SECTION 009115
ADDENDUM NUMBER 5

PARTICULARS

1.1 DATE: January 12, 2022

1.2 PROJECT: Orangetown Town Hall Addition and Alterations

1.3 Owner: Town of Orangetown

1.4 Architect: Lothrop Associates LLP Architects

TO: ALL HOLDERS OF BID DOCUMENTS:

2.1 THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND MODIFIES THE OriginalBid DOCUMENTS DATED November 9, 2021, WITH AMENDMENTS AND ADDITIONS NOTED BELOW.

2.2 ACKNOWLEDGE RECEIPT OF THIS ADDENDUM IN THE SPACE PROVIDED IN THE Bid Form. FAILURE TO DO SO Will DISQUALIFY THE BIDDER.

2.3 GENERAL:

A. Questions raised by RFI via email:
1. Are the $10M/$20M General Liability limits correct as indicated in Addendum 1? (Architect's RFI #1G.13)
a. **Yes, the limits are correct as stated. New York State has a Scaffold Law, as well as other requirements.**

2. Are there liquidated damages for this project? (Architect's RFI #1G.14)
a. **There are no requirements for liquidated damages on this project.**

3. Prevailing pay rate schedule appears to be missing rates for Asbestos Worker & Insulator, Asbestos Worker & Supervisor, Apprentice, or Journeyman. Is there an updated schedule that includes these rates? (Architect's RFI #1G.15)
a. **An updated Prevailing Pay Rate Schedule is not available at this time. We have reached out to the NYS DOL, but have not yet received a response.**

4. The expansion joints called out on A402, notes 11 and 15, are not listed in the specifications. Please advise. (Architect's RFI #1G.16)
a. **See Section 079513 - Expansion Joint Cover Assemblies: Part 2.2.**

5. Drawing A501 note 12 says fiberglass, but the specification for column covers calls for anodized aluminum. (Architect's RFI #1G.16)
a. **There are both metal column covers and fiberglass column covers used on this project. Interior column covers are fiberglass as indicated on Drawing A501, detail 12 and Section 066100 is applicable to those units. The exterior column located at A.5/9 is to be covered with the aluminum**

column cover and Section 057500 is applicable to this unit.

6. Addendum number 2 removed alternate 5 from the bid. Will you be reissuing the alternate bid form? Please advise. (Architect's RFI #1G.17)
   a. **See Addendum 1. Alternate numbers have been re-organized. A revised Section 004323-Alternates Form has been issued.**

7. In addendum 1, asbestos report, it shows no abatement is required. Is there a report on the area that abatement is called out in the specs, and is it possible to get an abatement drawing? (Architect's RFI #1G.18)
   a. **Although there is no evidence of ACM, PCBs, or lead-based paint materials in the samples previously taken and analyzed from within the existing 1992 structure, abatement specifications have been included for reference, should such materials that require abatement be encountered during the course of the work of these contracts. There is no abatement drawing for this project.**

8. Are other BMS manufacturers acceptable besides Honeywell? We have reached out to Honeywell numerous times with no response. (Architect's RFI #1G.19)
   a. **As long as the alternate control manufacturer can meet the plans and specifications and integrates the existing system with the new system, they would be acceptable.**

9. Please advise who is the current BMS contractor for the building? (Architect's RFI #3H.01)
   a. **The current maintenance contractor for the existing Andover BMS control system is Richmar Controls. Contact Raf Sowacki, rsowacki@richmarcontrols.com. The BMS system is to be totally integrated with the existing system. See specification Section 230923.**

10. Please clarify the symbology identified on Drawing E-001. The open triangle symbol calls for 2 tel. and 2 data cables. The shaded triangle calls for the same except extend into modular furniture. The majority of locations show one open triangle and two shaded triangles. I'm not sure how to interperet this. Please advise. (Architect's RFI #4E.06)
    a. **See revised drawings E-001 Issue 2, E-208 Issue 2, E-213 Issue 2 and E-218 Issue 2.**

11. Drawing E-208 shows and open triangle and a split shaded triangle for Board Room 157. How many cables are required by these? (Architect's RFI #4E.06)
    a. **See revised drawings E-001 Issue 2, E-208 Issue 2, E-213 Issue 2 and E-218 Issue 2.**

12. Do all floor box locations require AV cables and if so, what type? How many v/d for floor boxes? (Architect's RFI #4E.06)
    a. **See revised drawings E-001 Issue 2, E-208 Issue 2, E-213 Issue 2 and E-218 Issue 2.**

13. Per addendum 3, the camera cables will be pulled to room 118 instead of designated IT closet on each floor. This will result in some of them being over length. Please advise. (Architect's RFI #4E.06)
    a. **The Owner reserves the right to change the destination of the camera POE cable(s) to either the nearest data closet or Room 118. For those camera locations that require cabling lengths that exceed the recommended allowable length for proper signal strength, include the more expensive**

option in the bid proposal.

14. Our generator providers are asking for a spec on the generator ATS. Please advise. (Architect's RFI #4E.07)
    a. **See new specification Section 263600 - Automatic Transfer Switch, attached to this Addendum.**

15. Addendum #1 and #3 state that the contractor must pay the required permit fees. Since the Orangetown Building Department will be reviewing and issuing the permits for this project, it seems counterproductive for the Owner to charge themselves for permit fees. Please advise. (Architect's RFI #1G.20)
    a. **The Town of Orangetown will waive building permit fees for this project. Fees required by other jurisdictions or agencies, including county or state agencies, will be paid for by the Town. Paper work for filing for permits shall be the responsibility of the contractor whose work is the subject of such permits.**

16. Please confirm that each prime contractor (GC, Plumbing, HVAC, Electric) are responsible for completing and submitting their own permit applications and if each prime contractor will be responsible for their fees for their trade. (Architect's RFI #1G.20)
    a. **Each prime contractor is responsible for completing and submitting their own permit applications. The Town will pay for all permit application fees.**

17. The Soil Report requires a possible DEP Permit. Please confirm that this permit cost will be paid for by the Owner or taken out of the allowance as there is no way for a contractor to know what the cost of a DEP Permit will be, especially since the DEP will not even speak with us until a permit has been completed. Please confirm. (Architect's RFI #1G.20)
    a. **The Town of Orangetown will waive building permit fees for this project. Fees required by other jurisdictions or agencies, including county or state agencies, will be paid for by the Town. Paper work for filing for permits shall be the responsibility of the contractor whose work is the subject of such permits.**

18. Addendum #2, Question 25 asked if the General Liability insurance of $10,000,000/$20,000,000 was correct. This question was not answered. Please be advised that General Liability insurance of $10,000,000/$20,000,000 is extremely high and will add an excessive cost to the project. The standard insurance limits for General Liability is $1,000,000/$2,000,000 per occurrence. Please confrirm that the General Liabiltiy insurance limits should be $1,000,000/$2,000,000, which are industry standards. (Architect's RFI #1G.20)
    a. **The General Liability limits are correct as stated. New York State has a Scaffold Law, as well as other requirements.**

19. Is the asbestos in the 1959 Building to be removed by others since the building is being demolished by others or is the General Contractor responsible for removing the asbestos in the 1959 Building before the Owner demolishes the building? Please advise. (Architect's RFI #1G.20)
    a. **The asbestos abatement in the 1959 building is NOT included in this contract.**

20. Addendum #2 states that sprayed fireproofing is not require in the new addition. However, the General Contractor has to patch spray fireproofing in the existing building where mechanical work needs to be performed. Please provide a square

footage of spray fireproofing to include in the bid or advise if this patch work can be taken out of the allowance. (Architect's RFI #1G.20)

a. **For bidding purposes, assume an area of 75 square feet for spray fireproofing patch work.**

21. The Addenda made it clear that the GC is responsible for all site trenching outside the footprint of the new addition for the electrical and plumbing contractors. The GC is also responsible for maintaining the trenches, stone, bedding, etc. Please confirm that the plumbing and electrical contractors are responsible for their own excavation, backfill, trench, bedding, etc. for all work contained within the footprint of the addition and in the existing building. In absense of a response, we will make this assumption. (Architect's RFI #1G.20)

    a. **The Plumbing and Electrical Contractors are responsible for their own excavation, backfill, trenching, bedding, etc. associated with their work within the footprint of the new addition or the existing building, and to a distance not to exceed 5 feet beyond the perimeter of the building.**

22. Addendum #3 indicates that all 7 alternates need to be accepted for the project duration to be 660 days. As such, please confirm that if only 6 of the 7 alternates are accepted, no additional time will be granted. (Architect's RFI #1G.20)

    a. **If alternate GC-01 is accepted, the additional 110 calendar days is provided exclusively for completing the alternate work only. The Base Bid work deadline remains at 550 calendar days for Substantial Completion. All other alternate work shall be completed within the 550 calendar days allotted for Base Bid work.**

23. The bidding documents indicated that Substantial Completion for the base bid work is 550 calendar days, which is 18 months. If all 7 alternates are accepted, the Substantial Completion becomes 660 calendar days, which is 22 months. However, Phasing Plan C-107 indicates a Substantial Completion of 24 months. The duration for this project is still vague and needs further clarification. Please advise. (Architect's RFI #1G.20)

    a. **The following Sequencing Note, Note 5, on Drawing C-107:**
    "ESTIMATED SEQUENCING DURATION:
    SEQUENCE 1: THREE (3) MONTHS
    SEQUENCE 2: NINE (9) MONTHS
    SEQUENCE 3: NINE (9) MONTHS
    SEQUENCE 4: THREE (3) MONTHS"
    is changed to read:
    "ESTIMATED SEQUENCING DURATION:
    SEQUENCE 1: TWO (2) MONTHS
    SEQUENCE 2: SEVEN (7) MONTHS
    SEQUENCE 3: SEVEN (7) MONTHS
    SEQUENCE 4: TWO (2) MONTHS

24. Please prvide roof screen framing details and sizes. Structural drawing state to refer to architectural drawings, however, details on drawing A561 do not provide sizes for the framing members. (Architect's RFI #1G.20)

    a. **Refer to drawings S-101 and S-103 for structural framing support for roof screen. Roof screens are to be designed by delegated design, in accordance with Section 089200 - Louvered Equipment Screens. Refer to drawing 11/A561 and 19/A561 for flashing details.**

25. Temporary ramp indicates a handrail is required but does not specify a material. Please advise what this handrail should be made out of. (Architect's RFI #1G.20)

a. **The handrail for the temporary ramp shall be made of 1-1/2" diameter round, Schedule 80, steel pipe in accordance with specification Section 055213 - Pipe and Tube Railings, with welded joints.**

26. Specifications include an allowance of $25,000 for the purchase and delivery of building signage, inclusive of interior and exterior signs, dimensional lettering, logos, seals, and plaques. Who is responsible for the installation of the signs, the GC? Or does the allowance include installation as well? Please clarify. (Architect's RFI #1G.20)
    a. **The General Contractor is responsible for the installation of all signage, as part of Base Bid.**

27. Who is responsible to furnish and install the dishwasher shown in elevation 5/A610? (Architect's RFI #1G.20)
    a. **The dishwasher shall be furnished and installed by the General Contractor. Refer to the revised specification Section 113013 - Residential Appliances, attached to this Addendum.**

28. Please confirm the floor mounted medallion shown on drawings A502, Detail 5, is part of the signage allowance. Also, detail refers to detail 12./A402 which is mounting detail for a wall-mounted signage system. If medallion is by General Contractor, please provide proper mounting details. (Architect's RFI #1G.20)
    a. **The floor medallion is to be a custom fabricated carpet medallion. See specification Section 096813 - Tile Carpeting, part 2.2 G.**

29. Drawing A202, Elevation 3, depicts what looks to be a display case between column lines 1.2 and 1.5. Is this indeed a new display case? If so, who is responsible to furnish and install? If GC is responsible, please provide specifications, sections, and details. (Architect's RFI #1G.20)
    a. **The General Contractor is responsible for furnishing and installing the display case. See new specification Section 101200 - Display Cases, attached to this Addendum.**

30. The alternate bid form does not include the alternate for C1 - Site work. Please advise. (Architect's RFI #1G.21)
    a. **The original alternate numbers identified on the Bid Documents were modified in Addendum 1 in order to separate the alternate work between the multiple prime contracts. The original alternate C-1 has been changed to alternate GC-06. The alternate description for alternate C-1 has been modified in Addendum 3, item #53. "Alternate No. C-1" note on drawing C-101 is changed to read "Alternate GC-06".**

31. Floor Plan A113(B) does not indicate wood trim in the elevator lobby on the 3rd floor as it does on the 1st and 2nd floors. However, cross section 2/A-201 does indicate wood trim at the elevator. Unless clarified by Addendum, we assume Detail 2/A-201 is in error. (Architect's RFI #1G.22)
    a. **Drawing 2/A-201 is shown incorrectly. There is no wood trim in the elevator lobby on the 3rd floor.**

2.4 This Addendum consists of 6 PAGES.

CHANGES TO THE PROJECT MANUAL - TECHNICAL SPECIFICATIONS:

3.1 SECTION 263600 - AUTOMATIC TRANSFER SWITCH

A. **Add new Section 263600 - Automatic Transfer Switch, attached to this Addendum.**

3.2 SECTION 101200 - DISPLAY CASES

A. **Add new Section 101200 - Display Cases, attached to this Addendum.**

3.3 SECTION 113013 - RESIDENTIAL APPLIANCES

A. **Remove and replace Section 113013 - Residential Appliances with revised section attached to this Addendum.**

CHANGES TO DRAWINGS:

4.1 DRAWING E-001 - ELECTRICAL SYMBOLS LIST, LIGHTING FIXTURE SCHEDULE AND ABBREVIATIONS

A. **Remove and replace Drawing E-001, Issue 1 with new drawing E-001, Issue 2 attached to this Addendum.**

4.2 DRAWING E-208 - ELECTRICAL LEVEL 01 PLAN (IT/DATA/SECURITY)

A. **Remove and replace Drawing E-208, Issue 1 with new drawing E-208, Issue 2 attached to this Addendum.**

4.3 DRAWING E-213 - ELECTRICAL LEVEL 02 PLAN (IT/DATA/SECURITY)

A. **Remove and replace Drawing E-213, Issue 1 with new drawing E-213, Issue 2 attached to this Addendum.**

4.4 DRAWING E-218 - ELECTRICAL LEVEL 03 PLAN (IT/DATA/SECURITY)

A. **Remove and replace Drawing E-218, Issue 1 with new drawing E-218, Issue 2 attached to this Addendum.**

4.5 DRAWING A201 - BUILDING SECTIONS AND ELEVATIONS

A. **Remove and replace Drawing A201 with new drawing A201, attached to this Addendum.**

END OF SECTION

SECTION 101200
DISPLAY CASES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Recessed display cases.

1.2 RELATED REQUIREMENTS

A. Section 061053 -- Miscellaneous Rough Carpentry: Blocking and supports

B. Section 092116 - Gypsum Board Assemblies: Concealed supports in metal stud walls.

1.3 REFERENCE STANDARDS

A. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2017a.

B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.

C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.

D. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.

E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Submit complete printed data and installation details indicating products to be provided as specified.

C. Shop Drawings: Submit complete installation details. Include dimensioned elevations.

D. Samples: Submit samples of material and trim to illustrate finish, color, and texture.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver display cases and materials to the Project site with manufacturer’s protective crate covering and do not open until ready for use.

B. Protect display cases before, during, and after installation. In case of damage, immediately provide necessary repairs and replacements.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Claridge Products and Equipment, Inc; Imperial Series Bulletin Board Cabinet: www.claridgeproducts.comle.

B. An approved equal.

C. Substitutions: See Section 016000 - Product Requirements.

2.2 DISPLAY CASES

A. Recessed Display Case: Factory-fabricated aluminum-framed display case with adjustable glass shelves, finished interior, and aluminum trim on face to cover edge of recessed opening.
   1. Width: 4 feet.
   2. Height: 5 feet.
   3. Depth: 3-1/4 inches overall depth.
   4. Inside Cabinet Depth: 1-1/2 inch.
   5. Components:
      a. Glazed Doors: Sliding.
         1) Number of Doors: One pair.
      b. Back Panel: Tackable.

2.3 COMPONENTS

A. Aluminum Case Construction: Aluminum side, bottom, and top panels fabricated from extruded aluminum shapes.

B. Glazed Sliding Doors:
   1. 3/16 inch clear tempered glass with ground-in finger pulls.
   2. Door track: Extruded aluminum glass shoe with bottom rollers and top plastic guide.
   3. Lock: flat key tumbler.

C. Tackable Back Panel: Fabric laminated to cork on hardboard.
   1. Cork Thickness: 1/2 inch.
   2. Fabric: Polyester fabric; minimum fabric weight: 13 oz/sq yd.
   3. Color, Texture, Weave, and Pattern: As selected from manufacturer's full range.
   4. Surface Burning Characteristics: Flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84.

2.4 MATERIALS

A. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T5 temper.
   1. Finish: Factory finished; AAMA 2603: Powder coat; color as selected by Architect from manufacturer's full range of options.

B. Plywood: Softwood plywood with veneer core, waterproof glue, 3/4 inch thick.

C. Heat-Strengthened and Fully Tempered Glass: ASTM C1048, Kind FT.

PART 3 EXECUTION

3.1 INSTALLATION

A. Locate fastening devices to secure cases securely to back and sides of rough opening.

B. Install recessed display cases plumb and level in wall openings, 24 inches from finished floor to inside bottom of display case.

C. Clean case and glass using manufacturers recommended procedures.

D. Provide mitered and wrapped hairline joints for all trims.

END OF SECTION

SECTION 113013
RESIDENTIAL APPLIANCES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Kitchen appliances.

1.2 RELATED REQUIREMENTS

A. Section 260583 - Wiring Connections: Electrical connections for appliances.

1.3 REFERENCE STANDARDS

A. UL (DIR) - Online Certifications Directory Current Edition.

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data indicating dimensions, capacity, and operating features of each piece of residential equipment specified. Include manufacturer's installation instructions for each appliance to be installed.

C. Copies of Warranties: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Electric Appliances: Listed and labeled by UL (DIR) and complying with NEMA Standards (National Electrical Manufacturers Association).

1.6 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Provide five (5) year manufacturer warranty on refrigeration system of refrigerators.

C. Provide ten (10) year manufacturer warranty on magnetron tube of microwave ovens.

D. Provide ten (10) year manufacturer warranty on tub and door liner of dishwashers.

PART 2 PRODUCTS

2.1 KITCHEN APPLIANCES

A. Refrigerator: Free-standing, top-mounted freezer, and frost-free.
   1. Capacity: Total minimum storage of 18 cubic ft; minimum 15 percent freezer capacity.

2. Energy Usage: Minimum 20 percent more energy efficient than energy efficiency standards set by U.S. Department of Energy (DOE).
3. Features: Include glass shelves.
4. Exterior Finish: Stainless steel.
5. Manufacturers:
   a. Frigidaire Home Products: www.frigidaire.com.
   b. GE Appliances: www.geappliances.com.
   c. Whirlpool Corp: www.whirlpool.com.
   d. Substitutions: See Section 016000 - Product Requirements.

B. Microwave: Under-cabinet mounted.
1. Capacity: 0.9 cubic ft.
2. Power: 1000 watts.
3. Features: Include turntable, 2-speed exhaust fan, built-in trim kit, and undercabinet mounting kit.
4. Exterior Finish: Black.
5. Manufacturers:
   a. Frigidaire Home Products: www.frigidaire.com.
   b. GE Appliances: www.geappliances.com.
   c. Whirlpool Corp: www.whirlpool.com.
   d. Substitutions: See Section 016000 - Product Requirements.

C. Dishwasher: Undercounter.
1. Controls: Solid state electronic.
2. Wash Levels: Three (3).
3. Cycles: Six (6), including normal, rinse and hold, short, china/crystal, and pot and pan.
4. Features: Include rinse aid dispenser, optional no-heat dry, optional water temperature boost, adjustable upper rack, and adjustable lower rack.
5. Finish: Stainless steel , color as indicated.
6. Manufacturers:
   a. Frigidaire Home Products: www.frigidaire.com/#sle.
   b. GE Appliances: www.geappliances.com.
   c. Bosch: www.bosch-home.com.
   d. Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify utility rough-ins are provided and correctly located.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Anchor built-in equipment in place.

3.3 CLEANING

A. Remove packing materials from equipment and properly discard.

B. Wash and clean equipment.

END OF SECTION

SECTION 263600 - Automatic Transfer Switch

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Owner's Agreement, including General Conditions and Division 1 Specification Sections, apply to this and other Sections of Division 16.

1.02 SUMMARY

A. The work under this Division shall consist of all labor, materials, equipment, and services necessary and required to complete all work as shown on the Drawings and in the Specifications (Contract Documents) and as inferable from the Drawings and Specifications.

B. Furnish and install the low voltage automatic transfer switch(es) having the ratings, features/accessories and enclosures as specified herein and as shown on the contract drawings.

C. This Section includes general administrative and procedural requirements for electrical installations. The following administrative and procedural requirements are included in this Section to expand the requirements specified in Division 1:

1. Submittals.
2. Coordination drawings.
3. Record Documents.
4. Operation and Maintenance Manuals.
5. Rough-ins.
6. Electrical installations.
7. Field testing.
8. Quality control and acceptance testing.
9. Fire Stopping and Touchup painting.
10. Lockout/tagout of overcurrent protective devices.

C. Related Sections: The following Sections contain requirements that relate to this Section and/or are governed by the requirements of this Section:

Raceways, Boxes and Cabinets
Wires and Cables
Electrical Identification
Grounding

1.03 RELATED WORK NOT INCLUDED IN THIS DIVISION

A. Raceways and conductors or connections to the Owner's equipment beyond the point indicated on the Electrical Drawings.

B. Furnishing, setting, mounting or aligning of motors, motor driven equipment that is specified under other Divisions of these Specifications.

C. Furnishing motor starters and control devices (except for those in the motor starter panel/Motor Control Centers, which are part of this division) or assembled and wired panels or cabinets containing these devices for heating, ventilating, air conditioning or other systems which are specified under other Sections, except as otherwise specified in this Section.

D. Painting, except where specifically called for in other sections of this division (i.e.: identification) and except for factory applied prime or finish painting specified for equipment, fixtures, devices or materials furnished under this Section.

1.04 WORKMANSHIP

A. All work performed shall be first class work in every respect. The work shall be performed by mechanics skilled in their respective trades, who shall at all times be under the supervision of competent persons.

B. Work that is slipshod, poorly laid out, not perfectly aligned, or that is not consistent with the requirements generally accepted in the trade for "first class work" will not be acceptable.

C. In addition to the materials specified elsewhere, furnish and install all other miscellaneous items necessary for the completion of the work to the extent that all systems be complete and operative.

D. All work under this Section shall be performed in cooperation with the work performed under all other Sections of the Specifications on the Project in order to avoid interference's and to secure the proper installation of all work. Review the Drawings and Specifications covering the work to be performed under all Sections, so that the relation and extent of the work of this Section with respect to the work of all other Sections is understood.

1.05 REGULATIONS AND CERTIFICATES

A. All work under this Section shall comply with the applicable requirements of the National Electrical Code, other codes, laws, regulations and standards of all local and State authorities. Where references are made to laws, codes, regulations and standards, these documents, including the latest revisions and amendments thereto in effect as of the date of Bid Opening, shall form part of these Specifications.

B. Upon completion of the work, furnish Certificates of Approval from the local authorities having jurisdiction for approving materials, equipment installation and procedures under this Section and such other certificates pertaining to the electrical work as may be required by the authorities for the issuance of a permanent Certificate of Occupancy. Pay all expenses arising from the procurement of these certificates and included in the lump sum Contract Price.

C. The automatic transfer switch(es) shall be designed, manufactured and tested in accordance with the latest applicable standards of UL and NEMA as follows:

UL 1008: Standard for Safety - Transfer Switch Equipment

CSA C22.2 No. 178: Automatic Transfer Switches

UL 991: Standard for Tests for Safety-Related Controls Employing Solid-State Devices

NFPA 70: National Electrical Code

NFPA 110: Emergency and Standby Power Systems

NEMA ICS 10: Electromechanical AC Transfer Switch Equipment

IEEE 446: Recommended Practice for Emergency and Standby Power Systems

1.06 SUBMITTALS

A. Submit The following information for approval and record

Equipment shop drawings.
Final as-built drawings and information for items listed in section 1.04
Wiring diagrams
Certified production test reports
Installation information
Seismic certification as specified
UL1008 certificate of compliance for the transfer switches furnished under this section.
Equipment operation and maintenance manuals for each assembly shipped and shall include instruction leaflets and instruction bulletins for the complete assembly and each major component.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. The specification is based on ASCO. Provide an approved equal manufacturer's product. Products in compliance with the specification and manufactured by others will be considered only if they are equal to the specified product.

B. Provide ASCO 7000 Series Closed transition Automatic transfer switch with bypass isolation. Provide switch that complies with Orange and Rockland utilities distributed generation requirements.

2.02 CONSTRUCTION

A. Transfer switches shall be UL 1008 listed for application in their intended enclosures at 100% of continuous ampere rating and shall meet or exceed UL 1008 endurance test criteria to include rate of operation and number of operation cycles.

1. The transfer switch shall be designed and intended for switching the load connection between two power sources.
2. The transfer switch shall include electrical and mechanical interlocks to prevent unintentional paralleling of the power sources.
3. The transfer switch shall be of double throw construction and the dual electrical operators shall be equipped with a reliable two-step stored energy mechanism to charge the closing springs. The closing springs shall be capable of being charged electrically or manually. The closing of the main contacts shall automatically charge the opening springs to ensure quick-break operation. After closing the main contacts, the closing springs shall be capable of being re-charged.
4. In open transition mode the transfer switch shall include a mechanical coupling to facilitate completion of an open in-phase transition such that any inrush current is equal to or less than normal starting current for inductive loads. In overlapping transition mode the Transfer switches shall be closed transition and provide an in-phase monitor that will permit a transfer or re-transfer between two live sources that are in phase.
5. The transfer switch main contacts shall be of silver composition, electrically operated and mechanically held in position. Inspection of the main contacts shall be possible from the front of the transfer switch without major disassembly.
6. The transfer switch shall include removable arc chutes, housed within an arc chamber constructed of high-dielectric high-strength material, that are mounted over each set of main contacts. Arc chutes shall be constructed of metal plates and a baffle cover designed to extinguish an electrical arc and protect the main contacts.
7. The transfer switch shall include pushbutton controls, mounted on the power switch device, to perform manual operation with an electrical load connected.
8. The transfer switch shall provide colored mechanical indication of main contact position (open, closed), mounted on the power switch device, for source 1 and source 2.
9. The transfer switch shall provide colored mechanical indication of closing spring charge state (charged, discharged),mounted on the power switch device, for source 1 and source 2.

B. The transfer switch shall include a means of deriving control power for electrical operation. Control power transformers shall be multi-tap for ease of voltage adjustment in the field. Control power for all transfer operations shall be derived from the line side of the source to which the load is being transferred.

C. Transfer switches shall have an overlapping neutral capable of breaking full rated load current are not acceptable

D. Power conductor connections shall be provided as source 1 at the top, source 2 at the bottom, and load at the top (field adjustable as bottom). A source swap option shall provide source 1 at the bottom and source 2 at the top.

E. For safety and serviceability, a continuous steel barrier shall be provided between the power conductor connections and the electrical control components including the automatic controller, control power transformer, relays, user controls, and indication lights. Together, the continuous steel barrier and enclosure front door shall form an isolated control compartment.

2.03 ENCLOSURE

A. Each automatic transfer switch shall be provided in a NEMA 1enclosure suitable for use in environments indicated in the drawings.

B. Enclosures shall be painted with the manufacturer's standard light gray ANSI 61 paint.

C. Internal floor-mount anchors shall be provided to minimize footprint and facilitate integration into an equipment line-up.

2.04 MICROPROCESSOR CONTROLLER LOGIC

A. The transfer switch shall nave a microprocessor controller. Operation of the transfer switch and monitoring of both sources shall be managed by the controller. The controller shall be hardened against transient voltages.

B. The automatic transfer switch controllers shall meet or exceed the following standards:

1. IEC 61000-4-2 - EMC Testing and Measurement Techniques - Electrostatic Discharge Immunity Test
2. IEC 61000-4-3 - EMC Testing and Measurement Techniques - Radio-frequency, Electromagnetic Field Immunity Test
3. IEC 61000-4-4 - EMC Testing and Measurement Techniques - Electrical Fast Transient/Burst Immunity Test
4. IEC 61000-4-5 - EMC Testing and Measurement Techniques - Surge Immunity Test
5. IEC 61000-4-6 - EMC Testing and Measurement Techniques - Immunity to Conducted Disturbances, Induced by Radio-frequency Fields
6. IEC 61000-4-11 - EMC Testing and Measurement Techniques - Voltage Dips, Short Interrupts and Voltage Variations Immunity Tests
7. CISPR11, Class A - Industrial, Scientific and Medical Radio-frequency Equipment - Electromagnetic Disturbance Characteristics - Limits and Methods of Measurement
8. FCC Part 15, Subpart B, Class A

C. The controller shall have an operating temperature range from -20 to +70 degrees C (-4 to +158 degrees F) and a storage temperature range from -30 to +85 degrees C (-22 to +185 degrees F). The controller faceplate shall be UV resistant.

D. The controller shall internally derive two 120Vac supply power from two (2) different sources.

2.05 CONTROLLER DISPLAY AND KEYPAD

A. The microprocessor-based controller faceplate shall be UV resistant and include a 2-line, 16-character, backlit display. The controller shall be capable of displaying transfer switch status, parameters, setpoints, and diagnostic data. All set point parameters shall be password protected.

B. The microprocessor-based controller shall include one (1) unit status LED (3mm) and a mimic power bus consisting of four (4) LED's (3mm) for indicating the following:

1. Availability status of Source 1
2. Availability status of Source 2
3. Connection status of Load to Source 1
4. Connection status of Load to Source 2

C. The controller keypad shall include the following pushbutton controls:

1. ENGINE TEST, for use with a generator source.

2. PREVOUS, and NEXT for ease of navigation
3. INCREMENT, DECREMENT, and ENTER for programming.
4. HELP/LAMP TEST, for operator assistance and diagnostics
5. BYPASS TIMER, to bypass time delay countdown

D. The controller shall display voltage and frequency for source 1, source 2, and the load.

E. The controller shall display the voltage dropout and pickup setpoints, for source 1 and source 2, in volts.

F. The controller shall display the frequency dropout and pickup setpoints, for source 1 and source 2, in hertz.

2.06 CONTROLLER VOLTAGE AND FREQUENCY MONITORING

A. The controller shall monitor voltage and frequency for source 1 and source 2.

B. The controller shall have a voltage range of 0-790 Vrms with an accuracy of +/- 1%. Nominal voltage shall be adjustable in 1 volt increments from 120 to 600 Vac.

C. The controller shall have a frequency range of 40-70 Hz with an accuracy of +/- 0.3 Hz. Nominal frequency shall be adjustable as 50 or 60Hz.

D. The normal and emergency sources shall include phase reversal protection. The preferred rotation is programmable as ABC or CBA.

E. Voltage and frequency dropout and pickup setpoints, for source 1 and source 2, shall be adjustable as a percentage of nominal per the table below. Pickup and dropout setpoints for overvoltage, under-frequency, over-frequency, and voltage unbalance / phase loss shall be capable of being disabled.

Setpoint	Sources	Dropout	Pickup
Under voltage	Source1 and 2	70 – 97%	(DO + 2%) - 99%
Overvoltage	Source 1 and 2	105 – 110%	103% - (DO – 2%)
Under frequency	Source 1 and 2	90 – 97%	(DO + 1Hz) – 99%
Over frequency	Source 1 and 2	103 – 105%	101% - (DO – 1Hz)
Voltage Unbalance	Source 1 and 2	5 – 20%	3% to (DO – 2%)

2.06 CONTROLLER TIME DELAYS

A. A time delay shall be provided for transfer from source 1 to source 2, adjustable from 0 to 1800 seconds.

B. A time delay shall be provided on retransfer from source 2 to source 1, adjustable from 0 to 1800 seconds.

C. A time delay shall be provided for actuation of an engine start signal, adjustable from 0 to 120 seconds, for overriding momentary power fluctuations.

D. A time delay shall be provided allowing the load connection to remain in the "neutral position" (disconnected from source 1 and source 2), adjustable from 0 to 120 seconds.

E. A time delay shall be provided that allows the generator to run unloaded, adjustable from 0 to 0-1800 seconds, for cool-off prior to shut down.

F. A time delay shall be provided to postpone the generator source from being declared unavailable, fixed at 6 seconds, for overriding momentary power fluctuations.

G. A time delay shall be provided for actuation of a pre-transfer signal, adjustable from 0 to 120 seconds. The contact shall be a form-c contact rated for 10-Amp at 250-Vac and 10-Amp at 30-Vdc.

H. A time delay shall be provided to allow synchronization of sources, adjustable from 0 to 60 minutes (0 to 600 seconds), for use with in-phase transition transfer.

I. A time delay shall be provided for voltage unbalance, adjustable from 10 to 30 seconds.

J. All time delays shall be programmable, using the controller keypad, without the use of special tools.

2.07 CONTROLLER ADDITIONAL FEATURES

A. A setpoint shall be provided for entering a four-digit password, adjustable from 0000-9999, for controlling user access to programmable time delays, inputs, outputs, and other system settings.

B. A setpoint shall be provided for configuring retransfer operation mode, adjustable as [automatic, manual].

C. A setpoint shall be provided to change date, time, and enable daylight saving time (DST).

D. A setpoint shall be provided for configuring in-phase transition operation, adjustable as [disabled, enabled].

E. A setpoint shall be provided for configuring a frequency difference range between sources for in-phase transition, adjustable from 0 to 3 hertz nominal.

F. A setpoint shall be provided for configuring serial communication baud rate [9600-19200] and Modbus address [1-247].

2.08 CONTROLLER DATA LOGGING

A. The controller shall record, store and display a cumulative counter history of the following parameters. Each counter shall have the ability to be reset and indicate the last reset date.

1. Source 1 Available time
2. Source 2 Available time
3. Source 1 Connected time
4. Source 2 Connected time
5. Engine Run time
6. Load Energized Time
7. Number of Transfers
8. Date, Time and Reason for Last Sixteen (16) transfers

2.09 CONTROLLER PLANT EXERCISER

A. The controller shall provide a programmable engine plant exerciser.

B. Each engine plant exerciser shall provide the following user programmable setpoints that are only applicable during an engine test:

1. Test schedule, adjustable to disabled, daily,
2. Start time in hours and minutes, AM or PM.

3. Day of the week (Sun, Mon, Tues, Wed, Thurs, Fri, Sat)
4. Test mode, adjustable to disabled, no load transfer, loaded transfer.
5. Run time, adjustable from 0 to 600 minutes (0 to 6000 seconds).

C. A failsafe shall initiate an automatic retransfer to source 1 if source 2 should fail during an engine test.

2.10 CONTROLLER INPUTS

A. The controller shall include two (2) dedicated inputs for monitoring the position of the main contacts (source 1 and source 2).

B. The controller shall include five (5) control inputs that provide 10mA @ 24-Vdc. Each input shall be capable of accepting an external dry contact and will be configured with following functionality:

1. Monitor mode – disable automatic operation of the controller while continuing to display status information and allow set point programming.
2. Lockout – disable automatic operation of the controller and lock-out an integral overcurrent protection device (circuit breaker).
3. Manual retransfer - remotely initiate a retransfer from source 2 to source 1.
4. Go to emergency - initiate a transfer of the load to the emergency source (source 2). A failsafe shall initiate an automatic retransfer to source 1 if source 2 should fail.
5. Emergency inhibit/shed–remotely inhibit transfer of the load to the emergency source (source 2) or shed the load from the emergency source (source 2) if already connected.

2.11 CONTROLLER OUTPUTS

A. provide four (4) dedicated Form A relay outputs for controlling the power switch device.

B. provide one (1) dedicated Form A relay output for an engine start signal, for use with a generator source. The contact shall be rated for 5A @ 250-Vac / 5A @ 30-Vdc.

C. provide one (1) dedicated Form C relay output for Pre-transfer and the contacts shall be rated for 10A @ 250-Vac / 10A @ 30-Vdc.

D. provide one (1) dedicated Form C relay output for General Alarm and the contacts shall be rated for 10A @ 250-Vac / 10A @ 30-Vdc.

2.12 CONTROLLER COMMUNICATION

A. Serial communication (RS-485) with support for Modbus RTU protocol shall be provided with an integral network termination resistance that can be switched on/off.

B. A second Ethernet communication[Serial-Ethernet adapter] [Serial-Ethernet gateway] shall be provided.

2.13 AUTOMATIC TRANSFER SWITCH ACCESSORIES

A. A maintenance isolation selector switch, 2-position, shall be provided that permits service personal to electrically isolate the control compartment during maintenance, when the transfer switch is energized, to mitigate shock hazard.

B. A tethered remote control device shall be provided for non-automatic operation of the transfer switch at a distance. The tethered remote device shall include a 3-button control interface with integral LED indication for opening and closing the main contacts. A

standard industry cable, supporting 24Vdc signaling, shall be provided for connection with the transfer switch.

C. A kirk-key mechanical interlock shall be provided that prevents closure of the transfer switch main contacts during maintenance of downstream equipment.

D. Non-automatic control(open transition ATS): Provide a 2-position selector switch, maintained contact, marked: "Automatic" and "Non-Automatic". Provide a 2-position, maintained contact, selector switch labeled "Source 1" and "Source 2". The transfer switch shall be electrically operated by manually actuating the2-positionselector switch labeled "Source 1"and "Source 2". A 30mm pilot light shall be provided labeled "Not in Automatic".

E. Non-automatic control(open delayed transition ATS): Provide a 2-position selector switch, maintained contact, marked: "Automatic" and "Non-Automatic". Provide a 3-position, maintained contact, selector switch labeled "Source 1", "Off", and "Source 2". The transfer switch shall be electrically operated by manually actuating the 3-position selector switch labeled "Source 1", "Off", and "Source 2". A 30mm pilot light shall be provided labeled "Not in Automatic".

F. Manual retransfer control: Provide a pushbutton, momentary contact, marked: "Manual Retransfer". The ATS shall remain connected to the emergency source (source 2) after the normal source (source 1) becomes available until a momentary pushbutton contact closure signal initiates the retransfer. Should a failure of the emergency source occur while waiting for the pushbutton contact closure, the retransfer shall occur automatically.

G. Manual retransfer enable: Provide a 2-position selector switch, maintained contact. The selector switch shall be wired to a controller input to enable manual retransfer control.

H. Emergency inhibit/shed: Provide a 2-position keyed selector switch, maintained contact. The selector switch shall be wired to a controller input to inhibit transfer of the load to the emergency source (source 2) or shed the load from the emergency source if already connected. Provide a 30mm white pilot light indicating inhibit status.

I. Go to emergency: Provide a 2-position selector switch, maintained contact. The selector switch shall be wired to a controller input to initiate transfer of the load to the emergency source (source 2). A failsafe shall initiate an automatic retransfer upon failure of the emergency source.

J. Monitor mode: Provide a 2-position selector switch, maintained contact. The selector switch shall be wired to a controller input to disable automatic operation of the controller while continuing to display status information and allow setpoint programming.

K. Surge protection device: Provide a [50KA] [80KA] [100KA] [200KA] surge protection device as indicated on the drawings.

L. HMi Remote Annunciator Controller:

1. Provide a flush mount panel operator interface device that is capable of remotely managing up to eight (8) automatic transfer switches and includes the following:

   a. Color touchscreen display

   b. Single overview screen that allows an operator to view the status of up to eight (8) automatic transfer switches.

   c. Single overview screen that allows an operator to view the detailed status and vitals of each automatic transfer switch.

   d. Mimic power bus that displays a unique designation for each automatic transfer switch monitored and includes indication of source available, source connected, and preferred source.

e. Monitoring and indication of the following:
   1) source 1 and source 2 available
   2) source 1 and source 2 connected
   3) source 1 and source 2 preferred
   4) under/over voltage
   5) under/over frequency
   6) engine test active
   7) transfer in progress
   8) waiting for manual retransfer
   9) event history
   10) delay timer countdown
   11) go to emergency active
   12) emergency inhibit
   13) monitor mode / lockout
   14) communication link failure.

f. Control of the following with password protection:
   1) Start/stop engine test.
   2) Initiate go to emergency / cancel go to emergency
   3) Alarm silence
   4) Remote alarm reset
   5) Bypass timers
   6) Manual retransfer

g. Electrical Metering
   1) Voltage and frequency for source 1, source 2, and load
   2) Current and power for the load

h. Remotely manage controller setpoints.

i. Communication compatible with ATS controller.

2. Provide a HMi remote annunciator controller wall mount enclosure.

2.14 WITHSTAND AND CLOSING RATING

Short-circuit

The transfer switch shall have a short-circuit withstand and closing rating of85KA at 208volts for a duration of 6 cycles.

Short-time

The transfer switch shall be UL1008 listed and rated for use in a circuit capable of delivering the short-time current shown on the contract drawings.

PART 3 - EXECUTION

3.01 GENERAL

A. Inspection: Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence. Verify that the work of this Division may be completed in strict accordance with all pertinent codes and regulations, the approved shop drawings and the manufacturer's recommendations.

B. Discrepancies: In the event of discrepancy, immediately notify the Owner. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

C. Do not install work without approved shop drawings.

D. Should the Contractor proceed without submittals and approvals of submittals, any costs incurred to correct problems that could have been corrected in the shop drawing or coordination drawings shall be the responsibility of the Contractor.

E. All work performed shall be first class work in every respect. The work shall be performed by mechanics skilled in their respective trades, who shall at all times be under the supervision of competent persons.

F. Work that is slipshod, poorly laid out, not perfectly aligned, or that is not consistent with the requirements generally accepted in the trade for "first class work" will not be acceptable.

G. All work under this Section shall be performed in cooperation with the work performed under all other Sections of the Specifications on the Project in order to avoid interferences and to secure the proper installation of all work. Review the Drawings and Specifications covering the work to be performed under all Sections, so that the relation and extent of the work of this Section with respect to the work of all other Sections is understood.

3.02 INSTALLATION OF EQUIPMENT

A. Locations: Install all equipment in the locations shown on the approved shop drawings, except where specifically otherwise approved on the job by the Owner. Do not install motor control centers and electrical equipment directly under the work of other trades (including new and existing work) even if such work is in the locations indicated on the contract documents or approved submittals. If such a condition occurs contact the Owner's representative for specific direction regarding the exact location of such equipment.

B. Interferences: Avoid interference with structure, and with the work of other trades, preserving adequate headroom and clearing all doors and passageways to the approval of the Owner.

C. Inspection: Check each piece of equipment in the system for defects, verifying that all parts are properly furnished and installed, that all items function properly, and that all adjustments have been made.

D. Install components and equipment to provide the maximum possible headroom where mounting heights or other location criteria are not indicated.

E. Install items level, plumb, and parallel and perpendicular to other building systems and components, except where otherwise indicated.

F. Install equipment to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations.

G. Give right of way to raceways and piping systems installed at a required slope.

H. Anchor all floor mounted electrical equipment to the floor or equipment pad at each corner of each section of the equipment. Provide seismic bracing as specified elsewhere.

I. The contractor shall install all equipment per the manufacturer's recommendations and in accordance with the contract drawings

J. All necessary hardware to secure the assembly in place shall be provided by the contractor.

K. Provide all alarm, control circuitry required to accommodate all the functions and interconnections required for operation. provide all work required for a complete system including but not limited to remote annunciators, devices and the external generator.

L. Provide remote annunciator(s). Locate at the main office located on the first floor (not shown on the drawings). Exact location as directed buy the owner. Include the furthest location from the ATS on the first floor.

3.03 FIELD QUALITY CONTROL

A. Provide the services of a qualified factory-trained manufacturer's representative to assist the contractor in installation and start-up of the equipment specified under this section. The manufacturer's representative shall provide technical direction and assistance to the contractor in general assembly of the equipment, connections and adjustments, and testing of the assembly and components contained therein.

3.04 MANUFACTURER'S CERTIFICATION

A. A qualified factory-trained manufacturer's representative shall certify in writing that the equipment has been installed, adjusted and tested in accordance with the manufacturer's recommendations.

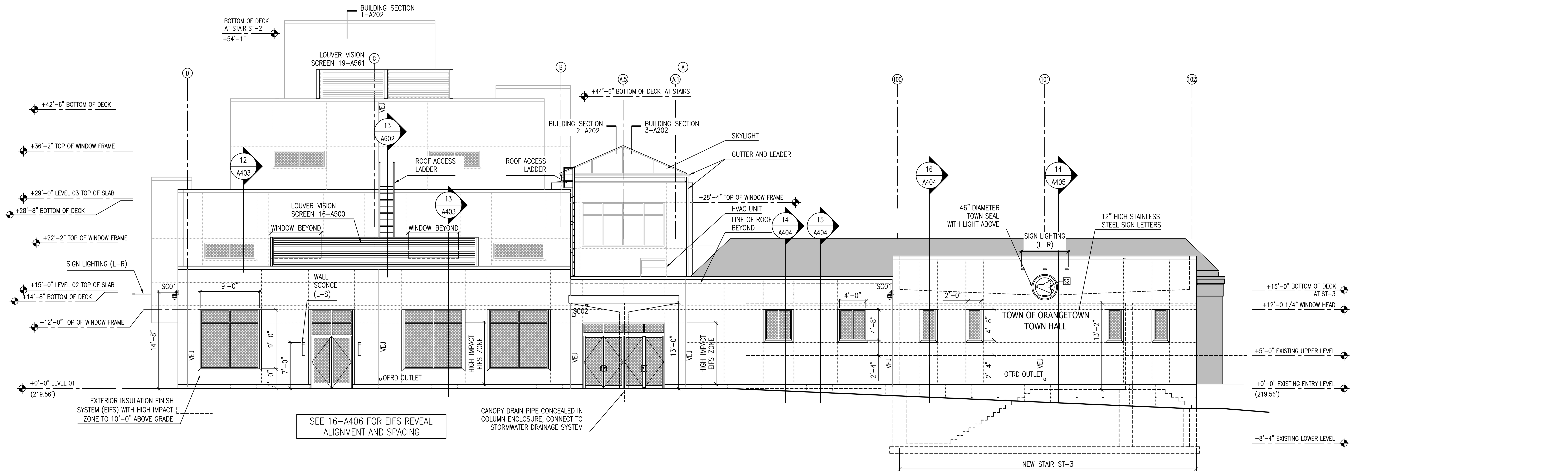
B. The contractor shall provide a copy of the manufacturer's representative's certification.

3.05 TRAINING

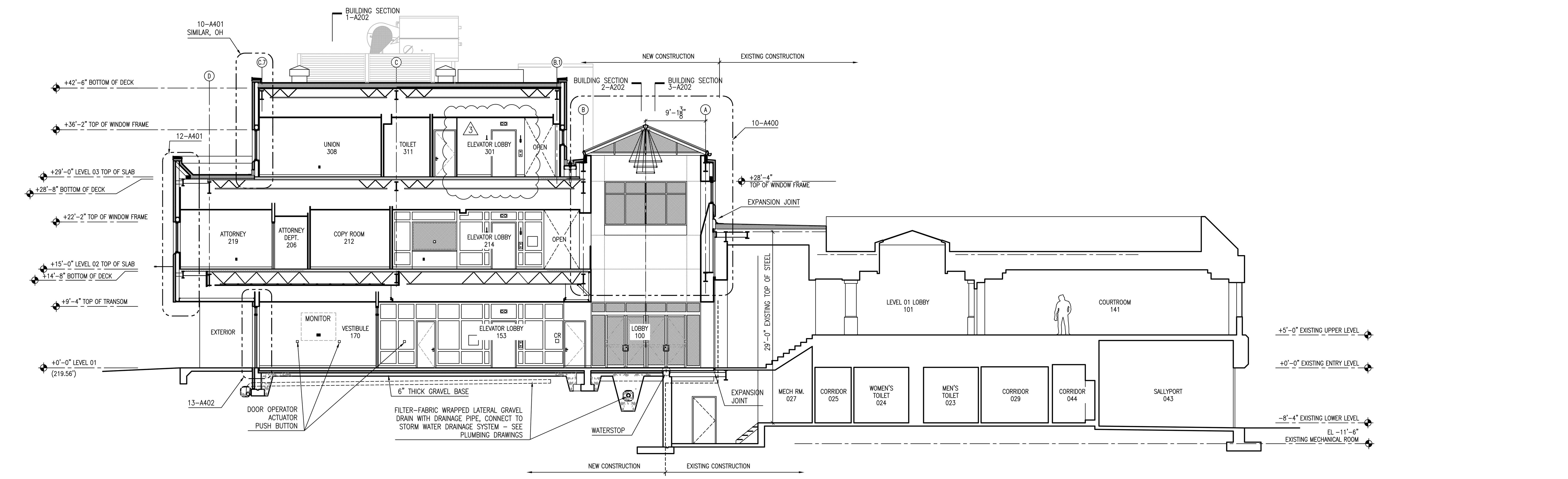
A. The [contractor] [manufacturer's qualified representative] shall conduct a training session for up to five (5) owner's representatives at a jobsite location determined by the owner. The training program shall consist of the instruction on the operation of the transfer switch and the major components within the assembly.

B. Provide recorded video of the training sessions for owner's future reference.

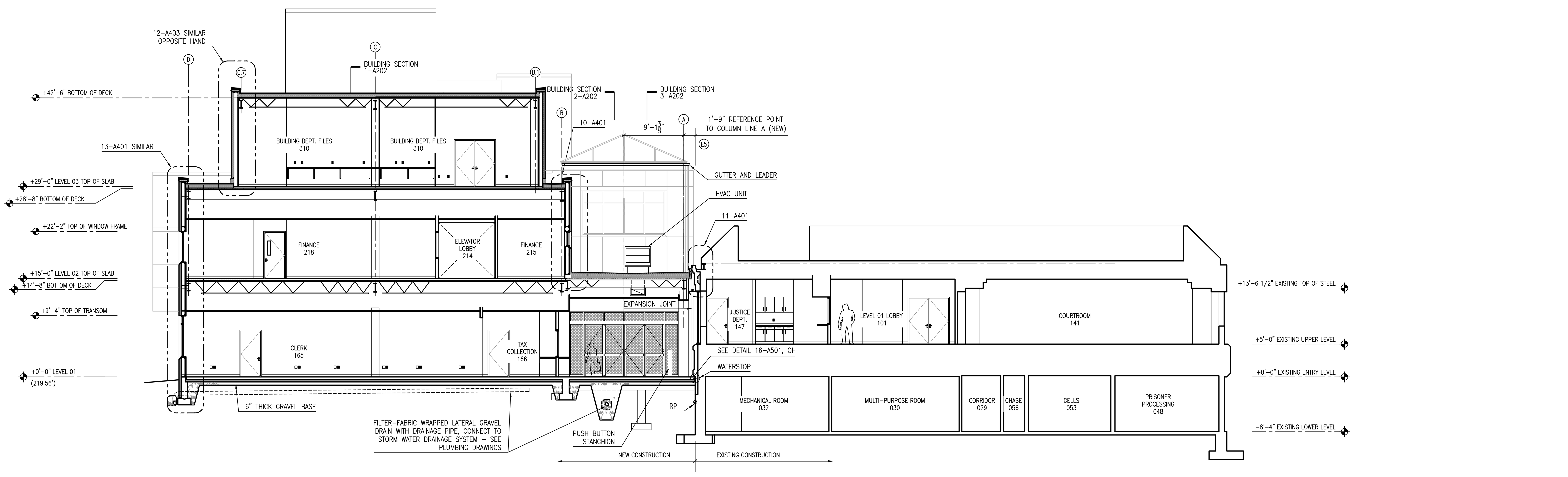
END OF SECTION 263600



1 SOUTH ELEVATION
1/8" = 1'-0"



2 CROSS SECTION AT ATRIUM
1/8" = 1'-0"

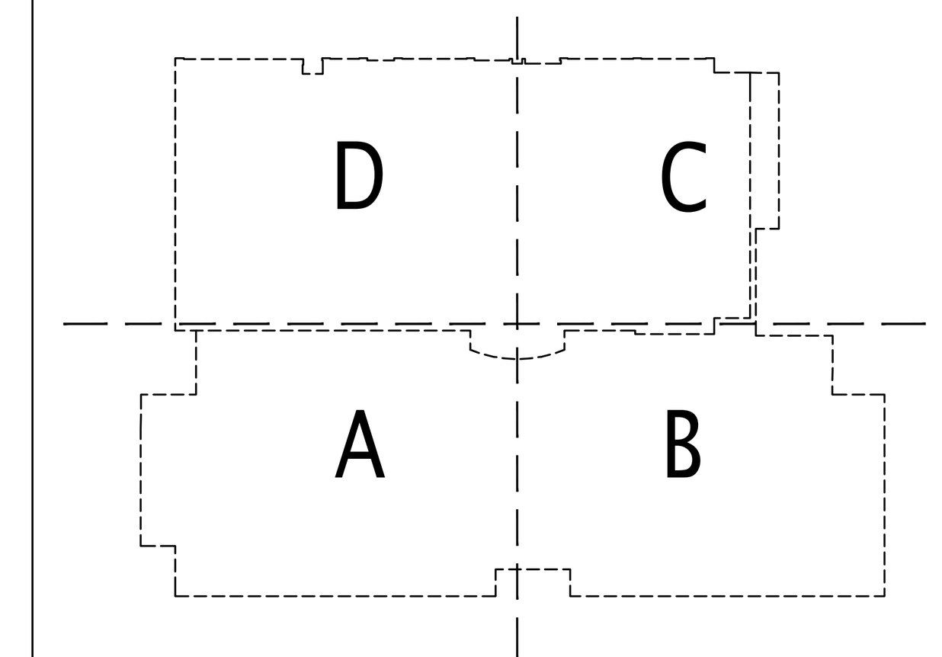


3 CROSS SECTION
1/8" = 1'-0"

Lothrop

Lothrop Associates LLP Architects
333 Westchester Avenue
White Plains, New York 10604
914-741-1115

White Plains Rochester Red Bank Hartford



KEY PLAN

ISSUE NO.	ISSUE DATE	DESCRIPTION
3	1/11/2022	ADDENDUM 5
2	12/28/2021	ADDENDUM 3
1	12/3/2021	ADDENDUM 1
1	11/9/2021	RELEASE FOR BID

ORANGETOWN TOWN HALL

ADDITION AND ALTERATIONS

26 ORANGEBURG RD
ORANGEBURG, NEW YORK 10962

BUILDING SECTIONS AND ELEVATIONS

PROJECT NO.: 2219-05 SCALE: AS NOTED

DRAWING NO.:

A201

SYMBOLS LIST

#	KEYED NOTE
▭	ELECTRICAL PANELBOARD SURFACE MOUNTED
▭	ELECTRICAL PANELBOARD FLUSH MOUNTED
▭	DISCONNECT SWITCH. 3 POLE, 60 AMPS, WP U.O.N.
▭	FUSED DISCONNECT SWITCH.
○	MOTOR/HVAC/HWH/FURNACE/FAN. CIRCUIT VIA STARTERS/CONTROLLERS/DRIVES ETC.. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION.
PANEL	PANELBOARD (ONE-LINE)
SPD OR SPD	SURGE PROTECTION DEVICE-JOSLYN SURGITRON III 1455-49
M	METER
(3)	METERING CURRENT TRANSFORMERS AND POTENTIAL CT'S/TAPS AS APPLICABLE.
#	CIRCUIT TAG
	CIRCUIT BREAKER – 3 POLE UON. "ST" INDICATES WITH SHUNT TRIP COIL.
	CIRCUIT BREAKER – 3 POLE UON
	FUSED DISCONNECT (ONE-LINE)
	GROUND
LP-A#3	SINGLE POLE HOME-RUN TO PANEL AND CIRCUIT AS INDICATED. 2#12,1#12G-3/4"C-20A OCPD UON
RP-A #1,3,5	HOMERUN TO PANEL BOARD AS INDICATED. QUANTITY OF ARROWHEADS INDICATE THE NUMBER OF SINGLE POLE CIRCUITS. EACH CIRCUIT WITH DEDICATED NEUTRAL.
RP-A #2	MULTIPOLE HOMERUN TO PANELBOARD AS INDICATED.
CO	CEILING MOUNTED CARBON MONOXIDE DETECTOR. PROGRAM FOR SUPERVISORY ANNUNCIATION
	DUCT MOUNTED SMOKE DETECTOR WITH PITOT SAMPLING TUBE, HOUSING, HEATER AND WEATHER ENCLOSURE. PROVIDE REMOTE STATION.
Z	INTELLIGENT MONITOR MODULE.
S	ADDRESSABLE OPEN AREA CEILING MOUNTED SMOKE DETECTOR.
B	ADDRESSABLE BEAM TYPE SMOKE DETECTOR.
F	MANUAL PULL STATION
F	AUDIO/VISUAL INDICATING APPLIANCE. (FIRE-ALARM)
F	VISUAL INDICATING APPLIANCE.
PAD	FIRE ALARM SUPERVISED EXTENDED POWER SUPPLY WITH AUDIO/VISUAL APPLIANCE CIRCUIT(S).
FACP	FIRE ALARM CONTROL PANEL (FACP).
FAA	FIRE ALARM 2 LINE LIQUID CRYSTAL ANNUNCIATOR.
	PC DESKTOP COMPUTER FOR SPECIFIC SYSTEM (FIRE ALARM, ACCESS CONTROL ETC...) COMPLETE WITH ALL CONNECTIONS, SOFTWARE AND PROGRAMMING.
▽	JACK/OUTLET FOR IT/DATA/TELEPHONE. PROVIDE RECESSED CONCEALED DEEP 1900 BOX, PLASTER RING, 1" EMPTY RACEWAY UP INTO ACCESSIBLE CEILING. PROVIDE (2)RJ45 TELEPHONE AND (2) RJ45 COMPUTER JACKS EACH WITH COLOR CODED CAT 6A CABLE TERMINATED AND PATCHED IN THE NEAREST IT CLOSET.
▼	JACK/OUTLET FOR IT/DATA/TELEPHONE IN MODULAR FURNITURE. PROVIDE AS INDICATED FOR OPEN TRIANGLE SYMBOL EXCEPT EXTENDED INTO THE MODULAR FURNITURE.
△1 ▼	JACK/OUTLET FOR IT/DATA/TELEPHONE. PROVIDE AS INDICATED FOR OPEN TRIANGLE SYMBOL EXCEPT AT NON-STANDARD MOUNTING HEIGHT
	IT/DATA OUTLET/JACK RJ45 WITH CAT 6A CABLING IN ACCESSIBLE CEILING CAVITY FOR POE WiFi ACCESS POINT.
E	EMERGENCY POWER OFF (EPO). SLEEVED PUSH BUTTON. CLEAR FLIP COVER.
TV	WALL COAX JACK FOR TELEVISION. WITH 1" EMPTY RACEWAY UP INTO ACCESSIBLE CEILING CAVITY.
	FIRE ALARM REMOTE INDICATOR STATION. ILLUMINATES WHEN ASSOCIATED (USUALLY CONCEALED) DEVICE IS ACTIVATED.
226	DOOR IDENTIFIER. SEE SECURITY/ACCESS CONTROL DETAILS AND ARCHITECTURAL DRAWINGS/SCHEDULES FOR ADDITIONAL INFORMATION
◪	CONCEALED MAGNETIC SWITCHES IN THE HEAD OF THE DOOR/JAMB (LATCH SIDE) AND IN THE ELECTRIC HINGE HARDWARE.
ML	ELECTRIFIED MORTISE LOCK/LATCH SET AND ASSOCIATED ELECTRIC HINGE HARDWARE. PROVIDE CONCEALED THRU WIRING IN DOOR THROUGH TO HINGE. PROVIDE MORTAR SHIELD BOX WITH RACEWAY UP FRAME/WALL TO SYSTEM.
ESR	ELECTRIC STRIKE RELEASE. PROVIDE MORTISE SHIELD WITH CONCEALED WIRING UP FRAME/WALL (IN RACEWAY) TO ACCESS CONTROL SYSTEM.
◐	ACCESS CONTROL READER.
EH	ELECTRIC HINGE WITH CONCEALED MAGNETIC CONTACT AND WIRING THROUGH THE DOOR LEAF TO EML OR STRIKE COMPONENT(S).
	DOORCHIME/BUZZER WITH ASSOCIATED CONTROL POWER TRANSFORMER. CIRCUIT TO ACTIVATE ON OPERATION OF THE ASSOCIATED PUSHBUTTON
▣	PUSHBUTTON. CIRCUIT TO ACTIVATE ASSOCIATED DOORCHIME/BUZZER.

▭	2'X4' (NOMINAL) LIGHTING FIXTURE –TYPE 'BB' UON
◩	2'X4' (NOMINAL) LIGHTING FIXTURE WITH INTEGRAL EMERGENCY BATTERY PACK –TYPE 'BBE' UON
□	2'X2' (NOMINAL) LIGHTING FIXTURE–TYPE 'BA' UON
◩	2'X2' (NOMINAL) EMERGENCY LIGHT FIXTURE WITH INTEGRAL EMERGENCY BATTERY PACK –TYPE 'BAE' UON.
○	RECESSED DOWN LIGHT
	WALL MOUNTED LIGHT FIXTURE WITH INTEGRAL EMERGENCY BATTERY PACK –TYPE 'T' UON.
▭	1'X4' (NOMINAL) LIGHTING FIXTURE. TYPE T WITH PENDANT MOUNT UON.
S_{3a}	ANTIMICROBIAL DECORA SERIES SPDT (3 WAY) 120–277 VAC SPECIFICATION GRADE SWITCH
S	ANTIMICROBIAL DECORA SERIES SPST 120–277 VAC SPECIFICATION GRADE SWITCH
S_P	ANTIMICROBIAL DECORA SERIES SPST 120–277 VAC SPECIFICATION GRADE SWITCH ILLUMINATED WHEN ON LEVITON SERIES 5628.
S_T	THERMAL SWITCH
S_a^{LV} $S_{a,b,f}^{LV}$ $S_{a,c-f,g}^{LV}$	LOW VOLTAGE SPECIFICATION GRADE NETWORKED DIGITAL SWITCH. WATT STOPPER. NUMBER OF BUTTONS TO PROVIDE SWITCH LEGS AS DESIGNATED BY SUBLETTERS AND/OR NUMBER IN PARENTHESES. SUB LETTER DESIGNATED WITH A HYPHEN REPRESENTS ONE BUTTON PROGRAMMED TO CONTROL SEVERAL SWITCH LEGS/GROUPS.
S_{TM}	BATHROOM FAN/LIGHT SWITCH WITH DELAY TIMERS AND VENTILATION TIMER. AIRCYCLER SMART EXHAUST SE1 (TOGGLE) SED-S (DECORA).
S_a^{PIR}	LOW VOLTAGE LIGHTING CONTROL SWITCH DIGITAL OCCUPANCY SENSOR/WALL SWITCH. PROGRAMMIBLE AS OCCUPANCY OR VACANCY AS DIRECTED IN THE FIELD. WATT STOPPER LMPW-101*.
S_a^{VS}	LOW VOLTAGE LIGHTING CONTROL SWITCH DIGITAL VACANCY SENSOR/WALL SWITCH WITH ON/OFF AND DIMMER. WATT STOPPER LMPW-101*.
S_P^{3a}	SPECIFICATION GRADE 3-WAY SWITCH WITH ILLUMINATED HANDLE. SWITCH ILLUMINATES WHEN LOAD IS ON.
OS a	DIGITAL NETWORKED ULTRASONIC/PASSIVE INFRARED OCCUPANCY SENSOR. WATT STOPPER LMDC-100. "US" INDICATES ULTRASONIC ONLY
VS a	DIGITAL NETWORKED ULTRASONIC/PASSIVE INFRARED VACANCY SENSOR. WATT STOPPER LMDC-VS-100. "US" INDICATES ULTRASONIC ONLY
1 LC a,b,c	DIGITAL LOAD CONTROL RELAY WITH 3 RELAYS. WATT STOPPER LMRC-213.
I/O	DIGITAL NETWORK INPUT/OUTPUT DEVICE. WATT STOPPER
TS	4 ZONE PROGRAMMABLE TIME SWITCH. PROVIDE WITH NETWORK I/O DEVICE MODULE. INTERFACE TO CONTROL (1)EXTERIOR LIGHTS (2)OUTDOOR SIGN LIGHTS (3)END OF WORK DAY LIGHTS OFF
DH	DAYLIGHT HARVESTING NETWORK SENSOR.
⊗	WALL MOUNTED LED ILLUMINATED EXIT LIGHT WITH INTEGRAL BATTERY BACKUP AND DUAL EMERGENCY LIGHTS
⊗	SAME AS ABOVE BUT DUAL DIRECTIONAL AND CEILING MOUNTED
⊗	SAME AS ABOVE BUT DIRECTIONAL AND WALL MOUNTED
	WALL MOUNTED EMERGENCY LIGHT
	DECORA STYLE SPECIFICATION GRADE DUPLEX SAFETY GRADE NEMA 5–20R RECEPTACLE. WHERE INDICATED WITH "TV" MOUNT 60"AFF FOR TELEVISION.
	DECORA STYLE DOUBLE DUPLEX (QUAD) RECEPTACLE, SPECIFICATION SAFETY GRADE GRADE NEMA 5–20R. WHERE INDICATED PROVIDE WITH INTEGRAL USB POWER JACKS.
	SPECIFICATION GRADE DECORA DUPLEX NEMA 5–20R RECEPTACLE ON DEDICATED CIRCUIT.
USB	DECORA STYLE SPECIFICATION GRADE TAMPER RESISTANT DUPLEX NEMA 5–20R RECEPTACLE. WITH TYPE A AND C USB POWER PORTS
	SPECIFICATION GRADE NEMA L21–30R (UON) RECEPTACLE
	SPECIFICATION GRADE NEMA L6–30R (UON) RECEPTACLE
OR OR	RECESSED FLOOR BOX WITH TWO (1) NEMA 5–20R RECEPTACLE, (1) NEMA 5–20R W/USB RECEPTACLE AND DATA/IT/AV/MEDIA ETC... RECEPTACLES. WIREMOLD EVOLUTION SERIES EFB6S–(OG WHERE APPLICABLE). WHERE SHOWN ON THE SECOND AND THIR FLOORS PROVIDE SAME DEVICE FEATURES IN A RATED POKE THRU TYPE ASSEMBLY; LEGRAND SERIES 6ATC2PAVBZ3HCOORDINATE TYPE TO ACCOMMODATE THE TYPE OF CONSTRUCTION BOX IS TO BE INSTALLED IN. PROVIDE COMPLETE WITH SIDE MODULES, PLATES, DIVIDERS, CAPS AND COVERS AND TRIMS. EXPOSED FINISHES AS APPROVED BY ARCHITECT
P	WALL MOUNTED/TRANSITION BASE POWER FEED FOR FURNITURE. "P" DENOTES FOR POWER. "D" DENOTES LOW VOLTAGE (DATA, TELEPHONE ETC..).
	FLOOR MOUNTED/TRANSITION BASE FEED FOR FURNITURE. FIRE RATED POKE THROUGH WITH CONNECTION WHIP. "P" DENOTES FOR POWER. "D" DENOTES LOW VOLTAGE (DATA, TELEPHONE ETC.)
ST	FRACTIONAL HORSEPOWER MOTOR/LOAD WITH MANUAL MOTOR STARTER DISCONNECT AT UNIT AND ADDITIONAL DISCONNECT AT ACCESSIBLE FLOOR LOCATION.

UPPER CASE LETTER(S) DENOTES TYPE, NUMBER DENOTES CIRCUIT, LOWER CASE LETTER DENOTES SWITCH LEG

	STATIONARY ELECTRIC GENERATOR.
G	PORTABLE TRAILER MOUNTED ELECTRIC GENERATOR.
	UTILITY POLE
	TRANSFORMER
	AUTOMATIC TRANSFER SWITCH.
	LIGHTNING PROTECTION AIR TERMINAL AND ASSOCIATED COMPONENTS.
●	GROUNDING/BONDING CONNECTION. CADWELD UON.
●	GROUND ROD. COPPER CLAD 5/8"ø 10' LONG UON
OR	COPPER GROUND BAR.
	WIRE MANAGEMENT TRAY SYSTEM. SNAKE TRAY.
	CAT 6A ETHERNET (LAN) PATCH CORD WITH RJ45 TERMINATED ENDS. RED OUTER JACKET. PROVIDE FOR INTERCONNECTIONS BETWEEN LIGHTING CONTROL DEVICES. RUN CONCEALED. WHERE EXPOSED (NO CEILING, MECHANICAL ROOMS, OUTDOORS) PROVIDE IN RACEWAY. PROGRAM SYSTEM TO CONTROL(S) AS DESIGNATED BY SUB-LETTERS ON THE DOCUMENTS.
S_a^{OS}	CONVENTIONAL HARD WIRED LIGHTING CONTROL SWITCH/VACANCY SENSOR/WALL SWITCH.
OC a	CONVENTIONAL HARD WIRED ULTRASONIC OCCUPANCY SENSOR. WATT STOPPER.
PSa	POWER SUPPLY "a" (DESIGNATION VARIES) FOR LED LIGHTING. PROVIDE IN NEMA 1 ENCLOSURE. PROVIDE CONCEALED LOW VOLTAGE CIRCUITRY TO LED.
	EMERGENCY CALL ANNUNCIATOR/CONTROLLER/SYSTEM WITH AUDIO AND VISUAL INDICATING OF EMERGENCY CALL STATION ACTIVATION. CIRCUIT TO ORIGINAL CIRCUIT.
$\varnothing_{SR}$	EMERGENCY CALL ELECTRIC STRIKE RELEASE. CIRCUIT TO RELEASE DOOR ON ACTIVATION OF EMERGENCY CALL STATION ACTIVATION.
E	IN TOILETS: EMERGENCY CALL PULL STATION WITH PULL CORD. INTERCONNECT WITH SYSTEM. CIRCUIT TO ACTIVATE ASSOCIATED AUDIO-VISUAL ANNUNCIATING DEVICE. PROVIDE COMPLETE SYSTEM AND POWER SUPPLY.
	SURFACE MOUNTED CAMERA. POWERED OVER ETHERNET (POE). PROVIDE WITH CAT6A CABLE IN RACEWAY BACK TO THE NEAREST IT/DATA CLOSET/ROOM
P	CHARGING STATION FOR ELECTRIC VEHICLES. DUAL STATION TO ACCOMMODATE 2 VEHICLES. LEVITON EVR-GREEN 4000 LEVEL 2 STATION. #CHHU2-CBMBX-CPCAP-B-CPCBX-CPCMX-CPWY3-CPVAL
☒ AFD	ADJUSTABLE FREQUENCY DRIVE. SEE MECHANICAL DOCUMENTS FOR ADDITIONAL INFORMATION.
☒	MOTOR CONTROLLER/STARTER. SEE MECHANICAL DOCUMENTS FOR ADDITIONAL INFORMATION.
	WALL MOUNTED LIGHT FIXTURE. CIRCUITING/FIXTURE TYPE AS INDICATED. WHERE NO TYPE IS INDICATED PROVIDE TYPE "X" WITH BATTERY BACKUP.
SYMBOL FOR HEAD TRACK	TRACK LIGHTING WITH ALL ASSOCIATED FITTINGS AND PLATES. TRACK LENGTH PER PLANS HEADS AS INDICATED.

PROVIDE ALL ELECTRICAL WIRING DEVICES AS DECORA STYLE DEVICES

ANY OF THESE SYMBOLS CONSTITUTES NEW WORK PROVIDED UNDER THIS CONTRACT, UNLESS OTHERWISE NOTED. SYMBOLS SHOWN IN " ——— " (LIGHT CONTINUOUS) LINETYPE ARE EXISTING DEVICES. SYMBOLS SHOWN IN " — — — " (DASHED) LINETYPE ARE TO BE REMOVED. ALL OTHER SYMBOLS, INCLUDING SYMBOLS SHOWN IN " ——— " OR " ——— " (SOLID HEAVIER) LINETYPES ARE NEW. SYMBOLS INDICATED WITH (ER) ARE EXISTING TO BE RELOCATED. SYMBOLS INDICATED WITH (RE) ARE RELOCATED EXISTING IN THE NEW LOCATION. SYMBOLS WITH AN NUMBER IN PARENTHESIS DENOTES MULTIPLE QUANTITIES OF THAT SYMBOL.

IN CERTAIN CASES SYMBOLS FOR NEW WORK MAY BE INDICATED IN LIGHTER LINETYPES TO EMPHASIZE OTHER WORK ASSOCIATED WITH THAT WORK. IF WORK IS INDICATED ANYWHERE AS NEW IT IS TO BE PROVIDED.

* ADJUST CATALOG NUMBER TO ACCOMMODATE THE NUMBER OF BUTTONS, ROUNDED UP TO EQUAL OR EXCEED THE NUMBER OF CONTROL SUBLETTERS OR NUMBER IN PARENTHESIS.

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
A	AMPERE
ACCU	AIR COOLED CONDENSING UNIT
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
ANN	ANNUNCIATOR
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
CB	CIRCUIT BREAKER
CCT	CORRELATED COLOR TEMPERATURE
CKT	CIRCUIT
COL	COLUMN
DET	DETECTOR
DWG	DRAWING
EF	EXHAUST FAN
ELEC	ELECTRIC(AL)
EMER	EMERGENCY
EML	ELECTRIC MORTISE LOCK
EMT	ELECTRICAL METALLIC TUBING
ESR	ELECTRIC STRIKE RELEASE
(E), EX	EXISTING
EXIST	EXISTING
EXT	EXTERIOR
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FL	FLOOR, FLUORESCENT
FBO	FURNISHED BY ANOTHER DIVISION, WIRED BY THIS DIVISION
FIBO	FURNISHED AND INSTALLED BY ANOTHER DIVISION, WIRED BY THIS DIVISION
FLA	FULL LOAD AMPERES
FLR, FL	FLOOR
FLUOR	FLUORESCENT
FUT	FUTURE
FURN	FURNISH, FURNITURE
G, GND	GROUND
GFF	GAS FIRED FURNACE
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
HP	HORSEPOWER, HEAT PUMP
HTR	HEATER
HWH	HOT WATER HEATER
IBC	INTERNATIONAL BUILDING CODE
JB	JUNCTION BOX
J-BOX	JUNCTION BOX

ABBREVIATION	DESCRIPTION
JCT	JUNCTION
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT–AMPERE
KW	KILOWATT
LP	LIGHTING PANEL
LTG	LIGHTING
LT(S)	LIGHT(S)
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCULAR MILS
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTR	MOTOR
NEC	NATIONAL ELECTRIC CODE
NL	NIGHT LIGHT
NO	NORMALLY OPEN
OC	OVER COUNTER
OCPD	OVERCURRENT PROTECTIVE DEVICE
P	POLE(S)
PNL	PANEL
POE	POINT OF ENTRY
PWR	POWER
ø	PHASE
(R)	REMOVE
RP	RECEPTACLE PANEL
RECP, RECEP	RECEPTACLE
RM	ROOM
SCH	SCHEDULE
SPD	SURGE PROTECTION DEVICE
SPR	SPARE
STA	STATION
SUSP	SUSPEND(ED)
SW	SWITCH
SWBD	SWITCHBOARD
T, TEL, TELE	TELEPHONE
TEMP	TEMPORARY
TV	TELEVISION
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLT, VOLTS
VIF	VERIFY IN FIELD
W	WIRE
WH	WATER HEATER
WP	WEATHERPROOF
WG	WIRE GUARD
XFRM	TRANSFORMER

LIST OF ELECTRICAL DRAWINGS

E-001	ELECTRICAL SYMBOLS LIST, LIGHTING FIXTURE SCHEDULE AND ABBREVIATIONS.
E-030	BASEMENT LEVEL 01 PART PLANS ALTERNATE 01
E-031	LEVEL 01 PART PLANS ALTERNATE 01
E-101	ELECTRICAL BASEMENT LEVEL FLOOR PLAN (REMOVALS).
E-102	ELECTRICAL LEVEL 01 PLAN (REMOVALS).
E-103	EXISTING ROOF PLAN (REMOVALS).
E-201	ELECTRICAL SITE PLAN.
E-202	ELECTRICAL BASEMENT LEVEL FLOOR PLAN (POWER).
E-203	ELECTRICAL BASEMENT LEVEL FLOOR PLAN (IT/DATA/SECURITY).
E-204	ELECTRICAL BASEMENT LEVEL FLOOR PLAN (LIGHTING).
E-205	ELECTRICAL BASEMENT LEVEL FLOOR PLAN (LIGHTING CONTROL).
E-206	ELECTRICAL BASEMENT LEVEL FLOOR PLAN (FIRE ALARM).
E-207	ELECTRICAL LEVEL 01 FLOOR PLAN (POWER).
E-208	ELECTRICAL LEVEL 01 FLOOR PLAN (IT/DATA/SECURITY).
E-209	ELECTRICAL LEVEL 01 FLOOR PLAN (LIGHTING).
E-210	ELECTRICAL LEVEL 01 FLOOR PLAN (LIGHTING CONTROL).
E-211	ELECTRICAL LEVEL 01 FLOOR PLAN (FIRE ALARM).
E-212	ELECTRICAL LEVEL 02 FLOOR PLAN (POWER).
E-213	ELECTRICAL LEVEL 02 FLOOR PLAN (IT/DATA/SECURITY).
E-214	ELECTRICAL LEVEL 02 FLOOR PLAN (LIGHTING).
E-215	ELECTRICAL LEVEL 02 FLOOR PLAN (LIGHTING CONTROL).
E-216	ELECTRICAL LEVEL 02 FLOOR PLAN (FIRE ALARM).
E-217	ELECTRICAL LEVEL 03 FLOOR PLAN (POWER).
E-218	ELECTRICAL LEVEL 03 FLOOR PLAN (IT/DATA/SECURITY).
E-219	ELECTRICAL LEVEL 03 FLOOR PLAN (LIGHTING).
E-220	ELECTRICAL LEVEL 03 FLOOR PLAN (LIGHTING CONTROL).
E-221	ELECTRICAL LEVEL 03 FLOOR PLAN (FIRE ALARM).
E-222	ELECTRICAL ROOF PLAN.
E-223	ELECTRICAL ROOF PLAN (LIGHTNING PROTECTION PLAN).
E-301	ELECTRICAL ONE-LINE DIAGRAM.
E-302	ELECTRICAL PART ONE-LINE POWER DIAGRAM, OUTDOOR PLANT FIBER OPTIC DIAGRAM AN KEYED NOTES.
E-303	IT/COMMUNICATIONS RISER DIAGRAM
E-304	ELECTRICAL PANEL SCHEDULES.
E-305	ELECTRICAL DETAILS.
E-306	GENERATOR DETAILS.
E-307	IT/DATA SPECIFICATIONS AND DETAILS.

LIGHTING FIXTURE SCHEDULE

IN ADDITION TO THE SPECIFIED FEATURE ON THIS SCHEDULE. WHERE FIXTURE TYPE IS INDICATED WITH AN "E" AND/OR FIXTURE SYMBOL IS HALF SHADED, PROVIDE BATTERY BACK-UP EMERGENCY PACK TO AUTOMATICALLY ILLUMINATE FIXTURE FOR 2 HOUR ON LOSS OF UTILITY POWER

WATTS PER FIXTURE	TYPE		LAMPS	DESCRIPTION	MANUFACTURER AND MODEL	REMARKS
22W	A		LED	6" RECESSED DOWN LIGHT FOR GENERAL LIGHTING. 2,000 LUMENS	HALO COMMERCIAL HC620D010-HM612840-61MDW	
40W	B		LED	47.9"X23.8"X3.9" RECESSED TROFFER LOW PROFILE GENERAL OFFICE LIGHTING	LSI LPEC24-LED-48L-UNV-DIM1 -35(-EM10)	
	BB		LED	47.9"X23.8"X3.9" RECESSED TROFFER LOW PROFILE GENERAL OFFICE LIGHTING	LSI LPEC24-LED-30L-UNV-DIM1 -35-(EM10)	
20W	BA		LED	2'X2' RECESSED TROFFER FIXTURE GENERAL OFFICE LIGHTING	LSI OPT22 LED LENSED TROFFER OPT22-LED45L-W-UNV-40	
32W	C		LED	DECO DRUM I-SERIS 516 ENERGY STAR VERSION 24" ROUND DRUM PENDANT	LEGION LIGHTING CO., INC MODEL 2408 516-2408-WMA-LL4-30-120 -F10DC-CM3-WH-8'	WHERE INDICTED WITH "E" IN TYPE AND/OR WHERE SYMBOL IS HALF SHADED; PROVIDE WITH DC BATTERY EMERGENCY PACK IN SEPARATE NEMA-1 ENCLOSURE (CONCEALED IN CLOSEST INTERIOR ACCESSIBLE CEILING CAVITY. CIRCUIT TO ILLUMINATE LIGHT ON LOSS OF POWER.
-W	D		LED	LOBBY TRIPLE RING PENDANT	STONE LIGHTING RINGS SUSPENSION CH143-CR-BB-604233	
77W	F		LED	LINEAR PENDANT	KUZCO EERIE PD19359 PENDANTS PD19359-AN ANTIQUE BRASS	
106W	H		LED	RING PENDANT	KUZCO PD22753 PENDANT LAMP BS BRUSHED SILVER	
37W	HA		LED	PROFESSIONAL TRACK WITH LED LIGHT HEADS	TARGETTI #STP-0-10V-PW-L2-35-WF (LIGHT HEADS)	PROVIDE TARGETTI 9000-UL8/B-ST-120 (9004/W, 9001/9002/W/3C, ETC..) TRACK LENGTHS (MODIFIED AS REQUIRED) AS DEPICTED BY THE LINE(S) ON THE DRAWINGS. PROVIDE TRACK HEADS AS DEPICTED BY THE TRIANGULAR SYMBOLS SHOWN ON THE LINE(S) REPRESENTING THE TRACK(S)
	HB		LED	LUX ILLUMINAIRE. LED WALL MOUNTED DIRECT LINEAR LIGHTING FIXTURE. 4' SECTIONS AS REQUIRED, WITH JOINER AND END CAPS, TO ACCOMMODATE THE RUN LENGTHS.	LUX ILLUMINAIRE EOS-30-W-D-ASY-750-4-35K-4-UNV (-EB WHERE INDICATED AS TYPE "HBE")	
6.1W PER FOOT	J		LED	RECESSED LINEAR	METALUMEN RAIL 4 RMD4 RM4D-1L35K-2-M-W-L1-1-T-4	
	K		LED	2' LONG RECESSED LINEAR FIXTURE	METALUMEN RAIL 4 RMD4 RM4D-1L35K-2-M-W-L1-1-T-4	
XXW	KK		LED	RING PENDANT	G LIGHTING ORBIS II ACRYLIC INTERIOR PENDANT GL-2739-Z-CH-1A	
17W	L		LED	WALL MOUNTED 4' LONG ROTATIONAL SIGNAGE LIGHT WITH SINGLE PIECE EXTRUDED ALUMINUM HOUSING	STARTEK LIGHTING # OPTD-4-1000-SD-35K-PBR -EBR-RWM-UEMB10	
8.3W	M		LED	ELEVATOR WALL SCONCE	TECH LIGHTING LINGER WALL 700WSLNG-11-N-LED930	WHERE INDICTED WITH "E" IN TYPE AND/OR WHERE SYMBOL IS HALF SHADED; PROVIDE WITH DC BATTERY EMERGENCY PACK IN SEPARATE NEMA-1 ENCLOSURE (CONCEALED IN CLOSEST INTERIOR ACCESSIBLE CEILING CAVITY. CIRCUIT TO ILLUMINATE LIGHT ON LOSS OF POWER.
31.45W	N		LED	PENDANT MOUNT LINEAR WET LOCATION	LSI #EG3 4 WET LOCATION EG3-4-LED-04L-DAS-S-UNV-DIM-4080(-EM)	
15W	O		LED	SURFACE MOUNT HEIGHT 3" DIAMETER 12" WALL OR CEILING MOUNT	LIGHTWAY BRCC-12-LED-F1P-4 -B99-WSP-DIM	WHERE INDICTED WITH "E" IN TYPE AND/OR WHERE SYMBOL IS HALF SHADED; PROVIDE WITH DC BATTERY EMERGENCY PACK IN SEPARATE NEMA-1 ENCLOSURE (CONCEALED IN CLOSEST INTERIOR ACCESSIBLE CEILING CAVITY. CIRCUIT TO ILLUMINATE LIGHT ON LOSS OF POWER.
8W	P		LED	SIGN LIGHT	HK USA LIGHTING GROUP #ZXLF-CPV-NBR-BD-12V-8-30-ACL W/#TXE-120-12	WP. CIRCUIT VIA POWER SUPLY. MOUNT POWER SUPPLY IN THE ASSOCIATED ACCESSIBLE INTERIOR CEILING CAVITY AT THE CORRESPONDING FLOOR.
19W	Q		LED	WALL SCONCE	G LIGHTING LUX EXTERIOR SCONCE GL-6618-B-R3-CH-A-EM	WP. PROVIDE WITH DC BATTERY EMERGENCY PACK IN SEPARATE NEMA-1 ENCLOSURE (CONCEALED IN CLOSEST INTERIOR ACCESSIBLE CEILING CAVITY. CIRCUIT TO ILLUMINATE LIGHT ON LOSS OF POWER.
20.3W	R		LED	VANITY LIGHT	MODERN FORMS COMPANY MINI LOFT WS-14824-BN-20.3-1826-1588	
12W	S		LED	SHOWER LIGHT WET AREA	TECH LIGHTING ENTRA CL 3" LED ENCL3R-F-L12 (HOUSING) ENCL3R-F-D-935-W-W (TRIM)	
	T		LED	WALL MOUNT LED FIXTURE WITH INTEGRAL OCCUPANCY SENSOR AND DUAL LIGHT LEVEL CONTROL. FIXTURE MAINTAIN LOW LIGHTING LEVEL AT ALL TIMES AND ILLUMINATES TO FULL OUTPUT WHEN OCCUPANCY IS DETECTED. WITH EMERGENCY BALLAST.	COLUMBIA# LBIL435MLUELL14	PROVIDE PENDANT MOUNTING WHERE NOT WALL MOUNTED.
	HR		LED	FLEX LED STRIP LIGHTING BUILT-IN TO ARCHITECTURAL HAND RAIL. 2.8 WATTS/FT. REMOTE 120-24V POWER SUPPLY. CONCEALED ACCESS. ANGLE FITTINGS. HAND RAIL TRACK WITH LENS.	LEDSCAPE #FLEX-T-HP-30-65-HR19-D-P WITH PS240D240U POWER SUPPLIES IN NEMA 1 ENCLOSURE	CUSTOM WIRED TO REMOTE POWER SUPPLY. CONCEALED LIGHTING STRIPS AND WIRING
48	V		LED	**OUTDOOR LED AREA LIGHT**	LSI MIRADA MEDIUM OUTDOOR LED AREA LIGHT MRM LED-07L-SIL-FT-30-70CRI	PROVIDE WITH LSI #4RP-B3-S10G-10'-S-STANDARD COLOR-GA-4SRBS. PROVIDE (2) ADDITIONAL RGS SPARE 3/4" C FROM POLE BASE THROUGH CONCRETE BASE TO BELOW GRADE. PROVIDE IMSBT INTEGRATED MOTION SENSOR PROGRAMMED TO CONTROL BI-LEVEL ILLUMINATION.
48	VA		LED	**OUTDOOR LED AREA LIGHT** WITH SHIELDING	LSI MIRADA MEDIUM OUTDOOR LED AREA LIGHT MRM LED-07L-SIL-FT-30-70CRI-IL	PROVIDE WITH LSI #4RP-B3-S10G-10'-S-STANDARD COLOR-GA-4SRBS. PROVIDE (2) ADDITIONAL RGS SPARE 3/4" C FROM POLE BASE THROUGH CONCRETE BASE TO BELOW GRADE. PROVIDE IMSBT INTEGRATED MOTION SENSOR PROGRAMMED TO CONTROL BI-LEVEL ILLUMINATION.
48	W		LED	OUTDOOR LED AREA LIGHT	LSI IRADA MEDIUM OUTDOOR LED AREA LIGHT MRM LED-07L-SIL-5W-30-70CRI	PROVIDE WITH LSI #4RP-B3-S10G-10'-S-STANDARD COLOR-GA-4SRBS. PROVIDE (2) ADDITIONAL RGS SPARE 3/4" C FROM POLE BASE THROUGH CONCRETE BASE TO BELOW GRADE. PROVIDE IMSBT INTEGRATED MOTION SENSOR PROGRAMMED TO CONTROL BI-LEVEL ILLUMINATION.
23	X		LED	SEE SYMBOL LIST FOR FIXTURE DESCRIPTION	RAB LIGHTING #WP2LED34L750UPCU	
85	Y		LED	OUTDOOR LED AREA LIGHT	LSI MIRADA MEDIUM OUTDOOR LED AREA LIGHT MRM LED-12L-SIL-FT-30-70CRI	PROVIDE WITH LSI #4RP-B3-S10G-10'-S-STANDARD COLOR-GA-4SRBS. PROVIDE (2) ADDITIONAL RGS SPARE 3/4" C FROM POLE BASE THROUGH CONCRETE BASE TO BELOW GRADE. PROVIDE IMSBT INTEGRATED MOTION SENSOR PROGRAMMED TO CONTROL BI-LEVEL ILLUMINATION.
85	YA		LED	OUTDOOR LED AREA LIGHT WITH SHIELDING	LSI MIRADA MEDIUM OUTDOOR LED AREA LIGHT MRM LED-12L-SIL-FT -30-70CRI-IL	PROVIDE WITH LSI #4RP-B3-S10G-10'-S-STANDARD COLOR-GA-4SRBS. PROVIDE (2) ADDITIONAL RGS SPARE 3/4" C FROM POLE BASE THROUGH CONCRETE BASE TO BELOW GRADE. PROVIDE IMSBT INTEGRATED MOTION SENSOR PROGRAMMED TO CONTROL BI-LEVEL ILLUMINATION.
27	Z		LED	OUTDOOR RADIAL EMISSION LED BOLLARD	TARGETTI RADIAL EMISSION OUTDOOR LED BOLLARD MBB414036L330FE	PROVIDE (2) ADDITIONAL RGS SPARE 3/4" C FROM POLE BASE THROUGH CONCRETE BASE TO BELOW GRADE
11	AB		LED	OUTDOOR IN-GROUND MOUNTED MONUMENT LIGHT ENCLOSED AND GASKETED. COMPOSITE BRONZE WELL LIGHT	KIM LIGHTING #LTV82EB18L3KUVPL	
	E		LED	AUTOMATIC EMERGENCY LIGHTING UNIT WITH 2 LED HEADS		
3.8	⊗		LED	CEILING MOUNTED EDGELIT EXIT SIGN WITH GREEN LETTERS AND INTEGRATED BATTERY BACK-UP	PHILIPS 44RLU2R-NYC-G-EM. SHADED ARE DENOTES ILLUMINATED FACE. ARROWS AS INDICATED	WITH EMERGENCY BATTERY PACK TO ILLUMINATE FIXTURE FOR 2 HOUR ON LOSS OF UTILITY POWER. PROVIDE CONSTANT HOT SENSING LEG IN ADDITION TO SWITCH LEG(S). ARROW(S) INDICATES DIRECTIONALITY
3.8	⊗		LED	WALL MOUNTED EDGELIT EXIT SIGN WITH GREEN LETTERS AND INTEGRATED BATTERY BACK-UP	PHILIPS 44RLU1R-NYC-G-EM. SHADED ARE DENOTES ILLUMINATED FACE. ARROWS AS INDICATED	WITH EMERGENCY BATTERY PACK TO ILLUMINATE FIXTURE FOR 2 HOUR ON LOSS OF UTILITY POWER. PROVIDE CONSTANT HOT SENSING LEG IN ADDITION TO SWITCH LEG(S). ARROW(S) INDICATES DIRECTIONALITY
3.8	⊗		LED	WALL MOUNTED EXIT SIGN WITH DUAL EMERGENCY LIGHTS, GREEN LETTERS AND INTEGRATED BATTERY BACK-UP	PHILIPS 44RLU1R-NYC-RH-G-EM. ARE DENOTES ILLUMINATED FACE. ARROWS AS INDICATED	WITH EMERGENCY BATTERY PACK TO ILLUMINATE FIXTURE FOR 2 HOUR ON LOSS OF UTILITY POWER. PROVIDE CONSTANT HOT SENSING LEG IN ADDITION TO SWITCH LEG(S). ARROW(S) INDICATES DIRECTIONALITY

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CBK PROJECT NO. 21030

ISSUE NO.	ISSUE DATE	DESCRIPTION
2	1/11/2022	ADDENDUM NO 5 △1
1	11/9/2021	RELEASE FOR BID

ORANGETOWN
TOWN HALL
ADDITION AND ALTERATIONS

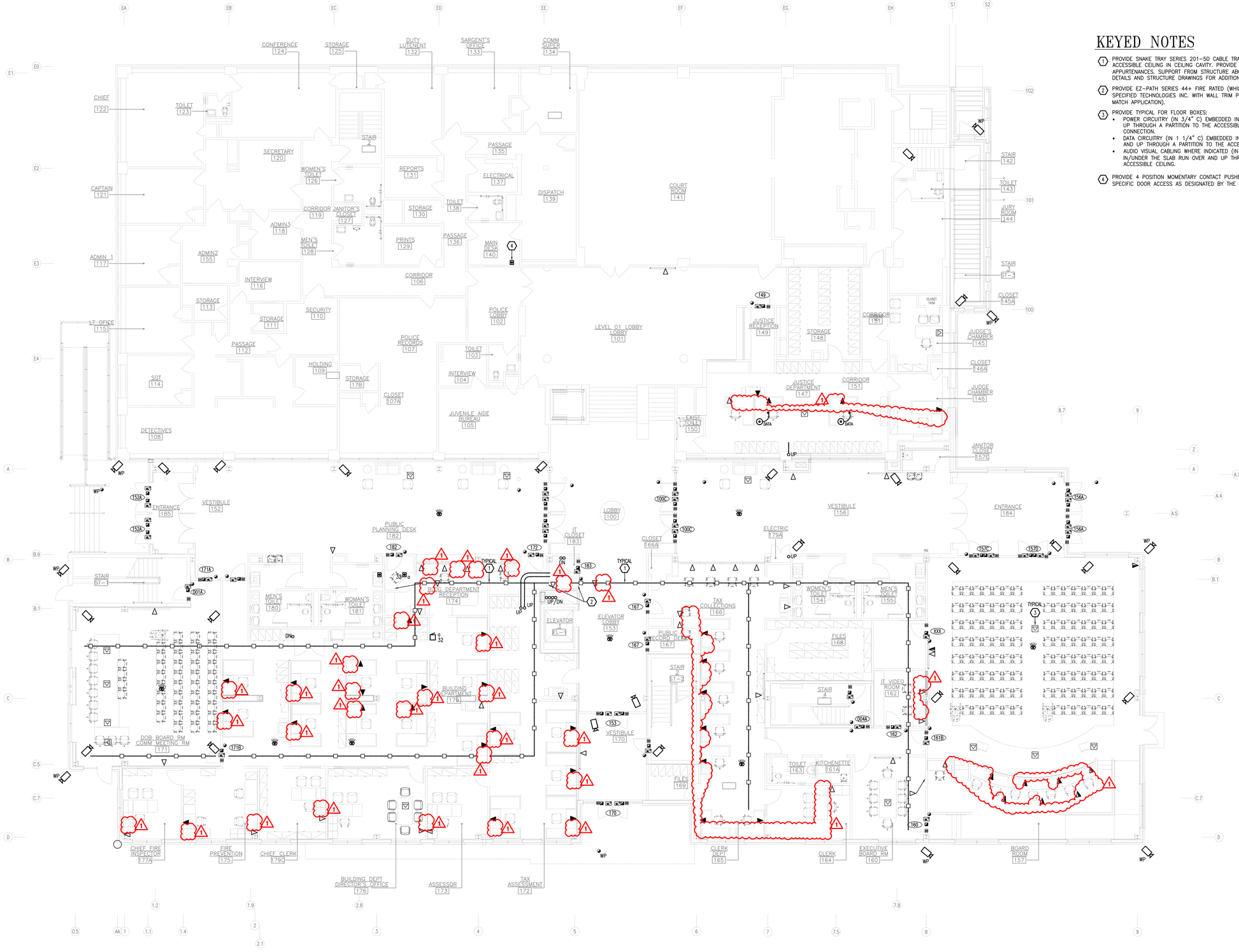
26 ORANGEBURG RD
ORANGEBURG, NEW YORK 10962

ELECTRICAL SYMBOLS LIST,
LIGHTING FIXTURE SCHEDULE
AND ABBREVIATIONS

PROJECT NO.: 2219-05

DRAWING NO.:

E-001



KEYED NOTES

1. PROVIDE SNAKE TRAY SERIES 201-5D CABLE TRAY SYSTEM MOUNTED ABOVE ACCESSIBLE CEILING IN CEILING CAVITY. PROVIDE ALL ASSOCIATED APPURTENANCES. SUPPORT FROM STRUCTURE ABOVE. SEE MANUFACTURER'S DETAILS AND STRUCTURE DRAWINGS FOR ADDITIONAL INFORMATION.
2. PROVIDE EZ-PATH SERIES 44+ FIRE RATED (WHILE OPEN) CABLE PATHWAY. SPECIFIED TECHNOLOGIES INC. WITH WALL TRIM PLATES (MULTI GANGED TO MATCH APPLICATION).
3. PROVIDE TYPICAL FOR FLOOR BOXES:
   - POWER CIRCUITRY (IN 3/4" C) EMBEDDED IN THE SLAB RUN OVER AND UP THROUGH A PARTITION TO THE ACCESSIBLE CEILING TO THE POWER CONNECTION.
   - DATA CIRCUITRY (IN 1 1/4" C) EMBEDDED IN/UNDER THE SLAB RUN OVER AND UP THROUGH A PARTITION TO THE ACCESSIBLE CEILING.
   - AUDIO VISUAL CABLING WHERE INDICATED (IN 1 1/4" C) EMBEDDED IN/UNDER THE SLAB RUN OVER AND UP THROUGH A PARTITION TO THE ACCESSIBLE CEILING.
4. PROVIDE 4 POSITION MOMENTARY CONTACT PUSHBUTTONS. CIRCUIT TO RELEASE SPECIFIC DOOR ACCESS AS DESIGNATED BY THE OWNER'S REPRESENTATIVE.

2 PART LEVEL 01 PLAN (IT/DATA)

SCALE: 1/8"=1'-0"

MAGNETIC NORTH / PROJECT NORTH

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2	1/11/2022	ADDENDUM NO 5
1	11/9/2021	RELEASE FOR BID

TOWN OF ORANGETOWN — RICH IN HISTORY

ORANGETOWN TOWN HALL

ADDITION AND ALTERATIONS

26 ORANGEBURG RD
ORANGEBURG, NEW YORK 10962

ELECTRICAL LEVEL 01 PLAN (IT/DATA/SECURITY)

PROJECT NO.: 2219-05

DRAWING NO.:

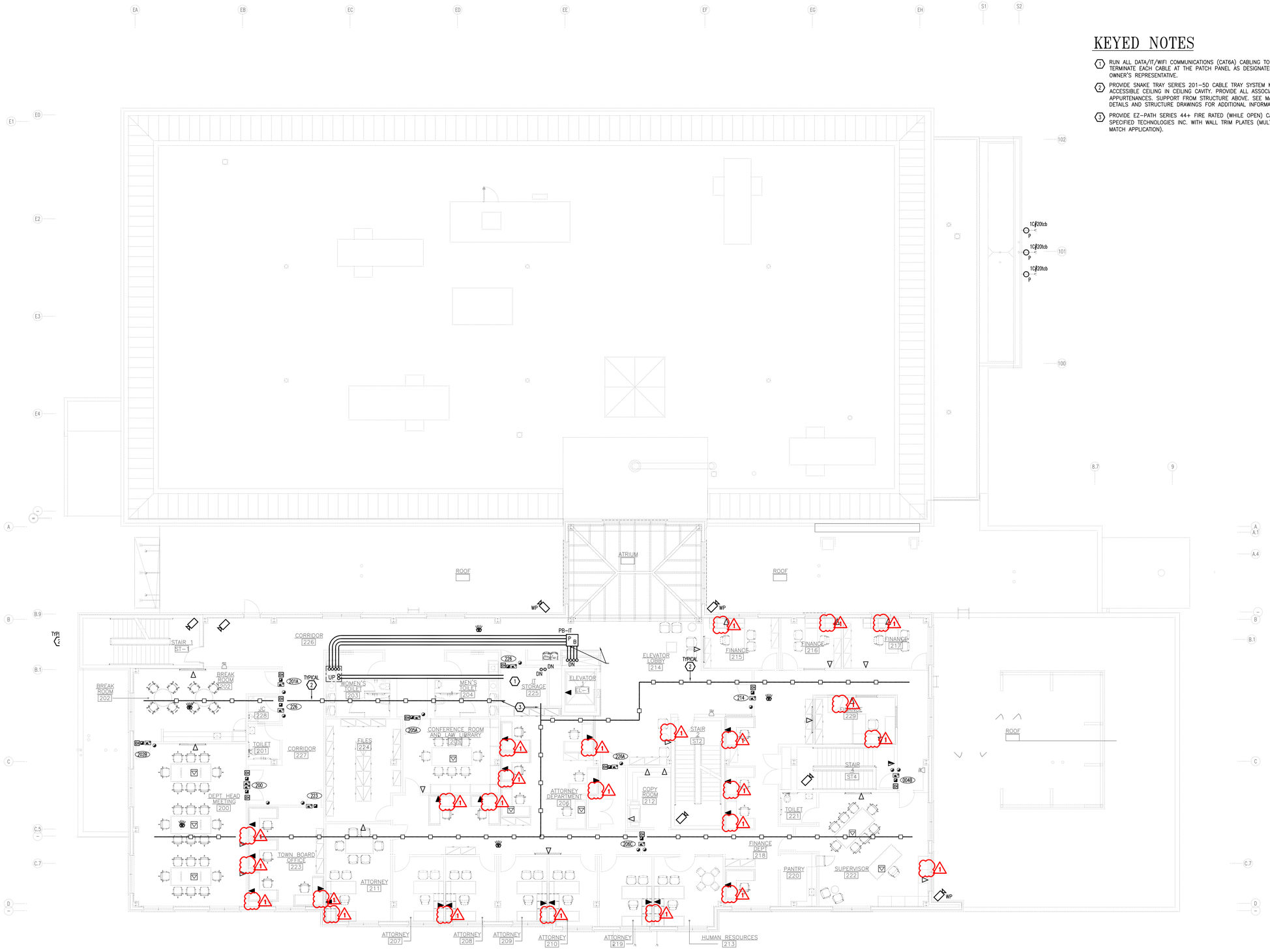
E-208

S:\CBK\PROJECTS\2021\21030 Orangetown Town Hall Revisions\Drawings\PROJECT\E-FIRST FLOOR.dwg

one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot

KEYED NOTES

1. RUN ALL DATA/IT/WIFI COMMUNICATIONS (CAT6A) CABLING TO THIS ROOM. TERMINATE EACH CABLE AT THE PATCH PANEL AS DESIGNATED BY THE OWNER'S REPRESENTATIVE.
2. PROVIDE SNAKE TRAY SERIES 201-5D CABLE TRAY SYSTEM MOUNTED ABOVE ACCESSIBLE CEILING IN CEILING CAVITY. PROVIDE ALL ASSOCIATED APPURTENANCES. SUPPORT FROM STRUCTURE ABOVE. SEE MANUFACTURER'S DETAILS AND STRUCTURE DRAWINGS FOR ADDITIONAL INFORMATION.
3. PROVIDE EZ-PATH SERIES 44+ FIRE RATED (WHILE OPEN) CABLE PATHWAY. SPECIFIED TECHNOLOGIES INC. WITH WALL TRIM PLATES (MULTI GANGED TO MATCH APPLICATION).



1 PART LEVEL 02 PLAN (IT/DATA)

SCALE: 1/8"=1'-0"

MAGNETIC NORTH / PROJECT NORTH

Lothrop

Lothrop Associates LLP Architects
333 Westchester Avenue
White Plains, New York 10604
914-741-1115

White Plains Rochester Red Bank Hartford

CBK Engineering PC
44-46 Foster Road Suite 7
Hopewell Junction , N.Y. 12533
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CBK PROJECT NO. 21030

ISSUE NO.	ISSUE DATE	DESCRIPTION
2	1/11/2022	ADDENDUM NO 5 ⚠1
1	11/9/2021	RELEASE FOR BID

ORANGETOWN TOWN HALL

ADDITION AND ALTERATIONS

26 ORANGEBURG RD
ORANGEBURG, NEW YORK 10962

ELECTRICAL LEVEL 02 PLAN (IT/DATA/SECURITY)

PROJECT NO.: 2219-05

DRAWING NO.:

E-213

KEYED NOTES

1. RUN ALL DATA/IT/WIFI COMMUNICATIONS (CAT6A) CABLING TO THIS ROOM. TERMINATE EACH CABLE AT THE PATCH PANEL AS DESIGNATED BY THE OWNER'S REPRESENTATIVE.
2. PROVIDE SNAKE TRAY SERIES 201-5D CABLE TRAY SYSTEM MOUNTED ABOVE ACCESSIBLE CEILING IN CEILING CAVITY. PROVIDE ALL ASSOCIATED APPURTENANCES. SUPPORT FROM STRUCTURE ABOVE. SEE MANUFACTURER'S DETAILS AND STRUCTURE DRAWINGS FOR ADDITIONAL INFORMATION.
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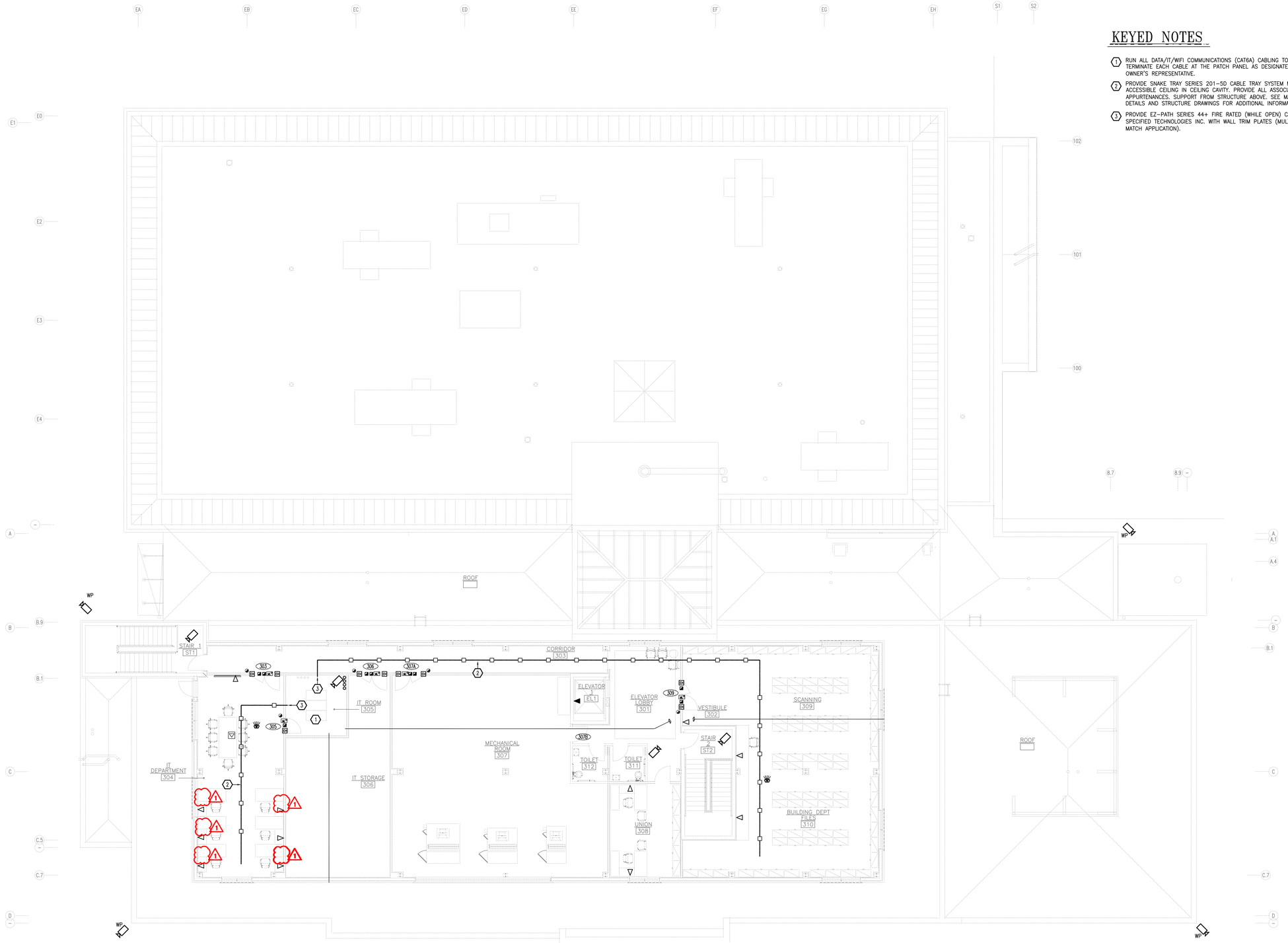

1 PART LEVEL 03 PLAN (IT/DATA)
SCALE: 1/8"=1'-0"

MAGNETIC NORTH / PROJECT NORTH

Lothrop

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CBK PROJECT NO. 21030

ISSUE NO.	ISSUE DATE	DESCRIPTION
2	1/11/2022	ADDENDUM NO 5
1	11/9/2021	RELEASE FOR BID

TOWN OF ORANGETOWN — RICH IN HISTORY

ORANGETOWN TOWN HALL
ADDITION AND ALTERATIONS

26 ORANGEBURG RD
ORANGEBURG, NEW YORK 10962

ELECTRICAL LEVEL 03 PLAN (IT/DATA/SECURITY)

PROJECT NO.: 2219-05

DRAWING NO.:

E-218