

### HOUSING AUTHORITY OF BERGEN COUNTY

ONE BERGEN COUNTY PLAZA, 2<sup>ND</sup> FLOOR HACKENSACK, N.J. 07601

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### **RFP ADDENDUM NOTICE**

To: All Prospective Bidders

Addendum Number: No. 1

Issued by: Erick Martinez, Purchasing Agent

Date: July 7, 2021

Project/Service Name: Standby Generator Replacement at Lehmann Gardens

Bid Dated: June 25, 2021

Bid Number: HABC 2021.07.14.01

The above referenced project/service is hereby amended as set forth below. Bidders MUST acknowledge receipt of this addendum, by completing, signing, and submitting with their Bid the Acknowledgment of Receipt of Addenda Form.

#### **Description of Addendum:**

The following constitutes Addendum No. 1 to the above referenced solicitation.

The addendum is in response to a bidder's request for *ENGINEERING DRAWINGS*. Part ONE of this addendum provides the ENGINEERING DRAWINGS, which SHALL become part of specifications dated June 25, 2021.

Original Bid Submission Due Date: July 14, 2021, at 9:30 A.M. shall remain UNCHANGED.

**PART ONE:** 

### \*SEE ENGINEERING DRAWINGS ON ATTACHED PAGES\*

It is the sole responsibility of the Bidder to be knowledgeable of all of the additions, deletions, clarifications and modifications to this Bid and/or the Standard Terms and Conditions relative to this Bid as set forth in all addenda.

Except as provided herein, all terms and conditions of the solicitation and any previous addenda remain unchanged and in full force and effect. Please note that the above-mentioned addenda shall become part of the specifications by reference hereto, having the same binding effect as provisions of the original specifications.

The Housing Authority of Bergen County's interpretation of the meaning and intent of these Bid documents, specifications and addenda items shall be final and conclusive.

**END OF ADDENDUM NO. 1** 

. Wherever in the documents the word "utility" is stated, PSE&G is implied. 3. Unless specifically noted otherwise, it shall be understood that when the words "Architect", "Engineer", or "A/E" are used in these drawings they are interchangeable an all refer to LAN Associates, Engineering, Planning,

. Where any device or part of equipment is referred to in these drawings in the singular number (e.g., "the switch", "the receptacle"), this reference shall be deemed to apply to as many such devices as are required to complete the installation as shown on the drawings.

### Code & Standards Compliance:

. Code compliance is mandatory. Nothing in these Drawings and Specifications permits work not conforming to these codes. Where work is shown to exceed minimum code requirements, comply with drawings and specifications. When differences in utility specifications or standards, governmental ordinances or codes occur, the more stringent requirements shall govern the installation.

The electric installation shall be in accordance with the currently enforced edition of the National Electrical Code (NEC), National Electrical Safety Code (NESC), American Electricians' Handbook, International Building Code (IBC), Americans with Disabilities Act (ADA), NFPA 55 & 99 and NEC Standard of installation. Wherever in the documents the word "code" is stated, the more stringent of the above referenced codes is implied.

All contractor supplied materials/equipment shall be new and UL Listed or approved by another Nationally Recognized Testing Laboratory (NRTL).

The contractor shall pay for and obtain all permits and inspections required by the building and safety codes and ordinances, and the rules and regulations of any legal body having jurisdiction. Permit and inspections shall be include in the base bid and shall not be cause for an extra.

Contractor shall confirm to all safety rules and other regulations, etc. pertaining to construction work on the client's premises. Contractor shall be responsible to ensure that all rules and regulations have been met and coordinate this work with responsible client's personnel.

All electrical equipment and raceways permanently attached to structures, including supporting structures and attachments to non-building structures, shall be anchored for seismic loading to resist a horizontal force action in any direction. Contractor shall provide seismic restraints for all conduits larger than 2½" trade diameter. Provide sway braces for conduit and equipment suspended from the overhead. Provide anchor bolts for floor and wall mounted equipment. The installation shall meet the requirements of International Building Code (IBC) Sections 1614 and 1621 as they apply to electrical equipment for Earthquake Loads.

All equipment shall be as indicated or as approved by the Engineer/Architect.

2. The cost incurred by the acceptance of substitutions shall be borne by the contractor. Proof for the equality of the substitutions shall be by the contractor and differences shall be enumerated with the submittal. . Electrical components including, but not limited to conductor size, overcurrent protection device and disconnect switches are based on the power requirements of the equipment shown on the contract documents. All costs

(including additional design fees if required) associated with changes to these power requirements shall be the

responsibility of the contractor making the change. 4. Obtain shop drawings and wiring diagrams for the proper installation of related electrical work. 5. Contractor shall be responsible for the removal of debris generated by his work and workers at the end of each working day and for general good housekeeping by his workers. Contractor shall provide required refuse

These drawings and specifications illustrate the work to be performed. The Engineer is not responsible for the means, methods, techniques, sequences, and procedures used to do the work, or the safety aspects of constructions, and nothing on these drawings expressed or implied changes this condition. Prior to bidding and/or starting work the contractor shall visit the project site to determine the conditions under which the work is to be performed and shall be responsible for knowing how they affect the work. Schedule site visit with client's representatives. Additionally, the contractor shall field verify all site dimensions and room layouts. Submission of 15. Underground conduits shall be pitched to drain away for them building in manholes. a bid to perform this work is an acknowledgement of these responsibilities, and that they have been fully considered in planning of the work, and the bid price. No claims or extra charges due to these conditions will be

2. The client will occupy the site and existing building during the entire construction period. Cooperate with the client during construction operations to avoid any conflicts. Perform the work so as not to interfere with the client's operations. Schedule all power outages with client's approval for overtime on Sundays and Holidays at no additional cost to the client.

. Existing project conditions indicated are based on field observations; existing design/construction documents and existing record documents and are intended to indicate the scope of the work affected by this project. l. Drawings shall not be scaled. Drawings indicate the general arrangement of systems and requirements of the work. Although size and location of equipment is drawn to scale wherever possible, contractor shall make use of all data in all of the contract documents and verify information at the project site.

The contractor shall make his own takeoff on all quantities. It shall be his responsibility, at his cost, to include all equipment and material in order to comply with the intent of the drawings.

. The circuit numbers are for identification only. The contractor shall be responsible for correctly phasing the

. Existing Circuit Designations:

a. All reference to existing circuit designations is based on previous project documentation. The contractor shall consult the engineer in the event that actual conditions do not coincide with the indicated re-distribution or other use of existing circuits as herein indicated.

b. The total connected load for any general purpose (protected at 20A) branch circuit which is re-distributed

as a part of this project shall not exceed 13A. c. Any deviation, as may be directed by the engineer, from the indicated circuit structure specified in this drawing set will require both verification by the contractor that the total connected load on the associated supply conductors is within the above specified limit and documentation in the project record (as-built)

Assign multi-pole circuits by the panelboard location number as follows, unless otherwise shown on the drawings. Note: switchboards populated with only multi-pole circuit breakers may have a single number assigned to each breaker position, which shall be used as the circuit number.

a. 2-pole circuit: use the first panelboard number b. 3-pole circuit: use the middle panelboard number

The electrical installation shown is represented diagrammatically and indicates the general arrangement of systems and work. The locations and arrangements of equipment, devices, switchboards, panelboards, partitions, openings, etc. are designed to show preferred configurations to suit known conditions but are approximate and are subject to modifications caused by structural conditions and other existing or proposed equipment. The locations are subject to such modifications as may be found necessary or desirable at the time of installation in order to accommodate field conditions and coordination requirements. Contractor shall follow the intent of the drawings in "laying out" the work and coordinate the work with other trades to verify spacing conditions. Contractor shall determine roughing locations required to effect such coordination. The contractor shall coordinate all work and shall make such changes without extra charge.

D. The contract drawings depict the approximate location of all required equipment and if shown, the diagrammatic arrangement of piping, raceways, conduits, feeders, cables, etc, herein after referred to as "conduit." Conduit runs, if shown, have been depicted with the intention of most clearly indicating the proposed routing. Actual runs may differ if kept within the requirements and provisions of these specifications, and providing that that all modifications have been shown in the shop drawings. Contractor responsible to determine conduit runs and "clear" piping, ductwork, access doors, and other obstructions as applicable. Contractor shall coordinate conduit with work of other trades and alter where necessary to avoid interference. Submit for approval, prior to scaled installation drawings showing the location of all new equipment/devices to be installed and indicating circuitry. Shop drawings shall include all wiring, pull boxes, junction boxes, fittings, wiring devices and dimensioned clearances from the structure and equipment. Coordinate shop drawings with other trades prior to submission.

. Before the relevant work proceeds, the Contractor shall prepare and submit five (5) copies of shop drawings depicting the proposed conduit routing diagram and equipment layout. Specifically detailed shall be a layout of the switchboard and related equipment in each electric room or electric closet. All equipment layouts shall be drawn to scale and dimensioned. Shop drawings shall be a minimum of 1/8" = 1'-0" and preferably 1/4"=1'-0", dimensioned, showing construction, sizes, weights, arrangements, operating clearances, performance characteristics and the necessary coordinating trades involved. Shop drawings will not be accepted unless a complete list of deviations from architect's/engineer's proposed plans is included. Exact location of all equipment will be determined in the field and the contractor must secure exact dimensional data before the layout of any

2. Routing for feeders, instrumentation and control circuits is not necessarily shown on the plan drawings. If indicated on the floor plans, they express the intent of routing. Final location and routing shall be suited for the construction of the building and established by the contractor based on the installation conditions and shall be verified in the field. All feeder information, conduit types and installation requirements shall be in accordance

with the specifications, electrical riser diagram and appropriate panel schedules. 13. Any cutting, patching, or finish repair work required for the installation is the responsibility of the contractor. 14. Where mounting heights are not detailed or dimensioned, install electrical services and overhead equipment to provide maximum headroom possible. Connect equipment for ease of disconnecting with minimum interference

5. Provide temporary power and lighting as required during the entire duration of demolition and construction utilizing the existing electrical system as a source. The Contractor shall remove all temporary power and lighting upon the completion of the project.

16. Where conflicts exist, provide in the bid proposal the more costly alternative.

. Grounding shall be installed in accordance with the NEC in accordance with electrode, grounding and bonding requirements for service, equipment and enclosures. Install an insulated equipment ground conductor in each raceway or conduit. Size equipment ground conductor in accordance with NEC Table 250.122. Bond raceways and the frames and enclosures of motors, breakers, switches, and other electrical equipment to the building

grounding system. Precaution shall be taken to ensure adequate ground continuity along the conduit or

2. Provide a separate neutral conductor for each circuit. Install neutral conductors and ground conductors into all switch boxes. Multiple circuits shall not share a common neutral. Neutral shall be sized as large as the phase conductors. Neutral conductors shall not be reduced in size.

3. Arrange connections for single phase circuits to achieve three phase load balance within 20% of the average phase load current. Ungrounded conductors using a common neutral must originate from different phases.

5. Phase rotation check: on multi-phase equipment, perform a phase rotation check prior to energizing the equipment. Use Knopp K-3 or equivalent device with red or "A" lead connected to phase A, white or "B" lead connected to phase B, and blue or "C" lead connected to phase C. Note the phase rotation and annotate test documentation with device used, manner connected, rotation observed, date of test, and name of craftsman. Do

4. The contractor is responsible for maintaining proper phase rotation with all existing three (3) phase electric

not energize equipment unless observed rotation matches the requirements of the equipment 6. Contractor shall supply all labor, power cables, conduit boxes, fittings, wiring materials, hardware, supports, and miscellaneous items for a complete electrical installation and connection of the electrical work required, except that the provision for owner supplied equipment shall be only be completed to the point indicated elsewhere on the drawings.

7. All cables, not within conduit (ex., MC type, fire alarm, PA), routed within the ceiling cavity must be secured using Bridle rings, J-hooks, or other appropriate means. The cable must not lay on dropped ceiling panels, be fastened to existing electrical conduits, steam pipes, sprinkler pipes, insulated pipes, or be routed in such a fashion as to obstruct access hatches, doors, utility access panels, mechanical service work areas or fittings and shall not be routed through fire doors, ventilating shafts, or grates.

a. Unless otherwise provided, MC cables shall be secured at intervals not exceeding 6'. Cables containing four or fewer conductors sized no larger than 10 AWG shall be secured within 12" of every box, cabinet, fitting, or other cable termination.

b. Type MC cable shall be permitted to be unsupported where the cable: (a) Is fished between access points through concealed spaces in finished buildings or structures and supporting is impractical; or (b) Is not more than 6' in length from the last point of cable support to the point of connection to luminaires or other electrical equipment and the cable and point of connection are within an accessible ceiling. Type MC cable fittings shall be permitted as a means of cable support

8. All cable trays and electrical conduits shall be independently supported and braced independently of the ceiling.

9. All new wiring is to be run concealed wherever possible. All conductors shall be in a surface mounted metallic raceway in public spaces or metallic conduit in utility locations when not routed concealed in the ceiling/wall cavities. Any locations that do not have accessible or dropped ceilings will require the use of surface mounted metallic raceways. Provide pull-boxes (size per code) and locate in conduit runs as required. No exposed cable

10. All openings and penetrations shall be sealed upon completion of the electrical installation to prevent the spread of smoke and fire through openings. Seal around conduit and raceway penetrations through interior walls and floor separating areas to restore original fire rating; use a UL classified fire sealant. Seal penetrations through roof and exterior walls to make waterproof. Request inspection of fire seals by electrical inspector from authority having jurisdiction before and after placement of fire seal materials. All openings shall be coordinated with the other trades to limit interference and obstruction.

11. Limit the use of electrical metallic tubing (EMT) to where it will not be subject to physical damage or corrosion. Use intermediate metal conduit (IMC) or rigid galvanized steel conduit (RGS) where raceways are embedded in concrete or exposed to physical damage. Use minimum 3/4" conduit except as follows: 1/2" conduit may be used for 20 amp general light and power circuits and for control circuits; 3/8" flexible metal conduit may be used to connect light fixtures in suspended ceilings. Use liquid tight flexible metal conduit for flexible connection to equipment in mechanical rooms or outdoors.

12. Where raceways contain insulated conductors 4 AWG and larger that enter an enclosure, the conductors must be protected from abrasion during and after installation by a fitting that provides a smooth, rounded insulating surface, such as an insulating bushing as per NEC 300.4(G).

13. Install outdoor equipment to be weatherproof (NEMA 3R). 14. All penetrations through exterior walls shall be sealed watertight. Provide seals for conduit and raceways as

manufactured by OZ/Gendy type CMSI or approved equal.

1. All wiring shall be copper conductor, 600 volts in EMT raceway with approved fittings unless otherwise indicated. Feeder and branch circuit wiring shall be minimum #12 AWG unless otherwise indicated. Feeder and branch circuit wiring larger than #10 AWG shall be stranded conductor: #10 AWG and smaller, shall be solid conductor. Control wiring shall be #18 AWG THWN. Type of insulation as follows unless noted otherwise: a. THHN/THWN insulation for #4 AWG and smaller

b. THW or THHN/THWN insulation for #2 AWG and larger c. THW used for all panel feeder and service conductors

d. XHHW-2 insulation type shall be used where conductors are installed in conduits exposed to the weather.

2. Use the following conductor color codes: 208Y/120V 480Y/277V

Orange Phase C Equip. GroundGreen

1. Use 600 VAC circuit breakers in 480V and 480Y/277V switchboards, panelboards and motor control centers. 2. Provide circuit breakers with UL listed interrupting rating (RMS symmetrical amperes) greater than the available fault current shown on the electrical one-line diagram. "Series rated" equipment shall not be accepted.

3. Install UL Listed circuit breaker padlocking devices for service and maintenance personnel on all over current protection devices at the main building panel (MDP or equivalent). The device must have provisions for placement of a lock on it to secure the device in the off position. The lock-out device must be part of the disconnect assembly and must remain in place after the padlock is removed, whether it is a fused disconnect switch, a single circuit breaker, or a circuit breaker in a panelboard. A device that is attached to the circuit breaker handle by a set screw is not an acceptable means to serve as a safe method of locking the device in the off position.

4. All circuit breakers shall be molded case thermal magnetic and rated for available short circuit current. 5. Circuit breakers used as switches shall be UL listed for switching duty and marked "SWD" per NEC 240-83(D).

1. All switchboards, panelboards, industrial control panels and motor control centers that are in other than dwelling occupancies and are likely to require examination, adjustment, servicing or maintenance while energized shall be field marked to warn qualified persons of potential electric arc flash hazards. The marking shall be located so as to be clearly visible to qualified persons before examination, adjustment, servicing or maintenance or the equipment. Marking shall be self adhesive, commercial label conforming to NEC 110.16 and ANSI Z535.4. Arc Flash Label shall be Brady (bradyid.com) catalog No. 102308 or equal.

2. Provide identification tags for all new wiring and install at each end and in all intermediate pull/junction boxes, cabinets, housings, etc. Indicate on tags, legibly minimum 1/2" high letters, the points of origin and termination of each conduit and conduit run. Label all receptacles and switch covers with panelboard and circuit number. For interior equipment, use Brother P-touch 3 label maker with TC-10 label cartridge or equal. For exterior equipment, use aluminum dymo half-inch tape label with embossed lettering. Abbreviate lettering to provide necessary information with minimum label size (i.e., Panelboard PP1, Circuit 23 should read PP1-23).

3. Label all switchgear, panelboards, and separately-mounted equipment with feeder source and circuit number. For interior equipment, provide white Micarta plate with quarter-inch block lettering. For exterior equipment, provide anodized aluminum plate with quarter-inch embossed block lettering. Attach to equipment using contact cement in a clear space on the upper portion of the equipment cover approximately 66" AFF. Abbreviate lettering or adjust letter size to provide necessary information with minimum label size, (i.e., 227/480V PANEL PP1 FROM MDP CKT 3 or P-1 20 HP PUMP FROM PP1 CKT 3).

4. All panels shall have typed, completed directories indicating equipment served and room number (as indicated on the final building signage) of equipment location, or spare, or space. Identify the purpose of individual circuit breakers, safety switches and motor starters by means of nameplates as indicated. Update directories as panels are altered. Circuit changes shall be reflected on "as-built" drawings.

5. All circuits and circuit modifications must be legibly identified as to their clear, evident, and specific purpose. The identification must include sufficient detail to allow each circuit to be distinguished from all others, and the identification must be on a circuit directory located on the face or inside of the door of a panelboard. Circuit directories containing multiple entries with only ``lights" or ``outlets" do not provide the sufficient detail required

1. No work shall be concealed until after inspection and approval by proper authorities. If work is concealed without inspection and approval, the Contractor shall be responsible for all work required to both open and restore the concealed areas in addition to any required modifications.

2. The contractor shall make a final inspection of all electrical equipment to ensure that there are no loose electrical connections or electrical circuits subject to electrical break down due to the presence of foreign material. This shall include inspection of all connections made under this contract.

3. The contractor shall deliver certificates of electrical and other inspections or copies thereof, to the client at the completion of the project with copies to the Engineer/architect.

4. The contractor shall guarantee all work in writing to the client against any and all defects in material and workmanship for a period of one year, or as indicated in the specification, from date of acceptance and perform all corrective work at no cost to the client.

Stand-By Elec. Dist. System General Notes

1. The emergency powers distribution system shall consist of a central engine generator and a separate distribution system with automatic transfer switch(es), disconnect switch(es), and distribution panel(s) feeding 208/120V emergency distribution panels as required.

2. The authority having jurisdiction and the local utility company must approve all equipment, i.e., generator, transfer switch, etc. used for the stand by system. Electrical contractor is responsible to coordinate the necessary approvals.

3. The electrical contractor shall coordinate acceptance test with owner's authorized representatives. A written record must be kept of all required tests. 4. Contractor shall erect and maintain all reasonable precautions for safety and health including posting danger signs

and other warning against hazards including promulgating safety regulations. Provide safety precautions and barricades for pedestrians at construction vehicle access and egress locations. 5. Contractor shall coordinate and sequence all demolition, cleaning and construction work. Contractor shall submit a

detailed construction schedule prior to pre-construction conference. 6. A temporary alternate source of power, i.e., temporary generator must be available whenever the existing emergency

generator is out of service for more than a few hours for maintenance or repair. Contractor shall furnish and install fixed identification at the service entrance equipment (2 locations) indicating the type and location of the on-site stand by power source in conformance with NEC 700.10. Identification signs shall be Bakelite with white lettering on red background. All identification plates shall be engraved with lettering height ½" and must be secured with rivets. Example as follows:

> TWO SOURCES OF ELECTRIC SUPPLY 120/208V, 3¢ Optional Stand-by Power Source

8. A sign shall be placed on the service entrance equipment and at the grounding location, indicating that the removal of the grounding or bonding connection in the normal power source will create a shock hazard. Contractor shall furnish and install a sign with red lettering on white background as follows:

Located at Exterior \_\_\_\_ Elevation of Building

WARNING: SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THIS EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE(S) IS ENERGIZED

9. Contractor shall furnish and install fixed identification on all boxes and enclosures, including transfer switches, generators and power distribution panels containing emergency circuits to readily identify them as components of an optional stand by power distribution system per NEC 700.10 . Identification labels shall be engraved with lettering height ½" and must be secured with rivets.

10. Per NEC 702.9 the optional standby system wiring shall be permitted to occupy the same raceways, cables, boxes and cabinets with other general wiring.

11. Generator control wiring (control conductors) installed between the transfer equipment and the emergency generator shall be shall be kept entirely independent of all other wiring. 12. Verify all equipment dimensions and locations before beginning rough in. Consult all applicable contract drawings and

shop drawings to insure minimum NEC code clearances are met around all electrical equipment. 13. All penetrations of fire rated floors, walls, and ceilings shall be sealed with approved material to maintain the fire rating

14. Do not penetrate structural elements of floors, walls, ceilings, roofs, etc. 15. The instruction to "provide" also includes installation

16. The working drawings are diagrammatic. They do not show every offset, bend, elbow or junction box necessary for the complete installation in the space provided. All locations for equipment shall be field verified and coordinated with

17. The contractor shall provide provisions for core drills through existing walls. All raceway penetrations in exterior walls shall be "sealed" with a conduit sealing bushing as manufactured by O-Z Gedney or approved equal. 18. Underground exterior PVC raceways where attached to structural components shall equipped with expansion joints to

compensate for thermal expansion in accordance with the NEC and NEMA standards. 19. Junction and pull boxes are not necessarily shown on this drawing and shall be provided where necessary and sized in accordance with NEC and installed where required.

20.Unless otherwise noted all circuit breakers, and/or switches are three (3) pole unless noted otherwise. 21. All exterior raceways to generator shall be installed below finished grade and shall be schedule 40 PVC, sunlight

**General Project Notes** 

1. All work performed, workmanship, and materials shall 16. Contractor shall coordinate scheduling of work with comply with building and zoning ordinances and all other applicable codes for the state of New Jersey and the local authority having jurisdiction.

Contractors or any Subcontractors performing work under this contract shall carry liability and property damage insurance against accidents of all kinds and shall furnish the Owner with certificates of insurance 18. prior to starting the work. 3. The Contractor and all Subcontractors shall verify all

cross-check details and dimensions shown on all 4. In all cases where a conflict may occur such as between items covered by specifications, notes on the 19. drawings, or between general notes and specific details, the Engineer shall be notified and will interpret

dimensions and conditions at the site, and shall notify

the Engineer of any discrepancies. Contractor shall

the intent of the contract documents. Details noted as "typical" shall apply in all cases unless specifically shown or noted otherwise.

Where no specific detail is shown, the construction shall be identical and similar to that indicated for like cases of construction. The Contractor shall not scale the drawings for

dimensions. In no case shall working dimensions be

scaled from plans, sections or detail drawings. All written or dimensioned information takes precedence over the drawing. Contractor shall be responsible for visiting the site and familiarizing himself with the existing conditions and scope of the work prior to submitting bids and

commencing work. Contractor shall be solely responsible for all safe working conditions and shall observe all safety requirements established by jurisdictional agencies and the Owner. Where conflicts exist, the more stringent requirement shall apply. Care shall be exercised to avoid endangering personnel or

The Contractor shall be responsible for construction methods, procedures and job site conditions including safety. Construction shall be performed in such a manner to protect workmen, occupants and the public to be protected from injury and adjoining property shall 25. The Engineer waives any and all responsibility and be protected from damage by use of scaffolding,

underpinning or other approved method. 11. The Contractor shall repair any and all damage caused during or resulting from his operations in kind to the satisfaction of the Owner at no additional cost to

12. The Contractor shall maintain the job site in a clean, debris free condition. The dust resulting from removals shall be controlled so as to prevent its spread to occupied portions of the building and to avoid creation of a nuisance in the surrounding area. 13. Contractor shall apply for, and secure all required

permits, fees, approvals, etc. Prior to commencing work and shall schedule inspections accordingly and secure a certificate of occupancy upon completion of 14. Contractor shall be responsible to dispose of all demolished material off site in an approved manner.

The Owner shall be consulted prior to disposal of any

salvaged or excess materials at the completion of the

Upon completion of work, all excess material, debris, etc. shall be removed and the work area shall be left clean to the Owner's satisfaction. Any extra building materials shall disposed of or given to the Owner as

the Owner's requirements for the use of the building, if required. Construction activities shall comply with local noise ordinances requirements. 17. Contractor shall furnish all equipment that may be

required to perform the work indicated in a safe and The Contractor shall be responsible for the relocation and temporary support of any utilities encountered during the course of his work and to ensure the Owner's facility to be operational, if required. The

Contractor shall maintain unobstructed access to all

utilities and public facilities including fire hydrants, fire

alarm boxes, police call boxes, street lights, manholes, among others during construction. Contractor shall field verify locations of existing utilities and objects above and below ground including but not limited to electrical service, well, sanitary, storm water drainage pipes, etc. Contractor is responsible for relocation and/or coordination of existing conditions to accommodate the new work.

20. The Contractor shall be responsible for cutting, patching, filling and cleaning upon completion of work. 21. The Contractor shall guarantee all of his work and the work of the sub-Contractor(s) for a period of two years after receiving final acceptance of each stage occupied by Owner and do all repair work and replacement as necessary during that period at the Contractor's expense. The Contractor shall furnish a written guarantee of workmanship to the Owner upon

substantial completion of the project. 22. All changes shall be requested in writing and may only be approved in writing by the Engineer and the Owner prior to any changes being made.

23. The Engineer and the Owner has the right to reject any portion of work that is poorly installed, does not meet industry standard, unauthorized or work done contrary to the intent of the contract documents. Such work shall be replaced, repaired or removed at the Contractor's expense.

24. All manufacturer's materials, components, fasteners assemblies, etc. Shall be handled and installed in accordance with manufacturer's instructions and

liability for problems which arise from failure to follow these plans and the design intent they convey, or for problems which arise from others as well as failure to obtain and/or follow the Engineer's guidance with respect to any errors, omissions, inconsistencies, ambiguities or conflicts which are alleged. 26. Overtime work required will be at no extra cost to the

27. These drawings and specifications illustrate the work to be performed. The Engineer is not responsible for the means, methods, techniques, sequences, and procedures used to do the work, or the safety aspects of constructions, and nothing on these drawings expressed or implied changes this condition. The contractor shall determine all conditions at the site and shall be responsible for knowing how they affect the

work. Submittal of a bid to perform this work is an acknowledgement of these responsibilities, and that they have been fully considered in planning of the work, and the bid price. No claims or extra charges due to these conditions will be forthcoming. 28. All switchboards and panelboards supplied by a feeder in other than one-or two-family dwellings shall

be marked to indicate the device or equipment where

the power supply originates in accordance with NEC

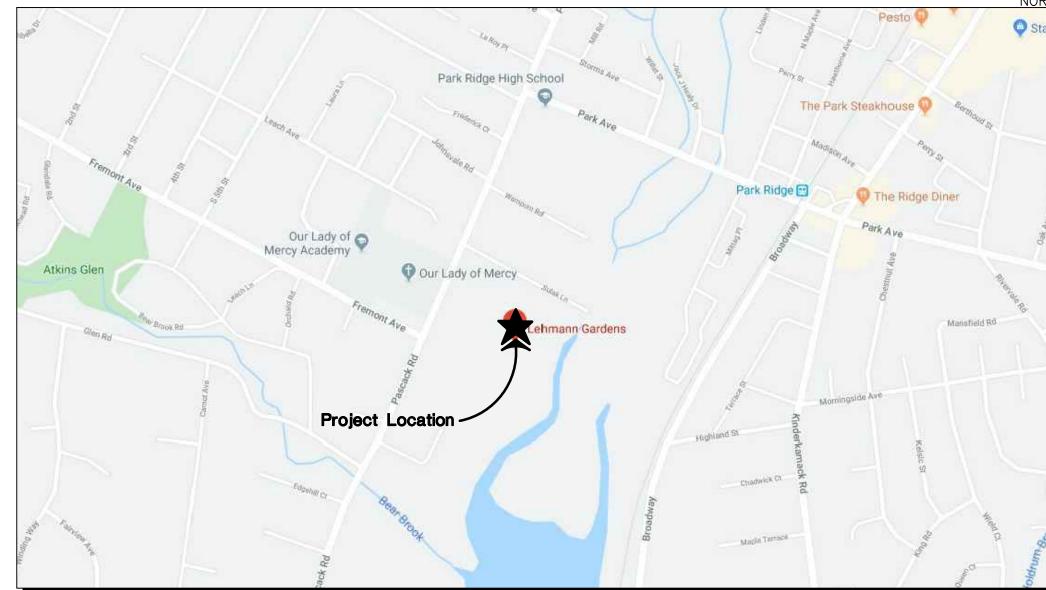
STAND-BY GENERATOR INSTALLATION

Lehmann Gardens Apartments

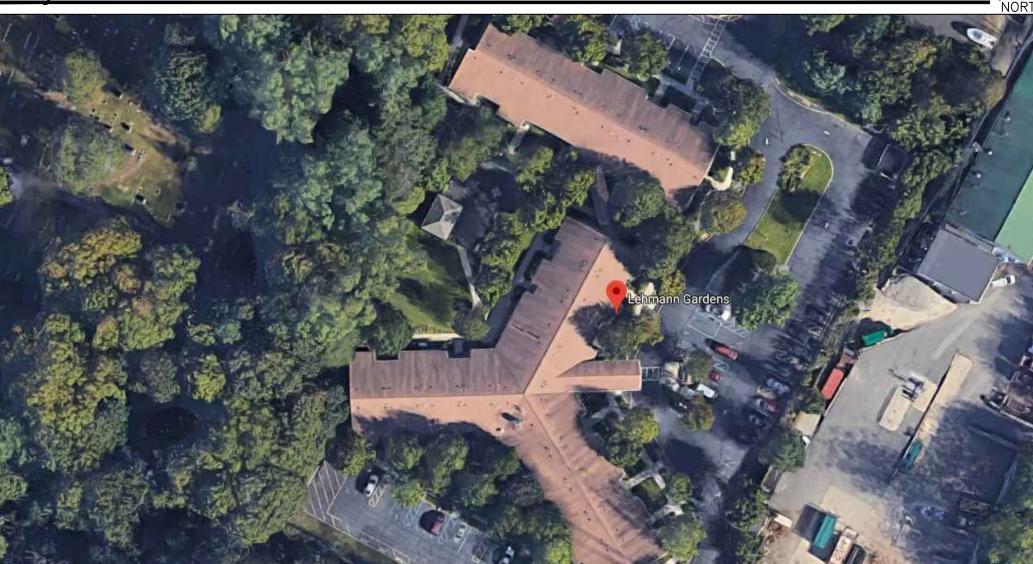
12 Sulak Ln, Park Ridge New Jersey, 07656

Housing Authority of Bergen County One Bergen County Plaza, 2nd fl Hackensack, N.J. 07601

**Location Map** 



**Key Site Plan** 



# **Drawing List**

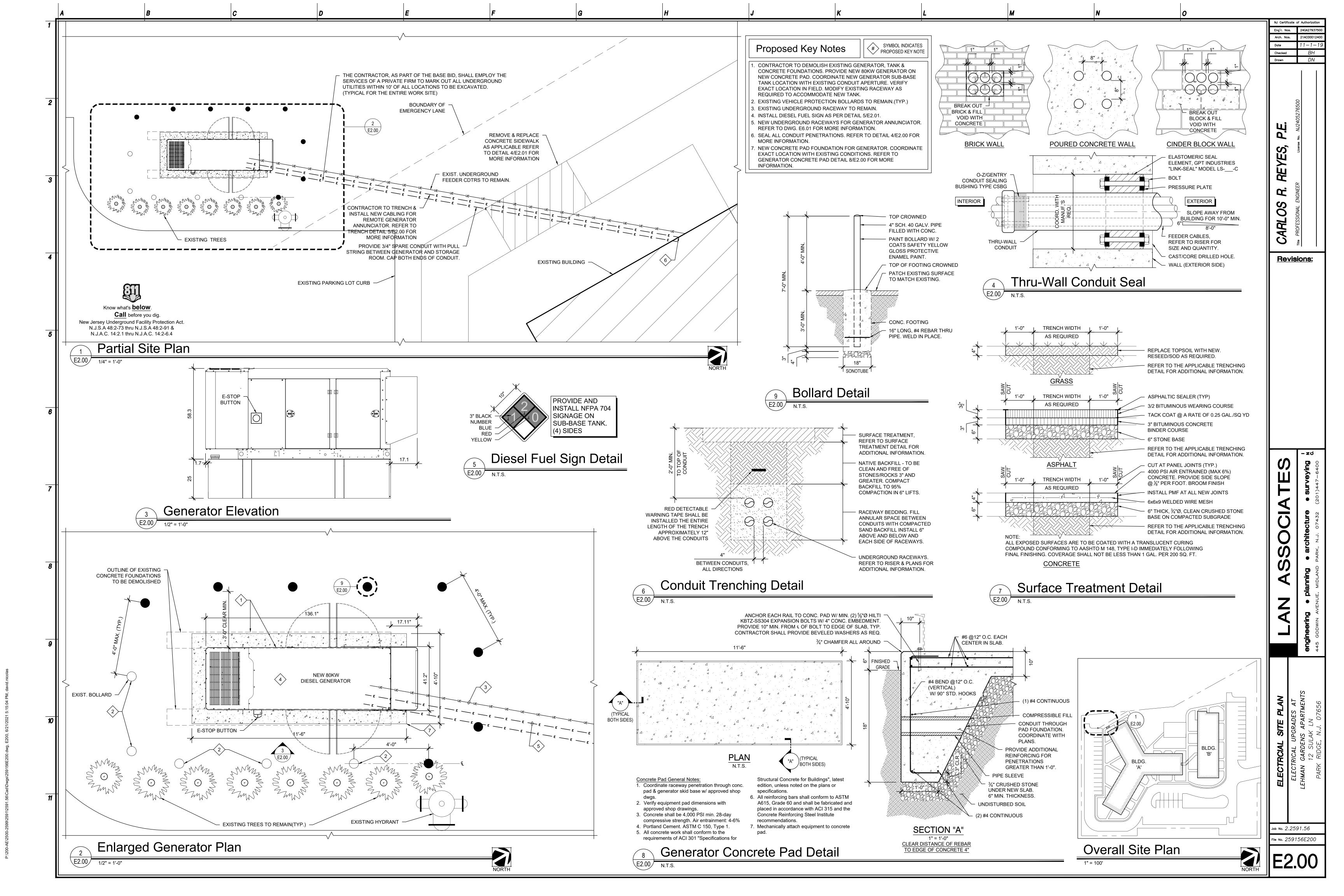
No. Description T0.01 COVER SHEET E2.00 ELECTRICAL SITE PLAN E2.01 PROPOSED ELECTRICAL PLAN E2.02 PROPOSED ELECTRICAL PLAN E6.01 ONE-LINE DIAGRAMS

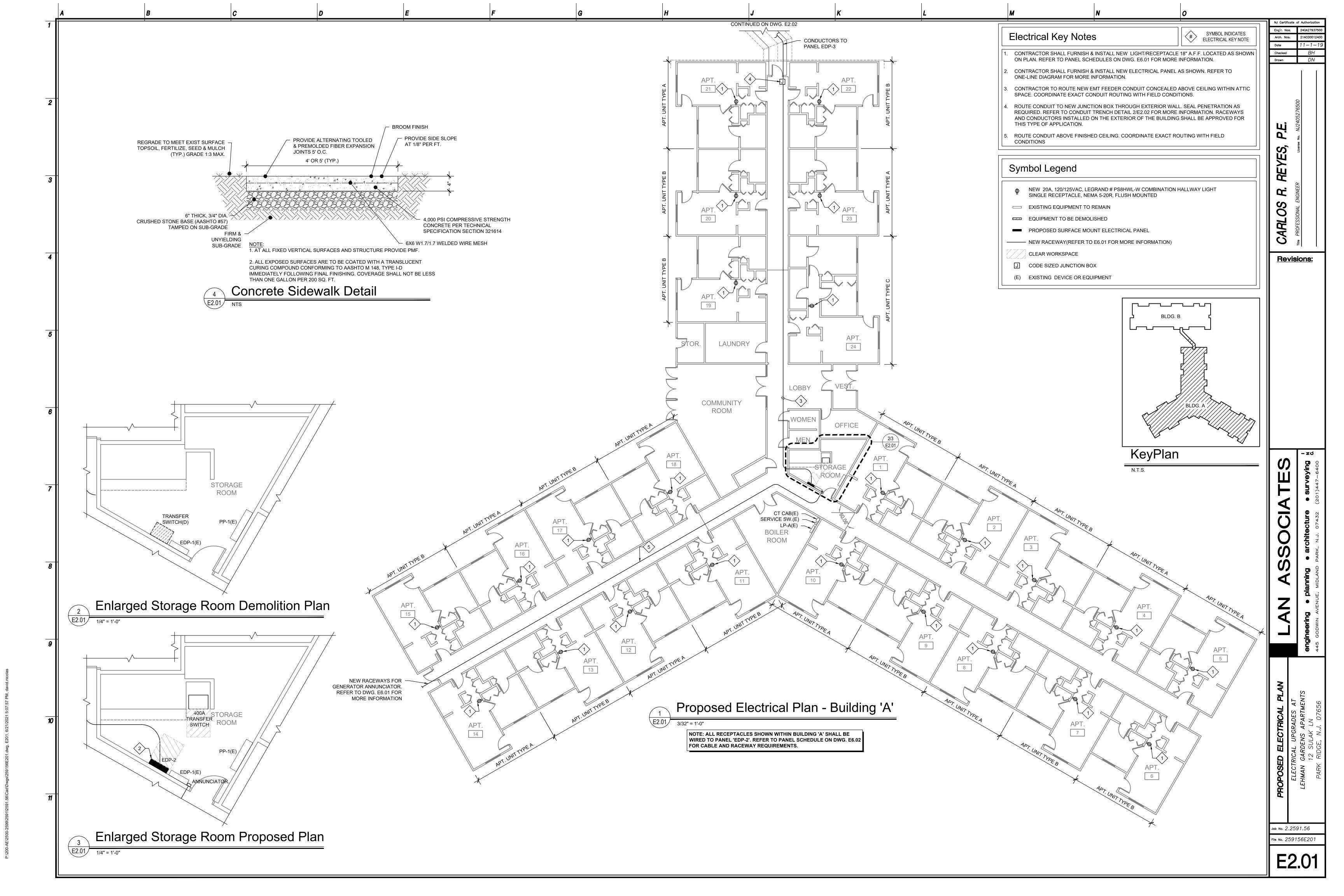
NJ Certificate of Authorizatio

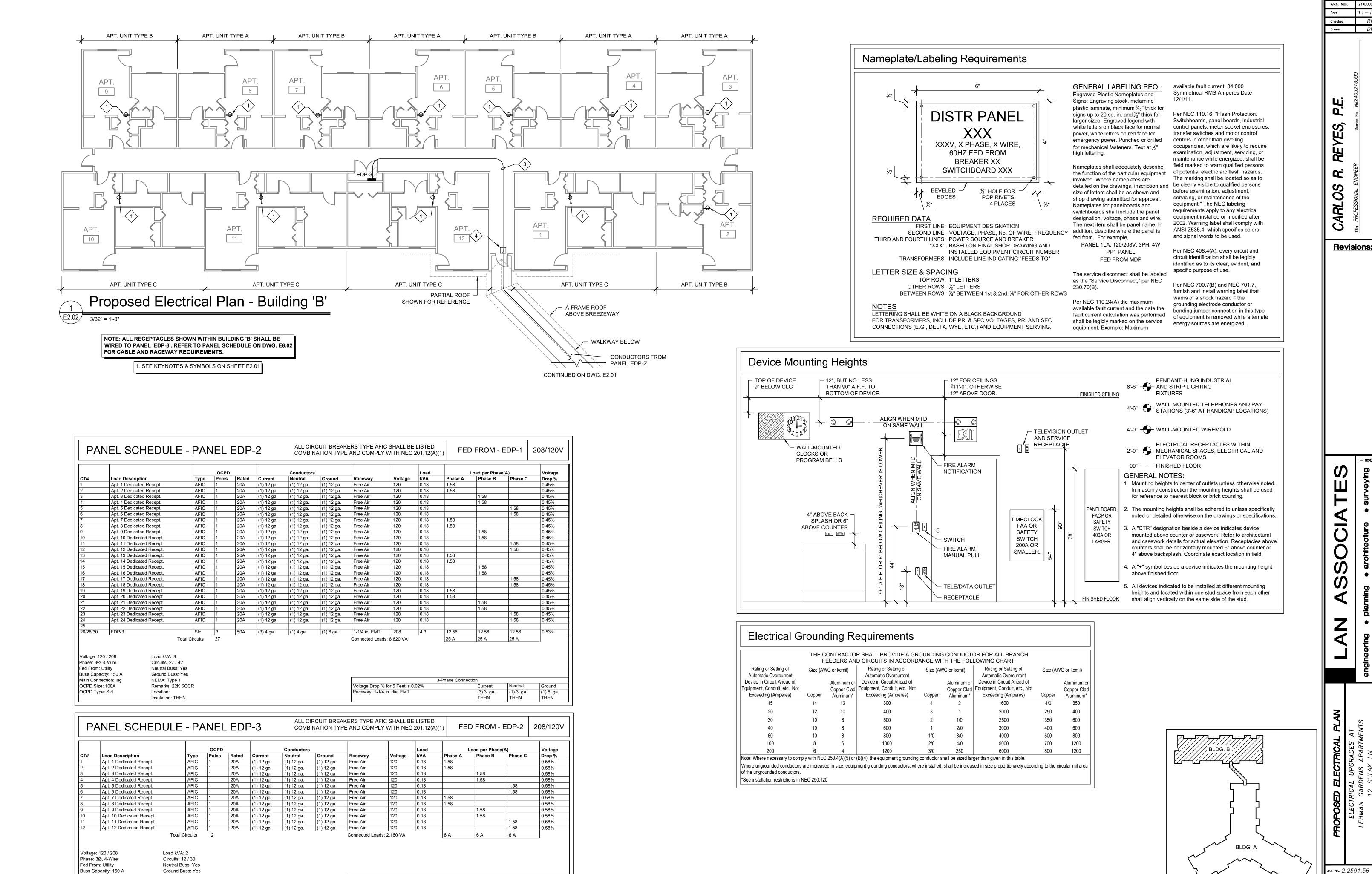
**Revisions:** 

ile No. 259156T001

Job No. 2.2591.56







Main Connection: breaker

OCPD Size: 45A

OCPD Type: Std

NEMA: Type 1

Location: Insulation: THHN

Remarks: 22K SCCR

Voltage Drop % for 230 Feet is 0.29%

Raceway: 1-1/4 in. dia. EMT

Neutral (1) 4 ga.

THHN

THHN

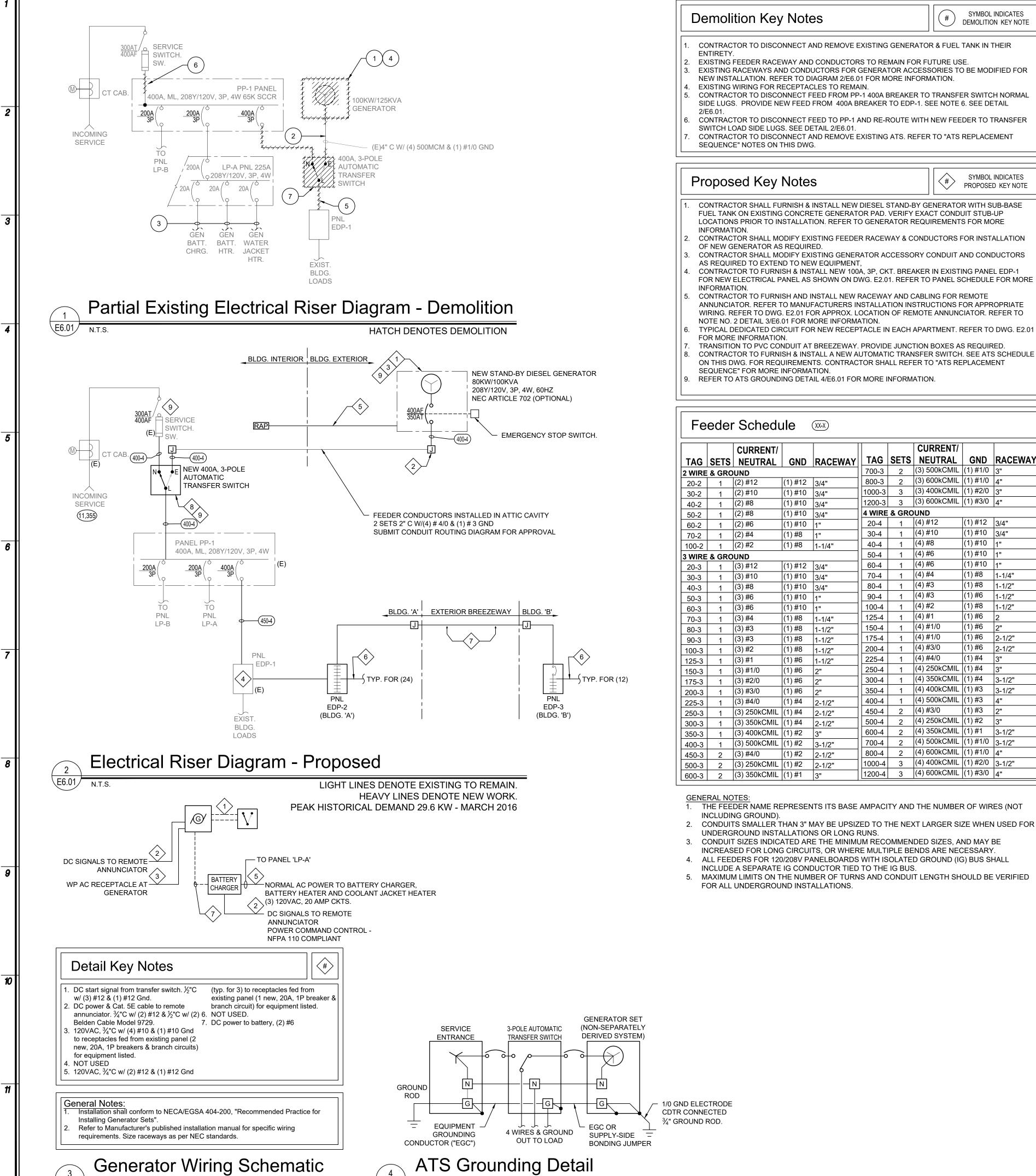
Ground (1) 8 ga.

NJ Certificate of Authorizatio

Revisions:

File No. 259156E201

KeyPlan



E6.01 N.T.S.

## Riser Diagram Symbol Legend

FRAME 6 LOW VOLTAGE, THERMAL MAGNETIC CIRCUIT BREAKER

"FRAME" INDICATES FRAME SIZE

**FUSED DISCONNECT SWITCH** 

XXXAT A XXXAT=TRIP

||E♥ ₽N

XXXAF=FRAME

A - 208Y/120V - 3φ - 4W - kAIC

Metering Device

---ET ELECTRONIC TRIP DEVICE

ELECTRICAL PANEL

ELECTRICAL PANEL

MAIN LUG ONLY

MAIN BREAKER

RAP GENERATOR REMOTE ANNUNCIATOR

TRIP O "TRIP" INDICATES DRIP AMPERAGE RATING

CODE SIZED JUNCTION BOX TO FACILITATE

GENERATOR - SEPARATELY DERIVED

REFER TO "GENERATOR REQUIREMENTS"

SCHEDULE FOR ADDITIONAL INFORMATION.

**EQUIPMENT BUS & RATING DATA, INCLUDING:** 

LSIG LONG/SHORT TIME, INSTANTANEOUS, & GROUND FAULT FUNCTIONS

BUS CONTINUOUS CURRENT RATING - VOLTAGE(S) - No. OF

CURRENT RATING CAPACITY IN THOUSANDS OF AMPERES (kAIC)

PHASES - No. OF WIRES - SHORT CIRCUIT INTERRUPTING

**AUTOMATIC TRANSFER SWITCH** 

(NEUTRAL BONDED TO GROUND)

FEEDER EXTENSION/RE-ROUTING AS REQUIRED.

# **Generator Requirements**

System Type: Standby Duty (NFPA 70 Art. 702 "Optional") Manufacturer: Cummins (Basis of Design) Model: C80D6C Alternator: 60 Hz., Wye, 208 Vol, 125C-Stdby, B946-2 Fuel Type: Diesel Type: EPSS Level 1, Type 10, Class 8 (NFPA 110) Voltage: 208/120V, 3P, 4-W Frequency (Hz.): 60 kW (Standby): 80 kVA (Standby) 100 Running kW: Running kVA Pct. Rated Capacity: 72.10% Emissions: EPATier 3, Stationary Emergency Housing Enclosure: Aluminum, Sound Attenuated Level 2, based Mtf. w/ExhSys (ONAN - Basis of Design) dB(A) at 7 meters: 71.2 Fuel Consumption: 7.3GPH at full load Max. Alt. Temp Rise, °C: 120 Alt. Excitation: PMG Motor Starting kVA at

90% Sustained Voltage Displacement, cu. In. 272 Rated Speed, RPM: 1800 Engine Configuration: Cast Iron, In line, 4 cylinder Gross engine power output (bhp): 173

· UL2200 Listed **Battery Heater** 

Exterior Receptacle

- Circuit Breaker Lockout Battery Charger X2 - Exterior E-Stop Meters - AC Output

- Startup and 2 Hour Load Test - Spill Containment Fuel Fill Box - Remote Annunciator (NFPA 110) - 5-Year Preventative Maintenance Contract - 250 gallons diesel fuel for commissioning - 120/240V, 1P, 3W, distribution panelboard

· Display-Control, LCD - Power Command 2.3 Control System (UL 508) Critical Grade Exhaust Muffler Inside Enclosure Thermostatically Controlled Coolant Heater 120VAC - (1) 100% Rated Gen Set Mounted Enclosed Circuit Brkrs (1) 100% rated 300A Brkr.

250 gallon Sub Base Tank, Dual Wall, UL 142 Compliant - 5-Year Extended Warranty (2500 hours, parts + labor + travel) -Cummins Power Command Annunciator Fuel tank extensions 12 ft bove the bottom of the tank

# **ATS Schedule**

-Quite Site stage II Enclosure(Auminum)

TAG	LOAD	STEP	TIME (SEC.)	RATINGS					
				VOLTS	MIN. CURRENT	POLES	ф	WIRES	CLOSING &
					AMPS				WITHSTAND
ATS-1	EDP-1	1	10	208	400	3	3	4	65,000
General Notes:									

1. All units shall have open transition, except as noted.

2. Level 1 ATS 3. Protected by molded-case circuit breaker.

Closing and withstanding-current ratings are minimum symmetrical amperes. Rating may be attained by using the ATS manufacturer's closing and withstand ratings. Coordinate withstand ratings of upstream overcurrent protection devices and transfer switches with manufactures published data.

5. Provide engine startup and shutdown contacts 6. Basis of Design: Power Generation, OTPC Transfer Switch, Level 2 Control (C204), NEMA

7. 5-year parts, labor & travel warranty.

8. Digital Display 9. Training session.

## **General One-Line Diagram Notes**

ONE LINE RISER GENERAL NOTES:

 $(XX,XX) = AVAILABLE 3\phi, FAULT CURRENT (RMS, SYM AMPS)$ 

[##'] = CIRCUIT LENGTH IN FEET. (USED FOR SCA CALCULATIONS ONLY)

ALL SHORT CIRCUIT INTERRUPTING RATINGS SHOWN, WHETHER AIC OR MVA IC ARE CALCULATED 3φ SYMMETRICAL VALUES AT THE LINE TERMINALS OF THE EQUIPMENT, WITH THE EXCEPTION OF 10,000 AIC VALUES. THE WITHSTAND SHORT CIRCUIT CURRENT RATINGS OF PROTECTIVE DEVICES, TRANSFER SWITCHES AND BUS BRACINGS SHALL BE EQUAL TO OR GREATER THAN THE VALUES INDICATED.

I. UNLESS OTHERWISE NOTED ALL CIRCUIT BREAKERS, AND/OR SWITCHES ARE THREE (3) POLE UNLESS NOTED OTHERWISE.

5. REFER TO PANELBOARD SCHEDULES FOR ADDITIONAL INFORMATION

AND TRANSFER SWITCHES WITH THE UTILITY CO.

FINISHED GRADE.

JUNCTION AND PULL BOXES ARE NOT NECESSARILY SHOWN ON THIS DRAWING AND SHALL BE PROVIDED WHERE NECESSARY AND SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND INSTALLED WHERE REQUIRED.

CONTRACTOR SHALL FURNISH & INSTALL PLASTIC LAMINATE SIGN (MIN. DIMENSIONS 8"X12") ON ENCLOSURE OF MAIN DISCONNECT SWITCH STATING "CAUTION - CURRENT LIMITING FUSES INSTALLED. IDENTICAL REPLACEMENT COMPONENT REQUIRED. TYPE KLPC AS MANUFACTURED BY LITTLEFUSE, INC.

ALL EXTERIOR RACEWAYS SHALL BE SCHEDULE 40 PVC, SUNLIGHT RESISTANT. ALL PVC RACEWAYS THAT EXTEND ABOVE FINISHED GRADE AND TRANSITION TO FIXED EQUIPMENT SHALL BE EQUIPPED WITH EXPANSION COUPLINGS.

. THIS FACILITY IS IN OPERATION 24 HOURS A DAY, 7 DAYS A WEEK. THE CONTRACTOR SHALL MINIMIZE POWER INTERRUPTION(S) TO THE FULLEST EXTENT POSSIBLE AND SHALL SCHEDULE NECESSARY OUTAGES DURING NIGHTTIME HOURS. CONTACTOR SHALL PROVIDE TEMPORARY BACKUP GENERATOR FOR ALL OUTAGES THAT LAST MORE THAN TWO (2) HOURS.

10.GENERATORS ONLY CONTRACTOR RESPONSIBLE TO COORDINATE APPROVALS OF GENERATOR

1.GENERATORS ONLY ALL EXTERIOR RACEWAYS TO GENERATOR SHALL BE INSTALLED BELOW

2.GENERATORS ONLY PER NEC 100.10, CONTRACTOR SHALL PROVIDE FIXED IDENTIFICATION ON ALL BOXES AND ENCLOSURES (INCLUDING TRANSFER SWITCHES, GENERATORS, AND POWER PANELS) CONTAINING EMERGENCY CIRCUITS TO READILY IDENTIFY THE AS COMPONENTS OF AN EMERGENCY SYSTEM. IDENTIFICATION LABELS SHALL BE WHITE LETTERING ON RED BACKGROUND. ALL EMERGENCY IDENTIFICATION PLATES SHALL BE ENGRAVED WITH LETTERING HEIGHT ½" AND MUST BE SECURED WITH RIVETS.

13.GENERATORS ONLY A PERMANENT SIGN SHALL BE PLACED ON THE SERVICE ENTRANCE EQUIPMENT BY THE CONTRACTOR THAT INDICATES THE LOCATION OF THE ALTERNATE ON-SITE POWER SOURCE

14.GENERATORS ONLY A SIGN SHALL BE PLACED ON THE SERVICE ENTRANCE EQUIPMENT AND AT THE GROUNDING LOCATION, INDICATING THAT THE REMOVAL OF THE GROUNDING OR BONDING CONNECTION IN THE NORMAL POWER SOURCE WILL CREATE A SHOCK HAZARD. CONTRACTOR SHALL FURNISH AND INSTALL A SIGN WITH RED LETTERING ON WHITE BACKGROUND AS FOLLOWS: WARNING

SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THIS EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE(S) IS ENERGIZED

### Sequence Of Work

SEQUENCE OF WORK FOR INSTALLING NEW TRANSFER SWITCH AND NEW EMERGENCY GENERATOR: THE SEQUENCE SHOWN BELOW DOES NOT DESCRIBE ALL THE STEPS THAT ARE REQUIRED TO REMOVE THE EXISTING AND INSTALL THE NEW TRANSFER SWITCH AND NEW GENERATOR. THE CONTRACTOR IS REQUIRED TO SUBMIT A DETAILED SEQUENCE OF HOW THE CONTRACTOR INTENDS TO REMOVE AND INSTALL THE NEW TRANSFER SWITCH AND NEW GENERATOR. THE CONTRACTOR'S SEQUENCE SHALL LIST PREPARATORY STEPS THAT MUST BE TAKEN TO RESULT IN MINIMUM DOWN TIME TO THE FACILITY'S OPERATION AND MUST BE APPROVED BY THE FACILITY BEFORE IT CAN BE

PROVIDE A 80kW RENTAL GENERATOR WITH ADEQUATE FUEL FOR 24 HOURS OF OPERATION AT

2. DISCONNECT AND REMOVE EXISTING EMERGENCY GENERATOR AND SAFEGUARD CABLES.

3. REMOVE EXISTING GENERATOR PAD AND INSTALL NEW PAD.

4. CONNECT RENTAL GENERATOR WITH TEMPORARY CABLES TO GENERATOR FEEDER CABLES.

5. DISCONNECT EMERGENCY GENERATOR FEEDER CABLES FROM TRANSFER SWITCH EMERGENCY TERMINALS AND SAFEGUARD CABLES.

OPEN TR SW NORMAL 400A FEEDER BREAKER IN PANEL PP-1 AND DISCONNECT FEEDER FROM TRANSFER SWITCH NORMAL TERMINALS AND 400A BREAKER.

OPEN SERVICE DISCONNECT SWITCH AND REMOVE SERVICE CONDUCTORS FROM PANEL PP-1.

SAFEGUARD SERVICE CONDUCTORS. USE TEMPORARY CABLES TO CONNECT EMERGENCY GENERATOR FEEDER TO PANEL PP-1.

START UP GENERATOR AND PROVIDE POWER TO PANEL PP-1.

9. FEED PANEL EDP-1 FROM PANEL PP-1 400A BREAKER

10. INSTALL NEW TRANSFER SWITCH IN NEW LOCATION SHOWN ON DRAWINGS. 11. CONNECT SERVICE CONDUCTORS TO NEW TRANSFER SWITCH NORMAL TERMINALS.

12. DISCONNECT EMERGENCY GENERATOR FROM PANEL PP-1

13. CONNECT NEW TRANSFER SWITCH LOAD TERMINALS TO PANEL PP-1.

14. CONNECT EMERGENCY GENERATOR WITH PERMANENT FEEDER TO EMERGENCY LUGS OF NEW

TRANSFER SWITCH. 15. DISCONNECT AND REMOVE RENTAL GENERATOR.

16. INSTALL NEW EMERGENCY GENERATOR. TEST & COMMISSION NEW EMERGENCY SYSTEM.

NJ Certificate of Authorization

**Revisions:** 

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