

Generator Replacement for Technology Services

Request for Proposals No. 26-009-075

Georgia Procurement Registry Event No. PE-65615-NONST-2026-000000082



NOTICE TO VENDORS

Brief Description of NEED: Fayette County Public Schools is seeking proposals with firm pricing to replace the generator located at our Technology/VoTech Building.

Service Location(s): Technology/VoTech Building, 205 LaFayette Avenue, Fayetteville, Georgia 30214

Complete solicitation documents may be obtained at www.fcboe.org. FCPS is not responsible for respondents and/or subcontractors not obtaining the information provided through the full set of contract documents.

Responses must be submitted via email, mail/parcel delivery, or hand delivery to the Fayette County Public Schools offices located at Facilities Services and directed to Jamie Marrero, Purchasing Associate. Envelopes should be sealed and marked conspicuously on the front with the solicitation name and number above.

SUBMISSION – BY HAND, MAIL OR COMMON COURIER

Fayette County Public Schools

ATTN: Jamie Marrero, Purchasing Department

Facilities Services

939 Goza Road, Fayetteville, Georgia 30215

SUBMISSION – BY EMAIL to: marrero.jamie@fcboe.org

Objective

Fayette County Public Schools (hereinafter FCPS or the District) is soliciting proposals via this Request for Proposals (hereinafter RFP) from interested and qualified respondents to provide and install a new generator, as specified within this solicitation, for Technology Services.

As is more fully explained in this RFP, an award, if made, will be made to the responsible and responsive respondent who provides the best solution to the described need, taking into consideration multiple evaluation factors as determined by the FCPS and defined herein.

It is the respondent's responsibility to address all elements of this RFP. Any respondent failing to meet the terms and conditions herein may suffer a reduction in their evaluation score up to a complete rejection of their proposal.

Responses Due

Responses to this request for proposals are due no later than the date and time specified in the timeline of events either physically or electronically to the FCPS Purchasing Department located at Facilities Services, 939 Goza Road, Fayetteville, Georgia 30215. Proposals received after the specified date and time will not be considered.

Section A: Instructions to Respondents

1. Designated Representative
 - 1.1. The FCPS Purchasing Department has designated the following staff member as the representative of the Department and District during the solicitation process: Jamie Marrero
2. Communication Restriction
 - 2.1. From the date of issuance of this RFP until an award is made all communications must be through the designated representative listed above.
 - 2.1.1. Failure to comply with this restriction or attempts to communicate with other Fayette County Public Schools staff may result in rejection of your proposal.
3. Respondent Registration
 - 3.1. Respondents are encouraged to register with the designated representative listed above via email after reviewing this solicitation.
 - 3.2. Respondents who register will automatically receive an email update with additional documents such as addenda and be notified of award issuance, even if they choose not to submit a proposal.

4. Schedule of Events

4.1.

RFP Released	Thursday, July 31, 2025
<u>Mandatory</u> Pre-Bid Meeting	Thursday, August 14, 2025 9:30AM (EST)
Respondent Questions Due	Monday, August 18, 2025
Addenda Issued (if applicable)	Wednesday, August 20, 2025
Proposals Due	Before 10:00AM (EST), Friday, August 29, 2025

5. Georgia Open Records Act Compliance ([O.C.G.A. § 50-18-70](#))

- 5.1. This solicitation and any resulting responses, evaluations, contracts, agreement, or purchase orders are subject to the [Georgia Open Records Act](#) and may be released publicly.
- 5.2. Pursuant to the act, for any records or documents marked as “confidential” or “trade secrets” the respondent must submit and attach to the records an affidavit affirmatively declaring that specific information in the records constitutes trade secrets according to [O.C.G.A. § 10-1-761](#).
 - 5.2.1. Failure to attach such an affidavit will result in the record being considered public and subject to release under the Georgia Open Records Act.
 - 5.2.2. If FCPS determines that the specifically identified information does not constitute a trade secret, it shall notify the entity submitting the affidavit of its intent to disclose the information within ten days unless prohibited from doing so by an appropriate court order.
 - 5.2.3. In the event the entity wishes to prevent disclosure of the requested records, the entity may file an action in superior court to obtain an order that the requested records are trade secrets exempt from disclosure. The entity filing such action shall serve the requestor with a copy of its court filing.
 - 5.2.4. If the agency determines that the specifically identified information does constitute a trade secret, the agency shall withhold the records, and the requester may file an action in superior court to obtain an order that the requested records are not trade secrets and are subject to disclosure.

6. Solicitation Documents and Forms

- 6.1. Documents and forms required for submission as part of this RFP can be found on the FCPS [Purchasing Department website](#).
- 6.2. Failure to include required submissions listed herein may result in a rejection of the proposal.

- 6.3. A list of required forms is contained herein and additional submissions may be required per the specifications contained herein.
7. Proposal Delivery
 - 7.1. Proposals should be sent to the FCPS Purchasing Department and must be received before the proposal due date and time specified in the solicitation.
 - 7.2. Proposals may be submitted electronically, by mail, or hand-delivered to Facilities Services, 939 Goza Road, Fayetteville, Georgia 30215, Attention: Purchasing Department.
 - 7.3. No faxed or telephone proposals will be accepted or considered.
 - 7.4. Proposals may be emailed to the designated representative if meeting the following guidelines:
 - 7.4.1. Emailed proposals must be in a consistent, clear, and readable format and complete. (Adobe PDF format is preferred unless specified otherwise)
 - 7.4.2. All proposal documents should be bound in one document. Multiple separate documents may result in evaluation score reductions.
8. Attachments
 - 8.1. Any specification listed with "Must Include Attachment" should include a document within the proposal conforming to standards set forth.
 - 8.2. All attachments must be clearly marked and labeled using the following format: Attachment #, Solicitation Reference, Respondent Name, Solicitation Title, and Number.
9. Proposal Format Requirements
 - 9.1. The proposal should be typed and legible as well as formatted to comply with accessibility standards (refer to ADA and Section 508 compliance).
 - 9.2. The solicitation document has been carefully organized. All sections, specifications/requirements, and appendices are numbered; therefore proposals should be organized in the same manner referencing the solicitation document when necessary.
 - 9.3. Proposals must be submitted with the following sections clearly identified and delineated:
 - 9.3.1. Letter of Interest
 - 9.3.2. Technical Proposal
 - 9.3.3. Qualifications and Experience
 - 9.3.4. References

9.3.5. Price/Cost

10. Multiple Proposals from the Same Respondent

- 10.1. Respondents may submit more than one proposal when offering multiple alternatives.
- 10.2. Proposals must be separate and each should conform to all terms and conditions within the solicitation.
- 10.3. Proposals must be labeled separately so as to easily identify different proposals from the same respondent.

Section B: Scope of Work and Specifications

1. Background and Project Overview

- 1.1. Fayette County Public Schools is seeking firm pricing to supply, deliver, and install a new generator at our Technology Services building. This generator will serve as an upgrade to the existing. All materials, delivery, equipment, and labor must be included in submitted proposal as this project is turn-key.

2. Mandatory Pre-Bid Meeting

- 2.1. Pre-Bid Meeting will take place on **Thursday, August 14, 2025 at 9:30AM (EST)**. Meeting location will be at Fayette County Public Schools Technology/Votech Building located at, 205 LaFayette Avenue, Fayetteville, Georgia 30214. Contractors will need to meet in front of Building A, no later than the posted time.

3. Design/Technical Requirements and Specifications

- 3.1. All Technical Requirements and Specifications are attached to this solicitation with engineer drawings. (Please see attachment)
 - 3.1.1. By submission of proposal, respondent verifies that their proposal meets or exceeds all technical requirements and specifications outlined in the attached document.

4. Performance and Service Requirements

- 4.1. Respondent must have valid certificates/licenses to perform the requested work, as required.
- 4.2. Respondent will be responsible for obtaining permits for this project.
- 4.3. Alternative brands can be submitted for consideration but must meet or exceed the technical specifications outlined in this solicitation.
- 4.4. Respondent maintain the operations of a temporary generator through the duration of this project, temporary generator will be supplied by Fayette County Public Schools Facilities Services.
- 4.5. Respondent will provide project status on a regular basis and report to David Kiblinger, Maintenance Supervisor.

Section C: Evaluation of Proposals

1. Evaluation Committee
 - 1.1. All proposals deemed responsive will be evaluated by a review committee composed of project administrators and end-users.
 - 1.2. Criteria based on qualifications and experience, a submitted proposal, and price/cost will be used in the evaluation process.
2. Evaluation Methodology
 - 2.1. The committee will perform a complete evaluation and verification process on a rating system of required proposal components contained herein based on an "Excellent", "Good", "Fair", or "Poor" rating.
 - 2.1.1. Excellent ratings will be issued four (4) points. Excellent ratings are issued when the proposed solution fully complies with the requirements of the specification and can be used as the high mark during the evaluation process.
 - 2.1.2. Good ratings will be issued three (3) points. Good ratings are issued when the proposed solution partially complies with the requirements of the specification but meets the intended goals of the project.
 - 2.1.3. Fair ratings will be issued either two (2) points or one (1) point. Fair ratings are issued when the proposed solution partially complies with the requirements of the specification but requires modification to meet the intended goals of the project.
 - 2.1.4. Poor ratings will be issued zero (0) points. Poor ratings are issued when the proposed solution does not comply with the requirements of the specification or the specification is not addressed at all.
 - 2.2. The committee will be the sole and final determiner of awarded points and whether or not a proposed solution complies with the specifications and intended goals of the project.
3. Interviews and Presentations
 - 3.1. Post-proposal interviews and presentations may be required, in person at the committee's direction or desire.
 - 3.2. Submission of a proposal does not guarantee an interview or presentation.
 - 3.3. Selection for interviews and presentations is at the sole discretion of the evaluation committee.
4. Contract Award and Negotiations
 - 4.1. The evaluation committee will issue a recommendation to award following the outcome of its evaluation process.
 - 4.2. The committee reserves the right to reject any or all bids.

- 4.3. A recommendation to award does not guarantee a contract. Final approval from the Superintendent and/or Board of Education may be required.
- 4.4. Following a recommendation to award, the Superintendent or their designee may engage in final negotiations with the selected respondent.

Section D: General Terms and Conditions

The FCPS General Terms and Conditions are posted on the Purchasing Department website under the heading of [Vendor Terms, Conditions, and Forms](#) and attached to this solicitation. By submission of a proposal, the respondent acknowledges they have read and understood these General Terms and Conditions as well as any terms and conditions contained herein.

Section E: Special Terms and Conditions

1. Contract Incorporation
 - 1.1. This solicitation will be incorporated into any resulting contract.
 - 1.2. When this solicitation and any resulting contract are in conflict, Fayette County Public Schools will determine the controlling method.
 - 1.3. Only the Superintendent or his direct designee may sign or enter into a contract on behalf of Fayette County Public Schools.
2. Term
 - 2.1. The proposal term will begin from the time of award through June 30, 2026, with no option to renew.
3. Quantities
 - 3.1. Quantities listed within this solicitation are not guaranteed. Purchase orders will be issued for specific projects, as needed, for the term of this solicitation. The Fayette County School District anticipates that this project will be completed. But, the project approval will be determined by the available budget allotment.
4. Cooperative Purchasing
 - 4.1. This solicitation allows for other Fayette County, Georgia government entities, including local municipalities, to purchase from the awarded contract at the same prices quoted during the effective term pending an agreement between the awarded respondent(s) and the government entity.
5. Substitutions and Alternates
 - 5.1. Products similar to or other than specified may be acceptable if in compliance with all requirements of these specifications and are of the same or better quality.
 - 5.2. The respondent must provide substantiation that proposed substitution or alternate does not violate any other manufacturer's patents, patents allowed, or patents pending and that the alternate proposed meets the same specifications contained herein.

- 5.3. The FCPS shall be the sole determiner of specification compliance and alternate acceptability.
- 5.4. No pre-proposal approval will be given for a proposed alternative.
- 6. Insurance Requirements
 - 6.1. Respondents are required to submit a current and valid Certificate of Insurance (COI) per the General Terms and Conditions and any specification contained herein.
 - 6.2. Should the respondent choose to utilize subcontractors for installation or other matters, the respondent must provide a valid COI for the subcontractor per the requirements of the General Terms and Conditions.

Section F: Required Forms and Submissions

- 1. Required Respondent Submissions
 - 1.1. Product Data: Fayette County School District must receive all product data that pertains to solicitations work scope, this includes but is not limited to;
 - 1.2. Product Data Sheet: Manufacturer Data/Specifications Sheet
 - 1.3. Product Certification: Submit manufacturer's certification that products and materials comply with the requirements of the specifications.
 - 1.4. Submit manufacturer's catalog cuts, material safety data sheets (MSDS), brochures, specifications;
 - 1.5. Preparation, maintenance, and installation instructions and recommendations;
 - 1.6. Storage, handling requirements, and recommendations.
 - 1.7. Warranties: Submit warranty documents according to specifications (if applicable).
 - 1.7.1. Include any and all manufacturer's warranties for each item.
- 2. Cost Proposal
 - 2.1. All respondents must include a separate cost proposal.
 - 2.2. Pricing not entered in the cost proposal form will not be considered.
 - 2.3. If pricing variations exist for different finishes/materials/options the respondent must include an attachment describing variations and associated costs.
 - 2.4. Costs should be in line-item format detailing all costs applicable to the proposed solution and a grand total cost to execute the proposed solution fully.

3. Letters of Recommendation

- 3.1. The respondent must include a minimum of three (3) letters of recommendation dated within the previous two (2) calendar years.
- 3.2. Letters must be from clients/customers who have engaged the respondent in previous services and must include details such as a description/scope of work, timeline and budget parameters, and assessment of the respondent's ability to complete work/service as specified.
- 3.3. Each letter must contain contact information including organization/firm, contact name, telephone, and email.
- 3.4. Letters from organizations and projects similar to the scope and size of Fayette County Public Schools are preferred.

4. Solicitation Response Form

- 4.1. Respondents must complete a Solicitation Response Form attached hereto and available online at the Purchasing Department website.
- 4.2. This form must be placed on top, or as the first page of your proposal.
- 4.3. Failure to attach could result in a reduction in score or a rejection of your proposal.

5. Business Capability Information Questionnaire

- 5.1. Respondents must complete a Business Capability Form attached hereto and available online at the Purchasing Department website.
- 5.2. Failure to attach could result in a reduction in score or a rejection of your proposal.

6. Certificate of Insurance

- 6.1. The respondent must submit a current certificate of insurance detailing coverage limits as defined in this RFP and the FCPS General Terms and Conditions.
- 6.2. Failure to attach could result in a reduction in score or rejection of your proposal.
- 6.3. The selected respondent will be required to submit a COI naming Fayette County Public Schools as an additional insured party.

7. W-9 Form

- 7.1. The respondent must submit a current [Internal Revenue Service W-9 Form](#) complete with proper signature.
- 7.2. Failure to attach could result in a reduction in score or rejection of your proposal.

8. E-Verify Documentation

- 8.1. The respondent must submit a completed E-Verify Compliance Form and Affidavit as attached below.
- 8.2. Failure to attach could result in a reduction in score or rejection of your proposal.

Cost Proposal

Proposed Generator Manufacturer: _____

Proposed Model: _____

Cost of Proposed Generator: \$ _____

Warranty for Proposed Generator: (Circle all that apply)

Terms of Warranty: 1 Year 3 Year 5 Year 10 Year Limited Lifetime

Warranty Coverage: Parts Labor Parts & Labor

Warranty Comments: _____

Cost of Installation of Proposed Generator: (Must include, but not limited to; labor, equipment, tools, delivery, shipping, and misc materials required to complete project) \$ _____

Total Cost of Project: (Including all items above) \$ _____

Company Name

Date

Signature

Printed Name

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Basic electrical requirements, which are specifically applicable to all Division 26 Sections, in addition to the requirements of Division 1 - General Requirements.

1.3 SUBMITTALS

- A. Provide submittals.
- B. Contractor shall provide a sufficient number of copies of manufacturer's data for review so that the Architect, Engineer and Owner may each retain one copy, plus any additional copies as required for contractor's and contractor's affiliates (subcontractors, suppliers, etc.) usage.
- C. Submittal data shall be assembled in complete sets and bound.
- D. All submittal data for a trade shall be submitted at one time except as noted herein.
- E. Data not submitted shall have a statement explaining why the data was not submitted.
- F. The submittal shall include an index sheet listing each tab number and contents.
- G. Submittals not conforming to any of the above requirements shall be rejected.
- H. The contractor shall go to each specification section to determine all technical information/data required and organize information/data using tabs for major headings as follows:

1. Section 260519 - Low-Voltage Electrical Power Conductors and Cables

- a. Building wire and cable (600 volts and less)
- b. Connectors, splices and terminations (600 volts and less)
- c. Sleeves

2. Section 260533 - Raceways and Boxes for Electrical Systems

- a. Rigid steel conduit
- b. IMC
- c. PVC coated steel conduit
- d. EMT
- e. Liquidtight flexible metal conduit
- f. Non-metal conduit

- g. Conduit fittings and bodies
3. Section 262416 – Panelboards
 - a. Product data
 - b. Shop drawings
4. Section 263213 – Engine Generators
 - a. Rated capacities (data)
 - b. Operating characteristics (data)
 - c. Overall dimensions (shop drawings)
 - d. Weight (shop drawings)
 - e. Required clearances (shop drawings)
 - f. Location of connectors (shop drawings)
 - g. Wiring diagrams (shop drawings)
 - h. Warranty
5. Section 263600 – Transfer Switches
 - a. Product data
 - b. Shop drawings
- I. Manufacturer's data sheets shall be marked to clearly indicate the manufacturer, model number, size, color, accessories, required clearances, field connection details, weight loading, electrical characteristics, capacities, etc. being submitted. Variations from specifications shall be explained. Submittal preparer's name and telephone number shall be listed on the index sheet.
- J. Only manufacturers listed in specifications or addendums will be considered.
- 1.4 REGULATORY REQUIREMENTS
 - A. All work installed under Division 16 shall conform to the current adopted Edition of Building/Electrical Codes and their appropriate amendments:
 1. NFPA 70 2023 National Electrical Code
 2. Life Safety Code, NFPA 101
 3. Requirements of the State of Georgia Fire Marshall's Office.
 4. GA State Energy Code.
 5. Standard Building Code
 6. Standard Mechanical Code (Georgia Edition)
 7. National Fire Alarm Code NFPA 72
 8. Standard for Emergency and Standby Power Systems NFPA110
 9. City of Fayetteville and Fayette County Codes
 - B. Obtain and pay for all permits, and request inspections from all authorities having jurisdiction, in a timely manner.
 - C. Materials and Equipment included in Underwriter's Label Service shall bear that label. Electrical equipment shall be UL approved as installed, and bear the UL label, unless noted otherwise herein.

- D. Where requirements of these specifications differ from specified codes and ordinances, conform to the more stringent requirements.

1.5 CONTRACTOR GUARANTEE

- A. All equipment and materials furnished, and all work performed under these specifications, shall be guaranteed to be free of defective materials and workmanship for a period of one year (unless a longer period is specified elsewhere) after Architect's Final Certificate. Upon notice of failure of any part of the guaranteed equipment during the guarantee period, the affected part or parts shall be promptly replaced with new parts by the Contractor at no additional cost to the Owner. All labor required to perform guarantee shall be included as part of the complete guarantee warranty.

1.6 OPERATING AND MAINTENANCE (O&M) MANUALS

- A. Three bound and indexed Operating and Maintenance Manuals shall be prepared by the Contractor and be submitted for approval prior to delivery to operating personnel. Binders shall be 3-ring commercial grade, complete with inside storage pockets, sheet protectors, spine and front cover labels.

- B. Operating and maintenance manuals shall also comply with Division 1 Section "Operation and Maintenance Data."

1.7 PROJECT/SITE CONDITIONS

- A. Install work in locations shown on Drawings, unless prevented by project conditions. Shift or relocate equipment or systems to avoid conflicts with other trades. Modifications to the work required to accommodate project conditions encountered in the field shall be made at no additional cost to the contract.

- B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission of Architect/Engineer before proceeding.

- C. Install items so that there are no obstructions (e.g., pipes, conduits, etc.) blocking service panels of the equipment, or preventing the removal of the equipment.

- D. Electrical items are shown on drawings in approximate locations unless dimensioned. Install at location required to serve intended purpose. Include installation within ten (10) feet of location shown.

1.8 SEQUENCING AND SCHEDULING

- A. Contractor shall coordinate work so as to avoid conflicts with other work in progress.

- B. Work shall progress in a manner that will not interfere with other trades. The Division 26 Contractor shall have coordination meetings with all other Contractors to ensure that all systems installed in "share areas" (e.g. ceiling plenums, mechanical rooms, etc.) are coordinated and installed to insure proper fit and access. All costs required for the coordination of the work between trades shall be borne solely by the Contractor.

- C. Contractor shall provide confirmation letters from the factory (not from the contractor) to the Owner that long lead items have been ordered. Long lead items are defined as items having longer than six-week fabrication schedules. See Section 01100 - Summary for additional requirements.

1.9 ACCEPTABLE PRODUCTS

- A. Where a manufacturer has been listed as being acceptable in the various specification sections hereinafter for a certain product, it shall be understood that the manufacturer has been approved as being capable of producing this product. This does not necessarily constitute approval of his standard product. His product shall still comply with all of the requirements and standards of this specification and not necessarily his standard specification, to the extent that it might require special manufacture to meet the requirement and standards of this specification.

- B. Prior Approval: Substitutions of specified items and prior approvals of other manufacturers will not be considered.

- C. Addenda: If the substitution is allowed, such approval will be set forth in an Addendum.

- D. Costs: All costs incurred by the acceptance of substitutions shall be borne by the contractor.

1.10 DRAWINGS

- A. General: Both the drawings and specifications shall be considered supplemental to one another so that materials and labor required by one but not the other shall be supplied and installed as though specifically called for by both. Where drawings and specification conflict, Contractor shall conform to the more stringent or costly of the two requirements.

- B. Scaling: The drawings are diagrammatic only and show generally the location of the equipment, ducts and pipes but are not to be scaled. All dimensions shall be verified at the building site. Prefabrication of work from the drawings shall be at the Contractor's risk.

- C. Existing Conditions: It shall be the Contractor's responsibility to visit the site prior to bidding the project and prior to beginning work to make himself familiar with existing conditions.

1.11 PROTECTION OF MATERIALS AND EQUIPMENT

- A. Delivery, Storage and Handling: Deliver products to site in factory-fabricated protective containers, with (where appropriate) factory-installed shipping skids and lifting lugs. Store in clean, dry place and protect from weather and construction traffic. Handle carefully to avoid damage to components, enclosures, and finish.

- B. Prior to Final Construction Review: All materials and equipment shall be cleaned. Chipped or scraped paint shall be retouched to match.

- C. Equipment Painting: Equipment which has been damaged beyond the point of retouching or has been retouched not to match the original finish shall be repainted in accordance with the Architectural painting section.

1 1.12 CLEANING

2 A. The Contractor shall maintain the site reasonably clean and free of excessive debris and
3 leftover materials at all times. All trash and debris shall be hauled from the job site on a
4 daily basis for disposal. Prior to testing and adjusting, equipment shall be clean and free of
5 any construction debris and litter.

6 B. Contractor shall meet all contractual requirements as related to site cleanliness including
7 dust control.

8 END OF SECTION 260500

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

- 1. Building wires and cables rated 600 V and less.
- 2. Connectors, splices, and terminations rated 600 V and less.
- 3. Sleeves and sleeve seals for cables.

1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Qualification Data: For testing agency.
- C. Field quality-control test reports.

1.5 QUALITY ASSURANCE

- A. Comply with NFPA 70.

1.6 COORDINATION

- A. Set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
- B. Determine required separation between this and other work.
- C. Determine routing to avoid interference with other work.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Available Manufacturers: Only products of domestic manufacturer will be accepted.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Alcan Products Corporation; Alcan Cable Division.
2. American Insulated Wire Corp.; a Leviton Company.
3. General Cable Corporation.
4. Senator Wire & Cable Company.
5. Southwire Company.
6. Allied
7. Carol.
8. Pirelli.
9. Rome.
10. Triangle.

C. Copper Conductors: Comply with NEMA WC 70.

D. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN and XHHW.

2.2 CONNECTORS AND SPLICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.
2. Hubbell Power Systems, Inc.
3. O-Z/Gedney; EGS Electrical Group LLC.
4. 3M; Electrical Products Division.
5. Tyco Electronics Corp.
6. Burndy Hydent.
7. IlSCO.
8. Thomas and Betts.
9. Ideal.

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

1. Solderless Pressure Connectors: 3M Skotch-loks, T & B Freespring, or Ideal Wing Nut for 10 AWG and smaller.
2. Compression Connectors: Burndy Hydent, IlSCO or Thomas and Betts, Color-Keyed for 8 AWG and larger.
3. Terminal Lugs: Thomas and Betts STA-KON for 10 AWG and smaller; Thomas and Betts Color-Keyed for 8 AWG and larger. Equal product as manufactured by Burndy or IlSCO are acceptable.

2.3 SLEEVES FOR CABLES

A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.

B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

C. Sleeves for Rectangular Openings: Galvanized sheet steel with minimum 0.052- or 0.138-inch thickness as indicated and of length to suit application.

- 1 D. Coordinate sleeve selection and application with selection and application of firestopping
2 specified in Division 7 Section "Through-Penetration Firestop Systems."

3 PART 3 - EXECUTION

4 3.1 CONDUCTOR MATERIAL APPLICATIONS

- 5 A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
6 B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG
7 and larger.

8 3.2 CONDUCTOR INSULATION APPLICATIONS AND WIRING METHODS

- 9 A. Service Entrance: Type XHHW, single conductors in raceway and duct bank.
10 B. Exposed Feeders: Type THHN-THWN, single conductors in raceway,
11 C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN-THWN,
12 single conductors in raceway.
13 D. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-
14 THWN, single conductors in raceway.
15 E. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground:
16 Type THHN-THWN, single conductors in raceway.
17 F. Class 1 Control Circuits: Type THHN-THWN, in raceway.
18 G. Class 2 Control Circuits: Type THHN-THWN, in raceway.
19 H. Insulation: ANSI/NFPA 70; Type XHHW insulation for circuits 6AWG and larger; Type
20 THHN/THWN insulation for circuits 8 AWG and smaller. At the contractor's option, type
21 THHN/THWN insulation may be utilized throughout for all feeders and branch circuits.

22 3.3 INSTALLATION OF CONDUCTORS AND CABLES

- 23 A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.
24 B. Use manufacturer-approved pulling compound or lubricant where necessary; compound
25 used must not deteriorate conductor or insulation. Do not exceed manufacturer's
26 recommended maximum pulling tensions and sidewall pressure values.
27 C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that
28 will not damage cables or raceway.
29 D. Identify and color-code conductors and cables according to Division 26 Section "Electrical
30 Identification."
31 E. Install products in accordance with manufacturers' instructions.
32 F. Use conductor not smaller than 12 AWG for power and lighting circuits.

G. Pull all conductors into raceway at same time.

H. Use suitable wire pulling lubricant for building wire 4 AWG and larger.

I. Neatly train and lace wiring inside boxes, equipment, and panelboards using nylon cable ties by Thomas and Betts, Panduit or Ideal.

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

D. Clean conductor surfaces before installing lugs and connectors.

E. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.

F. Where compression connectors are used for conductor splices and taps; tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.

G. Use terminal lugs for connecting all stranded conductors and for all multiple connections to terminals.

3.5 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 7 Section "Through-Penetration Firestop Systems."

B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.

C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.

D. Rectangular Sleeve Minimum Metal Thickness:

1. For sleeve rectangle perimeter less than 50 inches and no side greater than 16 inches, thickness shall be 0.052 inch.
2. For sleeve rectangle perimeter equal to, or greater than, 50 inches and 1 or more sides equal to, or greater than, 16 inches, thickness shall be 0.138 inch.

E. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.

F. Cut sleeves to length for mounting flush with both wall surfaces.

- 1 G. Extend sleeves installed in floors 2 inches above finished floor level.
- 2 H. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and cable unless
3 sleeve seal is to be installed.
- 4 I. Seal space outside of sleeves with grout for penetrations of concrete and masonry and with
5 approved joint compound for gypsum board assemblies.
- 6 J. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between
7 sleeve and cable, using joint sealant appropriate for size, depth, and location of joint
8 according to Division 7 Section "Joint Sealants."
- 9 K. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions,
10 ceilings, and floors at cable penetrations. Install sleeves and seal with firestop materials
11 according to Division 7 Section "Through-Penetration Firestop Systems."
- 12 L. Roof-Penetration Sleeves: Seal penetration of individual cables with flexible boot-type
13 flashing units applied in coordination with roofing work.
- 14 M. Aboveground Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical
15 sleeve seals. Size sleeves to allow for 1-inch annular clear space between pipe and sleeve
16 for installing mechanical sleeve seals.
- 17 N. Underground Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size
18 sleeves to allow for 1-inch annular clear space between cable and sleeve for installing
19 mechanical sleeve seals.

20 3.6 FIRESTOPPING

- 21 A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to
22 restore original fire-resistance rating of assembly according to Division 7 Section
23 "Through-Penetration Firestop Systems."

24 3.7 FIELD QUALITY CONTROL

- 25 A. Tests and Inspections:
 - 26 1. After installing conductors and cables and before electrical circuitry has been
27 energized, test for compliance with requirements.
 - 28 a. Verify continuity of each branch circuit.
 - 29 2. Perform each visual and mechanical inspection and electrical test stated in NETA
30 Acceptance Testing Specification. Certify compliance with test parameters.
- 31 B. Remove and replace malfunctioning units and retest as specified above.

32 END OF SECTION 260519

SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

- 1. Distribution panelboards.
- 2. Lighting and appliance branch-circuit panelboards.

1.3 DEFINITIONS

- A. EMI: Electromagnetic interference.
- B. GFCI: Ground-fault circuit interrupter.
- C. RFI: Radio-frequency interference.
- D. RMS: Root mean square.
- E. SPDT: Single pole, double throw.

1.4 SUBMITTALS

- A. Product Data: For each type of panelboard, overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings. Include the following:
 - a. Enclosure types and details for types other than NEMA 250, Type 1.
 - b. Bus configuration, current, and voltage ratings.
 - c. Short-circuit current rating of panelboards and overcurrent protective devices.
 - d. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
 - 2. Wiring Diagrams: Power, signal, and control wiring.

C. Panelboard Schedules: For installation in panelboards.

D. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section " Closeout Procedures and Operation and Maintenance Data," include the following:

1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
2. Time-current curves, including selectable ranges for each type of overcurrent protective device.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories through one source from a single manufacturer.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NEMA PB 1.

D. Comply with NFPA 70.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Rate equipment for continuous operation under the following conditions, unless otherwise indicated:

1. Ambient Temperature: Not exceeding 104°F.
2. Altitude: Not exceeding 6600 feet.

B. Service Conditions: NEMA PB 1, usual service conditions, as follows:

1. Ambient temperatures within limits specified.
2. Altitude not exceeding 6600 feet.

1.7 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, and encumbrances to workspace clearance requirements.

B. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases.

1.8 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Keys: Two spares for each type of panelboard cabinet lock.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Panelboards, Overcurrent Protective Devices, Controllers, Contactors, and Accessories:

- a. Eaton Corporation; Cutler-Hammer Products.
- b. General Electric Co.; Electrical Distribution & Protection Div.
- c. Siemens Energy & Automation, Inc.
- d. Square D.

2. Transient Voltage Suppression Panelboards:

- a. Liebert Corporation.
- b. Advance Protection Technologies (APT)
- c. Emerson

2.2 MANUFACTURED UNITS

- A. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Division 26 Section "Electrical Supports and Seismic Restraints."

- B. Enclosures: Flush- and surface-mounted cabinets. NEMA PB 1, Type 1.

1. Rated for environmental conditions at installed location.

- a. Outdoor Locations: NEMA 250, Type 3R.
- b. Kitchen Areas: NEMA 250, Type 4X, stainless steel.
- c. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
- d. Indoor Locations: NEMA 250, Type 1.

2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box. Provide with standard flush door and lock, all keyed alike.

3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.

4. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.

5. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
6. Finish: Manufacturer's standard grey enamel finish over corrosion-resistant treatment or primer coat.
7. Directory Card: With transparent protective cover, mounted in metal frame, inside panelboard door.

C. Phase and Ground Buses:

1. Material: Tin-plated aluminum.
2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment ground conductors; bonded to box. Provide in all panelboards.
3. Extra-Capacity Neutral Bus: Neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear loads. Provide where 5-wire configuration is indicated.

D. Conductor Connectors: Suitable for use with conductor material.

1. Main and Neutral Lugs: Mechanical type.
2. Ground Lugs and Bus Configured Terminators: Compression type.
3. Feed-Through Lugs: Mechanical type suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.
4. Extra-Capacity Neutral Lugs: Rated 200 percent of phase lugs mounted on extra-capacity neutral bus.

E. Service Equipment Label: UL labeled for use as service equipment for panelboards with main service disconnect switches.

F. Future Devices: Mounting brackets, bus connections, and necessary appurtenances required for future installation of devices.

2.3 PANELBOARD SHORT-CIRCUIT RATING

A. Fully rated to interrupt symmetrical short-circuit current available at terminals.

B. Minimum Integrated Short Circuit Rating: 14,000 amperes rms symmetrical for 480 volt panelboards or 10,000 amperes rms symmetrical for 208 volt panelboards; unless noted otherwise on Drawings.

2.4 DISTRIBUTION PANELBOARDS

A. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

B. Main Overcurrent Protective Devices: Circuit breaker.

C. Branch Overcurrent Protective Devices:

1. Molded Case Circuit Breakers: NEMA AB 1; bolt-on type thermal magnetic trip circuit breakers, with common trip handle for all poles. Circuit breakers shall be listed as suitable for use with 75 degrees C conductor.
2. Bolt-on circuit breakers, shall be replaceable without disturbing adjacent units.

2.5 TRANSIENT VOLTAGE SUPPRESSION

- A. Transient control systems: where noted on drawings, provide Emerson Network Power #DMK-C transient control systems Liebert “Hybrid Advantage@ or equal by Transtector. Install adjacent (within 10 feet) to applicable panelboards. Provide conduit and conductors as schedules for interconnection.

2.6 OVERCURRENT PROTECTIVE DEVICES

- A. Molded-Case Circuit Breaker: UL 489, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

- B. Molded-Case Circuit-Breaker Features and Accessories: Standard frame sizes, trip ratings, and number of poles.

1. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
2. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.
3. Shunt Trip: 120-V trip coil energized from separate circuit, set to trip at 55 percent of rated voltage.
4. Multipole units enclosed in a single housing or factory-assembled to operate as a single unit.

2.7 CONTROLLERS

- A. Controller Disconnect Switches: integrally mounted and interlocked with controller. Provide coil clearing contacts.

1. Auxiliary Contacts: Integral with disconnect switches to de-energize external control-power source.

- B. Contactors in Main Bus: NEMA ICS 2, Class A, mechanically held general-purpose controller.

1. Control-Power Source: Control-power transformer, with fused primary and secondary terminals, connected to main bus ahead of contactor connection.
2. Coil(s) Voltage 120 volts, 60 hertz, from separate source.
3. Switched Poles: Three (3).
4. Contact Rating: As scheduled on Drawings.
5. Contactor shall be furnished where applicable, in factory assembled panelboard enclosures. Provide line-side lugs to receive incoming feeder(s).

2.8 ACCESSORY COMPONENTS AND FEATURES

- A. Furnish accessory set including tools and miscellaneous items required for overcurrent protective device test, inspection, maintenance, and operation.

- 1 B. Provide filler plates for unused spaces in panelboards.

2 PART 3 - EXECUTION

3 3.1 INSTALLATION

- 4 A. Install panelboards and accessories according to NEMA PB 1.1.
- 5 B. Comply with mounting and anchoring requirements specified in Division 16 Section
- 6 "Electrical Supports and Seismic Restraints."
- 7 C. Top of Panel Height: Panelboards with box dimensions of 53 inches or less in height shall
- 8 be installed with top of panel at 6 ft.-6 in. Panels with box dimensions in excess of 53
- 9 inches in height shall be installed such that the operating handle of the uppermost device is
- 10 72 inches above finished floor.
- 11 D. Mount plumb and rigid without distortion of box. Mount recessed panelboards with fronts
- 12 uniformly flush with wall finish.
- 13 E. Install overcurrent protective devices and controllers.
- 14 1. Set field-adjustable switches and circuit-breaker trip ranges.
- 15 F. Install filler plates in unused spaces.
- 16 G. Stub four 1-inch empty conduits from panelboard into accessible ceiling space or space
- 17 designated to be ceiling space in the future. Stub four 1-inch empty conduits into raised
- 18 floor space or below slab not on grade.
- 19 H. Arrange conductors in gutters into groups and bundle and wrap with wire ties.
- 20 I. Install drip shields on all panels per detail on drawings.

21 3.2 IDENTIFICATION

- 22 A. Identify field-installed conductors, interconnecting wiring, and components; provide
- 23 warning signs as specified in Division 16 Section "Electrical Identification."
- 24 B. Create a directory to indicate installed circuit loads. Obtain approval before installing.
- 25 Use a computer or typewriter to create directory; handwritten directories are not
- 26 acceptable.
- 27 C. Panelboard Nameplates: Label each panelboard with engraved metal or laminated-plastic
- 28 nameplate mounted with corrosion-resistant screws.

29 3.3 CONNECTIONS

- 30 A. Ground equipment according to Division 26 Section "Grounding and Bonding."
- 31 B. Connect wiring according to Division 26 Section "Conductors and Cables."

3.4 FIELD QUALITY CONTROL

- A. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers, and lugs.
- B. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.
1. Measure as directed during period of normal system loading.
 2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.
 3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
 4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

3.5 CLEANING

- A. On completion of installation, inspect interior and exterior of panelboards. Remove paint splatters and other spots. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

END OF SECTION 262416

SECTION 263213 - ENGINE GENERATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes packaged engine-generator sets for emergency power supply with the following features:

1. Gas engine.
2. Unit-mounted cooling system.
3. Unit-mounted control and monitoring.
4. Performance requirements for sensitive loads.
5. Outdoor enclosure.

- B. Related Sections include the following:

1. Division 26 Section "Transfer Switches" for transfer switches including sensors and relays to initiate automatic-starting and -stopping signals for engine-generator sets.

1.3 DEFINITIONS

- A. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

- B. LP: Liquid petroleum.

1.4 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.
2. Time-current characteristic curves for generator protective device.

- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.
2. Wiring Diagrams: Power, signal, and control wiring.

C. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section "Operation and Maintenance Data," include the following:

1. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.

D. Warranty: Special warranty specified in this Section.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

1. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.

B. Manufacturer Qualifications: A qualified manufacturer. Maintain, within 180 miles of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.

C. Source Limitations: Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

E. Comply with ASME B15.1.

F. Comply with NFPA 37.

G. Comply with NFPA 70.

H. Comply with NFPA 99.

I. Comply with NFPA 110 requirements for Level 1 emergency power supply system.

J. Comply with UL 2200.

K. Engine Exhaust Emissions: Comply with applicable state and local government requirements.

L. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at adjacent property boundaries due to sound emitted by generator set including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.

1.6 PROJECT CONDITIONS

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service according to requirements indicated:

1. Notify Architect no fewer than two days in advance of proposed interruption of electrical service.
2. Do not proceed with interruption of electrical service without Architect's written permission.

- B. Environmental Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:

1. Ambient Temperature: Minus 15 to plus 40°C.
2. Relative Humidity: 0 to 95 percent.
3. Altitude: Sea level to 1000 feet.

1.7 COORDINATION

- A. Coordinate size and location of concrete bases for package engine generators. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.
- B. Coordinate size and location of roof curbs, equipment supports, and roof penetrations for remote radiators. These items are specified in Division 7 Section "Roof Accessories."

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One (1) year from date of Substantial Completion.

1.9 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, provide 12 months' full maintenance by skilled employees of manufacturer's designated service organization. Include quarterly exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

1.10 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Fuses: One for every 10 of each type and rating, but no fewer than one of each.
 - 2. Indicator Lamps: Two for every six of each type used, but no fewer than two of each.
 - 3. Filters: One set each of lubricating oil, fuel, and combustion-air filters.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. Caterpillar; Engine Div.

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 Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and generator-set center of gravity.
- C. Capacities and Characteristics:
 - 1. Power Output Ratings: Nominal ratings as indicated. Minimum Rating: 175kW, 218kVA at 0.8 power factor, 208Y/120 volts, 60 Hz.
 - 2. Output Connections: Three-phase, four-wire.
 - 3. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.
- D. Generator-Set Performance:
 - 1. Steady-State Voltage Operational Bandwidth: 3 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 two seconds.
 - 3. Steady-State Frequency Operational Bandwidth: 0.5 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.

- 1 5. Transient Frequency Performance: Less than 5 percent variation for 50 percent step-
- 2 load increase or decrease. Frequency shall recover and remain within the steady-
- 3 state operating band within five seconds.
- 4 6. Output Waveform: At no load, harmonic content measured line to line or line to
- 5 neutral shall not exceed 5 percent total and 3 percent for single harmonics.
- 6 Telephone influence factor, determined according to NEMA MG 1, shall not exceed
- 7 50 percent.
- 8 7. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output
- 9 terminals, system shall supply a minimum of 250 percent of rated full-load current
- 10 for not less than 10 seconds and then clear the fault automatically, without damage
- 11 to generator system components.
- 12 8. Start Time: Comply with NFPA 110, Type 10, system requirements.

13 2.3 ENGINE

- 14 A. Fuel: Natural gas.
- 15 B. Rated Engine Speed: 1800 rpm.
- 16 C. Maximum Piston Speed for Four-Cycle Engines: 2250 fpm.
- 17 D. Lubrication System: The following items are mounted on engine or skid:
 - 18 1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and
 - 19 smaller while passing full flow.
 - 20 2. Thermostatic Control Valve: Control flow in system to maintain optimum oil
 - 21 temperature. Unit shall be capable of full flow and is designed to be fail-safe.
 - 22 3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable
 - 23 container with no disassembly and without use of pumps, siphons, special tools, or
 - 24 appliances.
- 25 E. Engine Fuel System:
 - 26 1. Natural Gas (Vapor-Withdrawal) System:
 - 27 a. Carburetor.
 - 28 b. Secondary Gas Regulators: One.
 - 29 c. Fuel-Shutoff Solenoid Valves: One.
 - 30 d. Flexible Fuel Connectors: One.
- 31 F. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system.
- 32 Comply with NFPA 110 requirements for Level 1 equipment for heater capacity. 1,000
- 33 watts, 120 volts AC.
- 34 G. Governor: Adjustable isochronous, with speed sensing.
- 35 H. Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine-
- 36 generator-set mounting frame and integral engine-driven coolant pump.
 - 37 1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent
 - 38 water, with anticorrosion additives as recommended by engine manufacturer.

2. Size of Radiator: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.
3. 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.
4. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
5. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, ultraviolet-, and abrasion-resistant fabric.
 - a. Rating: 50-psig maximum working pressure with coolant at 180°F, and non-collapsible under vacuum.
 - b. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.
- I. Muffler/Silencer: Residential type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.
 1. Minimum sound attenuation of 18 dB at 500 Hz.
 2. Sound level measured at a distance of 10 feet from exhaust discharge after installation is complete shall be 95 dBA or less.
- J. Air-Intake Filter: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.
- K. Starting System: 12-V 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 Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
 3. Cranking Cycle: 60 seconds.
 4. Battery: Adequate capacity within ambient temperature range specified in Part 1 "Project Conditions" Article to provide specified cranking cycle at least three times without recharging.
 5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.
 6. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 10°C regardless of external ambient temperature within range specified in Part 1 "Project Conditions" Article. Include accessories required to support and fasten batteries in place. Constructed to contain spillage of electrolyte.
 7. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.
 8. Battery Charger: Current-limiting, automatic-equalizing and float-charging type. Unit shall comply with UL 1236 and include the following features:
 - a. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved

- 1 at battery terminals. Unit shall then be automatically switched to a lower
- 2 float-charging mode and shall continue to operate in that mode until battery is
- 3 discharged again.
- 4 b. Automatic Temperature Compensation: Adjust float and equalize voltages for
- 5 variations in ambient temperature from minus 40°C to plus 60°C to prevent
- 6 overcharging at high temperatures and undercharging at low temperatures.
- 7 c. Automatic Voltage Regulation: Maintain constant output voltage regardless
- 8 of input voltage variations up to plus or minus 10 percent.
- 9 d. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate
- 10 charging rates.
- 11 e. Safety Functions: Sense abnormally low battery voltage and close contacts
- 12 providing low battery voltage indication on control and monitoring panel.
- 13 Sense high battery voltage and loss of ac input or dc output of battery charger.
- 14 Either condition shall close contacts that provide a battery-charger
- 15 malfunction indication at system control and monitoring panel.
- 16 f. Enclosure and Mounting: NEMA 250, Type 1. Locate charger within genset
- 17 housing.

18 2.4 CONTROL AND MONITORING

- 19 A. Automatic Starting System Sequence of Operation: When mode-selector switch on the
- 20 control and monitoring panel is in the automatic position, remote-control contacts in one or
- 21 more separate automatic transfer switches initiate starting and stopping of generator set.
- 22 When mode-selector switch is switched to the on position, generator set starts. The off
- 23 position of same switch initiates generator-set shutdown. When generator set is running,
- 24 specified system or equipment failures or derangements automatically shut down generator
- 25 set and initiate alarms. Operation of a remote emergency-stop switch also shuts down
- 26 generator set.
- 27 B. Configuration: Operating and safety indications, protective devices, basic system controls,
- 28 and engine gages shall be grouped in a common control and monitoring panel mounted on
- 29 the generator set. Mounting method shall isolate the control panel from generator-set
- 30 vibration.
- 31 C. Indicating and Protective Devices and Controls: As required by NFPA 110 for Level 2
- 32 system, and the following:
 - 33 1. AC voltmeter.
 - 34 2. AC ammeter.
 - 35 3. AC frequency meter (45 – 65 Hz range).
 - 36 4. DC voltmeter (alternator battery charging).
 - 37 5. Engine-coolant temperature gage.
 - 38 6. Engine lubricating-oil pressure gage.
 - 39 7. Running-time meter.
 - 40 8. Ammeter-voltmeter, phase-selector switch(es).
 - 41 9. Generator-voltage adjusting rheostat.
 - 42 10. Start-stop switch.
 - 43 11. Overspeed shutdown device.
 - 44 12. Coolant high-temperature shutdown device.
 - 45 13. Coolant low-level shutdown device.
 - 46 14. Oil low-pressure shutdown device.
 - 47 15. Generator overload.

16. Lamp test switch.
17. Engine-Generator Control Panel: ANSI/NEMA 250, Type 1 generator mounted control panel enclosure with engine and generator controls and indicators. Include provision for padlock and the following equipment and features:
 - a. Frequency Meter: 45-65 Hz range, 3-1/2-inch dial.
 - b. AC Output Voltmeter: 3-1/2-inch dial, 2 percent accuracy, with phase selector switch.
 - c. AC Output Ammeter: 3-1/2-inch dial, 2 percent accuracy, with phase selector switch.
 - d. Output voltage adjustment.
 - e. Push-to-test indicator lamps, one each for low oil pressure, high water temperature, overspeed, and overcrank.
 - f. Engine start/stop selector switch.
 - g. Engine running time meter.
 - h. Oil pressure gage.
 - i. Water temperature gage.
 - j. Auxiliary Relay: 3PDT, operates when engine runs, with contact terminals prewired to terminal strip.

D. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated.

E. Connection to Data Link: A separate terminal block, factory wired to Form C dry contacts, for each alarm and status indication is reserved for connections for data-link transmission of indications to remote data terminals.

2.5 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. Generator Circuit Breakers: Molded-case, thermal-magnetic type; 100 percent rated; complying with NEMA AB 1 and UL 489.

1. Tripping Characteristic: Designed specifically for generator protection.
2. Trip Rating: Matched to generator rating.
3. Mounting: Adjacent to or integrated with control and monitoring panel.

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 or Class F.

D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required.

E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.

- 1 F. Enclosure: Drip proof.
- 2 G. Instrument Transformers: Mounted within generator enclosure.
- 3 H. Voltage Regulator: Solid-state type, separate from exciter, providing performance as
4 specified.
- 5 1. Adjusting rheostat on control and monitoring panel shall provide plus or minus 5
6 percent adjustment of output-voltage operating band.
- 7 I. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above
8 dew point.
- 9 J. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.

10 2.7 OUTDOOR GENERATOR-SET ENCLOSURE

- 11 A. Description: Vandal-resistant, weatherproof steel housing, wind resistant up to 100 mph.
12 Multiple panels shall be lockable and provide adequate access to components requiring
13 maintenance. Panels shall be removable by one person without tools. Instruments and
14 control shall be mounted within enclosure.

15 2.8 VIBRATION ISOLATION DEVICES

- 16 A. Elastomeric Isolator Pads: Oil- and water-resistant elastomer or natural rubber, arranged in
17 single or multiple layers, molded with a nonslip pattern and galvanized-steel baseplates of
18 sufficient stiffness for uniform loading over pad area, and factory cut to sizes that match
19 requirements of supported equipment.
- 20 1. Material: Standard neoprene.
- 21 2. Durometer Rating: 50.
- 22 3. Number of Layers: Three.

23 2.9 FINISHES

- 24 A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over
25 corrosion-resistant pretreatment and compatible primer.

26 PART 3 - EXECUTION

27 3.1 EXAMINATION

- 28 A. Examine areas, equipment bases, and conditions, with Installer present, for compliance
29 with requirements for installation and other conditions affecting packaged engine-generator
30 performance.
- 31 B. Examine roughing-in of piping systems and electrical connections. Verify actual locations
32 of connections before packaged engine-generator installation.
- 33 C. Proceed with installation only after unsatisfactory conditions have been corrected.

34 3.2 INSTALLATION

- 1 A. Comply with packaged engine-generator manufacturers' written installation and alignment
2 instructions and with NFPA 110.
- 3 B. Install packaged engine generator to provide access, without removing connections or
4 accessories, for periodic maintenance.
- 5 C. Install packaged engine generator with elastomeric isolator pads having a minimum
6 deflection of 1 inch on 4-inch- high concrete base. Secure sets to anchor bolts installed in
7 concrete bases. Concrete base construction is specified in Division 16 Section "Electrical
8 Supports and Seismic Restraints."
- 9 D. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not
10 specified to be factory mounted.
- 11 E. Commission Generator Emergency services in accordance with NEC 700.

12 3.3 CONNECTIONS

- 13 A. Piping installation requirements are specified in Division 15 Sections. Drawings indicate
14 general arrangement of piping and specialties.
- 15 B. Connect fuel, cooling-system, and exhaust-system piping adjacent to packaged engine
16 generator to allow service and maintenance.
- 17 C. Ground equipment according to Division 16 Section "Grounding and Bonding."
- 18 D. Connect wiring according to Division 16 Section "Conductors and Cables."

19 3.4 IDENTIFICATION

- 20 A. Identify system components according to Division 25 Section "Mechanical Identification"
21 and Division 26 Section "Electrical Identification."
- 22 B. Provide labels in accordance with NEC 700.

23 3.5 FIELD QUALITY CONTROL

- 24 A. Perform tests and inspections and prepare test reports.
 - 25 1. Manufacturer's Field Service: Engage a factory-authorized service representative to
26 inspect components, assemblies, and equipment installations, including connections,
27 and to assist in testing.
- 28 B. Tests and Inspections:
 - 29 1. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are
30 additional to those specified here including, but not limited to, single-step full-load
31 pickup test.
 - 32 2. Battery-Charger Tests: Verify specified rates of charge for both equalizing and
33 float-charging conditions.

- 1 C. System Integrity Tests: Methodically verify proper installation, connection, and integrity
2 of each element of engine-generator system before and during system operation. Check for
3 air, exhaust, and fluid leaks.
- 4 D. Coordinate tests with tests for transfer switches and run them concurrently.
- 5 E. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest
6 until no leaks exist.
- 7 F. Operational Test: After electrical circuitry has been energized, start units to confirm
8 proper motor rotation and unit operation.
- 9 G. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and
10 equipment.
- 11 H. Remove and replace malfunctioning units and retest as specified above.
- 12 I. Retest: Correct deficiencies identified by tests and observations and retest until specified
13 requirements are met.
- 14 J. Report results of tests and inspections in writing. Record adjustable relay settings and
15 measured insulation resistances, time delays, and other values and observations. Attach a
16 label or tag to each tested component indicating satisfactory completion of tests.
- 17 3.6 DEMONSTRATION
- 18 A. Describe loads connected to emergency system.
- 19 B. Simulate power outage by interrupting normal source and demonstrate that system operates
20 to provide emergency power.
- 21 END OF SECTION 263213

SECTION 263600 - TRANSFER SWITCHES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes transfer switches rated 600 V and less including the following:

1. Automatic transfer switches.
2. Remote annunciation systems.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, weights, operating characteristics, furnished specialties, and accessories.
- B. Shop Drawings: Dimensioned plans, elevations, sections, and details showing minimum clearances, conductor entry provisions, gutter space, installed features and devices, and material lists for each switch specified.
- C. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section "Operation and Maintenance Data," include the following:
1. Features and operating sequences, both automatic and manual.
 2. List of all factory settings of relays; provide relay-setting and calibration instructions, including software, where applicable.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Maintain a service center capable of providing training, parts, and emergency maintenance repairs within a response period of less than eight hours from time of notification.
- B. Source Limitations: Obtain automatic transfer switches and remote annunciators through one source from a single manufacturer.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- D. Comply with NEMA ICS 1.
- E. Comply with NFPA 70.
- F. Comply with NFPA 99.

G. Comply with NFPA 110.

H. Comply with UL 1008 unless requirements of these Specifications are stricter.

1.5 PROJECT CONDITIONS

A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service:

1. Notify Architect no fewer than two days in advance of proposed interruption of electrical service.
2. Do not proceed with interruption of electrical service without Architect's written permission.

1.6 COORDINATION

A. Coordinate size and location of switch with other trades.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Contactor Transfer Switches:
 - a. Caterpillar; Engine Div.

2.2 RATINGS

A. Ratings: NEMA ICS 2; as follows:

B. Voltage: 208Y/120 volts, three-phase, four wire, 60 Hz.

C. Switched Poles: 4.

D. Continuous Ratings:

1. ATS-LS at minimum 400 amperes.
2. ATS-EQ at minimum 225 amperes.

E. Interrupting Capacity: 100 percent of continuous rating.

F. Withstand Current Rating: 25,000 rms symmetrical amperes when used with circuit breakers (480V).

2.3 GENERAL TRANSFER-SWITCH PRODUCT REQUIREMENTS

- A. Indicated Current Ratings: Apply as defined in UL 1008 for continuous loading and total system transfer, including tungsten filament lamp loads not exceeding 30 percent of switch ampere rating, unless otherwise indicated.
- B. Tested Fault-Current Closing and Withstand Ratings: Adequate for duty imposed by protective devices at installation locations in Project under the fault conditions indicated, based on testing according to UL 1008.
 - 1. Where transfer switch includes internal fault-current protection, rating of switch and trip unit combination shall exceed indicated fault-current value at installation location.
- C. Solid-State Controls: Repetitive accuracy of all settings shall be plus or minus 2 percent or better over an operating temperature range of minus 20 to plus 70 deg C.
- D. Resistance to Damage by Voltage Transients: Components shall meet or exceed voltage-surge withstand capability requirements when tested according to IEEE C62.41. Components shall meet or exceed voltage-impulse withstand test of NEMA ICS 1.
- E. Electrical Operation: Accomplish by a nonfused, momentarily energized solenoid or electric-motor-operated mechanism, mechanically and electrically interlocked in both directions.
- F. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.
 - 1. Limitation: Switches using molded-case switches or circuit breakers or insulated-case circuit-breaker components are not acceptable.
 - 2. Switch Action: Double throw; mechanically held in both directions.
 - 3. Contacts: Silver composition or silver alloy for load-current switching. Conventional automatic transfer-switch units, rated 225 A and higher, shall have separate arcing contacts.
- G. Neutral Switching. Where four-pole switches are indicated, provide neutral pole switched simultaneously with phase poles.
- H. Battery Charger: For generator starting batteries.
 - 1. Float type rated 10 A.
 - 2. Ammeter to display charging current.
 - 3. Fused ac inputs and dc outputs.
- I. Annunciation, Control, and Programming Interface Components: Devices at transfer switches for communicating with remote programming devices, annunciators, or annunciator and control panels shall have communication capability matched with remote device.

J. Factory Wiring: Train and bundle factory wiring and label, consistent with Shop Drawings, either by color-code or by numbered or lettered wire and cable tape markers at terminations. Color-coding and wire and cable tape markers are specified in Division 16 Section "Electrical Identification."

1. Designated Terminals: Pressure type, suitable for types and sizes of field wiring indicated.
2. Power-Terminal Arrangement and Field-Wiring Space: Suitable for top, side, or bottom entrance of feeder conductors as indicated.
3. Control Wiring: Equipped with lugs suitable for connection to terminal strips.

K. Enclosures: General-purpose NEMA 250, Type 1, complying with NEMA ICS 6 and UL 508, unless otherwise indicated.

2.4 AUTOMATIC TRANSFER SWITCHES

A. Comply with Level 1 equipment according to NFPA 110.

B. Switching Arrangement: Double-throw type, incapable of pauses or intermediate position stops during normal functioning, unless otherwise indicated.

C. Manual Switch Operation: Under load, with door closed and with either or both sources energized. Transfer time is same as for electrical operation. Control circuit automatically disconnects from electrical operator during manual operation.

D. Manual Switch Operation: Unloaded. Control circuit automatically disconnects from electrical operator during manual operation.

E. Signal-Before-Transfer Contacts: A set of normally open/normally closed dry contacts operates in advance of retransfer to normal source. Interval is adjustable from 1 to 30 seconds.

F. Digital Communication Interface: Matched to capability of remote annunciator or annunciator and control panel.

G. Automatic Transfer-Switch Features:

1. Under Voltage Sensing for Each Phase of Normal Source: Sense low phase-to-ground voltage on each phase. Pickup voltage shall be adjustable from 85 to 100 percent of nominal, and dropout voltage is adjustable from 75 to 98 percent of pickup value. Factory set for pickup at 90 percent and dropout at 85 percent.
2. Adjustable Time Delay: For override of normal-source voltage sensing to delay transfer and engine start signals. Adjustable from zero to six seconds, and factory set for one second.
3. Voltage/Frequency Lockout Relay: Prevent premature transfer to generator. Pickup voltage shall be adjustable from 85 to 100 percent of nominal. Factory set for pickup at 90 percent. Pickup frequency shall be adjustable from 90 to 100 percent of nominal. Factory set for pickup at 95 percent.

4. Time Delay for Retransfer to Normal Source: Adjustable from 0 to 30 minutes, and factory set for 10 minutes to automatically defeat delay on loss of voltage or sustained under voltage of emergency source, provided normal supply has been restored.
5. Test Switch: Simulate normal-source failure.
6. Switch-Position Pilot Lights: Indicate source to which load is connected.
7. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and emergency-source sensing circuits.
 - a. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."
 - b. Emergency Power Supervision: Red light with nameplate engraved "Emergency Source Available."
8. Unassigned Auxiliary Contacts: Two normally open, single-pole, double-throw contacts for each switch position, rated 10 A at 240-V ac.
9. Transfer Override Switch: Overrides automatic retransfer control so automatic transfer switch will remain connected to emergency power source regardless of condition of normal source. Pilot light indicates override status.
10. Engine Starting Contacts: One isolated and normally closed, and one isolated and normally open; rated 10 A at 32-V dc minimum.
11. Engine Shutdown Contacts: Instantaneous; shall initiate shutdown sequence at remote engine-generator controls after retransfer of load to normal source.
12. Engine Shutdown Contacts: Time delay adjustable from zero to five minutes, and factory set for five minutes. Contacts shall initiate shutdown at remote engine-generator controls after retransfer of load to normal source.
13. Engine-Generator Exerciser: Solid-state, programmable-time switch starts engine generator and transfers load to it from normal source for a preset time, then retransfers and shuts down engine after a preset cool-down period. Initiates exercise cycle at preset intervals adjustable from 7 to 30 days. Running periods are adjustable from 10 to 30 minutes. Factory settings are for 7-day exercise cycle, 20-minute running period, and 5-minute cool-down period. Exerciser features include the following:
 - a. Exerciser Transfer Selector Switch: Permits selection of exercise with and without load transfer.
 - b. Push-button programming control with digital display of settings.
 - c. Integral battery operation of time switch when normal control power is not available.

2.5 REMOTE ANNUNCIATOR

- A. Remote Alarm Annunciator: Comply with NFPA 99. An LED labeled with proper alarm conditions shall identify each alarm event and a common audible signal shall sound for each alarm condition. Silencing switch in face of panel shall silence signal without altering visual indication. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset. Cabinet and faceplate are flush-mounting type to suit mounting conditions indicated. The following alarm conditions shall be annunciated at a minimum:
 1. Engine high-temperature shutdown.
 2. Lube-oil, low-pressure shutdown.

3. Overspeed shutdown.
4. Engine high-temperature pre-alarm.
5. Lube-oil, low-pressure pre-alarm.
6. Overcrank shutdown.
7. Coolant low-temperature alarm.
8. Control switch not in auto position.
9. Battery-charger malfunction alarm.
10. Battery low-voltage alarm

2.6 SOURCE QUALITY CONTROL

- A. Factory test and inspect components, assembled switches, and associated equipment. Ensure proper operation. Check transfer time and voltage, frequency, and time-delay settings for compliance with specified requirements. Perform dielectric strength test complying with NEMA ICS 1.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Design each fastener and support to carry load indicated by seismic requirements and according to seismic-restraint details. See Division 16 Section "Electrical Supports and Seismic Restraints."
- B. Annunciator and Control Panel Mounting: Flush in wall, unless otherwise indicated.
- C. Identify components according to Division 16 Section "Electrical Identification."
- D. Set field-adjustable intervals and delays, relays, and engine exerciser clock.
- E. Verify that surfaces are ready to receive work.

3.2 CONNECTIONS

- A. Wiring to Remote Components: Match type and number of cables and conductors to control and communication requirements of transfer switches as recommended by manufacturer. Increase raceway sizes at no additional cost to Owner if necessary to accommodate required wiring.
- B. Ground equipment according to Division 26 Section "Grounding and Bonding."
- C. Connect wiring according to Division 26 Section "Conductors and Cables."

3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections. Report results in writing.
- B. Coordinate tests with tests of generator and run them concurrently.

1 C. Report results of tests and inspections in writing. Record adjustable relay settings and
2 measured insulation and contact resistances and time delays. Attach a label or tag to each
3 tested component indicating satisfactory completion of tests.

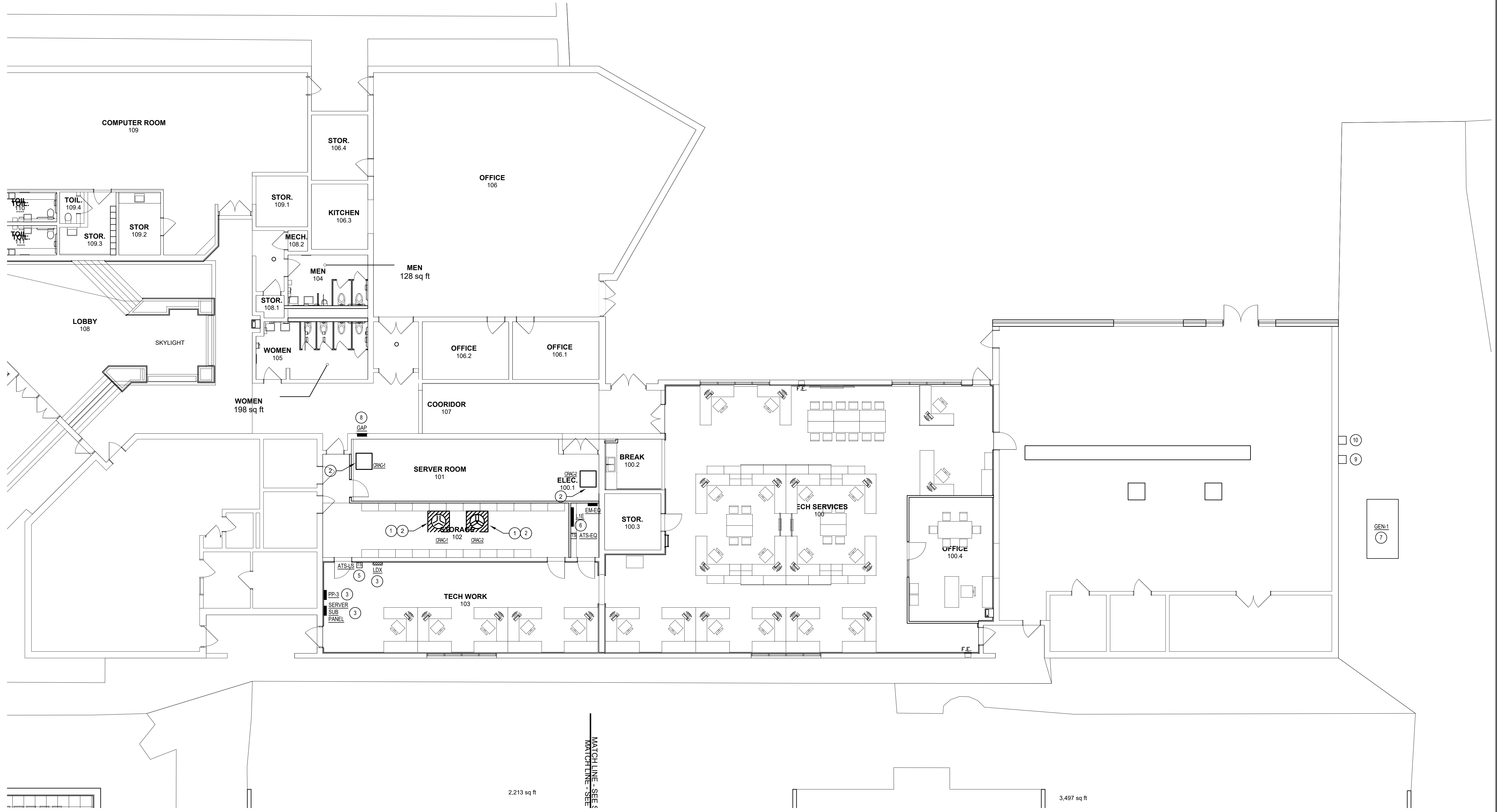
4 D. Remove and replace malfunctioning units and retest as specified above.

5 3.4 DEMONSTRATION

6 A. Engage a factory-authorized service representative to train Owner's maintenance personnel
7 to adjust, operate, and maintain transfer switches and related equipment as specified below.
8 Refer to Division 1 Section "Demonstration and Training."

9 B. Coordinate this training with that for generator equipment.

10 END OF SECTION 263600



NOTES: (THIS SHEET ONLY)

- EXISTING TO REMAIN MECHANICAL UNIT IS LOCATED ON ROOF.
- CONTRACTOR SHALL DISCONNECT AND RECONNECT TO NEW PANELBOARD. DISCONNECT AND MECHANICAL EQUIPMENT IS EXISTING TO REMAIN. EXTEND EXISTING CIRCUIT FROM PANELBOARD L1E TO PANELBOARD EM-E2.
- EXISTING TO REMAIN ELECTRICAL EQUIPMENT.
- GENERAL: SEE ELECTRICAL POWER RISER DIAGRAM ON ELECTRICAL SHEET E501 FOR MORE INFORMATION ON ELECTRICAL EQUIPMENT.
- EXISTING AUTOMATIC TRANSFER DEVICE SHALL BE REMOVED. PROVIDE NEW 400A ATS AND CONNECT TO NEW GENERATOR.
- EXISTING TO REMAIN SQUARE D, TYPE NO. 208/120V, 3PH, 4W PANELBOARD.
- PROPOSED LOCATION OF NEW GENERATOR GEN-1.
- PROPOSED LOCATION OF NEW GENERATOR ANNUNCIATOR PANEL GAP. RELOCATE AND EXTEND EXISTING CIRCUIT AS REQUIRED.
- PROPOSED LOCATION OF NEW GENERATOR CONNECTION CABINET. BASIS OF DESIGN: BERTHOLD #W04-35-M-3-6-10 EQUALS BY TRYSTAR AND STATES MANUFACTURING.
- PROPOSED LOCATION OF NEW DOUBLE THROW MANUAL TRANSFER SWITCH. 400A/3P/NEMA 3R.

ELECTRICAL NEW WORK PLAN

SCALE: $\frac{1}{8}" = 1'-0"$

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KEY PLAN

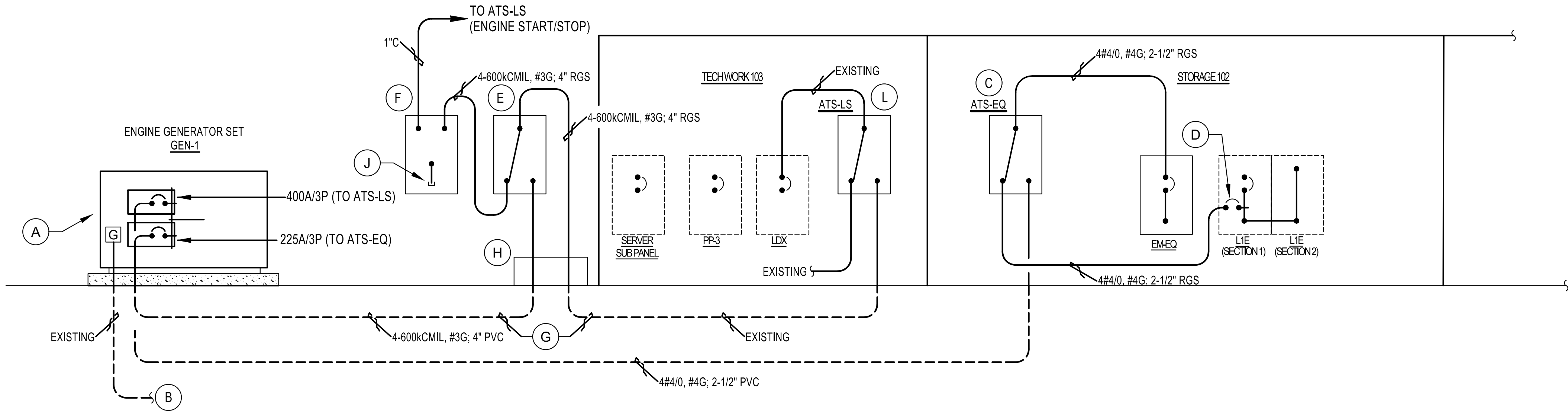
LAFAYETTE EDUCATION CENTER TECHNOLOGY
BUILDING GENERATOR UPGRADE
205 LAFAYETTE AVE., FAYETTEVILLE, GA 30214
FAYETTE COUNTY SCHOOLS, GEORGIA

REVISIONS		
NO.	DATE	DESCRIPTION

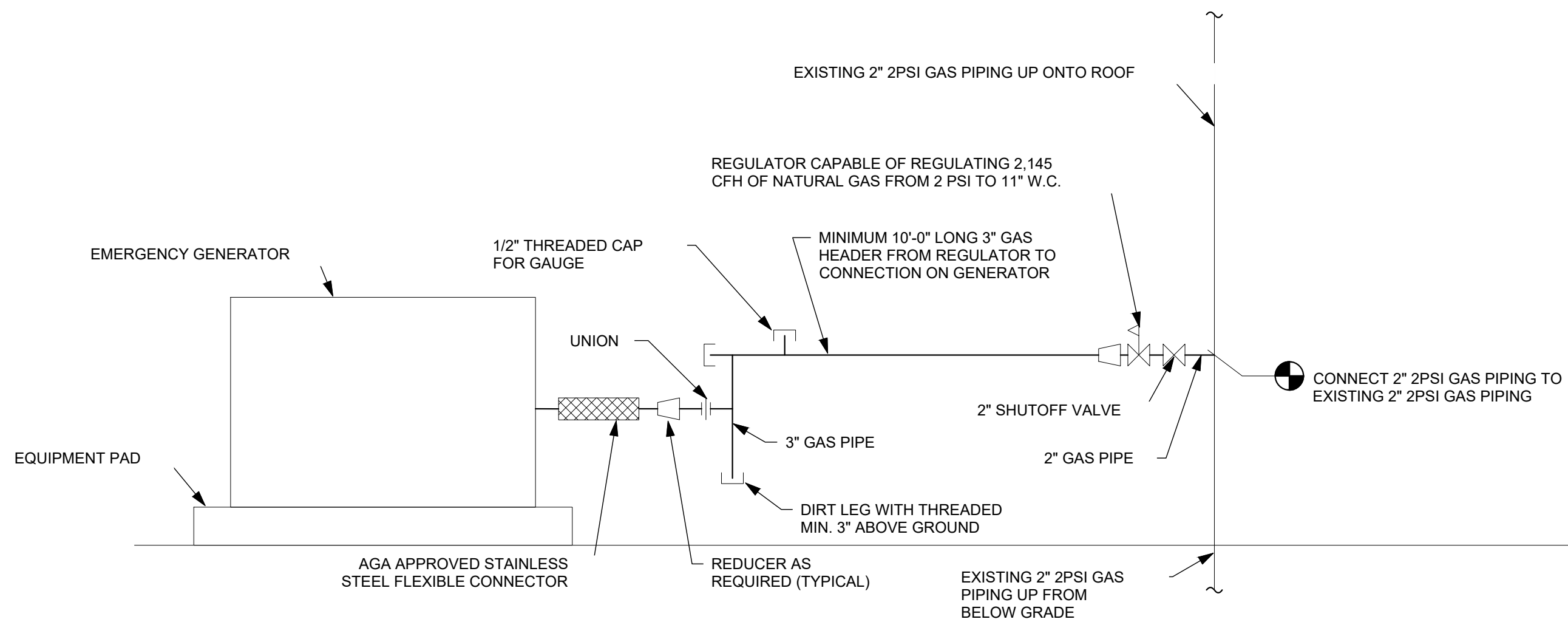
DATE: July 22, 2025
PROJECT NUMBER: 2025001
DRAWN BY: AJS
CHECKED BY: NHO
TITLE: ELECTRICAL NEW WORK PLAN

SHEET NUMBER:

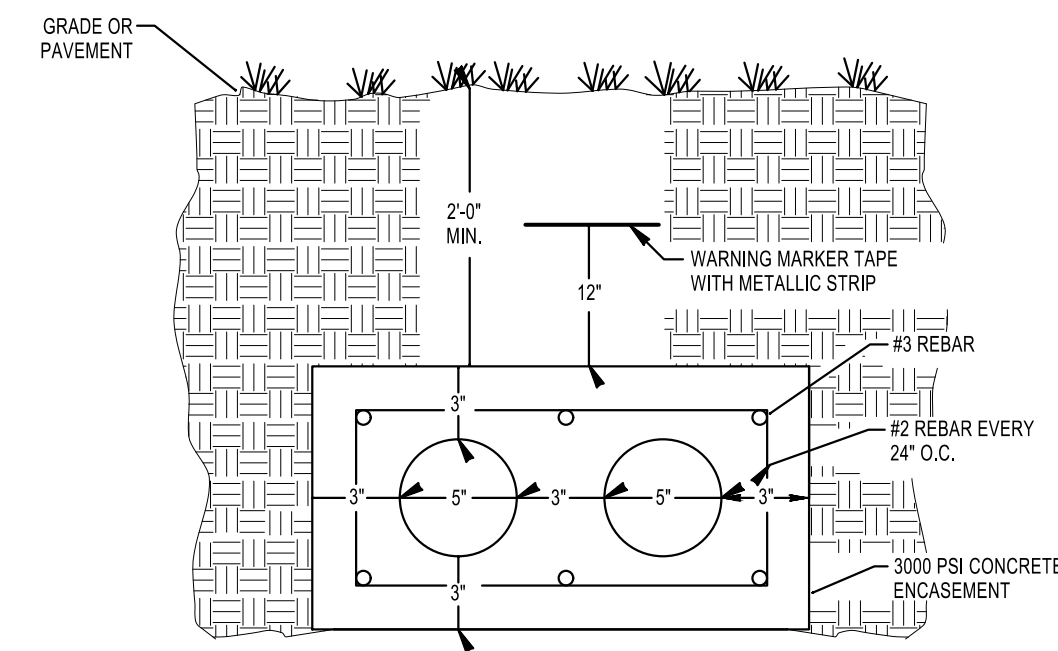
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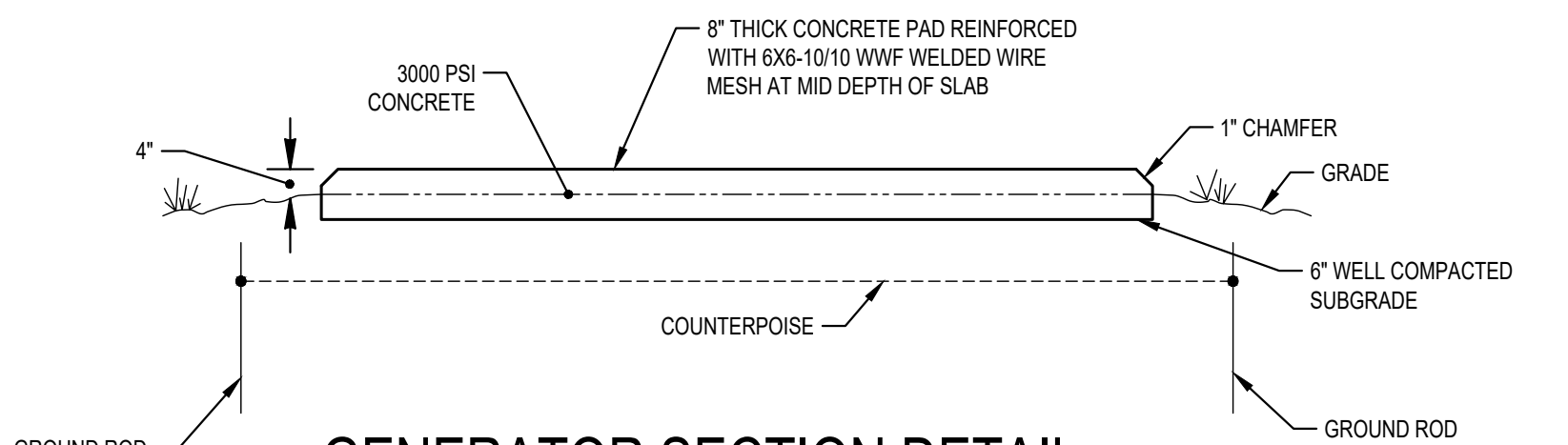
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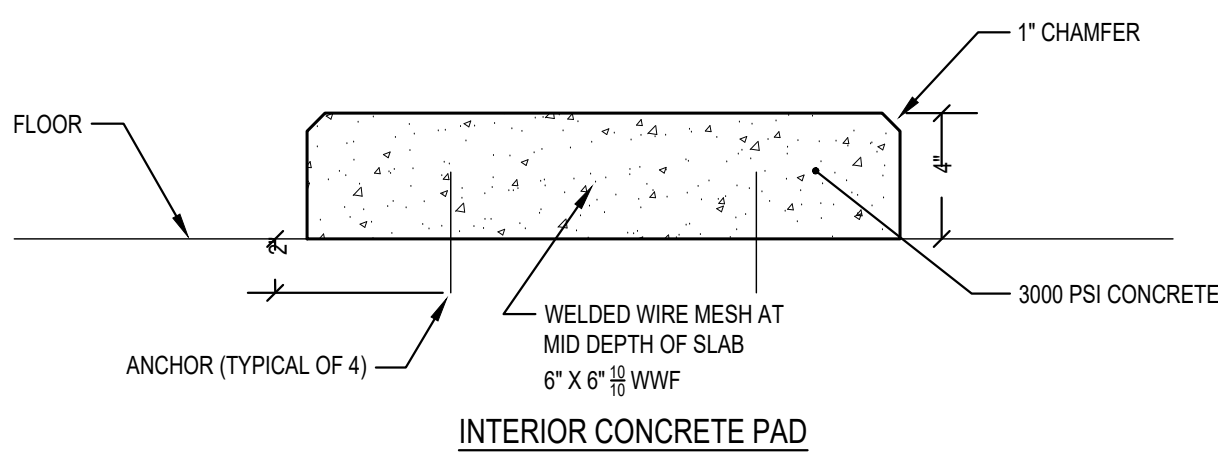
TYPICAL GENERATOR GAS CONNECTION
SCALE: _____ NONE



DUCT BANK DETAIL
SCALE: _____ NONE



GENERATOR SECTION DETAIL
SCALE: _____ NONE



CONCRETE EQUIPMENT PAD DETAIL
SCALE: _____ NONE

NOTES: (THIS SHEET ONLY)

- (A) CONTRACTOR SHALL DEMOLISH EXISTING GENERATOR AND GENERATOR PAD. PROVIDE NEW 208/120V, 3 PH, 4W, 175kW NATURAL GAS GENERATOR BY CATERPILLAR. PROVIDE NEW GENERATOR PAD. SEE SPECIFICATION FOR MORE INFO. MAKE CONNECTIONS TO NEW GENERATOR BATTERY CHARGER, JACKET HEATER, AND ANNUNCIATOR PANEL.
- (B) CONTRACTOR SHALL DISCONNECT AND RECONNECT EXISTING GROUNDING CONDUCTOR TO BUILDING GROUNDING SYSTEM. EXTEND AS REQUIRED.
- (C) CONTRACTOR SHALL PROVIDE 208/120V, 3PH, 4W, 4P, 225A AUTOMATIC TRANSFER SWITCH WITH SWITCHED NEUTRAL. SEE SPECIFICATION FOR MORE INFO.
- (D) PROVIDE 100% RATED 225A/3P CIRCUIT BREAKER IN PANELBOARD FOR NEW CIRCUIT. MAKE ALL CONNECTIONS. SEE SPECIFICATIONS FOR MORE INFORMATION.
- (E) MANUAL TRANSFER SWITCH. SEE ELECTRICAL SHEET E101 FOR MORE INFORMATION.
- (F) TEMPORARY GENERATOR CONNECTION CABINET. SEE ELECTRICAL SHEET E101 FOR MORE INFORMATION.
- (G) CONTRACTOR SHALL INTERCEPT EXISTING FEEDER TO ATS AND INSTALL PULLBOX FOR NEW CONNECTIONS TO AND FROM NEW MANUAL TRANSFER SWITCH.
- (H) PULLBOX SIZED FOR MANUAL TRANSFER SWITCH CIRCUITS.
- (J) CAM-LOCKS FOR TEMPORARY ENGINE GENERATOR CONNECTIONS.
- (K) GENERAL: EQUIPMENT DRAWN WITH DASHED LINE ARE EXISTING TO REMAIN.
- (L) CONTRACTOR SHALL PROVIDE 208/120V, 3PH, 4W, 4P, 400A AUTOMATIC TRANSFER SWITCH WITH SWITCHED NEUTRAL. SEE SPECIFICATION FOR MORE INFO.

PANEL		E1-E4		MAINS		225A MB (100% RATED)		A.I.C.		25,000									
VOLTAGE		208/120V, 3PH, 4W		ENTRY		TOP		MOUNTING		SURFACE									
DEVICE			BRANCH CIRCUIT						PHASE LOAD (KVA)			BRANCH CIRCUITS						DEVICE	
N O T E	P O L E	T R I P	DESIGNATION		CONDUCTOR	CON- DUIT	CONN KVA	No.	A	B	C	No.	CONN KVA	CON- DUIT	CONDUCTOR	DESIGNATION	T R I P	P O L E	N O T E
3	15		CRAC-1 (OUTDOOR)		3#12, #12G	1/2"	0.5	01	1.0			02	0.5	1/2"	3#12, #12G	CRAC-2 (OUTDOOR)	15	3	
							0.5	03		1.0		04	0.5						
							0.5	05			1.0	06	0.5						
3	150		CRAC-1 (INDOOR)		3#1/0, #16G	2"	12.8	07	25.5			08	12.8	2"	3#1/0, #16G	CRAC-2 (INDOOR)	150	3	
							12.8	09		25.5		10	12.8						
							12.8	11		25.5		12	12.8						
1	20		SPARE					13	0.0			14				SPARE	20	1	
1	20		SPARE					15	0.0			16				SPARE	20	1	
			SPACE					17			0.0	18				SPACE			
			SPACE					19	0.0			20				SPACE			
			SPACE					21		0.0		22				SPACE			
			SPACE					23			0.0	24				SPACE			
			SPACE					25	0.0			26				SPACE			
			SPACE					27		0.0		28				SPACE			
			SPACE					29			0.0	30				SPACE			
			SPACE					31	0.0			32				SPACE			
			SPACE					33		0.0		34				SPACE			
			SPACE					35			0.0	36				SPACE			
			SPACE					37	0.0			38				SPACE			
			SPACE					39		0.0		40				SPACE			
			SPACE					41			0.0	42				SPACE			
								26.5	26.5	26.5									

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AH&P
CONSULTING
ENGINEERS



KEY PLAN

LAFAYETTE EDUCATION CENTER TECHNOLOGY
BUILDING GENERATOR UPGRADE
205 LAFAYETTE AVE, FAYETTEVILLE, GA 30214
FAYETTE COUNTY SCHOOLS, GEORGIA

REVISIONS

NO.	DATE	DESCRIPTION

DATE: July 22, 2025

PROJECT NUMBER: 2025001

DRAWN BY: AJS

CHECKED BY: NHO

TITLE:
ELECTRICAL RISER DIAGRAM,
DETAILS & PANELBOARD
SCHEDULE

SHEET NUMBER:

E501

Solicitation Response Form

RFP 26-009-075 Generator Replacement for Technology Services

Place this form on top of your response.

Company Name:	
Point of Contact:	
Street Address:	
City:	
State:	
Zip Code:	
Telephone:	
Email:	
Website:	

Authority to Act

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the products/services in accordance with the terms and conditions herein.

Terms, Conditions, and Specifications

Through the submission of response and signature below, the respondent verifies that their solution, if applicable, complies fully, or complies with an exception, to all stated general and special terms, conditions, and specifications. See the FCPS General Terms and Conditions for further information and directions on notating exceptions to stated specifications.

Addenda

Through the submission of response and signature below the respondent verifies that they have read and understood any addenda issued for this solicitation if issued.

Signature: _____ Date: _____

Business Capability and Respondent Qualification Questionnaire (RFP 26-009-075)

Please answer all questions fully. Additional pages for responses must be clearly marked to identify the respondent's name and solicitation number.

- 1) How long has your company been in business?
- 2) What was your annual gross revenue in 2024?
- 3) Please indicate current contracts in hand similar to the scope of this project and attach a separate document indicating the name, telephone, and email of each owner/controlling firm; and the status and completion date of each. (Must Include Attachment).
- 4) Does your company have experience in public school services? List all public school projects completed in Georgia since 2015.
- 5) Has your company ever completed a project more than one month behind schedule? If so, please identify the project and explain the circumstances. (If applicable, must include an attachment.)
- 6) Has your company ever failed to complete any work awarded to it? If so, please explain. (If applicable, must include an attachment.)
- 7) Has your company ever defaulted on a contract? If so, please explain. (If applicable, must include an attachment.)
- 8) Please indicate your company's bonding capacity.
- 9) Please indicate your company's insurance carrier.
- 10) Please indicate whether any insurance claim has been made against or by your company in the past seven (7) years, the circumstances surrounding such claims, and the outcome. (If applicable, must include an attachment.)
- 11) Please indicate whether any legal claim, administrative hearings and/or proceedings has been made against your company in the past seven (7) years (including state and federal Department of Labor as well as OSHA), the circumstances surrounding such claims, and the adjudicated outcome. (If applicable, must include an attachment.)
- 12) Please list bank reference:
- 13) Has your company ever had a bankruptcy petition, arbitration demand, or lien filed against it in the previous seven (7) years? If so, please explain. (If applicable, must include an attachment.)
- 14) Has your company, any principal officers, or project managers had any criminal investigations or proceedings brought against them in the previous ten (10) years? If so, please explain. (If applicable, must include an attachment.)
- 15) Please attach a separate list of all employees who will be assigned to work on the project described herein and include any professional licenses or certifications they hold. (Must Include Attachment)

The respondent attests that the information included as attachments and responses are true and accurate as of the date of submission. Respondent also agrees by submission to allow Fayette County Public Schools to review or investigate any response contained herein. Respondent may be required to submit recent financial statements/reports and should indicate any objection herein. Failure to indicate or answer questions may deem the proposal non-responsive.

Notarized

FAYETTE COUNTY PUBLIC SCHOOLS - PURCHASING DEPARTMENT
GEORGIA SECURITY & IMMIGRATION COMPLIANCE ACT FORM

**GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT OF 2006, AS AMENDED BY
THE ILLEGAL IMMIGRATION REFORM ACT OF 2011, OCGA 13-10-90, ET SEQ.**

TO ALL PROSPECTIVE CONTRACTORS:

If you are providing services to Fayette County Public Schools, this completed document, as well as the applicable Georgia Security and Immigration Compliance forms and affidavits referenced herein must be completed, signed, notarized and submitted with your bid, proposal or contract.

Fayette County Public Schools shall comply with the Georgia Security and Immigration Compliance Act, as amended, O.C.G.A., ~13-10-90 et seq. In order to ensure compliance with the Immigration Reform and Control Act of 1986 (IRCA, P.L. 99-603 and the Georgia Security and Immigration Compliance Act of 2006, as amended by the Illegal Immigration Reform Act of 2011, O.C.G.A. ~ 13-10-90 et seq. (collectively the "Act") the contractor ("Contractor") **MUST INITIAL** the statement applicable to Contractor below:

INITIAL ONLY ONE CHOICE BELOW

____ (Initial here) Contractor represents and warrants that Contractor has registered at <https://e-verify.uscis.gov/enroll/> to verify information of all new employees in order to comply with the Act; Is authorized to use and uses the federal authorization program; and will continue to use the authorization program throughout the contract period. Contractor further represents, warrants and agrees that it shall execute and return any and all affidavits required by the Act and the rules and regulations issued by the Georgia Department of Labor as set forth at Rule 300-10-1-01 et seq. In accordance with the terms thereof; (Complete and submit the Contractor Affidavit and Agreement); **OR**

____ (Initial here) Contractor represents and warrants that it has no employees and does not intend to hire employees to perform contractual services, and that Contractor has therefore provided a U.S. state-issued Driver's license or ID card in lieu of an affidavit and that such license or ID card was issued by a State that verifies lawful Immigration status before issuing the license or ID card. If my status changes I will, before hiring any employees, immediately notify the School District in writing and provide all affidavits required under the Act; **OR**

____ (Initial here) Contractor represents and warrants that it does not physically perform any service within the State of Georgia as defined in the Act and thus does not have to comply with foregoing Georgia law; **OR**

____ (Initial here) Contractor is a foreign company and therefore not required to provide the affidavit as required by the Act. The Contractor must comply with any other laws required to perform services in the United States, including but not limited to having an appropriate visa.

USE OF SUBCONTRACTOR(S) and COMPLIANCE AS ABOVE

____(Initial here) Contractor will not employ or contract with any subcontractor in connection with a covered contract unless the subcontractor is registered, is authorized to use, and uses the Federal Work Authorization Program and provides Contractor with all affidavits required by the Act and the rules and regulations issued by the Georgia Department of labor as set forth at Rule 300-10-01 et seq.

____(Initial here) Contractor covenants and agrees that, if Contractor employs or contracts with any Subcontractor in connection with the covered contract under the Act and DOL Rule 300-10-1-02, then in such event Contractor will secure from each subcontractor at the time of the subcontract, the subcontractor's name and address, the employer identification number/taxpayer identification number applicable to the subcontractor; the date the authorization to use the Federal Work Authorization Program was granted to subcontractor; the subcontractor's attestation of the subcontractor's compliance with the Act and Georgia Department of Labor Rule 300-10-1-.2.; and the subcontractor's agreement not to contract with subcontractors unless the subcontractor is registered, authorized to use, and uses the Federal Work Authorization Program; and provides subcontractor with all affidavits required by the Act and the rules and regulations issued by the Georgia Department of Labor as set forth at Rule 300-10-1-01 et seq. (Complete and submit the Subcontractor Affidavit and Agreement)

____(Initial here) Contractor agrees to provide Fayette County Public Schools with all affidavits of compliance as required by the Act and Georgia Department of Labor Rule 300-10-1-02, 300-10-1-03, 300-10-1-07 and 300-10-1-08 within five (5) business days of its receipt of any such documents.

Company Name: _____

SIGNATURE: _____

DATE: _____

FAYETTE COUNTY PUBLIC SCHOOLS - PURCHASING DEPARTMENT
CONTRACTOR AFFIDAVIT PROVIDED PURSUANT TO O.C.G.A. § 13-10-91(b)(2)

(Rev. 4/18/2019)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91 stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with Fayette County Public Schools, has registered with, is authorized to use, and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor covenants that it will continue to use the federal work authorization program throughout the contract period, that the undersigned contractor will contract for the physical performance of services in the performance of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b), and that the contractor shall forward any subcontractor's affidavit to the School District within five (5) days of its receipt of the same.

Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

**EEV User Identification
Number (4 to 6 Digit Number)**

Date of Authorization

Contractor/Company

Email Address

Telephone Number

Name of Project

Project Number

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, 20__ in _____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name of Authorized Officer or Agent

Title of Authorized Officer or Agent

NOTARY INFORMATION

Sworn to before me this __ day of _____, 20__.

Notary Public Signature

My Commission Expires: _____

Affix Notarial Seal Here

FAYETTE COUNTY PUBLIC SCHOOLS - PURCHASING DEPARTMENT
SUBCONTRACTOR AFFIDAVIT PURSUANT TO O.C.G.A. § 13-10-91(b)(3)

(Rev. 4/18/2019)

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91 stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with _____, which has a contract with Fayette County Public Schools, has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor covenants that it will continue to use the federal work authorization program throughout the contract period, that the undersigned subcontractor will contract for the physical performance of services in the performance of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b), and that the subcontractor shall forward any sub-subcontractors affidavit to the contractor and School District within five (5) days of its receipt of the same.

Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

**EEV User Identification
Number (4 to 6 Digit Number)**

Date of Authorization

Subcontractor/Company

Email Address

Telephone Number

Name of Project

Project Number

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, 20__ in _____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name of Authorized Officer or Agent

Title of Authorized Officer or Agent

NOTARY INFORMATION

Sworn to before me this __ day of _____, 20__.

Notary Public Signature

My Commission Expires: _____

Affix Notarial Seal Here