

1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610.566.7044
FAX: 610.566.3258

ADDENDUM NO.1**Trainer Borough - New Borough Administration, Police and Community Center****October 14, 2019**

The following are revisions, clarifications, or additions to the contract drawings for the above referenced project:

- 1) Question: Will Specifications be provided for the Generator and Transfer Switch referenced on Drawing E3.0?

Answer: The new diesel generator is 75KW. Attached please find the Diesel Engine Generator Set Specification, Sketch #190909.01, and Sketch #190909.02.

- 2) Question: Is there a selection for bidding the solid surfaces?

Answer: Please provide pricing for Corian level 3 at all solid surface areas.

- 3) Question: Are there product spec (styles) for CFT 1 & 2, CBT 1 & 2 (base), and CWT 1 & 2 (walls).

Answer: Please refer to Ceramic Tiling Specification #093013. Ceramic tile to be Level 2, colors/patterns are the only difference between tile types.

- 4) Question: Will there be a Pre-Bid meeting for this project?

Answer: There will be no prebid meeting, however the site is open and available to view at any time and ALL contractors are encouraged to visit the site if they intend on submitting a bid

- 5) Question: The bid documents do not contain a bid sheet for the Site work. To clarify, the only bid sheet for Site Work is through PennBid's "Bid" tab, correct? The Site Work bid documents must contain a bid bond, Non-Collusion, and Contractor Qualification form only?

Answer: Correct all bid tabs should be submitted thru PennBid's BID tab. Site Work does require a bid bond, Non-Collusion and contractor Qualification.

- 6) The Soil Report has been added to the documents tab on the PennBid website

END OF ADDENDUM

SECTION 26 3213 – DIESEL ENGINE GENERATOR SET**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. Furnish and install a complete engine generator and transfer switch used to supply emergency power, with the following features:
1. Gen-Set mounted load bank and control.
 2. Skid mounted fuel tank.
 3. Weather-proof Housing.
 4. Automatic transfer with bypass.
 5. Remote annunciator.

1.3 SUBMITTALS

- A. Product Data: For each type of packaged engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. In addition, include the following:
1. Thermal damage curve for generator Floor plan.
 2. Time-current characteristic curves for generator protective device.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, and location and size of each field connection.
1. Single-Line Diagram: Show connections between transfer switch, **bypass/isolation switch**, power sources, and load; and show interlocking provisions.
 2. Riser Diagram: Show interconnection wiring between transfer switches, bypass/isolation switches, annunciators, and control panels.
- C. Certification:
1. Submit statement of compliance which states the proposed product(s) is certified to the emissions standards required by the location for EPA, stationary emergency application.
- D. Certified summary of prototype-unit test report. Include statement indicating torsional compatibility of components.
- E. Submit manufacturer's warranty statement to be provided for this Project.

1.4 QUALITY ASSURANCE

- A. Comply with provisions of the following:
 - 1. NFPA 37 Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines.
 - 2. NFPA 70 National Electrical Code.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Equipment shall be handled and stored in accordance with manufacturer's instructions. One (1) copy of these instructions shall be included with the equipment at time of shipment.

1.6 OPERATION AND MAINTENANCE MANUALS

- A. Equipment operation and maintenance manuals shall be provided with each assembly shipped, and shall include instruction leaflets and instruction bulletins for the complete assembly and each major component.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. The listing of specific manufacturers does not imply acceptance of their products that do not meet the specified ratings, features and functions. Manufacturers listed are not relieved from meeting these specifications in their entirety:
 - 1. Caterpillar, Inc.
 - 2. Cummins Power Generation.
 - 3. MTU Onsite Energy Corporation.

2.2 ENGINE-GENERATOR SET

- A. Factory-assembled and -tested, engine-generator set.
- B. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments:
 - 1. Rigging Information: Indicate location of each lifting attachment, generator-set center of gravity, and total package weight in submittal drawings.
- C. Capacities and Characteristics:
 - 1. Power Output Ratings: Electrical output power rating for Standby operation of not less than rated kw shown on drawings, at 80 percent lagging power factor, 208V/120, Series Wye, Three phase, 4 -wire, 60 hertz.
 - 2. Alternator shall be capable of accepting maximum rated kVA in a single step and be capable of recovering to a minimum of 90% of rated no load voltage. Following the

application of the specified kVA load at near zero power factor applied to the generator set.

3. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component. The engine-generator nameplate shall include information of the power output rating of the equipment.

D. Generator-Set Performance:

1. Steady-State Voltage Operational Bandwidth: 0.5 percent of rated output voltage from no load to full load.
2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within 5 seconds. On application of a 100% load step the generator set shall recover to stable voltage within 10 seconds.
3. Steady-State Frequency Operational Bandwidth: 0.25 percent of rated frequency from no load to full load.
4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
5. Transient Frequency Performance: Not more than 15 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within 5 seconds. On application of a 100% load step the generator set shall recover to stable frequency within 10 seconds.
6. Output Waveform: At full load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for any single harmonic. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50.
7. Sustained Short-Circuit Current: (For engine-generator sets using a PMG-excited alternator) For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 8 seconds without damage to generator system components. For a 1-phase, bolted short circuit at system output terminals, system shall regulate both voltage and current to prevent over-voltage conditions on the non-faulted phases.
8. Start Time: Comply with NFPA 110, Level 1, Type 10, system requirements.
9. Ambient Condition Performance: Engine generator shall be designed to allow operation at full rated load in an ambient temperature under site conditions, based on highest ambient condition. Ambient temperature shall be as measured at the air inlet to the engine generator for enclosed units, and at the control of the engine generator for machines installed in equipment rooms.

2.3 ENGINE

- A. Fuel: ASTM D975 #2 Diesel Fuel.
- B. Rated Engine Speed: 1800RPM.
- C. Lubrication System: The following items are mounted on engine or skid:
 - 1. Lube oil pump: shall be positive displacement, mechanical, full pressure pump.
 - 2. Filter and Strainer: Provided by the engine manufacturer of record to provide adequate filtration for the prime mover to be used.
 - 3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.
- D. Engine Fuel System: The engine fuel system shall be installed in strict compliance to the engine manufacturer's instructions.
- E. Main Fuel Pump: Mounted on engine. Pump ensures adequate primary fuel flow under starting and load conditions.
- F. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity and performance.
- G. Governor: Adjustable isochronous, with speed sensing. The governing system dynamic capabilities shall be controlled as a function of engine coolant temperature to provide fast, stable operation at varying engine operating temperature conditions. The control system shall actively control the fuel rate as appropriate to the state of the engine generator. Fuel rate shall be regulated as a function of starting, accelerating to start disconnect speed, accelerating to rated speed, and operating in various isochronous states.
- H. Cooling System: Closed loop, liquid cooled:
 - 1. The generator set manufacturer shall provide prototype test data for the specific hardware proposed demonstrating that the machine will operate at rated standby load in an outdoor ambient condition of 40 deg C.
 - 2. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
 - 3. Size of Radiator overflow tank: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.
 - 4. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.
 - 5. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
 - 6. Duct Flange: Generator sets installed indoors shall be provided with a flexible radiator duct adapter flange.

- I. Muffler/Silencer: Selected with performance as required to meet sound requirements of the application, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements. For generator sets with outdoor enclosures the silencer shall be inside the enclosure
- J. Air-Intake Filter: Engine-mounted air cleaner with replaceable dry-filter element and restriction indicator
- K. Starting System: 12 or 24V, as recommended by the engine manufacturer; electric, with negative ground
 1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in Part 1 "Project Conditions" Article.
 2. Cranking Cycle: As required by NFPA 110 for level 1 systems.
 3. Battery Cable: Size as recommended by engine manufacturer for cable length as required. Include required interconnecting conductors and connection accessories.
 4. Battery Compartment: Factory fabricated of metal with acid-resistant finish.
 5. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation. The battery charging alternator shall have sufficient capacity to recharge the batteries with all parasitic loads connected within 4 hours after a normal engine starting sequence.
 6. Battery Chargers: Unit shall comply with UL 1236, provide fully regulated, constant voltage, current limited, battery charger for each battery bank. It will include the following features:
 - a. Operation: Equalizing-charging rate based on generator set manufacturer's recommendations shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.
 - b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 20 deg C to plus 40 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.
 - c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.
 - d. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
 - e. Provide LED indication of general charger condition, including charging, faults, and modes. Provide a LCD display to indicate charge rate and battery voltage. Charger shall provide relay contacts for fault conditions as required by NFPA110.
 - f. Enclosure and Mounting: NEMA, Type 1, wall-mounted cabinet.

2.4 FUEL OIL STORAGE

- A. Comply with NFPA 30.
- B. Sub Base-Mounted Fuel Oil Tank: Provide a double wall secondary containment type sub base fuel storage tank. The tank shall be constructed of corrosion resistant steel and shall be UL 142 listed and labeled. The fuel tank shall include the following features:
 - 1. Capacity: Fuel for 72 hour(s) continuous operation at 100 percent rated power output.
 - 2. Tank rails and lifting eyes shall be rated for the full dry weight of the tank, genset, and enclosure.
 - 3. Electrical stub up(s).
 - 4. Normal & emergency vents.
 - 5. Lockable fuel fill.
 - 6. Mechanical fuel level gauge.
 - 7. High and low level switches to indicate fuel level.
 - 8. Leak detector switch.
 - 9. Sub base tank shall include a welded steel containment basin, sized at a minimum of 110% of the tank capacity to prevent escape of fuel into the environment in the event of a tank rupture.
 - 10. Fill port with overfill prevention valve (OFPV).
 - 11. 5 gallon fill/spill dam or bucket.
 - 12. Tank design shall meet the regional requirements for the Project location.

2.5 CONTROL AND MONITORING

- A. Engine generator control shall be microprocessor based and provide automatic starting, monitoring, protection and control functions for the unit.
- B. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of generator set. When mode-selector switch is switched to the on position, generator set starts. The off position of same switch initiates generator-set shutdown. (Switches with different configurations but equal functions are acceptable.) When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of the local (generator set-mounted) and/or remote emergency-stop switch also shuts down generator set.
- C. Manual Starting System Sequence of Operation: Switching on-off switch on the generator control panel to the on position starts generator set. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate

alarms. Operation of the local (generator set-mounted) and/or remote emergency-stop switch also shuts down generator set.

- D. Configuration: Operating and safety indications, protective devices, system controls, engine gages and associated equipment shall be grouped in a common control and monitoring panel. Mounting method shall isolate the control panel from generator-set vibration. AC output power circuit breakers and other output power equipment shall not be mounted in the control enclosure.
- E. Indicating and Protective Devices and Controls: As required by NFPA 110 for Level 1 system, and the following:
1. AC voltmeter (3-phase, line to line and line to neutral values).
 2. AC ammeter (3-phases).
 3. AC frequency meter.
 4. Ammeter-voltmeter displays shall simultaneously display conditions for all three phases.
 5. Emergency Stop Switch: Switch shall be a red “mushroom head” pushbutton device complete with lock-out/tag-out provisions. Depressing switch shall cause the generator set to immediately stop the generator set and prevent it from operating.
 6. Fault Reset Switch: Supply a dedicated control switch to reset/clear fault conditions.
 7. DC voltmeter (alternator battery charging).
 8. Engine-coolant temperature gauge.
 9. Engine lubricating-oil pressure gauge.
 10. Running-time meter.
 11. Generator-voltage and frequency digital raise/lower switches. Rheostats for these functions are not acceptable. The control shall adjustment of these parameters in a range of plus or minus 5% of the voltage and frequency operating set point (not nominal voltage and frequency values.) The voltage and frequency adjustment functions shall be disabled when the paralleling breaker is closed.
 12. Fuel tank derangement alarm.
 13. Fuel tank high-level shutdown of fuel supply alarm.
 14. AC Protective Equipment: The control system shall include over/under voltage, reverse kVAR over current, loss of voltage reference, and over excitation shut down protection. There shall be a overload warning, and overcurrent warning alarm.
 15. Status LED indicating lamps to indicate remote start signal present at the control, existing shutdown condition, existing alarm condition, not in auto, and generator set running.
 16. A graphical display panel with appropriate navigation devices shall be provided to view all information noted above, as well as all engine status and alarm/shutdown conditions (including those from an integrated engine emission

control system). The display shall also include integrated provisions for adjustment of the gain and stability settings for the governing and voltage regulation systems.

17. Panel lighting system to allow viewing and operation of the control when the generator room or enclosure is not lighted.
 18. Data Logging: The control system shall log the latest 20 different alarm and shut down conditions, the total number of times each alarm or shutdown has occurred, and the date and time the latest of these shutdown and fault conditions occurred.
 19. DC control Power Monitoring: The control system shall continuously monitor DC power supply to the control, and annunciate low or high voltage conditions. It shall also provide an alarm indicating imminent failure of the battery bank based on degraded voltage recover on loading (engine cranking).
- F. Remote Alarm Annunciator: Comply with NFPA 110. An LED labeled with proper alarm conditions shall identify each alarm event and a common audible signal shall sound for each alarm condition.
- G. Remote Emergency Stop Stations: Provide red mushroom head pushbutton stations with glass cover to cause generator to engage a shutdown sequence.

2.6 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

- A. Comply with NEMA MG 1.
- B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.
- C. Electrical Insulation: Class H
- D. Temperature Rise: 105 / Class F environment.
- E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, over speed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.
- F. Permanent Magnet Generator (PMG) shall provide excitation power for optimum motor starting and short circuit performance.
- G. Enclosure: Drip-proof.
- H. Voltage Regulator: SCR type, Separate from exciter, providing performance as specified. The voltage regulation system shall be microprocessor-controlled, full wave rectified, and provide a pulse-width modulated signal to the exciter. No exceptions or deviations to these requirements will be permitted.

- I. The alternator shall be provided with anti-condensation heater(s) in all applications where the generator set is provided in an outdoor enclosure, or when the generator set is installed in a coastal or tropical environment.
- J. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.
- K. Subtransient Reactance: 12 percent maximum, based on the rating of the engine generator set.

2.7 VIBRATION ISOLATION DEVICES

- A. Vibration Isolation: Generators installed on grade shall be provided with elastomeric isolator pads integral to the generator, unless the engine manufacturer requires use of spring isolation.

2.8 GEN-SET CIRCUIT BREAKERS

- A. Shall be electronic-trip type; 100 percent rated; complying with NEMA AB 1 and UL 489.

2.9 OUTDOOR ENGINE GENERATOR ENCLOSURE

- A. Description: Vandal-resistant, sound-attenuating, weatherproof steel housing; wind resistant up to 100 mph (160 km/h). Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Panels shall be removable by one person without tools. Instruments and control shall be mounted within enclosure.

1. Sound Attenuation Level: **<Insert level>**.

- B. Hinged Doors: With padlocking provisions.
- C. Space Heater: Thermostatically controlled and sized to prevent condensation.
- D. Thermal Insulation: Manufacturer's standard materials and thickness selected in coordination with space heater to maintain winter interior temperature within operating limits required by engine generator components.
- E. Engine-Cooling Airflow through Enclosure: Maintain temperature rise of system components within required limits when unit operates at 110 percent of rated load for two hours with ambient temperature at top of range specified in system service conditions.
- F. Louvers: Fixed-engine, cooling-air inlet and discharge. Stormproof and drainable louvers prevent entry of rain and snow.
- G. Automatic Dampers: At engine cooling-air inlet and discharge. Dampers shall be closed to reduce enclosure heat loss in cold weather when unit is not operating.

2.10 FINISHES

- A. Powder-coated and baked over corrosion-resistant pretreatment and compatible primer. Manufacturer's standard color or as directed on the drawing

2.11 FACTORY TESTING

- A. Prototype Testing: Factory test engine-generator set using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories
- B. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests
 - 1. Test engine generator set manufactured for this Project to demonstrate compatibility and functionality.
 - 2. Full load run.
 - 3. Maximum power.
 - 4. Voltage regulation. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests
 - 5. Steady-state governing.
 - 6. Single-step load pickup.
 - 7. Simulated safety shutdowns.

2.12 GEN-SET MOUNTED LOADBANK

- A. Description: Permanent, radiator-mounted, resistive unit capable of providing a balanced three-phase, delta-connected load to engine generator. Radiator/Duct mounted load bank shall be designed as a supplemental load to the generator set, and shall be sized at approximately 40% of generator nameplate KW rating. Unit shall be capable of selective control of load in 20 percent steps of load-bank rating. The load bank shall be designed for installation and operation outdoors. Load Bank shall have a screened exhaust louver. Load bank will be painted ASA-61 grey and have a baked polyester powder coated finish with a film thickness of 2.8 +/- 0.4 Mils per coat.
- B. Resistive Load Elements: Corrosion-resistant chromium alloy with ceramic and stainless-steel supports.
- C. An over-temperature switch shall be provided to sense the load bank exhaust. The switch shall be electrically interlocked with the load application controls to prevent load from being applied in the event of an over temperature condition
- D. Control Panel
 - 1. The control panel shall be a local panel mounted on the load bank. The control panel shall contain the following manual controls

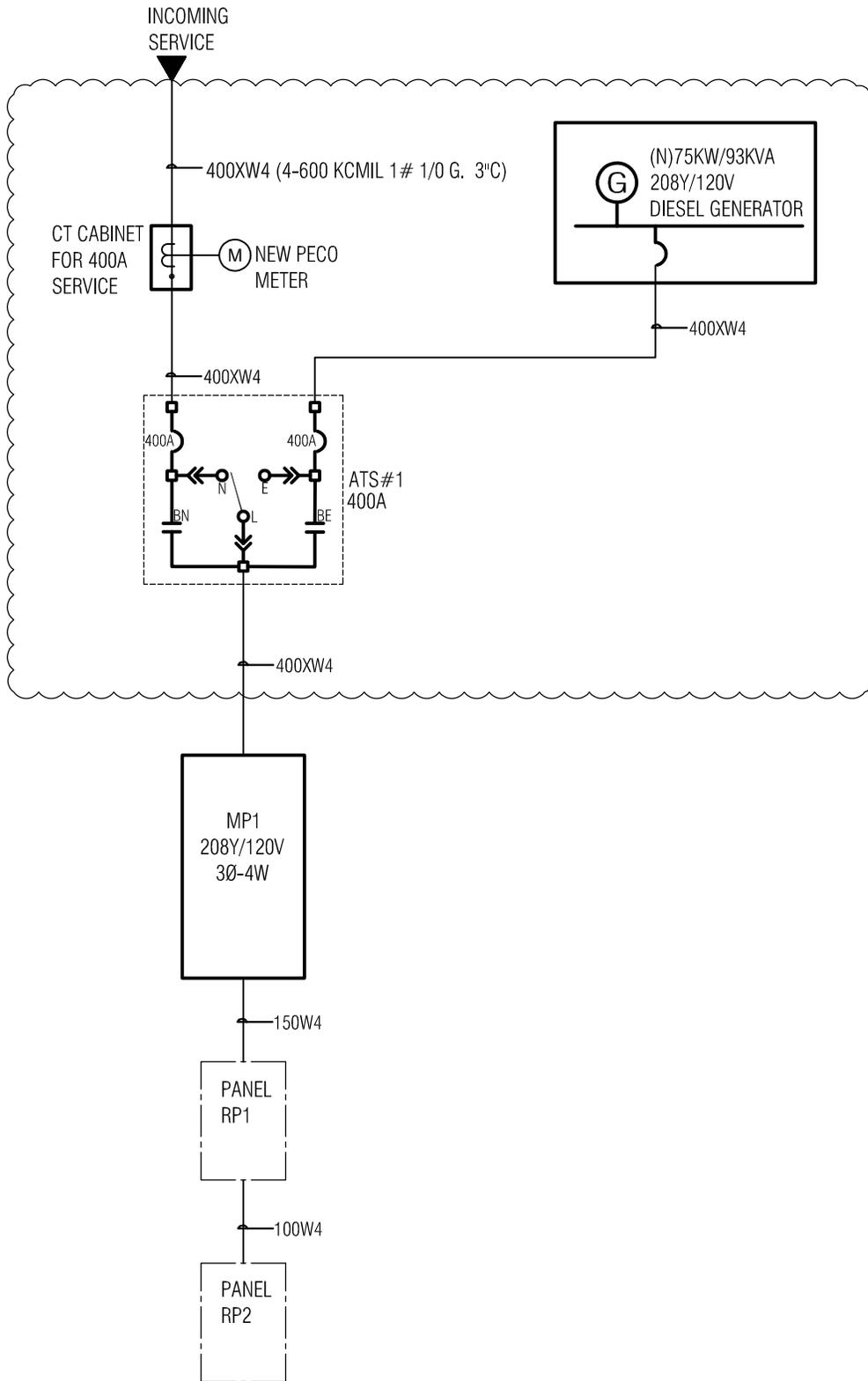
- a. Power ON/OFF switch.
 - b. Master load ON/OFF switch.
 - c. Load step switches for ON/OFF application of individual load steps.
2. Visual indicators shall be provided for Power On and Over-Temperature
 3. A standard remote load dump circuit shall be provided as part of the load bank control circuit. Provisions shall be provided to remove the load bank off-line from the operation of a remote normally closed set of auxiliary contacts from a transfer switch or other device. In the event of the remote contact opening, all load is removed.
 4. An Automatic Load Step Controller shall be provided for maintaining a minimum load on the generator set. The controller shall monitor the connected downstream loads and will automatically add or subtract load steps in response to building load changes as to maintain a minimum load level on the generator set. The controller includes an initial time-delay circuit, and automatic time delayed load step application circuit. A remote contact closure is required for activation and transfer of control. A separate current transformer shall be supplied loose for mounting and sensing of downstream loads.
- E. Manufacturer shall be Avtron Series K711H or equal.

2.13 AUTOMATIC TRANSFER SWITCH

- A. Furnish UL listed automatic transfer switches to automatically transfer between the normal and emergency power sources and/or automatic transfer switches to manually permit electrical bypass and electrical isolation of the automatic transfer switch.
- B. Transfer switches shall include a close-differential low-voltage monitor set to drop out at 83 to 85 percent and reset at 92 to 95 percent of nominal voltage, and also to protect against single phasing
- C. Transfer switch shall be service rated.
 1. Comply with UL 869A and UL 489.
 2. Provide circuit breakers for both the normal and emergency input.
 3. Provide terminals for bonding the grounding electrode conductor to the grounded service conductor.
 4. In systems with a neutral, the bonding connection shall be on the neutral bus.
 5. Provide removable link for temporary separation of the service and load grounded conductors.
 6. Surge Protective Device: Service rated.
 7. Service Disconnecting Means: Externally operated, manual **mechanically** actuated.
- b. Neutral Switching: Where four-pole switches are indicated, provide neutral pole switched simultaneously with phase poles.
- D. Neutral Terminal: Solid and fully rated unless otherwise indicated

- E. Transfer switches shall be open transition type
- F. Transfer switch shall transfer to the emergency source only when the emergency voltage and frequency attain 90 percent of nominal
- G. Fault-Current Closing and Short-Circuit Ratings: Coordinate with electrical utility to be adequate for duty imposed by protective devices at installation locations in Project under the fault conditions indicated, based on testing according to UL 1008.
- H. Refer to sequence of operation on drawings for information on control requirements for each transfer switch.
- I. Provide Engine Gen-Set Exerciser
- J. Manufacturer shall be ASCO Series 7000 or equal.

END OF SECTION 26 32 13



7 SLD - BOROUGH BUILDING

E300 SCALE - NONE

LINN ARCHITECTS

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MEDIA, PENNSYLVANIA 19063
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FAX: 610-566-3258

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NO.	REVISIONS DESCRIPTION	DATE

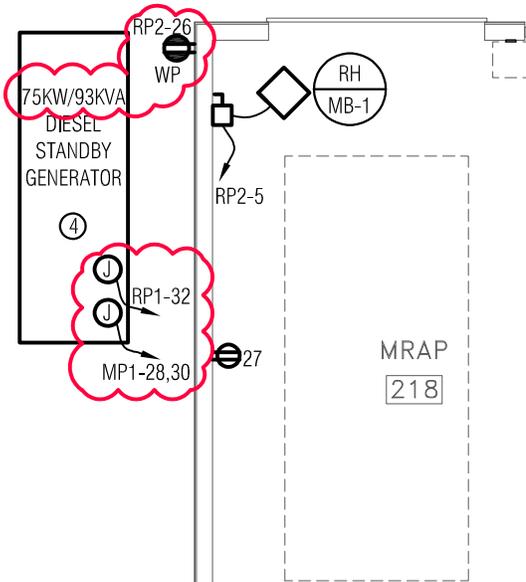
DATE: 09/09/19	SCALE: N/A	DRAWN BY:	CHECKED BY:	PROJ. NO.: 17214
SKETCH NUMBER		SHEET NO. REFERENCES		
SKE-190909.01		E3.0		
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**PLAN NOTES
4 & 5 REVISED
ON E2.1**

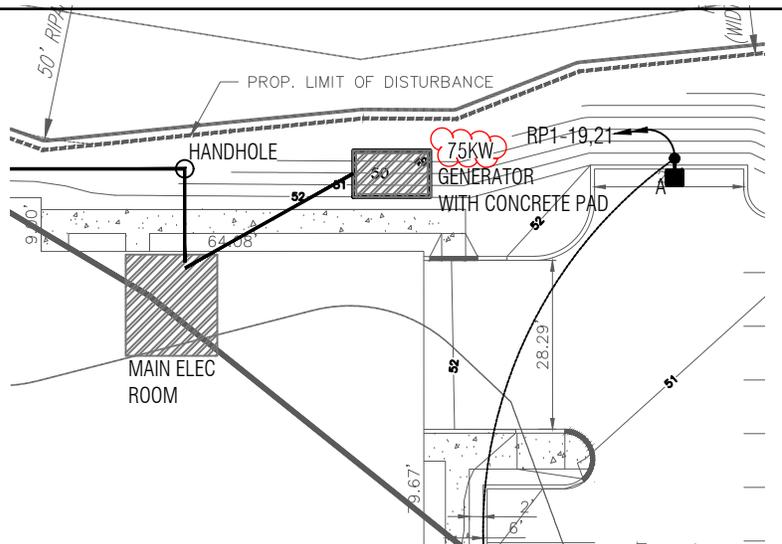
PLAN NOTES:

- ① CONNECT TOILET ROOM EXHAUST FAN TO LIGHTING BRANCH CIRCUIT AND LIGHTING CONTROL SWITCH IN ROOM.
- ② AC-1 SHALL BE POWERED FROM THE ROOFTOP CONDENSER UNIT. PROVIDE CONTROL CONDUIT WITH PULL STRING. ROUTING OF POWER AND CONTROL CONDUIT SHALL BE COORDINATED WITH MECHANICAL CONTRACTOR.
- ③ SERVICE RATED AUTOMATIC TRANSFER SWITCH WITH BYPASS ISOLATION, 208V 3-PHASE, 4-POLE. NORMAL SOURCE SHALL BE DIRECT FROM PECO SERVICE AND ALTERNATE FROM EMERGENCY GENERATOR. PROVIDE 400W4 CONNECTIONS TO EACH. PROVIDE CONTROL WIRES AS REQUIRED TO EMERGENCY GENERATOR.
- ④ 75KW/93KVA DIESEL EMERGENCY GENERATOR, 208V 3-PHASE, 4-POLE IN SOUND ATTENUATED WEATHERPROOF ENCLOSURE. GENERATOR SHALL INCLUDE BASE TANK WITH CAPACITY FOR 3 DAYS OF SERVICE AT FULL LOAD. PROVIDE CONCRETE BASE PAD AS REQUIRED.

**PLAN #1/E2.1
REVISED
AS SHOWN**



**PLAN #1/ES1.1
REVISED
AS SHOWN**



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1440 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
FAX: 610-566-3258

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NEW MUNICIPAL BUILDINGS
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TRAINER PA, 19061

REVISIONS		DATE
NO.	DESCRIPTION	

DATE	09/09/19
SCALE	N/A
DRAWN BY	
CHECKED BY	
PROJ. NO.	17214

SKETCH NUMBER	SHEET NO. REFERENCES
SKE-190909.02	E2.1 ES1.1
	SHEET OF