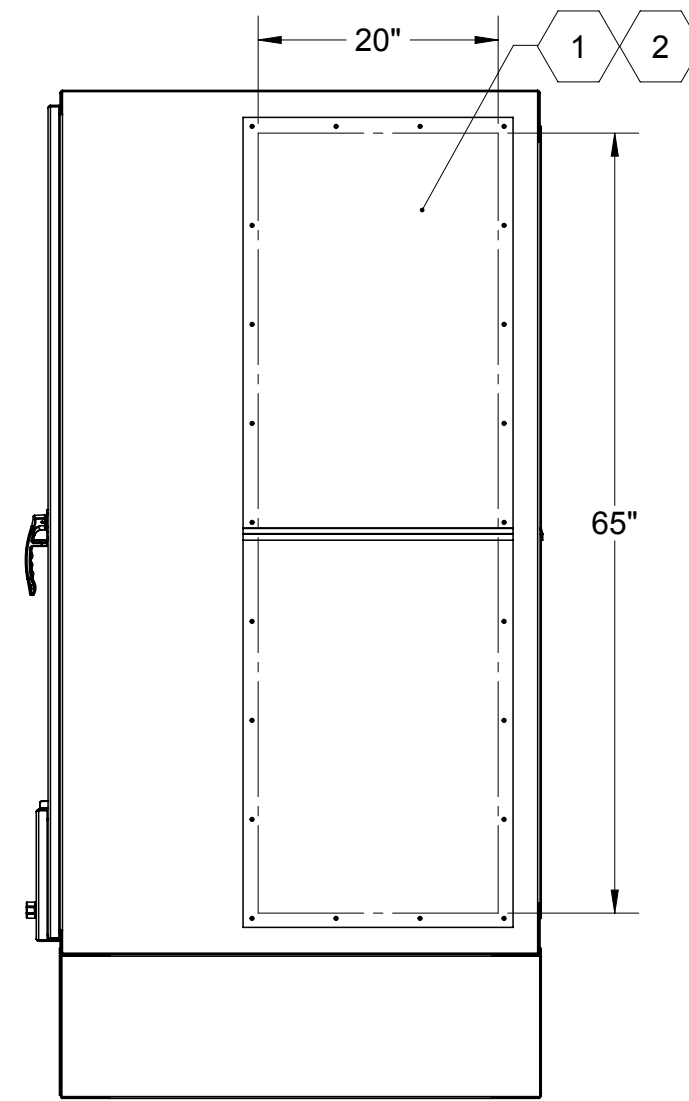
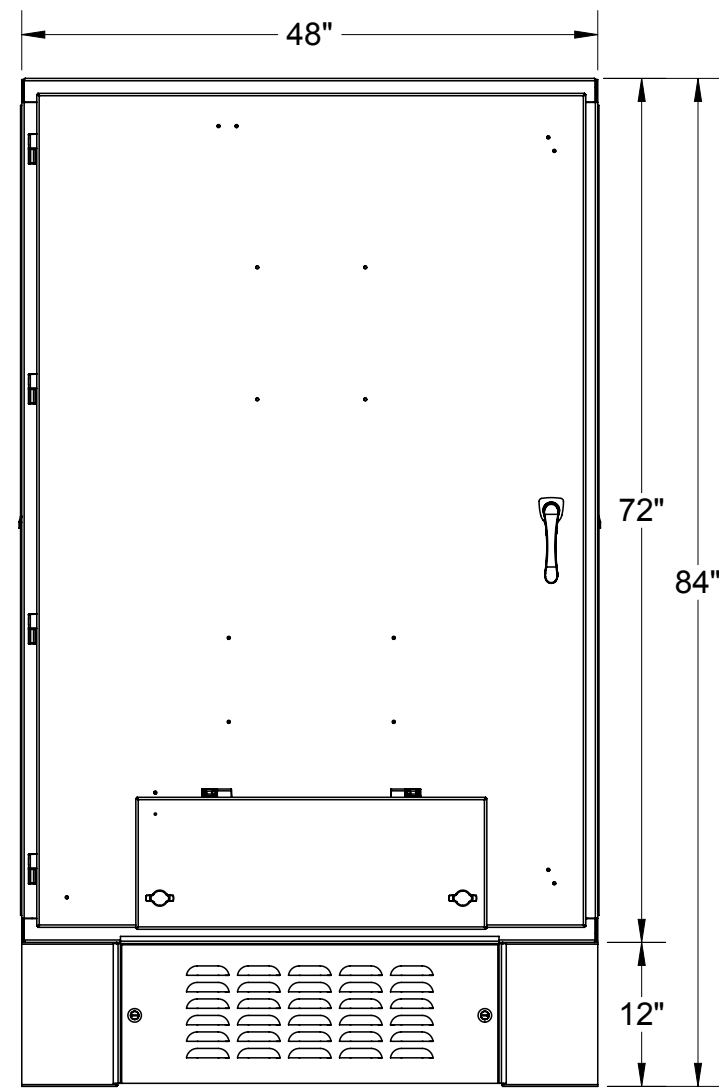
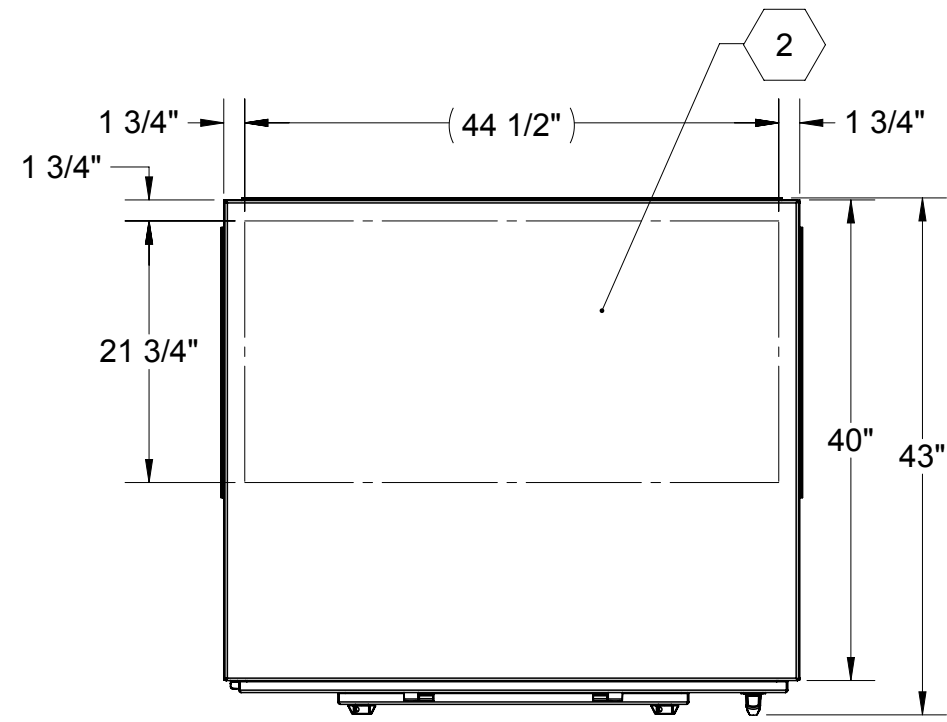
DATE CREATED: 2015-10-13

DIMENSIONAL LAYOUT		
DESCRIPTION: 150-200 kW Genset, Housing		
ENGINE: Mercedes, OM926	WEIGHT (MIN-MAX): 1496-2935 KG / 3298-6469 LB	
DRAWING NUMBER: XZG2100100040	SHEET: 1 of 1	

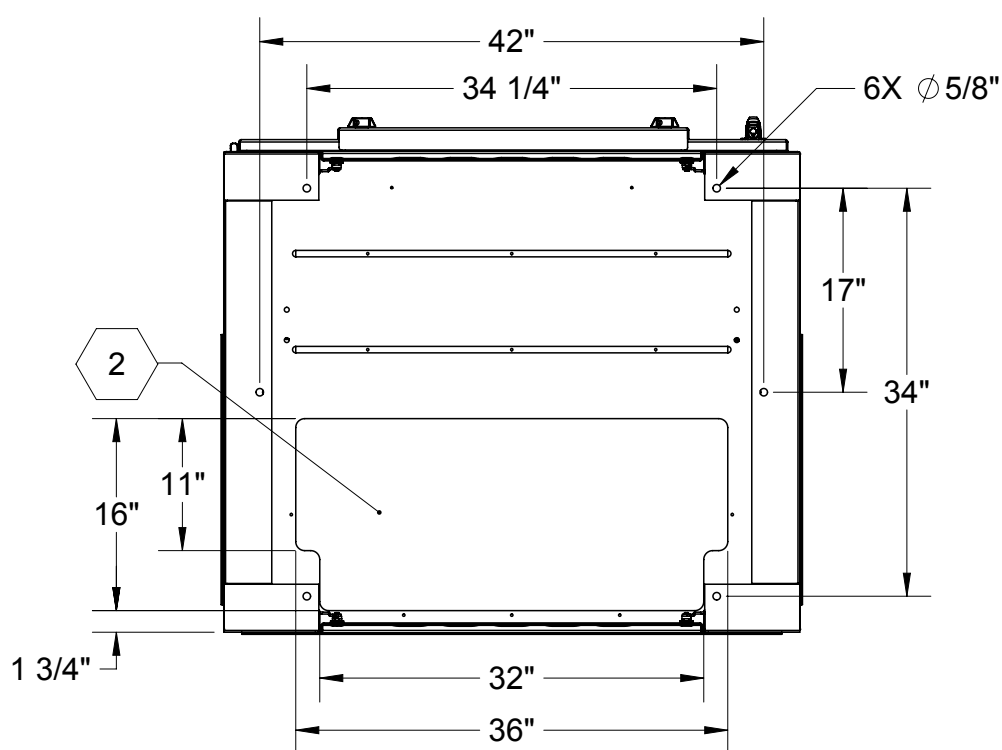
REVISION HISTORY				
REV	DESCRIPTION	ECO	BY	DATE
-01	RELEASED FOR CUSTOMER INQUIRIES	N/A	CWS	02/01/2017

Padmount Docking Station

ONE-LINES AVAILABLE UPON REQUEST



DIMETRIC VIEW CLOSED
SCALE 1:16

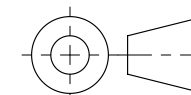


- NOTES:
1. REMOVABLE ACCESS PANEL
 2. CONDUIT ENTRY AREA - SIZE & LOCATION SUBJECT TO CHANGE WITH ADDITION OF FEATURES

PROPRIETARY AND CONFIDENTIAL
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UNLESS OTHERWISE SPECIFIED DIM ARE IN INCHES
TOL ON ANGLE ± 1° FRACTION ± 1/16
1 PL ± 1/32 2 PL ± .015 3 PL ± .010
INTERPRET DIM AND TOL PER ASME Y14.5M-1994

THIRD ANGLE PROJECTION



MATERIAL
FINISH

APPROVALS	
DRAWN: CWS	DRAWN DATE: 2/1/2017
CHECKED:	CHECKED DATE:
ENG:	DATE:
MFG:	DATE:
QA:	DATE:

TRYSTAR, INC. 2917 INDUSTRIAL DRIVE, FARIBAULT, MN 55021 (507) 333-3990 - (866) TRYSTAR - TRYSTAR.COM			
TITLE: PADMOUNT DOCKING STATION; DIMENSIONS & CONDUIT ENRTY AREA			
SIZE C	CAGE CODE 1N5J6	DWG. NO. Pdmt xDS-aavP-xxx(x)	REV -01
SCALE: 1:16		WEIGHT:	SHEET 1 OF 1

Automatic Transfer Switch

TATS LINE

THE INDUSTRY'S FIRST SERVICE ENTRANCE RATED ATS & DUAL PURPOSE DOCKING STATION

Trystar's new TATS product line is the first to market solution that integrates a Service Rated Main Breaker, Automatic Transfer Switch, Dual Purpose Docking Station and MTS Capability in a single turn-key package. The Trystar Automatic Transfer Switch gives you peace of mind, and the confidence that your backup power will kick in automatically. While the Dual Purpose capability allow the seamless testing of the Permanent Generator and Connection of Temporary Generator in compliance with NEC 2017 requirements.

REDUCE TOTAL COST OF OWNERSHIP:

- All-in-One design means one single point of installation and minimal equipment footprint
- Reduce installation and programming time by up to 80% through automatic commissioning capabilities and self contained wiring components

IMPROVE EMERGENCY EQUIPMENT ROI:

- Integrated Load Bank and Roll Up Generator connections eliminates the wear & tear on mechanical components, the number one cause of electrical failures
- Reduce installation costs and setup time for temporary generatory installation and load bank testing

MINIMIZE FACILITY DOWNTIME:

- Eliminate the need for an electrician to install a temporary generator through our industry standard camlok connections
- Factory Standard Generator Auto-Start package ensures your back up power source is primed and ready on demand
- Manual Operataion Capability of ATS ensures your facility's means of transfer is always operational



TURNKEY DESIGN FIVE IN ONE DESIGN:

1. Service Rated Disconnect
2. Automatic Transfer Switch
3. Load Bank Connections for Permanent Generator
4. Docking Station Connections for Temporary Generator
5. MTS Interlock to Transfer between Permanent and Temporary Generator

Automatic Transfer Switch

Features and Options

APPLICATION RANGE:

- 100-1200A
- Up To 480V

STANDARD FEATURES:

- Factory Installed Phase Rotation Monitor
- All Aluminum NEMA 3R or Stainless 4X Construction
- Load Shed Receptacle to Safely Disconnect the Load Bank under Loss of Power
- Patented Tamper-Resistant Rake System to Prevent Cable Theft and Unauthorized Disconnection
- Industry Standard 16 Series CamLock Connections compatible with any Rental Generator or Load Bank

AVAILABLE OPTIONS:


- SER MAIN BREAKER OPTIONAL
- Strip Heater & Unit Thermostat (375 Watt)
- Secondary Convenience Receptacles for added power options
- Patented Solenoid Safety Interlock Door to comply with NEC702.12C
- Utility Indicator Lights
- Visit Trystar.com for a Full List of Additional Options and Features



LISTINGS:

- Listed to UL 1008 Standards
- UL 50 Listed Enclosure
- NEC 700.3F Compliant By Application
- NEC 702.12C Compliant w/ Safety Interlock Door Adder

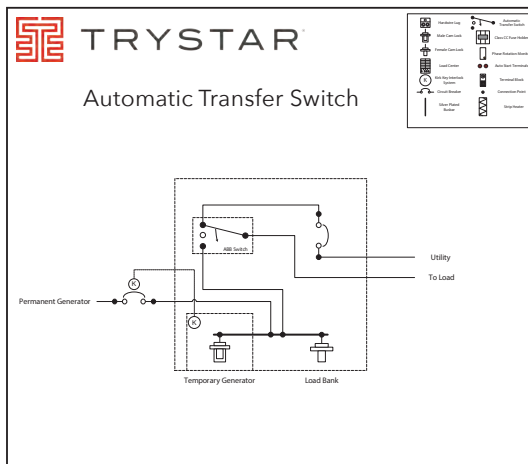
ENCLOSURE GUIDE:

 TRYSTAR					
TATS LINE	SMALL	MEDIUM	LARGE	PADMOUNT	PADMOUNT EXTRA DEPTH
SINGLE PURPOSE ATS + SERVICE ENTRANCE BREAKER	0-260A	261-600A	601-1200A	1201-2000A	1201-4000A
DUAL PURPOSE ATS + SERVICE ENTRANCE BREAKER	0-260A	261-600A	601-1200A	1201-2000A	1201-4000A
DIMENSIONS	48" x 30" x 16"	54" x 40" x 16"	60" x 48" x 19"	84" x 48" x 43"	84" x 48" x 61"
APPROXIMATE WEIGHT	150LB	250LB	350LB	750LB	900LB

Automatic Transfer Switch

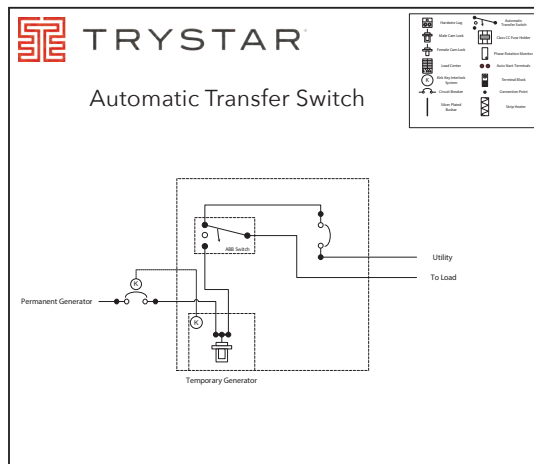
One Lines

TATS-1



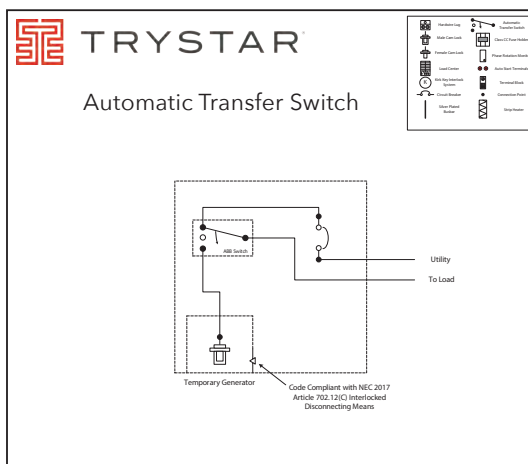
Service Entrance Rated ATS with Dual Purpose Load Bank and Temporary Generator Connections

TATS-3



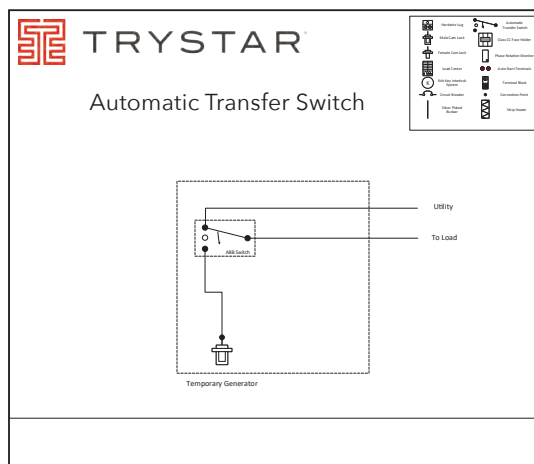
Service Entrance Rated ATS with MTS for Permanent and Temporary Generator

TATS-2



Service Entrance Rated ATS with Temporary Generator Connections and 702.12C Compliant Interlock access door

TATS-4



ATS with Temporary Generator Connections

***ADDITIONAL CONFIGURATIONS AVAILABLE: CONTACT TR YSTAR FOR MORE INFORMATION**

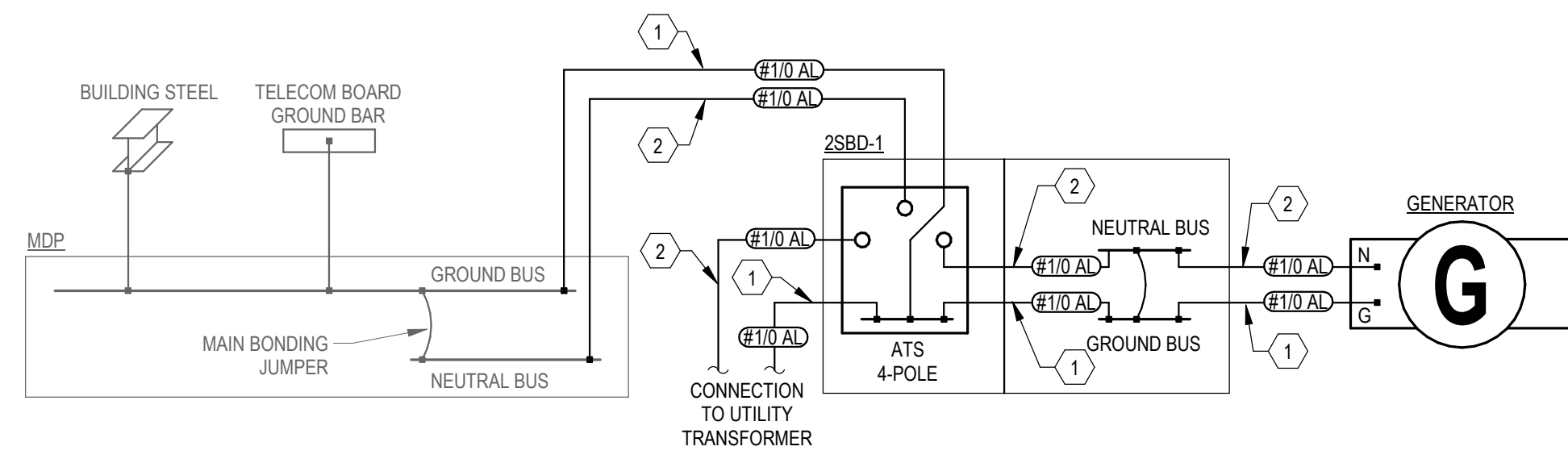
FEEDER SCHEDULE (CU & AL)

FEEDER AMPACITY	# OF SETS	PHASE AND NEUTRAL CONDUCTORS		GROUND		RACEWAY
		CONDUCTORS	MAT.	CONDUCTOR	MAT.	
20	1	#12	CU	#12	CU	3/4"
30	1	#10	CU	#10	CU	3/4"
40	1	#8	CU	#10	CU	3/4"
50	1	#6	CU	#10	CU	1"
60	1	#4	CU	#10	CU	1-1/4"
70	1	#4	CU	#8	CU	1-1/4"
80	1	#3	CU	#8	CU	1-1/4"
90	1	#2	CU	#8	CU	1-1/2"
100	1	#1	CU	#8	CU	1-1/2"
110	1	#1/0	AL	#6	CU	2"
125	1	#2/0	AL	#6	CU	2"
150	1	#3/0	AL	#6	CU	2"
175	1	#4/0	AL	#6	CU	3"
200	1	250 KCM	AL	#6	CU	3"
225	1	300 KCM	AL	#4	CU	3"
250	1	350 KCM	AL	#4	CU	3"
300	1	500 KCM	AL	#4	CU	4"
350	2	#4/0	AL	#3	CU	3"
400	2	250 KCM	AL	#3	CU	3"
450	2	300 KCM	AL	#2	CU	3"
500	2	350 KCM	AL	#2	CU	3"
600	2	500 KCM	AL	#1	CU	4"
800	3	400 KCM	AL	#1/0	CU	3"
1000	4	350 KCM	AL	#2/0	CU	3"
1200	4	500 KCM	AL	#3/0	CU	4"
1600	6	400 KCM	AL	#4/0	CU	4"
2000	8	350 KCM	AL	250 KCM	CU	4"
2500	10	350 KCM	AL	350 KCM	CU	4"
3000	10	500 KCM	AL	400 KCM	CU	4"
4000	12	600 KCM	AL	500 KCM	CU	4"

NOTE: PROVIDE GROUND CONDUCTOR WITH ALL FEEDERS EXCEPT SERVICE ENTRANCE CONDUCTORS.
 FEEDER SCHEDULE KEY:
 (YYY#X) YYY = FEEDER AMPACITY
 # = PROVIDE QUANTITY OF CURRENT CARRYING CONDUCTORS
 * = REFER TO TRANSFORMER SCHEDULE FOR GEC AND BONDING.

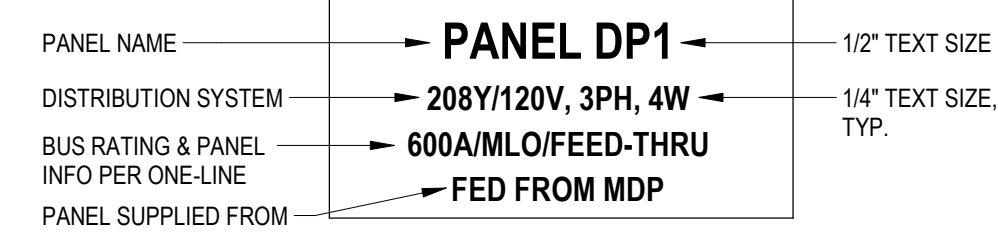
LOAD CALCULATION AT MDP (600A RATED)

MONTH W/ HIGHEST DEMAND - Sep 23	74.0	kVA
DEMAND @ 125% (NEC 220.87)	92.5	kVA
ADDED MECHANICAL LOAD	109.5	kVA
NEW TOTAL BUILDING LOAD	202.0	kVA
NEW TOTAL BUILDING LOAD (A) @ 208V	561.0	A

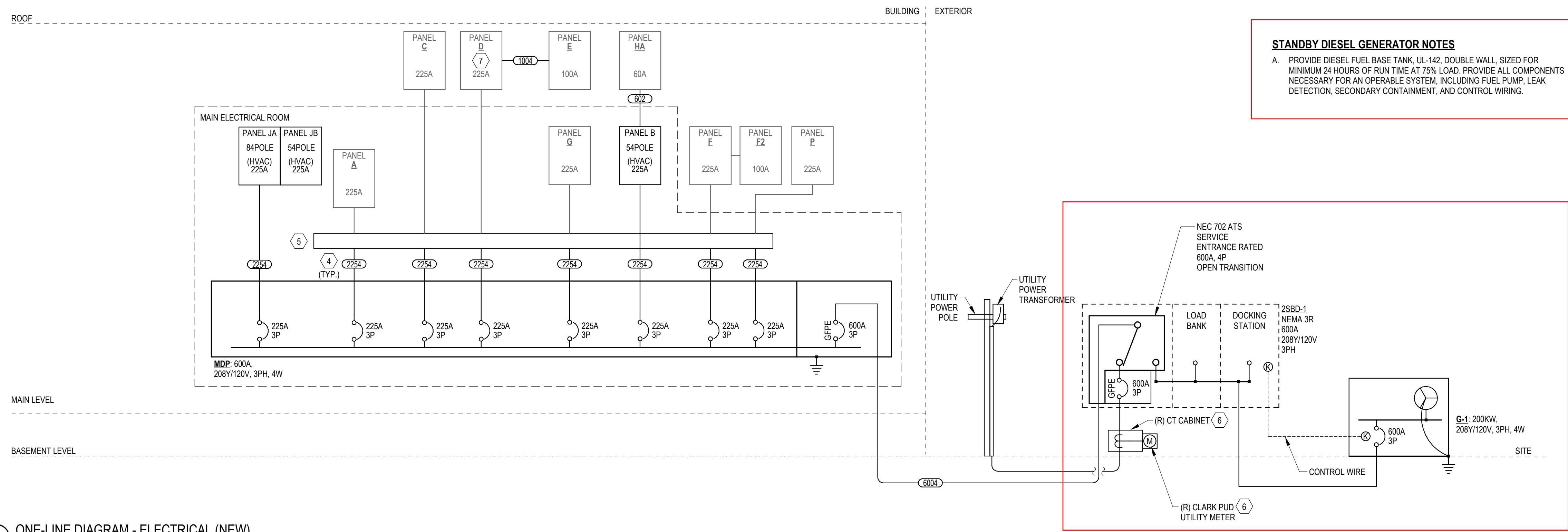


GENERAL GROUNDING NOTES:
 A. GENERATOR AND ACCOMPANYING EQUIPMENT TO BE CONNECTED TO EXISTING GROUNDING SYSTEM AS INDICATED.
 B. LINES SHOWN BOLD REPRESENT NEW EQUIPMENT. LINES SHOWN FADED REPRESENT EXISTING EQUIPMENT UNO.

3 BUILDING GROUNDING DIAGRAM
NOT TO SCALE

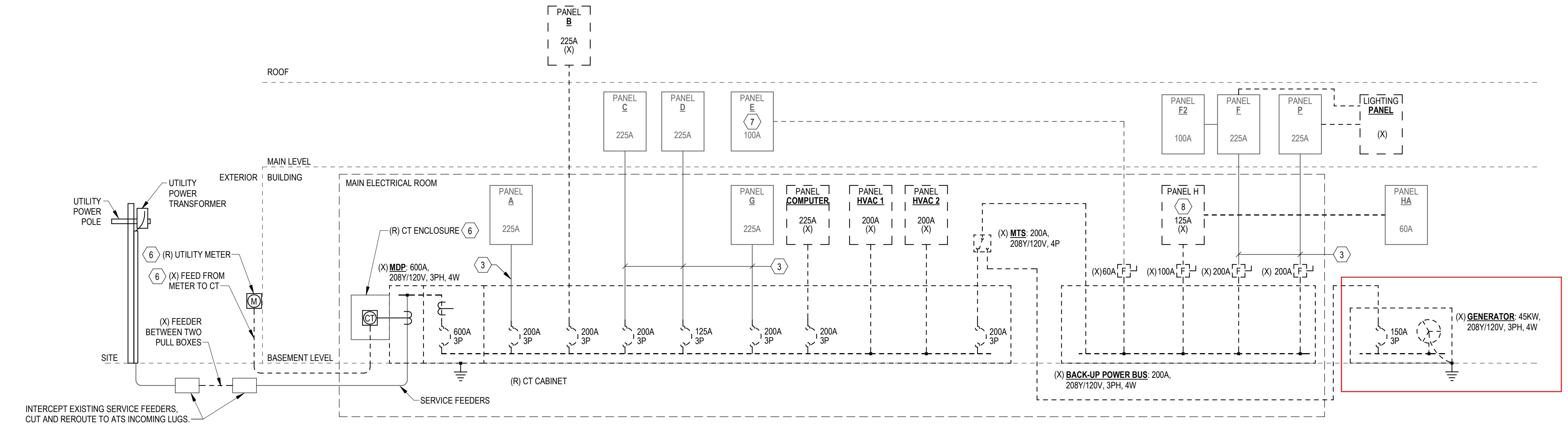


4 EQUIPMENT IDENTIFICATION NAMEPLATE DETAIL
NOT TO SCALE



STANDBY DIESEL GENERATOR NOTES
 A. PROVIDE DIESEL FUEL BASE TANK, UL-142, DOUBLE WALL, SIZED FOR MINIMUM 24 HOURS OF RUN TIME AT 75% LOAD. PROVIDE ALL COMPONENTS NECESSARY FOR AN OPERABLE SYSTEM, INCLUDING FUEL PUMP, LEAK DETECTION, SECONDARY CONTAINMENT, AND CONTROL WIRING.

2 ONE-LINE DIAGRAM - ELECTRICAL (NEW)
NOT TO SCALE



1 ONE-LINE DIAGRAM - ELECTRICAL (DEMOLITION)
NOT TO SCALE

GENERAL SHEET NOTES

- A. CONTROLS WIRING: PROVIDE ALL CONDUIT AND CONDUCTORS FOR CONTROL WIRING OF GENERATOR, AUTOMATIC TRANSFER SWITCHES, AND FIRE ALARM INTERCONNECTIONS. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT SUBMITTALS.
- B. PROVIDE EQUIPMENT IDENTIFICATION NAMEPLATES PER DETAIL IN DIAGRAMS AND DETAILS.

KEYNOTES

- EQUIPMENT GROUNDING CONDUCTOR (INSULATED) INCLUDED WITH THE FEEDER.
- NEUTRAL CONDUCTOR INCLUDED WITH THE FEEDER.
- EXISTING FEEDER TO REMAIN. VERIFY FEEDER CONDITION FOR USABILITY. DISCONNECT FROM DEMOLISHED EQUIPMENT AND CAP TO REUSE FOR FUTURE SPLICE. WITH NEW FEEDER.
- PROVIDE NEW FEEDERS AS INDICATED FROM BREAKER TERMINATION TO NEW GUTTER. SPLICE WITH EXISTING FEEDER IN GUTTER.
- PROVIDE NEW METAL GUTTER ABOVE MDP FOR PULLING AND SPLICING NEW FEEDERS.
- CONTRACTOR TO COORDINATE RELOCATION OF METER, CT CABINET AND FEEDER WITH CPUD PRIOR TO CONSTRUCTION. REFER TO SHEET E100 FOR NEW LOCATIONS.
- EXISTING FEED FROM BACK-UP POWER BUS TO BE DEMOLISHED. FEED PANEL E FROM PANEL D. PROVIDE A 100A, 3P SUB-FEED BREAKER IN PANEL D.
- EXISTING FEED FROM DISCONNECT TO BE DEMOLISHED. FEED PANEL HA FROM NEW PANEL B. PROVIDE A 60A, 2P SUB-FEED BREAKER IN NEW PANEL B. LOAD ON CIRCUIT 6 IN PANEL H TO BE SHUT OFF, CUT AND MOVED TO NEW PANEL B. LOAD ON CIRCUITS 5 AND 7 TO BE DEMOLISHED. DEMOLISH FEEDER, CONDUIT AND COOLING UNIT.

Revisions:

75% CD

Project No:

PROJECT MANAGER: LIE
 DRAWN BY: MBK
 CHECKED BY: BPW

Issue Date:
 8/16/2024

ELECTRICAL
 ONE-LINE DIAGRAM