

THE SCHOOL DISTRICT OF PHILADELPHIA
Office of Capital Programs
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Addendum No. 2

Subject: John M. Patterson Elementary School
2022 Classroom Modernization
SDP Contract Nos. 2022-010-G, 2022-010-P, 2022-010-E

Location: John M. Patterson Elementary School
7001 Buist Avenue
Philadelphia PA 19142

This Addendum No. 2, dated FEBRUARY 18, 2022, shall modify and become part of the proposed Contract Documents of the work of this project. Any items not mentioned herein, or affected by, shall be performed strictly in accordance with the original Contract Documents, unless modified by prior addenda.

Specifications

1. Added Specifications (5 total) 096400 Wood Flooring
260505 Selective Demolition for Electrical
260923 Lighting Control Systems
271300 Communications Systems
275313 2-Wire Clock System
2. Revised Specifications (1 total) 260563 Acceptance Electrical Testing
3. Removed Specifications (2 total) 101423 Panel Signs
024119 Selective Electrical Demolition

Clarification

1. Delete keynote 2 (radiator removal) from Room 101 on M101.

Questions and Answers

1. **Question:** As of now, six (6) of the nine (9) Classroom Modernization projects bid on the same date. It is not feasible for the small pool of approved GC bidders to prepare six (6) bids along with all of the required M/WBE paperwork and hand-deliver them to the SDP building all on the same day. Please consider changing the bid due dates so that a maximum of 2-3 classroom modernization projects bid on the same date.

Response: The bid date has been extended per Addendum #1 to February 24, 2022

2. **Question:** Regarding AWI QCP Certification requirements for all nine (9) of the Classroom Modernization projects: Please make a blanket determination for all 9 schools as to whether this requirement will be waived or not and issue an addendum.

Response: SDP to waive the AWI QCP millwork certification requirement.

3. **Question:** Please confirm that Catharine Elementary School is the only Classroom Modernization project that requires Room Signage. The bid documents for all the other projects include a specification section for signage however Catharine ES is the only project that shows signage on the drawings.

Response: Room signage is not required at Patterson.

4. **Question:** "Provide new lighting controls as indicated". Floor plans do not show any lighting controls, what quantity and type control do we bid?

Response: Provide new lighting controls in classroom and student closets as indicated on revised E200 series drawings attached.

5. **Question:** "Provide a vacancy sensor for manual on/off control of entire area". How many are required in each classroom? Can you provide a wiring diagram?

Response: Refer to revised E200 series drawings for wiring diagram and controls information.

6. **Question:** Due to wiring and electrical controls not shown on electrical drawings, License & Inspections will not issue an electric permit for this project. Will the school district issue the required drawings or is the electrical contractor responsible to hire an electrical engineer to provide signed and sealed drawings?

Response: Refer to revised E200 series and E501 drawings for wiring and controls information. Sealed permit drawings to be provided.

7. **Question:** The List of Specifications in section 00 00 05 of Project Manual includes 02 4119 Selective Demolition and 02 4119.1 Minor Electrical Demolition.

The Project Manual Technical Specifications includes 02 4119 Selective Electrical Demolition and 024119 Selective Demolition.

Please confirm that SDP Contract No. 2022-010 G for General Construction does not include either Selective Electrical Demolition or Minor Electrical Demolition.

Response: General Construction Contractor is not responsible for Selective Electrical Demolition or Minor Electrical Demolition. The Electrical Contractor is responsible for Selective Electrical Demolition or Minor Electrical Demolition. 024119 Selective Electrical Demolition Spec has been removed from Specs.

8. **Question:** The spec calls for Greenscreen Revive 5% shade fabric, but the plans call for blackout shades. Which is correct?

Response: Provide Revive 5% shade fabric.

9. **Question:** Ref: Drawings E100, E101, E102, E103 SHEET KEYNOTE #3 - How do we bid "Provide new data outlets & Cat 6 cabling as needed"?

Response: Provide new data outlets and wiring in main school building – see keynote #3 on revised E101, E102, and E103 attached. Existing data wiring to remain in annex building, replace receptacles and provide additional new outlets and wiring in locations noted – see revised E100 attached.

10. **Question:** Ref: Drawings E100, E101, E102, E103 SHEET KEYNOTE #3 - Does each classroom have the Cat 6 cabling required for the quantity of drops?

Response: Provide new data outlets and wiring in main school building – see keynote #3 on revised E101, E102, and E103 attached. Existing data wiring to remain in annex building, replace

receptacles and provide additional new outlets and wiring in locations noted – see revised E100 attached.

11. **Question:** Ref: Drawings E100, E101, E102, E103 SHEET KEYNOTE #3 - What is the location in the buildings for the MDF?

Response: Refer to revised E102 for IT Closet location in room 210.

12. **Question:** Ref: Drawings E100, E101, E102, E103 SHEET KEYNOTE #3 - Do we need to provide additional patch panels or other equipment?

Response: No.

13. **Question:** Ref: Drawings E100, E101, E102, E103 SHEET KEYNOTE #7 - "Provide new clock if existing is in working condition." Should we bid to replace clock only if it is in working condition?

Response: Provide new clock - refer to keynote 7 on revised E100 series drawings attached.

14. **Question:** Ref: Drawings E100, E101, E102, E103 SHEET KEYNOTE #7 - What type clock (battery, 120 volt, 24 volt) & quantity should we bid to replace? Are you requiring a systems clock (Sapling) or an off the shelf unit?

Response: Clocks are to be Sapling, hardwired. Refer to specification section 275313 attached.

15. **Question:** Drawings E200, E201, E202, E203 sheet new work keynote #1 calls for dimming lighting controls in the classrooms but the note has very little detail on design requirements. The floor plans show nothing in terms of design for the lighting controls (control layout, zoning, basis of design part numbers etc.). The floor plans conflict with keynote #1 and show single pole switches which do not dim. Why was a design not provided with basis of design control part numbers like all other typical SDP projects? If no design will be provided, please answer questions below.

Response: Refer to revised E200 series drawings attached.

16. **Question:**

- a. Are the dimming controls in the classroom supposed to be low voltage digital (room controller type)?

Response: Refer to locations, keynotes, and wiring diagram shown on revised E200 series drawings attached.

- b. Is there supposed to be 2 control zones, (1) for the row of lighting adjacent to the window and (1) for the other (2) rows of lights? Or are there 3 control zones for each of the 3 rows?

Response: Refer to locations and keynotes shown on revised E200 series drawings attached.

- c. Are the storage closets associated with each classroom supposed to have some sort of analog automatic control (e.g. PIR wall mounted line voltage occ sensors)? If so please specify requirements as toggle switches are currently shown.

Response: Refer to locations and keynotes shown on revised E200 series drawings attached.

17. **Question:** Drawing E200 specifies type A1 fixture on the fixture schedule. The lumen selection per the fixture schedule catalog number is “384L” which is not possible per the cut sheet and appears to be a typo. Please clarify lumen section.

Response: Refer to lighting fixture schedules on revised E200 series drawings attached.

18. **Question:** Regarding spec 260500-3.11, please confirm all touch up paint will be provided by the general contract.

Response: Touch-up painting related to electrical work is the responsibility of EC.

19. **Question:** Spec 260533-3.01A states all exposed circuits, including feeders, shall be provided in rigid conduit. This statement conflicts with the wiring methods described on E001, which allows EMT. Please confirm EMT is approved for exposed branch circuits and exposed feeders.

Response: EMT is permitted for exposed branch circuits and feeders.

20. **Question:** Division 27 specs were not provided. Please confirm CAT6 cable should be provided for new voice drops, new data drops, and new WAP drops. Please confirm CAT6 should be run on j-hooks above drop ceilings, and in EMT when exposed.

Response: Provide CAT6 for all new work, refer to spec section 271300 Communications Systems attached.

21. **Question:** Drawings E101/E102/E103/E100 new work keynotes #1 and #2 states to fish new wiring within partition walls, and that no surface mounted conduit is allowed in the annex. However, general note 3 on E101/E102/E103 says “paintable surface mounted conduit”, which conflicts with the first statement. Please confirm all new devices and new conduit can be surface mounted throughout the project, which has been typical for previous SDP projects.

Response: At new (main building) and existing (Annex) drywall partitions, provide concealed wiring and recessed boxes for new electrical and data devices. At existing plaster walls (main building), painted surface-mounted EMT is acceptable. Refer to revised general note 3 on E100 series drawings.

22. **Question:** Drawings E101/E102/E103/E100 new work keynote #3 state to connect to existing data circuits previously serving this area. CAT6 cable cannot be extended. Please confirm we should provide a new CAT6 run back to an IT room for all new voice/data WAP outlets.

Response: All new data wiring to be provided for voice, data, WAP outlets in main building and new receptacle locations in annex building – see revised notes on electrical drawings attached.

23. **Question:** Drawings ED101/ED102/ED103/E100 demo keynote 2 states that the data/telephone/coaxial outlets within the rooms are to remain. However, E101/E102/E103/E100 new work keynote 3 states provide new data outlets and CAT6 cabling as needed. This is conflicting direction. Please confirm we should provide new data outlets and CAT6 cabling at all bold locations shown.

Response: All new outlets to be provided for voice, data, WAP outlets in main building and new receptacle locations in annex building. Existing coaxial receptacles and cabling to be removed – see revised keynote 2 on electrical demo drawings attached.

24. **Question:** Please provide the location in plan of the IT rooms where the new voice/data/WAP drops should be run to.

Response: Refer to revised E102 for IT Closet location in room 210.

25. **Question:** Demo Keynote 3 on ED101/ED102/ED103/E100 states to remove wall mounted speakers. However, E101/E102/E103/E100 new work keynote 6 states existing wall mounted speakers to remain.

Please clarify if we are to remove wall mounted speakers. If we are to remove wall mounted speakers, please confirm there is 1 speaker per classroom to be removed.

Response: Old wall mounted speakers to be removed. See revised keynotes on attached drawings.

26. **Question:** Please provide basis of design for new clocks mentioned in drawings ED101/ED102/ED103/E100 demo keynote 4 and drawings E101/E102/E103/E100 new work keynote 7. Please confirm head end clock system is existing.

Response: Refer to spec section 275313 Clock Systems attached. Existing head end clock system is existing to remain.

27. **Question:** Drawings ED101/ED102/ED103/E100 demo keynote #5 states to remove old phone if old phone and new phone exist at this location. The quantity of these instances is unknown and therefore unbiddable. Please provide quantity of removals.

Response: See demo keynote 5 and 9 on revised ED101/ED102/ED103/E100 attached.

28. **Question:** Drawings ED101/ED102/ED103/E100 demo keynote 6 states to extend cabling for relocated WAP. This is not possible with CAT6 cable. Please confirm we should provide new CAT6 cable runs from the WAP to the IT room.

Response: Provide new CAT6 cable runs for new ceiling-mounted WAP. See keynote 6 on revised ED101/ED102/ED103/E100; keynote 4 on E100 series; keynote 2 on E200; keynote 3 on E201, E202, E203.

29. **Question:** Drawings ED101/ED102/ED103/E100 demo keynote 6 states to relocate access point box, but also says to turn box over to the owner. Please confirm we are relocating the existing box, and not turning this box over to the owner.

Response: Turn over existing box to the owner – new WAP to be installed at ceilings per response to Question 28 above.

30. **Question:** New work keynote 2 on E201/E202/E203/E200 states to provide new ceiling grid, and new work keynote 4 states to provide new tiles as needed to accept new lighting layout. Please confirm new ceiling grid and tiles are to be provided by the GC contract.

Response: New tile and grid to be provided by GC in main building – refer to architectural A200 drawings for scope of grid and tiles replacement. Refer to revised keynote 2 on E201, E202, E203 drawings.

31. **Question:** Spec section 260563 Acceptance Electrical Testing was included in the bidding documents. Multiple different NETA testing requirements are listed in section 3.02 to be performed by the contractor. Please provide clarification on which tests are applicable to the project. See notes below.

- a. There are no adjustable trip breakers in the scope.

Response: No adjustable trip breakers in scope - no testing required.

- b. There are no new feeders for megger (insulation) testing.

Response: No testing required.

- c. There are no new panelboards for thermographic inspection. Confirm thermographic insulation testing is not required for existing panelboards.

Response: No testing required.

- d. There are no new motor/starters in scope.

Response: No new motor / starters in scope - no testing required.

- e. GFCI receptacles are factory tested. Does SDP want to spend extra money for a testing agency to also test them?

Response: No testing required.

- f. For the circuit breaker tests, are we to test only the new 20A-1P circuit breakers that we add for the project? or all the existing ones inside the panelboards associated with the scope of work?

Response: No testing required.

Attachments:

Specification – 096400 Wood Flooring

- 260505 Selective Demolition for Electrical
- 260563 Acceptance Electrical Testing
- 260923 Lighting Controls Systems
- 271300 Communications Systems
- 275313 2-Wire Clock System

Drawings

E001, ED101, ED102, ED103, ED201, ED202, ED203, E100, E101, E102, E103, E200, E201, E202, E203

End of Addendum 2

SECTION 096400 - WOOD FLOORING

PART 1 GENERAL

1.1 STIPULATIONS

- A. The specifications sections "General Conditions", "Special Requirements" and "General Requirements" form a part of this Section by this reference thereto and shall have the same force and effect as if printed herewith in full.

1.2 SUMMARY

- A. Section Includes: Field-finished wood flooring.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show installation details including location and layout of each type of wood flooring and accessory.
- C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors and finishes available for wood flooring.
- D. Samples for Verification: For each type of wood flooring and accessory, with finish required, approximately 12 inches long and of same thickness and material indicated for the Work and showing the full range of normal color and texture variations expected.

1.4 QUALITY ASSURANCE

- A. Source Limitations: For field-finished wood flooring, obtain each species, grade, and cut of wood from one source with resources to provide materials and products of consistent quality in appearance and physical properties.
- B. Maple Flooring: Comply with applicable MFMA grading rules for species, grade, and cut.
 - 1. Certification: Provide flooring that carries MFMA mark on each bundle or piece.

1.5 PRODUCT HANDLING

- A. Deliver wood flooring materials in unopened cartons or bundles.
- B. Protect wood flooring from exposure to moisture. Do not deliver wood flooring until after concrete, masonry, plaster, ceramic tile, and similar wet work is complete and dry.
- C. Store wood flooring materials in a dry, warm, ventilated, weathertight location.

1.6 PROJECT CONDITIONS

- A. Conditioning period begins not less than seven days before wood flooring installation, is continuous through installation, and continues not less than seven days after wood flooring installation.
 - 1. Environmental Conditioning: Maintain an ambient temperature between 65 and 75 deg F and relative humidity planned for building occupants in spaces to receive wood flooring during the conditioning period.

2. Wood Flooring Conditioning: Move wood flooring into spaces where it will be installed, no later than the beginning of the conditioning period.
 - a. Do not install flooring until it adjusts to relative humidity of, and is at same temperature as, space where it is to be installed.
 - b. Open sealed packages to allow wood flooring to acclimatize immediately on moving flooring into spaces in which it will be installed.
- B. After conditioning period, maintain relative humidity and ambient temperature planned for building occupants.

PART 2 PRODUCTS

2.1 FIELD-FINISHED WOOD FLOORING

- A. Solid-Wood, Plank Flooring: Kiln dried to 6 to 9 percent maximum moisture content, tongue and groove and end matched, and with backs channeled (kerfed) for stress relief.
 1. Species and Grade: MFMA-RL Second and Better Grade hard maple.
 2. Cut: Plain sawn.
 3. Thickness: 25/32 inch, match existing.
 4. Face Width: 2-1/4 inches, match existing.
 5. Lengths: Random-length strips complying with applicable grading rules.
- B. Urethane Finish System: Complete water-based system of compatible components that is recommended by finish manufacturer for application indicated.
 1. Floor Sealer: Pliable, penetrating type.
- C. Wood Filler: Compatible with finish system components and recommended by filler and finish manufacturers for use indicated. If required to match approved Samples, provide pigmented filler.

2.2 ACCESSORY MATERIALS

- A. Wood Sleepers: As specified in Division 6 Section "Rough Carpentry."
- B. Vapor Retarder: ASTM D 4397, polyethylene sheet not less than 8.0 mils thick.
- C. Trowelable Leveling and Patching Compound: Latex-modified, hydraulic-cement-based formulation approved by wood flooring manufacturer.
- D. Fasteners: As recommended by manufacturer, but not less than that recommended in NWFA's "Installation Guidelines: Wood Flooring."
- E. Cork Expansion Strip: Composition cork strip.
- F. Trim: In same species and grade as wood flooring, unless otherwise indicated.
 1. Transition Strip: Manufacturer's standard profile.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas and conditions, with Installer present, for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of wood flooring.

1. Verify that substrates comply with tolerances and other requirements specified in other Sections.
 2. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Substrate Moisture Testing, General: Perform tests recommended by manufacturer or, if none, comply with applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."
1. Proceed with installation only after substrates pass testing.
- C. Concrete Moisture Testing: Perform anhydrous calcium chloride test per ASTM F 1869, as follows:
1. Perform tests so that each test area does not exceed 200 sq. ft. and perform not less than 2 tests in each installation area with test areas evenly spaced in installation area.
 2. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.

3.2 PREPARATION

- A. Grind high spots and fill low spots on concrete substrates to produce a maximum 1/8-inch deviation in any direction when checked with a 10-foot straight edge.
1. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.
- B. Broom or vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION

- A. Comply with flooring manufacturer's written installation instructions, but not less than applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."
- B. Wood Sleepers: Install according to requirements in Division 6 Section "Rough Carpentry."
- C. Provide expansion space at walls and other obstructions and terminations of flooring of not less than 3/4 inch.
- D. Vapor Retarder:
1. Wood Flooring Nailed to Sleepers over Concrete: Install flooring over a layer of polyethylene sheet with edges overlapped over sleepers and turned up behind baseboards.
- E. Solid-Wood Plank Flooring: Blind nail or staple flooring to substrate.
1. For flooring of face width more than 3 inches, do the following:
 - a. Install countersunk screws at each end of each piece in addition to blind nailing. Cover screw heads with wood plugs glued flush with flooring.
- F. Tooth in boards at joints with areas of existing wood flooring to remain.

3.4 FIELD FINISHING

- A. Machine-sand flooring to remove offsets, ridges, cups, and sanding-machine marks that would be noticeable after finishing. Vacuum and tack with a clean cloth immediately before applying finish.
 - 1. Comply with applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."
- B. Fill and repair wood flooring seams and defects.
- C. Apply floor-finish materials in number of coats recommended by finish manufacturer for application indicated, but not less than one coat of floor sealer and three finish coats.
 - 1. For water-based finishes, use finishing methods recommended by finish manufacturer to minimize grain raise.
- D. Cover wood flooring before finishing.
- E. Do not cover wood flooring after finishing until finish reaches full cure, and not before seven days after applying last finish coat.

3.5 PROTECTION

- A. Protect installed wood flooring during remainder of construction period with covering of heavy kraft paper or other suitable material. Do not use plastic sheet or film that might cause condensation.
 - 1. Do not move heavy and sharp objects directly over kraft-paper-covered wood flooring. Protect flooring with plywood or hardboard panels to prevent damage from storing or moving objects over flooring.

END OF SECTION

SECTION 26 0505 - SELECTIVE DEMOLITION FOR ELECTRICAL

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: The work specified in this Section consists of material for demolition and salvaging existing electrical systems, wiring, raceways, supports, equipment, and minor repair of underlying structure.
- B. Related Sections:
 - 1. Division 1 – General Requirements

1.02 REFERENCES

- A. National Fire Protection Association (NFPA):
 - 1. NFPA 70 National Electrical Code (NEC)

1.03 SUBMITTALS

- A. Submit demolition plan.

1.04 COORDINATION AND SEQUENCING

- A. Coordinate all power outages with Owner.
- B. Perform demolition in a manner not to delay or interfere with other operations of work in the Project and operations of the Owner.

1.05 SCHEDULING

- A. Schedule all work with the Owner through the Owner's designated representative. Start no work in an area until a schedule has been prepared, submitted, and approved.
- B. Coordinate the work schedule with the Owner, Engineer, and other Contractors. Coordinate the work so not to interfere or conflict with the performance of work by the Owner and the Owner's tenants.

1.06 PROJECT/SITE CONDITIONS

- A. Care shall be used so not to impede the ongoing operations of the Owner.
- B. Demolition work, as specified herein, is not intended to be performed as a wrecking operation but as work relative to the performance of the various construction operations of the Project.
- C. Existing Conditions:
 - 1. Demolition information shown or otherwise indicated on the Drawings is based on visual field examination and existing record documents. While the information provided is believed to be correct, no assurance is implied relative to its total completeness or accuracy. Report discrepancies to Construction Manager for disposition of the Engineer before disturbing existing installations.
 - 2. The Contractor hereby distinctly agrees that neither the Construction Manager, the Engineer nor the Owner is responsible for the correctness or sufficiency of the information given and after his own Site Investigation:

- a. That he must have no claim for delay or extra compensation or damage on account of the information given; and
 - b. That he must have no claim for relief from any obligation or responsibility under the Contract with respect to the above stated stipulations.
- D. Protection: Exercise care during demolition work to confine demolition operations to the areas as indicated on the Drawings. The physical means and methods used for protection are at the Contractor's option. However, the Contractor will be completely responsible for replacement and restitution work, of whatever nature, at no expense to the Owner.
- 1. Additionally, if public safety is endangered during the progress of the demolition work, provide adequate protective measures to protect public pedestrian and vehicular traffic on streets and walkways.
 - 2. Conform signs, signals and barricades to requirements of Federal, State and local laws, rules, regulations, precautions, orders and decrees.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. Basic Electrical Materials: Those products such as conduit, raceway, wire and cable, support devices, fasteners, and control devices as required for work of this Section are specified in other Sections.
- B. Equipment along with machinery and apparatus, motorized or otherwise, used to perform the demolition may be chosen at the Contractor's discretion. However, the chosen equipment shall perform the work within the limits of the Contract requirements.
- C. Patching Materials: Patching materials shall match, as nearly as practical, the existing material for each surface being patched.

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify that measurements and existing circuiting arrangements are as shown on Drawings.
- B. Equipment, machinery, and apparatus, motorized or otherwise, used to perform the demolition work may be used as chosen at the Contractor's discretion, but which will perform the work within the limits of the Contract requirements.
- C. Verify that abandoned wiring and electrical equipment serve only the abandoned facility.

3.02 DEMOLITION

- A. General: The means and methods of performing electrical demolition and removal operations are the sole responsibility of the Contractor, except as otherwise specified. However, equipment used, and methods of demolition and removal will be subject to approval of the Construction Manager and the Engineer.
 - 1. Remove, relocate, and extend existing installations to accommodate new construction as indicated and/or as required.
 - 2. Remove exposed abandoned conduit systems, including abandoned conduit systems above accessible ceiling systems.
 - 3. Remove wiring in abandoned conduit systems to source of power supply.
 - 4. Maintain access to existing electrical installations, which remain active. Modify installations and provide access panels or plates as appropriate.

5. Extend existing installations using materials and methods compatible with existing electrical installations, and as specified in other Sections of these Specifications.
 6. Wiring Devices:
 - a. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduits serving them is abandoned and removed. Provide blank covers for abandoned outlets, which are not removed.
 - b. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
 - c. Remove exposed wire mold system where so indicated on the Drawings.
 7. Lighting:
 - a. Disconnect and remove abandoned luminaires and poles, lighting fixtures and floodlighting units. Remove brackets, stems, hangers, and other accessories.
 - b. Disconnect and remove abandoned concrete luminaire pole bases.
 8. Equipment:
 - a. Disconnect and remove electrical equipment where so indicated on the Drawings.
 - b. Disconnect and remove abandoned distribution equipment, panelboards, disconnect switches and motor starters as indicated on the drawings or as otherwise required due to the removal of associated equipment.
 9. In exposed through-structure conduit locations, or where concealed conduits become exposed by penetrating a structural floor, wall or ceiling, the abandoned conduits must be cut below the finished structural surface in order to perform surface patching.
- B. System De-activation: Prior to demolition and removal work, de-activate existing electrical systems as indicated.
 - C. Use means and methods for permanent disconnection, which render the remaining electrical systems and apparatus in conformity with NFPA 70.
 - D. Provide temporary wiring and connections to maintain existing systems in service during construction.
 1. Conform temporary wiring to the requirements of NEC Article 305, General Requirements.
 2. Temporary electrical service work as specified in Division 1, General Requirements.
 - E. Remove all wiring from disconnected circuits, feeders, and equipment unless otherwise specified or indicated. Remove all exposed raceways and related supports. Cut all exposed raceways flush with floor and plug.
 - F. Coordinate electrical power outages with requirements in Section 26 05 00.
 - G. General: The means and methods of performing electrical demolition and removal operations are the sole responsibility of the Contractor except as otherwise specified. Use equipment and methods that do not damage items to remain or salvaged and areas adjacent to demolition operations. Use methods that do not interfere with Owner's operations and which do not cause excessive dust. Remove debris as it accumulates.
 - H. Cutting: Perform cutting work of existing structure materials by such methods as will prevent extensive damage beyond the immediate area of cutting.
 - I. Debris Removal: Dispose of demolition debris off site in a lawful manner. Containerize or otherwise store debris as work is in progress.
 - J. Patching: After demolition and removal work is performed patch the existing structure as required to match surrounding finish and appearance including the appropriate surface decoration.

- K. Abandoned Electrical Equipment and Apparatus: Existing electrical equipment and apparatus in or on the structures not claimed as salvage by the Owner shall become the property of the Contractor and may not be disposed of on the site but removed and disposed of in a lawful manner off-site.
- L. Salvage: The Owner shall have the right to claim as salvage any items and materials removed under the work of this Section. Should such right of salvage be exercised by the Owner, move, and neatly store removed items on the site in a location agreeable to the Owner and in a manner approved by the Engineer.

END OF SECTION

SECTION 26 0563 - ACCEPTANCE TESTING OF ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: The work specified in this Section consists of materials to performance test electrical systems and equipment.
 - 1. Items Supplied Under This Section:
 - a. Electrical System Testing
 - b. Ground System Testing
 - c. Equipment Testing
 - d. Performance Test
 - e. Test Procedure
 - f. Test Report
- B. Related Sections:
 - 1. Division 1 – General Requirements
 - 2. Division 26 Sections, As Applicable

1.02 REFERENCES

- A. Applicable Documents and Testing Requirements of:
 - 1. America National Standards Institute (ANSI): as applicable, including:
 - a. ANSI C2, National Electrical Safety Code.
 - b. ANSI Z244.1 American National Standards for Personnel Protection.
 - 2. National Electrical Manufacturer's Association (NEMA): as applicable, including:
 - a. NEMA ICS 2.3 - Instructions for the Handling, Installation, Operation and Maintenance of Motor Control Centers.
 - b. NEMA ICS 7.1 - Safety Standards for Construction and Guide for selection, Installation, and Operation of Adjustable Speed Drive Systems.
 - c. NEMA PB 1.1 - General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.
 - d. NEMA PB 2.1 - Proper Handling, Installation, Operation and Maintenance of Deadfront Switchboards Rated 600 Volts or Less.
 - 3. American Society for Testing and Materials (ASTM), as applicable.
 - 4. Institute of Electrical and Electronics Engineers (IEEE), as applicable, including:
 - a. IEEE C.57.13, IEEE Standard Requirements for Instrument Transformers.
 - 5. National Fire Protection Association (NFPA), as applicable, including:
 - a. NFPA 70 - National Electrical Code (NEC).
 - b. NFPA 70E - Electrical Safety Requirements for Employee Workplaces.
 - c. NFPA 72 - National Fire Alarm Code (NFAC).
 - 6. Insulated Cable Engineer's Association (ICEA), as applicable.
 - 7. State and Local Codes and Ordinances as applicable
 - 8. Occupational Safety and Health Administration (OSHA), as applicable, including: Title 29, Parts 1907, 1910 and 1936.
 - 9. International Electrical Testing Association (NETA) as applicable, including:
 - a. ATS-2013: Acceptance Testing Specifications for Electric Power Distribution Equipment and Systems.
 - b. MTS-2013: Maintenance Testing Specifications for Electric Power Distribution Equipment and Systems.

1.03 SUBMITTALS

- A. Submit documentation as required by this Section of the Contract to the Design Engineer in strict accordance with the provisions of Section 26 05 00 for review, comments, and subsequent approval.

- B. Submission to include the following:
 - 1. Field inspection report as required for each item of material and/or equipment outlined herein.
 - 2. Manufacturer's directions for use of ground megger with proposed method indicated.
- C. Test Reports:
 - 1. Each test report prepared by the respective testing firm(s) comply, where applicable, to all stipulations specified in Section 26 05 00 for Operation, Maintenance, and Installation Manuals with reference to preparation, paper requirements, indexing and binders. Include in each test report the following:
 - a. Summary of project.
 - b. Description of equipment tested.
 - c. Description of test.
 - d. Test results.
 - e. Conclusions and recommendations.
 - f. Appendix, including appropriate test forms.
 - g. Identification of test equipment used.
 - h. Signature of responsible test organization authority.
 - i. Furnish five copies of each completed report to the Design Electrical Engineer no later than 30 days after completion of each test. Assemble and certify the testing firm each final test report, which must be submitted to the Design Engineer for review, comments and subsequent approval.

1.04 GENERAL REQUIREMENTS

- A. Field Inspection:
 - 1. This Contractor is responsible for a complete inspection of all equipment, prior to testing and energizing to ascertain that it is free from any damage, scratches, or missing components and that all power connections are correct, and that they are tight in conformance with recommended standard practice. The inspection is to also include a check of control wiring, terminal connections and all bolts and nuts.
 - 2. Perform field inspection by this Contractor during a time when the Field Engineer and the Design Engineer are present to witness each inspection and its performance.
 - 3. Correct any deficiencies found during the inspection by this Contractor prior to the energizing and testing of the equipment.

1.05 SCHEDULING

- A. Schedule all testing with work of other contractors to ensure an orderly sequence of startup and completion of work.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 ELECTRICAL INSPECTIONS AND TESTS

- A. Perform, supervise, and furnish all test equipment needed to perform tests and provide safety measures, procedures and equipment required for each test.
- B. Schedule all testing with the Engineer. Perform testing in the presence of the Engineer except when the Engineer approves in writing conducting a specific test without the Engineer's presence.
- C. Notify all involved parties including the Engineer prior to tests, advising them of the test to be performed and the scheduled date and time.

- D. Coordinate the tests with others involved.
- E. Prepare written test procedures and forms used in the test reports and submit for approval prior to commencement of testing.
- F. Include in each test report the following information:
 - 1. Job title.
 - 2. Date of test.
 - 3. Equipment, system, or cable identification.
 - 4. Type of test.
 - 5. Description of test instrument and date of latest calibration.
 - 6. Section of specification defining test along with description of test and evaluations as reported by the testing company.
 - 7. Test results (correct all readings at 20 degrees C).
 - 8. Signature of person supervising test.
 - 9. Signature of Contractor.
 - 10. Space for Engineer's signature.
- G. Refer to individual tests and inspections hereinafter specified for any additional or specified requirements.
- H. Test Instrument Calibration:
 - 1. The testing firm is to have a calibration program, which assures that all applicable test instrumentation are maintained within rated accuracy.
 - 2. The accuracy is to be directly traceable to The National Institute of Standards and Technology.
 - 3. Instruments are to be calibrated in accordance with the following frequency schedule.
 - a. Field Instruments: Analog - 6 months maximum
 Digital - 12 months maximum
 - b. Laboratory Instruments: 12 months
 - c. Leased specialty equipment: 12 months
 - 4. Make dated calibration labels visible on all test equipment.
 - 5. Keep records up-to-date, which show date and results of instruments calibrated or tested.
 - 6. Maintain an up-to-date instrument calibration instruction and procedure for each test instrument.
 - 7. Calibrating standard is to be of higher accuracy than that of the instrument tested.
- I. Safety and Precautions:
 - 1. Safety practices are to include, but are not limited to, the following requirements:
 - a. Occupational Safety and Health Act of 1970-OSHA.
 - b. Accident Prevention Manual for Industrial Operations, National Safety Council, Chapter 4.
 - c. Applicable State and Local safety operating procedures.
 - d. IETA Safety/Accident Prevention Program.
 - e. Owner's safety practices.
 - f. National Fire Protection Association - NFPA 70E.
 - g. ANSI Z244.1 American National Standards for Personnel Protection.
 - 2. Perform all tests with apparatus de-energized except where otherwise specifically required.

3.02 TESTING TO BE PERFORMED BY THE CONTRACTOR

- A. The Contractor is required to obtain copies of NETA ATS-2013 and MTS-2013, and to keep at least one copy of each at the project site, to use as reference for testing requirements.
- B. Continuity Test: Make test for continuity and correctness of wiring and identification on all conductors installed.

- C. Wire and Cable:
 - 1. Test all wires and cables sized No. 2 and larger in accordance with NETA ATS-2013.
 - 2. Perform visual, mechanical, and electrical tests on all No. 4 and No. 6 power cables that operate at voltages exceeding 150 volts to ground in accordance with NETA ATS-2013.
 - 3. Perform visual, mechanical, and electrical tests on all other wires and cables in accordance with NETA ATS-2013.
 - 4. Replace any wires which have been damaged.
 - 5. Correct causes of all readings which do not meet the acceptable minimum insulation readings as stated in NETA ATS-2013. Exceed the nominal expected temperatures for the actual load.
 - 6. Retest items requiring correction.

- D. Ground Fault Circuit Interrupter (GFCI) Receptacles:
 - 1. Test all GFCI receptacles as specified in Section 26 27 26.

END OF SECTION 26 0563

SECTION 26 0923 - LIGHTING CONTROL 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. Standalone daylight-harvesting switching and dimming controls.
- 2. Indoor occupancy and vacancy sensors.
- 3. Switchbox-mounted occupancy sensors.
- 4. Emergency shunt relays.

B. Related Requirements:

- 1. Division 26 Section "Wiring Devices" for wall-box dimmers, non-networkable wall-switch occupancy sensors, and manual light switches.

1.3 ACTION SUBMITTALS

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

B. Shop Drawings:

- 1. Show installation details for the following:
 - a. Occupancy sensors.
- 2. Interconnection diagrams showing field-installed wiring.
- 3. Include diagrams for power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plan(s) and elevations, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

- 1. Suspended ceiling components.

2. Structural members to which equipment will be attached.
3. Items penetrating finished ceiling, including the following:
 - a. Luminaires.
 - b. Air outlets and inlets.
 - c. Speakers.
 - d. Sprinklers.
 - e. Access panels.
 - f. Control modules.

- B. Field quality-control reports.
- C. Sample Warranty: For manufacturer's warranties.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For each type of lighting control device to include in operation and maintenance manuals.
- B. Software and Firmware Operational Documentation:
 1. Software operating and upgrade manuals.
 2. Program Software Backup: On USB media. Provide names, versions, and website addresses for locations of installed software.
 3. Device address list.
 4. Printout of software application and graphic screens.

1.6 WARRANTY

- A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace lighting control devices that fail(s) in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Faulty operation of lighting control software.
 - b. Faulty operation of lighting control devices.
 2. Warranty Period: Two year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 DAYLIGHT-HARVESTING DIMMING CONTROLS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Cooper Industries, Inc.
 2. Hubbell Building Automation, Inc.
 3. Leviton Manufacturing Co., Inc.
 4. Lithonia Lighting; Acuity Brands Lighting, Inc.
 5. WattStopper; a Legrand® Group brand.
- B. System Description: Sensing daylight and electrical lighting levels, the system adjusts the indoor electrical lighting levels. As daylight increases, the lights are dimmed.
1. Lighting control set point is based on two lighting conditions:
 - a. When no daylight is present (target level).
 - b. When significant daylight is present.
 2. System programming is done with two hand-held, remote-control tools.
 - a. Initial setup tool.
 - b. Tool for occupants to adjust the target levels by increasing the set point up to 25 percent, or by minimizing the electric lighting level.
- C. Ceiling-Mounted Dimming Controls: Solid-state, light-level sensor unit, with separate power pack mounted on luminaire, to detect changes in indoor lighting levels that are perceived by the eye.
- D. Electrical Components, Devices, and Accessories:
1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 2. Sensor Output: 0- to 10-V dc to operate luminaires. Sensor is powered by controller unit.
 3. Light-Level Sensor Set-Point Adjustment Range: 20 to 60 fc.

- E. Power Pack/Room Controller: As recommended by selected manufacturer.
- F. Room Low Voltage Controllers: On/Off, Raise/Lower. Cover plate shall be stainless steel.

2.2 INDOOR OCCUPANCY AND VACANCY SENSORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Cooper Industries, Inc.
 - 2. Hubbell Building Automation, Inc.
 - 3. Leviton Manufacturing Co., Inc.
 - 4. Lithonia Lighting; Acuity Brands Lighting, Inc.
 - 5. Lutron Electronics Co., Inc.
 - 6. Philips Lighting Controls.
 - 7. Sensor Switch, Inc.
 - 8. WattStopper; a Legrand® Group brand.
- B. General Requirements for Sensors:
 - 1. Ceiling-mounted, solid-state indoor occupancy and vacancy sensors.
 - 2. Dual technology.
 - 3. Integrated power pack.
 - 4. Hardwired connection to switch and BAS.
 - 5. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 - 6. Operation:
 - a. Occupancy Sensor: Unless otherwise indicated, turn lights on when coverage area is occupied, and turn them off when unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
 - b. Vacancy Sensor: Unless otherwise indicated, lights are manually turned on and

sensor turns lights off when the room is unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.

- c. Combination Sensor: Unless otherwise indicated, sensor shall be programmed to turn lights on when coverage area is occupied and turn them off when unoccupied, or to turn off lights that have been manually turned on; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
7. Power: Line voltage.
 8. Power Pack: Dry contacts rated for 20-A LED load at 120- and 277-V ac, for 13-A tungsten at 120-V ac, and for 1 hp at 120-V ac. Sensor has 24-V dc, 150-mA, Class 2 power source, as defined by NFPA 70.
 9. Mounting:
 - a. Sensor: Suitable for mounting in any position on a standard outlet box.
 - b. Relay: Externally mounted through a 1/2-inch knockout in a standard electrical enclosure.
 - c. Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.
 10. Indicator: Digital display, to show when motion is detected during testing and normal operation of sensor.
 11. Bypass Switch: Override the "on" function in case of sensor failure.
 12. Automatic Light-Level Sensor: Adjustable from 2 to 200 fc; turn lights off when selected lighting level is present.
- C. Dual-Technology Type: Ceiling mounted; detect occupants in coverage area using PIR and ultrasonic detection methods. The particular technology or combination of technologies that control on-off functions is selectable in the field by operating controls on unit.
1. Sensitivity Adjustment: Separate for each sensing technology.
 2. Detector Sensitivity: Detect occurrences of 6-inch-minimum movement of any portion of a human body that presents a target of not less than 36 sq. in., and detect a person of average size and weight moving not less than 12 inches in either a horizontal or a vertical manner at an approximate speed of 12 inches/s.
 3. Detection Coverage (Standard Room): Detect occupancy anywhere within a circular area of 1000 sq. ft. when mounted on a 96-inch-high ceiling.

4. Detection Coverage (Room, Wall Mounted): Detect occupancy anywhere within a 180-degree pattern centered on the sensor over an area of 3000 square feet when mounted 48 inches above finished floor.

2.3 SWITCHBOX-MOUNTED OCCUPANCY SENSORS

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

1. Cooper Industries, Inc.
2. Hubbell Building Automation, Inc.
3. Leviton Manufacturing Co., Inc.
4. Lithonia Lighting; Acuity Brands Lighting, Inc.
5. Lutron Electronics Co., Inc.
6. Philips Lighting Controls.
7. Sensor Switch, Inc.
8. WattStopper; a Legrand® Group brand.

- B. General Requirements for Sensors: Automatic-wall-switch occupancy sensor with manual on-off switch, suitable for mounting in a single gang switchbox, with provisions for connection to BAS using hardwired connection.

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Occupancy Sensor Operation: Unless otherwise indicated, turn lights on when coverage area is occupied, and turn lights off when unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
3. Operating Ambient Conditions: Dry interior conditions, 32 to 120 deg F.
4. Switch Rating: Not less than 800-VA LED load at 120 V, 1200-VA LED load at 277 V, and 800-W incandescent.

- C. Wall-Switch Sensor:

1. Standard Range: 180-degree field of view, field adjustable from 180 to 40 degrees; with a minimum coverage area of 2100 sq. ft.
2. Sensing Technology: Dual technology - PIR and ultrasonic.

3. Switch Type: SP, field-selectable automatic "on," or manual "on," automatic "off."
4. Capable of controlling load in three-way application.
5. Voltage: Match the circuit voltage.
6. Ambient-Light Override: Concealed, field-adjustable, light-level sensor from 10 to 150 fc. The switch prevents the lights from turning on when the light level is higher than the set point of the sensor.
7. Concealed, "off" time-delay selector at 30 seconds and 5, 10, and 20 minutes.
8. Adaptive Technology: Self-adjusting circuitry detects and memorizes usage patterns of the space and helps eliminate false "off" switching.
9. Color: As selected by Architect.
10. Faceplate: stainless steel.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine lighting control devices before installation. Reject lighting control devices that are wet, moisture damaged, or mold damaged.
- B. Examine walls and ceilings for suitable conditions where lighting control devices will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 SENSOR INSTALLATION

- A. Comply with NECA 1.
- B. Coordinate layout and installation of ceiling-mounted devices with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, smoke detectors, fire-suppression systems, and partition assemblies.
- C. Install and aim sensors in locations to achieve not less than 90-percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.

3.3 CONTACTOR INSTALLATION

- A. Comply with NECA 1.
- B. Mount electrically held lighting contactors with elastomeric isolator pads to eliminate structure-

borne vibration unless contactors are installed in an enclosure with factory- installed vibration isolators.

3.4 WIRING INSTALLATION

- A. Comply with NECA 1.
- B. Wiring Method: Comply with Division 26 Section "Low-Voltage Electrical Power Conductors and Cables." Minimum conduit size is 1/2 inch.
- C. Wiring within Enclosures: Comply with NECA 1. Separate power-limited and nonpower- limited conductors according to conductor manufacturer's written instructions.
- D. Size conductors according to lighting control device manufacturer's written instructions unless otherwise indicated.
- E. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.

3.5 IDENTIFICATION

- A. Identify components and power and control wiring according to Division 26 Section "Identification for Electrical Systems."
 - 1. Identify controlled circuits in lighting contactors.
 - 2. Identify circuits or luminaires controlled by photoelectric and occupancy sensors at each sensor.
- B. Label time switches and contactors with a unique designation.

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to evaluate lighting control devices and perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- C. Perform the following tests and inspections:
 - 1. Operational Test: After installing time switches and sensors, and after electrical circuitry has been energized, start units to confirm proper unit operation.
 - 2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

- D. Lighting control devices will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports.

3.7 ADJUSTING

- A. Occupancy Adjustments: When requested within 12 months from date of Substantial Completion, provide on-site assistance in adjusting lighting control devices to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.
 - 1. For occupancy and motion sensors, verify operation at outer limits of detector range. Set time delay to suit Owner's operations.
 - 2. For daylighting controls, adjust set points and deadband controls to suit Owner's operations.
 - 3. Align high-bay occupancy sensors using manufacturer's laser aiming tool.

3.8 SOFTWARE SERVICE AGREEMENT

- A. Technical Support: Beginning at Substantial Completion, service agreement shall include software support for two years.
- B. Upgrade Service: At Substantial Completion, update software to latest version. Install and program software upgrades that become available within two years from date of Substantial Completion. Upgrading software shall include operating system and new or revised licenses for using software.
 - 1. Upgrade Notice: At least 30 days to allow Owner to schedule and access the system and to upgrade computer equipment if necessary.

3.9 DEMONSTRATION

- A. Coordinate demonstration of products specified in this Section with demonstration requirements for low-voltage, programmable lighting control systems.
- B. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain lighting control devices.

END OF SECTION 26 0923

SECTION 271300 – COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 FORWARD

- A. The following specification is typically intended for the extension of existing communications systems in an existing facility. They are intended to provide a set of instructions and materials needed for installation of additional data and voice ports, and additional cabling for new data and voice ports, etc. within parameters set by industry standards and by the SDP IT Department:

1.2 DESIGN

- A. Structured Cabling Systems:
 1. All horizontal drops for voice and data shall be Cat.6 (minimum) copper.
 2. From drop locations to IDF

1.3 APPLICABLE STANDARDS

- A. EIA/TIA-569A-1 to A-7. "Commercial Building Standard for Telecommunications Pathways and Spaces."
- B. EIA/TIA-568-B.1 & B.1-1; B.2, B-2.2, B-2.3; B.3."Commercial Building Telecommunication Standard."
- C. EIA/TIA-455-61. "FOTP-61, Measurement of Fiber or Cable Attenuation Using an OTDR."
- D. ANSI/TIA/EIA-606. "The Administration Standard for the Telecommunications Infrastructure of Commercial Building."
- E. ANSI/TIA/EIA-607-A."Commercial Building Grounding and Bonding Requirements for Telecommunications."
- F. TIA/EIA 492AAAB "Detail Specification for 50µm Core Diameter/125µm Cladding Diameter Class Multi-Mode Optical Fibers"
- G. TIA/EIA 492AAAC-A "Detail Specification for 850-nm Laser Optimized 50-µm Core Diameter/125µm Cladding Diameter Class 1a Graded Index Multi-Mode Optical Fibers"
- H. IEEE 802.3 "Carrier Sense Multiple Access with Collision Detection" and all applicable supplements a through af.
 1. IEEE 802.3u-100 Base T/100-Base-TX, Fast Ethernet
 2. IEEE 802.3z-Gigabit Ethernet
 3. IEEE 802.3 ab-1000 Base T
 4. IEEE 802.3ae-10 Gigabit Ethernet
- I. Electrical Code Compliance: Comply with applicable local and code requirements of the authority having jurisdiction.
- J. NFPA-70-NEC Compliance: Comply with NEC requirements as applicable to construction, installation and color coding of both power type wires/cables and control/signal transmission media.

- K. UL Compliance: Comply with applicable requirements of UL Standards 83, "Thermoplastic-Insulated Wires and Cables," 486A, "Wire Connectors and Soldering Lugs for Use with Copper Conductors," and UL 910, "Test Method for Fire and Smoke Characteristics of Cables Used in Air-Handling Spaces." Provide products which are ULlisted and labeled.
- L. NEMA/ICEA Compliance: Comply with NEMA/ICEA Std. Pub/No's WC-5, "Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy," and WC30, "Color Coding of Wires and Cables," pertaining to control and signal transmission media.
- M. ASTM Compliance: Comply with applicable requirements of D-2219 and D-2220. Provide copper conductors with conductivity of not less than 98% at 20°C (68°F).
- N. FCC Compliance: Comply with U.S. Federal Communications Commission Class 8 standard for allowable radiation from network equipment and wiring.
- O. Internet Networking Standards: Network hardware and software shall be able to communicate with the Internet and provide for the creation of IP based networks for the district. Supplied hardware and software shall comply with the following standards and RFC's as appropriate.
 - 1. MIL-STD -1777, RFC 971 -Internet Protocol
 - 2. MIL-STD -1778, RFC 793 -Transmission Control Protocol
 - 3. MIL-STD -1780, RFC 959 -File Transfer Protocol
 - 4. MIL-STD -1781, RFC 821 -Simple Mail Transfer Protocol
 - 5. MIL-STD -1782, RFC 854 -TELNET Protocol
 - 6. RFC 950 -Internet Standard Sub-Netting Procedure
 - 7. RFC 1140 -Official Protocol Standards
 - 8. RFC 1156 -MIB Base for IP Networks
 - 9. RFC-1213 -MIB-II
 - 10. RFC-1757 -Remote Monitoring (RMON)
 - 11. 1RFC 1157 -Simple Network Management Protocol
 - 12. RFC 1720 -TCP/IP, OSI Compliant
 - 13. RFC 1918 -Address Allocation for Private Subnets
 - 14. RFC 1583 -OSPF, Version II
 - 15. RFC 1723 -RIP -II
- P. NECA (National Electrical Contractors Association) Standard of Installation.
- Q. BICSI TDM Manual, latest edition
- R. BICSI LAN Design Manual, latest edition
- S. BICSI Cabling Installation Manual, latest edition

PART 2 - STRUCTURED CABLING SYSTEM (SCS) DISTRIBUTION

2.1 DEFINITIONS

- A. MAIN DISTRIBUTION FRAME (MDF): The MDF is the location, within a building or complex of buildings, where the entire telecommunications system originates. It may include: the physical location, enclosure, wire and cable management hardware, termination hardware, distribution hardware, and patching and equipment racks.
- B. INTERMEDIATE DISTRIBUTION FRAME (IDF): The IDF is the location in a building where a transition between the backbone or vertical riser system and the individual drop distribution system occurs. It may include: the physical location, enclosure, wire and cable management hardware, termination hardware, distribution hardware, and patching and equipment racks. The IDF's provide the interface location between fiber distribution cable (backbone) and station cable (horizontal distribution). All walls shall be covered with 3/4" plywood, AC or better, from

12" above the finished floor to the ceiling, painted with two coats of fire retardant paint both sides.

- C. Entrance Facility (EF): Existing. Existing MDF room is the entrance facility.
- D. BACKBONE PATHWAY: The Backbone Pathway consists of a series of conduits, surface raceways (renovations only), cable trays, conduit sleeves, and chases which connect the MDF to IDF's and MDF to the EF and the MDF to the Server Room. It generally houses the vertical or backbone system.
- E. BACKBOARD: Backboard generally refers to the plywood sheeting lining the walls of telecommunications facilities. Backboard may also refer to the entire wall-mounted assembly, including wire management, wiring blocks, and equipment racks. In this case, the term Backboard is fully interchangeable with SBB or TTB and the equipment required to fulfill the Scope of Work below.

2.2 WORK DESCRIPTION -TYPICAL

- A. Contractor shall provide data, voice and wireless outlets where indicated on plans, and shall provide cabling from outlets to existing IT equipment room. Termination to new cables to existing IT equipment by School District.
- B. The work performed under these guidelines shall be of good quality and performed in a workmanlike manner. In this context "good quality" means the work shall meet industry technical standards and quality of appearance. The owner reserves the right to reject all or a portion of the work performed, either on technical or aesthetic grounds. "Rats Nest" wiring and poor workmanship is not acceptable.

2.3 MANUFACTURERS

- A. Cat 6 cables and telecommunications outlets shall be equal in quality and performance to that manufactured by SYSTIMAX. Note that other cabling systems meeting the listed performance and warranty requirements are also acceptable substitutions.

2.4 FUNCTIONS AND OPERATION

- A. The intended function of the data communications cable system is to transmit data signals from a central location to several individual data outlet locations. Upon completion of the work outlined in this specification, the system shall be capable of transmitting data signals at a rate of 1000 Mbps minimum over Category 6 cable and over SM and MM fiber. Both SM and MM fiber shall also be capable of transmitting 10Gbps based upon the transmitting distance and number of links.
- B. Work station cable, from the IDF to the work area, shall be installed in accordance with EIA/TIA-568-B.2 specified installation practices, BICSI Guidelines, manufacturer specified installation practices, SYSTIMAX or (Other Acceptable Substitutes) Certified Cabling System installation practices, and shall be capable of transmitting a signal at 1000 Mbps with acceptable attenuation and cross-talk measurements and PSACR MARGIN. The entire workstation cable system, including wiring blocks, cable, and telecommunications outlets shall be tested for Category Six compliance.

PART 3 - PRODUCTS AND INSTALLATION

3.1 GENERAL

- A. Throughout Part 3, material quantities are not given. It is the responsibility of the Contractor to provide appropriate quantities of materials to provide a complete, functional system according to the design drawings, specifications, and work description.
- B. General installation provisions are as follows:
1. Cable: Where cable enters an MDF or IDF it shall be supported on horizontal or vertical cable runway. If terminations are on backboards, then from the runway support to the backboard via "D" Rings and cable ties. All cable shall be neatly bundled, combed, and tied. All cable runs, within the MDF or IDF, shall be horizontal or vertical, and bends shall comply with minimum specified cable bending radii. Copper UTP cable runs shall be provided with a ten-foot slack loop in the cable runway, in each IDF. Spread out the Cat. 6 cable in the runway and cable trays to avoid heavy stressing of the cable due to its own weight. Provide sufficient slack in the run to avoid any cinching of cables. NOTE CAT.6 CABLES SHALL NOT BE CINCHED TOO TIGHTLY. CABLE TIES AT PATCH PANEL LOCATIONS SHALL BE VELCRO TYPE TIE-WRAPPS ONLY. PLASTIC WIRE TIE WRAPS ARE NOT ALLOWED TO BE USED FOR ANY CAT.6 CABLING.
 2. Labeling: hand written labels are not acceptable. All labels shall be machine printed on clear or opaque tape, stenciled onto adhesive labels, or type written onto adhesive labels. The font shall be at least one-eighth inch (1/8") in height, block characters, and legible. The text shall be of a color contrasting with the label such that it may be easily read. If labeling tape is utilized, the width of the tape shall not exceed 3/8," and the font color shall contrast with the background. Patch panels shall exhibit workstation numbers, in sequential order, for all workstations served by the MDF or IDF.
 - a. Each telecommunications outlet shall be labeled with its respective work station number (machine labels only). Workstation numbers shall be comprised of a sequential numbering scheme that meets the TIA/EIA606 requirements, i.e. "1-1-DJ-52"(IDF #1-rack 1-data patch panel-port #52); or "1-2-VJ-48" (IDF #1-rack 2-voice patch panel-port# 48). Each workstation cable shall be labeled, using a machine based net permanent labeling medium, at each end with its respective workstation number. Each binder group shall be tied off with its respective identifying ribbon at each break-out point.
 3. T-Bar Suspended Ceilings: All data drop cable above dropped ceilings shall be installed in J-hooks, cable tray, or a combination thereof, conduit, or in cable chase. In no case shall cable be supported on ceiling tiles, T-bars, or tie-wrapped to any conduit or pipes. Cable must be supported in all areas. Bridle rings and tie-wrapped supporting means are not acceptable. Wire-rod cable trays are acceptable above dropped ceilings in-lieu of J-hooks. Laying cable on a T-bar ceiling is not allowed by the NEC and is not acceptable for support of Cat. 6 cabling, j-hooks must be used between conduit stub-ups and the wire rod cable tray for support.

3.2 WORK STATION CABLE

- A. DESCRIPTION: From each IDF, 4-pair Category 6 UTP cables shall be routed to each work station (for both data and voice outlets) served by the IDF. Where the data outlet resides in a classroom, a minimum of 6 cables plus one voice drop shall be required Route drops in, conduit, j-hooks, and /or chases and sleeves as required.
- B. COPPER UTP CABLE SPECIFICATIONS
1. HIGH SPEED LAN COMMUNICATIONS PLENUM CABLE; ENHANCED MARGIN CATEGORY 6, HORIZONTAL UNSHIELDED TWISTED PAIR (UTP).
- C. SCOPE
1. This section defines the requirements for commercially available high-performance Category 6 plenum-rated LAN communications cable. The cable design described herein exceeds minimum ANSI/TIA/EIA 568-B Category 6 and ISO/IEC 11801 Class D standards in critical transmission characteristics and provides additional specifications for conductor insulation. This specification provides more ACR margin (headroom) at transmission frequencies up to 200 MHz, better electrical balance, and temperature/humidity stability

for superior long-term performance. (NOTE: Minimum cable fire-rating shall be CMR; plenum rating only as required if returns are ducted; however, 100% FEP cable must be supplied).

- a. The minimum Power Sum ACR, for the Worst Case Pair for a 4Connector Channel shall be 10.9dB at 200 MHz.

2. ENGINEERING SPECIFICATIONS

- a. Cable Manufacturers' Part Numbers:
 - 1) SYSTIMAX # 2071E GigaMax Cable & Gigamax Cabling SystemPreferred
 - 2) Mohawk/CDT: AdvanceNet with Hubbell NEXTSPEED
 - 3) Berk-Tek: LanMark 2000 with Ortronics Clarity
 - 4) Superior Essex: NextGain with Leviton eXtreme
 - 5) Commscope : Ultrapipe with Siemon Ultra-"Uniprise Solution"
- b. Product: Jack Faceplates (WAO's) 4 pair, S110 connecting blocks, T568B pinning, Category 6 compliant, light Ivory or as selected by SDP:
 - 1) Modular Outlet Jacks & Faceplates: SYSTIMAX MGS-400 Series jacks in M-Series Information Outlets, 8 wire, T568B pinning, Category 6 S110 type insulation displacement modular outlet. Provide couplers as required per application and drawings.
- c. Accessories: Snap-in colored icons, blue for data and light gray for voice, 'phone' for voice and 'computer' for data/video, labels and clear label covers, quantities as required
 - 1) Required Accessories and Quantities (Surface Mount Boxes):
 - 2) Modular Mounting Frames: SYSTIMAX. PART #M12AP-246, Two-port, with cover, base, bezel, icons, screws, Light Ivory – surface mount with screws.
 - 3) Modular Mounting Frames: SYSTIMAX, PART #M14L-246, Four-port, with cover, base, bezel, icons, screws, Light Ivory – surface mount with screws.
 - 4) Modular Mounting Frames: SYSTIMAX, PART #M16L-246, Six-port, with cover, base, bezel, icons, screws, Light Ivory – surface mount with screws.
 - 5) Modular Outlet Jacks: SYSTIMAX M-Series Information Outlets or Flexible Information Outlets for HI-LO outlets and/or A/V outlets, 8 wire, T568B pinning, Category 6 S110 insulation displacement type modular outlet. Provide couplers as per application and drawings.
 - a) SYSTIMAX MGS400 Category 6 jack
 - b) single port F-type coaxial adapter
 - c) blank inserts for unused port
 - d) Icons same as surface raceway jacks

3. INSTALLATION:

- a. Installation shall be conducted in accordance with guidelines established the manufacturer and industry standards. Surface raceway jack faceplates shall be mounted in the surface raceway hanging boxes and shall be coordinated by the installation contractor. Each jack faceplate plate shall be labeled with its respective work station number. Each modular surface mounted box shall be labeled with its respective work station number. Labels shall be made by machine and shall be compliant with TIA/EIA-606 requirements.

D. TESTING AND DOCUMENTATION

1. TESTING:

- a. Contractor shall test each pair of each twisted-pair copper cable. The Owner reserves the right to have a representative present during all or a portion of the testing process. If the Owner elects to be present during testing, test results will only be acceptable when conducted in the presence of the Owner.
 - b. Tests
 - 1) Multi-mode: Signal attenuation at 850 and 1300 nm.

- 2) Single-mode: Bi-directional signal attenuation at 1310 and 1550 nm.

E. WORKSTATION CABLE

1. Each workstation cable shall be tested from the Jack Panel to the data outlet per TIA/EIA-568-B2.1 permanent link test requirements.
 - a. Test Equipment: Minimum Level III Compliant Tester
 - 1) Wirescope 350(Agilent Technologies) or equivalent
 - a) Test Criteria: The system shall be tested to Category 6 TIA/EIA-568B.2-1 permanent link test parameter requirements.

F. DOCUMENTATION

1. Contractor shall provide documentation to include test results and as-built drawings, all test results shall be computer generated. One Hard Copy shall also be provided to the District. Software for viewing the test results shall also be provided in the soft copy package.

G. WORK STATION CABLE:

1. The results of the work station cable tests shall be provided in the form of computer print-outs from the test equipment.

H. AS-BUILT DRAWINGS:

1. Contractor will be provided with clean copies of the Electrical drawings depicting data outlet locations or, if required by Addendum, shall produce drawings depicting data outlet locations as they were installed. The drawings, provided by Owner or in accordance with Addendum shall be modified to indicate actual cable routing, work station locations and workstation numbers.

3.3 INSTALLATION TESTING - COPPER

- A. The Owner/Engineer shall be notified 2 weeks prior to any testing so that the testing may be witnessed.
- B. Before requesting a final inspection, the Contractor shall perform a series of end to end installation performance tests. The Contractor shall submit for approval a proposal describing the test procedures, test result forms, and timetable for fiber optic and all copper plant wiring.
- C. Acceptance of the simple test procedures discussed below is predicated on the Contractor's use of the recommended products including but not limited to twisted pair cable, cross-connect blocks, and outlet devices specified and adherence to the inspection requirements, and practices set forth. Acceptance of the completed installation will be evaluated in the context of each of these factors.
- D. Minimum Test Parameter requirements for Enhanced Category 6 horizontal cabling.
 1. Category 6:
 - a. Each wire/pair shall be tested at both ends for the following utilizing Contractor generated test results forms:
 - 1) Wire Map
 - 2) Length
 - 3) Insertion Loss
 - 4) Near-end crosstalk (NEXT) loss
 - 5) Power sum near-end crosstalk (PSNEXT)
 - 6) Equal-level far-end crosstalk (ELFEXT)
 - 7) Power sum equal-level far-end crosstalk (PSELFEXT)
 - 8) Return loss
 - 9) Propagation delay
 - 10) Delay Skew
 - 11) Power Sum ACR

2. When errors are found, the source of each error shall be determined, corrected, and the cable re-tested. All defective components shall be replaced and retested. Defective components not corrected shall be reported to the Owner/Engineer with explanations of the corrective actions attempted.
3. Test records shall be maintained using the approved test results forms. The form shall record closet number, riser pair number or outlet ID, outcome of test, indication of errors found (e.g., a, b, c, d, or e) cable length, re-test results after problem resolution and signature of the technician completing the tests.
4. Test results for each 4 pair, Category 6, UTP cable must be submitted with identification to match labels on all patch panel ports and 8 position modular jacks, and identification to match as-built associated with that cable.
5. Owner/Engineer will observe and verify the accuracy of test results submitted.
6. Submit in both hardcopy and electronic floppy disc format.

E. ACCEPTANCE

1. Acceptance of the Data Communications System, by Owner, shall be based on the results of testing, functionality, and the receipt of documentation. With regard to testing, all fiber segments and all workstation data cables must meet the criteria established in the Section above. With regard to functionality, Contractor must demonstrate to Owner that 1000 Mbps data signals can be successfully transmitted, bi-directionally, from the MDF to and from a minimum of 10% of individual data outlets on each floor, witness tested by the Owner. The number of outlet locations to be tested shall be determined by Owner. With regard to documentation, all required documentation shall be submitted to Owner.

F. MINIMUM WARRANTY

1. The Cabling System shall meet the performance requirements of the ANSI/TIA/EIA568-B.2 standard. The warranty on the material, services, and operation of the cabling system to this specification must be for a period of at least 20 years. The connecting hardware shall have a lifetime extended warranty against defects in material and workmanship.
2. The warranty must include the following statements regarding the cabling system:
 - a. "Will support and conform to TIA/EIA-568-B specifications covering ANY CURRENT OR FUTURE APPLICATION which supports transmission over a properly constructed horizontal cabling system premises network which meets the channel and/or basic link performance as described in TIA/EIA-568-B."
 - b. "Will be free from defects in material or faulty workmanship."

PART 4 -VOICE DISTRIBUTION

4.1 GENERAL

A. PERFORMANCE REQUIREMENTS

1. The Telephone Voice Distribution System shall be provided from the outlet locations to the IDF's with Cat.6 station cabling.

4.2 PRODUCTS AND INSTALLATION

A. General: Refer to the requirements and equipment outlined in this guideline specification.

B. Miscellaneous Hardware: Provide all terminations, cross-connects, wire management, surge protectors, etc. for a complete and operational system.

1. Jacks, wall mount only, EIA/TIA 568B Pin-out, Cat. 6; provide wall mount type jacks with studded mounts for locations as required – Classrooms shall be located in the recessed wall box enclosure-see module details
2. Auxiliary Equipment: The Contractor shall install cross-connect wire (minimum Cat. 3 rated), D-rings, wire distribution spools, 110 block labeling, organizer rings, and other appurtenances for a complete, neat, and functional system.

C. RECORD DRAWINGS

1. The Contractor shall submit record drawings showing the actual system installation and the hardware/equipment locations. Clearly drafted markings on the Bid Documents attached Drawings shall be acceptable. These drawings shall indicate actual cable routing, cable numbers, outlet jack labeling, and designations of each termination at outlets and in the IDF's/MDF. Also included shall be the test report.

PART 5 -CABLE AND WIRE MANAGEMENT

5.1 GENERAL

- A. Unless indicated all data and voice cables shall be installed in conduit.
- B. Cabling, voice and data shall be installed according to the general requirements, as detailed below, and as shown on the drawings or in an attached addendum.
 1. No more than 50 UTP cable drops per run can be installed in Category 6 two inch "Jhooks" as called out herein (if necessary).
 2. Station Cable drops from work area outlet will be installed in conduit, Category 6 "Jhooks," from outlet stub up to the cable tray.
 3. Use Vertical Wire runway to support any /all risers between floors in closets or accessible locations; in no case shall any cable risers be unsupported.
 4. Cables entering IDF's/MDF's shall be supported with Cable runway from entrance to rack/cabinet location.

PART 6 - CORING/SLOTTING/SLEEVING

6.1 SLEEVES

- A. All wall penetrations shall be bored, and then sleeved; minimum is 1-inch metallic sleeve with plastic bushings or as required to size up. All floor penetrations shall be core drilled clean and true, and then installed with a metallic sleeve and plastic bushings on each side.
- B. The Contractor shall provide sleeves where required to protect equipment or facilities in the installation. Each sleeve shall extend through its respective floor, wall, or partition and shall be cut flush with each surface unless otherwise required.
- C. Sleeves in bearing and masonry walls, floors, and partitions shall be of standard weight steel pipe finished with smooth edges. For other masonry partitions, through suspended ceilings and for concealed vertical piping, sleeves shall be No. 22 U.S.G. galvanized iron.
- D. All sleeves shall be properly installed and securely cemented in place.
- E. Floor sleeves shall extend 3 inches above the finished floor. Space between floor sleeves and passing conduit shall be caulked with graphite packing and waterproof caulking compound as required for a waterproof installation. All floor sleeves shall be installed with plastic bushings to protect the cable, on both sides.
- F. Where conduits pass through waterproofed floors or walls, design of sleeves shall be such that waterproofing can be flashed into and around the sleeves.
- G. Sleeves through exterior walls below grade shall have the spaces between conduit and sleeve caulked watertight.
- H. Core drill one size larger than sleeve to accommodate the sleeve installation, caulk the void with watertight and fire rated sealing mastic (between bore and sleeve).

6.2 CHASES AND OPENINGS

- A. All openings or chases required for the installation of the telecommunications work in the building shall be provided by the Contractor.
- B. This Contractor shall seal all openings he has made in fire rated floors, ceilings or partitions after his work has been installed. The material used for sealing the openings shall have a fire rating equal to or greater than the rating of the floor, ceiling or partition material. All fire stop material shall be U.L. classified. Fire stop sealants, foams and compounds shall be as manufactured by 3M, STI, or Nelson. All floors minimum 2-hour rated fire stops and all corridor penetrations to classrooms or other areas.
- C. All Corridor Walls shall be considered fire rated and shall have a two-hour fire stop also-the Contractor has the option to install a UL Classified Sleeve/Firestop Combination, for wall and floor applications; use the STI "EZ-PATH" System, 1.5" for corridor penetrations to classrooms and 4" for floors for risers and 4" for entering IDF's/MDF's from the corridor.

APPENDIX #1

THE SCHOOL DISTRICT OF PHILADELPHIA

CURRENT PRODUCTS (STANDARDS)

- 1. Cabling: EIA/TIA 568B Compliant minimum (568B pinouts)-Cat.6 drops
- 2. Data Wireless Networking: AVAYA –AP6/AP8 Access Points-PROPRIETARY
 - a. Access Point (AP) in the Classroom to be protected with a non-metallic, plenum rated box, lockable, installed above the ceiling above the door or near the door. Antenna is mounted on the dropped ceiling in classroom and cabled to the AP lockbox; use antenna attenuators to keep signal within classroom area. AP Lockbox shall be Hoffman#A48, or equivalent.
 - b. All areas of student aggregation shall be covered for wireless access.
 - c. Design for 40% non-overlapping cells, use only non-overlapping channels 1, 6 and 11.
 - d. Each AP 54 MBPS minimum unless otherwise directed by SDP IT Dept.
 - e. Power using 802.3af PoE from IDF's. Install in a separate rack in IDF's/MDF.
 - f. Connect Cat 6 AP drop in ceiling to lockbox via a Cat. 6 patch cord.
 - g. Security: IEEE 802.1x and IEEE 802.1i standards employing EAP and RADUIS
 - 1) Utilize Wireless LAN Switch as a gateway from AP's to the network.

END OF SECTION

SECTION 27 5313 - 2-WIRE CLOCK SYSTEM

1 GENERAL

1.01 SUMMARY OF WORK

- A. This Section specifies materials and accessories for a 2-wire digital communication clock system.
- B. Section Includes:
 - 1. Secondary analog clock.

1.02 REFERENCE STANDARDS

- A. Federal Communications Division (FCC)
 - 1. Part 15 - Code of Federal Regulations.
- B. National Fire Protection Association (NFPA).
 - 1. NFPA 70E-2012, Standard for Electrical safety in the Workplace.
- C. US Green Building Council (USGBC).
 - 1. LEED[®] NC Version 2.2-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
- D. Underwriter's Laboratories (UL)

1.03 ACTION AND INFORMATIONAL SUBMITTALS

- A. Make submittals in accordance with Contract Conditions - Submittal Procedures.
- B. Product Data: Submit product data including manufacturer's literature for clock system materials and accessories, indicating compliance with specified requirements and material characteristics.
 - 1. Submit list on clock system manufacturer's letterhead of materials and accessories to be incorporated into Work.
 - 2. Include product name.
 - 3. Include preparation instructions and recommendations, installation methods, and storage and handling requirements.
 - 4. Include contact information for manufacturer and their representative for this Project.
- C. Shop Drawings: Submit shop drawings with information as follows:
 - 1. Diagram of proposed system showing system platform appliance, communication pathway, and schedule of individual device locations.
 - 2. Indicate integration with the Owner's network and servers. Include line diagram of network relationships.
 - 3. Show system power requirements.
- D. Samples:
 - 1. Submit one sample of each type of device used on project. Samples will be returned Contractor for incorporation into the Work after Consultant's review.
- E. Test Reports:

1. Submit evaluation and test reports or other independent testing agency reports showing compliance with specified performance characteristics and physical properties.

F. Subcontractor Experience: Submit verification of communication and electronics subcontractor's experience.

1.04 QUALITY ASSURANCE

- A. Communications and Electronics Subcontractor Quality Assurance:
1. Work experience of [3] years minimum with work similar to work of this Section.
 2. Manufacturer's authorization to perform work of this section.
- B. Supplier's Accreditation: Use only suppliers accredited by clock system manufacturer.
- C. Supplier's Maintenance Requirements:
1. Ensure local supplier has adequate facility for storage of spare parts for clock system.

1.05 DELIVERY STORAGE AND HANDLING

- A. Delivery and Acceptance Requirements:
1. Deliver materials and accessories in clock system manufacture's original packaging with identification labels intact and to suit project.
 2. Ensure clock system materials are not exposed to moisture during delivery.
 3. Replace damaged clock system materials.
- B. Storage and Handling Requirements: Store materials off ground in dry location and protected from exposure to fumes and harmful weather conditions and at temperature conditions recommended by manufacturer.
1. Store in original packaging until installed.

1.06 WARRANTY

- A. Warranty period: 2 years commencing on Date of Purchase.

2 PRODUCTS

2.01 MANUFACTURER

- A. Manufacturer: Sapling Inc., 670 Louis Drive, Warminster, Pennsylvania 18974, USA, Phone: 1-215-322- 6063, URL: www.sapling-inc.com.
- B. Substitution: Substitution will be accepted only if approved by consulting engineer and School District's Engineer.

2.02 SYSTEM REQUIREMENTS

- A. Ensure clock system components are designed to operate as a 2-wire digital communications system and as part of complete system including "fail-proof" design to ensure power interruption does not cause system failure.
- B. Ensure system can work in conjunction with existing wiring.
- C. Ensure system synchronizes all clocks and devices to each other.
- D. Include Converter Box, which allows combining data and electrical power requirements on same line.

- E. Ensure system is capable of receiving signal as often as once per second.
- F. Ensure system is capable of correcting clocks immediately upon receipt of digital signal.
 - 1. Analog and digital clocks automatically correct themselves on receipt of digital signal.
 - 2. Include built-in closed-loop system in analog clocks capable of allowing clocks to detect position of hands and bring clocks to correct time even if clocks are manually altered.
 - 3. Ensure analog clocks have diagnostic function capable of allowing user to view how long since clock received a digital signal.
 - 4. Ensure analog clocks are capable of functional tests of electronics and gears.
- G. Ensure each individual product is bench tested at the manufacturer's facility.
 - 1. Random testing is unacceptable
- H. Ensure each product is designed, assembled and tested in the United States of America.
- I. Basis of Design: Sapling Inc., 2-Wire Clock System. SRM Series Wired Round Clock (V5.4)

SECONDARY CLOCKS

- A. Analog Clocks: To UL and cUL 863, designed for 2-wire digital communication system with fully automatic plug and play capability.
 - 1. Ensure secondary clock is capable of receiving digital signals through a wired connection, and has automatic communication protocol identification recognizing:
 - a. 2-wire digital communication.
 - b. 59-minute correction.
 - c. 58-minute correction.
 - d. National Time or Rauland correction.
 - 2. Clock display: 12-hour white face with black numbers.
 - a. Size: Round 12 inches.
 - 3. Materials:
 - a. Dial: Polystyrene
 - b. Case: Smooth surface, low profile SlimLine ABS
 - c. Crystal: Shatter-proof, side-molded polycarbonate
 - 4. Hand tolerance:
 - a. Hour and Minute hand: $\pm 1/4$ minute;
 - b. Second hand: $\pm 1/2$ minute.
 - 5. Power Requirements: 24 V DC.
 - 6. Basis of design: Sapling Inc., SAM Series Smart Wired Round Clock.

1.02 SOURCE QUALITY CONTROL

- A. Ensure clock system components and accessories are supplied by single manufacturer.

2 EXECUTION

2.01 INSTALLERS

- A. Use only installers with 3 years minimum experience with work similar to work of this Section.

- B. Ensure all clock system components are installed by single communications and electronics subcontractor.

2.02 EXAMINATION

- A. Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for clock system installation in accordance with manufacturer's written recommendations.
 - 1. Visually inspect substrate in presence of Consultant.
 - 2. Ensure surfaces are free of snow, ice, frost, grease, and other deleterious materials.
 - 3. Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.
- B. Start of clock system installation indicates installer's acceptance of substrate installation conditions.

2.03 INSTALLATION

- A. Install 2-wire digital communication clock system in accordance with manufacturer's written recommendations and in accordance with NFPA 70E.
- B. Integrate clock system with Owner's electrical and communications network.
- C. Install wiring in accordance with requirements of local Authority Having Jurisdiction.
- D. Conceal wiring except in unfinished spaces and as approved in writing by Consultant.
- E. Install clocks only after painting and other finish work is completed in each room.
- F. Install clocks and other devices square and plumb.

2.04 SYSTEM STARTUP

- A. At completion of installation and before final acceptance, turn on equipment and ensure equipment is operating properly, and clock system devices and components are functioning.
- B. Evaluate and test each device in clock system on room-by-room basis using factory-trained technicians.
 - 1. Fix or replace devices which fail test or are functioning incorrectly.
 - 2. Submit evaluation and report showing results of room-by-room tests and overall system compliance within 3 days of testing being carried out.

2.05 CLEANING

- A. Progress Cleaning: Perform cleanup as work progresses.
 - 1. Leave work area clean at end of each day.
- B. Final Cleaning: Upon completion, remove surplus materials, rubbish, tools, and equipment.
- C. Waste Management:
 - 1. Co-ordinate recycling of waste materials with 01 74 19 - Construction Waste Management and Disposal.
 - 2. Collect recyclable waste and dispose of or recycle field generated construction waste created during construction or final cleaning related to work of this Section.
 - 3. Remove recycling containers and bins from site and dispose of materials at

appropriate facility.

2.06 DEMONSTRATION AND TRAINING

- A. Arrange system demonstration and training session for Owner's operation and maintenance personnel.
 - 1. Allow Owner and Consultant 7 days minimum advance notice before training session.
- B. Break down system demonstration and training session into logical segments for Owner's operations and maintenance personnel.
- C. Train Owner's maintenance personnel in procedures and schedules involved in operating, troubleshooting, servicing, and preventative maintenance of clock system.

2.07 PROTECTION

- A. Protect installed products and accessories from damage during construction.
- B. Repair damage to adjacent materials caused by clock system installation.

END OF SECTION

SEAL:

ENGINEER OF RECORD AND MECHANICAL/PLUMBING/ELECTRICAL ENGINEER:

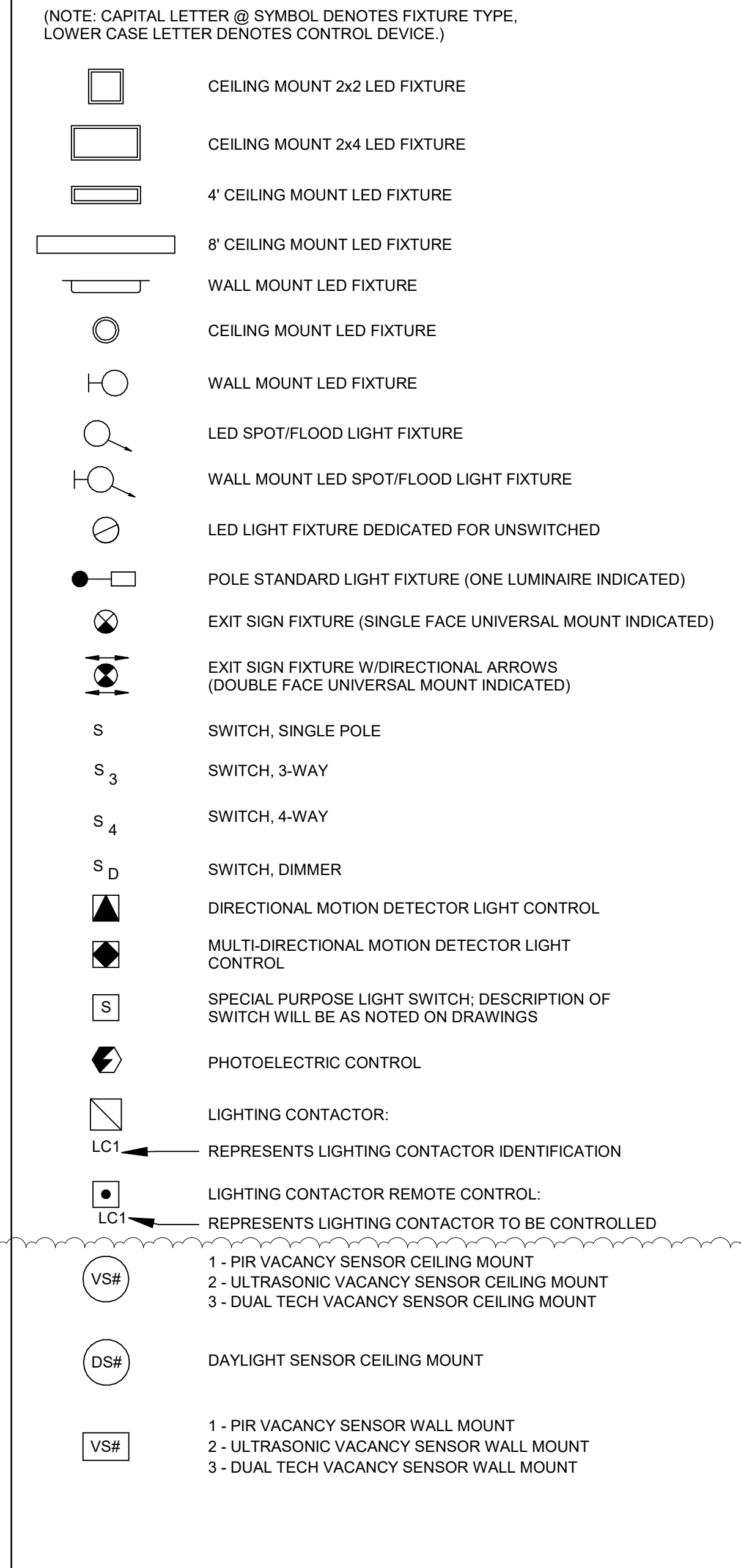
GANNETT FLEMING, INC. 1010 ADAMS AVENUE VALLEY FORGE, PA 19403 Phone: 610.783.3862 Email: BWISSER@GFNET.COM Attn: BRIAN WEISSER

ARCHITECT:

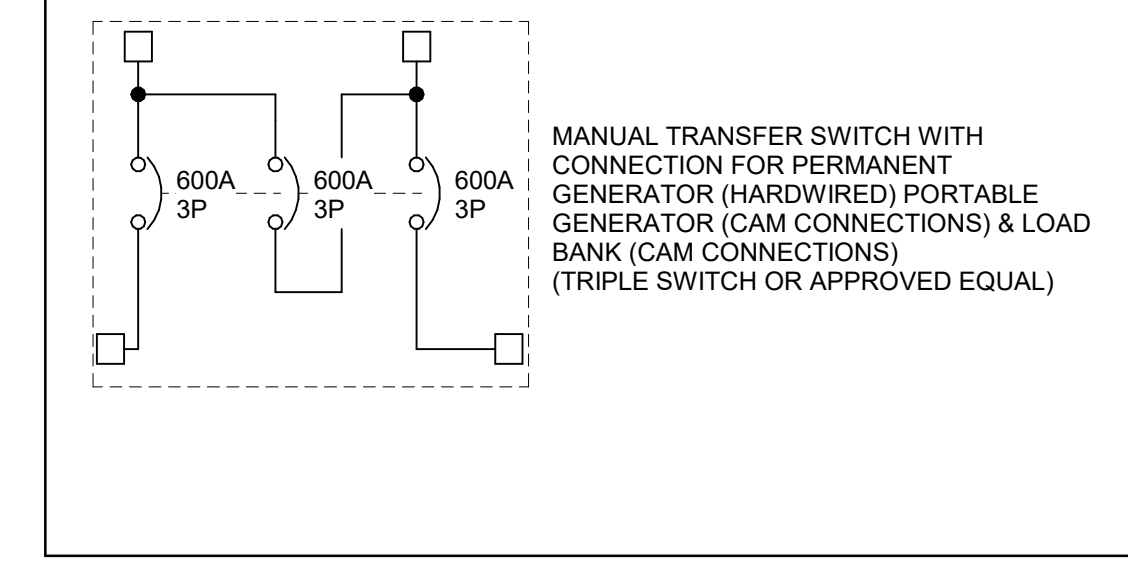
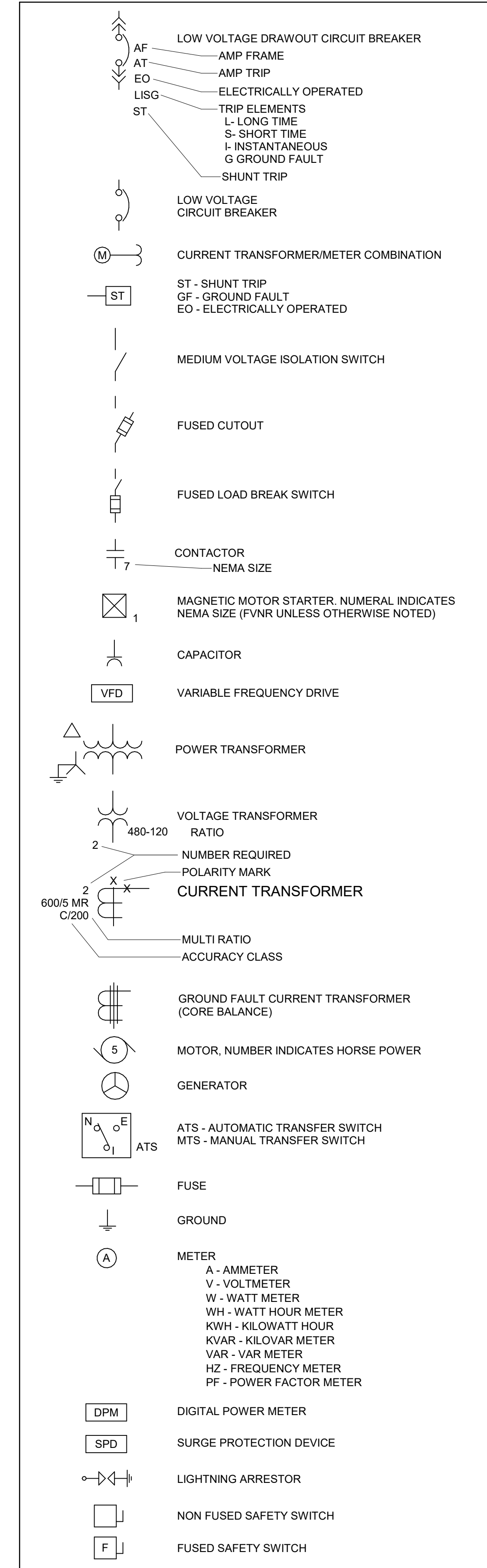
OZ COLLABORATIVE 4818 BALTIMORE AVENUE PHILADELPHIA, PA 19143 Phone: 215.386.8191 ext. 210 Email: NJZIMMERMAN@OZCOLLABORATIVE.COM Attn: MORRIS ZIMMERMAN

A B C D E F

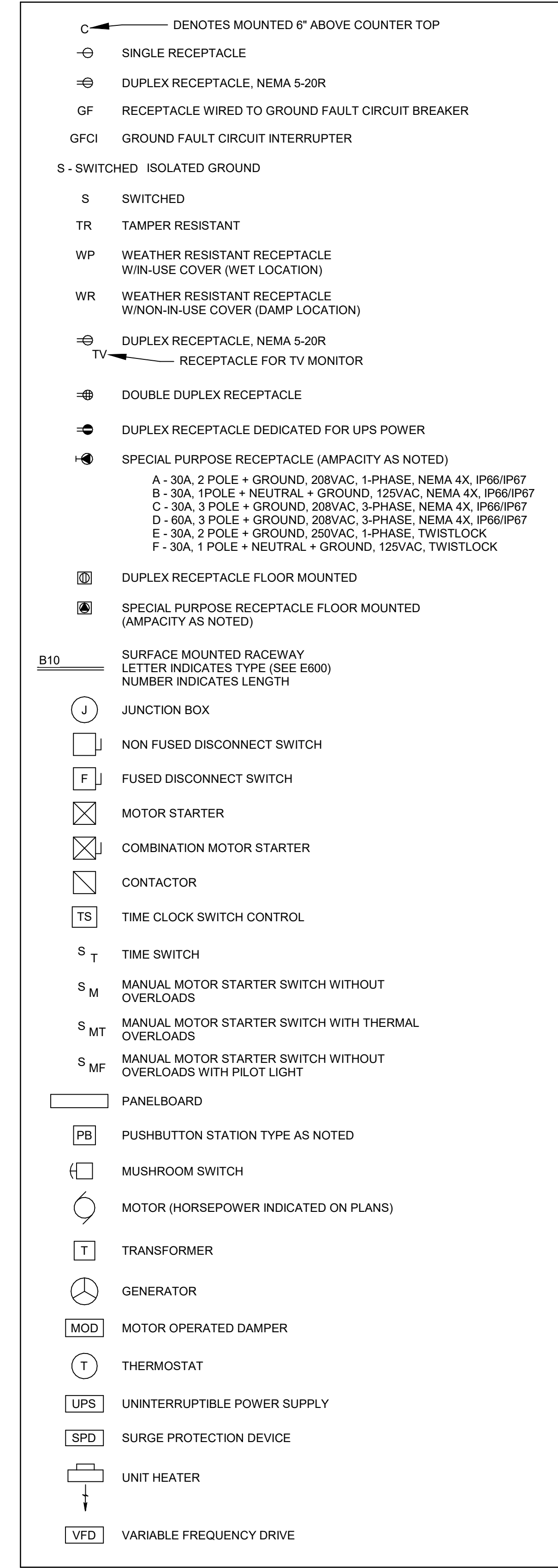
LIGHTING



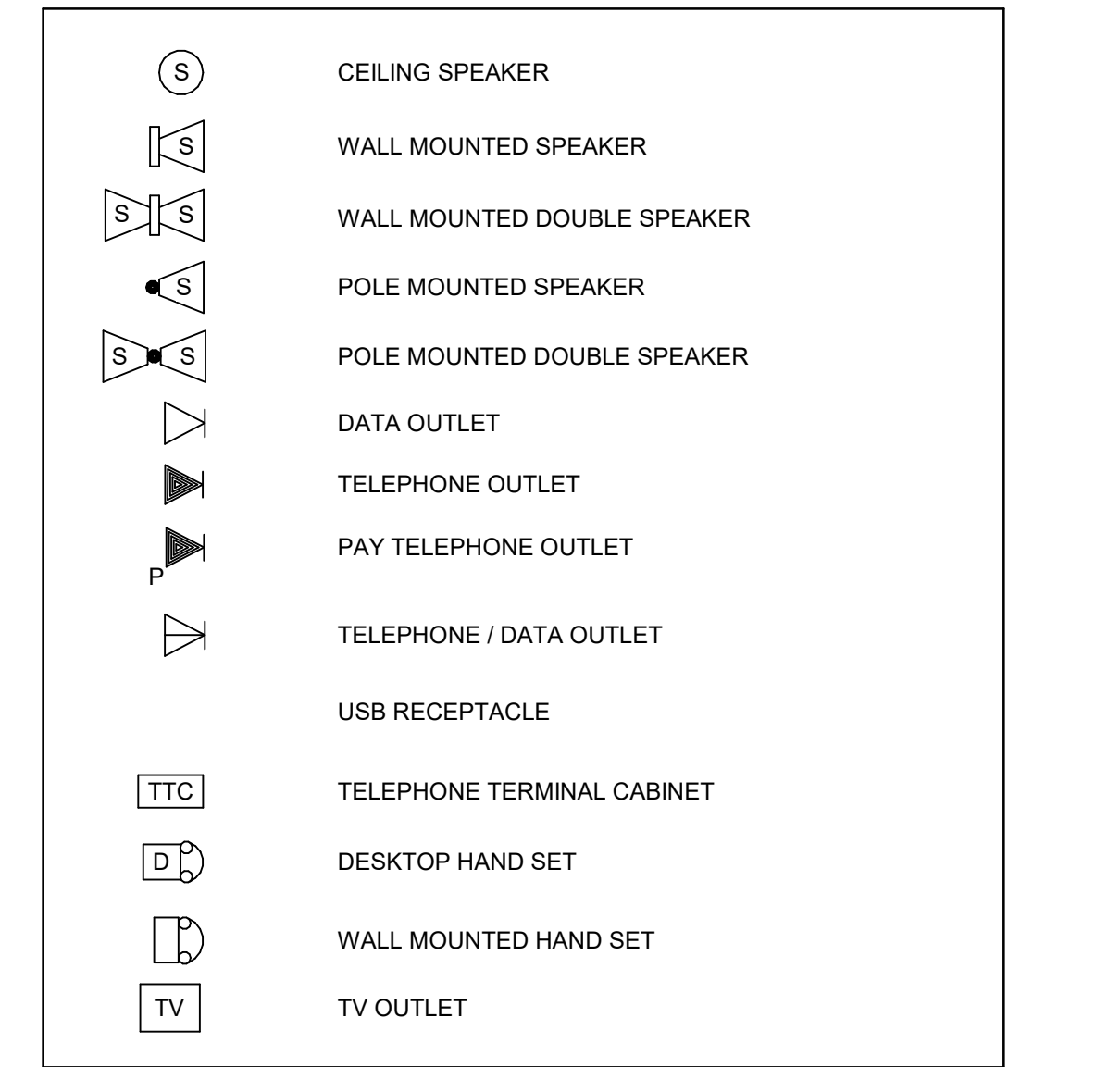
ONE LINE DIAGRAM



GENERAL POWER



COMMUNICATION



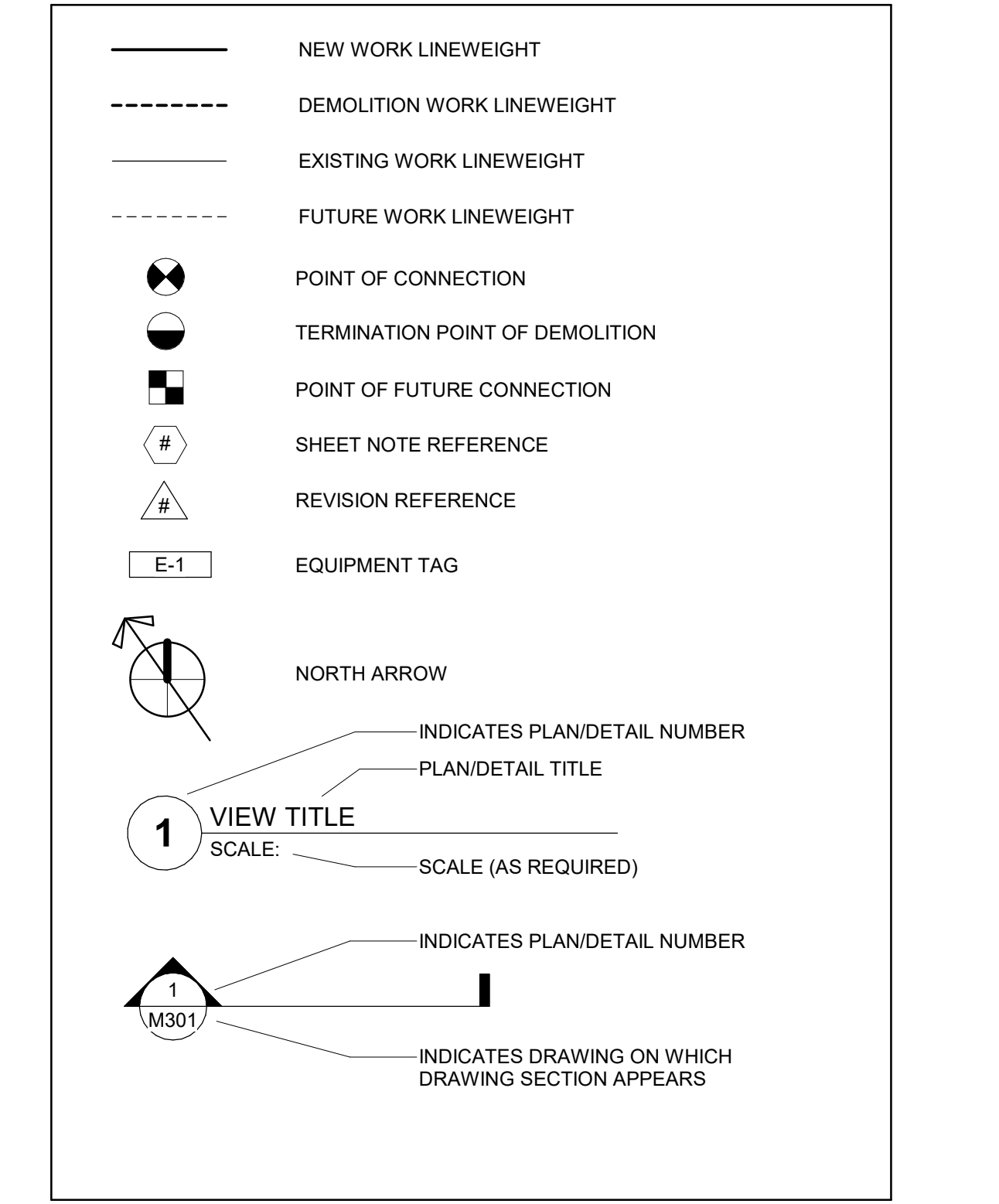
GENERAL NOTES

- 1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA-70) AS ADOPTED AND AMENDED BY PHILADELPHIA ELECTRICAL CODE AND THE COMMONWEALTH OF PENNSYLVANIA.
2. ALL ELECTRICAL WORK SHALL BE PROPERLY GROUNDED AND SHALL MEET ALL REQUIREMENTS OF THE APPLICABLE SECTION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ANY AUTHORITIES HAVING JURISDICTION.
3. DRAWINGS ARE DIAGRAMMATIC IN NATURE. THE CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO INSTALLATION. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER DIVISIONS TRADES TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM. CONTRACTOR SHALL COORDINATE LOCATION OF FIXTURES, DEVICES, ETC WITH OTHER TRADES IN ORDER TO AVOID INTERFERENCES.
4. ARCHITECTURAL FEATURES SHOWN ON THESE DRAWINGS ARE FOR BACKGROUND INFORMATION ONLY. REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ACTUAL BUILDING CONSTRUCTION WALLS AND CURBS. REFER TO EQUIPMENT DRAWINGS FOR ACTUAL LOCATION OF EQUIPMENT.
5. EXACT CONDUIT STUB-UP LOCATIONS ARE TO BE DETERMINED BY THE ELECTRICAL CONTRACTOR BASED ON THE CERTIFIED MANUFACTURER'S DRAWINGS OF RESPECTIVE EQUIPMENT. CONDUITS SHALL BE INSTALLED TO AGREE WITH EQUIPMENT DRAWINGS FOR ACTUAL LOCATION OF EQUIPMENT.
6. WALL AND FLOOR PENETRATIONS SHALL BE BY THE ELECTRICAL CONTRACTOR. PROVIDE FIRESTOP AS REQUIRED FOR ALL PENETRATIONS MADE FOR ELECTRICAL WORK.
7. COORDINATE THE COLORS OF WIRING DEVICES AND FACEPLATES WITH THE ARCHITECT.
8. EQUIPMENT AND DEVICES SHALL MATCH THE BUILDING STANDARD.

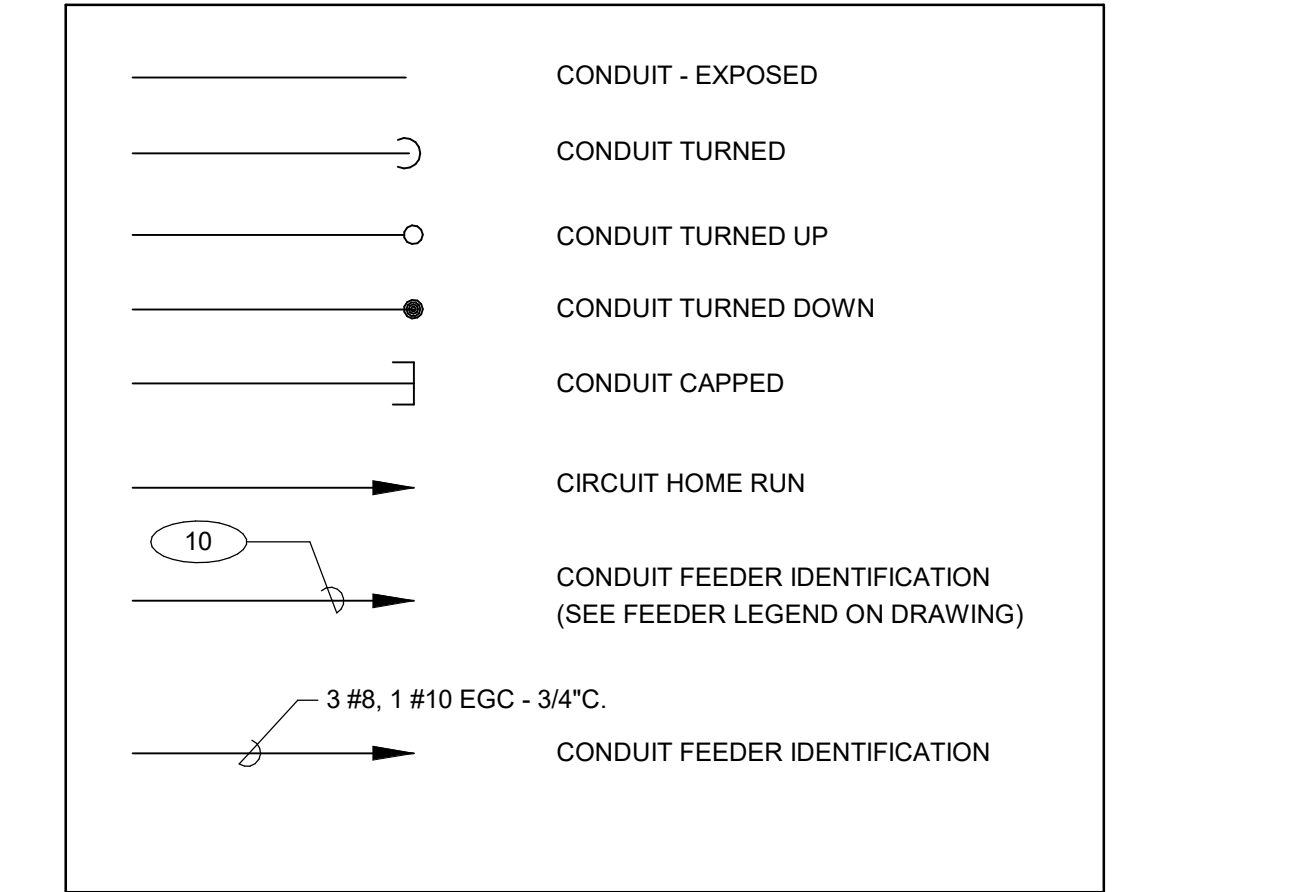
WIRING METHODS

- 1. UNDERGROUND
A. UNLESS OTHERWISE NOTED ON THE DRAWINGS CONCRETE ENCASED AND DIRECT BURIED CONDUIT SHALL BE SCHEDULE 40 PVC. WHERE CONDUITS PASS THROUGH GRADE, THROUGH CONCRETE PADS, OR THROUGH BUILDING FOUNDATION WALLS OR FLOOR SLABS CONDUIT SHALL BE PVC COATED.
2. OUTDOORS
A. UNLESS OTHERWISE NOTED ON THE DRAWINGS CONDUIT INSTALLED OUTDOORS SHALL BE GALVANIZED RIGID STEEL AND FLEXIBLE CONNECTIONS SHALL BE LIQUIDTIGHT FLEXIBLE METAL CONDUIT.
3. INDOORS
A. IN FINISHED AREAS ALL RACEWAY AND WIRING SHALL BE CONCEALED AND BOXES RECESSES. WIRING INSTALLED IN MASONRY WALLS SHALL BE EMT OR GALVANIZED RIGID STEEL. WIRING INSTALLED IN STUD WALL CAVITIES OR ABOVE HUNG CEILINGS MAY BE TYPE MC CABLE OR EMT.
B. IN UNFINISHED AREAS SUCH AS MECHANICAL AND ELECTRICAL ROOMS WIRING SHALL BE INSTALLED IN EMT.
C. WIRING IN THE CRAWLSPACE SHALL BE INSTALLED IN RIGID METAL CONDUIT.

LINES & REFERENCE SYMBOLS



CONDUIT FEEDERS & BRANCH CIRCUITS



BID DOCUMENTS JANUARY 07, 2022 FOR BID PURPOSES ONLY

Table with columns for NO, DATE, REVISION, and content.

SCHOOL & LOCATION JOHN M. PATTERSON SCHOOL

7001 BUIST AVE, PHILADELPHIA, PA 19142 PROJECT TITLE

PATTERSON CLASSROOMS MODERNIZATIONS

DRAWING NAME GENERAL NOTES, ABBREVIATIONS & LEGEND

Table with columns for DRAWING SCALE, LOCATION NO., DRAWN BY, CHECKED BY, and dates.

DRAWING NO. E001

SEAL:

Electrical Engineer
XX Elnorvinn DATE
MM/DD/YY

ENGINEER OF RECORD AND
MECHANICAL/PLUMBING/ELECTRICAL ENGINEER:

GANNETT FLEMING, INC.
1010 ADAMS AVENUE
VALLEY FORGE, PA 19403
Phone: 610.783.3862
Email: BWESSER@GFNET.COM
Attn: BRIAN WEISSER

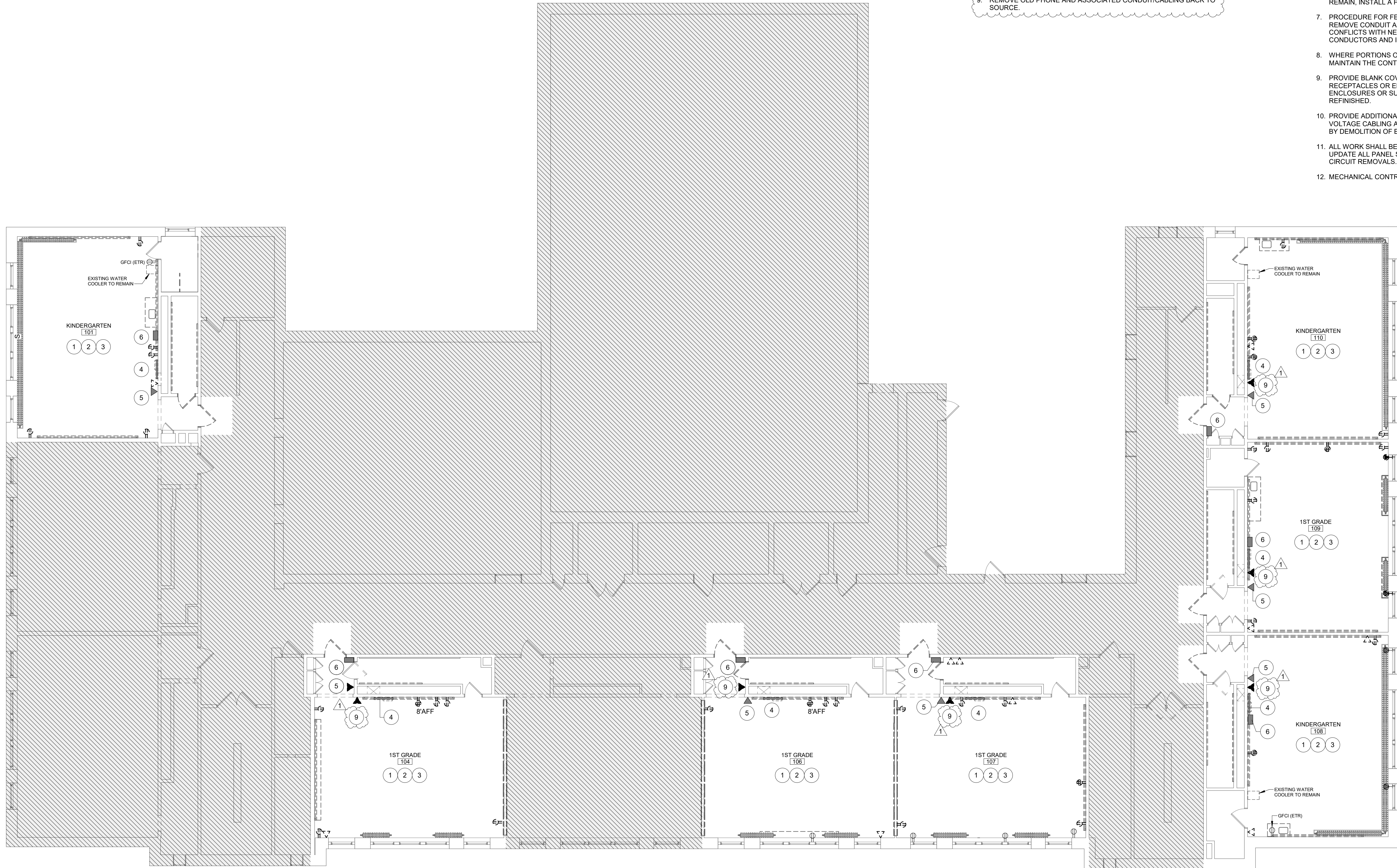
ARCHITECT:
OZ COLLABORATIVE
4818 BALTIMORE AVENUE
PHILADELPHIA, PA 19143
Phone: 215.386.8191 ext. 210
Email: MJZIMMERMAN@OZCOLLABORATIVE.COM
Attn: MORRIS ZIMMERMAN

SHEET DEMOLITION KEYNOTES

- REMOVE EXISTING RECEPTACLES WITHIN THIS ROOM/AREA. WIRING AND CONDUIT TO BE REUSED FOR NEW WORK.
- REMOVE EXISTING DATA/TELEPHONE OUTLETS AND WIREMOLD WITHIN THIS ROOM/AREA. REMOVE DATA/TELEPHONE CABLING BACK TO SOURCE. CONDUIT TO BE REUSED FOR NEW WORK. REMOVE EXISTING COAXIAL RECEPTACLES, ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
- REMOVE WALL MOUNTED SPEAKERS. EXISTING CEILING MOUNTED SPEAKERS TO REMAIN.
- REMOVE EXISTING CLOCK. EXISTING WIRING AND CONDUIT TO BE REUSED FOR NEW CLOCK. FURNISH EXISTING CLOCK TO THE SCHOOL DISTRICT AS ATTIC STOCK.
- EXISTING HOUSE PHONE TO REMAIN.
- REMOVE EXISTING WIRELESS ACCESS POINT (WAP). REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE. FURNISH EXISTING (WAP) TO THE SCHOOL DISTRICT AS ATTIC STOCK.
- EXISTING FIRE ALARM DEVICES TO REMAIN. TYP.
- EXISTING DUPLEX RECEPTACLE TO BE RELOCATED AS NEEDED FOR NEW CASEWORK.
- REMOVE OLD PHONE AND ASSOCIATED CONDUIT/CABLING BACK TO SOURCE.

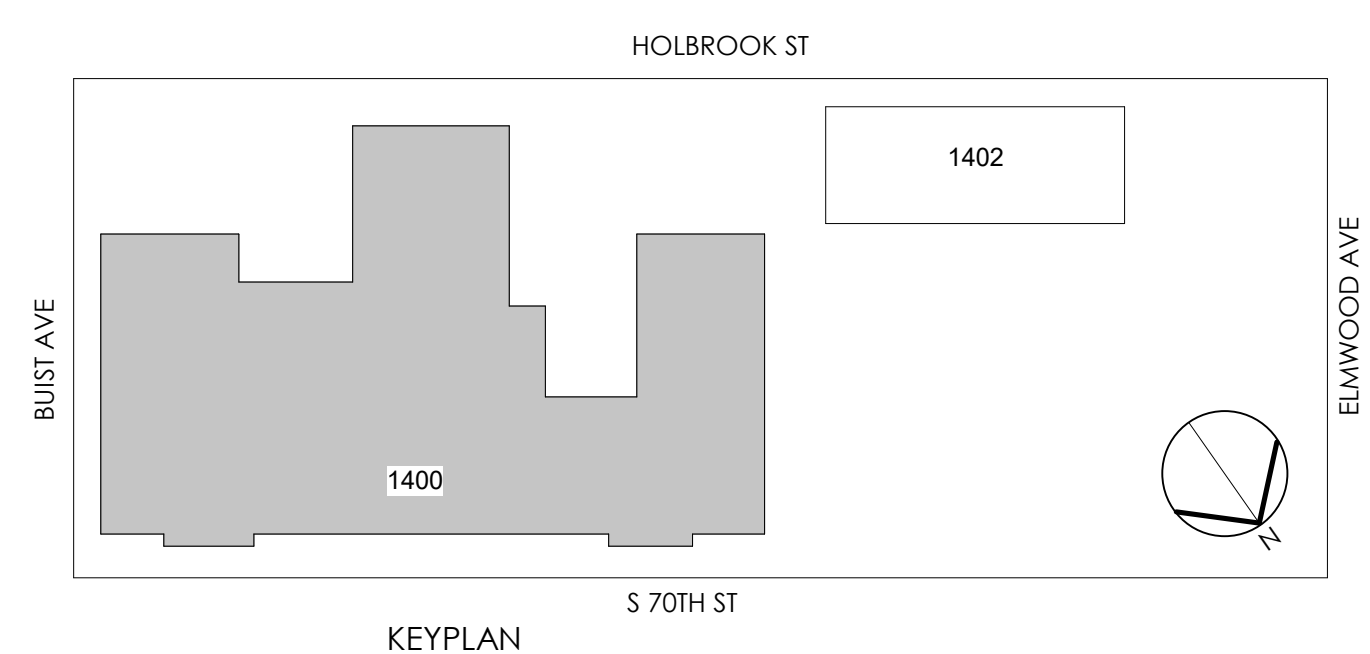
GENERAL DEMOLITION NOTES

- SEE ARCHITECTURAL DRAWING A-001 FOR GENERAL NOTES AND PROJECT INFORMATION.
- NOTES AND GRAPHIC REPRESENTATIONS SHALL NOT LIMIT THE EXTENT OR DEMOLITION REQUIRED. CONTRACTOR SHALL VISIT THE SITE, CAREFULLY EXAMINE EXISTING CONDITIONS AND SHALL PERFORM ALL DEMOLITION REQUIRED TO ACHIEVE THE FINAL DESIGN INTENT AS REQUIRED BY THE CONTRACT DOCUMENTS. EXTENT OF ALL DEMOLITION WORK SHALL BE COORDINATED WITH THE OWNER & ENGINEER.
- ALL WORK REQUIRED TO REMAIN IN SERVICE BUT INTERFERING WITH THE ALTERATIONS SHALL BE RELOCATED AND RECONNECTED USING MATERIALS AND STANDARDS OF THIS CONTRACT.
- EQUIPMENT AND WIRING TO BE REMOVED SHALL BE DE-ENERGIZED PRIOR TO ANY DEMOLITION WORK.
- EQUIPMENT INDICATED TO BE REMOVED SHALL BE TAKEN FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS. EQUIPMENT REQUIRED TO BE TURNED OVER TO THE OWNER, SHALL BE PLACED IN A MUTUALLY ACCEPTED LOCATION.
- PROCEDURE FOR FEEDERS AND BRANCH CIRCUITS TO BE REMOVED: CONDUIT AND SUPPORTS SHALL BE REMOVED TO THE PANEL OF ORIGIN OR THE BOUNDARY OF THE PROJECT AREA. WIRING SHALL BE REMOVED TO THE PANEL OF ORIGIN. WHERE EMPTY CONDUITS REMAIN, INSTALL A PULL STRING AND IDENTIFY AT BOTH ENDS.
- PROCEDURE FOR FEEDERS AND BRANCH CIRCUITS TO BE RE-USED: REMOVE CONDUIT AND WIRING TO LOCATIONS WHICH AVOID CONFLICTS WITH NEW WORK. INSTALL JUNCTION BOXES. TAPE OFF CONDUCTORS AND IDENTIFY WITH PANEL AND CIRCUIT NUMBER.
- WHERE PORTIONS OF EXISTING BRANCH CIRCUITS ARE REMOVED, MAINTAIN THE CONTINUITY OF CIRCUITING TO REMAINING DEVICES.
- PROVIDE BLANK COVER PLATES AT OPEN BOXES WHERE EXISTING RECEPTACLES OR ELECTRICAL DEVICES ARE REMOVED FROM ENCLOSURES OR SURFACES NOT INDICATED TO BE REPAIRED OR REFINISHED.
- PROVIDE ADDITIONAL SUPPORT FOR ALL EXISTING CONDUITS, LOW VOLTAGE CABLING AND DEVICES TO REMAIN WHICH ARE AFFECTED BY DEMOLITION OF EXISTING CEILINGS AND PARTITIONS.
- ALL WORK SHALL BE PROPERLY IDENTIFIED AFTER DEMOLITION. UPDATE ALL PANEL SCHEDULES TO REFLECT EQUIPMENT AND CIRCUIT REMOVALS.
- MECHANICAL CONTROL SWITCHES TO REMAIN.



1 ELECTRICAL FIRST FLOOR POWER DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

THE ELECTRICAL CONTRACTOR SHALL PERFORM A SURVEY OF THE EXISTING SITE CONDITIONS PRIOR TO BEGINNING WORK. THE SURVEY SHALL INCLUDE TRACING THE WIRING/CONDUIT FOR EACH PIECE OF EQUIPMENT THAT IS BEING DEMOLISHED BACK TO THE SOURCE PANELBOARD/SWITCHBOARD AND IDENTIFYING THE CIRCUIT BREAKER FEEDING THAT EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL MARK UP THE PLANS IDENTIFYING THE PANELBOARD LOCATION AND RATINGS AS WELL AS THE CIRCUIT BREAKER LOCATION IN THE PANELBOARD AND THE CIRCUIT BREAKER AMPERAGE RATINGS, MANUFACTURER AND CATALOG NUMBER. THIS INFORMATION SHALL BE PROVIDED TO CLIENT'S REPRESENTATIVE PRIOR TO BEGINNING CONSTRUCTION.



BID DOCUMENTS
JANUARY 07, 2022
FOR BID PURPOSES ONLY

NO.	DATE	REVISION

1 2/9/2022 ADDENDUM #2

SCHOOL & LOCATION
JOHN M. PATTERSON SCHOOL

7001 BUIST AVE, PHILADELPHIA, PA 19142

PROJECT TITLE
**PATTERSON CLASSROOMS
MODERNIZATIONS**

DRAWING NAME
**ELECTRICAL FIRST FLOOR
POWER DEMOLITION PLAN**

DRAWING SCALE
As indicated

LOCATION NO. ENGINEER'S PROJECT #
1400 & 1402 069078

DRAWN BY CHECKED BY
Author Checker

2022-010-G
2022-010-P
2022-010-E

DRAWING NO.
ED101

SEAL:

DATE

ENGINEER OF RECORD AND MECHANICAL/PLUMBING/ELECTRICAL ENGINEER:

GANNETT FLEMING, INC. 1010 ADAMS AVENUE VALLEY FORGE, PA 19403 Phone: 610.783.3862 Email: BWEISSER@GFNET.COM Attn: BRIAN WEISSER

ARCHITECT:

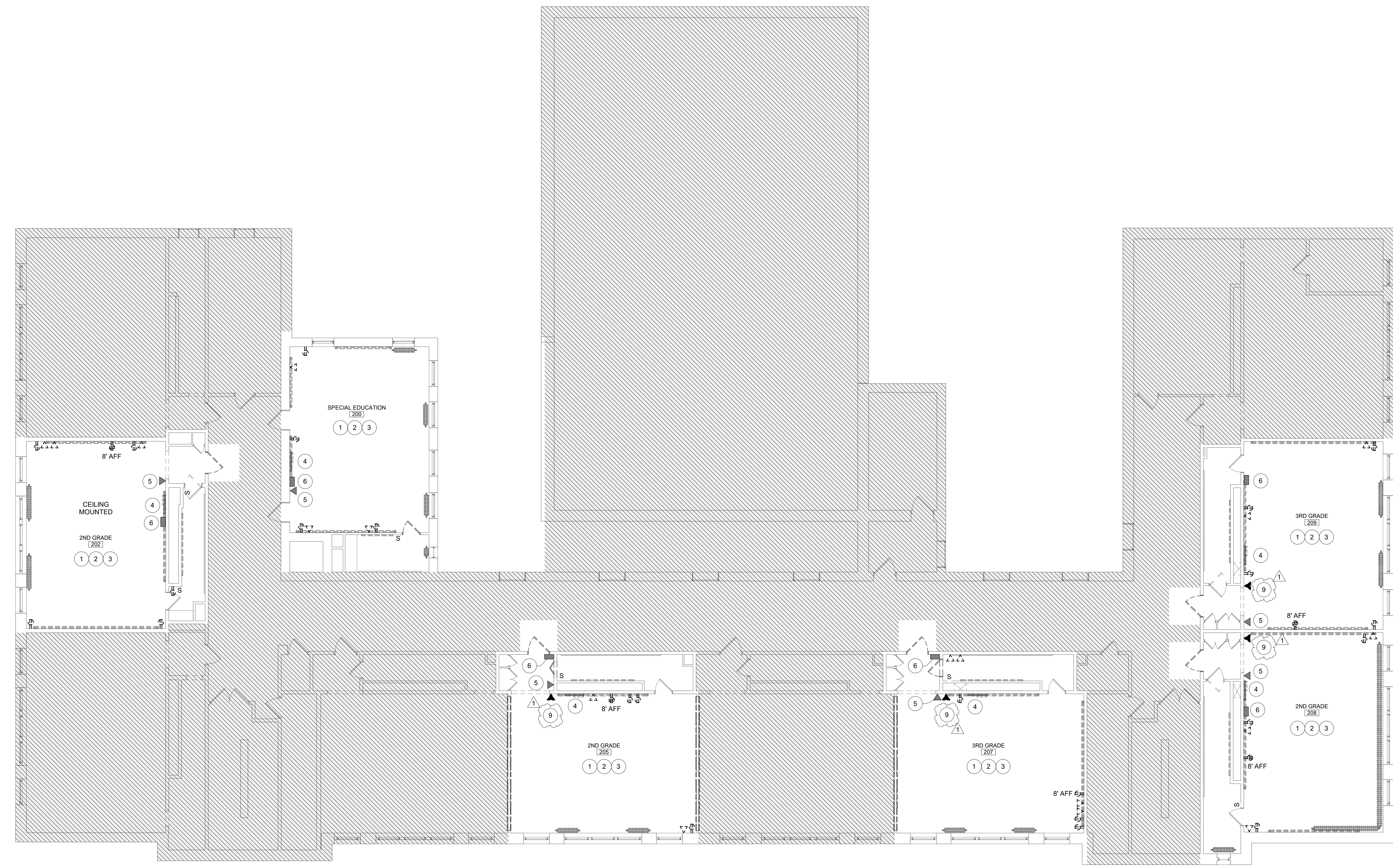
OZ COLLABORATIVE 4818 BALTIMORE AVENUE PHILADELPHIA, PA 19143 Phone: 215.386.8191 ext. 210 Email: MJZIMMERMAN@OZCOLLABORATIVE.COM Attn: MORRIS ZIMMERMAN

GENERAL DEMOLITION NOTES

- 1. SEE ARCHITECTURAL DRAWING A-001 FOR GENERAL NOTES AND PROJECT INFORMATION. 2. NOTES AND GRAPHIC REPRESENTATIONS SHALL NOT LIMIT THE EXTENT OR DEMOLITION REQUIRED. CONTRACTOR SHALL VISIT THE SITE, CAREFULLY EXAMINE EXISTING CONDITIONS AND SHALL PERFORM ALL DEMOLITION REQUIRED TO ACHIEVE THE FINAL DESIGN INTENT AS REQUIRED BY THE CONTRACT DOCUMENTS. EXTENT OF ALL DEMOLITION WORK SHALL BE COORDINATED WITH THE OWNER & ENGINEER. 3. ALL WORK REQUIRED TO REMAIN IN SERVICE BUT INTERFERING WITH THE ALTERATIONS SHALL BE RELOCATED AND RECONNECTED USING MATERIALS AND STANDARDS OF THIS CONTRACT. 4. EQUIPMENT AND WIRING TO BE REMOVED SHALL BE DE-ENERGIZED PRIOR TO ANY DEMOLITION WORK. 5. EQUIPMENT INDICATED TO BE REMOVED SHALL BE TAKEN FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS. EQUIPMENT REQUIRED TO BE TURNED OVER TO THE OWNER, SHALL BE PLACED IN A MUTUALLY ACCEPTED LOCATION. 6. PROCEDURE FOR FEEDERS AND BRANCH CIRCUITS TO BE REMOVED: CONDUIT AND SUPPORTS SHALL BE REMOVED TO THE PANEL OF ORIGIN OR THE BOUNDARY OF THE PROJECT AREA. WIRING SHALL BE REMOVED TO THE PANEL OF ORIGIN WHERE EMPTY CONDUITS REMAIN. INSTALL A FULL STRING AND IDENTIFY AT BOTH ENDS. 7. PROCEDURE FOR FEEDERS AND BRANCH CIRCUITS TO BE RE-USED: REMOVE CONDUIT AND WIRING TO LOCATIONS WHICH AVOID CONFLICTS WITH NEW WORK. INSTALL JUNCTION BOXES, TAPE OFF CONDUCTORS AND IDENTIFY WITH PANEL AND CIRCUIT NUMBER. 8. WHERE PORTIONS OF EXISTING BRANCH CIRCUITS ARE REMOVED, MAINTAIN THE CONTINUITY OF CIRCUITING TO REMAINING DEVICES. 9. PROVIDE BLANK COVER PLATES AT OPEN BOXES WHERE EXISTING RECEPTACLES OR ELECTRICAL DEVICES ARE REMOVED FROM ENCLOSURES OR SURFACES NOT INDICATED TO BE REPAIRED OR REFINISHED. 10. PROVIDE ADDITIONAL SUPPORT FOR ALL EXISTING CONDUITS, LOW VOLTAGE CABLING AND DEVICES TO REMAIN WHICH ARE AFFECTED BY DEMOLITION OF EXISTING CEILINGS AND PARTITIONS. 11. ALL WORK SHALL BE PROPERLY IDENTIFIED AFTER DEMOLITION. UPDATE ALL PANEL SCHEDULES TO REFLECT EQUIPMENT AND CIRCUIT REMOVALS. 12. MECHANICAL CONTROL SWITCHES TO REMAIN.

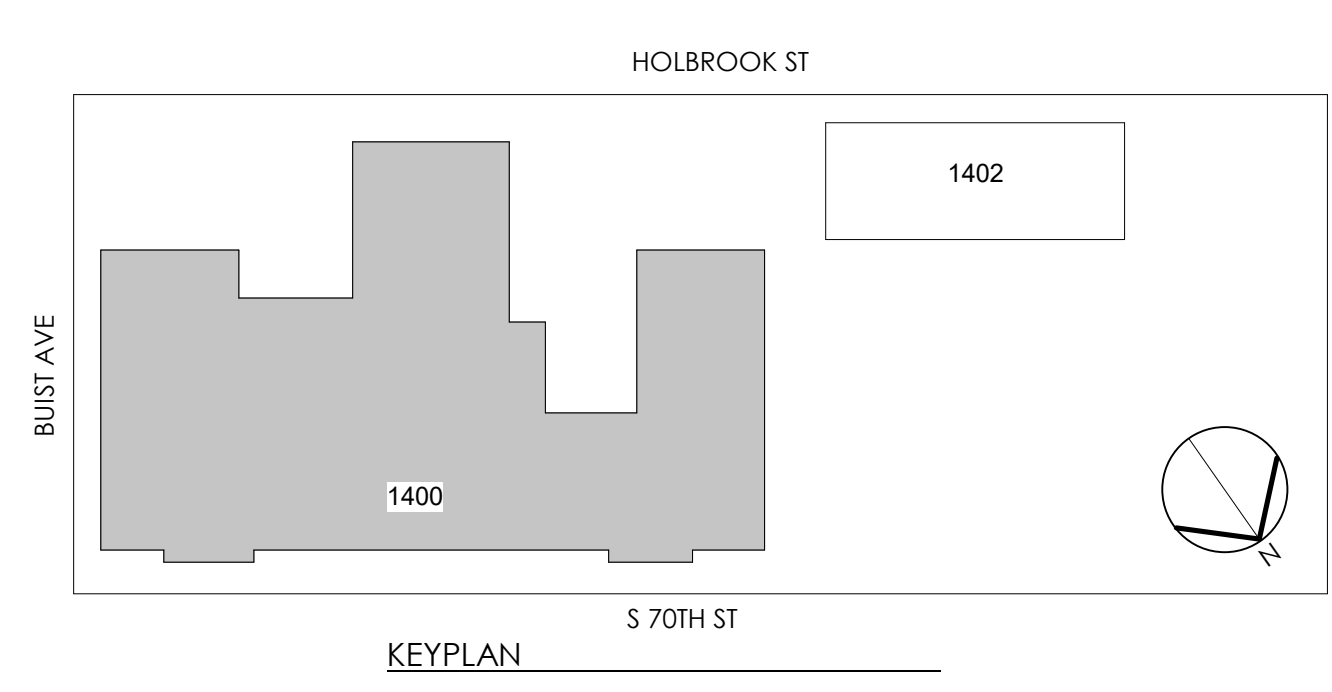
SHEET DEMOLITION KEYNOTES

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1 ELECTRICAL SECOND FLOOR POWER DEMOLITION PLAN SCALE: 1/8" = 1'-0"

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BID DOCUMENTS JANUARY 07, 2022 FOR BID PURPOSES ONLY

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1 2/9/2022 ADDENDUM #2

SCHOOL & LOCATION JOHN M. PATTERSON SCHOOL

7001 BUIST AVE, PHILADELPHIA, PA 19142

PROJECT TITLE PATTERSON CLASSROOMS MODERNIZATIONS

DRAWING NAME ELECTRICAL SECOND FLOOR POWER DEMOLITION PLAN

DRAWING SCALE As indicated

LOCATION NO. 1400 & 1402 ENGINEER'S PROJECT # 069078

DRAWN BY Author CHECKED BY Checker

2022-010-G 2022-010-P 2022-010-E

DRAWING NO. ED102

SEAL:

DATE

**ENGINEER OF RECORD AND
MECHANICAL/PLUMBING/ELECTRICAL ENGINEER:**

GANNETT FLEMING, INC.
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ARCHITECT:

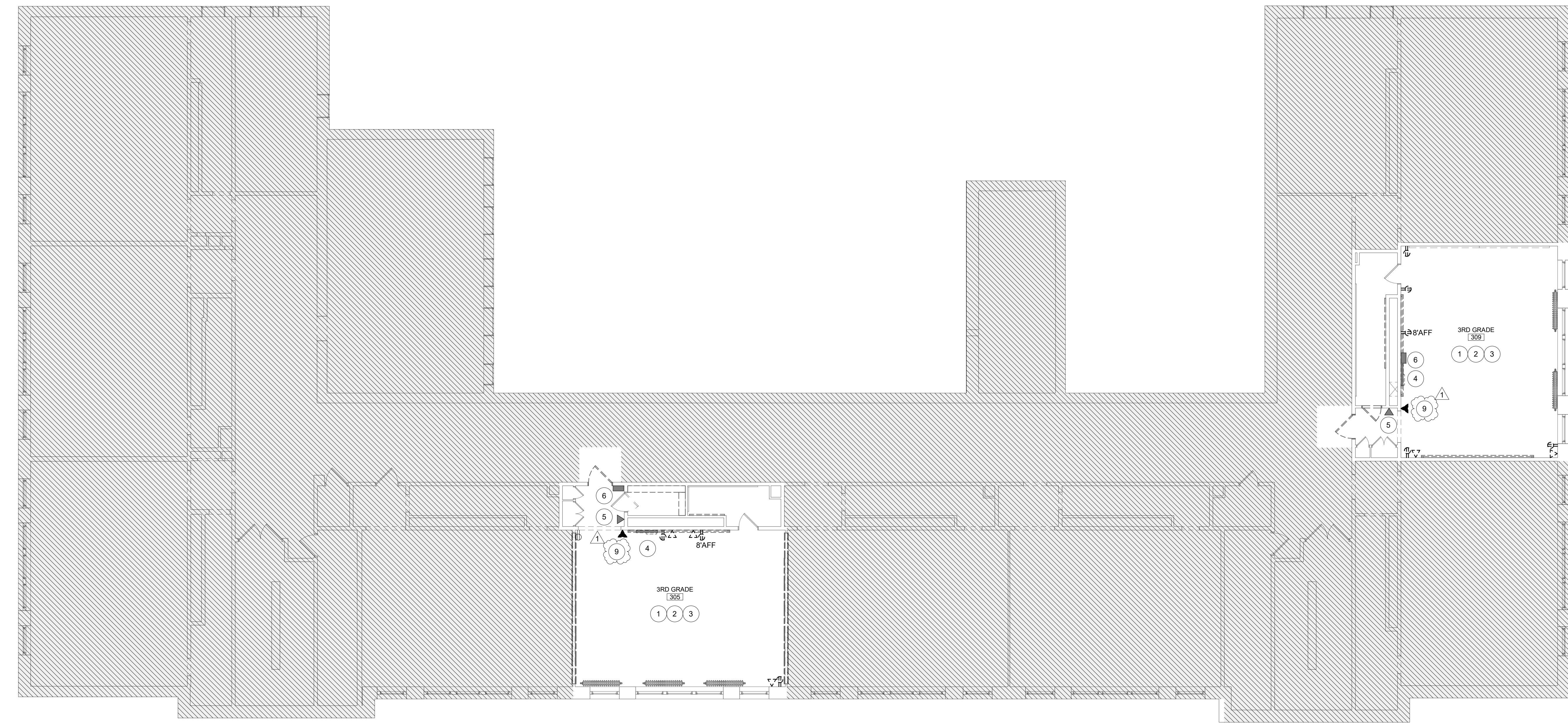
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GENERAL DEMOLITION NOTES

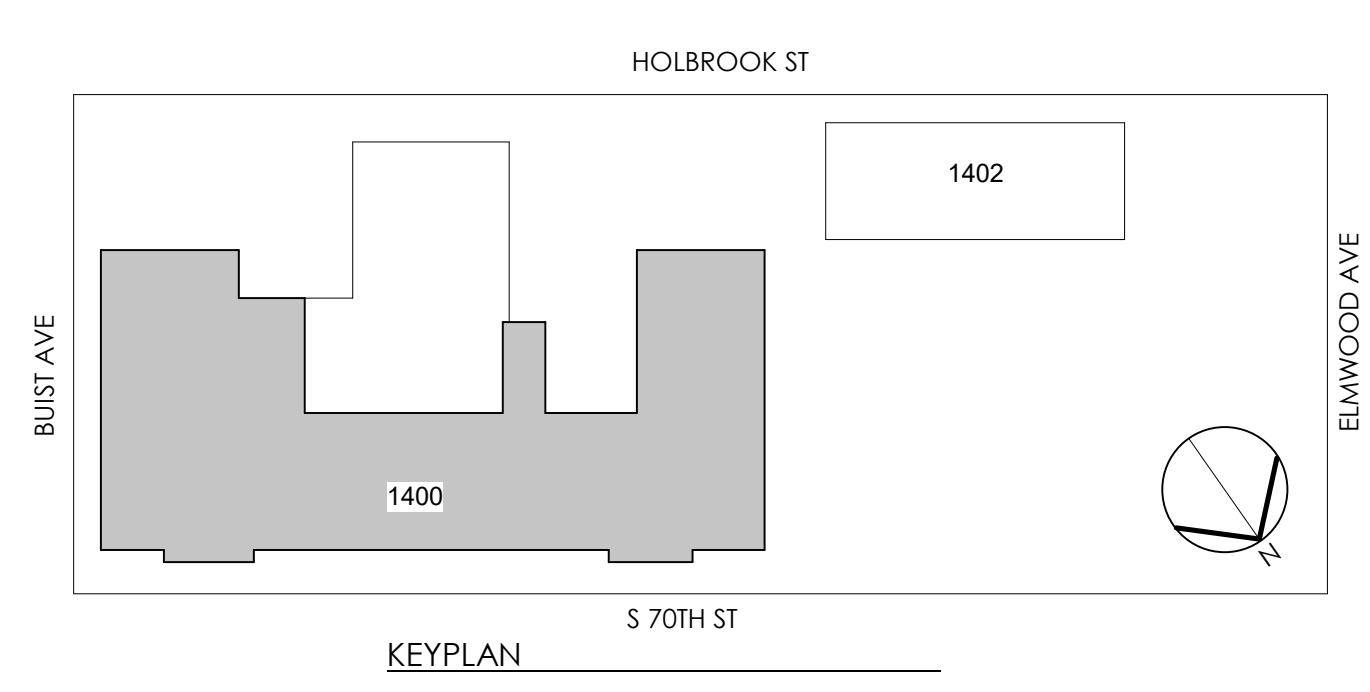
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- MECHANICAL CONTROL SWITCHES TO REMAIN.

SHEET DEMOLITION KEYNOTES

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1 ELECTRICAL THIRD FLOOR POWER DEMOLITION PLAN
SCALE: 1/8" = 1'-0"



BID DOCUMENTS
JANUARY 07, 2022
FOR BID PURPOSES ONLY

NO.	DATE	REVISION

1 2/9/2022 ADDENDUM #2

SCHOOL & LOCATION
JOHN M. PATTERSON SCHOOL

7001 BUIST AVE, PHILADELPHIA, PA 19142
PROJECT TITLE
**PATTERSON CLASSROOMS
MODERNIZATIONS**

DRAWING NAME
**ELECTRICAL THIRD FLOOR
POWER DEMOLITION PLAN**

DRAWING SCALE
As indicated

LOCATION NO. ENGINEER'S PROJECT #
1400 & 1402 069078

DRAWN BY CHECKED BY
FJR BAM

2022-010-G
2022-010-P
2022-010-E

DRAWING NO.
ED103

SEAL:

DATE

ENGINEER OF RECORD AND MECHANICAL/PLUMBING/ELECTRICAL ENGINEER:

GANNETT FLEMING, INC.
 1010 ADAMS AVENUE
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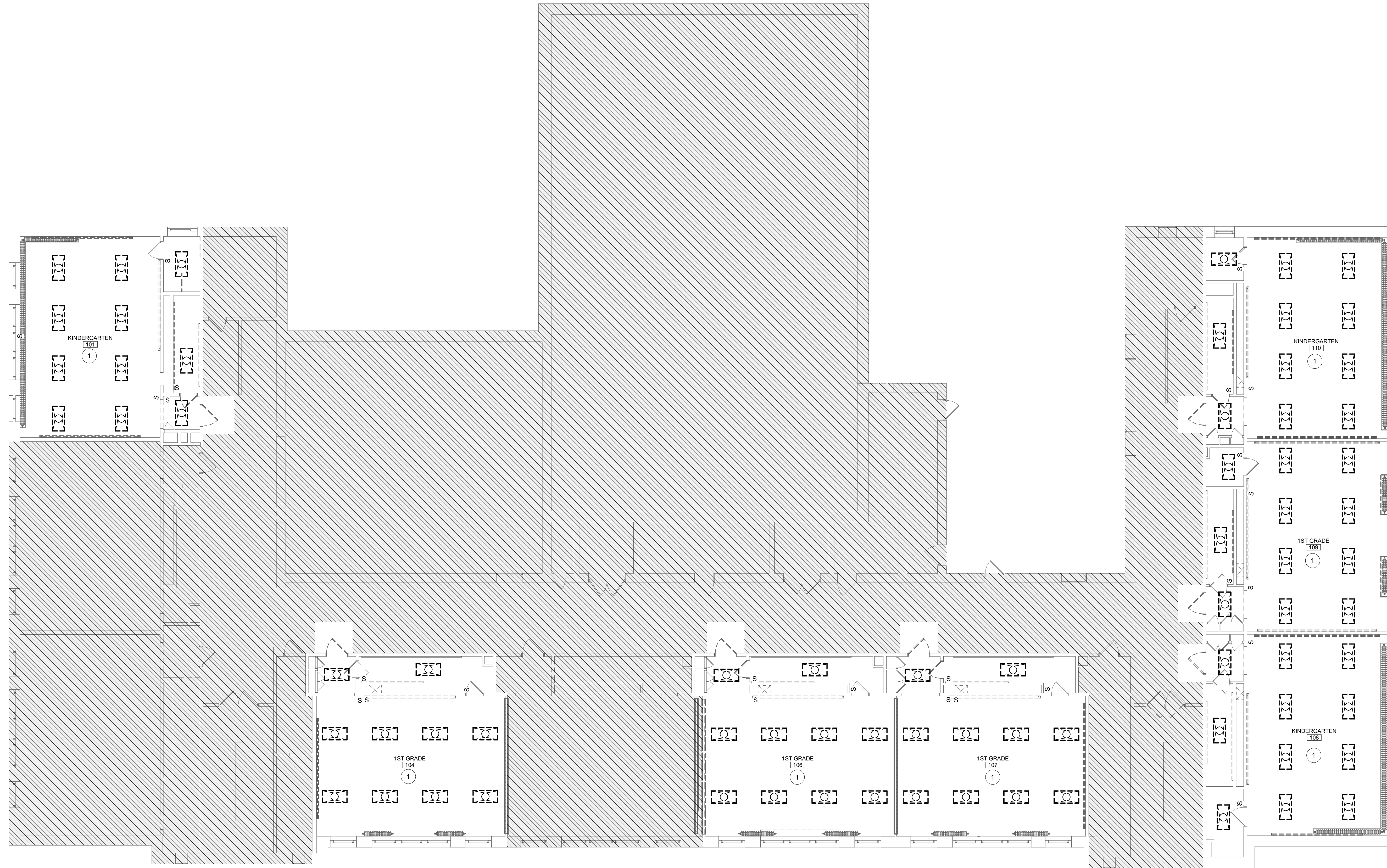
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 Phone: 215.386.8191 ext. 210
 Email: MZIMMERMAN@OZCOLLABORATIVE.COM
 Attn: MORRIS ZIMMERMAN

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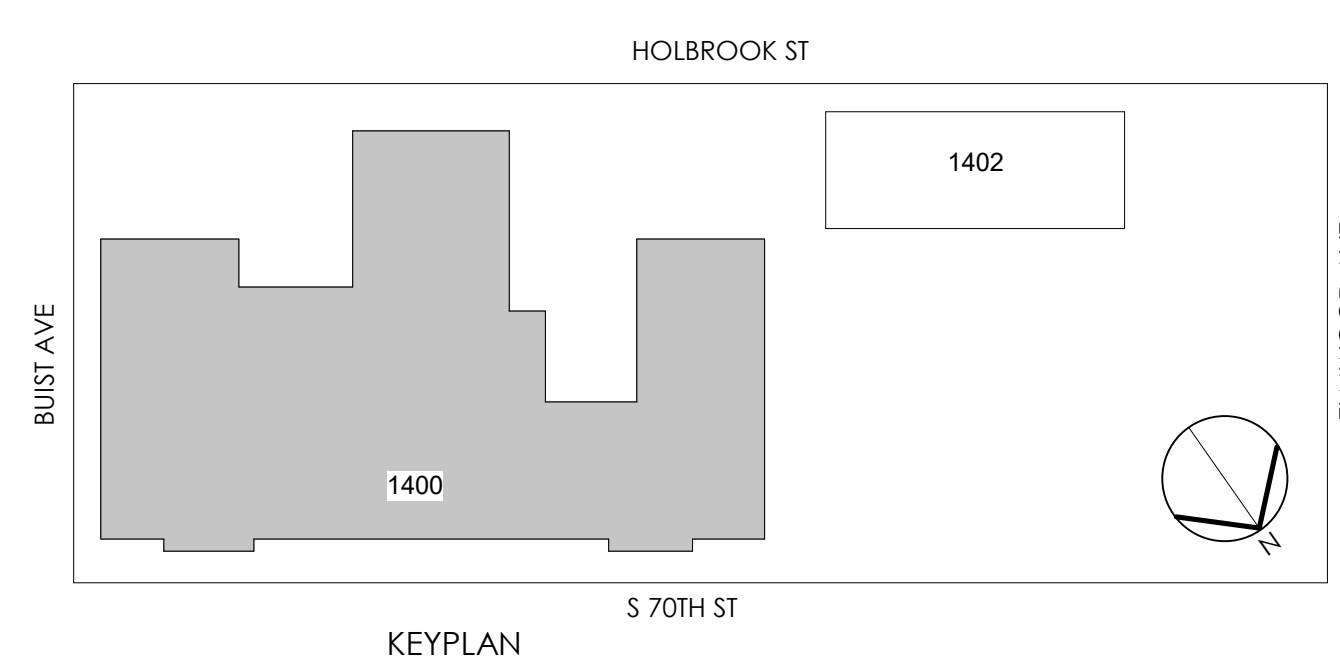
SHEET DEMOLITION KEYNOTES

- REMOVE EXISTING FLOURESCENT LIGHT FIXTURES AND LIGHTING CONTROLS, EXISTING CONDUIT, WIRE AND CIRCUITS TO BE REUSED.



1 ELECTRICAL FIRST FLOOR LIGHTING DEMOLITION PLAN
 SCALE: 1/8" = 1'-0"

THE ELECTRICAL CONTRACTOR SHALL PERFORM A SURVEY OF THE EXISTING SITE CONDITIONS PRIOR TO BEGINNING WORK. THE SURVEY SHALL INCLUDE TRACING THE WIRING/CONDUIT FOR EACH PIECE OF EQUIPMENT THAT IS BEING DEMOLISHED BACK TO THE SOURCE PANELBOARD/SWITCHBOARD AND IDENTIFYING THE CIRCUIT BREAKER FEEDING THAT EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL MARK UP THE PLANS IDENTIFYING THE PANELBOARD LOCATION AND RATINGS AS WELL AS THE CIRCUIT BREAKER LOCATION IN THE PANEL BOARD AND THE CIRCUIT BREAKER AMPERAGE RATINGS, MANUFACTURER AND CATALOG NUMBER. THIS INFORMATION SHALL BE PROVIDED TO CLIENT'S REP/PROJECT MANAGER PRIOR TO BEGINNING CONSTRUCTION.



BID DOCUMENTS
 JANUARY 07, 2022
 FOR BID PURPOSES ONLY

NO.	DATE	REVISION

NO. DATE REVISION

SCHOOL & LOCATION
JOHN M. PATTERSON SCHOOL

7001 BUIST AVE, PHILADELPHIA, PA 19142

PROJECT TITLE
**PATTERSON CLASSROOMS
 MODERNIZATIONS**

DRAWING NAME
**ELECTRICAL FIRST FLOOR
 LIGHTING DEMOLITION PLAN**

DRAWING SCALE
 As indicated

LOCATION NO. ENGINEER'S PROJECT #
 1400 & 1402 069078

DRAWN BY CHECKED BY
 Author Checker

2022-010-G
 2022-010-P
 2022-010-E

DRAWING NO.
ED201

SEAL:

DATE

ENGINEER OF RECORD AND
MECHANICAL/PLUMBING/ELECTRICAL ENGINEER:

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- ALL WORK SHALL BE PROPERLY IDENTIFIED AFTER DEMOLITION. UPDATE ALL PANEL SCHEDULES TO REFLECT EQUIPMENT AND CIRCUIT REMOVALS.
- MECHANICAL CONTROL SWITCHES TO REMAIN.

SHEET DEMOLITION KEYNOTES

- REMOVE EXISTING FLOURESCENT LIGHT FIXTURES AND LIGHTING CONTROLS. EXISTING CONDUIT, WIRE AND CIRCUITS TO BE REUSED.

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A

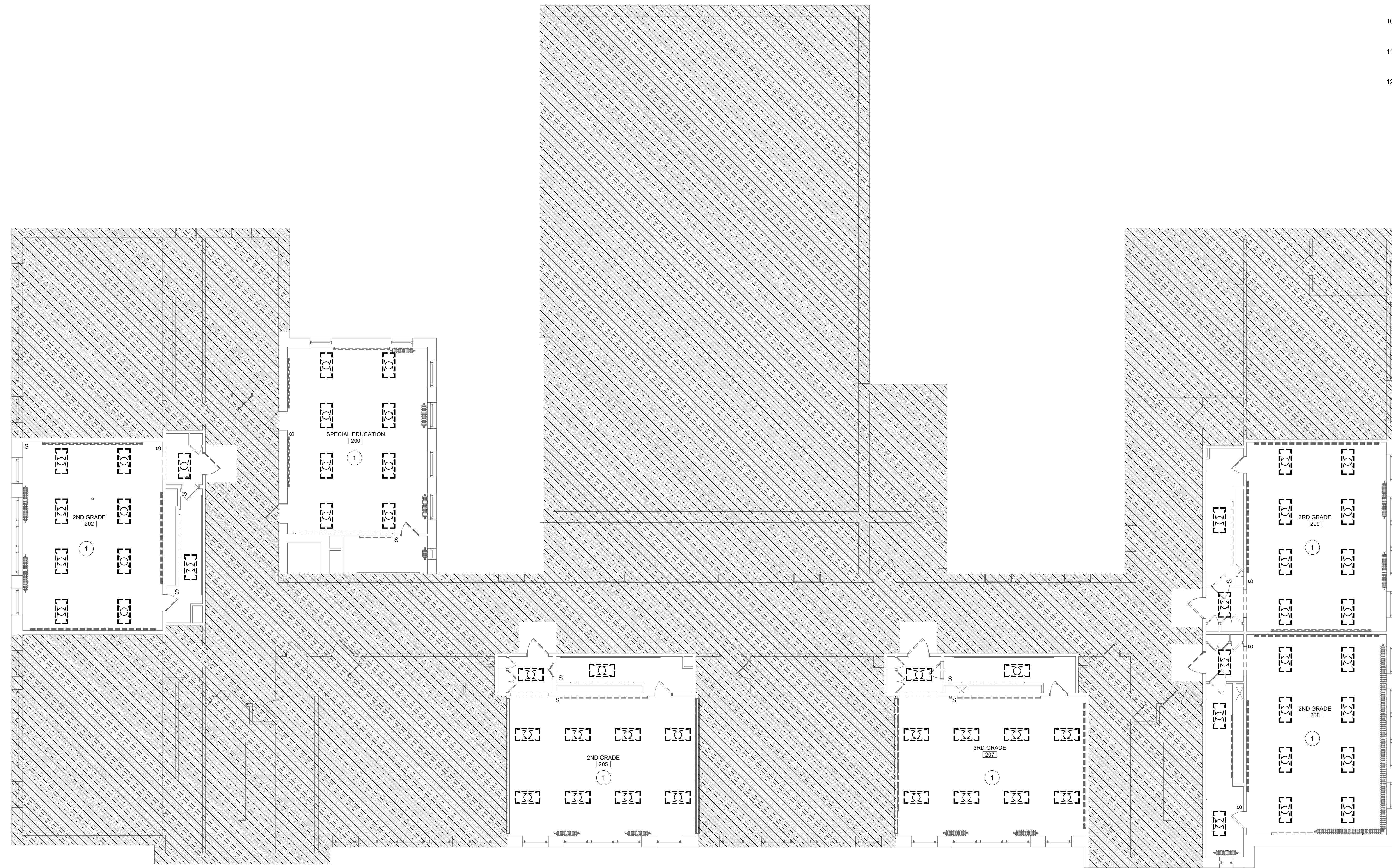
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C

D

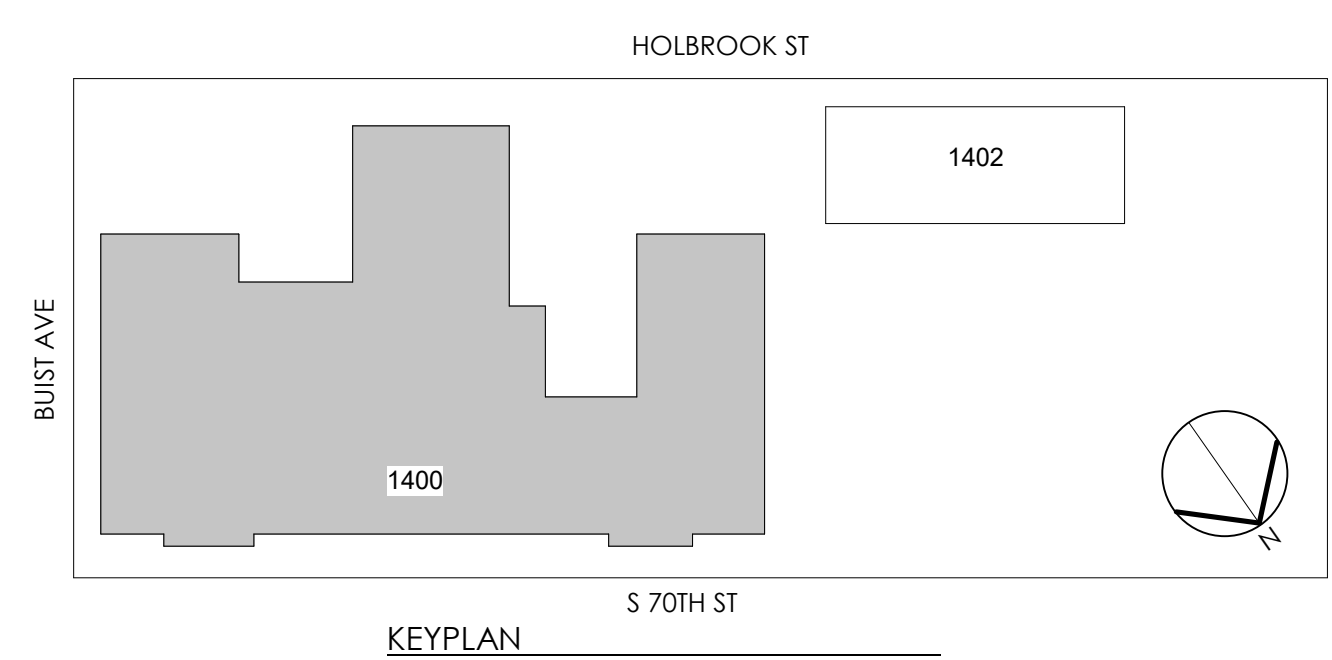
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F



1 **ELECTRICAL SECOND FLOOR LIGHTING DEMOLITION PLAN**
SCALE: 1/8" = 1'-0"

THE ELECTRICAL CONTRACTOR SHALL PERFORM A SURVEY OF THE EXISTING SITE CONDITIONS PRIOR TO BEGINNING WORK. THE SURVEY SHALL INCLUDE TRACING THE WIRING/CONDUIT FOR EACH PIECE OF EQUIPMENT THAT IS BEING DEMOLISHED BACK TO THE SOURCE PANELBOARD/SWITCHBOARD AND IDENTIFYING THE CIRCUIT BREAKER FEEDING THAT EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL MARK UP THE PLANS IDENTIFYING THE PANELBOARD LOCATION AND RATINGS AS WELL AS THE CIRCUIT BREAKER LOCATION IN THE PANEL BOARD AND THE CIRCUIT BREAKER AMPERAGE RATINGS, MANUFACTURER AND CATALOG NUMBER. THIS INFORMATION SHALL BE PROVIDED TO CLIENT'S REP/PROJECT MANAGER PRIOR TO BEGINNING CONSTRUCTION.



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JANUARY 07, 2022
FOR BID PURPOSES ONLY

NO.	DATE	REVISION

SCHOOL & LOCATION
JOHN M. PATTERSON SCHOOL
7001 BUIST AVE, PHILADELPHIA, PA 19142

PROJECT TITLE
**PATTERSON CLASSROOMS
MODERNIZATIONS**

DRAWING NAME
**ELECTRICAL SECOND FLOOR
LIGHTING DEMOLITION PLAN**

DRAWING SCALE
As indicated

LOCATION NO. ENGINEER'S PROJECT #
1400 & 1402 069078

DRAWN BY CHECKED BY
Author Checker

2022-010-G
2022-010-P
2022-010-E

DRAWING NO.
ED202

SEAL: _____
DATE _____

**ENGINEER OF RECORD AND
MECHANICAL/PLUMBING/ELECTRICAL ENGINEER:**

GANNETT FLEMING, INC.
1010 ADAMS AVENUE
VALLEY FORGE, PA 19403
Phone: 610.783.3862
Email: BWEISSER@GFNET.COM
A/E/T: BRIAN WEISSER

ARCHITECT:

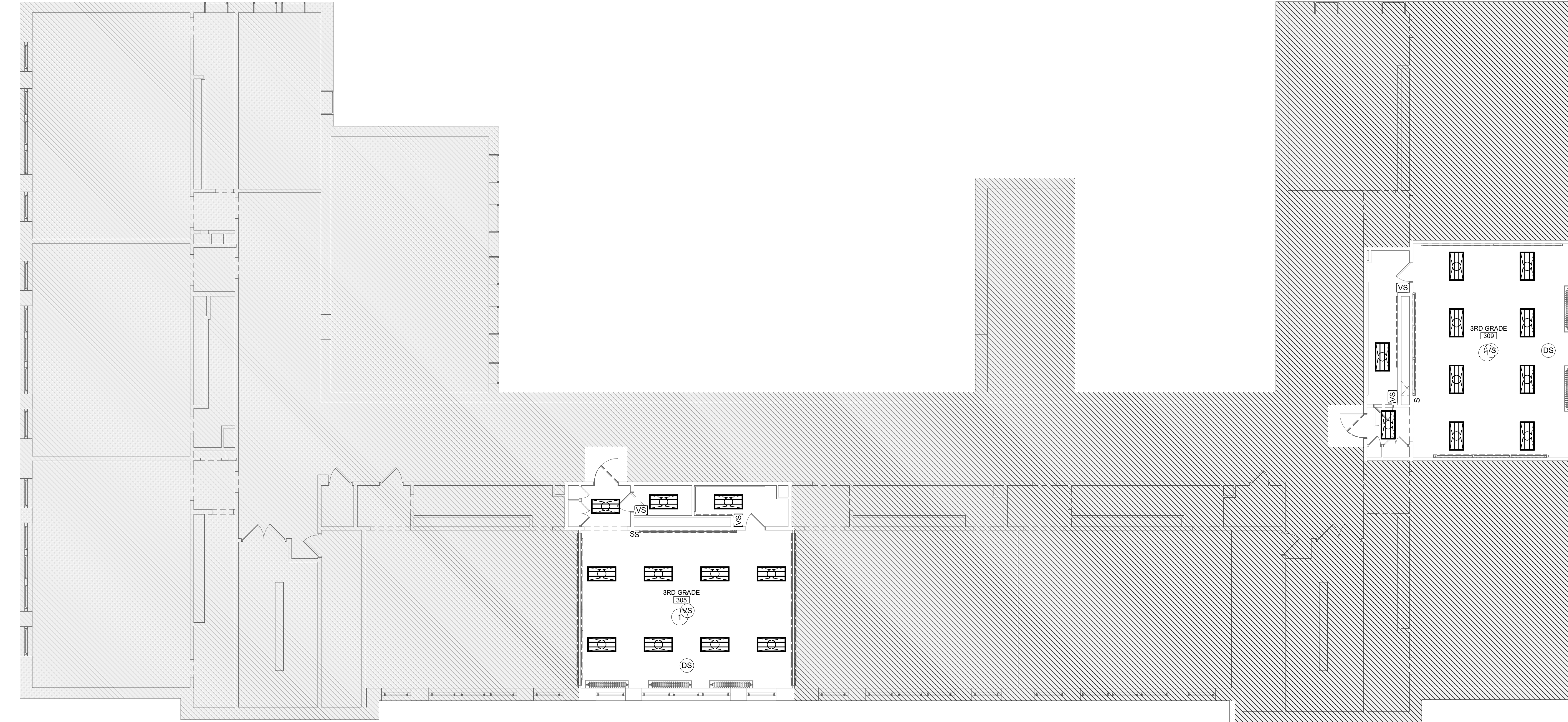
OZ COLLABORATIVE
4818 BALTIMORE AVENUE
PHILADELPHIA, PA 19143
Phone: 215.386.8191 ext. 210
Email: MZIMMERMAN@OZCOLLABORATIVE.COM
A/E/T: MORRIS ZIMMERMAN

GENERAL DEMOLITION NOTES

1. SEE ARCHITECTURAL DRAWING A-001 FOR GENERAL NOTES AND PROJECT INFORMATION.
2. NOTES AND GRAPHIC REPRESENTATIONS SHALL NOT LIMIT THE EXTENT OR DEMOLITION REQUIRED. CONTRACTOR SHALL VISIT THE SITE, CAREFULLY EXAMINE EXISTING CONDITIONS AND SHALL PERFORM ALL DEMOLITION REQUIRED TO ACHIEVE THE FINAL DESIGN INTENT AS REQUIRED BY THE CONTRACT DOCUMENTS. EXTENT OF ALL DEMOLITION WORK SHALL BE COORDINATED WITH THE OWNER & ENGINEER.
3. ALL WORK REQUIRED TO REMAIN IN SERVICE BUT INTERFERING WITH THE ALTERATIONS SHALL BE RELOCATED AND RECONNECTED USING MATERIALS AND STANDARDS OF THIS CONTRACT.
4. EQUIPMENT AND WIRING TO BE REMOVED SHALL BE DE-ENERGIZED PRIOR TO ANY DEMOLITION WORK.
5. EQUIPMENT INDICATED TO BE REMOVED SHALL BE TAKEN FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS. EQUIPMENT REQUIRED TO BE TURNED OVER TO THE OWNER, SHALL BE PLACED IN A MUTUALLY ACCEPTED LOCATION.
6. PROCEDURE FOR FEEDERS AND BRANCH CIRCUITS TO BE REMOVED: CONDUIT AND SUPPORTS SHALL BE REMOVED TO THE PANEL OF ORIGIN OR THE BOUNDARY OF THE PROJECT AREA. WIRING SHALL BE REMOVED TO THE PANEL OF ORIGIN, WHERE EMPTY CONDUITS REMAIN, INSTALL A PULL STRING AND IDENTIFY AT BOTH ENDS.
7. PROCEDURE FOR FEEDERS AND BRANCH CIRCUITS TO BE RE-USED: REMOVE CONDUIT AND WIRING TO LOCATIONS WHICH AVOID CONFLICTS WITH NEW WORK. INSTALL JUNCTION BOXES, TAPE OFF CONDUCTORS AND IDENTIFY WITH PANEL AND CIRCUIT NUMBER.
8. WHERE PORTIONS OF EXISTING BRANCH CIRCUITS ARE REMOVED, MAINTAIN THE CONTINUITY OF CIRCUITING TO REMAINING DEVICES.
9. PROVIDE BLANK COVER PLATES AT OPEN BOXES WHERE EXISTING RECEPTACLES OR ELECTRICAL DEVICES ARE REMOVED FROM ENCLOSURES OR SURFACES NOT INDICATED TO BE REPAIRED OR REFINISHED.
10. PROVIDE ADDITIONAL SUPPORT FOR ALL EXISTING CONDUITS, LOW VOLTAGE CABLING AND DEVICES TO REMAIN WHICH ARE AFFECTED BY DEMOLITION OF EXISTING CEILINGS AND PARTITIONS.
11. ALL WORK SHALL BE PROPERLY IDENTIFIED AFTER DEMOLITION. UPDATE ALL PANEL SCHEDULES TO REFLECT EQUIPMENT AND CIRCUIT REMOVALS.
12. MECHANICAL CONTROL SWITCHES TO REMAIN.

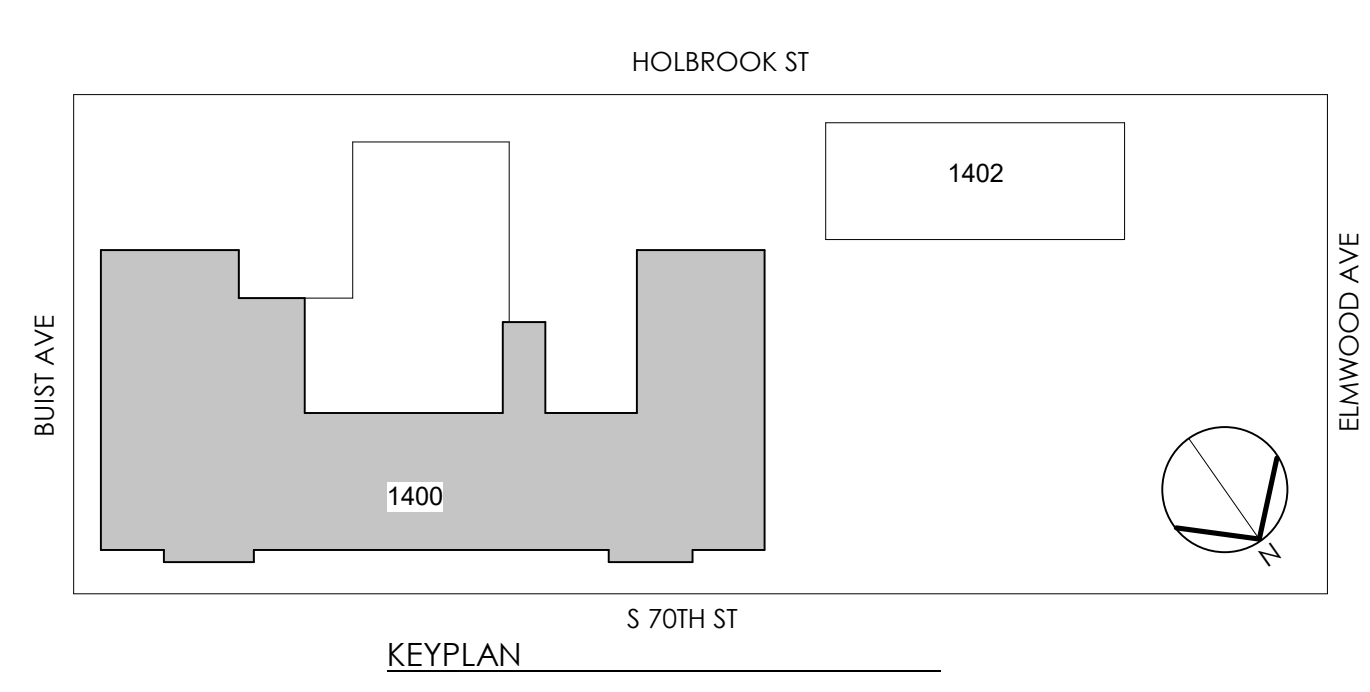
SHEET DEMOLITION KEYNOTES

1. REMOVE EXISTING FLOURESCENT LIGHT FIXTURES AND LIGHTING CONTROLS. EXISTING CONDUIT, WIRE AND CIRCUITS TO BE REUSED.



1 ELECTRICAL THIRD FLOOR LIGHTING DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

THE ELECTRICAL CONTRACTOR SHALL PERFORM A SURVEY OF THE EXISTING SITE CONDITIONS PRIOR TO BEGINNING WORK. THE SURVEY SHALL INCLUDE TRACING THE WIRING/CONDUIT FOR EACH PIECE OF EQUIPMENT THAT IS BEING DEMOLISHED BACK TO THE SOURCE PANELBOARD/SWITCHBOARD AND IDENTIFYING THE CIRCUIT BREAKER FEEDING THAT EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL MARK UP THE PLANS IDENTIFYING THE PANELBOARD LOCATION AND RATINGS AS WELL AS THE CIRCUIT BREAKER LOCATION IN THE PANELBOARD AND THE CIRCUIT BREAKER AMPERAGE RATINGS, MANUFACTURER AND CATALOG NUMBER. THIS INFORMATION SHALL BE PROVIDED TO CLIENT'S REP/PROJECT MANAGER PRIOR TO BEGINNING CONSTRUCTION.



**BID DOCUMENTS
JANUARY 07, 2022
FOR BID PURPOSES ONLY**

NO.	DATE	REVISION

NO.	DATE	REVISION

SCHOOL & LOCATION
JOHN M. PATTERSON SCHOOL

7001 BUIST AVE, PHILADELPHIA, PA 19142

PROJECT TITLE

**PATTERSON CLASSROOMS
MODERNIZATIONS**

DRAWING NAME
**ELECTRICAL THIRD FLOOR
LIGHTING DEMOLITION PLAN**

DRAWING SCALE	ENGINEER'S PROJECT #
As indicated	1400 & 1402 069078
LOCATION NO.	CHECKED BY
DRAWN BY	Author
Author	Checker
2022-010-G	
2022-010-P	
2022-010-E	

DRAWING NO.
ED203

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Project Number: 095079
2/17/2022 7:51:17 PM
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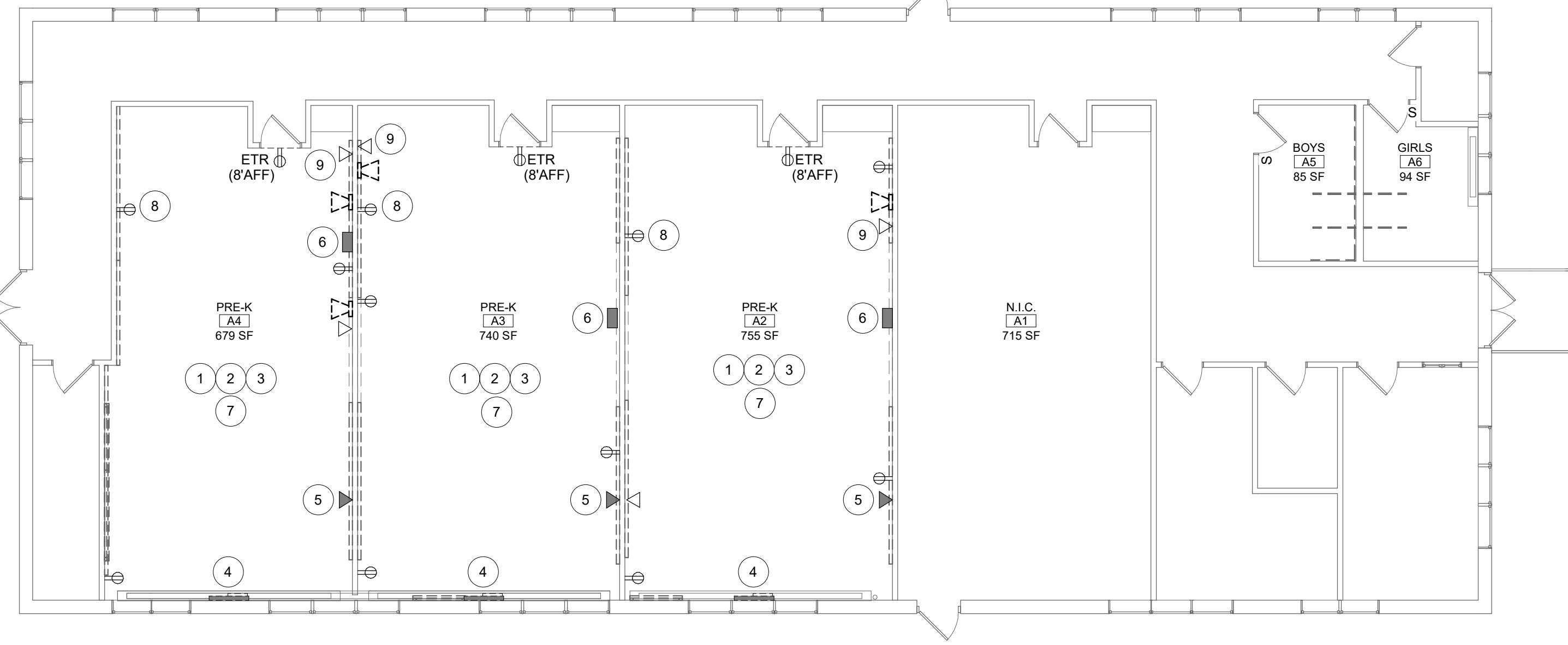
SEAL:

DATE

ENGINEER OF RECORD AND MECHANICAL/PLUMBING/ELECTRICAL ENGINEER:

GANNETT FLEMING, INC.
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Phone: 215.386.8191 ext. 210
Email: MZIMMERMAN@OZCOLLABORATIVE.COM
Attn: MORRIS ZIMMERMAN



1 ELECTRICAL ANNEX POWER DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

SHEET DEMOLITION KEYNOTES

1. RETAIN EXISTING RECEPTACLES WITHIN THIS ROOM/AREA AND REPLACE WITH NEW TAMPER RESISTANT RECEPTACLES. CONDUIT, WIRING AND CIRCUITS TO BE REUSED FOR NEW WORK. REPLACE ALL FACE PLATES TO MATCH NEW.
2. EXISTING DATA/TELEPHONE OUTLETS WITHIN THIS ROOM/AREA TO REMAIN. REPLACE ALL FACE PLATES TO MATCH NEW. CONDUIT, WIRING AND CIRCUITS TO BE REUSED FOR NEW WORK. REMOVE EXISTING COAXIAL RECEPTACLES, ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
3. REMOVE WALL MOUNTED SPEAKERS. EXISTING CEILING MOUNTED SPEAKERS TO REMAIN.
4. REMOVE EXISTING CLOCK. EXISTING WIRING AND CONDUIT TO BE REUSED FOR NEW CLOCK. FURNISH EXISTING CLOCK TO THE SCHOOL DISTRICT AS ATTIC STOCK.
5. EXISTING HOUSE PHONE TO REMAIN.
6. REMOVE EXISTING WIRELESS ACCESS POINT (WAP). REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE. FURNISH EXISTING (WAP) TO THE SCHOOL DISTRICT AS ATTIC STOCK.
7. EXISTING FIRE ALARM DEVICES TO REMAIN, TYP.
8. EXISTING DUPLEX RECEPTACLE TO BE RELOCATED AS NEEDED FOR NEW CASEWORK.
9. REMOVE OLD PHONE AND ASSOCIATED CONDUIT/CABLING BACK TO SOURCE.

GENERAL DEMOLITION NOTES

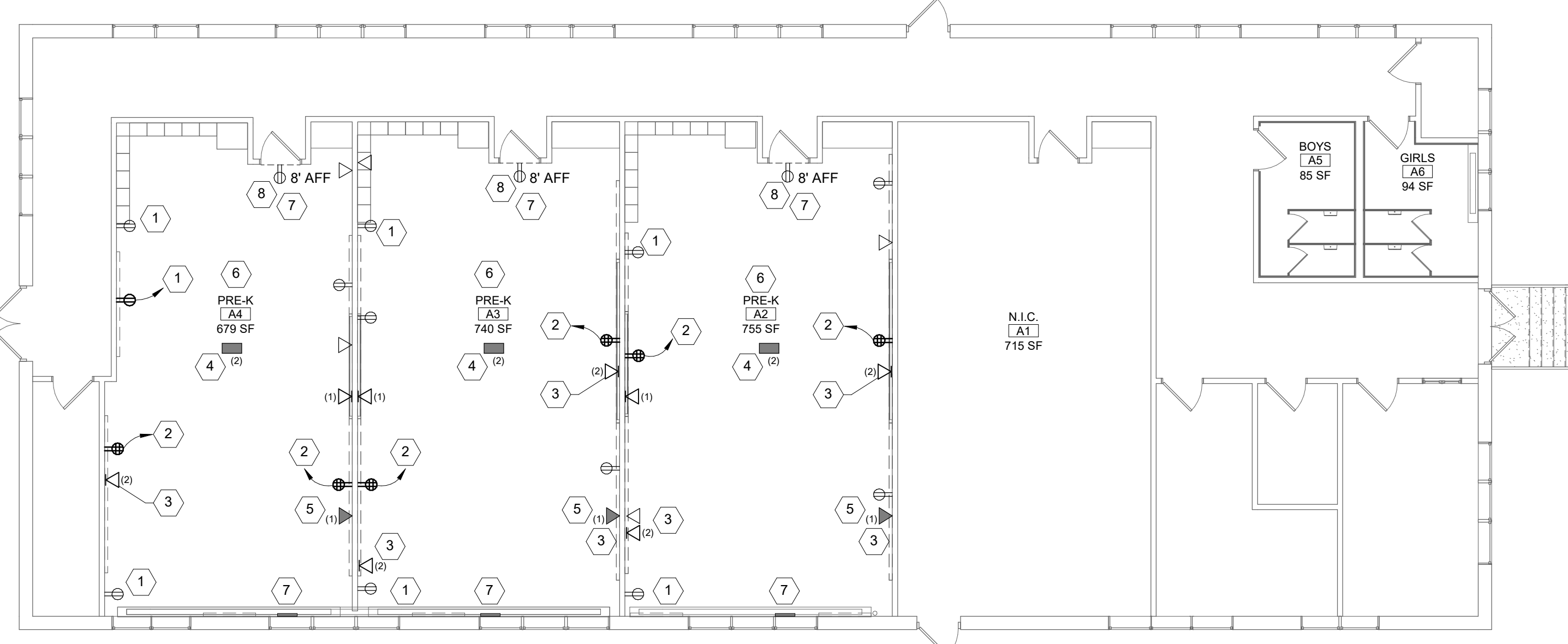
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8. WHERE PORTIONS OF EXISTING BRANCH CIRCUITS ARE REMOVED, MAINTAIN THE CONTINUITY OF CIRCUITING TO REMAINING DEVICES.
9. PROVIDE BLANK COVER PLATES AT OPEN BOXES WHERE EXISTING RECEPTACLES OR ELECTRICAL DEVICES ARE REMOVED FROM ENCLOSURES OR SURFACES NOT INDICATED TO BE REPAIRED OR REFINISHED.
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12. MECHANICAL CONTROL SWITCHES TO REMA.

NEW WORK GENERAL NOTES

1. REFER TO DRAWING E001 FOR GENERAL NOTES AND WIRING METHODS.
2. ALL ELECTRICAL EQUIPMENT SHOWN ON DRAWING IS NEW UNLESS NOTED OTHERWISE.
3. PAINT-ABLE SURFACE MOUNTED CONDUIT, NOT WIREMOLD, RUN DROPS IN ROOM CORNERS. DO NOT CUT WALL MOLDINGS. AT NEW DRYWALL PARTITIONS, PROVIDE CONCEALED WIRING AND RECESSED BOXES FOR NEW ELECTRICAL AND DATA DEVICES.

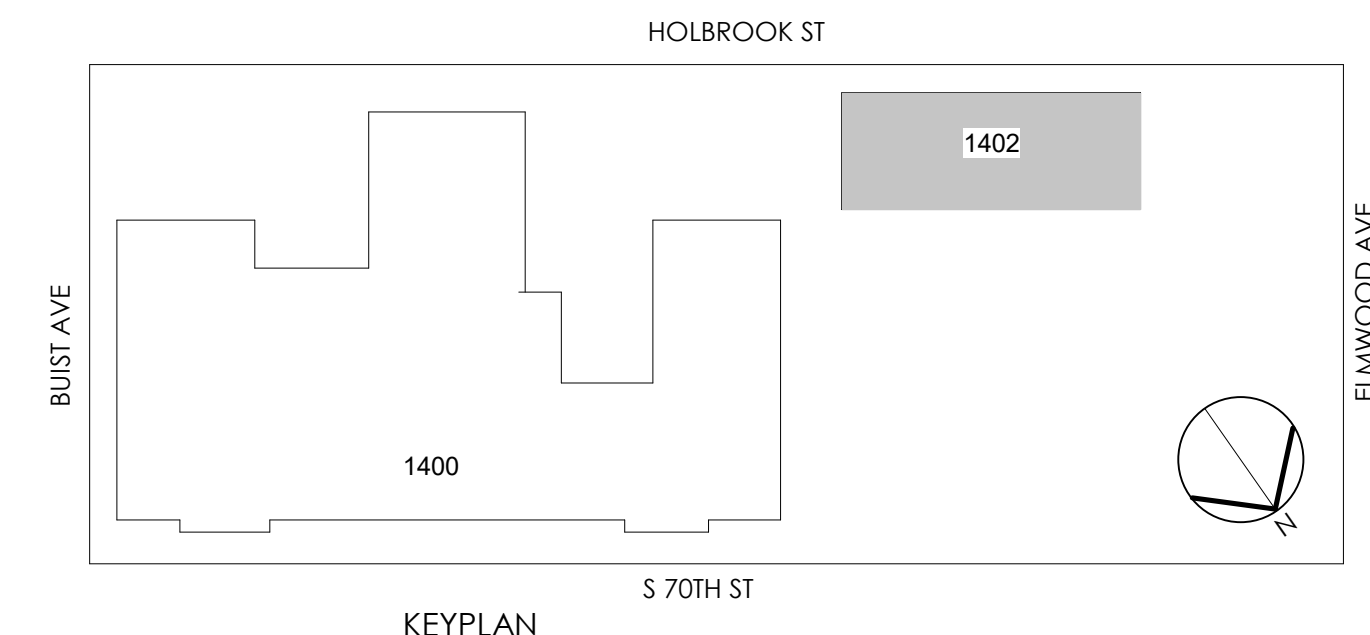
SHEET NEW WORK KEYNOTES

1. PROVIDE NEW TAMPER RESISTANT 120V DUPLEX RECEPTACLE(S) CONNECT TO EXISTING CIRCUITS PREVIOUSLY SERVING THIS AREA. NEW WIRING TO BE FISHED WITHIN PARTITION WALLS. NO SURFACE MOUNTED CONDUIT IN THE ANNEX. FOR ANY NEW DUPLEX RECEPTACLES, PROVIDE (2) #12, (1) #12GRD IN 3/4" CONDUIT.
2. PROVIDE NEW TAMPER RESISTANT 120V QUAD RECEPTACLE(S) CONNECT TO EXISTING CIRCUITS PREVIOUSLY SERVING THIS AREA. PROVIDE (2) #12, (1) #12GRD IN 3/4" CONDUIT FOR ALL CIRCUITS WHERE NECESSARY AT BLOCK WALLS. NEW WIRING TO BE FISHED WITHIN PARTITION WALLS. NO SURFACE MOUNTED CONDUIT WILL BE PERMITTED IN THE ANNEX.
3. PROVIDE DATA OUTLETS AND CAT 6 CABLING AS SHOWN. NUMBER IN PARENTHESIS DENOTES AMOUNT OF CAT 6 DATA CABLE DROPS.
4. LOCATE BISCUIT DATA JACK ABOVE CEILING TILE AT CENTER OF ROOM FOR NEW WIRELESS ACCESS POINT (WAP) PROVIDED BY SDP. PROVIDE NEW CAT 6 CABLING.
5. EXISTING HOUSE PHONE TO REMAIN.
6. EXISTING CEILING MOUNTED SPEAKER TO REMAIN.
7. PROVIDE NEW CLOCK. REUSE CLOCK WIRING PREVIOUSLY SERVING THIS ROOM.
8. EXISTING RECEPTACLE TO REMAIN.



2 ELECTRICAL ANNEX POWER NEW WORK PLAN
SCALE: 1/8" = 1'-0"

KEYPLAN



BID DOCUMENTS JANUARY 07, 2022 FOR BID PURPOSES ONLY

NO.	DATE	REVISION

SCHOOL & LOCATION

JOHN M. PATTERSON SCHOOL

7001 BUJIST AVE, PHILADELPHIA, PA 19142

PROJECT TITLE

PATTERSON CLASSROOMS MODERNIZATIONS

DRAWING NAME
ELECTRICAL ANNEX POWER DEMOLITION & NEW WORK PLANS

DRAWING SCALE As indicated	ENGINEER'S PROJECT # 1400 & 1402
069078	069078
DRAWN BY Author	CHECKED BY Checker
2022-010-G 2022-010-P 2022-010-E	
DRAWING NO. E100	

Project Number: 095078
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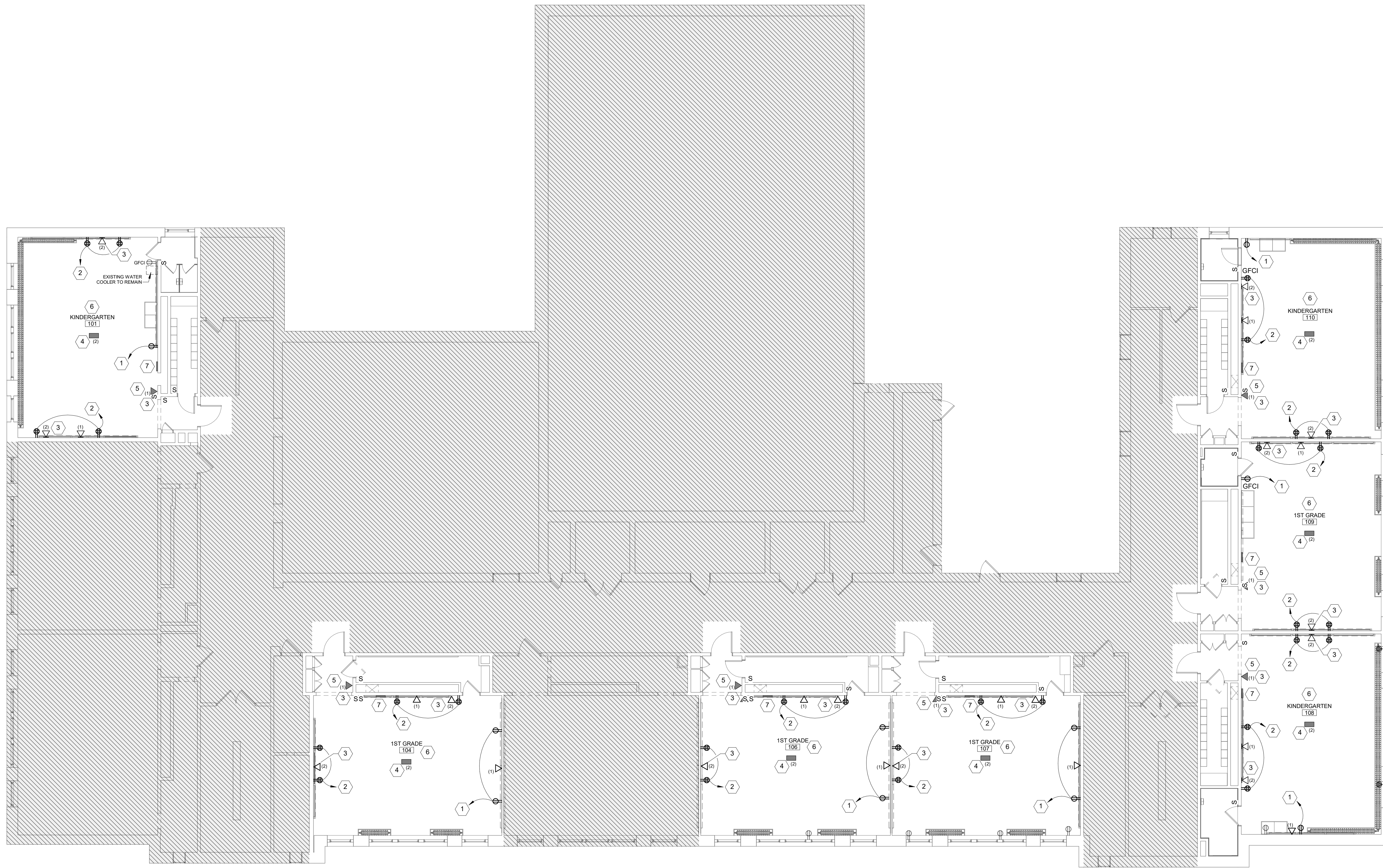
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NEW WORK GENERAL NOTES

- REFER TO DRAWING E001 FOR GENERAL NOTES AND WIRING METHODS.
- ALL ELECTRICAL EQUIPMENT SHOWN ON DRAWING IS NEW UNLESS NOTED OTHERWISE.
- PAINTABLE SURFACE MOUNTED CONDUIT, NOT WIREMOLD. RUN DROPS IN ROOM CORNERS. DO NOT CUT WALL MOLDINGS. AT NEW DRYWALL PARTITIONS, PROVIDE CONCEALED WIRING AND RECESSED BOXES FOR NEW ELECTRICAL AND DATA DEVICES.

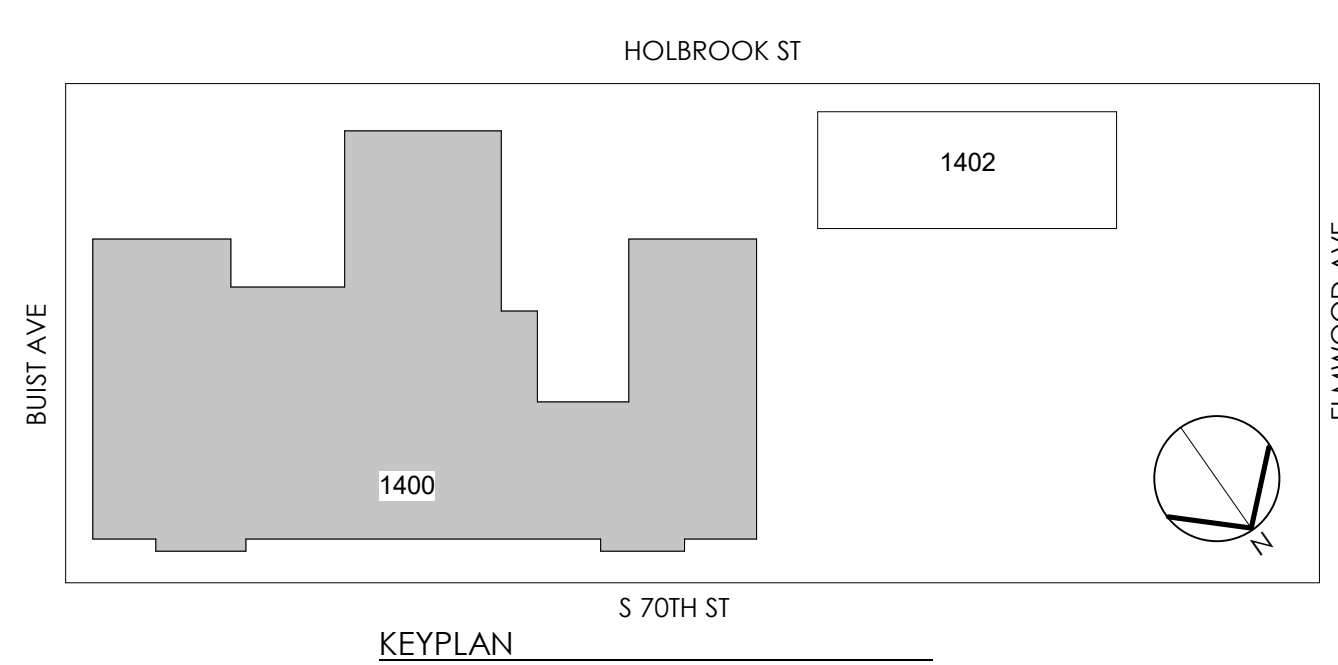
SHEET NEW WORK KEYNOTES

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- PROVIDE DATA OUTLETS AND CAT 6 CABLEING AS SHOWN. NUMBER IN PARENTHESIS DENOTES AMOUNT OF CAT 6 DATA CABLE DROPS.
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- EXISTING HOUSE PHONE TO REMAIN.
- EXISTING CEILING MOUNTED SPEAKER TO REMAIN.
- PROVIDE NEW CLOCK. REUSE CLOCK WIRING PREVIOUSLY SERVING THIS ROOM.
- EXISTING RECEPTACLE TO REMAIN.



1 ELECTRICAL FIRST FLOOR POWER NEW WORK PLAN
 SCALE: 1/8" = 1'-0"

THE ELECTRICAL CONTRACTOR SHALL PERFORM A SURVEY OF THE EXISTING SITE CONDITIONS PRIOR TO BEGINNING WORK. THE SURVEY SHALL INCLUDE TRACING THE WIRING/CONDUIT FOR EACH PIECE OF EQUIPMENT THAT IS BEING DEMOLISHED BACK TO THE SOURCE PANELBOARD/SWITCHBOARD AND IDENTIFYING THE CIRCUIT BREAKER FEEDING THAT EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL MARK UP THE PLANS IDENTIFYING THE PANELBOARD LOCATION AND RATINGS AS WELL AS THE CIRCUIT BREAKER LOCATION IN THE PANELBOARD AND THE CIRCUIT BREAKER AMPERAGE RATINGS, MANUFACTURER AND CATALOG NUMBER. THIS INFORMATION SHALL BE PROVIDED TO CLIENT'S REP/PROJECT MANAGER PRIOR TO BEGINNING CONSTRUCTION.



NEW WORK GENERAL NOTES

- 1. REFER TO DRAWING E001 FOR GENERAL NOTES AND WIRING METHODS.
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6. EXISTING CEILING MOUNTED SPEAKER TO REMAIN.
7. PROVIDE NEW CLOCK, REUSE CLOCK WIRING PREVIOUSLY SERVING THIS ROOM.
8. EXISTING RECEPTACLE TO REMAIN.

BID DOCUMENTS JANUARY 07, 2022 FOR BID PURPOSES ONLY

Table with 2 columns: NO, DATE, REVISION. Contains revision history for ADDENDUM #2.

Table with 2 columns: NO, DATE, REVISION. Contains revision history for SCHOOL & LOCATION.

SCHOOL & LOCATION JOHN M. PATTERSON SCHOOL

7001 BUIST AVE, PHILADELPHIA, PA 19142 PROJECT TITLE

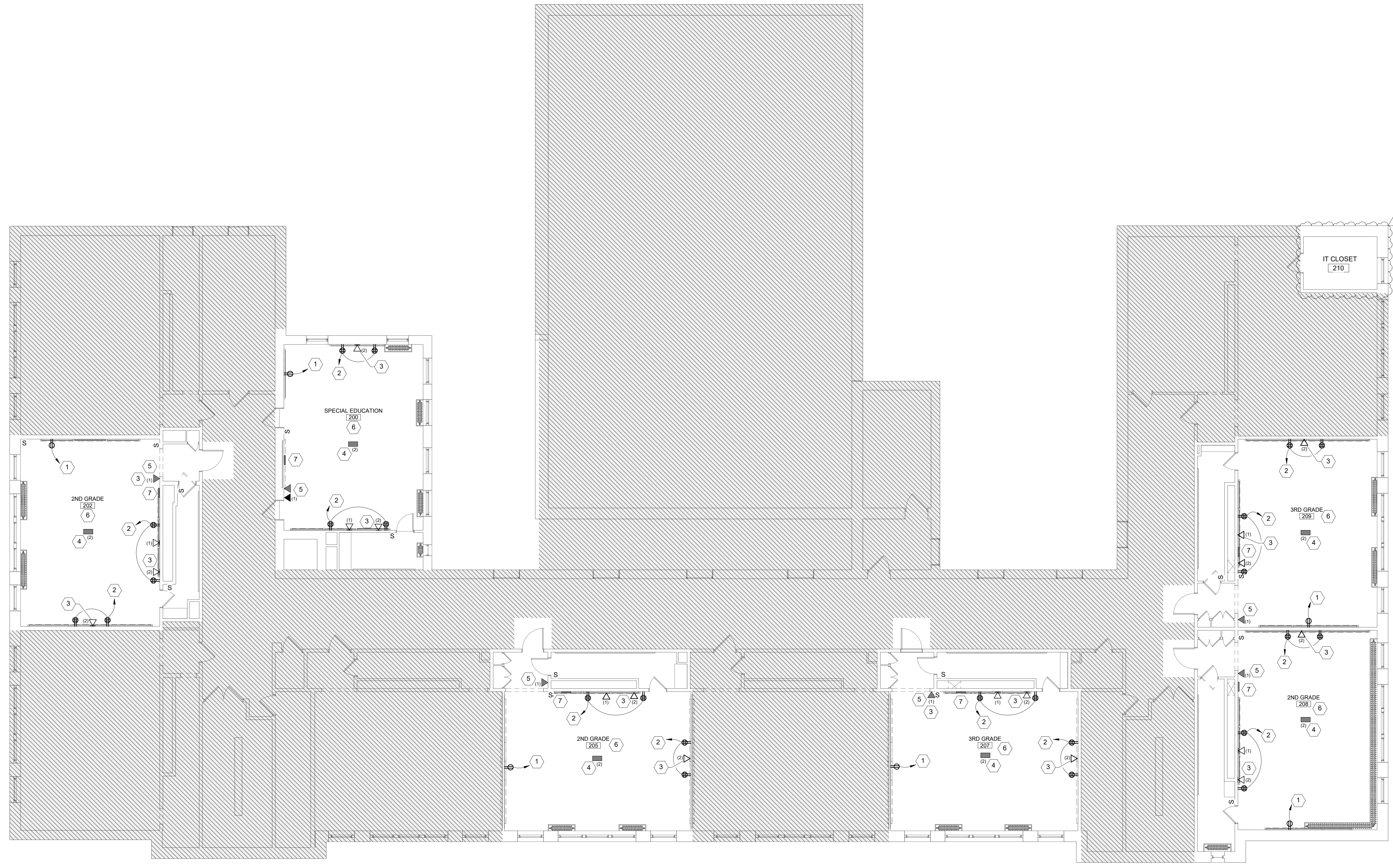
PATTERSON CLASSROOMS MODERNIZATIONS

DRAWING NAME ELECTRICAL SECOND FLOOR POWER NEW WORK PLAN

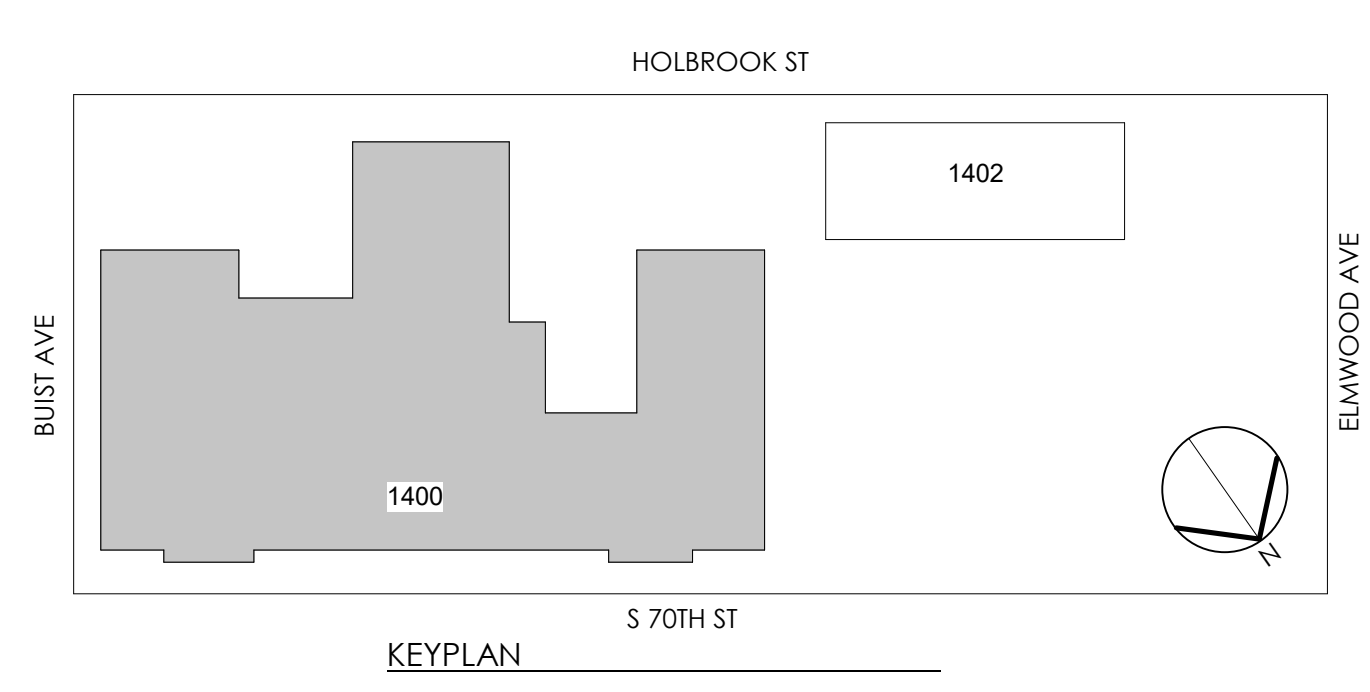
DRAWING SCALE As indicated LOCATION NO. ENGINEER'S PROJECT # 1400 & 1402 069078 DRAWN BY CHECKED BY Author Checker

2022-010-G 2022-010-P 2022-010-E

DRAWING NO. E102



1 ELECTRICAL SECOND FLOOR POWER NEW WORK PLAN SCALE: 1/8" = 1'-0"



Project Number: 069078 2/17/2022 7:59:07 PM Local File: BIM_360/021152-39-94_SDP_Class Mod 01/21/194_SDP_OZC_PATTERSON MEP_CENTRAL_R21.rvt © GANNETT FLEMING, INC 2021

SEAL: _____ DATE _____

ENGINEER OF RECORD AND MECHANICAL/PLUMBING/ELECTRICAL ENGINEER:

GANNETT FLEMING, INC. 1010 ADAMS AVENUE VALLEY FORGE, PA 19403 Phone: 610.783.3862 Email: BWESSER@GFNET.COM Attn: BRIAN WEISSER

ARCHITECT:

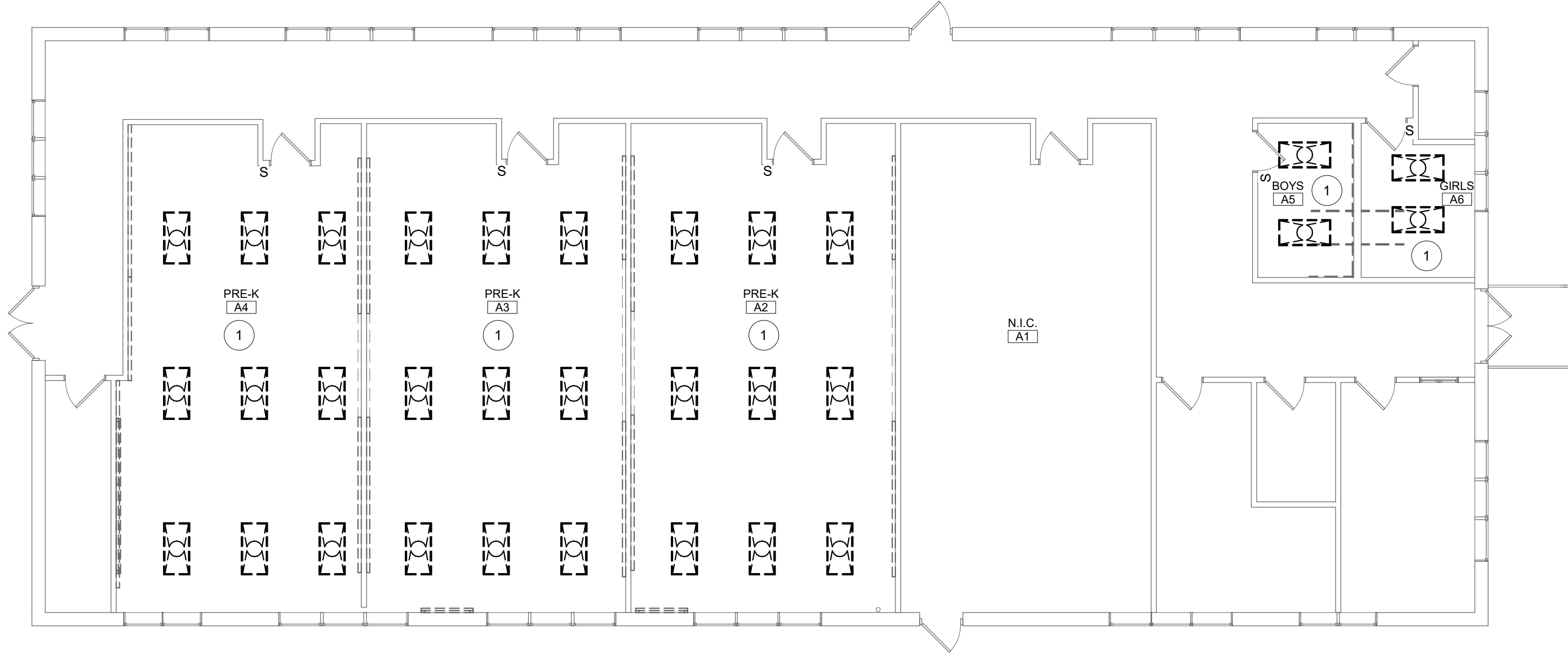
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GENERAL DEMOLITION NOTES

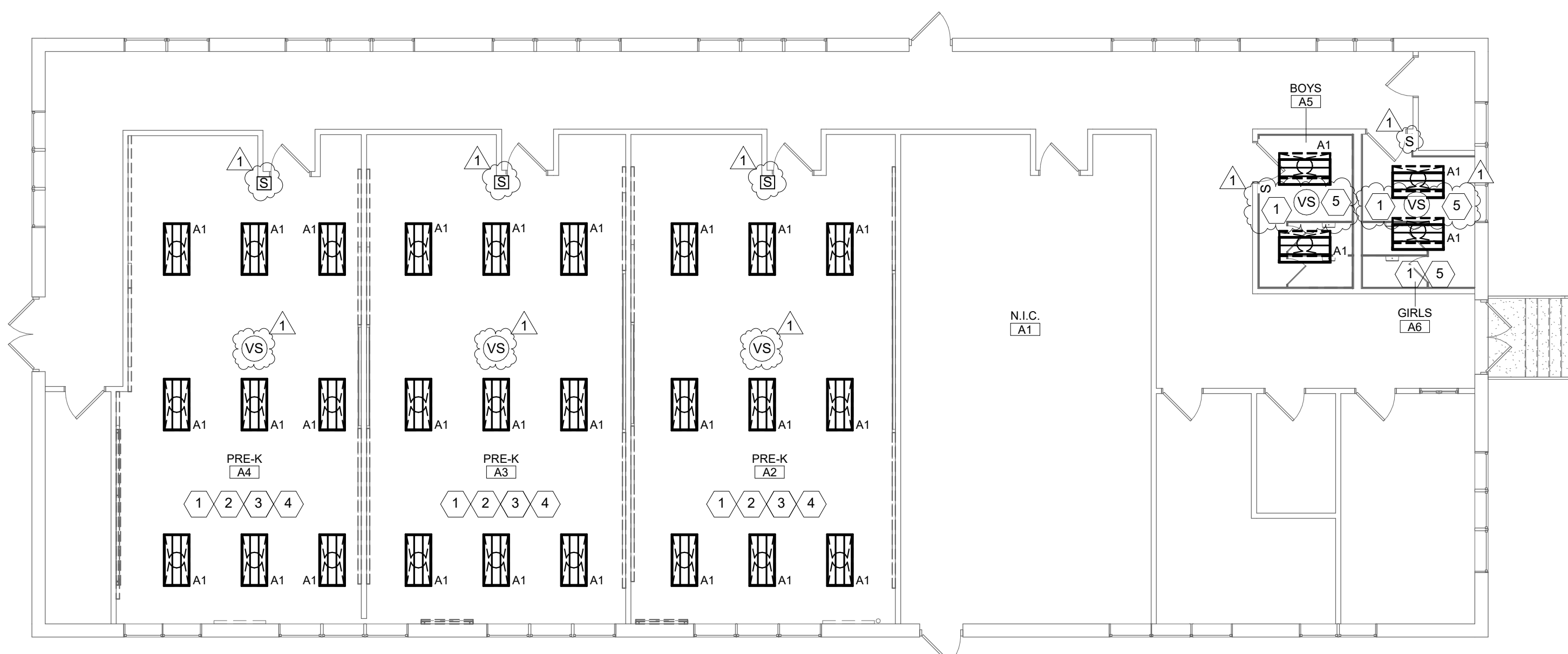
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- REMOVE EXISTING FLOURESCENT LIGHT FIXTURES AND LIGHTING CONTROLS. EXISTING CONDUIT, WIRE AND CIRCUITS TO BE REUSED.



1 ELECTRICAL ANNEX LIGHTING DEMOLITION PLAN SCALE: 1/8" = 1'-0"



2 ELECTRICAL ANNEX LIGHTING NEW WORK PLAN SCALE: 1/8" = 1'-0"

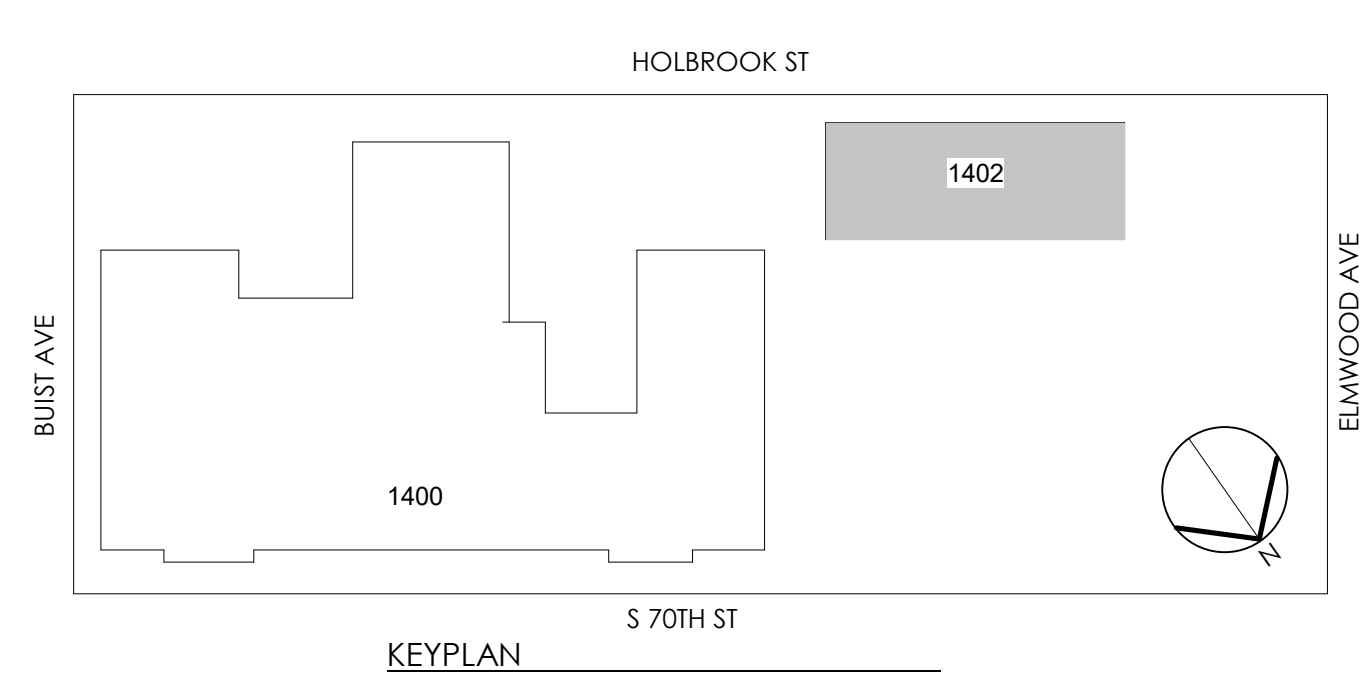
NEW WORK GENERAL NOTES

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- ALL ELECTRICAL EQUIPMENT SHOWN ON DRAWING IS NEW UNLESS NOTED OTHERWISE.
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SHEET NEW WORK KEYNOTES

- PROVIDE NEW TAMPER RESISTANT 120V DUPLEX RECEPTACLE(S). CONNECT TO EXISTING CIRCUITS PREVIOUSLY SERVING THIS AREA. NEW WIRING TO BE FISHED WITHIN PARTITION WALLS. NO SURFACE MOUNTED CONDUIT IN THE ANNEX. FOR ANY NEW DUPLEX RECEPTACLES, PROVIDE (2) #12, (1) #12GRD IN 3/4" CONDUIT.
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- EXISTING HOUSE PHONE TO REMAIN.
- EXISTING CEILING MOUNTED SPEAKER TO REMAIN.
- PROVIDE NEW CLOCK. REUSE CLOCK WIRING PREVIOUSLY SERVING THIS ROOM.
- EXISTING RECEPTACLE TO REMAIN.

LIGHTING FIXTURE SCHEDULE							
TYPE	DESCRIPTION	MANUFACTURER	CATALOG #	LAMP TYPE	WATTS	MOUNTING	REMARKS
A1	FLUX PANEL LED	DAYBRITE	2FXP48L835-4-DS-UNV-DIM	LED	38	RECESSED	
A2	FLUX PANEL LED	DAYBRITE	2FXP48L835-4-DS-UNV-DIM	LED	38	SURFACE	FSF24 SURFACE MOUNT KIT



BID DOCUMENTS JANUARY 07, 2022 FOR BID PURPOSES ONLY

NO.	DATE	REVISION
1	2/9/2022	ADDENDUM #2

SCHOOL & LOCATION
JOHN M. PATTERSON SCHOOL

7001 BUJIST AVE, PHILADELPHIA, PA 19142

PROJECT TITLE
PATTERSON CLASSROOMS MODERNIZATIONS

DRAWING NAME
ELECTRICAL ANNEX LIGHTING DEMOLITION & NEW WORK PLANS

DRAWING SCALE As indicated	
LOCATION NO. 1400 & 1402	ENGINEER'S PROJECT # 069078
DRAWN BY Author	CHECKED BY Checker
2022-010-G 2022-010-P 2022-010-E	

DRAWING NO.
E200

SEAL:

DATE

ENGINEER OF RECORD AND MECHANICAL/PLUMBING/ELECTRICAL ENGINEER:

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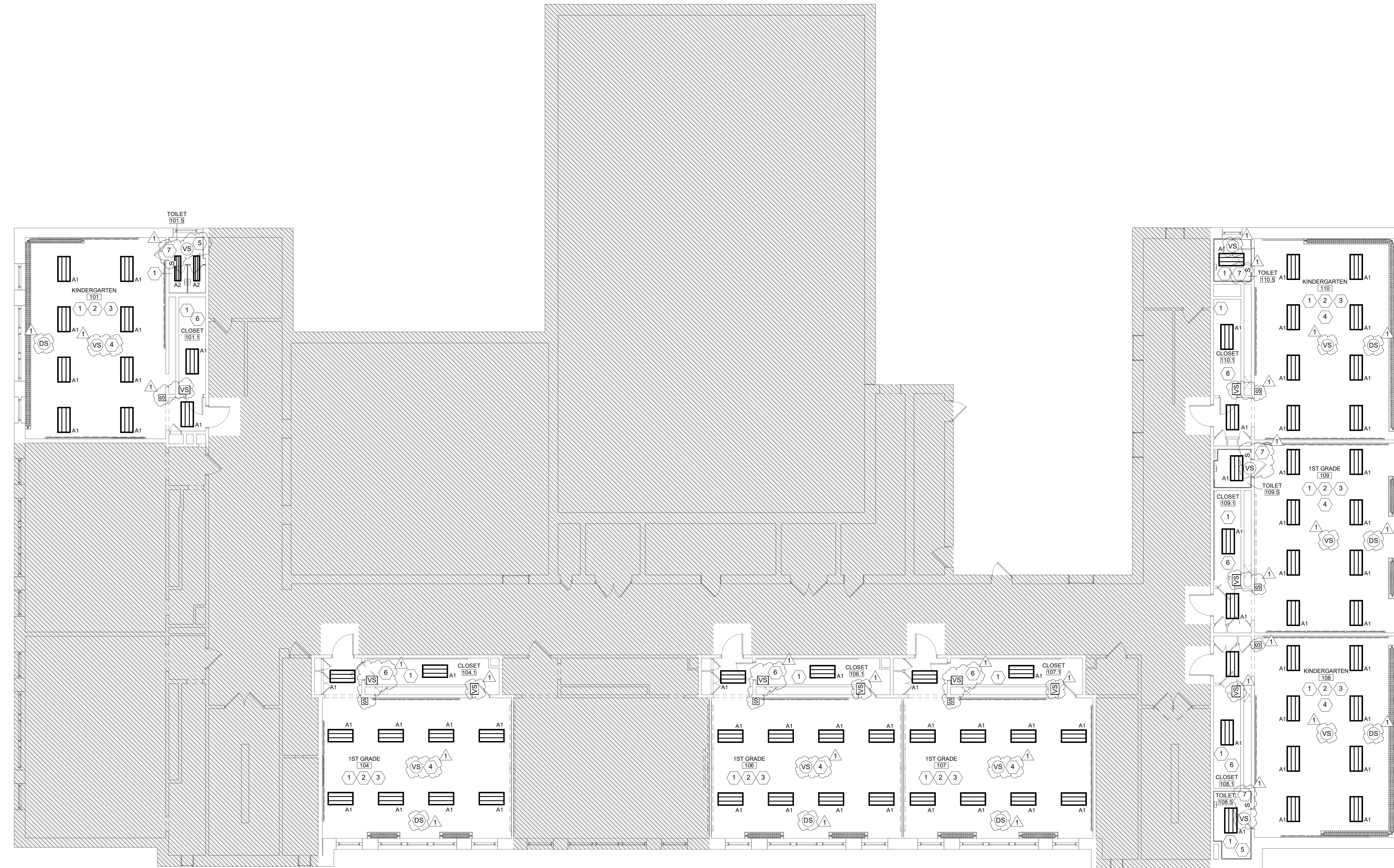
OZ COLLABORATIVE
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Email: NJZIMMERMAN@OZCOLLABORATIVE.COM
Attn: MORRIS ZIMMERMAN

NEW WORK GENERAL NOTES

1. REFER TO DRAWING E001 FOR GENERAL NOTES AND WIRING METHODS.
2. ALL ELECTRICAL EQUIPMENT SHOWN ON DRAWING IS NEW UNLESS NOTED OTHERWISE.
3. PAINT-ABLE SURFACE MOUNTED CONDUIT, NOT WIREMOLD, RUN DROPS IN ROOM CORNERS, DO NOT CUT WALL MOLDINGS. AT NEW DRYWALL PARTITIONS, PROVIDE CONCEALED WIRING AND RECESSED BOXES FOR NEW ELECTRICAL AND DATA DEVICES.

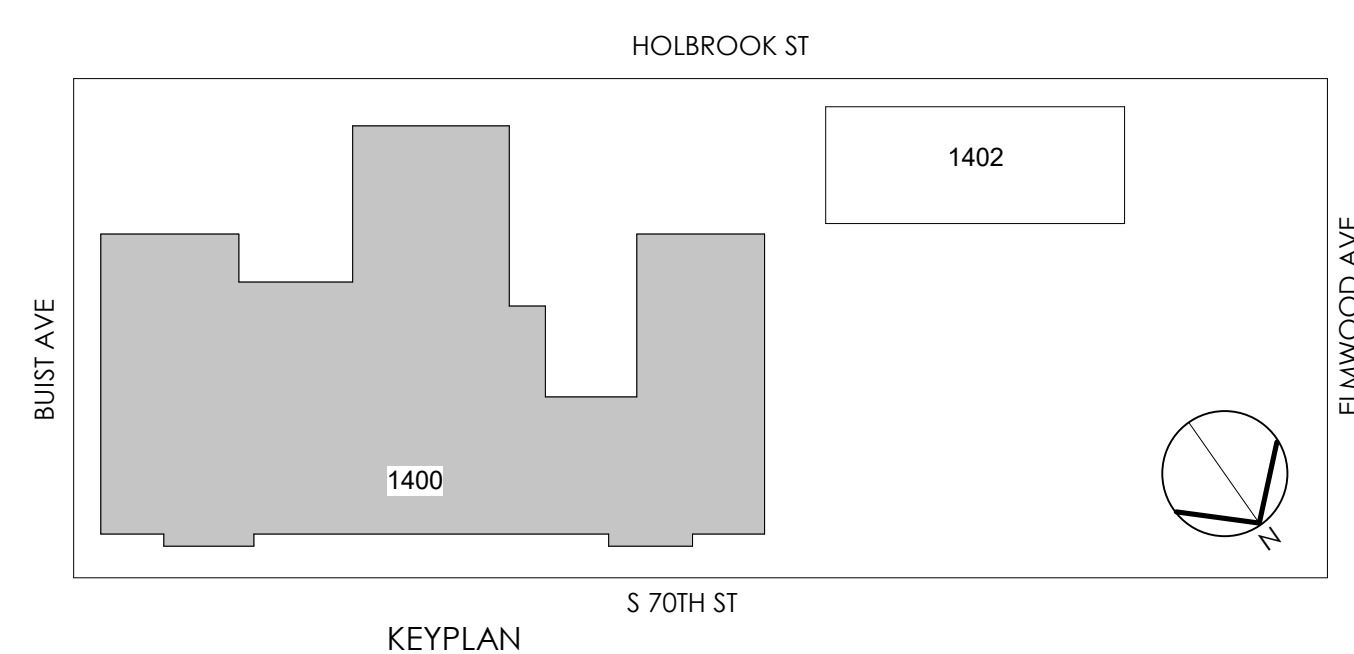
SHEET NEW WORK KEYNOTES

1. PROVIDE NEW LED LIGHT FIXTURE AS SHOWN. REUSE EXISTING CONDUIT, WIRE AND CIRCUIT. (REFER TO LIGHTING FIXTURE SCHEDULE ON THIS SHEET).
2. NEW CEILING TILES AND GRID. REFER TO ARCHITECTURAL DWGS.
3. NEW BISCUIT JACK AND NEW WIRELESS ACCESS POINT - PROVIDED BY OWNER.
4. PROVIDE A LOW VOLTAGE LIGHTING CONTROL SYSTEM FOR THIS SPACE CONSISTING OF A LOCAL ROOM LIGHTING CONTROLLER, WITH VACANCY SENSING OCCUPANT DETECTOR(S), DAYLIGHT SENSOR(S) AND LOW VOLTAGE ON/OFF/DIM CONTROL SWITCHES, AS SHOWN. (NOTE: DAYLIGHT SENSORS MAY NOT BE REQUIRED IN ALL SPACES). REFER TO SPECIFICATIONS SECTION 26 09 23.
5. PROVIDE NEW PASSIVE INFRARED (PIR) LINE VOLTAGE OCCUPANCY SENSOR, LEVITON PROVOLT MODEL #ODC15-IDW, OR APPROVED EQUAL. INSTALL AND WIRE PER MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE NEW RECESSED IN-WALL (I.E. "WALL BOX") LINE VOLTAGE MANUAL-ON VACANCY SENSOR/SWITCH, LEVITON MODEL #DVS05-1LZ, OR APPROVED EQUAL.
7. REPLACE EXISTING LIGHT SWITCH WITH NEW. PROVIDE NEW FACE PLATE.



1 ELECTRICAL FIRST FLOOR LIGHTING NEW WORK PLAN
SCALE: 1/8" = 1'-0"

LIGHTING FIXTURE SCHEDULE							
TYPE	DESCRIPTION	MANUFACTURER	CATALOG #	LAMP TYPE	WATTS	MOUNTING	REMARKS
A1	FLUX PANEL LED	DAYBRITE	2FXP54L835-4-DS-UNV-DIM	LED	38	RECESSED	FSF14 SURFACE MOUNT KIT AT CLOSETS ONLY
A2	FLUX PANEL LED 2'x4'	DAYBRITE	2FXP43L835-4-DS-UNV-DIM	LED	38	SURFACE	FSF14 SURFACE MOUNT KIT



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NO. DATE REVISION

SCHOOL & LOCATION
JOHN M. PATTERSON SCHOOL

7001 BUSS AVENUE, PHILADELPHIA, PA 19142

PROJECT TITLE
PATTERSON CLASSROOMS MODERNIZATIONS

DRAWING NAME
ELECTRICAL FIRST FLOOR LIGHTING NEW WORK PLAN

DRAWING SCALE
As indicated

LOCATION NO. ENGINEER'S PROJECT #
1400 & 1402 069078

DRAWN BY CHECKED BY
Author Checker

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2022-010-P
2022-010-E

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Project Number: 069078
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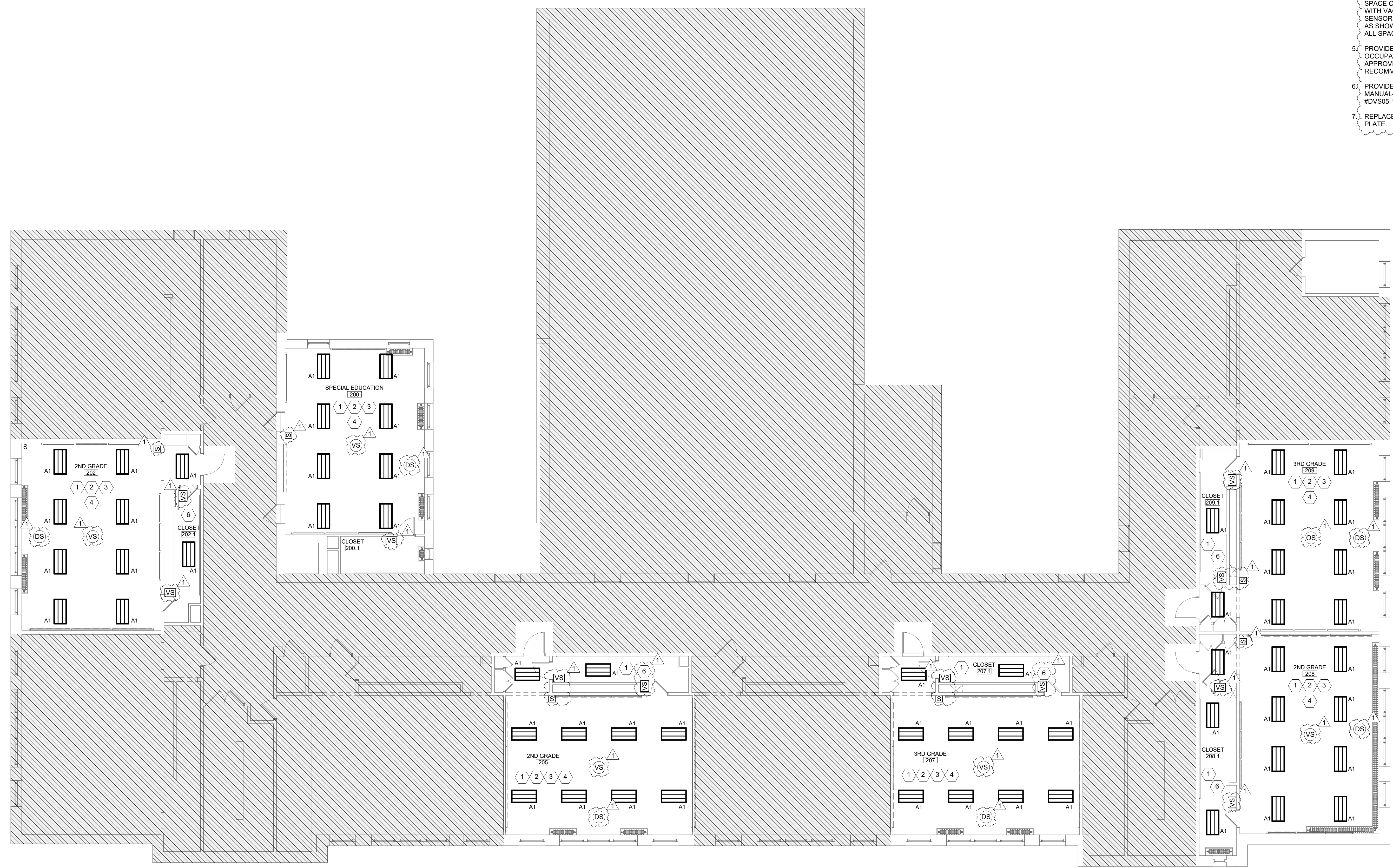
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Attn: MORRIS ZIMMERMAN

NEW WORK GENERAL NOTES

- REFER TO DRAWING E001 FOR GENERAL NOTES AND WIRING METHODS.
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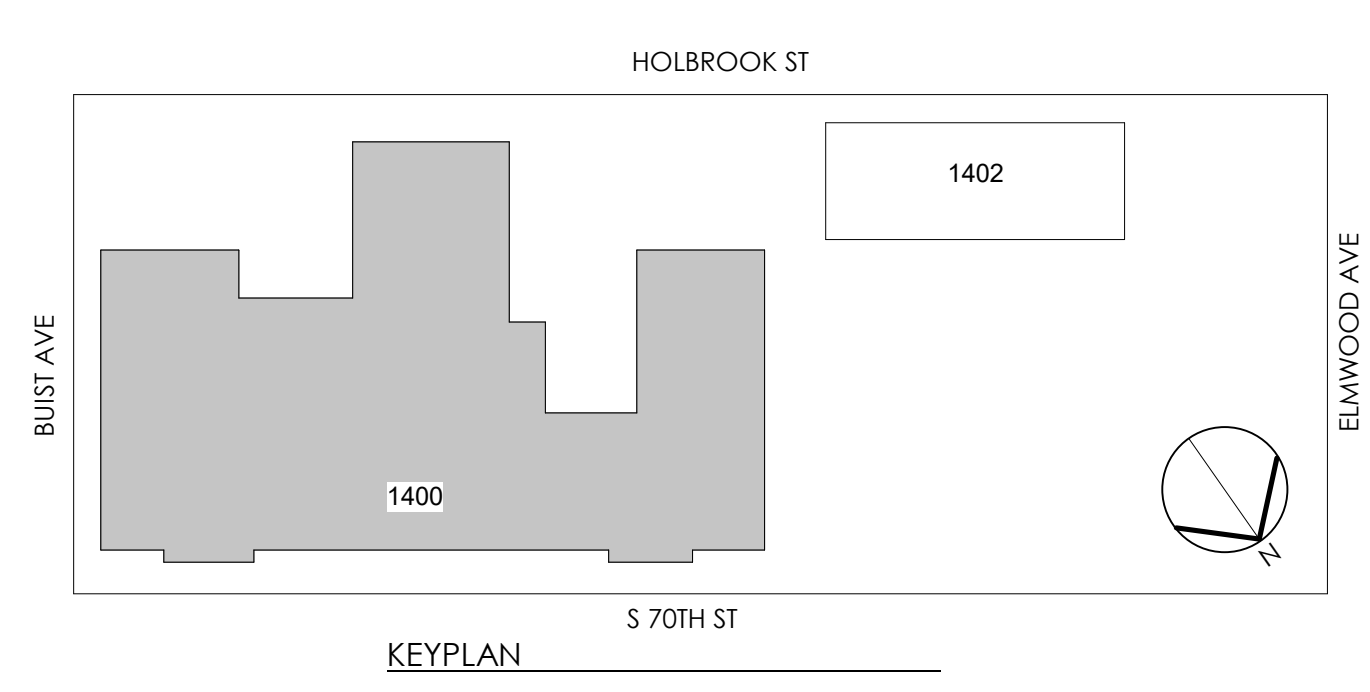
SHEET NEW WORK KEYNOTES

- PROVIDE NEW LED LIGHT FIXTURE AS SHOWN. REUSE EXISTING CONDUIT, WIRE AND CIRCUIT. (REFER TO LIGHTING FIXTURE SCHEDULE ON THIS SHEET).
- NEW CEILING TILES AND GRID. REFER TO ARCHITECTURAL DWGS.
- NEW BISCUIT JACK AND NEW WIRELESS ACCESS POINT - PROVIDED BY OWNER.
- PROVIDE A LOW VOLTAGE LIGHTING CONTROL SYSTEM FOR THIS SPACE CONSISTING OF A LOCAL ROOM LIGHTING CONTROLLER, WITH VACANCY SENSING OCCUPANT DETECTOR(S), DAYLIGHT SENSOR(S) AND LOW VOLTAGE ON/OFF/DIM CONTROL SWITCH(ES) AS SHOWN. (NOTE, DAYLIGHT SENSORS MAY NOT BE REQUIRED IN ALL SPACES). REFER TO SPECIFICATIONS SECTION 26 09 23.
- PROVIDE NEW PASSIVE INFRARED (PIR) LINE VOLTAGE OCCUPANCY SENSOR, LEVITON PROVOLT MODEL #DDC15-IDW, OR APPROVED EQUAL. INSTALL AND WIRE PER MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE NEW RECESSED IN-WALL (I.E. "WALL BOX") LINE VOLTAGE MANUAL-ON VACANCY SENSOR/SWITCH, LEVITON MODEL #DVS05-1LZ, OR APPROVED EQUAL.
- REPLACE EXISTING LIGHT SWITCH WITH NEW. PROVIDE NEW FACE PLATE.



1 ELECTRICAL SECOND FLOOR LIGHTING NEW WORK PLAN
SCALE: 1/8" = 1'-0"

LIGHTING FIXTURE SCHEDULE							
TYPE	DESCRIPTION	MANUFACTURER	CATALOG #	LAMP TYPE	WATTS	MOUNTING	REMARKS
A1	FLUX PANEL LED	DAYBRITE	2FXP54L835-4-DS-UNV-DIM	LED	38	RECESSED	FSF14 SURFACE MOUNT KIT AT CLOSETS ONLY.
A2	FLUX PANEL LED	DAYBRITE	2FXP43L835-4-DS-UNV-DIM	LED	38	SURFACE	FSF14 SURFACE MOUNT KIT



BID DOCUMENTS
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SCHOOL & LOCATION
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7001 BUUST AVE, PHILADELPHIA, PA 19142

PROJECT TITLE
PATTERSON CLASSROOMS MODERNIZATIONS

DRAWING NAME
ELECTRICAL SECOND FLOOR LIGHTING NEW WORK PLAN

DRAWING SCALE
As indicated

LOCATION NO. ENGINEER'S PROJECT #
1400 & 1402 069078

DRAWN BY CHECKED BY
Author Checker

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DRAWING NO.
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SEAL:

DATE

ENGINEER OF RECORD AND MECHANICAL/PLUMBING/ELECTRICAL ENGINEER:

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NEW WORK GENERAL NOTES

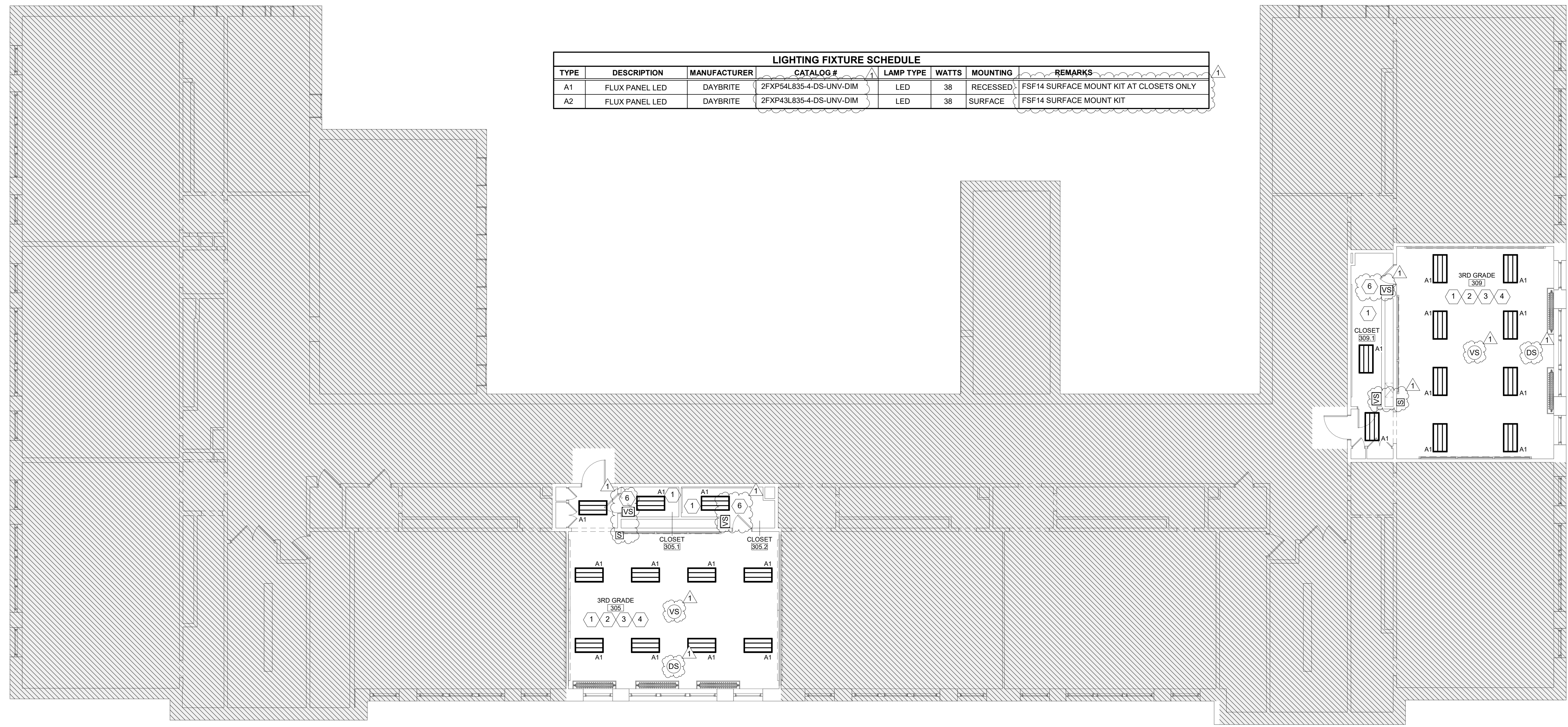
- 1. REFER TO DRAWING E001 FOR GENERAL NOTES AND WIRING METHODS.
- 2. ALL ELECTRICAL EQUIPMENT SHOWN ON DRAWING IS NEW UNLESS NOTED OTHERWISE.
- 3. PAINT-ABLE SURFACE MOUNTED CONDUIT. NOT WIREMOLD. RUN DROPS IN ROOM CORNERS. DO NOT CUT WALL MOLDINGS. AT NEW DRYWALL PARTITIONS, PROVIDE CONCEALED WIRING AND RECESSED BOXES FOR NEW ELECTRICAL AND DATA DEVICES.

SHEET NEW WORK KEYNOTES

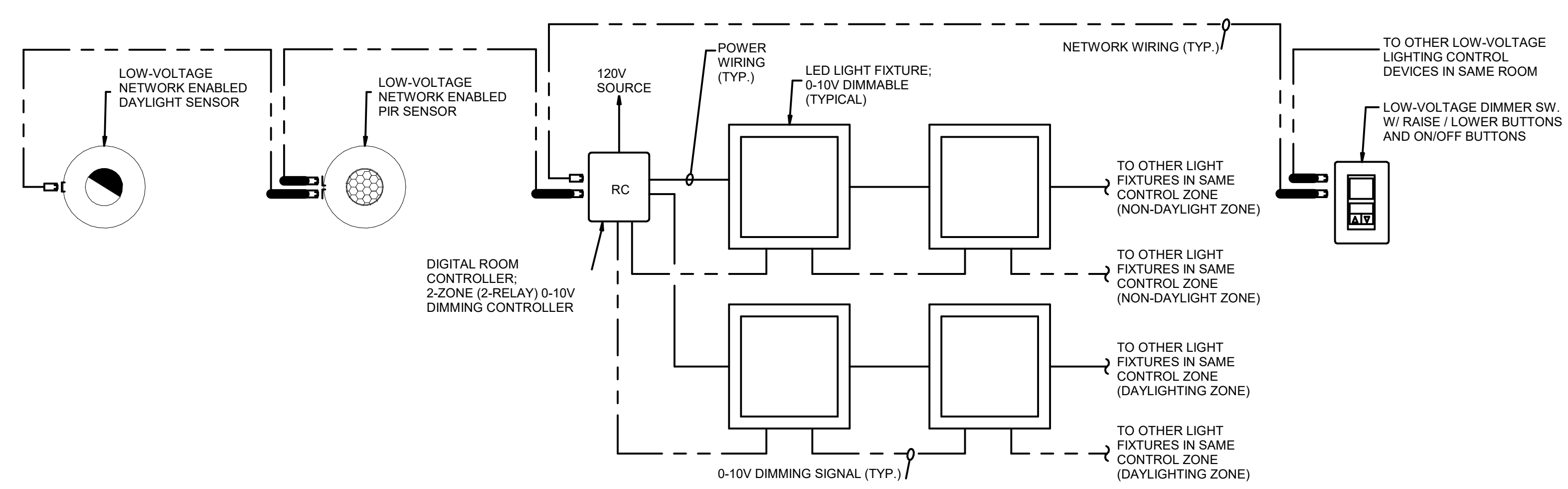
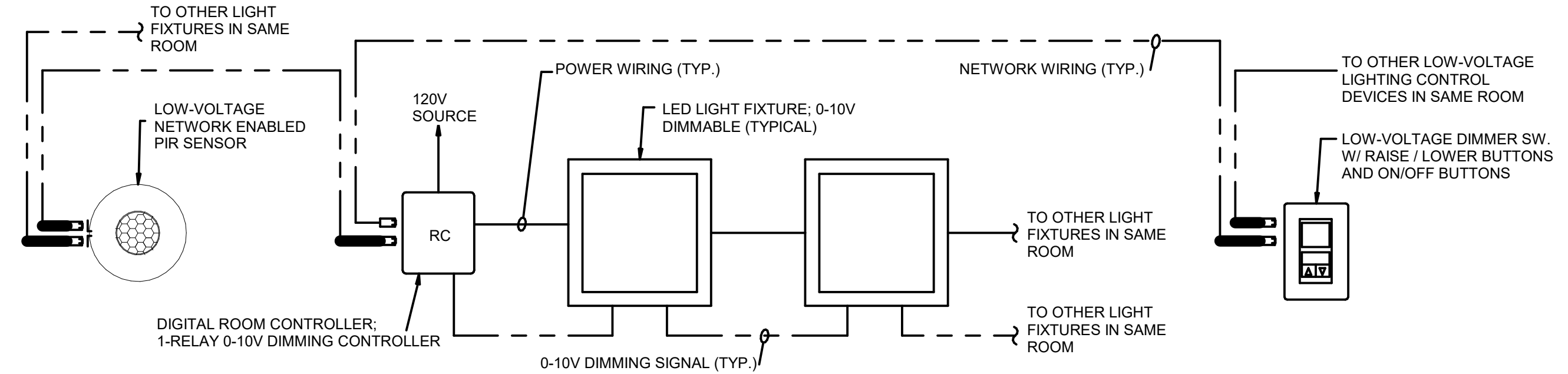
- 1. PROVIDE NEW LED LIGHT FIXTURE AS SHOWN. REUSE EXISTING CONDUIT, WIRE AND CIRCUIT. (REFER TO LIGHTING FIXTURE SCHEDULE ON THIS SHEET).
- 2. NEW CEILING TILES AND GRID. REFER TO ARCHITECTURAL DWGS.
- 3. NEW BISCUIT JACK AND NEW WIRELESS ACCESS POINT - PROVIDED BY OWNER.
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- 6. PROVIDE NEW RECESSED IN-WALL (I.E. "WALL BOX") LINE VOLTAGE MANUAL ON VACANCY SENSOR SWITCH, LEVITON MODEL #DV50S-1LZ, OR APPROVED EQUAL.
- 7. REPLACE EXISTING LIGHT SWITCH WITH NEW. PROVIDE NEW FACE PLATE.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	CATALOG #	LAMP TYPE	WATTS	MOUNTING	REMARKS
A1	FLUX PANEL LED	DAYBRITE	2FXP54L835-4-DS-UVV-DIM	LED	38	RECESSED	FSF14 SURFACE MOUNT KIT AT CLOSETS ONLY
A2	FLUX PANEL LED	DAYBRITE	2FXP43L835-4-DS-UVV-DIM	LED	38	SURFACE	FSF14 SURFACE MOUNT KIT



1 ELECTRICAL THIRD FLOOR LIGHTING NEW WORK PLAN
SCALE: 1/8" = 1'-0"



LIGHTING CONTROL NOTES:

- LC1. NOT ALL LIGHT FIXTURES, CONTROLS, DEVICES, ETC. ARE SHOWN. DIAGRAMS SHOWN ARE TYPICAL FOR CONTROL OF INTERIOR LIGHT FIXTURES AND NEED TO BE MODIFIED AS NECESSARY TO MEET THE INTENT OF THE DRAWINGS.
- LC2. NETWORK WIRING SHALL BE CAT 5E PLENUM-RATED WITH A WHITE JACKET AND INSTALLED IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S DIRECTIONS. SUPPORT CABLE ABOVE CEILING VIA CLOSED RINGS OR OPEN TOP HOOKS. CABLE SHALL NOT LAY ON THE CEILING TILE OR BE TIED TO CEILING WIRE HANGERS.
- LC3. PROVIDE PROGRAMMABLE SWITCHES THAT ARE NETWORK ENABLED. SWITCHES MAY OPERATE AS A SINGLE, 3-WAY, 4-WAY, OR DIMMER TYPE.
- LC4. CONNECT MULTIPLE SENSORS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- LC5. INSTALL ROOM CONTROLLERS AND NETWORK WIRING ABOVE ACCESSIBLE CEILING. COORDINATE LOCATIONS OF ROOM CONTROLLERS WITH THE SCHOOL DISTRICT PRIOR TO INSTALLATION.
- LC6. CONTROL SYSTEMS SHALL BE ARRANGED FOR VACANCY SENSING (MANUAL ON / AUTO OFF) OPERATION UNLESS OTHERWISE INDICATED.
- LC7. REFER TO SPECIFICATIONS, SECTION 26 05 23 - LIGHTING CONTROL SYSTEMS, FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

3 LIGHTING CONTROL DIAGRAMS
SCALE: 1/2" = 1'-0"

BID DOCUMENTS
JANUARY 07, 2022
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1 2/9/2022 ADDENDUM #2

SCHOOL & LOCATION
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PROJECT TITLE
**PATTERSON CLASSROOMS
MODERNIZATIONS**

DRAWING NAME
**ELECTRICAL THIRD FLOOR
LIGHTING NEW WORK PLAN**

DRAWING SCALE
As indicated

LOCATION NO. 1400 & 1402 ENGINEER'S PROJECT # 069078

DRAWN BY Author CHECKED BY Checker

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