



Department of Building & Grounds  
Architectural Services Division

City of Baton Rouge  
Parish of East Baton Rouge

P.O. Box 1471  
Baton Rouge, Louisiana 70821  
225 389-4694 Voice  
225 389-4704 Fax

**ADDENDUM #1**

**April 16, 2024**

**TO ALL BIDDERS**

**PROJECT: CITY HALL FIRE ALARM UPRADES [RE-START]  
CITY PARISH PROJECT NO. 20-ASC-CP-1517**

The following revisions shall be incorporated in and take precedence over any conflicting part of the original contract documents.

**Please see attach revised Bid Package dated: April 12, 2024**

TOTAL PAGES .....Drawings 15 Sheets  
Specifications 53 Pages

***FAILURE TO INDICATE RECEIPT OF THIS ADDENDUM ON BID FORM MAY BE CAUSE FOR THE BID TO BE REJECTED***

Sean M. Johnson, AIA  
Chief Architect  
Architectural Services Division  
1100 Laurel Street, Rm 227  
Baton Rouge, LA 70802

**DIVISION 1 – GENERAL REQUIREMENTS**  
**SECTION 01 01 00 – SUMMARY OF WORK**

**PART 1.00 GENERAL**

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including Invitation to Bid Form, General Conditions, Modifications to the General Conditions, Supplementary Conditions, any Addenda issued during bidding, and other Division 1 Specifications Sections, apply to this section.

1.02 PROJECT DESCRIPTION

- A. All work shall take place at the Governmental Building, Baton Rouge, Louisiana. The work consists of a new fire alarm system in the respective Building.

1.03 CONTRACTOR USE OF PREMISES

- A. General: Limit use of the premises to construction activities in areas indicated.
  - 1. Confine operations to areas within Contract limits indicated. Portions of the site beyond save areas in which construction operations are indicated are not to be disturbed.
  - 2. Disposal of Waste Materials: Waste materials shall be disposed of in a legal manner off the site in accordance with all governing laws.
- B. Contractor shall follow strict guidelines set forth by the City of Baton Rouge at Pre-Construction Meeting.

END OF SECTION

**DIVISION 1 – GENERAL REQUIREMENTS**  
**SECTION 01 04 00 – COORDINATION**

**PART 1.00 GENERAL**

1.01 REQUIREMENTS INCLUDED

- A. Coordination of work of contract.

1.02 RELATED REQUIREMENTS

- A. Section 01045 - Cutting and Patching
- B. Section 01700 - Contract Closeout Procedures: Closeout submittals.

1.03 DESCRIPTION

- A. Coordinate scheduling, submittals and work of the various sections of specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.
- B. Coordinate sequence of work to accommodate Owner occupancy as described in the individual sections of specifications on the drawings.

1.04 MEETINGS

- A. Contractor shall hold coordination meetings and pre-installation conferences with personnel and subcontractors to assure coordination of work.

1.05 COORDINATION OF SUBMITTALS

- A. Schedule and coordinate submittals specified in Section 01300.
- B. Coordinate requests for substitutions to assure compatibility of space, of operating elements, and affect on work of other sections.
- C. Coordinate requests for substitutions to assure compatibility of space, of operating elements, and affect on work of other sections.

1.06 COORDINATION OF SPACE

- A. Coordinate use of project space and sequence of installation of electrical work which is indicated diagrammatically on drawings. Follow routings shown from pipes, ducts and conduits as closely as practicable, with due allowance for available physical space; make runs parallel with lines of building. Utilize space efficiently to maximize accessibility for other installations, for maintenance and for repairs.

- B. In finished areas, conceal pipes, ducts, and wiring in the construction. Coordinate locations for fixtures and outlets with finish elements.

1.07 COORDINATION OF CONTRACT CLOSEOUT

- A. Coordinate completion and clean up of work of separate sections in preparation for substantial completion.
- B. Assemble and coordinate closeout submittals.

END OF SECTION

**DIVISION 1 – GENERAL REQUIREMENTS**  
**SECTION 01 04 50 – CUTTING AND PATCHING**

**PART 1.00 GENERAL**

1.01 REQUIREMENTS

- A. Requirements and limitations for cutting and patching of work.

1.02 RELATED REQUIREMENTS

- A. Product Options and Substitutions.
- B. Individual Specification Sections: Cutting and patching incidental to work of the section.

1.03 DESCRIPTIONS

- A. Execute cutting, fitting, and patching (including excavation and fill), to complete work, and to:
  1. Fit the several parts together, to integrate with other work.
  2. Uncover work to install ill-timed work.
  3. Remove and replace defective and non-conforming work.
  4. Remove samples of installed work for testing.
  5. Provide openings in non-structural elements for penetrations of mechanical and electrical work.
  6. Provide neat and substantial joints between existing and new work.
  7. All existing surfaces affected shall be reworked to a complete and finished condition.
  8. Patch all roofing damaged during construction to Engineers satisfaction.

1.04 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
  1. Structural integrity of any element of project.
  2. Integrity of weather-exposed or moisture-resistant element.
  3. Efficiency, maintenance, or safety of any operational element.
  4. Visual qualities of sight-exposed elements.
- B. Include in request:
  1. Identification of project.
  2. Location and description of affected work.
  3. Necessity for cutting or alteration.
  4. Description of proposed work, and projects to be used.
  5. Alternatives to cutting and patching.
  6. Date and time work will be executed.

**PART 2.00 PRODUCTS**

2.01 MATERIALS

A. Those required for original installation.

END OF SECTION

**DIVISION 1 – GENERAL REQUIREMENTS**  
**SECTION 01 30 00 – SUBMITTALS**

**PART 1.00 GENERAL**

1.01 REQUIREMENTS INCLUDED

- A. Procedures.
- B. Construction Progress Schedules.
- C. Schedule of Values.
- D. Shop Drawings.
- E. Product Data.
- F. Samples.
- G. Manufacturer's Instructions.
- H. Manufacturer's Certificates.

1.02 RELATED REQUIREMENT

- A. General Conditions of the Contract For Construction
- B. Supplementary Conditions of the Contract For Construction.

1.03 PROCEDURES

- A. Deliver submittals to engineer at address listed on cover of Project Manual.
- B. Transmit each item under engineer-accepted form. Identify project, contractor, subcontractor, and major supplier. Identify pertinent drawing sheet and detail number, and specification section number, as appropriate. Identify deviations from Contract Documents. Provide space for contractor and engineer review stamps.
- C. Submit initial Progress Schedule and Schedule of Values in duplicate at pre-construction conference. After review by engineer, revise and resubmit as required. Submit revised schedules with each Application for Payment, reflecting changes since previous submittal.
- D. Comply with progress schedule for submittals related to work progress. Coordinate submittal of related item.
- E. After engineer review of submittal, revise and resubmit as required, identifying changes made since previous submittal.

- F. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

#### 1.04 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit horizontal bar chart with separate bar for each major trade or operation, identifying first work day of each week.

#### 1.05 SCHEDULE OF VALUES

- A. Submit typed schedule of AIA Form G703, 8-1/2 x 11 inch paper.
- B. Format: Table of contents of this Project Manual. Identify each line item with number and title of the major Specification Sections.

#### 1.06 SHOP DRAWINGS

- A. Submit the number of opaque reproductions which contractor requires, plus two copies which will be retained by engineer.

#### 1.07 PRODUCT DATA

- A. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information unique to the work.
- B. Submit the number of copies which contractor requires, plus two (2) copies which will be retained by engineer.

#### 1.08 MANUFACTURER'S INSTRUCTIONS

- A. When required in individual Specification Sections, submit manufacturer's printed instructions for delivery, storage, assembly, installation start-up, adjusting, and finishing, in quantities specified for product data.

#### 1.09 SAMPLES

- A. Submit full range of manufacturer's standard colors, textures, and patterns for engineer's selection.
- B. Submit samples to illustrate functional characteristics of the product, with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work.
- C. Include identification on each sample, giving full information.
- D. Submit the number specified in respective Specification Section; one will be retained by engineer. Reviewed samples which may be used in the work are indicated in the Specification



Section.

1.10 FIELD SAMPLES

- A. Provide field samples of finishes at project as required by individual Specification Sections. Install sample complete and finished. Acceptable samples in place may be retained in completed work.

END OF SECTION

**DIVISION 1 – GENERAL REQUIREMENTS**  
**SECTION 01 40 00 – QUALITY CONTROL**

**PART 1.00 GENERAL**

1.01 REQUIREMENTS INCLUDED

- A. General Quality Control.
- B. Workmanship.
- C. Manufacturer's Instructions.
- D. Manufacturer's Certificates.
- E. Mockups.
- F. Manufacturer's Field Services.

1.02 RELATED REQUIREMENTS

- A. Section 01 30 00 - Submittals

1.03 QUALITY CONTROL - GENERAL

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

1.04 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship or specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and packing.

1.05 MANUFACTURERS' INSTRUCTIONS

- A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from engineer before proceeding.

1.06 MANUFACTURERS' CERTIFICATES

- A. When required by individual Specification Sections, submit manufacturer's certificate, in duplicate, that products meet or exceed specified requirements.

## 1.07 MANUFACTURERS' FIELD SERVICES

- A. When specified in respective Specification Sections, required manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to make appropriate recommendations.
- B. Representative shall submit written report to engineer listing observations and recommendations.

END OF SECTION

**DIVISION 1 – GENERAL REQUIREMENTS**  
**SECTION 01 60 00 – MATERIAL AND EQUIPMENT**

**PART 1.00 GENERAL**

1.01 REQUIREMENTS INCLUDED

- A. Products.
- B. Transportation and Handling.
- C. Storage and Protection.
- D. Product Options.
- E. Products Lists.
- F. Substitutions.
- G. Systems Demonstration.

1.02 RELATED REQUIREMENTS

- A. Instructions to Bidders: Substitutions
- B. Section 01 40 00 - Quality Control: Submittal of Manufacturers' Certificates.
- C. Section 01 60 00 - Materials and Equipment: Systems Demonstration.
- D. Section 01 70 00 - Contract Closeout: Operation and Maintenance data.

1.03 PRODUCTS

- A. Products include material, equipment, and systems.
- B. Comply with specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a specification section shall be the same and shall be interchangeable.

1.04 TRANSPORTATION AND HANDLING

- A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.

- C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

#### 1.05 STORAGE AND PROTECTION

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
- C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
- D. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged and are maintained under required conditions.

#### 1.06 SUBSTITUTIONS

- A. The name of a certain brand, make, manufacturer, or definite specification is to denote the quality standard of the article desired but does not restrict contractor to the specific brand, make, manufacturer, or specification named unless specifically noted otherwise. It is to set forth to convey the general style, type, character, and quality of article desired.
- B. All requests for substitutions shall be in accordance with Paragraph 3.3 "SUBSTITUTIONS" on Page IB-3 of INSTRUCTIONS TO BIDDERS. No post bid substitution will be allowed.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- D. Request constitutes a representation that contractor:
  - 1. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
  - 2. Will provide the same warranty for substitution as for specified product.
  - 3. Will coordinate installation and make other changes which may be required for work to be complete in all respects.
  - 4. Waives claims for additional costs which may subsequently become apparent.

#### 1.07 SYSTEMS DEMONSTRATION

- A. Prior to final inspection, demonstrate operation of each system to engineer and City of Baton Rouge.
- B. Instruct User's personnel in operation, adjustment, and maintenance of equipment and

systems, using the operation and maintenance data as the basis of instruction.

END OF SECTION

**DIVISION 1 – GENERAL REQUIREMENTS**  
**SECTION 01 70 00 – CONTRACT CLOSEOUT**

**PART 1.00 GENERAL**

1.01 REQUIREMENTS INCLUDED

- A. Closeout Procedures.
- B. Final Cleaning.
- C. Project Record Documents.
- D. Operation and Maintenance Data.
- E. Warranties and Bonds.
- F. Spare Parts and Maintenance Materials.

1.02 RELATED REQUIREMENTS

- A. AIA Document A201 – General Conditions of the Contract For Construction.

1.03 CLOSEOUT PROCEDURES

- A. Comply with procedures stated in General Conditions of the Contract for issuance of Certificate of Substantial Completion.

1.04 FINAL CLEANING

- A. Execute prior to final inspection.
- B. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains, and foreign substances.
- C. Clean site; sweep paved areas, rake clean other surfaces.
- D. Remove waste and surplus materials, rubbish, and construction facilities from the project and from the site. Owner will provide final cleaning after final acceptance.

1.05 PROJECT RECORD DOCUMENTS

- A. Store documents separate from those used for construction.
- B. Keep documents current; do not permanently conceal any work until required information has been recorded.

- C. At contract closeout, submit documents with transmittal letter containing date, project title, contractor's name and address, list of documents, and signature of contractor.
- D. In addition to the site-maintained record copy, the designer shall prepare and furnish to the Owner, final record drawings of the completed project. Such drawings, shall describe the project as actually built and shall incorporate any changes made during construction.
- E. Final record drawings shall consist of one (1) set of reproducible film sepia and one (1) set of prints of such tracings including all sheets of the contract drawings and any shop drawings of additional details that cannot reasonably be incorporated into the contract drawings. The record drawings shall be reviewed and approved by the contractor prior to submission.

#### 1.06 OPERATION AND MAINTENANCE DATA

- A. Provide data as described in Division 26.
- B. Other section as described.
- C. Submit three (3) sets prior to final inspection, bound in 8-1/2 x 11 inch three-ring side binders with durable plastic covers.
- D. Provide a separate volume for each system, with a table of contents and indent tabs for each volume.
- E. Part 1: Directory, listing names, addresses, and telephone numbers of: Engineer and Contractor.
- F. Part 2: Operation and maintenance instructions, arranged by system. For each system give names, addresses, and telephone numbers of subcontractors and suppliers.
  - 1. Appropriate design criteria.
  - 2. List of equipment.
  - 3. Parts lists.
  - 4. Operating instructions.
  - 5. Maintenance instructions, equipment.
  - 6. Maintenance instruction, finishes.
  - 7. Shop drawings and product data.
  - 8. Warranties.

#### 1.07 WARRANTIES AND BONDS

- A. Provide duplicate, notarized copies. Execute contractor's submittals and assemble documents executed by subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.
- B. Submit material prior to final Application for Payment.

#### 1.08 SPARE PARTS AND MAINTENANCE MATERIALS



- A. Provide products, spare parts, and maintenance materials in quantities specified in each section, in addition to that used for construction of work. Coordinate with Owner, deliver to project site and obtain receipt prior to final payment.

#### 1.09 FINAL INSPECTION

- A. At the time of the final inspection, a punchlist with assigned monetary values will be compiled by the design professional in charge. If these items are not completed within the forty-five (45) day lien period, the monetary value of the item will be withheld and the item will be completed by the City.

END OF SECTION

**DIVISION 26 – ELECTRICAL**  
**SECTION 26 01 00 - BASIC ELECTRICAL REQUIREMENTS**

**PART 1.00 GENERAL**

1.01 SCOPE

- A. The scope of work is as indicated on electrical drawings and includes but is not limited to the following:
- B. Demolition:
  - 1. Disconnect and remove all existing fire alarm notification and initiation devices. Contractor shall be permitted to re-use existing conduit pathways and conductors where in good condition.
  - 2. Disconnect and remove all fire alarm panels.
  - 3. Outage of system shall be closely coordinated with the building maintenance personnel.
- C. Power:
  - 1. Provide branch circuits as required for the fire alarm system. Including but not limited to Fire Alarm Control Panel and Remote Power Supplies (NAC Panels)
- D. Telecommunications:
  - 1. Provide two (2) CAT 6 cables to the fire alarm control panel
- E. Fire Alarm:
  - 1. Provide fire alarm control panel, voice evacuation panel and remote booster panels.
  - 2. Provide manual pull stations at all exterior exits.
  - 3. Provide visual and audio notification throughout including voice evacuation.
  - 4. Provide smoke detectors at all control panels, voice evacuation panels and booster panels.
  - 5. Provide duct mounted smoke detectors for all air units with greater than 2000 cfm air flow.
  - 6. Provide a monitor module for all sprinkler system tamper and flow switches.
  - 7. Provide a monitor module for sprinkler system hotbox heater power and tamper switches.
  - 8. Make all connections required to elevator and associated shunt trip controls.
  - 9. Provide monitor modules as required for all fire alarm interconnections including but not limited to duct detectors, dry chemical suppression systems, and elevator.

1.02 GENERAL CONDITIONS

- A. The General Conditions and Supplementary General Conditions are a part of this section of these Specifications. The Contractor is cautioned to read and be thoroughly familiar with all provisions of the General Conditions. These conditions shall be complied with in every aspect.

### 1.03 DEFINITIONS:

- A. The word "shall" where used, is to be understood, as mandatory and the word "should" as advisory. "May" is used in the permissive sense.
- B. Concealed: Concealed areas are those areas that cannot be seen by building occupants.
- C. Exposed: Exposed areas are all areas that are exposed to view by building occupants, including areas below counter tops, inside cabinets and closets, inside all equipment rooms, and areas outside the building exterior envelope.
- D. Feeder: Feeder consists of both conduit and wiring installed above or below grade
- E. Provide: Provide shall including furnishing, installing, and connecting the item or items referenced unless specifically indicated otherwise.

### 1.04 QUALITY ASSURANCE

- A. General:
  - 1. Every effort has been made by the Engineer to clearly indicate all devices/equipment requiring an electrical/data connection. It is the intent of the Engineer that all devices and equipment be circuited to a panelboard of appropriate voltage and breaker of MOCP not exceeding manufacturer's specifications. That all communications, security, and fire alarm devices are installed, wiring, and functioning properly.
  - 2. Where there is a conflict between the contract document and an applicable Code. The Code shall govern except where the requirements of the contract documents are more stringent. The most stringent requirement shall apply.
  - 3. All work shall be concealed unless specifically noted to be exposed.
  - 4. Coordinate the exact locations of electrical outlets and equipment with building features and equipment as indicated on architectural, structural, mechanical, plumbing, landscape, and food service drawings. Review any/all proposed changes in electrical device/equipment locations with Architect prior to rough-in. Architect may direct relocation of outlets before rough-in, up to ten (10) feet from the position indicated, without additional cost. Remove and relocate outlets placed in unsuitable locations when requested by the Architect, at no additional cost.
  - 5. Resolve, in writing, any code violation discovered in contract documents with the Engineer prior to bidding. After award of the contract, Contractor shall make any correction or addition necessary for compliance with applicable codes at no additional cost.
- B. An approved contractor for the work under this division shall be:
  - 1. A licensed fire alarm contractor in the jurisdiction in which the work shall be performed.
  - 2. Able to furnish evidence of having contracted for and installed not less than five (5) systems of comparable size and type that have served their Owners satisfactorily

- for no less than three (3) years.
3. Have in his employment not less than three (3) fire alarm technicians certified and trained in the products specified.
  4. Have an office located within a 50 miles radius of the project staffed with a minimum of eight (8) employees.
- C. All work, materials and equipment shall comply with the latest applicable codes, local ordinances, and UL requirements.
  - D. Provide new products of manufacturers regularly engaged in production of such equipment. Provide the manufacturer's latest standard design for the type product specified. All new products shall be listed for the use shown on drawings.
  - E. Equipment shall be delivered with a factory-applied finish so that no additional field painting is required.
  - F. Equipment shall be selected to conform the building space limitations. Do not provide equipment that cannot meet the arrangement requirements shown on plans. Contractor shall submit room layouts with submitted items shown drawn to scale. Submittals will be rejected without floor plan Drawings showing submitted items.
  - G. All equipment included in the service and distribution specifications shall be provided by the same manufacturer.
  - H. Manufacturer names and model numbers are subject to change. Contractor shall verify them with manufacturer's representative prior to ordering any product or equipment.

#### 1.05 GENERAL REQUIREMENTS

- A. The Contractor is referred to all of the Drawings for building construction as well as the electrical Drawings.
- B. The Contractor shall examine the site and shall verify to his own satisfaction the location of all utilities, and shall adequately inform himself as to their relation to his work before entering into a Contract and he shall base his bid on any conditions, which may be encountered during the progress of the work.
- C. The Contractor shall furnish and install properly all materials, devices, equipment, supports, controls, appurtenances, etc., mentioned or required to make complete or satisfactory installations in working order whether shown or not. All electrical equipment shall be connected in accordance with manufacturer's instructions. All work shall be executed in a workmanlike manner and shall present a neat and mechanical appearance when completed.
- D. The Contractor shall provide finished to match approved samples; all exposed finishes shall be approved by the Architect. Submit color samples as required.

## 1.06 APPLICABLE GENERAL CODES AND REGULATIONS

- A. All electrical work and equipment, in whole or in part, shall conform to the applicable portions of the following specifications, codes and regulations in effect on that date of invitation for bids, and shall form a part of this specification.
- B. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition.
- C. All reference amendments adopted prior to the effective date of this Contract shall be applicable to this Project.
  - 1. NFPA 70, National Electrical Code
  - 2. National Fire Codes:
    - a. NFPA 72, National Fire Alarm Code
    - b. NFPA 101, Life Safety Code
  - 3. Occupational Safety and Health Regulations (OSHA).
  - 4. NFPA Standards in effect shall be as listed or adopted by the appropriate authority having jurisdiction.
  - 5. American National Standards Institute (ANSI)
  - 6. Institute of Electrical and Electronics Engineers (IEEE)
  - 7. Local, City and State Codes and Ordinances
  - 8. National Electrical Manufacturers Association (NEMA)
  - 9. Insulated Power Cable Engineers Association (IPCEA)
  - 10. International Building Codes (IBC)
- D. Equipment that has been inspected and approved by the Underwriter's Laboratory shall bear its label or appear on its list of approved apparatus.

## 1.07 DRAWINGS

- A. Plans and detail sketches are submitted to limit, explain, and define conditions, specified requirements, conduit sizes, and manner of erecting work. The Contractor is cautioned to field check and verify all existing conditions before bidding, as no extra compensation will be allowed for conditions found different than represented in the construction drawings and/or specifications. Written approval of the Architect shall be obtained prior to any alterations or additions to specified work.
- B. Structural or other conditions may require certain modifications from the manner of installation shown, and such deviations are permissible and shall be made as required, but specified sizes and requirements necessary for satisfactory operations shall remain unchanged.
- C. The drawings and these specifications are complementary to each other and what is called for by one shall be binding as if called for by both.
- D. General arrangement of work is indicated on plans. Due to the small scale of the drawings, offsets, fittings, and boxes required are not all indicated; provide fittings, boxes,

etc., as needed in accordance with codes and accepted practices.

#### 1.08 SUPERVISION

- A. The Contractor shall personally or through an authorized and competent representative, constantly supervise the work from beginning to completion and final acceptance. So far as possible, he shall keep the same foreman and workmen throughout the project duration.
- B. During its progress, the work shall be subject to inspection by representatives of the Engineer, at which times the Contractor shall furnish required information.
- C. It is not the Engineer's duty to direct or guarantee the work of the Contractor, but to assist the Owner in obtaining a complete building in accordance with plans, specifications and addenda and to furnish engineering services in accordance with recognized practices.

#### 1.09 PRIOR APPROVALS

- A. The Contractor shall base his proposal on materials as specified herein. Any references to a specific manufacturer or trade name is made to establish a standard of quality and to define a type of product and in no way is intended to indicate a preference for a particular manufacturer. It is the intent of these specifications to allow all manufacturers of equipment, products, etc., judged equal to the specified product to bid on a competitive basis.

#### 1.10 MEASUREMENTS

- A. The Contractor shall verify all measurements and shall be responsible for the correctness of same, before ordering any materials or doing any work. No extra charge or compensation will be allowed for any differences between the actual measurements and those indicated on the drawings.

#### 1.11 LAWS, PERMITS AND FEES

- A. The entire electrical work shall comply with the rules and regulations of the City, Parish, and State, including the State Fire Marshal and State Board of Health, whether so shown on plans or not. The Contractor shall pay fees for permits, inspections, etc., and shall arrange with the inspecting authorities all required inspections.

#### 1.12 SITE INSPECTION

- A. The Contractor shall visit the site and familiarize himself with difficulties attendant to the successful execution of the work before bidding. Failure to visit the site shall not relieve the Contractor of the extent or conditions of the work required of him.

### **PART 2.00 PRODUCTS**

## 2.01 MATERIAL AND EQUIPMENT

- A. All materials, equipment, and accessories installed under this Contract, whether approved or not, shall be new and shall conform to all rules, codes, etc., as recommended or adopted by the National Association(s) governing the manufacture, rating and testing of such materials, equipment, and accessories.
- B. Product Substitutions
  1. If item of equipment or device offered as Substitution differs in dimension or configuration from that indicated in the Contract Documents, provide, as part of the substitution submittal, a drawing that shows that the equipment or devices proposed for Substitution can be installed in the space available without interfering with other trades or with access requirements for operations and maintenance in the completed project. Drawings shall be of appropriate scale but shall not be smaller than a scale of 1/4-inch equals one foot.
  2. Where substitute equipment or devices requires different arrangement or connections from that indicated in the Contract Documents, install the equipment or devices to operate properly and in accordance with the requirements of the Contract Documents. Make incidental changes necessary in piping, ductwork or wiring which results from the inclusion of the substitute equipment or device without any additional cost to the Owner. Pay all additional costs incurred by other trades in connection with changes required by the inclusion of the substituted equipment or device in the Work.

## 2.02 SHOP DRAWINGS & SUBMITTALS

- A. Shop drawings shall be taken to mean detailed drawings with dimensions, schedules, weights, capacities installation details, and pertinent information that will be needed to describe the material or equipment in detail.
  1. Shop drawings shall be prepared using computerized digital software compatible with AutoDesk's AutoCAD
  2. Submit hardcopy of Shop Drawings in the quantity as required under Division 01. Hardcopies of Shop Drawings shall have each sheet clearly labeled with a unique sheet identification number.
  3. In addition to hardcopies required by Division 01, submit one copy of Shop Drawings in electronic format on Flash Drive. Files contained shall be named to correspond with the sheet names contained in the hardcopy set. Files on shall include both AutoCAD compatible source files and files printed to Portable Document Format (.pdf).
- B. Submittals shall be taken to mean catalog cuts, general descriptive information, catalog numbers, and manufacturer's name.
- C. Review of submittals or shop drawings shall not remove the responsibility for furnishing materials or equipment of proper dimensions, quantity and quality; nor will such review remove the responsibility for error in the shop drawings or submittals.
- D. Assume all costs and liabilities, which may result from the ordering of any material, or

equipment prior to the review of the shop drawings or submittals, and no work shall be done until the shop drawings or submittals have been reviewed. In case of correction or rejection, resubmit until such time as they are accepted by the Owner's representative and such procedures will not be cause for delay. After the final review, 6 copies will be supplied if requested.

- E. Shop drawings and submittals will be returned unchecked if the specific items proposed are not clearly marked, or if the general Contractor's approval stamp is omitted.
- F. Shop drawings, unless mark-ups are very trivial, will not be returned, "No Exception Taken". They will be returned for re-submittal as many times as necessary, however, the Contractor shall be back charged for engineering review time beginning with the second resubmittal. Therefore, the Contractor should make every effort to comply with the requirements of this Project on the first submittal in order to avoid project delays.
- G. The Contractor shall submit to the Architect complete descriptive and dimensional data on the following items for review and approval when specified or provided:
  - 1. Fire Alarm System Panels, Initiation Devices, and Annunciation Devices
  - 2. Fire Rated Cables and Connectors

## **PART 3.00 METHODS OF INSTALLATIONS**

### **3.01 CONTRACTOR COORDINATION**

- A. The Drawings are diagrammatic in nature. Cooperate with other trades so the interferences of facilities and equipment will be avoided.
- B. Space allocations for materials, equipment and devices have been made on the basis of present and known future requirements and the dimensions of items of equipment or devices of a particular manufacturer. Verify that all materials, equipment and devices proposed for use on this Project are within the constraints of the allocated space.
- C. Coordinate arrangement, mounting, and support of electrical equipment:
  - 1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
  - 2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
  - 3. To allow right of way for piping installed at required slope. So, connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.
- D. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

### **3.02 OPENINGS, CUTTING AND PATCHING**

- A. Cut all openings as required for the electrical work. Patching will be done by the various



crafts whose work is involved. Furnish and install all necessary sleeves, thimbles, hangers, inserts, etc., at such times and in such a manner as not to delay or interfere with the work of other Contractors. Caulk, flash or otherwise make weatherproof all penetrations through the roof and exterior walls.

- B. Where conduit, cable or other items that are provided for under this contract penetrate fire rated walls or floors, the Contractor is to seal around the item to maintain the integrity of the rated system.

### 3.03 PAINTING

- A. Painting shall be performed as described in the painting specifications. No painting will be required by the Contractor except for touch-up of factory finishes on equipment furnished under this contract.

### 3.04 INSTALLATION

- A. Equipment must be leveled and set plumb. Use corrosion resistant mounting hardware. For sheet metal enclosures mounted against a wall provide corrosion-resistant spaces to separate the wall by 1/4 inch or by 3 inches of air for freestanding units.
- B. Unused knockouts on panels and boxes shall be covered with approved cover plates manufactured for the purpose.

### 3.05 TESTS AND INSPECTIONS

- A. The Contractor shall assist in making periodic inspections or tests required by the Architect or Engineer. When requested, the Contractor shall provide the assistance of foremen and qualified craftsmen for reasonable duration of each test, etc.
- B. The contract will not be declared to be substantially complete until all of the following conditions are satisfied.
  1. the functional operation of the subsystems have been demonstrated and verified and reports have been provided, reviewed and accepted.
  2. The "As-Built" drawings have been submitted, reviewed and accepted by the Architect / Owner / Owner's Construction Representative.

### 3.06 SAFETY PRECAUTIONS DURING CONSTRUCTION

- A. It shall be the Contractor's responsibility to furnish and install proper guards and instruction signs for prevention of accidents and to provide and maintain for the duration of construction any installations needed for safety of life and property.

### 3.07 IDENTIFICATION OF EQUIPMENT

- A. Identification of Equipment:

1. Three layer laminated plastic engraved identifying nameplate shall be permanently secured to all disconnect switches, panelboards, switchboards, starters, bus ducts, fire alarm panels, etc.
  - a. Utility Power: White letters on black background
  - b. Identifying nameplates shall have 1/2-inch high, engraved letters for equipment designation and 1/4-inch letters indicating source circuit designation.
2. Junction Box, Outlet Box & Wireway/Gutters: Identify conduits, pull boxes, junction boxes, and outlet boxes with the complete circuit number contained there-in.
  - a. Where low voltage relay panels are used for lighting control, identify the low voltage relay panel and number in addition to the branch circuit panel and number.
  - b. Emergency circuit junction boxes shall have a red painted cover. Circuit identification shall be clearly marked on the cover.
  - c. Fire alarm circuits (only) shall be marked with a half red painted junction box and noted "Fire Alarm" on the cover.

### 3.08 COMPLETION

- A. The Contractor shall leave all electrical equipment with proper connections, and in proper working order. He shall test the entire electrical system to show that it is properly installed. Contractor shall leave all panels and switches completely fused or complete with circuit breakers.

### 3.09 RECORD DRAWINGS

- A. The Contractor shall furnish one (1) complete set of drawings on which any changes in the work shall be shown. In addition to changes in work contractor shall clearly indicate routing of all feeders both above and below ground. All underground conduit shall be noted on drawings to show "as built" locations. These drawings must be turned over to the Architect prior to final acceptance of the work.

### 3.10 GUARANTEE

- A. The Contractor shall guarantee to keep the entire electrical system as installed by him or his subcontractors in repair and in perfect working order for one (1) year from the date of the final Certification of Final Acceptance, and shall furnish free of cost to the Owner, all material and labor necessary to comply with the above guarantee; said guarantee shall be based upon defective material and workmanship. In any case where equipment has a factory warranty exceeding this one-year limit, the full extent of the warranty shall apply.

### 3.11 CLEANING

- A. When all work has been finally tested, the Contractor shall clean all fixtures, equipment, conduits, ducts, and all exposed work. All cover plates and other finished products shall be thoroughly cleaned.

### 3.12 INSTRUCTION MANUALS

- A. The Contractor shall provide three (3) operating and maintenance instruction manuals on all systems and equipment installed in the electrical work.
- B. The Contractor shall provide (3) copies of all warranties and guarantees for systems, equipment, devices, and materials.

### 3.13 ADDITIONAL DEVICES

- A. The Contractor shall include in the price for this project the costs to furnish and installed devices/systems with described below. Any device/system not used shall be returned to the owner at the completion of construction. A credit shall be given for the un-used labor and materials at the completion of the project.
- B. The additional devices/systems included in bid pricing are as follows:
  - 1. Fire Alarm: All devices below shall be complete with conduit, wiring any/all associated programming and any applicable submittal documents for State Fire Marshal Review.
    - a. Thirty (30) speaker/strobe alarm devices
    - b. Ten (10) manual pull stations
    - c. Thirty (30) smoke detectors
    - d. Six (6) control modules
    - e. Ten (10) Duct Detectors
    - f. Two (2) Heat Detectors

### 3.14 CONTRACTOR SPECIAL NOTE

- A. The Contractor is again cautioned to refer to all parts of these Specifications and all Drawings, not just electrical sections, and the individual cross references made to other standard specifications or details describing any electrical work, which may be required under these other sections. The Contractor is cautioned to note carefully any other sections which may reference electrical work in order for this Contractor to fully understand the wiring requirements and electrical work that is required. Any conflicts found between the electrical sections of these Specifications or Drawings shall be immediately directed to the General Contractor for clarification.
- B. These Specifications and the electrical Drawings size equipment, wire, conduit, etc. based on the horsepower of motors and/or wattages of equipment as shown on the plans or specified herein. The Contractor shall install electrical raceways, conductors, fuses, safety switches, breakers, contactors, starters or any other electrical equipment with the capacities to suit the horsepower and/or wattages of the equipment actually furnished and installed. The Contractor shall not furnish or install any electrical raceways, conductors, safety switches, contactors or motor starters of sizes smaller than those shown on the Drawings or specified herein. The Contractor shall coordinate with the various sections of the Specifications and/or Drawings and with the various Sub-Contractors to provide the properly sized equipment without additional cost to the Owner.

END OF SECTION

**DIVISION 26 – ELECTRICAL**  
**SECTION 26 05 50 - BASIC ELECTRICAL MATERIALS AND METHODS**

**PART 1.00 GENERAL**

1.01 GENERAL REQUIREMENTS

- A. All material furnished shall be new and shall conform to all rules and codes as recommended or adopted by the National Association governing the manufacture, rating and testing of the material. All electrical equipment shall be UL listed for the intended use.

**PART 2.00 PRODUCTS**

2.01 RACEWAYS AND FITTINGS

- A. Raceways permitted on this project shall be aluminum rigid conduit; electrical metallic tubing (EMT); flexible metallic tubing; liquid-tight flexible metal conduit; and rigid polyvinyl chloride (PVC) conduit. All conduits shall be new and shall bear the inspection label of the Underwriter's Laboratories, Inc.
- B. Metallic conduit shall be metalized, or hot-dipped galvanized. Non-metallic conduit shall be schedule 40 PVC.
- C. Fittings for conduit shall be an approved type specially designed and manufactured for their purpose. EMT fittings shall be water tight, compression type. Rigid metal conduit fittings, bushings, and other components shall be aluminum. All fittings for rigid steel or aluminum conduit shall be threaded and coupled unless specifically approved otherwise by the Engineer.
- D. Where conduit connects to an outlet box, it shall have an insulated throat type connector.

2.02 EXPOSED CONDUIT

- A. Exposed conduit shall be firmly supported on galvanized hangers; on brackets, hangers, or pipe straps; or by beam clamps. Conduit installed exposed shall be neatly aligned and run at right angles to the building walls or walls of the rooms in which installed. All exposed conduit shall be located to avoid all conflicts with architectural or mechanical components.

2.03 FLEXIBLE CONDUIT

- A. Liquid-tight flexible metal conduit shall have a spiral wound, flexible, galvanized steel core and a tough extruded synthetic moisture-tight outer covering. All flexible conduits shall be UL listed.

2.04 CONDUIT

- A. Each piece of conduit shall be straight, free from blisters and other debris, cut square and

taper reamed, and furnished with coupling in 10 foot length threaded each end.  
exterior locations.

## 2.05 WIRE (600 VOLT AND BELOW)

- A. All conductors used in the work shall be of soft drawn annealed copper having a conductivity of not less than 98% of that of pure copper. Conductors shall be standard code gauge in size, insulated and shall have insulation rated for use at 600 volts.
- B. Unless noted otherwise or specified, insulation shall be type THW, THWN, or THHN for sizes up to and including No. 2 AWG. Insulation for wire sizes larger than No. 2 AWG shall be type THW, XHHW, or THHN. Lighting fixture wire shall be heat resistant type TF (150°C) with 300-volt insulation minimum. Wires shall be of the single conductor type. Sizes No.14 AWG and larger shall be stranded. No wire shall be single strand solid copper.
- C. Throughout the system, all conductors shall be identified as to the phase and voltage of the system by color-coding in accordance with NEC 210.5. Color-coding shall be continuous the full length of the wire with surface printing at regular intervals on all conductors and for neutral conductors.
- D. Color coding shall be as follows:

### 3phase, 208V System

Phase 1-Black

Phase 2-Red

Phase 3-Blue

Neutral-White

Ground-Green

## 2.06 FIRESTOPPING PRODUCTS

- A. The Contractor shall provide and install at all fire-rated wall through-penetrations, a non-hardening, conformable firestop system. The system shall consist of a water insoluble putty and suitable damming materials (where required). The non-hardening putty shall be a two-staged intumescent and capable of expanding up to 8 times its original volume. This putty shall contain no asbestos, no fiberglass, no solvents nor corrosive mineral salts of any kind. It shall remain soft during its installed life and shall be capable of being removed and reinstalled to facilitate the addition of cables or pipes. The putty shall exhibit aggressive adhesion to all common building materials and penetrants and shall allow reasonable movement of penetrants without being displaced. The firestop system shall be tested to the time/temperature requirements of ASTM E119 and shall be tested to UL 1479 (ASTM E814) and Classified for up to 3 hours.

## **PART 3.00 EXECUTION**

### 3.01 WIRING - GENERAL

- A. Unless otherwise specified, all wiring shall be installed in conduit. No wire shall be smaller than No. 12 unless noted otherwise. Wiring for low voltage control may be #14 AWG. Wire for each branch circuit shall be of single size and type from the branch circuit protective device the last outlet of the circuit. BX wiring shall not be allowed.
- B. Wiring for branch circuits shall run the entire length without splices, with splices and joints made only at outlets or in accessible junction boxes only when absolutely necessary and approved by the Engineer. Joints and splices in branch circuit wiring shall be made with compression type solderless connectors.
- C. Connectors of the non-metallic screw on type are not acceptable. Terminations or splices for conductors No. 6 AWG and larger shall utilize bolted connecting lugs. All splices and terminations shall be insulated in an approved manner by an integral or separate cover or by taping to provide insulating value equal to that of the conductors being joined.
- D. Branch circuit home run numbers shown on the drawings shall be used as a guide for connection of circuit wiring to similarly number protective devices in branch circuit panelboards. Requests for changes in the plans shall be directed to the Engineer. No changes shall be made without approval from the Engineer.
- E. Each circuit shall be furnished with its own neutral conductor. There shall be no sharing of neutral conductors.
- F. In instances where a junction box, wireway, etc. contains three (3) or more branch circuits, the feeders shall be labeled within the junction box, wireway, etc. with circuit location, including panel name and breaker number. Labeling shall be neatly typed and affixed to each feeder. Labeling shall meet all applicable Code requirements.

### 3.02 ELECTRICAL SERVICE GROUNDING

- A. Main electrical service equipment, conduit work, motors, panelboards and all other electrical equipment shall be effectively and permanently grounded. Grounding connections and conductor sizes shall be in accordance with requirements of the National Electrical Code, Article 250 and local or State ordinances.
- B. All conduit entering panelboards shall be grounded to the panelboard by means of a grounding type locknut installed on the inside of the panelboard. Where the continuity of the metallic conduit system is interrupted by a run of non-metallic conduit, a separate grounding conductor, sized in accordance with NEC Table 250.122 shall be run in the conduit with the insulated conductors. A separate grounding conductor, as described above or as called for on the plans, shall be run in the conduit with the circuit conductors for all circuits serving multi-outlet assemblies.
- C. Conduit runs shall be increased in size where necessary to accommodate the grounding conductor in addition to circuit conductors. The grounding screw on all grounding type receptacles shall be securely grounded to the outlet box using a No. 12 green insulated

conductor attached to the outlet box with lug screw.

### 3.03 CONDUIT - MATERIALS AND METHODS

- A. Conduit shall be installed as per NEC and NEMA regulations and the manufacturer's recommendations. Conduit shall be as follows:
- B. Rigid Steel Conduit shall be used for all conduits exposed to the weather, and underground conduit except where non-metallic conduit is specified or approved. Underground and under slab runs are to be watertight. All horizontal runs of underground conduit shall utilize rigid steel elbows on vertical risers. Conduits used for receptacles and run under the building slab, shall be hot dipped galvanized rigid steel and shall be 3/4" minimum size.
- C. All conduits routed underground shall not be placed in building slab. Conduits larger than 1" routed under building slab shall be routed below the vapor barrier. Minimum conduit size allowed to be routed underground shall be 3/4". Conduits routed under building slab may be PVC. All conduits rising vertically out of slab or out of ground shall be type RMC to 48" above finished floor.
- D. Electrical Metallic Tubing shall be used for all other feeders, branch circuit and communications and control wiring where rigid steel or non-metallic conduit is not specified.
- E. Non-metallic conduit, minimum schedule 40 PVC, shall be permitted to be installed underground. Non-metallic conduit shall not be used in any environmental air plenum. If PVC conduit is run, a full sized grounding conductor shall be pulled with the circuit conductors. PVC conduit shall not be run exposed. Where PVC conduit is run underground, it shall be encased in concrete or run minimum 24" below grade, or at the depth below grade shown on the drawings.
- F. Flexible metallic tubing and EMT shall only be permitted in spaces above finished ceilings and within enclosed walls within the interior of buildings. Flexible metallic tubing shall only be permitted for the final four (4) feet of conduit runs to fixtures located above finished ceilings. No flexible metallic tubing or EMT will be permitted exposed. Also, EMT may not be installed in or below concrete slabs.
- G. Flexible metal conduit or liquid-tight flexible metal conduit shall be used for the final connection of runs to motors. Flexible conduit shall be at least twelve (12) inches, but not more than 48 inches long. Where used, an external grounding conductor shall be run with conduit unless conductor is made as a part of the conduit.
- H. Conduits installed underground and used for communications system wiring shall be reviewed with the communications contractor prior to installation. Conduits below the vapor barrier may require moisture proof wiring to comply with the structured connectivity solution. Conduits may need to be installed above the vapor barrier to maintain connectivity solution compliance.



### 3.04 CONDUIT - GENERAL

- A. Fittings for rigid steel conduits shall be hot-dipped galvanized steel and shall be of a type especially designed and manufactured for their purpose. Fittings for EMT shall be die cast zinc type. Rigid conduit joints for single conduit runs shall be made with threaded fittings made tight with at least five threads fully engaged. Fittings for rigid non-metallic conduit shall be solvent welded.
- B. Where they enter boxes or cabinets that do not have threaded hubs, conduits shall be secured in place with galvanized locknuts inside and outside the cabinet and shall have bushings inside. Conduits larger than 1-1/4 inch shall have galvanized locknuts and galvanized bushings.
- C. All conduits shall be installed concealed or as indicated or scheduled on the drawings and shall be of sufficient size to accommodate the required number of insulated conductors including equipment grounding conductor where such grounding conductor is required or specified.
- D. Conduit runs shall be straight; elbows and bends shall be uniform, symmetrical and free from dents or flattening. Exposed conduit shall be firmly supported on galvanized hangers; on brackets, hangers, or pipe straps; or by beam clamps. Conduit installed exposed shall be neatly aligned and run at right angles to the building walls or walls of the rooms in which they are installed. All exposed conduit shall be located to avoid all conflicts with architectural or mechanical components.
- E. Pull boxes shall be installed as required to permit proper installation of conductors and expansion fittings installed where conduit runs cross building expansion joints.
- F. Conduit shall be run no closer than six (6) inches to covering of hot water or steam piping except where crossings are unavoidable. Conduit shall be kept at least one (1) inch from crossing steam and hot water piping.
- G. Conduit shall be held securely in place by hangers and fasteners of appropriate design and dimensions for the particular application. Support shall be such that no strain will be transmitted to outlet box and pull box supports. Wire shall not be used, with or without spring steel fasteners, clips or clamps, for the support of any conduit. Conduit shall not be supported by or attached to duct work unless specifically allowed otherwise.
- H. Hangers and other fasteners shall be supported on solid masonry with inserts or expansion sleeves and bolts, on wood with wood screws, hollow masonry with toggle bolts, on steel with machine screws or welded threaded studs. Fastenings shall be proof tested by the Contractor for secure mounting.
- I. All conduits shall be cut square and reamed at the ends. The conduit system shall be complete and cleaned before any conductors are installed. Open ends of all conduits shall be capped until conductors are installed. A non-metallic fish wire shall be installed in all

empty conduits. Empty conduit shall remain capped.

- J. Contractor shall refer to National Electrical Code Appendix C, Conduit and Tubing Fill Tables for Conductors and Fixture Wire of the Same Size. Contractor shall refer to the appropriate table for the conduit and wire condition and shall install wiring in accordance with code requirements.
- K. Contractor shall provide pull box for every 270 degrees of bend. This shall apply to underground and above ground conduit. Where the run is under slab, contractor shall provide an appropriate pull box for the traffic rating.

### 3.05 FLEXIBLE CONDUIT

- A. Flexible metal conduit may be used for short final connections to equipment where permitted by governing codes. Flexible metal conduit shall be sized and supported in accordance with Article 350 of the NEC or more stringent local codes. A separate equipment-grounding conductor sized in accordance with NEC Table 250.122 shall be installed in flexible conduit unless exceptions are allowed by governing codes and if the fittings used are UL listed for the purpose.
- B. Liquid-tight flexible metal conduit shall be used where flexible conduit is permitted and desired and conditions of installation, operation, or maintenance require protection from liquids, vapors, or solids and in other hazardous locations where specifically approved. Flexible conduit for all exterior motor connections shall be liquid-tight. Liquid-tight flexible conduit shall be used with terminal fittings approved for the purpose.

### 3.06 FIRE-RATED WALL AND FLOOR THROUGH-PENETRATIONS

- A. All fire-rated walls or floors penetrated by this Contractor shall be properly sealed with fire stopping materials. All floor through-penetrations shall be fire stopped with a light-weight mortar material. Wall through-penetrations shall be fire stopped with a non-hardening putty material. Contractor shall see that all penetrations are fire stopped and seals are inspected.

### 3.07 SUPPORTS AND FITTINGS

- A. The Contractor shall furnish and install all supports for equipment under this contract. Supports shall be spaced at intervals of eight (8) feet maximum for rigid conduit and five (5) feet maximum for EMT and as necessary to obtain rigid support. Perforated strap supports will not be permitted.
- B. All conduits shall be firmly secured with pipe clamps, conduit straps, or suspension hangers as appropriate. Fasten to steel with screws in tapped holes, to wood with wood screws, and to masonry with expansion anchors. Expansion anchors shall have a minimum pull out load of 1,200 pounds and an ultimate shear load of 1,950 pounds.
- C. All conduit, fixtures, and accessories shall be rigidly supported to form a firm, well-braced

installation.

- D. Joints shall be made tight with standard galvanized or sheradized couplings; corners turned with fittings, elbows, or long radius bends.
- E. Low voltage wiring installed above accessible ceilings shall be supported on J-hooks. J-hooks installed for communications system wiring shall not be used for other low voltage system wiring (fire alarm, security, EMS controls, etc.).

### 3.08 WEATHERPROOF EQUIPMENT

- A. All disconnect switches, starters, and other electrical equipment located on the exterior of the building or exposed to the outside shall be enclosed in a rain-tight enclosure.

### 3.09 MOUNTING HEIGHTS

- A. Unless otherwise noted on the drawings or required by the Engineer, the following mounting heights shall apply:

Fire Alarm Manual Stations	4'-0"
Fire Alarm Annunciation Devices	80" or 6" below ceiling (whichever is lower)

- B. Upon permission of the Engineer, mounting heights may be adjusted to simplify cutting of masonry units or to facilitate furniture and cabinet arrangements. Dimensions above refer to the centerline of the device unless noted otherwise.

END OF SECTION

**DIVISION 28 – FIRE PROTECTION**  
**SECTION 28 31 00 - FIRE DETECTION AND ALARM**

**PART 1.00 GENERAL**

1.01 INCLUDED IN THIS SPECIFICATION

- A. Provide a complete fire alarm system per this project's plans and specifications. The system shall include a state-of-the-art, software-based control panel using addressable and analog type initiating devices and be capable of voice evacuation capabilities. System shall include an incident management platform tied to a local monitor that indicates status of every device on the system.

1.02 RELATED WORK

- A. The Contractor shall coordinate work in this Section with all related trades. Work and/or equipment provided in other Sections and related to the fire alarm system shall include, but not be limited to:
1. Sprinkler waterflow and supervisory switches shall be furnished and installed by the fire protection contractor, but wired and connected by the electrical contractor. Modification of existing sprinkler devices to accommodate monitoring by the new fire alarm system shall be the responsibility of the fire alarm system installing contractor.
  2. Duct smoke detectors shall be furnished, wired and connected by the electrical contractor. The HVAC contractor shall furnish necessary duct opening to install the duct smoke detectors.
  3. New air handling and smoke exhaust system fan control circuits and status contacts to be furnished by the HVAC control equipment.
  4. Elevator recall control circuits to be provided by the elevator control equipment. Modifications to the existing elevator controls to accommodate ANSI A17.1 shunt trip activation shall be provided by the elevator controls contractor. Any shunt trip circuit breakers and related wiring required for ANSI A17.1 compliance shall be provided by the electrical contractor.
  5. Dry pipe/deluge sprinkler system release valve control circuits and supervision contacts shall be provided by the dry pipe/deluge sprinkler system control equipment.
  6. Fire pumps (manual, automatic and special service) status monitoring.
    - a. Pump failure (fail to start) indication
    - b. Pump running indication
    - c. Phase reversal indication
  7. Emergency generator status monitoring
    - a. Running indication
    - b. Fail to start indication
  8. Existing IP network interface
    - a. Coordinate with the owner's IT department for interconnection between the owner's existing TCP/IP network and the TCP/IP network equipment supplied under this contract.

## 1.02 REFERENCES

- A. Electrical Industries Association (EIA):
  - 1. RS-232-D – Interface Between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange
  - 2. RS-485 – Electrical Characteristics of Generators and Receivers for Use in Balanced Multipoint Systems
  
- B. National Fire Protection Association (NFPA):
  - 1. NFPA 12 – Standard on Carbon Dioxide Extinguishing Systems.
  - 2. NFPA 13 – Installation of Sprinkler Systems.
  - 3. NFPA 15 – Standard for Water Spray Fixed Systems for Fire Protection.
  - 4. NFPA 16 – Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems.
  - 5. NFPA 16A – Standard for the Installation of Closed Head Foam-Water Sprinkler Systems.
  - 6. NFPA 70 – National Electrical Code (NEC).
  - 7. NFPA 72 – National Fire Alarm Code 2010 Edition
  - 8. NFPA 90A – Standard for the Installation of Air Conditioning and Ventilating Systems.
  - 9. NFPA 101 – Life Safety Code 2012 Edition
  - 10. NFPA 750 – Standard on Water Mist Fire Protection Systems.
  - 11. NFPA 5000 – Building Construction and Safety Code.
  - 12. IBC Chapters 9 & 10 2012 Edition
  - 13. ADAAG Americans with Disabilities Act Application Guidelines
  
- C. Fire Alarm Control Panel Equipment: System shall comply with applicable provisions of the following UL standards and classifications:
  - 1. UL 864 9<sup>th</sup> Edition
  - 2. UOJZ, Control Units, System.
  - 3. SYZV Control Units, Releasing Device.
  - 4. UOXX, Control Unit Accessories, System.
  
- D. The Fire Alarm Control Panel's U.L. Listed signaling types shall be:
  - 1. Digital alarm communicator
  - 2. Other Technology

## 1.03 SUBMITTALS

- A. Equipment Submittal Brochures:
  - 1. Provide minimum 10 copies of submittal brochures and shop drawings.
  - 2. Submittal brochures shall be bound my means of 3 ring binders, binding combs or similar. Stapled brochures will be rejected.
  - 3. Provide one submittal brochure in color, highlighted and reserved for use by the Louisiana State Fire Marshal Plan Review Office. This copy shall become the record copy for the project.

4. Include a cover page that indicates the following minimal information:
  - a. Project name and address.
  - b. Engineered systems distributor's name and contact information.
  - c. Installing contractor's name and contact information.
  - d. The date of the equipment submittals and date of any subsequent required re-submittals. Indicate on revised submittals the original submittal date and re-submittal date.
  - e. Architectural project review number assigned by the Louisiana State Fire Marshal's Office.
5. Provide a Scope of Work Narrative describing the system's basic operating premise in written word.
6. Provide a detailed Sequence of Operation Matrix Grid tailored for this project indicating the cause and effect of all fire alarm system control panels, input and output functions.
7. Include a system bill of material prepared specifically for this project. Include the make, model, description, quantity and manufacturer for every component to be installed in the project.
8. Provide manufacturer's data sheet for each component to be installed in the project. For data sheets that include multiple part numbers, options and accessories, the components included or pertinent to this project shall be highlighted in yellow.
9. Include the U.L. (Underwriters Laboratories) Certification for each component to be installed in the system. The U.L. Certification shall be placed directly behind its corresponding data sheet.
10. Manufacturers device compatibility documentation shall be included proving testing and operational compatibility between control panels and peripheral devices.
11. Separate battery calculations shall be provided for each control panel and prepared on manufacturer's official worksheets.

B. Shop Drawings

1. Shop drawings shall be prepared with the contractor's own title block which shall include:
  - a. Project name and address.
  - b. Contractor's name, address and phone number.
  - c. Date.
  - d. Drawing pages shall be numbered.
  - e. Bound with spines and stapled.
  - f. Floor plan scale.
  - g. Louisiana State Fire Marshal architectural assigned project number.
  - h. Revision number with re-submittal dates.
2. Drawings shall contain one floor per page. If a floor must be split use match lines and references that refer sheet number to match lines.
3. Floor plan shop drawings shall be prepared in AutoCAD.
4. Prepare floor plans to a 1/8" = 1'-0" scale unless directed otherwise by the architect.
5. Show all equipment, control panels, and device locations.

6. Include a distinct address for every device including panels, initiating, notification, auxiliary, and peripheral devices. All visual notification appliances shall have their candela indicated.
7. Floor plans shall include the following:
  - a. Door swings.
  - b. Room names and numbers.
  - c. Reflected ceiling plan overlay.
  - d. Ceiling heights.
  - e. Fire and smoke barriers.
  - f. Office furnishings when available.
8. Include a symbol schedule of devices for this project.
9. Include the necessary details and general notes for mounting heights, device placement restrictions, etc.
10. End-of-line symbols shall be shown on the floor plans.
11. Riser locations shall be indicated on the floor plan by a bold circle.
12. A detailed riser shall be provided as part of the shop drawings. The riser shall include:
  - a. Control panels, power supplies, annunciators, demark cabinets, each identified with its own address and description matching the symbol schedule.
  - b. Operating power requirements with breaker panel and breaker number identification.
  - c. All system circuits including initiating, notification, SLC, power, control, monitor, network, audio, riser, fiber optic, phone, category cable and auxiliary circuits. Circuits shall be individually addressed indicating wire type, size, quantity and color.
  - d. Provide a point to point diagram of every system device on its riser circuit using the exact device symbol as the floor plan. Provide the corresponding device address and candela rating next to each device.
  - e. Provide the cumulative current draw at the end of each notification appliance circuit.
  - f. Indicate location and placement of surge suppressors.
  - g. Provide detail circuit diagrams for connections with systems from other trades.

#### 1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name, number and manufacturer.
- B. Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
- C. Protect materials from damage during handling and installation.

#### 1.05 WARRANTY

- A. Contractor shall warranty material and installation against defects in manufacturing and workmanship for a period of one year beginning on the date of final acceptance of the project. Warranty related service calls shall be provided at no charge during the contractor's normal working hours.

## **PART 2.00 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. The following are acceptable manufacturers and series for control panels. No substitutions are allowed.
  - 1. EST4 Series
  - 2. Gamewell E3 Series
- B. References to manufacturer's model numbers and other information is intended to establish minimum standards of performance, function, and quality. No other manufacturers, other than those listed will be considered for use on this project.
- C. Substitute equipment proposed as equal to equipment specified shall meet or exceed requirements of this section. For equipment other than Gamewell-FCI S3 Series provide proof that such substitute equipment equals or exceeds features, functions, performance, and quality of specified equipment. This proof shall be provided by submission of a copy of specification with each copy of the submittals that has had each paragraph marked as either compliant or non-compliant along with a letter from engineering manager or product manager at factory that certifies information presented as either compliant or non-compliant including a detailed explanation of each paragraph identified as non-compliant. In order to ensure that the Owner is provided with a system that incorporates required survivability features, this letter shall also specifically certify that the system is capable of complying with the test requirements of this section.

### **2.02 FIRE ALARM SYSTEM**

- A. Control Panel shall be EST4 or Gamewell E3 Series with integral audio controls inside the cabinet.
- B. System shall include a graphical command and control system fireworks or equal monitoring equipment/software. This shall include but is not limited to:
  - 1. 22" Monitor
  - 2. Server
  - 3. Workstation
  - 4. Programming of device locations on accurate floor plan

### **2.03 CONTROL PANEL**

- A. System Cabinet
  - 1. Shall be all metal with a textured finish suitable for surface or semi-flush mounting. Cabinets containing anything non-metal are not acceptable.



2. Front door of steel construction with lockout or dead-front inner door of steel construction to conceal internal circuitry and wiring.
  3. Cabinet shall be capable of housing 12 amp hour batteries.
  4. Cabinet shall be pre-fabricated to accept all available internal circuitry. Installations with loosely hanging internal panel components will not be accepted.
- B. Main Power Supply
1. Shall incorporate the latest power-saving switching technology using no step-down transformers.
  2. Shall provide minimum 7 amps of continuous rated output to supply all necessary power under normal and emergency conditions.
  3. Shall include an internal battery charger capable of charging up to 55 amp hour batteries while under full load.
- C. Batteries
1. Provide U.L. Listed batteries of sufficient capacity to provide power for the entire system automatically upon loss of AC power for a period of 24 hours with 15 minutes of alarm signaling at the end of the 24 hour period.
  2. Battery connectors shall be the exact size and type required for the standby battery posts or tabs.
  3. Connect batteries to the main panel with minimum 14 AWG stranded hook up wire. Red for positive and black for negative. Use fully insulated crimp style connectors.
- D. Battery Cabinets
1. Provide U.L. listed metal battery cabinet and enclosures with key lockable door for installations requiring batteries too large to be housed in control panels.
  2. Battery cabinet shall be textured painted to match the control panel it is housing the batteries for.
- E. Display
1. Main control panel shall include a color touch screen display for user interface.
  2. Display shall be capable of a minimum 200 characters.
  3. The touch screen communications shall be textual RS-485 based with the capability of being mounted locally or remotely.
  4. The display shall provide both audible and visual annunciation of all system events.
  5. Separate LED's shall be dedicated for:
    - a. AC (normal power): Green
    - b. Fire: Red
    - c. Hazard: Blue
    - d. Supervisory: Yellow
    - e. Trouble: Yellow
    - f. Silenced: Yellow
  6. Pre-programmed keys shall be on board for:
    - a. Menu
    - b. Fire Drill

c. System Reset

7. Display shall contain a minimum 5 keys that can be custom programmed for system functions
8. The display shall be suitable to be remotely installed as a remote annunciator up to 3,000 feet away from the main CPU cabinet. The remote display shall be available with a manufacturer's custom metal cabinet suitable for surface or semi flush installation complete with a lockable see through door and textured finish matching the main control cabinet.

F. Main System CPU

1. System CPU shall incorporate a 32-bit RISC multiprocessor design on a single circuit board. An isolated watchdog circuit shall monitor the microprocessor and shall activate system trouble on the display upon any failure. The system program shall not be lost upon any loss of power. The CPU software shall support control-by-event (CBE) programming using Boolean logic including AND, OR, NOT, XOR and TIMING functions to provide complete custom programming flexibility. An auto programming option shall be available where only devices that are present on the SLC shall activate.
2. System shall be programmed via the manufacturer's proprietary field configuration program (FCP), allowing the project configuration custom programming to be uploaded and downloaded via a portable laptop computer at the project.
3. An RJ-45 Ethernet port shall be provided to accept downloaded programs from a portable computer, or provide 80-column readout of all alarms, troubles, location descriptions, time, and date. Communication shall operate at 10/100 speeds.
4. An on-board supervised RS-232C Serial Output shall be included to operate remote printers and video terminals.
5. The system CPU shall include an on-board supervised RS-485 Serial Output for connection and communication to system modules. The RS-485 port shall allow for communication with remote annunciator modules up to 3,000' from the cabinet.
6. Smoke detector alarm verification shall be a standard software option while allowing other devices such as manual stations and sprinkler flow to create immediate alarms. This feature shall be selectable for smoke sensors that are installed in environments prone to nuisance or unwanted alarms.
7. Standard software shall provide for the analog drift compensation of smoke detectors allowing each smoke detector to automatically adjust its sensitivity to accommodate changes caused by the effects of component aging or its surrounding environment including dust. Each sensor shall maintain its actual sensitivity under adverse conditions to respond to alarm conditions while ignoring factors which generally contribute to nuisance alarms. System trouble circuitry shall activate, display smoke detectors that require cleaning and maintenance.
8. System software shall automatically test each analog smoke sensor a minimum of 3 times daily. Test shall be a recognized functional test of each photocell (analog photoelectric sensors) and ionization chamber (analog ionization sensors) as required annually by NFPA 72. Failure of sensor test shall activate system trouble circuitry, display "Test Failed" indication, and identify individual device that failed.
9. The system control panel shall be capable of setting any detector or sensor into Positive Alarm Sequence mode. Positive Alarm Sequence will operate in the

following manner. Any alarms received from a device will activate an alarm at the control panel but will not execute any output functions (e.g. turning on the strobes or fire horns). The operator has 30 seconds to “acknowledge” the event or the system will activate a general alarm and sound all the fire horn and strobes. If the operator does acknowledge the vent within thirty (30) seconds, the panel will start a timer for 180 seconds (3 minutes) in which time the operator must find the device in alarm and reset the device. If the operator has not performed a reset within 180 seconds or a second device reports an alarm, the system will immediately sound the general alarm.

10. The CPU display shall have the option of being configured as an additional remote annunciator. This annunciator shall be mounted in its own metal cabinet with lockable door.
  11. The CPU shall maintain a 4100 event history log. The log shall be maintained upon loss of any power.
  12. 24 volt D.C. power-limited 1 amp outputs shall be provided for both resettable and non-resettable power. The outputs shall be screw terminal on board the CPU board.
  13. Manufacturer’s standard software shall accommodate a 1 man walk test feature.
- G. Signaling Line Circuits
1. Provide 1 SLC loop for this project. Projects including more than 1 floor shall include a second SLC loop. Each SLC shall be capable of being wired Class B Style 4 or Class A Style 6 and shall operate in NFPA Style 7 configuration when equipped with isolator modules.
  2. Each SLC shall accommodate a maximum 159 analog sensors and 159 monitor/control devices.
- H. Notification Appliance Circuits
1. The CPU shall include a minimum 4 on-board polarized NAC circuits rated at 2 amps DC each. Each NAC shall be capable of being wired Class B, Style Y or Class A, Style Z.
- I. Dry Contacts
1. Form C dry contacts with a 2 amp at 30VDC resistive rating shall be included on-board the CPU for alarm, trouble and supervisory events.
- J. DACT
1. Fire alarm control panel shall include a Digital Alarm Communicator Transmitter (DACT) for signaling to central station. DACT shall contain “Dialer-Runaway” feature preventing unnecessary transmissions as result of intermittent faults in system and shall be Carrier Access Code (CAC) compliant, accepting up to 20-digit central station telephone numbers. Fire department shall be consulted as to authorized central station companies serving municipality. Fire alarm system shall transmit both alarm and trouble signals, with alarm having priority over trouble signal. Contractor shall be responsible for all installation charges and Owner will be responsible for line lease charges

2. DACT shall be a U.L. listed internal component of the main control panel and shall be capable of transmitting specific detailed point by point system events to the monitoring station.
3. Systems using external standalone digital communicators will not be accepted.

K. Cellular/IP COMMUNICATOR

1. Provide a dual path commercial fire communicator as part of this project.
2. Acceptable manufacturers:
3. Fire-Lite Alarms Model IPGSM-4G by Honeywell. All equipment must be available "over the counter" through security equipment distributor network markets and can be installed by dealerships who are independent of the manufacturer. No substitutions allowed.
4. The central station's supervisory equipment shall be Honeywell's AlarmNet Network Control Center.
5. Contract the services of a monitoring company sub-contractor or distributor to provide, program the communicator and provide monitoring of the system.
6. The communicator shall use the internet or GSM cellular network as a primary transmission format.
7. IPGSM-4G Communicator is connected to any Fire Alarm Control Panel DACT telephone ports, the system shall be capable of transmitting Contact ID formatted alarms, supervisory or troubles to a Honeywell's AlarmNet Network Control Center equipped with a Honeywell AlarmNet receiver via Ethernet over a private or public WAN/LAN, Intranet or Ethernet.
8. The IPGSM-4G Communicator shall include connections to the Fire Alarm Control Panel's phone outputs and shall convert the contact ID protocol into Ethernet Packets.
9. The IPGSM-4G Communicator shall be completely field-programmable locally from a 7720P Programming Tool.
10. The IPGSM-4G Communicator shall be capable of transmitting events in contact ID format.
11. Communication shall include vital system status such as:
  - a. Independent Zone (Alarm, trouble, non-alarm, supervisory)
  - b. Independent Addressable Device Status
  - c. AC (Mains) Power Loss
  - d. Low Battery and Earth Fault
  - e. System Off Normal
  - f. 24 Hour Test Signal
  - g. Abnormal Test Signal (per UL requirements)
12. The IPGSM-4G Communicator shall support independent zone reporting via the Contact ID format. This format shall enable the central station to have details concerning the location of the fire for emergency response. The IPGSM-4G Communicator shall be capable of providing simulated phone lines to the Fire Alarm Control Panel. The IPGSM-4G Communicator shall communicate over IP or GSM primary and shall be transparent to the Fire Alarm Control Panel normal operation over phone lines.

## 2.04 PRINTERS

- A. A printer shall not be required for this project.

## 2.05 SUPPLEMENTARY NOTIFICATION APPLIANCE POWER SUPPLIES

- A. The following are acceptable manufacturers and series for supplementary notification appliance circuit power supplies. No substitutions are allowed. It is the intent of this specification that all notification equipment must be available over the counter through security equipment distributor network markets
  - 1. APS6 of APS10 with the appropriate amp.
- B. The supplementary NAC power supply shall offer up to 6.0 amps continuous regulated 24-volt power. The power supply shall include the following features:
  - 1. Integral Charger: Charge up to 35.0 amp-hour batteries and support 60-hour standby.
  - 2. 2 Input Triggers. Input trigger shall be Notification Appliance Circuit (from fire alarm control panel) or supervised addressable relay.
  - 3. Surface-mount back box.
  - 4. Ability to delay AC fail delay in accordance with applicable NFPA requirements.
  - 5. Power limited circuitry in accordance with applicable UL standards.
  - 6. Operates as sync follower or a sync generator.
  - 7. Shall have on-board built in sync capability for System Sensor and Wheelock brand appliances.
- C. Do not exceed 75% of the power supply's available listed current. Provide the necessary quantity of power supplies to satisfy this requirement with the quantity of devices indicated on the plans.

## 2.06 VOICE EVACUATION PANEL

- A. Provide a standalone voice evacuation panel from one of the approved manufactures:
  - 1. Edwards
  - 2. Honeywell
- B. The voice evacuation panel shall be a single assembly complete with metal lockable enclosure, power supply, amplifier, audio controller board and supervised hand-held microphone.
- C. Provide a system with 4 on-board circuits capable of supervising U.L. listed speakers.
- D. The amplifier shall provide a minimum of 50 watts of output power on either 25 or 70.7 Vrms circuits.
- E. The panel shall support a minimum of two pre-recorded messages and have the capability of adding application specific messages through the use of a P.C.
- F. The system audio notification emergency message shall initiate automatically from a supervised D.C. polarity reversing fire alarm notification appliance circuit.

- G. The power supply shall be capable of charging up 18 amp hours batteries.
- H. The audio controller board shall be complete with form C dry trouble and alarm contacts, and LED's for the following:
  - 1. Speaker circuit trouble
  - 2. Alarm
  - 3. Microphone trouble
  - 4. Ground fault
  - 5. Low battery
  - 6. Power fail
- I. The system shall be available with a U.L. listed remote microphone accessory manufactured for the system.

## 2.07 SYSTEM PERIPHERALS

- A. Every devices address shall be set by means of a rotary-decimal switch using a standard screwdriver. Devices using or requiring binary switches, handheld device programmers or addressed only through software mapping shall not be acceptable.
- B. Smoke detectors
  - 1. Shall be fully listed and compatible with the furnished system.
  - 2. Each detector shall be provided with 2 status LEDs that shall flash under normal conditions and remain steady during alarm conditions.
- C. Pull Stations
  - 1. Shall be fully listed and compatible with the furnished system, dual action, and constructed of Lexan with clearly visible operating instructions provided on cover. The word FIRE shall appear on front of stations in raised letters.
  - 2. Stations shall be designed so after actuation they cannot be restored except by key reset.
  - 3. Stations shall be keyed alike with the fire alarm control panel and NAC power supply.
  - 4. Surface boxes shall be available as an option from the manufacturer.
  - 5. Pull stations shall not utilize glass rods.
- D. Duct Detectors
  - 1. Duct detectors shall be System Sensor DNR or DNRW Series housings.
  - 2. Housings and all the related accessories listed below shall be provided for the each of the following:
    - a. On the ductwork of every supply branch of every HVAC air handling/rooftop unit exceeding 2,000 CFM
    - b. On the ductwork of every return branch of HVAC air handling/rooftop unit exceeding 2,000 CFM. Where duct detectors cannot be practically or effectively installed on return ductwork, securely fasten the duct detector

on the side of the AHU and install and secure its sampling tube across the front of the return air filter.

- c. On every shown smoke and fire/smoke damper. Where duct detectors cannot be practically installed on dampers consult with the general contractor to coordinate their installation with other trades.

- 3. The housing shall include the listed addressable photoelectric smoke detector head which shall twist in and lock inside the housing.
- 4. Provide System Sensor DST Series sampling tube of enough length to extend 75% of the width of the duct it is being installed in. Sampling tubes in ducts exceeding widths of 6 feet shall extend and install across the entire width of the duct and be supported by drilling a hole in the opposite side of the ductwork.
- 5. A System Sensor model RTS151KEY module shall be installed for each duct detector. Provide phenolic labels identifying the related HVAC unit it is connected to. The RTS151KEY module shall mount in a standard single gang electrical box. Verify and coordinate location of RTS151KEY modules with architect.
- 6. Provide one addressable relay module for each HVAC required function including:
  - a. AHU Shutdown
  - b. Smoke damper operation
  - c. Smoke sequence/exhaust/pressurization operations
- 7. System designs incorporating hardwired, conventional relays for any mechanical functions are not allowed and will be subsequently rejected.

E. Thermal Detectors

- 1. Shall be listed and compatible with the furnished system.
- 2. Detector shall be rated at 135 degrees and shall have rate of rise element rated at 15 degrees per minute.

F. Addressable Monitor Modules

- 1. Where required provide addressable monitor modules to monitor normally open dry contacts from other non-addressable equipment.
- 2. Module shall be suitable for installation on a standard 4" square electrical box 2-1/8" deep and shall include the manufacturer's matching cover plate.
- 3. An LED shall be visible on the outside of the module's cover plate and shall flash under normal conditions and remain on steady when it's connected device is in alarm.
- 4. Modules not suitable for mounting directly onto a 4" square electrical box or those which wire with pigtail type connectors are not acceptable.

G. Supervised Addressable Output Module

- 1. Provide addressable supervised output module where required for the project to provide a supervised, programmed 24volt DC reverse polarity output.
- 2. Module shall be suitable for installation on a standard 4" square electrical box 2-1/8" deep and shall include the manufacturer's matching cover plate.
- 3. An LED shall be visible on the outside of the module's cover plate and shall flash under normal conditions and remain on steady when the module is activated.

H. Addressable Relay Output Module

1. Provide addressable modules suitable for installation on a standard 4" square electrical box 2-1/8" deep and shall include the manufacturer's matching cover plate.
  2. The module shall provide two isolated sets of Form-C normally open and normally closed contacts
  3. Contact ratings shall be rated at minimum 2.0 amps resistive or 1.0 amp inductive
  4. An LED shall be visible on the outside of the module's cover plate and shall flash under normal conditions and remain on steady when the module is activated.
- I. Audio Visual Notification Appliances
1. Shall be System Sensor SpectraAlert Advance Series listed for use on both wall and ceiling as indicated on the plans.
  2. Provide devices white in color with red FIRE screened on device from manufacturer.
  3. Audio visual devices shall be one complete assembly utilizing a speaker for audible notification for this project.
  4. The device shall be suitable for mounting on standard electrical boxes using the manufacturer's universal mounting plate. The strobe device shall snap into the mounting plate and secured by one fastener.
  5. The manufacturer's mounting plate shall include screw terminals to accept all field wiring.
  6. Candelas shall be selectable in settings of 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177 and 185.
  7. The strobe shall be listed to U.L. 1971 standards and meet all current ADAAG Guidelines.
  8. The system shall utilize speakers for audible alarm notification. The speakers shall be listed to UL 1480 for Fire Protective Signaling Systems. It shall be a dual-voltage transformer speaker capable of operation at 25.0 or 70.7 nominal Vrms. The speaker shall have a frequency range of 400 to 4,000 Hz. The speaker shall be capable of mounting to a standard 4x4x2 1/8 electrical box. The speaker shall have power taps from 1/4 watt to 2 watts and voltage output selectable via rotary switches. The speaker shall have a maximum sound output of 86 dB at 10 feet. Provide System Sensor Spectralert SPS Series speakers and speaker strobe devices.
  9. Provide manufacturer's surface mount and weatherproof backboxes where required.

## 2.05 TELEPHONE SYSTEM

- A. Telephone Stations
1. Provide remote 4-state firefighter's telephone stations (warden) stations at the locations shown on the drawings.
  2. The station shall consist of a red telephone handset with vandal-resistant armored cord, housed within a locked break glass surface or flush mounted enclosures as shown on the drawings. The enclosure shall have a red finish, and shall be clearly marked "FIRE FIGHTERS TELEPHONE" in large letters for easy identification.



3. Removing the handset from the cradle shall signal the main fire alarm panel of an incoming phone call.
- B. Telephone Jack Stations
1. Provide stainless steel 4-state firefighter's telephone jack stations at the locations shown on the drawings.
  2. The jack station shall be clearly identified with the words "FIRE FIGHTER'S TELEPHONE" for use with portable fire fighter telephone handsets
  3. Plugging in a remote handset into the jack station shall signal the main fire alarm panel of an incoming phone call.
- C. Telephone Handsets
1. Provide five (5) 4-state firefighter's telephone handsets for use with the firefighter's telephone jack stations. The telephone handsets shall be red in color and have a 5 ft (1.3m) coiled cord.
- D. Telephone Storage Cabinet
1. Provide a firefighters' telephone storage cabinet at the location shown on the drawings.
  2. The cabinet shall have the capacity to hold six (6) phones and a red finish with white lettering "Emergency telephone." A locked door shall be provided.

## 2.06 WIRE AND CABLE

- A. The following are acceptable manufacturers:
1. Windy City Wire
  2. General Cable
- B. Cable shall be approved for plenum use without conduit per the NFPA 262 Flame Test
- C. Cable shall be approved per NEC 800, 760; UL, CMP, FPLP UL, RoHS Complaint

## PART 3.00 EXECUTION

### 3.01 EXAMINATION

- A. Examine areas and surfaces to receive fire alarm system.
1. Notify Architect of conditions that would adversely affect installation or subsequent use.
  2. Do not begin installation until unacceptable conditions are corrected.

### 3.02 INSTALLATION

- A. Install fire alarm system in accordance with NFPA 72, NFPA 70, state and local codes, manufacturer's instructions, and as indicated on the Drawings.

- B. The entire system shall be installed in a skillful manner in accordance with approved manufacturer's installation manuals, shop drawings and wiring diagrams.
- C. Coordinate locations of all devices with all other divisions' drawings and specifications.
- D. All fire alarm devices shall be accessible for periodic maintenance. Should a device location indicated on the contract drawings not meet this requirement, it shall be the responsibility of the installing contractor to bring it, in writing, to the attention of the Project Engineer.
- E. Fasten equipment to structural members of building or metal supports attached to structure, or to concrete surfaces.
- F. All systems and system components listed to UL864 Control Units for Fire Protective Signaling Systems may be installed within a common conduit raceway system, in accordance with the manufacture's recommendations. System(s) or system components not listed to the UL864 standard shall utilize a separate conduit raceway system for each of the sub-systems.
- G. No wiring except life safety system circuits and system power supply circuits shall be permitted in the control panel enclosures.
- H. Any low-voltage copper wiring that leaves the protection of a building shall be provided with a compatible UL 497B listed transient protection devices where the circuit leaves the building and where it enters the next building.
- I. Devices containing end-of-line resistors shall be appropriately labeled. Devices should be labeled such that removal of the device is not required to identify the EOL device.
- J. Fiber Optic Cable
  1. Only glass filament cable permitted. Plastic filament fiber optic cables are not acceptable.
  2. LC connectors shall be used at all equipment terminations.
- K. Conceal conduit, junction boxes, and conduit supports and hangers in finished areas. Conceal or expose conduit, junction boxes, and conduit supports and hangers in unfinished areas.
- L. Fire alarm system junction box covers shall be painted red.
- M. Wiring within cabinets, enclosures, boxes, junction boxes and fittings shall be installed in a neat and workmanlike manner, installed parallel with or at right angles to the sides and back of any box, enclosure or cabinet, and routed to allow access for maintenance. All conductors that are terminated, spliced, or otherwise interrupted in any enclosure, cabinet, mounting or junction box shall be connected to terminal blocks. Mark each terminal in accordance with the wiring diagrams of the system. Make all connections with approved pressure type terminal blocks, which are securely mounted. All terminal block screws shall

have pressure wire connectors of the self-lifting or box lug type. No more than two conductors shall be installed under one connection. Wire nuts, crimp splices and similar devices shall not be used.

N. Conductors

1. Each conductor shall be identified as shown on the drawings at terminal points. Permanent wire markers shall be located within 2 inches of the wire termination. Marker text shall be visible with protective doors or covers removed.
2. Maintain a consistent color code for fire alarm system conductor functions throughout the installation.
3. All wiring shall be checked and tested to insure that there are no grounds, opens or shorts.

O. Devices

1. Fire Alarm Control Panels
  - a. Mount the enclosure with the top of the cabinet 72" above the finished floor or center the cabinet at 63", whichever is lower.
  - b. Label the fire alarm panels with the room number, electrical panel number and circuit breaker number feeding them.
  - c. Paint the handles of the dedicated circuit breakers feeding fire alarm panels red, and install handle locks.
  - d. Within the panel, all non-power limited wiring must be properly separated from power limited circuits.
  - e. Grounds shall comply with IEEE 1100. Install a ground wire from main service ground to fire-alarm control unit.
2. Annunciator
  - a. Mount the panel; with the top of the panel 72" above the finished floor or center the panel at 63", whichever is lower.
3. Remote power supplies and auxiliary fire alarm panels
  - a. Locate the panel or cabinet with the top of the panel 72" above the finished floor or center the panel at 63", whichever is lower.
  - b. Do not locate these panels above ceilings or where inaccessible by a person standing on the finished floor of the space.
  - c. Label the power supplies and auxiliary FACPs with the room number, electrical panel number and circuit breaker number feeding them.
  - d. Paint the handles of the dedicated circuit breakers feeding fire alarm panels red, and install handle locks.
  - e. Within the panel, all non-power limited wiring must be properly separated from power limited circuits.
4. Manual Pull Stations
  - a. Mount stations so that their operating handles are between 42" and 48" above the finished floor.
5. Firefighter Telephone Jacks
  - a. Wall mount at 48" above the finished floor.
6. Notification Appliances: Mount assemblies as follows:

- a. All wall mounted audio/visual devices shall be mounted so the entire lens is between 80" and 96" above the finished floor. Where low ceilings exist, devices shall be mounted within 6" of the ceiling.
  - b. Where ceiling height exceeds 30 feet, appliances shall be suspended from the ceiling to a height of 30 feet maximum above the finished floor.
  - c. Appliances installed outdoors shall be UL listed for outdoor use.
7. Smoke Detectors:
- a. Detectors located on the wall shall have the top of the detector at least 4" and not more than 12" below the ceiling.
  - b. On smooth ceilings, detectors shall not be installed over 30 ft. apart in any direction.
  - c. Install smoke detectors no closer than 3 ft. from air handling supply air diffusers or return air openings.
  - d. Locate detectors no closer than 12" from any part of a lighting fixture.
8. Duct Smoke Detectors:
- a. Install sampling tubes so they extend the full width of ducts exceeding 36".
  - b. Detectors shall be located to facilitate ease of maintenance.
  - c. All penetrations near detectors located on/in return ducts shall be sealed to prevent air entry.
9. End-of-Line Resistors
- a. Devices containing end-of-line resistors shall be appropriately labeled.
10. Remote Status and Alarm Indicators:
- a. Install near each smoke detector and each sprinkler water-flow switch and valve-tamper switch that is not readily visible from normal viewing position.
11. Single-Station Smoke Alarms:
- a. Where more than one smoke alarm is installed within a dwelling or suite, they shall be connected so that the operation of any smoke alarm causes the alarm in all smoke alarms to sound
12. CO Detectors
- a. Ceiling mounted CO detectors should be kept 12" from sidewalls.
  - b. Wall mounted CO detectors should be at least 48" above the finished floor, but less than 6" from the ceiling.
  - c. Locate at least 60" from fuel burning appliances.
  - d. Install CO detectors no closer than 3 ft. from air handling supply air diffusers or return air openings.>
13. Beam Smoke Detectors
- a. Install beam type smoke detectors in accordance with the shop drawings and the manufacturer's recommendations.
  - b. Mount detectors 19" to 24" below the ceiling unless instructed otherwise.
  - c. Keep the centerline of the beam 19" from obstructions.
  - d. Mount on solid surfaces (brick/block walls, steel beams, or concrete).
  - e. Use all mounting points on detector mounts.
  - f. Mount where accessible for maintenance
14. Heat Detectors
- a. Heat detectors shall be installed in strict accordance with their UL listing and the requirements of NFPA 72.

- b. Heat detectors installed in the elevator machinery room to meet ANSI A17.1 requirements for elevator power disconnect, shall be located adjacent to each sprinkler head. Coordinate temperature rating and location with sprinkler rating and location.
15. Addressable Control (relay) Modules
- a. Install the module less than 3 feet from the device controlled.
  - b. Orient the device mounting for best maintenance access.
  - c. Label all addressable control modules as to their function.
  - d. Provide a dedicated 24VDC circuit to feed all auxiliary relays required for inductive loads (auxiliary relays, door holders). Circuits shall be supervised via an end-of-line relay and addressable input module. Auxiliary relays shall not derive their power from the starter or load being controlled.
- P. Do not install smoke detectors before system programming and test period. If construction is ongoing during this period, take measures to protect smoke detectors from contamination and physical damage.
- Q. Flush-mount fire detection and alarm system devices, control panels, and remote annunciators in finished areas. Flush-mount or surface-mount fire detection and alarm system devices, control panels, and remote annunciators in unfinished areas.

### 3.03 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Provide service of competent, factory-trained technician authorized by manufacturer to technically supervise and participate during pre-testing and acceptance testing of system.
- B. Testing:
- 1. Conduct complete visual inspection of control panel connections and test wiring for short circuits, ground faults, continuity, and insulation before energizing cables and wires.
  - 2. Close each sprinkler system control valve and verify proper supervisory alarm at Control Panel.
  - 3. Verify activation of flow switches.
  - 4. Open initiating device circuits and verify that trouble signal actuates.
  - 5. Open signaling line circuits and verify that trouble signal actuates.
  - 6. Open and short notification appliance circuits and verify that trouble signal actuates.
  - 7. Ground initiating device circuits and verify response of trouble signals.
  - 8. Ground signaling line circuits and verify response of trouble signals.
  - 9. Ground notification appliance circuits and verify response of trouble signals.
  - 10. Check installation, supervision, and operation of intelligent smoke detectors.
  - 11. Introduce on system each of the alarm conditions that system is required to detect. Verify proper receipt and proper processing of signal at Control Panel and correct activation of control points.

12. Consult manufacturer's manual to determine proper testing procedures when system is equipped with optional features. This is intended to address such items as verifying controls performed by individually addressed or grouped devices, sensitivity monitoring, verification functionality, and similar.

C. Acceptance Testing:

1. Before installation shall be considered completed and acceptable by AHJ, a complete test using as a minimum, the following scenarios shall be performed and witnessed by representative approved by Engineer. Monitoring company and/or fire department shall be notified before final test in accordance with local requirements.
2. Contractor's job foreman, in presence of representative of manufacturer, representative of Owner, and fire department shall operate every installed device to verify proper operation and correct annunciation at control panel.
3. Open signaling line circuits and notification appliance circuits in at least 2 locations to verify presence of supervision.
4. When testing has been completed to satisfaction of both Contractor's job foreman and representatives of manufacturer and Owner, a notarized letter co-signed by each attesting to satisfactory completion of said testing shall be forwarded to Owner and fire department.
5. Leave fire alarm system in proper working order and, without additional expense to Owner, replace defective materials and equipment provided within 1 year (365 days) from date of final acceptance by the owner.

### 3.04 DEMONSTRATION

- A. Provide instruction as required for operating fire alarm system.

END OF SECTION

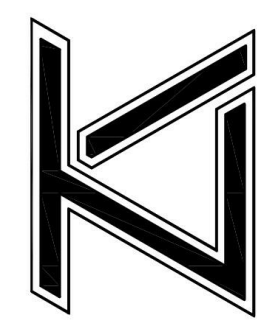


UPGRADE THE EXISTING FM200 SYSTEM IN HATCHED AREA AS REQUIRED TO INTERFACE WITH THE NEW FIRE ALARM SYSTEM (EVIDENCE). CONTRACTOR SHALL UPGRADE THE CONTROL PANEL, VALVES, GAS CYLINDERS, AND/OR ANY HEADS REQUIRED AS WELL AS ANY SOLENOIDS OR AUTOMATIC SHUTOFFS REQUIRED FOR COMMUNICATION TO THE FIRE ALARM SYSTEM OR COMPATIBILITY WITH THE NEW FM200 PANEL. THE FIRE SPRINKLER CONTRACTOR AND FM200 SUB CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO DETERMINE THE EXACT REQUIREMENTS FOR THE PROJECT. AFTER COMPLETION IT IS EXPECTED THAT THE FM200 SYSTEM SHALL BE OPERATIONAL AND PASS ALL FIRE MARSHAL INSPECTIONS AND COMMUNICATE WITH THE NEW FIRE ALARM SYSTEM PER ALL NFPA AND LIFE SAFETY CODES.

APPROXIMATE LOCATION OF EXISTING FM200 SYSTEM TANK/CONTROLS

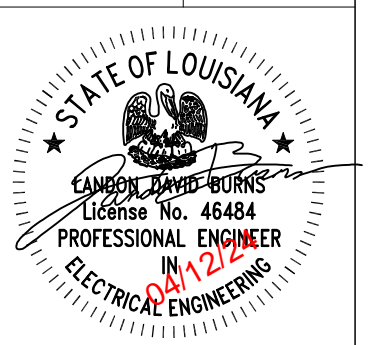
**1 FIRE PROTECTION PLAN**  
1/8" = 1'-0"

**THOMPSON LUKE & ASSOCIATES, L.L.C.**  
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225-293-9474 | www.tlaeng.com



**BATON ROUGE CITY HALL  
FIRE ALARM UPGRADES**  
222 St Louis St, Baton Rouge, LA 70802

Revision	Date



DATE: 4/12/2024  
TLA PROJECT NO: 23-114  
DRAWN: BMG  
CHECKED: LDB

SHEET NO:

**FP0.01**

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10705 Rieger Road, STE 101  
BATON ROUGE, LA 70809  
(225)293-9474 TLA PROJECT # 23-114  
Frank Saville Thompson - License No. 28854  
Landon David Burns - License No. 46484



**ELECTRICAL SYMBOL LEGEND**

(REFER TO DRAWINGS AND SPECIFICATIONS FOR FURTHER REQUIREMENTS)

**GENERAL**

① KEYNOTE  
 A-1.3 CIRCUIT TAG, PANEL AND CIRCUIT DESIGNATION AS INDICATED; E.G. PANEL "A", CIRCUIT #1.3

**WIRE, CONDUIT, AND RACEWAY**

— ABOVE-SLAB CONDUIT & WIRE/CABLING  
 - - - - - BELOW-SLAB CONDUIT & WIRE/CABLING; 3/4" MINIMUM CONDUIT SIZE UON  
 HOMERUN TO PANEL; TICK MARKS INDICATED NUMBER OF WIRES

**DISTRIBUTION**

PANELBOARD, SWITCHBOARD, OR OTHER DISTRIBUTION EQUIPMENT AS NOTED; INSTALL WITH SUFFICIENT WORKING SPACE AND CLEARANCES TO MEET ALL REQUIREMENTS OF NEC SECTION 110.26.

**EQUIPMENT CONNECTIONS**  
 (PROVIDE CONDUIT AND WIRE PER THE PANEL SCHEDULE)

FUSED SAFETY DISCONNECT SWITCH; LOCATE WITHIN SIGHT OF THE EQUIPMENT SERVED WITH 36" MINIMUM CLEAR WORKING SPACE IN FRONT OF THE SWITCH; DO NOT MOUNT DIRECTLY TO EQUIPMENT  
 JUNCTION BOX  
 JUNCTION BOX FOR MOTORIZED DAMPER  
 MOTOR RATED SWITCH WITH THERMAL OVERLOAD; LOCATE WITHIN SIGHT OF THE EQUIPMENT SERVED; DO NOT MOUNT DIRECTLY TO EQUIPMENT; WHEN LOCATED ABOVE CEILING, MOUNT TO STRUCTURAL MEMBER NEARBY.  
 ELECTRICAL MOTOR, HORSEPOWER AS NOTED

**FIRE ALARM**  
 (PROVIDE CONDUIT AND WIRE PER THE PANEL SCHEDULE FOR POWER AND CONDUIT AND CABLING PER THE MANUFACTURER'S SPECIFICATIONS)

FIRE ALARM CONTROL PANEL  
 FIRE ALARM SYSTEM PULL STATION  
 FIRE ALARM SYSTEM STROBE  
 FIRE ALARM SYSTEM CHIME/STROBE  
 FIRE ALARM SYSTEM HORN/STROBE  
 FIRE ALARM SYSTEM SPEAKER/STROBE  
 FIRE ALARM SYSTEM CEILING MOUNT STROBE  
 FIRE ALARM SYSTEM CEILING MOUNT CHIME/STROBE  
 FIRE ALARM SYSTEM CEILING MOUNT HORN/STROBE  
 FIRE ALARM SYSTEM CEILING MOUNT SPEAKER/STROBE  
 FIRE ALARM SYSTEM CARBON MONOXIDE DETECTOR  
 FIRE ALARM SYSTEM THERMAL DETECTOR  
 FIRE ALARM SYSTEM DUCT SMOKE DETECTOR  
 FIRE ALARM SYSTEM SMOKE DETECTOR  
 TWO WAY TELEPHONE COMMUNICATION SYSTEM APPLIANCE  
 FIRE ALARM SYSTEM CONNECTION TO HALON CONTROL PANEL  
 FIRE ALARM SYSTEM FLOW SWITCH  
 FIRE ALARM SYSTEM TAMPER SWITCH  
 FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT PANEL

**ELECTRICAL GENERAL NOTES**

- ALL ELECTRICAL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS ADOPTED BY THE AHJ.
- THE WORDS "PROVIDE" AND "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN, "PROVIDE COMPLETE IN PLACE" THAT IS "FURNISH AND INSTALL." EQUIPMENT AND MATERIAL INDICATED TO BE PROVIDED SHALL BE UNLESS OTHERWISE NOTED AND SHALL BE OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED.
- ROUTE NEW CONDUIT AND WIRING CONCEALED IN WALLS AND CEILING WHERE POSSIBLE. COORDINATE INSTALLATION OF EXPOSED CONDUIT AND WIRING WITH THE ARCHITECT.
- BEFORE INSTALLATION, CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS TO THE ENGINEER FOR REVIEW COVERING PROPOSED LOCATIONS, MOUNTING, AND ROUTING FOR ALL CONDUITS, SERVICES, FITTINGS, GROUND RODS, SUPPORTS, ETC.
- MATERIALS AND MANUFACTURERS NOTED ON DRAWINGS ARE TO BE USED AS BASIS OF DESIGN TO ESTABLISH QUALITY AND PERFORMANCE STANDARDS AND SHALL BE PROVIDED AS SPECIFIED. SUBSTITUTIONS WILL BE CONSIDERED WHERE SUFFICIENT PRODUCT INFORMATION IS PROVIDED TO MAKE A PROPER EVALUATION. REVIEW OF A SUBSTITUTION IS AT THE SOLE DISCRETION OF THE PROFESSIONAL.
- THE CONTRACTOR SHALL SUBMIT COPIES OF THE PRODUCT DATA, SHOP DRAWINGS, ETC. OF ALL MATERIALS NOTED ON THE DRAWINGS. ALL SUBMITTED PRODUCT DATA, SHOP DRAWINGS, ETC. SHALL BE MARKED WITH THE NAME OF THE PROJECT AND SHALL BEAR THE STAMP OF APPROVAL OF THE CONTRACTOR AS EVIDENCE THAT THE MATERIAL HAS BEEN CHECKED BY THE CONTRACTOR.
- DRAWINGS SPECIFIC TO THIS TRADE DO NOT LIMIT THE RESPONSIBILITY OR WORK REQUIRED BY THE CONTRACT DOCUMENTS. REFER TO DRAWINGS AND SPECIFICATIONS OF OTHER TRADES FOR COMPLETE INFORMATION PRIOR TO BID.
- WHERE CONFLICTS EXIST AMONG DRAWINGS, SPECIFICATIONS, AND EQUIPMENT SCHEDULES, THE MOST STRINGENT REQUIREMENT OR QUANTITY SHALL APPLY. NOTIFY THE ARCHITECT/ENGINEER OF ALL CONFLICTS FOR RESOLUTION OR INTERPRETATION.
- NO EQUIPMENT SHALL BE ORDERED OR INSTALLED UNTIL THE PROJECT ENGINEER HAS RECEIVED A COPY STAMPED "NO EXCEPTIONS TAKEN" "NO EXCEPTIONS TAKEN" DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMANCE WITH THE CONTRACT. EXTEND TO QUANTITIES OR DIMENSIONS, IMPLY THAT THE EQUIPMENT CAN BE INSTALLED OR OPERATE SATISFACTORILY THAT THE EQUIPMENT CONTAINS ALL NECESSARY COMPONENTS, OR THAT IT WILL COORDINATE WITH OTHER REVIEWED ITEMS.
- OMISSION FROM THIS SHEET OF ANY ITEM SHOWN ELSEWHERE IN THE PLANS DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY FOR ANY ASSOCIATED WORK.
- COORDINATE INSTALLATION OF NEW ITEMS AND EQUIPMENT WITH THE OWNER'S REPRESENTATIVE AND THE WORK OF OTHER TRADES. THE CONTRACTOR SHALL INCUR ALL COSTS ASSOCIATED WITH THE RELOCATION OF EQUIPMENT CONFLICTING WITH NEW WORK BY OTHER TRADES THAT HAS NOT BEEN COORDINATED.
- COORDINATE ALL ASPECTS OF NEW SERVICE WITH UTILITY COMPANY AND INCLUDE ALL COSTS IN BID.
- WARNING TAPE SHALL BE INSTALLED 12 TO 18 INCHES BELOW GRADE OVER ALL CONDUITS.
- PROVIDE 1/4" MINIMUM DIAMETER PULL ROPE; PULL ROPE SHALL NOT BE NYLON STRINGS.
- ALL EXISTING FIREMAN TELEPHONE STATIONS SHALL BE REPLACED WITH NEW. CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS AND QUANTITY PRIOR TO BID.

**SPECIAL SYSTEMS GENERAL NOTES**

- INTERCONNECT THE HOOD EXTINGUISHING SYSTEM WITH THE FIRE ALARM SYSTEM IF APPLICABLE.
- PROVIDE AN ADDITIONAL 10% OR ONE (1), WHICHEVER IS GREATER, OF THE FOLLOWING DEVICES WHICH ARE INCLUDED IN THE PROJECT, AND INSTALL THEM AT THE DIRECTION OF THE ARCHITECT, ENGINEER, OR AHJ DURING THE COURSE OF THE PROJECT. PROVIDE ALL REQUIRED CONDUIT, INTERCONNECTIONS, CONDUCTORS, PROGRAMMING, ETC. AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER. INITIATING DEVICES (PULL STATIONS, SMOKE DETECTORS, THERMAL DETECTORS, ETC.), NOTIFICATION APPLIANCES (STROBES, HORN STROBES, SPEAKER STROBES, SPEAKERS, DUCT DETECTORS, ETC.), AND MONITORING MODULES.
- VERIFY REQUIRED QUANTITY OF DUCT DETECTORS WITH DUCTWORK CONFIGURATION AS IT IS ACTUALLY INSTALLED. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

**IDENTIFICATION OF EQUIPMENT GENERAL NOTES**

- ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL: PUNCHED OR DRILLED FOR SCREW MOUNTING. WHITE LETTERS ON A DARK GRAY BACKGROUND. MINIMUM LETTER HEIGHT SHALL BE 3/8 INCH. LETTERING AND BACKGROUND COLORS AS INDICATED BELOW:
  - POWER CIRCUITS:
    - NORMAL: WHITE LETTERING ON BLACK BACKGROUND.
    - FIRE ALARM SYSTEM: BLACK LETTERING ON RED BACKGROUND.
  - LABELING INSTRUCTIONS:
    - INDOOR EQUIPMENT: ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL, UNLESS OTHERWISE INDICATED. PROVIDE A SINGLE LINE OF TEXT WITH 1/2-INCH-HIGH LETTERS ON 1-1/2-INCH-HIGH LABEL; WHERE 2 LINES OF TEXT ARE REQUIRED, USE LABELS 2 INCHES HIGH.
    - OUTDOOR EQUIPMENT: ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL.
    - EQUIPMENT TO BE LABELED SHALL INCLUDE BUT NOT BE LIMITED TO:
      - PANELBOARDS, ELECTRICAL CABINETS, AND ENCLOSURES.
      - EMERGENCY SYSTEM BOXES AND ENCLOSURES.
      - RECEPTACLES WITH PANEL AND CIRCUIT NUMBERS.
      - FIRE-ALARM CONTROL PANEL AND ANNUNCIATORS
      - ALL JUNCTION BOXES. LABEL TO INCLUDE CIRCUIT NUMBERS (PANEL AND NUMBER).

**DEMOLITION GENERAL NOTES**

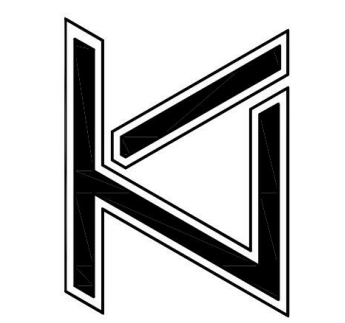
- THE LOCATIONS OF EXISTING CIRCUITS AND EQUIPMENT ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING ELECTRICAL DEVICES, EQUIPMENT, AND WIRING BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING PORTIONS OF THE ELECTRICAL SYSTEMS.
- THE CONTRACTOR SHALL REMOVE SUCH EXISTING WORK AS CALLED FOR ON THE DRAWINGS OR AS REQUIRED TO CLEAR THE AREAS OF NEW CONSTRUCTION.
- ALL EQUIPMENT REMOVED THAT IS NOT BEING REUSED SHALL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF AS REQUIRED.
- EXCEPT AS OTHERWISE NOTED, ALL EXISTING ELECTRICAL WORK WHICH WILL NOT BE RENDERED OBSOLETE AND WHICH MAY BE DISTURBED DUE TO ANY CHANGES REQUIRED UNDER THIS CONTRACT, SHALL BE RESTORED TO ITS ORIGINAL OPERATING CONDITION. OTHER ELECTRICAL WORK OR MATERIAL RENDERED OBSOLETE SHALL BE ABANDONED WHERE CONCEALED AND REMOVED WHERE EXPOSED. OLD, UNUSED WIRING AND DEVICES SHALL BE REMOVED FROM THE ABANDONED (CONCEALED) CONDUITS. OUTLETS SHALL BE PROVIDED WITH BLANK COVERS. ANY CONDUITS STUBBED OUT OF MASONRY SURFACE SHALL BE CUT INTO SURFACE AND PATCHED.
- WHERE EXISTING ELECTRICAL WORK INTERFERES WITH NEW WORK AND WHERE SUCH INSTALLATIONS ARE TO REMAIN IN USE, THE INSTALLATIONS SHALL BE DISCONTINUED AND RELOCATED AND/OR RECONNECTED TO COORDINATE WITH THE WORK INDICATED ON THE CONTRACT DRAWINGS AS SPECIFIED.
- WHERE EXISTING RACEWAYS THAT ARE NOT TO BE REUSED INTERFERE WITH NEW WORK, THESE RACEWAYS SHALL BE REMOVED BACK TO THE NEAREST JUNCTION BOX OR PULL BOX AND THE OPENINGS BLANKED.
- CONTRACTOR SHALL MAINTAIN CONTINUITY OF BRANCH CIRCUITS SERVING MULTIPLE ITEMS OF WHICH ONE OR MORE ARE BEING DEMOLISHED. CONDUCTORS AND CONDUITS FOR THOSE ITEMS BEING DEMOLISHED SHALL BE REMOVED AS FAR AS PRACTICABLE.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AND DATA WIRING NOT REUSED OR NOT NECESSARY FOR THE COMPLETION OF THIS PROJECT.
- IF ANY BRANCH CIRCUIT WIRING FEEDING EQUIPMENT TO REMAIN IN PLACE FOR REUSE IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THE NEW BRANCH CIRCUIT WIRING OF THE SAME SIZE AND TYPE AS THAT OF THE EXISTING AT NO COST TO THE OWNER.
- EXISTING DEVICES ARE SHOWN IN GRAY. CONDUIT AND WIRING ARE NOT GENERALLY SHOWN AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ADDITIONAL DEMOLITION WORK AND CLARIFICATION OF INDICATED WORK WILL BE GIVEN BY RFI.
- COORDINATE THE REMOVAL AND REINSTALLATION (OR PROTECTION IN PLACE) OF EXISTING ELECTRICAL EQUIPMENT AND DEVICES WITH THE WORK OF OTHER TRADES TO REPLACE OR REFINISH EXISTING WALLS AND CEILINGS.
- WHERE EXISTING CIRCUITS ARE BEING REMOVED IN EXISTING PANELS, PROVIDE A NEW, NEATLY TYPED DIRECTORY WHICH INDICATES WHERE "SPARE" BREAKERS ARE LOCATED. ANY EXISTING BREAKERS THAT ARE NOT FEEDING DEVICES SHALL REMAIN AND BE LABELED AS A "SPARE."

**ABBREVIATIONS**

AFB	ABOVE FINISHED FLOOR	CLG	CLG	EMER	EMERGENCY	G_GND	GROUND	NO	NORMALLY OPEN	REQ'D	REQUIRED	UG	UNDERGROUND
AFG	ABOVE FINISHED GRADE	CORR	CORRIDOR	EMT	ELECTRICAL METALLIC TUBING	HP	HORSEPOWER	NU	WEATHERPROOF IN-USE COVER	SF	SUPPLY FAN	UGP	UNDERGROUND PRIMARY
AIC	ABOVE FINISHED GRADE	CT	CURRENT TRANSFORMER	EQ	EQUAL	KAIC	1,000 AMP SYMMETRICAL INTERRUPTING CAPACITY RMS	OH	OVERHEAD	SN	SOLID NEUTRAL	UGS	UNDERGROUND SECONDARY
AT	AMP SYMMETRICAL INTERRUPTING CAPACITY RMS	CTRL	CONTROLLER	EQUIP.	EQUIPMENT	KWH	1,000 WATT HOURS	OHE	OVERHEAD ELECTRICAL	SPD	SURGE PROTECTIVE DEVICE	UH	UNIT HEATER
AWG	AMERICAN WIRE GAUGE	D	TO BE DEMOLISHED	EWC	ELECTRIC WATER COOLER	KVA	1,000 VOLT AMPERES	OSP	OUTSIDE PLANT	STD	STANDARD	UL	UNDERWRITER'S LABORATORY, INC.
BG	BELOW GRADE	DISC.	DISCONNECT	EWH	ELECTRICAL WATER HEATER	LAN	LOCAL AREA NETWORK	UPP	UTILITY POWER POLE	TEL	TELEPHONE	UON	UNLESS OTHERWISE NOTED
BLDG	BUILDING	DIST.	DISTRIBUTION	EXIST.	EXISTING	MCA	MINIMUM CIRCUIT AMPACITY	PB	PULL BOX	TELECOM	TELECOMMUNICATIONS	V	VOLTS
BKR	BREAKER	DWG	DRAWING	FACP	FIRE ALARM CONTROL PANEL	MECH.	MECHANICAL	PH	PHASE	TGB	TELECOMMUNICATIONS GROUND BUS	VAC	VOLTS ALTERNATING CURRENT
C	CONDUIT	E	EXISTING TO REMAIN	FACPR	FIRE ALARM CONTROL PANEL REMOTE ANNUNCIATOR	MOC	MAXIMUM OVERCURRENT PROTECTION	PNL	PANEL	TMB	TELECOMMUNICATIONS MAIN GROUND BUS	VDC	VOLTS DIRECT CURRENT
CAT	CATEGORY	EC	EMPTY CONDUIT	FC	FOOTCANDLE	NEC	NATIONAL ELECTRICAL CODE	PV	PHOTOVOLTAIC	TTB	TELECOM TERMINAL BOARD	VFD	VARIABLE FREQUENCY DRIVE
CATV	CABLE TELEVISION	ECB	ENCLOSED CIRCUIT BREAKER	FCU	FAN COIL UNIT	NEU	NEUTRAL	PVC	POLYVINYL CHLORIDE	TV	TELEVISION	WH	WATER HEATER
CB	CIRCUIT BREAKER	EF	EXHAUST FAN	FLA	FULL LOAD AMPERE(S)	NF	NON-FUSED	QTY	QUANTITY	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION	WP	WEATHERPROOF
CKT	CIRCUIT	EGC	EQUIPMENT GROUNDING CONDUCTOR	FOC	FIBER OPTIC CABLE	NIC	NOT IN CONTRACT	RCPT	RECEPTACLE	TYP.	TYPICAL	XFMR	TRANSFORMER

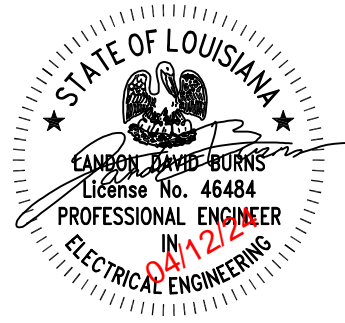
ALL SYMBOLS, ABBREVIATIONS, AND NOTES ABOVE ARE TYPICAL AND ARE NOT NECESSARILY USED IN THESE CONSTRUCTION DOCUMENTS

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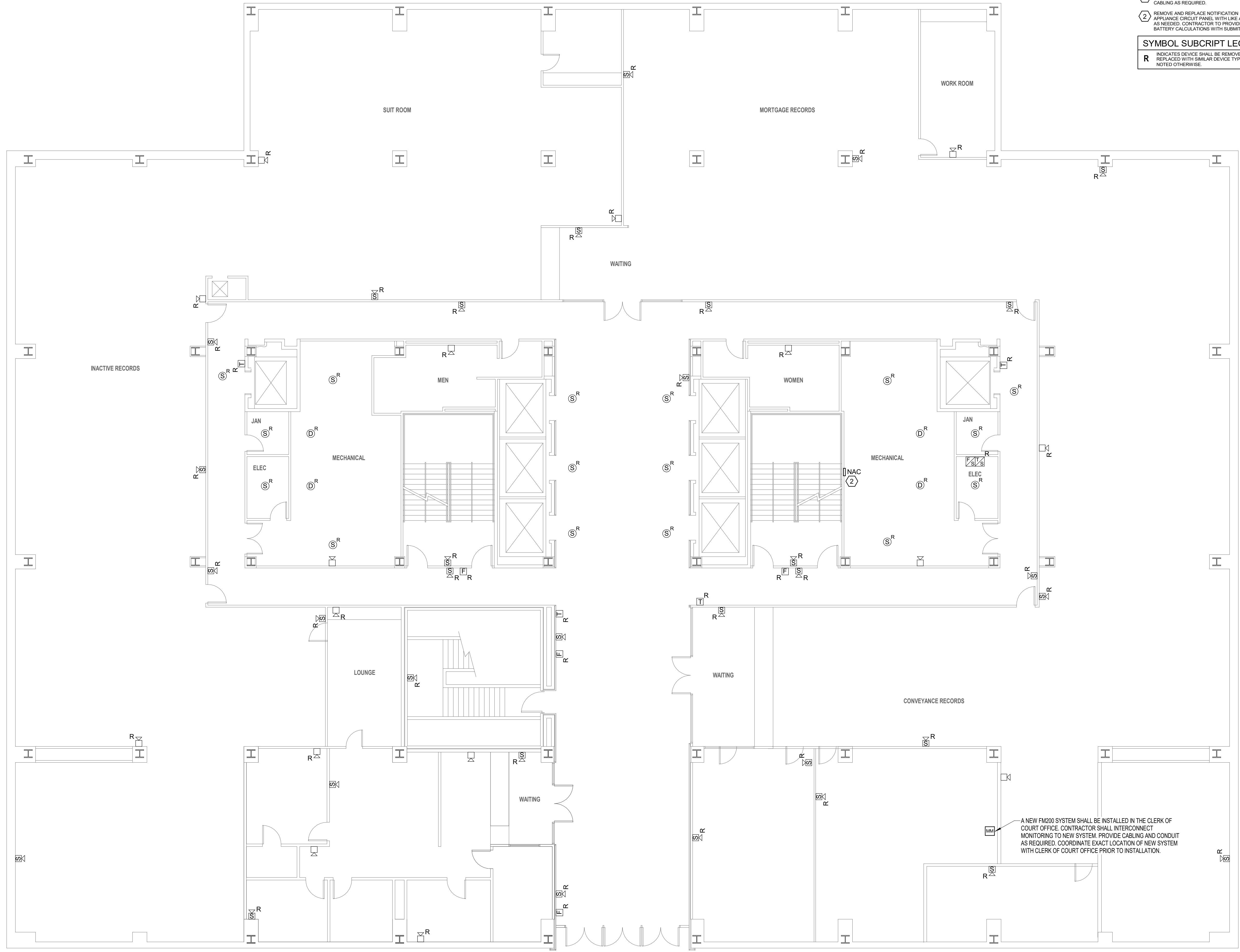


DATE: 4/12/2024  
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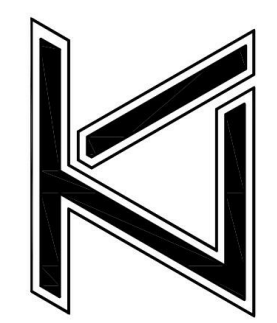




- ELECTRICAL KEYED NOTES:**
- 1 REMOVE AND REPLACE EXISTING STROBE WITH NEW SPEAKER/STROBE. PROVIDE ADDITIONAL CABLING AS REQUIRED.
  - 2 REMOVE AND REPLACE NOTIFICATION APPLIANCE CIRCUIT PANEL WITH LIKE AND KIND AS NEEDED. CONTRACTOR TO PROVIDE BATTERY CALCULATIONS WITH SUBMITTAL.
- SYMBOL SUBSCRIPT LEGEND**
- R INDICATES DEVICE SHALL BE REMOVED AND REPLACED WITH SIMILAR DEVICE TYPE UNLESS NOTED OTHERWISE.

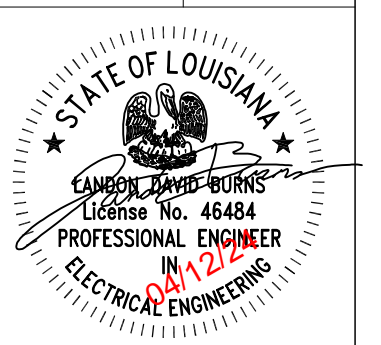
**1** B1 FIRE ALARM PLAN  
1/8" = 1'-0"

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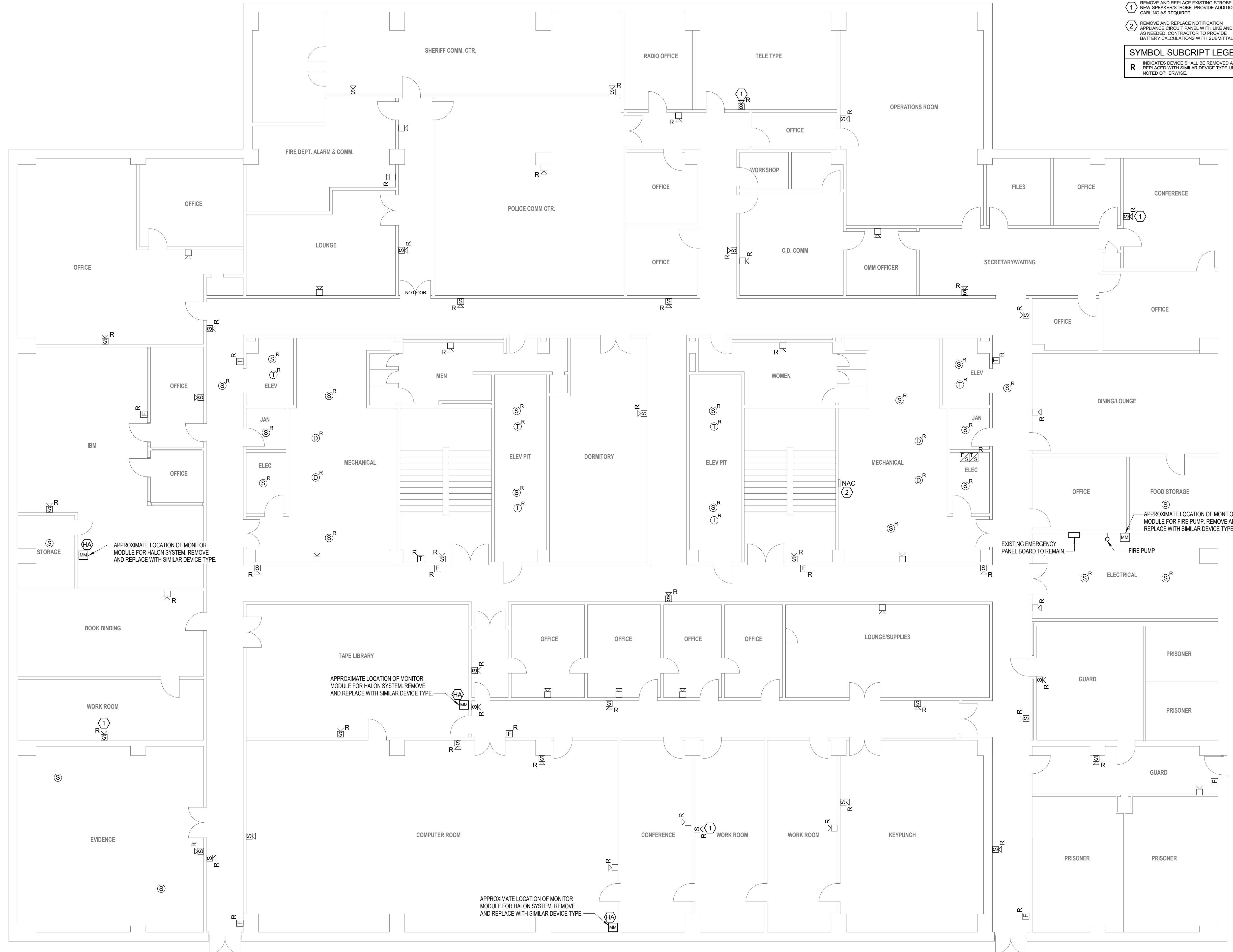


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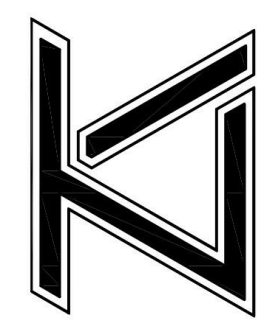


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**1 B2 FIRE ALARM PLAN**  
1/8" = 1'-0"

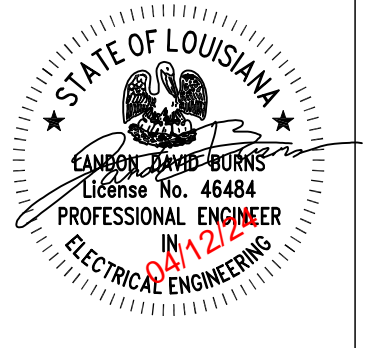
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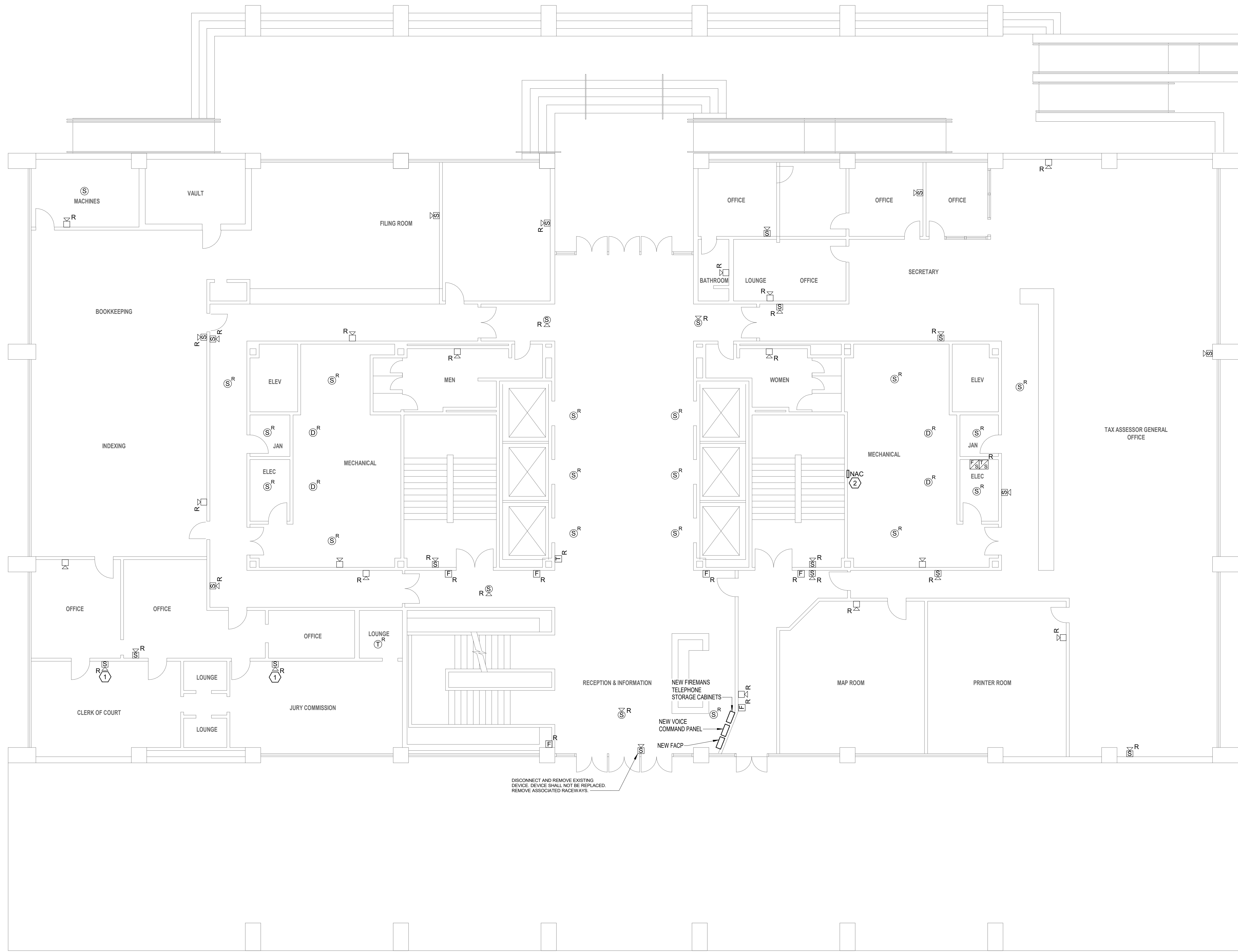
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DRAWN: BMG  
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SHEET NO:  
**E0.02**



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**SYMBOL SUBSCRIPT LEGEND**

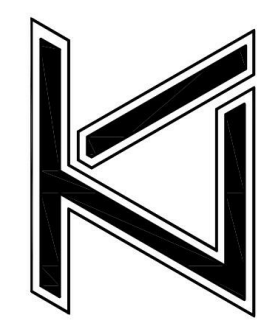
R INDICATES DEVICE SHALL BE REMOVED AND REPLACED WITH SIMILAR DEVICE TYPE UNLESS NOTED OTHERWISE.

**1 | 1ST FLOOR FIRE ALARM PLAN**  
1/8" = 1'-0"

DISCONNECT AND REMOVE EXISTING DEVICE. DEVICE SHALL NOT BE REPLACED. REMOVE ASSOCIATED RACEWAYS.

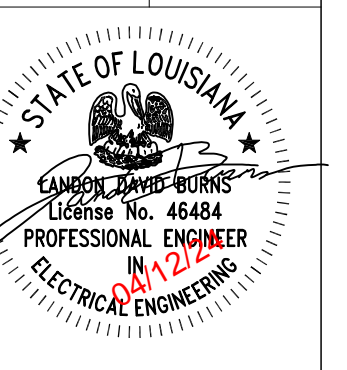
RECEPTION & INFORMATION  
NEW FIREMANS TELEPHONE STORAGE CABINETS  
NEW VOICE COMMAND PANEL  
NEW FACP

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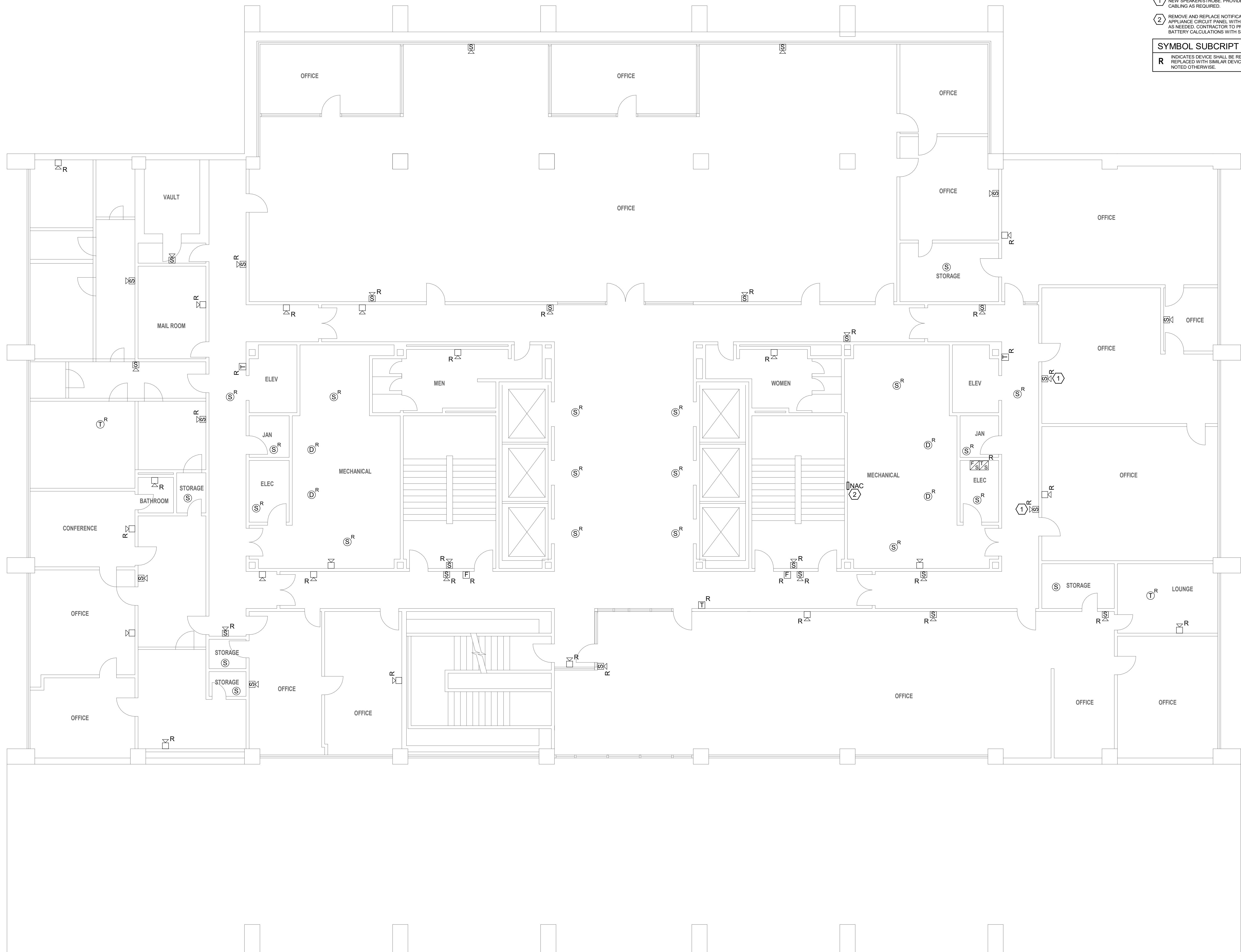


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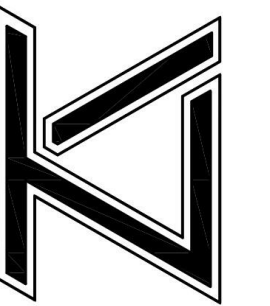
**SYMBOL SUBSCRIPT LEGEND**

R INDICATES DEVICE SHALL BE REMOVED AND REPLACED WITH SIMILAR DEVICE TYPE UNLESS NOTED OTHERWISE.



**1 2ND FLOOR FIRE ALARM PLAN**  
1/8" = 1'-0"

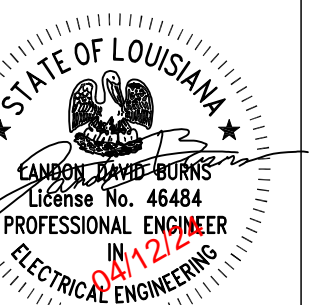
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**BATON ROUGE CITY HALL  
FIRE ALARM UPGRADES**  
222 St Louis St, Baton Rouge, LA 70802

Revision      Date

Revision	Date



DATE: 4/12/2024

TLA PROJECT NO: 23-114

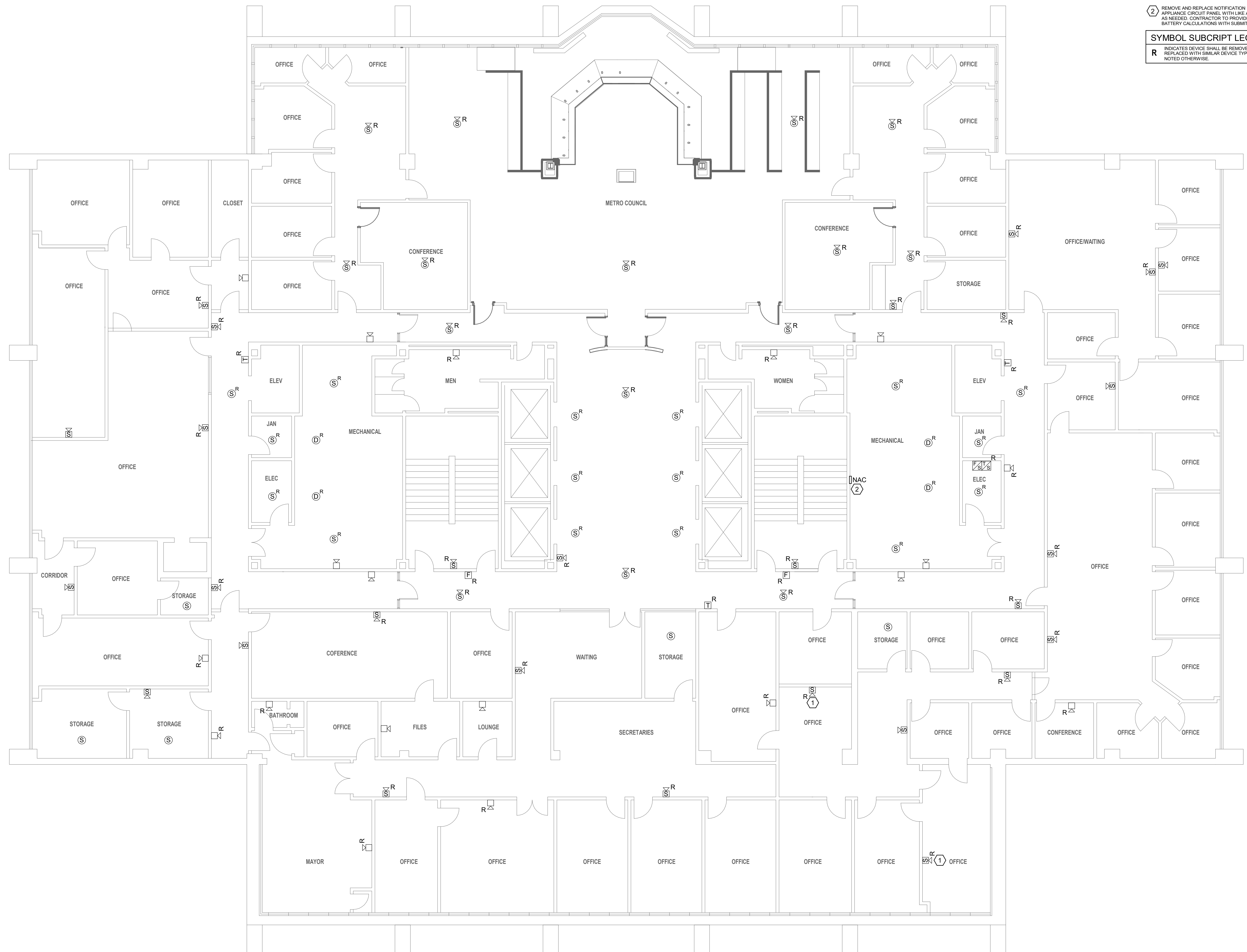
DRAWN: BMG

CHECKED: LDB

SHEET NO:

**E1.02**

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10705 Rieger Road, STE 101  
BATON ROUGE, LA 70809  
(225)293-9474 TLA PROJECT # 23-114  
Frank Saville Thompson - License No. 28854  
Landon David Burns - License No. 46484



**ELECTRICAL KEYED NOTES:**

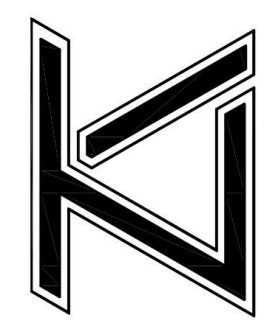
- ① REMOVE AND REPLACE EXISTING STROBE WITH NEW SPEAKER/STROBE. PROVIDE ADDITIONAL CABLING AS REQUIRED.
- ② REMOVE AND REPLACE NOTIFICATION APPLIANCE CIRCUIT PANEL WITH LIKE AND KIND AS NEEDED. CONTRACTOR TO PROVIDE BATTERY CALCULATIONS WITH SUBMITTAL.

**SYMBOL SUBSCRIPT LEGEND**

R INDICATES DEVICE SHALL BE REMOVED AND REPLACED WITH SIMILAR DEVICE TYPE UNLESS NOTED OTHERWISE.

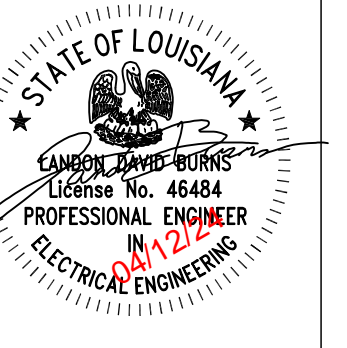
**1** 3RD FLOOR FIRE ALARM PLAN  
1/8" = 1'-0"

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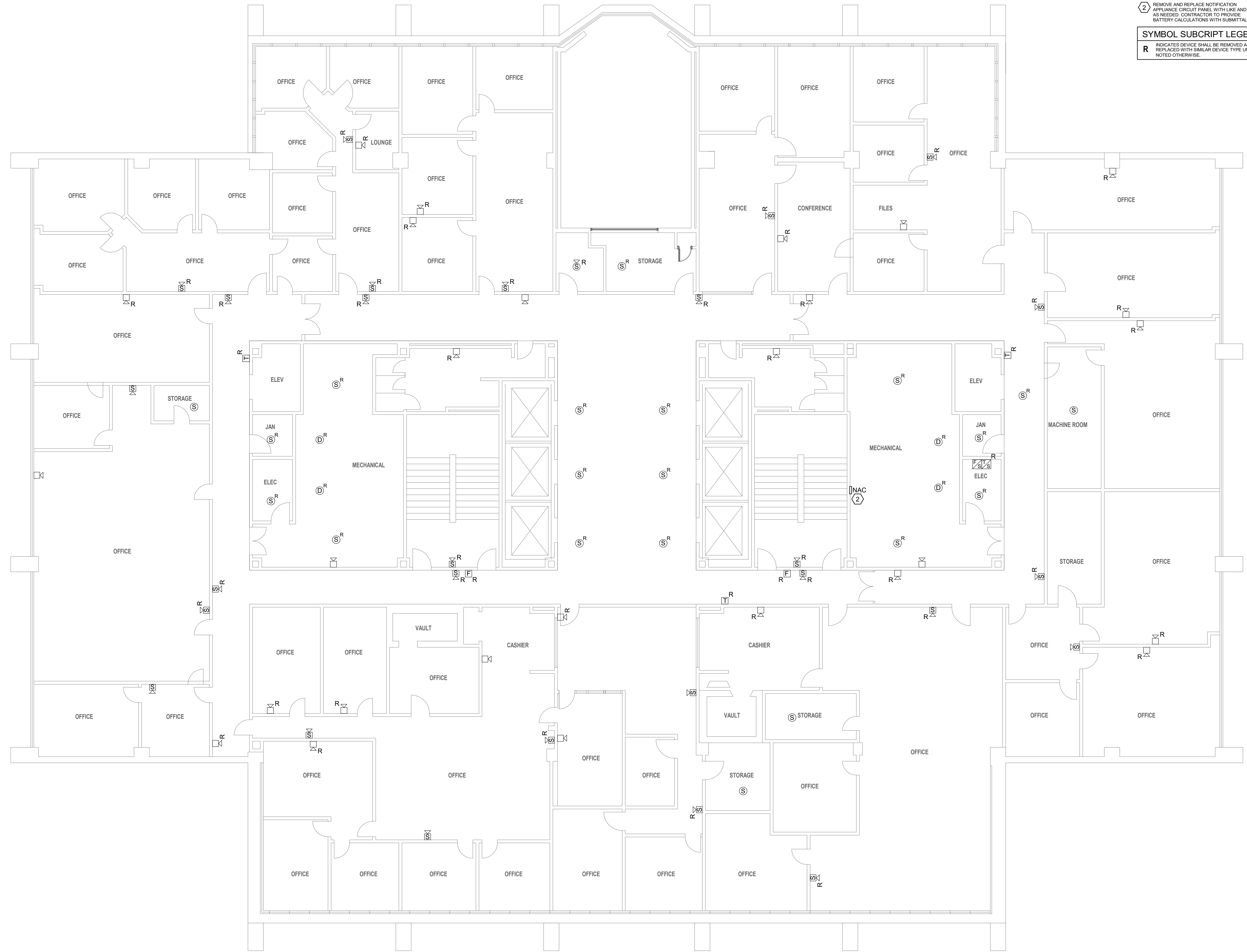


DATE: 4/12/2024  
TLA PROJECT NO: 23-114  
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SHEET NO:

**E1.03**

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**ELECTRICAL KEYED NOTES:**

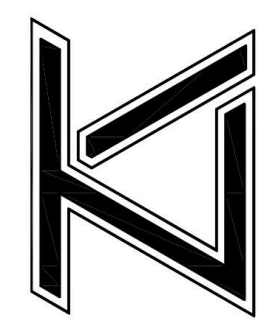
- 1 REMOVE AND REPLACE EXISTING STROBE WITH NEW SPEAKER/STROBE. PROVIDE ADDITIONAL CABLING AS REQUIRED.
- 2 REMOVE AND REPLACE NOTIFICATION APPLIANCE CIRCUIT PANEL WITH LIKE AND KIND AS NEEDED. CONTRACTOR TO PROVIDE BATTERY CALCULATIONS WITH SUBMITTAL.

**SYMBOL SUBSCRIPT LEGEND**

R INDICATES DEVICE SHALL BE REMOVED AND REPLACED WITH SIMILAR DEVICE TYPE UNLESS NOTED OTHERWISE.

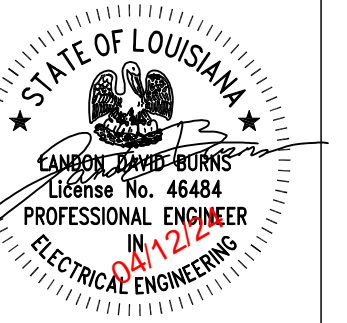
**1 | 4TH FLOOR FIRE ALARM PLAN**  
1/8" = 1'-0"

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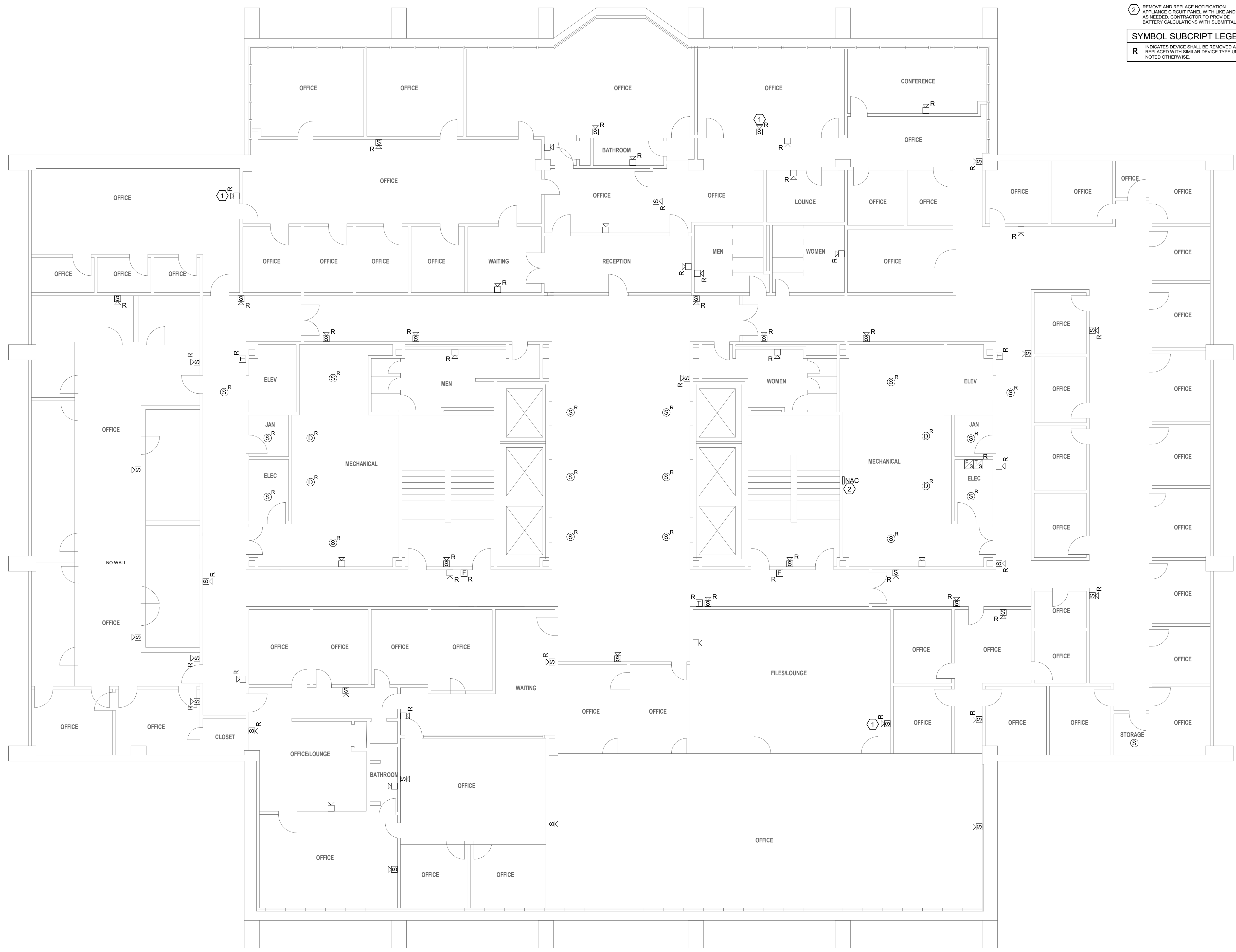
DATE: 4/12/2024  
TLA PROJECT NO: 23-114  
DRAWN: BMG  
CHECKED: LDB

SHEET NO:

**E1.04**

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**ELECTRICAL KEYED NOTES:**

1 REMOVE AND REPLACE EXISTING STROBE WITH NEW SPEAKER/STROBE. PROVIDE ADDITIONAL CABLING AS REQUIRED.

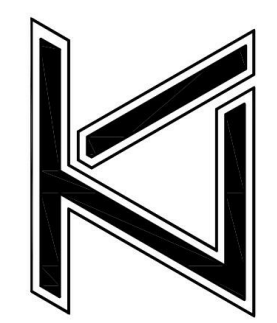
2 REMOVE AND REPLACE NOTIFICATION APPLIANCE CIRCUIT PANEL WITH LIKE AND KIND AS NEEDED. CONTRACTOR TO PROVIDE BATTERY CALCULATIONS WITH SUBMITTAL.

**SYMBOL SUBSCRIPT LEGEND**

R INDICATES DEVICE SHALL BE REMOVED AND REPLACED WITH SIMILAR DEVICE TYPE UNLESS NOTED OTHERWISE.

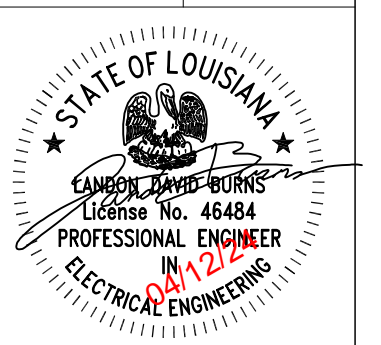
**1** 5TH FLOOR FIRE ALARM PLAN  
1/8" = 1'-0"

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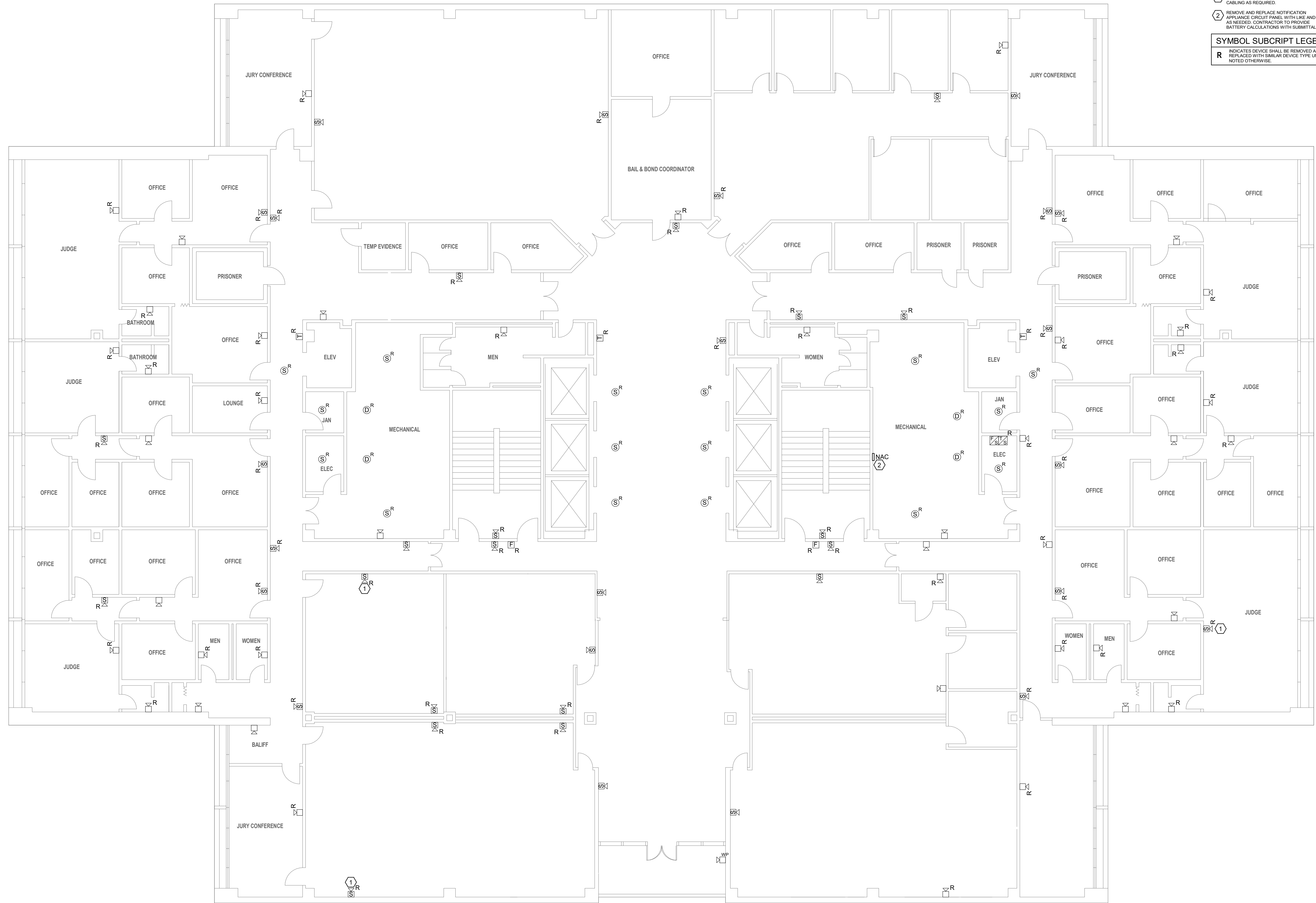


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SHEET NO:

**E1.05**

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**ELECTRICAL KEYED NOTES:**

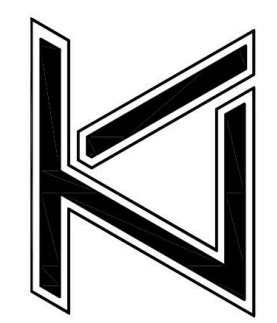
- 1 REMOVE AND REPLACE EXISTING STROBE WITH NEW SPEAKER/STROBE. PROVIDE ADDITIONAL CABLING AS REQUIRED.
- 2 REMOVE AND REPLACE NOTIFICATION APPLIANCE CIRCUIT PANEL WITH LIKE AND KIND AS NEEDED. CONTRACTOR TO PROVIDE BATTERY CALCULATIONS WITH SUBMITTAL.

**SYMBOL SUBSCRIPT LEGEND**

R INDICATES DEVICE SHALL BE REMOVED AND REPLACED WITH SIMILAR DEVICE TYPE UNLESS NOTED OTHERWISE.

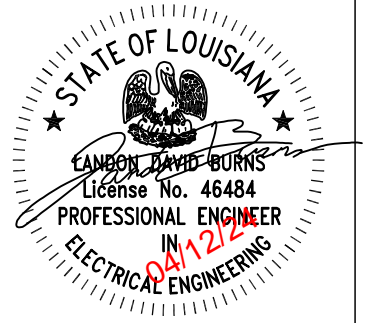
**1** 6TH FLOOR FIRE ALARM PLAN  
1/8" = 1'-0"

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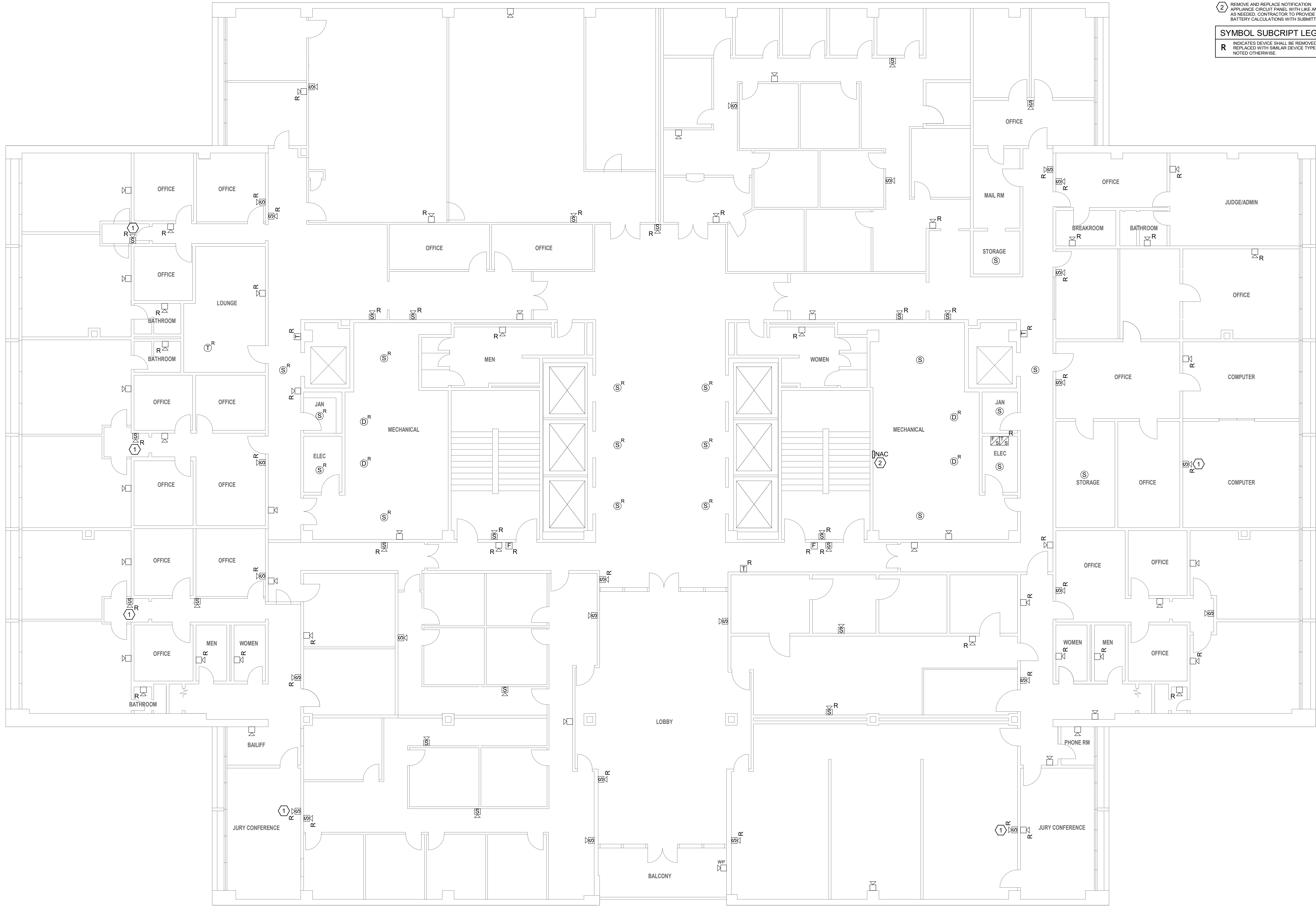


DATE: 4/12/2024  
TLA PROJECT NO: 23-114  
DRAWN: BMG  
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SHEET NO:  
**E1.06**

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**ELECTRICAL KEYED NOTES:**

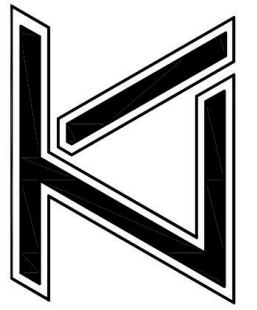
- ① REMOVE AND REPLACE EXISTING STROBE WITH NEW SPEAKER/STROBE. PROVIDE ADDITIONAL CABLING AS REQUIRED.
- ② REMOVE AND REPLACE NOTIFICATION APPLIANCE CIRCUIT PANEL WITH LIKE AND KIND AS NEEDED. CONTRACTOR TO PROVIDE BATTERY CALCULATIONS WITH SUBMITTAL.

**SYMBOL SUBSCRIPT LEGEND**

R INDICATES DEVICE SHALL BE REMOVED AND REPLACED WITH SIMILAR DEVICE TYPE UNLESS NOTED OTHERWISE.

**1 | 7TH FLOOR FIRE ALARM PLAN**  
1/8" = 1'-0"

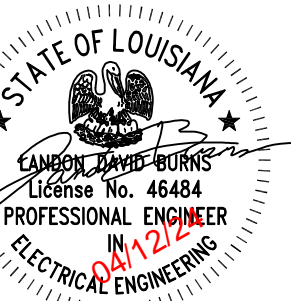
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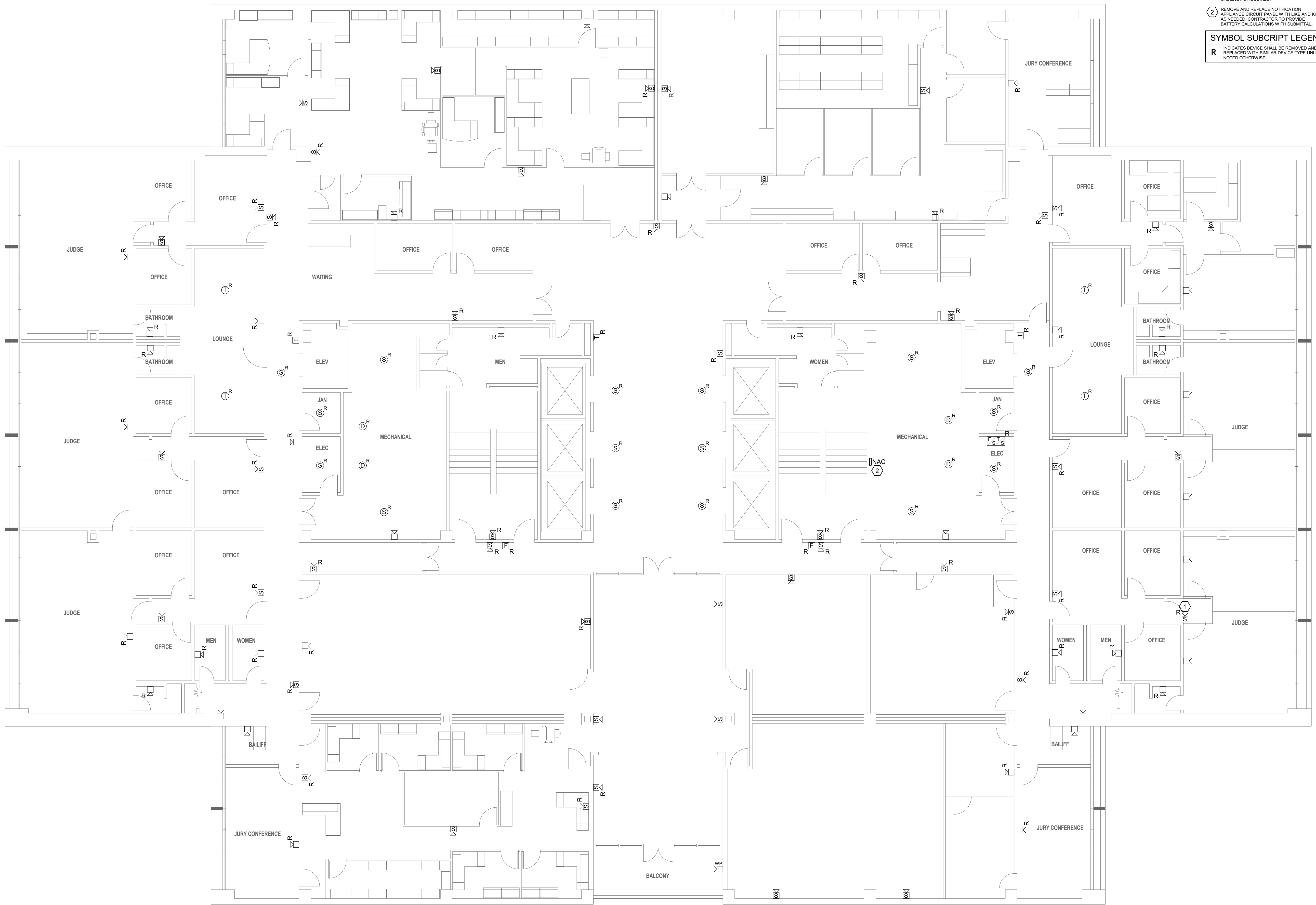


DATE: 4/12/2024  
 TLA PROJECT NO: 23-114  
 DRAWN: BMG  
 CHECKED: LDB

SHEET NO:

**E1.07**

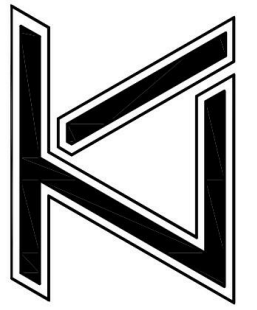
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**ELECTRICAL KEYED NOTES:**  
 ① REMOVE AND REPLACE EXISTING STROBE WITH NEW SPEAKER/STROBE. PROVIDE ADDITIONAL CABLING AS REQUIRED.  
 ② REMOVE AND REPLACE NOTIFICATION APPLIANCE CIRCUIT PANEL WITH LIKE AND KIND AS NEEDED. CONTRACTOR TO PROVIDE BATTERY CALCULATIONS WITH SUBMITTAL.  
**SYMBOL SUBSCRIPT LEGEND**  
 R INDICATES DEVICE SHALL BE REMOVED AND REPLACED WITH SIMILAR DEVICE TYPE UNLESS NOTED OTHERWISE.

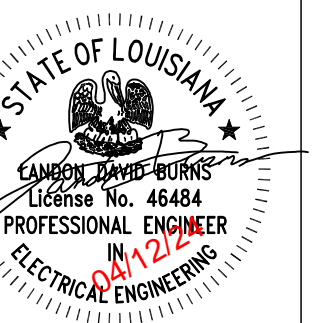
1 | 8TH FLOOR FIRE ALARM PLAN  
 1/8" = 1'-0"

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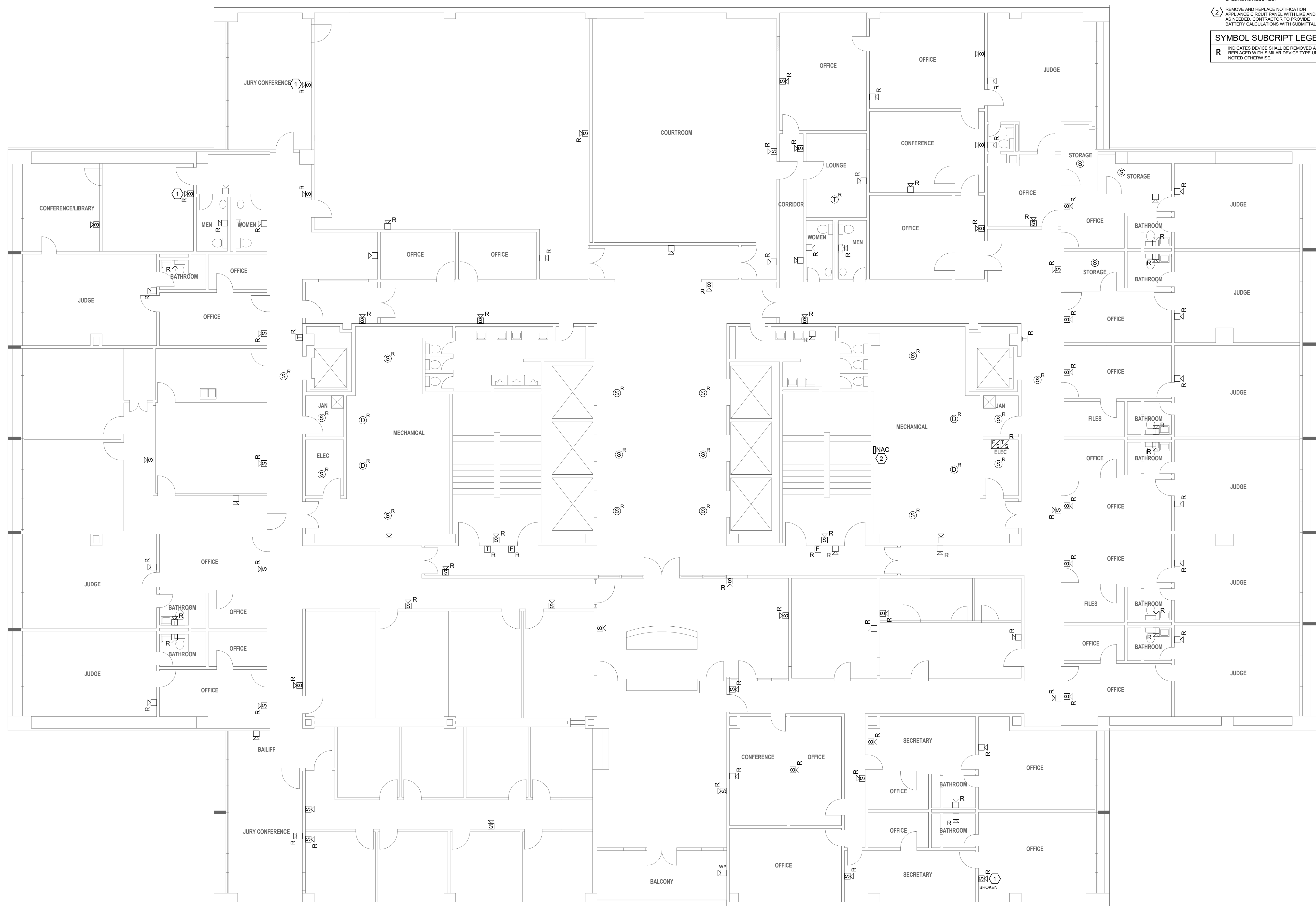


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**E1.08**

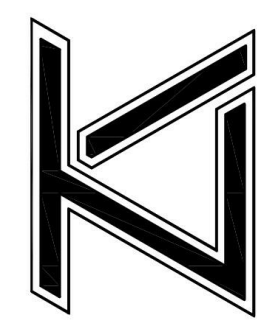
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- ELECTRICAL KEYED NOTES:**
- REMOVE AND REPLACE EXISTING STROBE WITH NEW SPEAKERSTROBE. PROVIDE ADDITIONAL CABLING AS REQUIRED.
  - REMOVE AND REPLACE NOTIFICATION APPLIANCE CIRCUIT PANEL WITH LIKE AND KIND AS NEEDED. CONTRACTOR TO PROVIDE BATTERY CALCULATIONS WITH SUBMITTAL.
- SYMBOL SUBSCRIPT LEGEND**
- R INDICATES DEVICE SHALL BE REMOVED AND REPLACED WITH SIMILAR DEVICE TYPE UNLESS NOTED OTHERWISE.

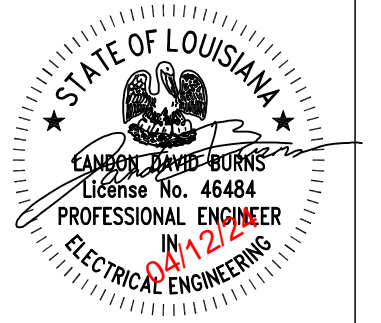
**1 | 9TH FLOOR FIRE ALARM PLAN**  
1/8" = 1'-0"

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**E1.09**

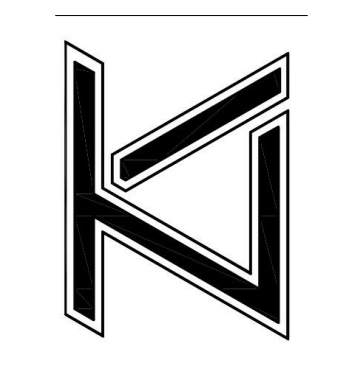
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- ELECTRICAL KEYED NOTES:**
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  - 2 REMOVE AND REPLACE NOTIFICATION APPLIANCE CIRCUIT PANEL WITH LIKE AND KIND AS NEEDED. CONTRACTOR TO PROVIDE BATTERY CALCULATIONS WITH SUBMITTAL.
- SYMBOL SUBSCRIPT LEGEND**
- R INDICATES DEVICE SHALL BE REMOVED AND REPLACED WITH SIMILAR DEVICE TYPE UNLESS NOTED OTHERWISE.

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**E1.10**

**10TH FLOOR FIRE ALARM PLAN**  
 1/8" = 1'-0"

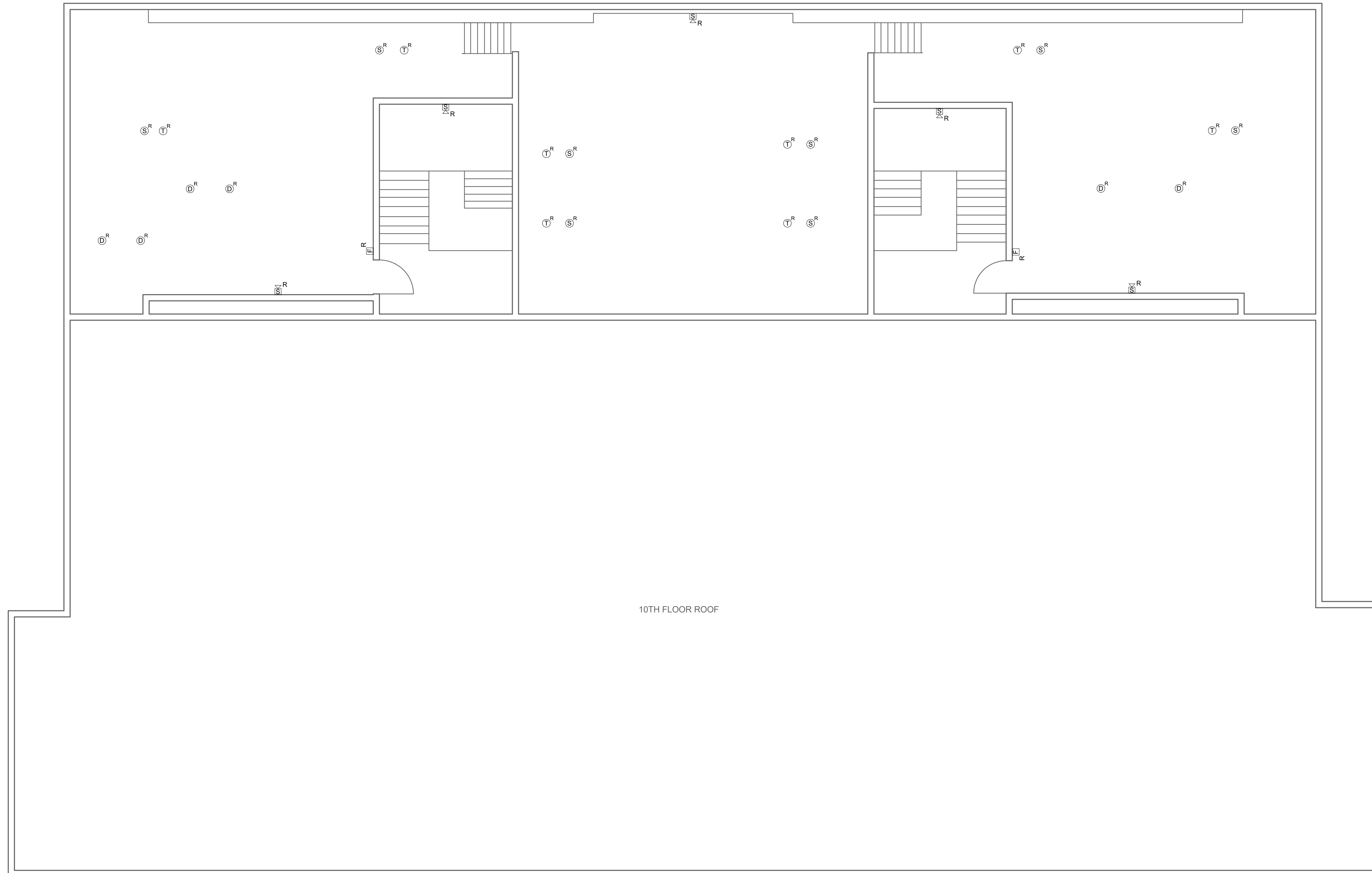
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ELECTRICAL KEYED NOTES:

- ① REMOVE AND REPLACE EXISTING STROBE WITH NEW SPEAKER-STROBE. PROVIDE ADDITIONAL CABLING AS REQUIRED.
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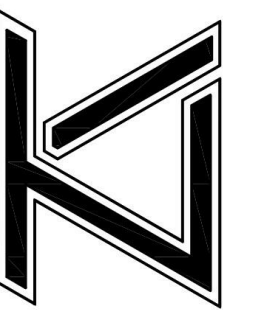
SYMBOL SUBSCRIPT LEGEND

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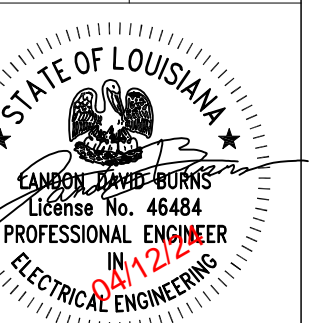
10TH FLOOR ROOF

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1 PENTHOUSE FIRE ALARM PLAN  
 3/16" = 1'-0"

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