

Newmarket Elementary School Electrical Upgrades, 2022

NEWMARKET SCHOOL DISTRICT REQUEST FOR PROPOSAL

Newmarket Elementary School Electrical Upgrades, 2022

DEADLINE FOR RECEIPT OF PROPOSALS: **May 4, 2022 3:00 PM**

LOCATION OF NES: **Newmarket School District
School Administrative Unit # 31
243 Main Street
Newmarket, NH 03857**

PROPOSAL SUBMITTAL ADDRESS: **Newmarket School District
School Administrative Unit # 31
Attn: Janna Mellon, Business Administrator
186A Main Street
Newmarket, NH 03857**

School Administrative Unit #31- Newmarket School District (“District”) is issuing this request for proposals (“RFP”), for the purpose of obtaining Proposals from qualified Electrical Contractors (“Contractors”) for electrical upgrades at Newmarket Elementary School. The scope of work is described in the drawings prepared by Bennett Engineering (attached to this RFP) and described in the additional specifications documents included in this RFP (Attachment A). Drawings will be provided with this RFP.

TERMS AND CONDITIONS:

1. **BID ACCEPTANCE:** The Newmarket School District reserves the right to accept or reject any and all bids or proposals received or any parts thereof for any reason whatsoever, to waive any informalities in any bid or proposal or in any provision in the request for bids or proposals, to negotiate with any or all proposers, to require a modification of the RFP at any time, and to select the proposer whom, the District, in its sole discretion determines is in the best interests of the District even though the proposer may not submit the lowest bid or proposal. Under no circumstances will the District be responsible for the cost of preparing any bid or proposal.
2. A mandatory site visit shall be held on **Monday April 25, 2022 at 9:00 a.m.** at the Newmarket Elementary School.
3. **FINAL BID PRICE:** If the bidder has any special payment or delivery clauses which could affect the final delivery price of an item or service for bid, that too shall be made part of the bid. If, however, this is not included in the bid, the bidder will be solely responsible for any increased prices due to any circumstances.
4. **NON-TRANSFERRING OF AWARD:** No bidder will be allowed to assign the contract.

BIDDER'S INITIALS: _____

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5. REQUIRED COMPLETION DATE: All work must be complete prior to August 15, 2022, unless an extension is agreed upon and pre-authorized in writing by the District.
6. LATE PROPOSAL/BIDS: ONLY SEALED PAPER BIDS will be accepted. ***No late bids will be accepted after 3:00 pm May 4, 2022.*** Any bids received after the specified date and time will not be considered, nor will late bids be opened.
7. PAYMENT TERMS: SAU 31-Newmarket School District will pay the selected Contractor within thirty (30) days following receipt of invoices.
8. WITHDRAWAL OF BIDS/PROPOSALS: Proposals may be withdrawn prior to the opening date and time upon written request of the Bidder. Negligence on the part of the Bidder in preparing his/her proposal shall not constitute a right to withdraw a bid subsequent to the bid opening.
9. PRICING: Unless otherwise specified, all prices listed are firm for the term of the contract. All prices should include all labor and material costs, and any discounts offered.
10. BID RESULTS: The SAU Business Office will not respond to phone inquiries for bid results. Individuals or company representatives may attend a bid opening which is open to all interested parties or by emailing for a summary of the bids. Bid award results will only be released to parties via email once the Newmarket School Board has been notified and awarded the bid. The bids and proposals are governmental records and shall be available to the public under the Right-to-Know Law. The District will not accept bids or proposals marked confidential in whole or in part. All concepts, information, and cost savings alternatives presented by the Bidder during the bid selection process shall become the property of the District and shall thereafter be used at the District's sole discretion. The District shall own all instruments of service.
11. CONTRACT REQUIREMENTS:
 - (a) The selection of the Contractor is conditioned upon the Contractor executing an agreement acceptable to the District. In the event the District cannot reach an agreement with the apparently selected Contractor to the District's satisfaction, the District reserves the right to terminate negotiations with no obligation to the apparently selected Contractor and to enter into any agreement with any other party of the District's choosing.
 - (b) The District may at any time terminate the services and/or contract with the Contractor for the District's convenience and without cause. In the case of such termination for the District's convenience, the Contractor shall be entitled to receive payment from the District limited to actual documented expenses of the Contractor as of the termination date as its sole remedy. In no event will the District be responsible for lost profits, compensatory or other consequential damages.
 - (c) To the fullest extent permitted by law, Contractor shall indemnify and hold harmless SAU 31-Newmarket School District, and the District's officials, agents, employees, and volunteers or any of them from and against claims, damages, losses and expenses, including but not limited to attorneys fees arising out of or resulting from performance of the work provided that such claim, damage, loss or expenses is attributable to bodily injury, sickness, disease or death, or to injury or to destruction of tangible property caused by the negligent and intentional acts or omissions of Contractor, a subcontractor or anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part or by a party indemnified hereunder. The indemnification provision shall survive termination or expiration of this agreement.

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- (d) The guaranteed maximum price shall not be exceeded under any circumstances unless the District gives prior written approval to the work and the additional cost of the work prior to the work being undertaken that would form the basis of Contractor's claim to an additional amount over the guaranteed maximum price.
 - (e) The District shall retain ten percent (10%) of any progress payment until the final completion and acceptance of the work by the District.
 - (f) Changes in the work or the time to complete the work shall be accomplished only by change order. Accordingly, no course of conduct or dealings between the parties, nor any expressed or implied acceptance of alterations or additions to the work and no claim that the District has been unjustly enriched by any alterations or additions to the work whether or not there is, in fact, any unjust enrichment to the work shall be the basis of the claim to an increase in the amounts due.
12. **NON-APPROPRIATION CLAUSE:** Multi-year contracts entered as a result of this RFP require a non-appropriation clause.
 13. **INSURANCE:** The selected Contractor awarded the bid will be required to submit a certificate of insurance and policy endorsements naming the SAU 31-Newmarket School District as additional insured. Said certificate of insurance must have a minimum liability limit of \$1,000,000.00 for Comprehensive General Liability Combined Single Limit and workers' compensation coverage in accordance with NH State law. The Contractor shall procure and maintain for the duration of this project Workmen's Compensation Insurance as required by State Law for all employees that are engaging in any work at the project site, whether directly employed or subcontracting associates. The Contractor shall provide builders risk insurance. Upon award of the bid, Contractor will furnish a current Certificate of Insurance to the SAU Business Office no later than 5 business days of receiving notification of bid award, and ***prior to the commencement of any work being performed.*** The Newmarket School District shall be named an Additional Insured on the Certificate of Insurance and policy endorsements.
 14. All quotations must be signed by an authorized representative of the Contractor.
 15. Should a Contractor find discrepancies in or omissions from the specifications, or should he/she be in doubt as to their meaning, the Contractor shall at once notify the DISTRICT, who will send written instructions to all Contractors. The District will not be responsible for any oral instructions or addendums.
 16. Proposals should be prepared simply and economically providing a straightforward, concise description of the Contractor's ability to meet the requirements of the RFP.
 17. All work in the District must meet the requirements of all applicable town, local and state codes, laws and ordinances, permits, in addition to any technical societies referenced herein. Contractor shall obtain all required permits and provide copies of the permits to the District.
 18. All questions during the bidding period should be directed to David Reilly, Facilities Director. Questions should be submitted by email and will be shared with all potential bidders. Email: reillyd@newmarket.k12.nh.us. Please copy Janna Mellon, Business Administrator at mellonj@newmarket.k12.nh.us. Last opportunity to submit questions shall be Friday, April 29, 2022 by 3pm.
 19. Proposal due date is Wednesday, May 4, 2022 by 3pm. Sealed proposals should be submitted to Janna Mellon, Business Administrator at 186A South Main Street, Newmarket, NH. Please reference **Newmarket Elementary School Electrical Upgrades, 2022** on the sealed envelope.
 20. The District's decision with regard to the selection of the Contractor shall be considered final.
 21. The District reserves the right to investigate the financial responsibility of any and all submitters to determine the ability of the firm and/or individual to assure services throughout the term of the project and to provide insurance that will be required by the District.

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22. PAYMENT AND PERFORMANCE BONDS: The Newmarket School District requires Payment and Performance Bonds for projects that are over \$125,000.00 be supplied to the SAU Business Office, prior to commencing work.
23. GUARANTEES AND WARRANTY: All parts and labor must be guaranteed and include a warranty of at least one year after final completion of the work and with an additional one-year warranty commencing on the date that any defective or nonconforming work was corrected.

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Attachment A - Additional Information

Additional Information (see also attached drawings and sections):

General:

- a. All material installation shall be installed per manufacturer's specifications.
- b. All materials shall be provided in accordance with the products specified in RFP, unless a change is agreed upon in writing by the District.
- c. Colors of materials, if unspecified, will be selected by the District upon receipt and review samples.
- d. Costs for disposal of debris and other construction materials shall be included in the price of the bid.
- e. All electrical components shall be provided and installed in accordance with the general notes and other specifications as shown on the attached drawings and documents provided by Bennett Engineering.
- f. All existing conditions and dimensions shown in drawings are approximate. While every effort has been made toward accuracy, square footage and dimensions need to be verified by Contractor and adjusted on site as needed.
- g. Given the disruptive nature of this project, all work must be performed in a manner that minimizes disruption to staff and students, such as during school vacations or over the summer. All work schedules must be approved in advance by the Facilities Director. **All work must be substantially completed on or before August 15, 2022, unless an extension is agreed upon and pre-approved in writing by the District.**
- h. All work performed and all equipment provided as part of this RFP shall be as specified in the following as shown below:
 - Section 260533-Raceways and Boxes for Electrical Systems
 - Section 262726-Wiring Devices
 - Section 264700-Panelboards
 - Section 260519-Low-Voltage Electrical Power Conductors and Cables
 - Section 262200- Low-voltage Transformers

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Attachment A - Additional Information
Section 260533

SECTION 260533- RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Metal conduits, tubing, and fittings.
 - 2. Nonmetal conduits, tubing, and fittings.
 - 3. Boxes, enclosures, and cabinets.

1.3 DEFINITIONS

- A. GRC: Galvanized rigid steel conduit.

1.4 ACTION SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

PART 2 - PRODUCTS

2.1 METAL CONDUITS, TUBING, AND FITTINGS

- A. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. GRC: Comply with ANSI C80.1 and UL 6.
- C. EMT: Comply with ANSI C80.3 and UL 797.
- D. FMC: Comply with UL 1; zinc-coated steel or aluminum.
- E. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.
- F. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
 - 1. Fittings for EMT:
 - a. Material: Steel or die cast.

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- b. Type: Setscrew.
- 2. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions were installed, and including flexible external bonding jumper.
- G. Joint Compound for GRC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.2 NONMETALLIC CONDUITS, TUBING, AND FITTINGS

- A. Listing and Labeling: Nonmetallic conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.
- C. Fittings for RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.
- D. Solvent cements and adhesive primers shall have a VOC content of 510 and 550 g/L or less, respectively, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.3 BOXES, ENCLOSURES, AND CABINETS

- A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- C. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, aluminum, Type FD, with gasketed cover.
- D. Luminaire Outlet Boxes: Nonadjustable, designed for attachment of luminaire weighing 50 lb (23 kg). Outlet boxes designed for attachment of luminaires weighing more than 50 lb (23 kg) shall be listed and marked for the maximum allowable weight.
- E. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- F. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, cast aluminum with gasketed cover.
- G. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
- H. Device Box Dimensions: 4 inches square by 2-1/8 inches deep (100 mm square by 60 mm deep).
- I. Gangable boxes are allowed.

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- J. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 3R with continuous-hinge cover with flush latch unless otherwise indicated.
 - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
 - 2. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.

- K. Recessed device box.
 - 1. Non-metallic, recessed electrical box with trim plate.
 - 2. Two-gang style to allow installation of two duplex receptacles, or two low voltage devices in the box.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
 - 1. Exposed Conduit: GRC.
 - 2. Concealed Conduit, Aboveground: GRC.
 - 3. Underground: RNC
 - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC.
 - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.

- B. Indoors: Apply raceway products as specified below unless otherwise indicated:
 - 1. Exposed: EMT.
 - 2. Concealed in Ceilings and Interior Walls and Partitions: EMT.
 - 3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
 - 4. Damp or Wet Locations: GRC.
 - 5. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless steel in damp or wet locations including kitchens.

- C. Minimum Raceway Size: 3/4-inch (21-mm) trade size.

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- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
1. Rigid Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
 2. EMT: Use setscrew, steel fittings. Comply with NEMA FB 2.10.
 3. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.

3.2 INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- B. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation.
- D. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- E. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches (300 mm) of changes in direction.
- F. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- G. Support conduit within 12 inches (300 mm) of enclosures to which attached.
- H. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- I. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.

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- J. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch (35mm) trade size and insulated throat metal bushings on 1-1/2-inch (41-mm) trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- K. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- L. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.
- M. Cut conduit perpendicular to the length. For conduits 2-inch (53-mm) trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.
- N. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- O. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches (1830 mm) of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
 - 1. Use LFMC in damp or wet locations subject to severe physical damage.
- P. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.
- Q. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- R. Locate boxes so that cover or plate will not span different building finishes.
- S. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.
- T. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

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- U. Set metal floor boxes level and flush with finished floor surface.
- V. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

3.3 BOXES FOR WIRING DEVICES IN EXTERIOR WALLS AND INTERIOR SOUND CONTROL WALLS BETWEEN RESIDENT ROOMS.

- A. Provide air vapor barrier install per manufacturer's instructions. Provide LESSCO model number: VAPORBOX

3.4 INSTALLATION OF ELECTRICAL BOXES IN FIRE RATED WALLS

- A. Outlet boxes on opposite sides of the wall shall be separated as follows:
 - 1. By a horizontal distance of not less than 24 inches (610 mm);
 - 2. By a horizontal distance of not less than the depth of the wall cavity where the wall cavity is filled with cellulose loose fill, rockwool or slag mineral wool insulation.
 - 3. By protecting both outlet boxes by listed putty pads, 3M Catalog # MPP+ or equal.
- B. Boxes exceeding 16 sq. in. (103 sq. cm) must be protected by listed putty pads, 3M Catalog # MPP+ or equal.

3.5 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

END OF SECTION 260533

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Section 262726

SECTION 262726 - WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Receptacles, receptacles with integral GFCI, and associated device plates.
 - 2. Weather-resistant receptacles.
 - 3. Snap switches.
 - 4. Cord and plug sets.

1.3 DEFINITIONS

- A. EMI: Electromagnetic interference.
- B. GFCI: Ground-fault circuit interrupter.
- C. Pigtail: Short lead used to connect a device to a branch-circuit conductor.
- D. RFI: Radio-frequency interference.
- E. TVSS: Transient voltage surge suppressor.
- F. UTP: Unshielded twisted pair.

1.4 ADMINISTRATIVE REQUIREMENTS A.

Coordination:

BIDDER'S INITIALS: _____

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Section 262726

1. Receptacles for Owner-Furnished Equipment: Match plug configurations.
2. Cord and Plug Sets: Match equipment requirements.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.6 INFORMATIONAL SUBMITTALS

Field quality-control reports.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:

1. Cooper Wiring Devices; Division of Cooper Industries, Inc. (Cooper).
2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
3. Leviton Mfg. Company Inc. (Leviton).
4. Pass & Seymour/Legrand (Pass & Seymour).

- B. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

2.2 GENERAL WIRING-DEVICE REQUIREMENTS

- A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

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- C. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:
 - 1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
 - 2. Devices shall comply with the requirements in this Section.

2.3 STRAIGHT-BLADE RECEPTACLES

- A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

2.4 GFCI RECEPTACLES

- A. General Description:
 - 1. Straight blade, non-feed-through type.
 - 2. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 943 Class A, and FS W-C-596.
 - 3. Include indicator light that shows when the GFCI has malfunctioned and no longer provides proper GFCI protection.
- B. Duplex GFCI Convenience Receptacles, 125 V, 20 A:
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

2.5 CORD AND PLUG SETS A.

Description:

- 1. Match voltage and current ratings and number of conductors to requirements of equipment being connected.

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2. Cord: Rubber-insulated, stranded-copper conductors, with Type SOW-A jacket; with green-insulated grounding conductor and ampacity of at least 130 percent of the equipment rating.
3. Plug: Nylon body and integral cable-clamping jaws. Match cord and receptacle type for connection.

2.6 TOGGLE SWITCHES

- A. Comply with NEMA WD 1, UL 20, and FS W-S-896.
- B. Switches, 120/277 V, 20 A:
 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

2.7 WALL-BOX DIMMERS

- A. Control: Continuously adjustable slider; with single-pole or three-way switching. Comply with UL 1472.

2.8 WALL PLATES

- A. Single and combination types shall match corresponding wiring devices.
 1. Plate-Securing Screws: Metal with head color to match plate finish.
 2. Material for Finished Spaces: **Stainless Steel.**
 3. Material for Unfinished Spaces: **Stainless Steel.**
 4. Material for Damp Locations: Cast aluminum with spring-loaded lift cover and listed and labeled for use in wet and damp locations.
- B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with Type 3R, weather resistant, die-cast aluminum with lockable cover.

2.9 FLOOR SERVICE FITTINGS

Type: Modular, flush-type, dual-service units suitable for wiring method used.

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- B. Compartments: Barrier separates power from voice and data communication cabling.
- C. Service Plate: Round, die-cast aluminum with satin finish.
- D. Power Receptacle: NEMA WD 6 Configuration 5-20R, gray finish, unless otherwise indicated.
- E. Voice and Data Communication Outlet: Two modular, keyed, color-coded, RJ-45 jacks for UTP cable complying with requirements in Section 271500 "Communications Horizontal Cabling."

2.10 FINISHES

- A. Device Color:
 - 1. Wiring Devices Connected to Normal Power System: As selected by Architect unless otherwise indicated or required by NFPA 70 or device listing.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.
- B. Coordination with Other Trades:
 - 1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
 - 2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
 - 3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
 - 4. Install wiring devices after all wall preparation, including painting, is complete. C. Conductors:
 - 1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
 - 2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.

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3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.

D. Device Installation:

1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.

E. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles down, and on horizontally mounted receptacles to the right.

- F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

G. Dimmers:

1. Install dimmers within terms of their listing.
2. Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.

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- H. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.
- I. Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.

3.2 GFCI RECEPTACLES

- A. Install non-feed-through-type GFCI receptacles where protection of downstream receptacles is not required.

3.3 IDENTIFICATION

Identify each receptacle with panelboard identification and circuit number. Use hot, stamped, or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

3.4 FIELD QUALITY CONTROL

- A. Test straight-blade for the retention force of the grounding blade according to NFPA 99. Retention force shall be not less than 4 oz. (115 g).
- B. Wiring device will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

END OF SECTION 262726

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Attachment A - Additional Information
Section 264700

SECTION 264700 - PANELBOARDS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Service and distribution panelboards.

1.02 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.03 REFERENCES

- A. NECA (National Electrical Contractors Assoc.) "Standard of Installation".
- B. FS W-C-375 - Circuit Breakers, Molded Case, Branch Circuit and Service.
- C. NEMA AB 1 - Molded Case Circuit Breakers.
- D. NEMA KS 1 - Enclosed Switches.
- E. NEMA PB 1 - Panelboards.
- F. NEMA PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.
- G. NEMA PB 1.2 - Application Guide for Ground-Fault Protective Devices for Equipment.
- H. NFPA 70 - National Electrical Code.

1.04 SUBMITTALS

- A. Submit shop drawings for equipment and component devices.

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- B. Include outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker and fusible switch arrangement and sizes.

1.05 SPARE PARTS

- A. Keys: Furnish 4 each to Owner.

PART 2 PRODUCTS

2.01 PANELBOARDS

A. Main and Distribution Panelboards

1. Panelboards: NEMA PB 1; circuit breaker type – bolt on.
2. Enclosure: NEMA PB 1; Type 1.
3. Provide cabinet front with concealed trim clamps, screw cover, and hinged door with flush lock. Finish in manufacturer's standard gray enamel.
4. Provide panelboards with aluminum bus, ratings as scheduled on Drawings. Provide copper ground bus in all panelboards.
5. Molded Case Circuit Breakers: NEMA AB 1 FS W-C-375; provide circuit breakers with integral thermal and instantaneous magnetic trip in each pole. Provide circuit breakers UL listed as Type HACR for air conditioning equipment branch circuits.
6. Molded Case Circuit Breakers with Current Limiters: NEMA AB 1 FS W-C-375; provide circuit breakers with replaceable current limiting elements, in addition to integral thermal and instantaneous magnetic trip in each pole.
7. Current Limiting Molded Case Circuit Breakers; NEMA AB 1 FS W-C-375; provide circuit breakers with integral thermal and instantaneous magnetic trip in each pole, coordinated with automatically resetting current limiting elements in each pole. Interrupting rating 100,000 symmetrical amperes, let-through current and energy level less than permitted for same size Class RK-5 fuse.
8. Provide circuit breaker accessory trip units and auxiliary contacts as indicated.
9. Install the quantity of corrosion inhibiting compound recommended by manufacturer in all wireways and device enclosures. This includes PVC enclosures where device terminals are exposed to the atmosphere.

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PART 3 EXECUTION

3.01 INSTALLATION

- A. Install panelboards plumb and flush with wall finishes, in conformance with NEMA PB 1.1.
- B. Height: 6 feet to top of panelboard maximum.
- C. Provide filler plates for unused spaces in panelboards.
- D. Provide typed or neatly handwritten circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes required to balance phase loads. Label Panels per Section 261950.

3.02 FIELD QUALITY CONTROL

- A. Measure steady state load currents at each panelboard feeder. Should the difference at any panelboard between phases exceed 20 percent, rearrange circuits in the panelboard to balance the phase loads within 20 percent. Take care to maintain proper phasing for multiwire branch circuits.
- B. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers, fusible switches, and fuses.

*** END OF SECTION 264700***

Newmarket Elementary School Electrical Upgrades, 2022
Attachment A - Additional Information
Section 260519

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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Building wires and cables rated 600 V and less.
- 2. Connectors, splices, and terminations rated 600 V and less.

- B. Related Requirements:

- 1. Section 271500 "Communications Horizontal Cabling" for cabling used for voice and data circuits.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. General Cable Technologies Corporation.
 - 2. Southwire Incorporated.

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3. The Okonite Company.

B. Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658.

C. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THHN-2-THWN-2.

D. Multiconductor Cable: Comply with NEMA WC 70/ICEA S-95-658 for Metal Clad cable, Type MC or SO cable.

2.2 CONNECTORS AND SPLICES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. AFC Cable Systems, Inc.
2. Gardner Bender.
3. Hubbell Power Systems, Inc.
4. Ideal Industries, Inc.
5. Ilsco; a branch of Bardes Corporation.
6. NSi Industries LLC.
7. O-Z/Gedney; a brand of the EGS Electrical Group.
8. 3M; Electrical Markets Division.
9. Tyco Electronics.

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

2.3 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

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Section 260519

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper for feeders smaller than No. 4 AWG; copper or aluminum for feeders No. 4 AWG and larger. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.
- C. All conductor sizes shown on drawings are for copper unless noted otherwise.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Service Entrance: Type THHN-2-THWN-2, single conductors in raceway.
- B. Feeders: Type THHN-2-THWN-2, single conductors in raceway.
- C. Exposed Branch Circuits, Including in Crawlspace: Type THHN-2-THWN-2, single conductors in raceway.
- D. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Metal Clad Cable, Type MC.
- E. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN2-THWN-2, single conductors in raceway.
- F. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- B. Complete raceway installation between conductor and cable termination points according to Section "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.

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- C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips that will not damage cables or raceway.
- E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

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-486B.
- B. Make splices, terminations, and taps that are compatible with conductor material.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.5 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section "Identification for Electrical Systems."
- B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

3.6 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 - 1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
 - 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

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Section 260519

B. Test and Inspection Reports: Prepare a written report to record the following:

1. Procedures used.
2. Results that comply with requirements.
3. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

C. Cables will be considered defective if they do not pass tests and inspections.

END OF SECTION 260519

BIDDER'S INITIALS: _____

Newmarket Elementary School Electrical Upgrades, 2022
Attachment A - Additional Information
Section 262200

SECTION 262200 - LOW-VOLTAGE TRANSFORMERS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following types of dry-type transformers rated 600 V and less, with capacities up to 1000 kVA:

1. Distribution transformers.

1.2 ACTION SUBMITTALS

A. Product Data: For each product indicated.

B. Shop Drawings: Indicate dimensions and weights.

1. Wiring Diagrams: Power, signal, and control wiring.

1.3 INFORMATIONAL SUBMITTALS

A. Field quality-control test reports.

1.4 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

A. 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.

B. Comply with IEEE C57.12.91, "Test Code for Dry-Type Distribution and Power Transformers."

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Section 262200

PART 2 - PRODUCTS

2.1 GENERAL TRANSFORMER REQUIREMENTS

- A. Description: Factory-assembled and -tested, air-cooled units for 60-Hz service.
- B. Cores: Grain-oriented, non-aging silicon steel.
- C. Coils: Continuous windings without splices except for taps.
 - 1. Internal Coil Connections: Brazed or pressure type.
 - 2. Coil Material: Copper.

2.2 DISTRIBUTION TRANSFORMERS

- A. Comply with NEMA ST 20, and list and label as complying with UL 1561.
 - B. Cores: One leg per phase.
 - C. Enclosure: Ventilated, NEMA 250, Type 2.
 - 1. Core and coil shall be encapsulated within resin compound, sealing out moisture and air. D.
- Transformer Enclosure Finish: Comply with NEMA 250.
- 1. Finish Color: Gray.
- E. Taps for Transformers 25 kVA and Larger: Two 2.5 percent taps above and two 2.5 percent taps below normal full capacity.
 - F. Insulation Class: 220 deg C, UL-component-recognized insulation system with a maximum of 150 deg C rise above 40 deg C ambient temperature.
 - G. Energy Efficiency for Transformers Rated 15 kVA and Larger:
 - 1. Complying with NEMA TP 1, Class 1 efficiency levels.
 - 2. Tested according to NEMA TP 2.

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Attachment A - Additional Information
Section 262200

H. Wall Brackets: Manufacturer's standard brackets.

2.3 IDENTIFICATION DEVICES

A. Nameplates: Engraved, laminated-plastic or metal nameplate. Nameplates are specified in Section 260553 "Identification for Electrical Systems."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install wall-mounting transformers level and plumb with wall brackets fabricated by transformer manufacturer.

1. Brace wall-mounting transformers as specified in Section 260548 "Vibration and Seismic Controls for Electrical Systems."

3.2 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Tests and Inspections:

1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. Infrared Scanning: Two months after Substantial Completion, perform an infrared scan of transformer connections.
 - a. Use an infrared-scanning device designed to measure temperature or detect significant deviations from normal values. Provide documentation of device calibration.
 - b. Perform 2 follow-up infrared scans of transformers, one at 4 months and the other at 11 months after Substantial Completion.
 - c. Prepare a certified report identifying transformer checked and describing results of scanning. Include notation of deficiencies detected, remedial action taken, and scanning observations after remedial action.

Newmarket Elementary School Electrical Upgrades, 2022
Attachment A - Additional Information
Section 262200

3.3 ADJUSTING

- A. Adjust transformer taps to provide optimum voltage conditions at secondary terminals. Optimum is defined as not exceeding nameplate voltage plus 10 percent and not being lower than nameplate voltage minus 3 percent at maximum load conditions. Submit recording and tap settings as test results.
- B. Connect buck-boost transformers to provide nameplate voltage of equipment being served, plus or minus 5 percent, at secondary terminals.
- C. Output Settings Report: Prepare a written report recording output voltages and tap settings.

END OF SECTION 262200

Bid Form

Newmarket Elementary School Electrical Upgrades, 2022

Proposal due date is **Wednesday, May 4, 2022 by 3pm**. Sealed proposals should be submitted to Janna Mellon, Business Administrator at 186A South Main Street, Newmarket, NH. Please reference **Newmarket Elementary School Electrical Upgrades, 2022** on the sealed envelope.

- I accept that substantial completion is expected by **August 15, 2022**, unless an extension is agreed upon and pre-approved in writing by the District.
- I acknowledge that this RFP must be returned in its entirety, including the Bid form and all attachments. Each page of the RFP must be initialed by the bidder, where indicated.
- I have read and reviewed both Attachment A (additional information) and the drawings prepared by Bennett Engineering which accompany this RFP.
- I propose to perform the work described in Attachment A- Additional Information, and in the drawings as provided by Bennett Engineering for guaranteed maximum price as shown below.
 - Any additional / unforeseen work will not be performed without a properly authorized change order.

Bid Proposals shall remain valid for thirty (30) days.

Guaranteed Maximum Bid Amount: _____

Name of Company: _____

Address: _____

Email Address: _____

Telephone Number: _____

Authorized Representative Name and Title: _____

Signature of Authorized Representative: _____

Date: _____

Any exclusions, qualifications, or comments:

Have you, or any of the Principals of your company been involved in any litigation, arbitrations, mediations, or administrative proceedings in the past 10 years?

Yes. No

If yes, please note the details of the claims, attorneys and resolution below.

BIDDER'S INITIALS: _____

Bid Form

Newmarket Elementary School Electrical Upgrades, 2022

Vendor Qualifications

The proposal shall include all of the following information. Failure to include all of the required information may result in disqualification of a bidder.

1. List of three (3) references including names, addresses, phone numbers and contact persons, of clients for whom you have performed similar services in this proposal.

2. State how long you have been operating under your present company name.

3. Contractor's qualifications, years in business, experience in providing the level and type of service specified in the proposal.
