



INVITATION TO BID "ITB"

Notice is hereby given that the **LIBERTY PUBLIC SCHOOL DISTRICT, LIBERTY, MISSOURI**, requests written, sealed bids on the items specified on the attached sheet(s).

DATE: **APRIL 20, 2020**

BID NUMBER: **ITB 013-020**

BID TITLE: **FRANKLIN ELEMENTARY FIRE ALARM REPLACEMENT**

BIDS MUST: be received on **MAY 12, 2020 BETWEEN 12:00 PM and 2:00 PM CST**

PUBLIC BID OPENING: **MAY 12, 2020 at 3:00 PM via online format. Here is the link.**

Please click the link below to join the webinar: <https://zoom.us/j/99658110084>
Webinar ID: 996 5811 0084

BIDS MUST BE HAND DELIVERED TO: Jason Breit, Director of Purchasing
District Administration Center
8 Victory Lane
Liberty, MO 64068
Between 12:00 PM and 2:00 PM (CST)

All questions, requests for information or clarification pertaining to this bid must be submitted in writing to Jason Breit at jason.breit@lps53.org

The District reserves the right to accept or reject all or any part of any quote/proposal/bid, to waive technicalities, and to accept the offer that the District considers to be the most advantageous.

All supporting bid documents such as addenda, tabulation sheets, notices of action and/or notices of award will be posted on the website the District's website at <https://www.lps53.org/Page/1563>. It is the responsibility of the bidder to monitor the website for all information regarding this bid or any upcoming bids/proposals.

BIDDER ACKNOWLEDGEMENT

Company Name _____

Address _____ City _____ State _____ Zip Code _____

Telephone _____ E-mail Address _____ Web Address _____

Name (Typed or Printed) _____

Signature of Authorized Representative: _____

Date _____ Company Type: (i.e. Corporation, LLC. or Other) _____

BID IDENTIFICATION LABEL

NOTICE TO ALL RESPONDENTS

For your convenience, the label below has been provided to properly identify your proposal submittal. Place your bid in a sealed envelope, type or print company name and address in area provided below and affix the label on the outer surface of the envelope or package.

PLEASE FILL OUT THE LABEL BELOW AND ATTACH IT TO THE OUTSIDE OF YOUR REPLY ENVELOPE.

DO NOT OPEN - SEALED BID - DO NOT OPEN

BID #: ITB 013-020, TITLE: FRANKLIN ELEMENTARY FIRE ALARM REPLACEMENT

BID PROPOSAL DUE ON: MAY 12, 2020 at 2:00 PM CST

FROM:

DELIVER TO:

LIBERTY PUBLIC SCHOOL DISTRICT
PURCHASING DEPARTMENT
ATTN: JASON BREIT
8 VICTORY LANE
LIBERTY, MO 64068

BID INSTRUCTIONS

PURPOSE

The purpose of this ITB is to establish an agreement for the replacement services of a fire alarm system to be performed at Franklin Elementary as described herein. It is the intent of the District to award a service contract to a single vendor.

CALENDAR OF EVENTS

| | |
|-------------------------|---|
| Monday, April 20, 2020 | Bid Release Date |
| Monday, May 4, 2020 | Pre-Bid Meeting – 10:00 AM CST |
| Thursday, May 7, 2020 | Question Deadline – 3:00 PM CST |
| Tuesday, May 12, 2020 | Submittal of Bid Deadline - 2:00 PM CST |
| Tuesday, May 19, 2020 | BOE Recommendation for Award |
| Wednesday, May 20, 2020 | Vendor Award Notification |

PRE-BID MEETING

A pre-bid meeting will be held at Franklin Elementary on May 4, 2020 at 10:00 AM CST. Franklin Elementary is located at 201 W. Mill St, Liberty, MO. 64068. The point of contact for the meeting is Justin Presson, Project Manager, who can be reached at 816-736-5448. It is highly recommended that all perspective vendors attend the pre-bid meeting in order to fully understand the scope of service being requested.

CLARIFICATION DEADLINE

The Vendor is presumed to completely accept the Bid requirements as stated herein. Bidders having questions concerning ITB terminology, general or specific conditions should submit them in writing to the Director of Purchasing at jason.breit@lps53.org.

The Vendor must raise any questions regarding the Bid requirements no later than May 7, 2020 at 3:00 PM CST so that appropriate information may be researched and made available prior to the bid opening.

By submitting a bid, the bidder warrants that he/she is fully satisfied that these specifications, as amended if applicable, accurately describe or indicate that all conditions, site or otherwise, have been taken into account in determining the bid price(s). There will be no increase in the contract price based upon a bidder's misunderstanding or lack of knowledge about the intent of the solicitation. In addition, the vendor must list and outline, in their bid response, any exceptions to the Bid requirements. The timeliness, nature and number of the exceptions taken by the Vendor are among the factors that the District will consider in selecting the successful Vendor.

BONDING

A **Payment Bond** will be required from any vendor that submits a total bid proposal in excess of \$50,000. The undersigned Bidder agrees to furnish a Payment Bond in the amount of 100% of the total contract value prior to execution of the formal service contract, agreement or issuance of an official district purchase order.

SPECIAL REQUIREMENTS

One original proposal clearly marked "**Original**", and two (2) copies, clearly marked "**Copy**", must be submitted. The complete Bid Response should be sealed in an envelope or box for delivery to the Purchasing Office of Liberty Public Schools. "Copy" documents must be identical to Original Response submitted. The Liberty School District will not be held responsible for pricing sheets or materials left out of "Copy" or "Original" submittals.

The District may occasionally submit more than one separately numbered proposal packet to you in a single envelope. Please be aware that you must return separately numbered proposals to the District in separate envelopes. Multiple options within the same proposal may, however, be submitted together.

ADDENDA

All changes, additions, and/or clarifications in connection with this Bid will be issued by the Purchasing Office in the form of a written addendum. Signed acknowledgement of receipt of each addendum must be submitted with the Bid (see "Bid Response Form"). Verbal responses and/or representations shall not be binding.

BID CONTENTS AND SUBMISSION

Bids shall include the following information:

- A. Name, address, and telephone number of Bidder(s). See page 2.
- B. Full price for providing the Product, Equipment and/or Service in accordance with this Bid.
- C. A completed Bid Form attached to this Invitation for Bid.
- D. Name, address and telephone number of not less than two (2) references for whom the Vendor has provided similar Supplies, Equipment, and/or Services to within the last 2 years.
- E. Detailed description of material and services to be provided.

Vendors must use the forms provided for the purpose of submitting quotes and must give the unit price, extend totals, and sign the quote as required in each specific instance. If the vendor does not care to quote, we request that forms be returned and the reason noted. Provide all specifications and descriptive literature.

EVALUATION

In evaluating any aspect of the Response, the District may consider previous dealings with the Vendor, references from the Vendor's customers, inspections of other Supplies, Equipment or Services provided by the Vendor, and any other information the District obtains regarding the Vendor, or that the District deems relevant.

1. Responsive responses from Vendors will be evaluated on the basis of criteria that include the following:
 - a. Overall cost to the District, whether direct or indirect.
 - b. Delivery and/or lead-time required for receipt of goods/services.
 - c. Completed required forms and ability to meet the requirements of the attached service contract.
2. The timeliness, nature and number of any exceptions taken by the Vendor to the Bid will be considered by the District in evaluating a Response. Any one of these criteria alone, or in combination, may provide a basis for not accepting the Vendor's Response.
3. A responsible vendor is one who, in the opinion of the District, possesses the skill, experience, ability, integrity, financial and other resources necessary for providing the supplies, equipment, and/or services. In evaluating a Vendor's responsibility, or in evaluating any other aspect of the Response, the District may consider previous dealing with the District, references from the Vendor's customers, inspections of other supplies, equipment, and/or services supplied by the vendor, and may other information the District obtains regarding the Vendor or that the District deems relevant.

SUPPLEMENTAL MATERIALS

Vendors are responsible for including all pertinent product data in the returned proposal package. Literature, brochures, data sheets, specification information, completed forms requested as part of the proposal package and any other facts which may affect the evaluation and subsequent contract award should be included.

Materials such as legal documents and contractual agreements, which the vendor wishes to include as a condition of the proposal, must also be in the returned bid package. Failure to include all necessary and proper supplemental materials may be cause to reject the entire proposal.

TIME OF COMPLETION

Work shall begin on or about June 1, 2020. Work shall be substantially complete, excluding additional projects added to the original scope of work, by July 31, 2020.

BID EXPIRATION

All bids shall be considered as firm for a period of sixty (60) calendar days, commencing the date and time of the bid closing and expiring at 3:00 PM CST of the last day. **Please note on the any deviations to this requirement.**

DISTRICT OPTION

- A. Select more than one successful Bidder based on price break(s).
- B. During the term of this Bid, the District reserves the right to purchase, from the accepted Bidder, additional products, equipment or services at the herein proposed Bid price.
- C. The District does not guarantee that any minimum quantity will be purchased from the successful Bidder during the term of this Bid.

BID OPENING

The bid opening will be conducted via online format. Here are the instructions for connecting to view the public bid opening that will take place at 3:00 PM CST on May 12, 2020.

Please click the link below to join the webinar:

<https://zoom.us/j/99658110084>

Or iPhone one-tap:

US: +13126266799,,99658110084# or +16465588656,,99658110084#

Or Telephone:

Dial (for higher quality, dial a number based on your current location):

US: +1 312 626 6799 or +1 646 558 8656 or +1 253 215 8782 or +1 301 715 8592 or +1 346 248 7799 or +1 669 900 9128

Webinar ID: 996 5811 0084

BID REJECTION

The District reserves the right to accept or reject all or any part of any quote, to waive technicalities, and to accept the offer that the District considers to be the most advantageous.

ACCEPTANCE OF BIDS:

The District reserves the right to accept the Bid that, in its judgment, is the lowest and/or best Bid.

The delivery date(s) or dates when work will start shall be stated in definite terms, as they will be taken into consideration when making the award.

LATE BIDS

Bids received after the date and time of the Bid opening stated herein shall not be considered and will be returned unopened.

MISTAKE IN BIDS

If the respondent discovers a mistake in Bid prior to the date and time specified for the Bid opening, he or she may correct the mistake by modifying or withdrawing the Bid. If the apparent low and best Bidder discovers a mistake in

Bid of a serious and significant nature which is unfavorable to him or her prior to the issuance of a purchase order or a contract, he or she may request consideration be given to modifying the Bid if he or she remains the lowest Bidder or to withdrawing the Bid if the result of the correction of the mistake makes another Bidder lowest and best Bidder. The mistake must be evident and provable. A mistake in Bid cannot be considered once a purchase order or contract is issued.

NEGOTIATION

- A. The District reserves the right to award a contract based on the initial Responses received, without engaging in discussions or negotiations. Accordingly, a Vendor should submit its initial Bid on the most favorable terms possible to the District. However, should only one Bid be received by the District, the District may, but is not obligated to, conduct negotiations with this vendor whose Response, in the opinion of the District, is competitive or may best meet the needs of the District.
- B. The District may, but is not obligated to, seek clarification of a Response submitted by a Vendor.
- C. If the District chooses to negotiate, negotiation may involve any issue bearing on the Response and may take place after submission of Response and before an award is made. The District reserves the right to follow negotiations with a request for submission of a best and final Response.

AWARD OF THE CONTRACT

After the Bids have been opened and duly considered, the lowest and/or best Bid shall be submitted to the Liberty Public School District 53 Board of Education for formal approval. After approval by the District Board of Education, the Purchasing Director will notify, in writing, the successful Bidder. An approved Bid award by the Board of Education shall constitute the District's official award of the Bid. A written contract, or purchase order, noting the terms and conditions of this bid will be executed before "Notice to Proceed" is given. **Vendors with standardized contracts should submit them with the Bid Response.**

PREVAILING WAGE PROJECT

This is a prevailing wage solicitation. Not less than the prevailing hourly rate of wages, as set out in the wage order attached to and made part of the specification for work under the contract, shall be paid to all workers performing under this contract. (Section 290.250, RSMo).

The contractor will be held responsible for paying the prevailing wages and it is imperative that all contractors familiarize themselves with the current wage rates before submitting bids based on these specifications herein. The contractor will forfeit a penalty to the contracting public body of \$100 per day (or a portion of a day) for each worker that is paid less than the prevailing rate for any work done under the contract by the contractor or any subcontractors (Section 290.250, RSMo). The Contractor and all subcontractors to the contract must require all on-site employees to complete the ten-hour safety training program required under Section 292.675, RSMo, unless they have previously completed the program and have documentation of having done so.

The contractor will forfeit a penalty to the contracting public body of \$2500 plus an additional \$100 for each employee employed by the contractor or subcontractor, for each calendar day, or portion thereof, such employee is employed without the required training (Section 292.675, RSMo).

A legible list of all prevailing wage rates must remain posted in a prominent and easily accessible place at the worksite by each contractor and subcontractor on the project. The notice must be posted during the full time that any worker is employed on the job (Section 290.265, RSMo).

During periods of excessive employment (any month immediately following two consecutive calendar months during which the level of unemployment in the state has exceeded five percent as measured by the United States Bureau of Labor Statistics) only Missouri laborers (persons who have resided in Missouri for at least thirty days and intend to become or remain Missouri residents) and laborers from non-restrictive states persons who are residents of a state which has not enacted state laws restricting Missouri laborers from working on public works projects in that state, (as determined by the Labor and Industrial Relations Commission) may be employed under the contract, except that other laborers may be used when Missouri laborers or laborers from nonrestrictive states are not available, or are incapable of performing the particular type of work involved, if so certified by the contractor and approved by the contracting officer.

Every transient employer, as defined in section 285.230 RSMo, enclosed in the laws section, must post in a prominent and easily accessible place at work site a clearly legible copy of the following: (1) The notice of registration for employer withholding issued to such transient employer by the director of revenue; (2) Proof of coverage for workers' compensation insurance or self-insurance signed by the transient employer and verified by the department of revenue through records of the division of workers' compensation; and (3) The notice of registration for unemployment insurance issued to such transient employer by the division of employment security. Any transient employer failing to comply with these requirements shall, under section 285.234 RSMo, enclosed in the laws section, be liable for a penalty of five hundred dollars per day until the notices required by this section are posted as required by that statute.

The awarded contractor must provide certified payroll for themselves and any sub-contractors throughout the duration of work and prior to final payment being made (290.290, RSMo).

At the completion of this project and prior to a final payment being made, the contractor must submit an "Affidavit of Compliance" for PW-4 with the Liberty Public School District. The affidavit must state the party has fully complied with Missouri Prevailing Wage Law, and the public body must verify that the correct wages were paid. No payment can be legally made by the public body to the contractor(s) until the affidavit is filed in proper form and order with the public body (Section 290.290 and 290.325, RSMo).

All contractors must report to the Liberty Public School District if a wage subsidy, bid supplement, or rebate was provided, and if so, if it was provided lawfully. The amount and date of each subsidy, supplement or rebate must be reported to the Liberty Public School District within 30 days of receipt of payment (Section 290.095, RSMo).

Missouri Prevailing Wage Order for this Project – Wage Order No. 26 (See Enclosed)

REFERENCES

Please provide references of entities that your company has provided services to and that the district may contact for reference.

Reference # 1

Organization Name: _____ Telephone #: _____

Contact Name: _____ Email: _____

Scope of Work Provided: _____

Project Dollar Value: _____ Contract Dates: _____

Reference # 2

Organization Name: _____ Telephone #: _____

Contact Name: _____ Email: _____

Scope of Work Provided: _____

Project Dollar Value: _____ Contract Dates: _____

Reference # 3

Organization Name: _____ Telephone #: _____

Contact Name: _____ Email: _____

Scope of Work Provided: _____

Project Dollar Value: _____ Contract Dates: _____

SERVICE CONTRACT

Below is the formal service contract, which includes all governing terms and conditions, that shall be dually executed between the District and awarded Vendor upon formal award of service by the District Board of Education. All materials such as legal documents and contractual agreements, which the vendor wishes to include as a condition of the proposal, must also be included within the returned proposal package for review by District.



SERVICES CONTRACT

Between

LIBERTY PUBLIC SCHOOL DISTRICT #53

and

CONTRACTOR

Contract No. _____

THIS CONTRACT SHALL BE BINDING ON THE DISTRICT ONLY IF IT IS APPROVED BY THE BOARD OF EDUCATION AND SIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE DISTRICT

This Services Contract (“Contract”) is made by and between the Liberty Public School District #53, Liberty, MO 64068 (“LPS” or “Liberty Schools”) and CONTRACTOR (“Contractor”). The parties agree as follows:

CONTRACTOR DATA

Contractor Name: _____

Contact Name: _____

Address: _____

City, State, ZIP: _____

Telephone: _____ Email: _____

Contractor must submit a completed “Request for Taxpayer Identification Number and Certification” (Form W-9) with this signed contract. Payment information will be reported to the Internal Revenue Services under the name and TIN or SSN, whichever is applicable, provided by Contractor. Contractor certifies under penalty of perjury that Contractor is a

Sole Proprietor Corporation Limited Liability Company

Partnership Nonprofit Corporation Other (describe : _____)

District Point of Contact: _____

Name of Building or Department: _____

Address: _____

***All information in this contract is subject to public records law. Please contact the District Point of Contact listed above if you have any questions.**

TERMS AND CONDITIONS

1. **Purpose.** This contract is for services other than (a) personal services or (b) architecture, engineering, or related services.
2. **Term and Termination.** This contract becomes effective on _____ or the date on which the Contract is fully executed by both parties, **whichever is later. No party shall perform work under this Contract before the effective date.** An email notification with a copy of the fully executed contract will be sent to the Contractor email listed above upon execution. At that time, work under the contract may begin.

Unless earlier terminated as provided below, this Contract shall continue through

Check if applicable:

___ As provided for in _____ (enter RFP/ITB/QUOTES solicitation number, e.g. RFP 010-018), this Contract may be renewed for up to _____ (e.g. four additional one-year terms) by amendment signed by both parties.

3. **Cooperative Purchasing Option.** At the discretion of the Contractor and pursuant to District policy, purchasing procedures, other public agencies may purchase the awarded goods and services from the awarded Contractor(s), under terms and conditions of this contract.

Any such purchases will be between the Contractor and the participating public agency under separate contract and will not impact the Contractor's obligations to the District. Any estimated purchase volumes listed in this Contract do not include other public agencies and the District makes no guarantee as to their participation.

4. **Detailed Description of Services/Statement of Work.** Contractor shall provide the services described in Exhibit A (Statement of Work).

5. **Contract Documents.** This Contract consists of these Terms and Conditions and the documents listed below in descending order of precedence. A conflict in these documents shall be resolved in the priority listed below with these Terms and Conditions taking precedence over all other documents. The Exhibits to this Contract include the following documents.

- Exhibit A (Statement of Work)
- Exhibit B (Felony Conviction Notification Form)
- Exhibit C (Federal Work Authorization Program Affidavit Form)
- Exhibit D (Federal Work Authorization Program ("E-Verify) Addendum Form)

6. **Maximum Total Payment; Invoicing.** The maximum total payment under this Contract is \$_____ ; This is a not-to-exceed amount, and the District will not pay more than this amount unless specifically agreed to in an amendment executed by the parties. Contractor shall invoice District, and District shall pay Contractor as described in Exhibit A. In all cases, District reserves the right to withhold payments to Contractor for amounts

reasonable and sufficient to (a) cover District's costs in processing invoices more than 60 days late and (b) protect the District from any loss, damage, or claim which may result from Contractor's failure to perform in accordance with the terms of the Contract or failure to make proper payment to suppliers or subcontractors.

7. Other Payment Issues.

- a. Method of Payment: Unless otherwise specified in Exhibit A, District shall pay Contractor net 30 days upon invoice approval and work acceptance.
- b. Payment on Early Termination: Upon termination pursuant to Section 15 (Early Termination), District shall pay Contractor as follows:
 - i. If District terminates this Contract for its convenience under Section 15 (a) or 15 (b), then District must pay Contractor for work performed before the termination date if and only if Contractor performed in accordance with this Contract. District shall not be liable for any direct, indirect, or consequential damages. Termination by District shall not constitute a waiver of any other claim District may have against Contractor.
 - ii. If Contractor terminates this Contract under Section 15 (c) or 15 (d) due to Contractor's breach, then District must pay Contractor for work performed before the termination date if and only if Contractor performed in accordance with this Contract.
 - iii. If District terminates this Contract under Sections 15 (c) or 15 (d) due to Contractor's breach, then District must pay Contractor for work performed before the termination date less any setoff to which District is entitled and if and only if Contractor performed such work in accordance with this Contract.
- c. Non-Appropriation; Adequate Funding: District is prohibited from contracting for services for which it has not received appropriated funds. If payment for work under this Contract extends into District's next fiscal year, District's obligation to pay for such work shall be subject to approval for future School Board appropriations to fund this Contract. Moreover, continuation of this Contract at specified levels is specifically conditioned on adequate funding under the District's budget adopted in June of each year. District reserves the right to adjust the level of services provided for in this Contract in accordance with the funding levels adopted by its Board of Education.

8. Cost Adjustments. Both parties agree that contracted prices shall be fixed for the first 12 months of this Contract. Contractor must submit to District any proposed cost adjustments at least 60 days before the proposed effective date of such increases with a detailed explanation for each adjustment. District reserves the right to reject any changes to this Contract it deems unacceptable.

9. Independent Contractor Status: By its signature on this contract, Contractor certifies that the service or services to be performed under this Contract are those of an independent contractor. And that Contractor is solely responsible for the work performed under this Contract. Contractor represents and warrants that Contractor, its subcontractors, employees, and agents are not "officers, agents, or employees" of the District.

10. Subcontracts and Assignment. Contractor shall not subcontract, assign, delegate, or transfer any of its duties, rights, or interests under this Contract without the prior written consent of District. District may withhold such consent for any or no reason. If District consents to an assignment or subcontract, then in addition to any other provisions of this Contract, Contractor shall require any permitted subcontractor to be bound by all the terms and

conditions of this Contract that would otherwise bind Contractor. The parties agree that any such subcontracts shall be construed as matters solely between Contractor and its subcontractor and shall not have any binding effect on District.

11. **Successors in Interest.** This Contract shall bind and insure to the benefit of the parties, their successors, and approved assigns, if any.
12. **No Third Party Beneficiaries.** District and Contractor are the only parties to this Contract and are the only parties entitled to enforce its terms. Nothing in this Contract gives or provides any benefit or right, directly or indirectly, to third parties unless they are individually identified by name in this Contract and expressly described as intended beneficiaries of this Contract.
13. **Other Contractors.** If this Contract is for “services” and not “services requirements” (see Section 1 (Purpose)) District may enter into other contracts for additional or related work, and Contractor shall fully cooperate and coordinate its performance under the Contract with those other contractors and with relevant District employees. Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by District employees.
14. **Nonperformance; Substituted Services.** As used in this Contract, “failure to perform” means failure (for whatever reason) to deliver the services as specified and/or scheduled in this Contract. If Contractor fails to perform under this Contract and does not cure that failure within seven days’ written notice from District, then District has the right to complete the services itself, to obtain the services from other sources, or to a combination thereof as necessary to accomplish the purpose of this Contract. Both parties agree that Contractor shall bear any reasonable cost difference for these substituted services.
15. **Early Termination.** This Contract may be terminated as follows unless specified herein:
 - a. Mutual: District and Contractor may terminate this Contract at any time by their written agreement.
 - b. District’s Sole Discretion: District in its sole discretion may terminate this Contract for any reason on 30 days’ written notice to Contractor.
 - c. Breach: Either party may terminate this Contract in the event of a breach by the other party. To be effective, the party seeking termination must give to the other party written notice of the breach and its intent to terminate. If the breaching party does not entirely cure the breach within 15 days of the date of the notice, then the non-breaching party may terminate this Contract at any time thereafter by giving a written notice of termination.
 - d. Contractor Licensing, etc.: Notwithstanding Section 15 (c), District may terminate this Contract immediately by written notice to Contractor upon denial, suspension, revocation, or non-renewal of any license, permit, or certificate that Contractor must hold to provide services under this Contract.
 - e. Furlough: District reserves the right to terminate or otherwise suspend this Contract if District’s Board of Education determines that funding is insufficient to remain fully open and calls for a District-wide furlough or similar temporary District reduction in operations. Any temporary closure shall not affect amounts due Contractors under the Contract, subject to a pro-rated adjustment for reduction in services or need for goods during the furlough.

- 16. Remedies.** In case of Contractor breach and in addition to the provisions of Section 13 and 14 of this Contract, the parties agree that District is entitled to any other available legal and equitable remedies. In case of District breach, the parties agree that Contractor's remedy is limited to Contract termination and receipt of Contract payments to which Contractor is entitled.
- 17. Hazardous Materials.** Contractor shall notify District before using any products containing hazardous materials to which District employees, students, or the general public may be exposed. Upon District request, Contractor must immediately provide Material Safety Data Sheets to District for all Materials subject to this provision.
- 18. Errors.** Contractor shall perform any additional work necessary to correct Contractor errors in the services it performs. Under this Contract and shall do so without undue delays or additional cost to District.
- 19. Access to Records; Contractor Financial Records.** Contractor agrees that District and its authorized representatives are entitled to review all Contractor books, documents, papers, plans, and records, electronic or otherwise ("Records"), directly pertinent to this Contract for the purpose of making audit, examination, excerpts, and transcripts. Contractor shall maintain all Records, fiscal and otherwise, directly relating to this Contract in accordance with generally accepted accounting principles so as to document clearly Contractor's performance. Following final payment and termination of this Contract, Contractor shall retain and keep accessible all Records for a minimum of three years, or such longer period as may be required by law, or until the conclusion of any audit, controversy, or litigation arising out of or related to this Contract, whichever date is later.
- 20. Ownership of Work Products.** Contractor agrees that all work product created or developed for District by Contractor pursuant to this Contract are intended as "work made for hire" and shall be the exclusive property of the District. If any such work product contains Contractor's intellectual property that is or could be protected by federal copyright, patent, or trademark laws, Contractor hereby grants District a perpetual, royalty-free, fully-paid, non-exclusive, and irrevocable license to copy, reproduce, deliver, publish, perform, dispose of, and use or re-use, in whole or in part, and to authorize others to do so, all such work product. District claims no right to any pre-existing work product of Contractor provided to District by the Contractor in the performance of this Contract, except to copy, use, or re-use any such work product for District use only.
- 21. Work performed on District Property.** Contractor shall comply with the following:
- a. Identification: When performing work on District property, Contractor shall be in appropriate work attire (or uniform, if applicable) at all times. If Contractor does not have a specific uniform, then Contractor shall provide identification tags and/or any other mechanism the District in its sole discretion determines is required to easily identify Contractor.
 - b. Sign-In Required: As required by schools and other District locations, each day Contractor's employee are present on District property, those employees must sign into the location's main office to receive an in-school identification/visitors tag. Contractor's employees must display this tag on their person at all times while on District property.
 - c. No Smoking: All District properties are tobacco-free zones; Contractor is prohibited from using any tobacco product on District property.

- d. No Drugs: All District properties are drug-free zones as enforced by law enforcement.
- e. No Weapons or Firearms: Except as provided by statute and District policy, all District properties are weapons and firearms-free zones; Contractor is prohibited from possessing on its persons or in its vehicles any weapons or firearms while on District property.

22. Security. Any disclosure or removal of any District matter or property by Contractor shall be cause for immediate termination of this Contract. Contractor shall bear sole responsibility for any liability including, but not limited to attorney fees, resulting from any action or suit brought against District because of Contractor's willful or negligent release of information, documents, or property contained in or on District property.

23. Employee Removal. At District's request, Contractor shall immediately remove any Contractor employee from all District properties in cases where the District in its sole discretion determines that removal of that employee is in the District's best interests.

24. Media Contacts. Contractor shall issue no news release, press release, or other statement to members of the news media or any other publication regarding this Contract or the Services provided hereunder within one (1) year of Services completion without District's prior written authorization. Contractor shall not post or publish any textual or visual representations of the Services without approval of District.

30. Compliance with Applicable Law. Contractor shall comply with all federal, state, and local laws applicable to public contracts and the work done under this Contract, and with all regulations and administrative rules established pursuant to those laws.

31. Indemnification. Contractor shall defend and indemnify District, its officers, directors, employees, and agents from and against all liabilities, losses, expenses, claims, actions, or judgements (including attorney fees) recovered or made against District for any damage, injury, or death to persons or damage to property caused by the negligent or intentional acts or omissions of Contractor, its officers, employees, agents, or subcontractors related to Contractor's performance under this Contract. District must promptly notify Contractor in writing of any such claim or demand to indemnify and shall cooperate with Contractor in a reasonable manner to defend such claim.

32. Insurance. At all times while providing services under this Contract, Contractor shall maintain in force at Contractor's expense the following insurance coverage(s), as applicable:

- a. Workers' Compensation. As required by Chapter 287 of the Revised Statutes of Missouri, subject employers shall provide workers' compensation coverage in accordance with this law. Contractors shall submit a certificate of insurance to District showing proof of coverage.
- b. Professional Liability/Errors & Omissions (E&O). If Contractor is providing services that require a state license (including, but not limited to , accounting, architectural, auditing, legal, and medical), then Contractor shall maintain professional liability/E&O insurance coverage of at least 3,000,000 for each claimant, and at least \$3,000,000 coverage for each incident or occurrence.

- c. General Liability. Contractor shall provide general liability insurance coverage to sufficiently cover events adverse to the objectives of this Contract. Contractor shall maintain general liability insurance coverage of at least \$1,000,000 for each claimant and \$3,000,000 for each incident, or occurrence.
- d. Motor Vehicle Liability. If Contractor is providing services that require Contractor to transport District personnel, students, or property, then in addition to any legally required insurance coverage, Contractor shall maintain motor vehicle liability insurance of at least \$1,000,000 for each claimant, and \$3,000,000 for each incident, or occurrence.
- e. Other Insurance. District reserves the right to require other insurance (e.g. Builder's All -Risk Insurance for construction services) as may be reasonably prudent under this Contract.
- f. Additional Requirements. All insurance coverage shall be provided by an insurance company having an A.M. Best rating of at least A- and licensed to do business in Missouri. Contractor alone is responsible for paying all deductibles and retentions. Contractor's coverage shall be primary in the event of loss.
- g. Certificate of Insurance. Upon District request, Contractor shall furnish to District a current certificate of insurance for each of the above coverages within 48 hours of District request. Each certificate must state the relevant deductible or retention level. For general liability coverage, the certificate must state that District, its agents, officers, and employees are additional insureds with respect to Contractor's services provided under this Contract. The certificate must specify an additional insured endorsement, and Contractor shall attached a copy of the endorsement to the certificate. If requested by District, Contractor shall also provide complete copies of insurance policies to District.

33. Waiver; Severability. Waiver of any default or breach under this Contract by District does not constitute a waiver of any subsequent default or a modification of any other provisions of this Contract. If any term or provision of this Contract is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular term or provision held invalid.

34. Non-discrimination Clause. Both parties agree that no person shall be subject to unlawful discrimination based on race; national or ethnic origin; color; sex; religion; age; sexual orientation; gender expression or identify; pregnancy; marital status; familial status; economic status or source of income; mental or physical disability or perceived disability; or military service in programs, activities, services, benefits, or employment in connection with this Contract. The parties further agree not to discriminate in their employment or personnel policies.

35. Confidentiality. Contractor agrees that all knowledge and information that it may receive from the Liberty Public School District or its employees, agents or consultants or by virtue of the performance of services under and pursuant to this agreement including but not limited to information concerning the students and employees of LPS shall for all time and for all purposes be regarded by Contractor as confidential and held by Contractor in confidence and shall be solely for the benefit and use of LPS and shall not be used by Contractor or directly or indirectly disclosed by Contractor to any person or entity whatsoever excepting LPS or with the written permission of LPS or when required by law.

36. Controlling Law; Venue. The parties agree that Missouri law will govern any dispute related to this Contract and to conduct any litigation arising out of this Contract in courts located in Clay County, Missouri.

- 37. **Amendments; Renewal.** Any amendments, consents to or waivers of the terms of this Contract must be in writing and signed by both parties. The parties may renew this Contract by their signed, written instrument.
- 38. **Counterparts.** The parties may execute this Contract in counterparts, each of which constitutes an original and all of which comprise one and the same Contract. Counterparts may be delivered by electronic means.
- 39. **Entire Agreement.** When signed by both parties, this Contract (and any attached exhibits) is their final and entire agreement. As their final and entire expression, this Contract supersedes all prior and contemporaneous oral or written communications between the parties, their agents, and representatives. There are no representations, promises, terms, conditions, or obligations other than those contained herein.
- 40. **Notices.** All notices or demands delivered upon depositing the notice or demand in the United States mail, certified or registered, postage prepaid, addressed to the respective party at the addresses herein.

PAYMENT METHOD: The District preferred method of payment is by check. Electronic payment is not available at this time. The district will issue an official purchase order once the Contract has been executed. All invoices should state the applicable purchase order number in order to expedite payment.

I have read this contract and its attached exhibits, if any. I certify that I have the authority to sign and enter into this contract on behalf of the party I represent and agree to be bound by its terms.

CONTRACTOR

DISTRICT

CONTRACTOR

LIBERTY PUBLIC SCHOOL DSITRICT
8 VICTORY LANE
LIBERTY, MO 64068

Signature

Steve Anderson
Chief Operations Officer

Contractor Printed Name and Title

Date

Date

ATTACHMENT (A) – STATEMENT OF WORK

This attachment will be provided by the awarded vendor once the bid award recommendation has been approved.

Either a Statement of Work by Vendor, the Bid Response Form, or a copy of the entire bid proposal submitted by the awarded vendor will be included in the Service Contract as Attachment A.

ATTACHMENT (B) - FELONY CONVICTION NOTIFICATION FORM

The person or business entity that enters into an agreement with this school district must give advance notice to the District if the person or an owner or operator of the business entity has been convicted of a felony. The notice must include a general description of the conduct resulting in the conviction of a felony.

The district may terminate this agreement with a person or business entity if the District determines that the person or business entity failed to give notice by the next preceding subsection, or misrepresented the conduct resulting in the conviction. The District will compensate the person or business entity for services performed before the termination of the agreement”.

By submitting this offer and signing this certificate, this bidder:

- Certifies that the owner/operator has not been convicted of a felony, except as indicated on a separate attachment to this offer, and
- Certifies that no employee who will enter school buildings or potentially have contact with school children has been convicted of any felony or a misdemeanor involving violence or sexual contact or sexual abuse. It shall be the duty of the vendor to conduct the appropriate background checks on its employees and vendor agrees to share this information with the District upon request.

Vendor Name: _____

Vendor Address: _____

Vendor E-mail Address: _____

Vendor Telephone: Fax Number: _____

Authorized Company Official’s Name: _____ (Printed)

Signature of Company Official: _____

Date: _____

ATTACHMENT (C) - FEDERAL WORK AUTHORIZATION PROGRAM AFFIDAVIT

I, _____, being of legal age and having been duly sworn upon my oath, state the following facts are true:

1. I am more than twenty-one years of age; and have first-hand knowledge of the matters set forth herein.
2. I am employed by _____ (hereinafter “Company”) and have authority to issue this affidavit on its behalf.
3. Company is enrolled in and participating in the United States E-Verify (formerly known as “Basic Pilot”) federal work authorization program with respect to Company’s employees working in connection with the services Company is providing to, or will provide to, the District, to the extent allowed by E-Verify.
4. Company does not knowingly employ any person who is an unauthorized alien in connection with the services the Company is providing to, or will provide to, the District.

FURTHER AFFIANT SAYETH NOT.

By: _____ (individual signature)

For _____ (company name)

Title: _____

Subscribed and sworn to before me on this ____ day of _____, 200__.

NOTARY PUBLIC

My commission expires:

ATTACHMENT (D) – FEDERAL WORK AUTHORIZATION PROGRAM (“E-VERIFY”) ADDENDUM

Pursuant to Missouri Revised Statute 285.530, all business entities awarded any contract in excess of five thousand dollars (\$5,000) with a Missouri public school district must, as a condition to the award of any such contract, be enrolled and participate in a federal work authorization program with respect to the employees working in connection with the contracted services being provided, or to be provided, to the District (to the extent allowed by E-Verify). In addition, the business entity must affirm the same through sworn affidavit and provision of documentation. In addition, the business entity must sign an affidavit that it does not knowingly employ any person who is an unauthorized alien in connection with the services being provided, or to be provided, to the District.

Accordingly, your company:

a) agrees to have an authorized person execute the attached “Federal Work Authorization Program Affidavit” attached hereto as Exhibit A and deliver the same to the District prior to or contemporaneously with the execution of its contract with the District;

b) affirms it is enrolled in the “E-Verify” (formerly known as “Basic Pilot”) work authorization program of the United States, and are participating in E-Verify with respect to your employees working in connection with the services being provided (to the extent allowed by E-Verify), or to be provided, by your company to the District;

c) affirms that it is not knowingly employing any person who is an unauthorized alien in connection with the services being provided, or to be provided, by your company to the District;

d) affirms you will notify the District if you cease participation in E-Verify, or if there is any action, claim or complaint made against you alleging any violation of Missouri Revised Statute 285.530, or any regulations issued thereto;

e) agrees to provide documentation of your participation in E-Verify to the District prior to or contemporaneously with the execution of its contract with the District (or at any time thereafter upon request by the District), by providing to the District an E-Verify screen print-out (or equivalent documentation) confirming your participation in E-Verify;

f) agrees to comply with any state or federal regulations or rules that may be issued subsequent to this addendum that relate to Missouri Revised Statute 285.530; and

g) agrees that any failure by your company to abide by the requirements a) through f) above will be considered a material breach of your contract with the District.

By: _____ (signature)

Printed Name and Title: _____

For and on behalf of: _____ (company name)

BID RESPONSE FORM

ADDENDA ACKNOWLEDGEMENT:

The undersigned acknowledges receipt of the following addenda; list by number and the date appearing on Addenda. If Applicable.

#1 _____ Date: _____ #2 _____ Date: _____ #3 _____ Date: _____

BASE BID: \$ _____

Duration of Work: _____ days to complete.

Deviations from Scope of Work or Specifications (please detail) _____

Voluntary Alternates _____

NO BID RESPONSE FORM

(ONLY PROVIDE IF NOT BIDDING THIS PROJECT)

This form is designed to assist the bidder in providing information necessary to confirm a “No-Bid” response. To remain potentially involved in future opportunities, the bidder should state the reasons for declining such an invitation. Please submit to Procurement after completion and required signature.

BID NUMBER: FRANKLIN ELEMENTARY FIRE ALARM REPLACEMENT; ITB 013-020

Company Name: _____

Contact Person: _____

Telephone Number: _____

Fax Number: _____

E-Mail: _____

Please Note:

A no-bid response is a critical factor in remaining on the bidders list, and thus ensures future business opportunities. In addition, a no bid response demonstrates that, while you are not interested in bidding for a particular project, you are still interested in competing for future opportunities and want to stay on the prospective bidders list.

We, the undersigned have declined to submit a bid for the following reason(s):

- ___ Specifications are too rigid (i.e. geared toward one brand/manufacturer/service only (explain below).
- ___ Unable to meet deadline for responding to above bid number (IFB/RFP).
- ___ We do not offer this product or service.
- ___ Our schedule would not permit us to perform.
- ___ Unable to meet specifications.
- ___ Unable to meet Bond/Insurance requirement(s).
- ___ Specifications unclear (explain below).
- ___ Unable to meet insurance requirements.
- ___ Please remove us from your “Bidders List”.
- ___ Other (specify below).

COMMENTS: _____

I certify that the above information is true and correct, and that no other data, fact or consideration offered or given has influenced this response.

Submitted By: _____
Name (Printed)

Title/Department

Signature

Date

TABLE OF CONTENTS

DIVISION 28 - ELECTRONIC SAFETY & SECURITY SPECIFICATION

Fire Alarm:

284600 FIRE DETECTION AND ALARM

END OF DIVISION 28 TABLE OF CONTENTS

SECTION 284600**FIRE DETECTION AND ALARM****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Related Sections: The following sections contain requirements that relate to this Section:
 - 1. Division 7 Section "Penetration Firestopping" for material and methods for firestopping systems.
 - 2. Division 26 Section "Common Work Results for Electrical," for materials and methods for coordination, sleeves and common installation requirements.

1.2 DESCRIPTION OF WORK

- A. This Section requires the Contractor to furnish all materials required to install the fire alarm system. The Contractor shall be responsible for installing, testing, and start-up of a complete functioning fire alarm system, and each element thereof, as specified or indicated on the Drawings or reasonably inferred, including every article, device or accessory (whether or not specifically called for by item) necessary to facilitate each system's function as indicated by the design and the equipment specified. Elements of the work include materials, labor, supervision, supplies, equipment, transportation and utilities.
- B. Division 28 of the Specifications and Drawings numbered with prefixes FA generally describe these systems, but the scope of the Fire Alarm work includes all such work indicated in the Contract Documents: Instructions to Bidders; Proposal Form; General Conditions; Supplementary General Conditions; Architectural, Structural, Fire Suppression, Mechanical, Plumbing, Fire Alarm and Electrical Drawings and Specifications; and Addenda.
- C. The Drawings have been prepared diagrammatically and are intended to convey the scope of work, indicating the general location and arrangement of the major equipment, devices, appliances, etc. without showing all the exact details as to elevations, circuits, routing, and other installation requirements. Use the Drawings as a guide when laying out the system and verify that materials and equipment will fit into the designated spaces, and which, when installed per manufacturers' requirements, will ensure a complete, coordinated, satisfactory and properly operating system.
- D. The scope of work in this section includes:
 - 1. Fire alarm control unit
 - 2. Remote annunciator
 - 3. Manual fire alarm pull stations
 - 4. System smoke detectors
 - 5. Carbon monoxide detectors
 - 6. Notification appliances
 - 7. Magnetic door holders
 - 8. Air handling unit shutdown
 - 9. Battery stand-by power
 - 10. Multi-channel one-way voice notification system
 - 11. Digital alarm communicator transmitter (DACT)

1.3 QUALITY ASSURANCE

- A. All work under this division shall be executed in a thorough professional manner by competent and experienced workmen licensed to perform the Work specified.

- B. All work shall be installed in strict conformance with manufacturer's requirements and recommendations. Equipment and materials shall be installed in a neat and professional manner and shall be aligned, leveled, and adjusted for satisfactory operation.
- C. Material and equipment shall be new, shall be of the best quality and design, shall be current model of the manufacturer, shall be free from defects and imperfections and shall have markings or a nameplate identifying the manufacturer and providing sufficient reference to establish quality, size and capacity. Material and equipment of the same type shall be made by the same manufacturer whenever practicable.
- D. Installation of devices shall be performed or supervised by a National Institute for Certification of Engineering Technologies (NICET) Level 2 or higher Fire Alarm Technician. Submit copies of the certification for employees through shop drawing submittals.

1.4 APPLICABLE CODES AND STANDARDS

- A. Execute Work in accordance with the National Fire Protection Association Standards and all Local, State, and National codes, ordinances and regulations in force governing the particular class of Work involved. Obtain timely inspections by the constituted authorities. Upon final completion of the Work obtain and deliver to the Owner executed final certificates of acceptance from the Authority Having Jurisdiction.
- B. Any conflict between these Specifications and accompanying Drawings and the applicable Local, State and Federal codes, ordinances and regulations shall be reported to the Architect in sufficient time, prior to the opening of Bids, to prepare the Supplementary Drawings and Specification Addenda required to resolve the conflict.
- C. The governing codes are minimum requirements. Where these Drawings and Specifications exceed the code requirements, these Drawings and Specification shall prevail.
- D. All material, manufacturing methods, handling, dimensions, method or installation and test procedure shall conform to but not be limited to the following industry standards and codes.
 - 1. NFPA 70, "National Electrical Code", 2011 Edition. NFPA 72, "National Fire Alarm and Signaling Code", 2010 Edition.
 - 3. Underwriters Laboratories, "Fire Protection Equipment Directory", Latest Edition.
 - 4. International Building Code (IBC) 2012 Edition with local amendments.
 - 5. International Fire Code (IFC) 2012 Edition with local amendments.
- E. Contractor shall comply with rules and regulations of public utilities and municipal departments affected by connections of services.

1.5 DEFINITIONS

- A. General:
 - 1. Furnish: The term "furnish" is used to mean "supply and deliver to the project site, ready for unloading, unpacking, assembly, installation and similar operations."
 - 2. Install: The term "install" is used to describe operations at the project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations."
 - 3. Provide: The term "provide" means "to furnish and install, complete and ready for the intended use."
 - 4. Furnished by Owner or Furnished by Others: The item will be furnished by the Owner or Others. It is to be installed and connected under the requirements of this Division, complete and ready for operation, including items incidental to the Work, including services necessary for proper installation and operation. The installation shall be included under the guarantee required by this Division.
 - 5. Engineer: Where referenced in this Division, "Engineer" is the Engineer of Record and the Design Professional for the Work under this Division, and is a Consultant to, and an authorized representative of, the Architect, as defined in the General and/or Supplementary Conditions. When used in this Division, it means increased involvement by, and obligations to, the Engineer, in addition to involvement by, and obligations to, the "Architect".
 - 6. AHJ: The local code and/or inspection agency (Authority) Having Jurisdiction over the Work.

7. NRTL: Nationally Recognized Testing Laboratory, as defined and listed by OSHA in 29 CFR 1910.7 (e.g., UL, ETL, CSA, etc.), and acceptable to the AHJ over this project. Nationally Recognized Testing Laboratories and standards listed are used only to represent the characteristics required and are not intended to restrict the use of other listed Manufacturers and models that meet the specified criteria.
 8. FACP: Fire Alarm Control Panel.
 9. NICET: National Institute for Certification in Engineering Technologies.
- B. The terms "approved equal", "equivalent", or "equal" are used synonymously and shall mean "accepted by or acceptable to the Engineer as equivalent to the item or manufacturer specified". The term "approved" shall mean labeled, listed, or both, by an NRTL, and acceptable to the AHJ over this project.

1.6 COORDINATION

- A. The Contractor shall visit the site and ascertain the conditions to be encountered while installing the Work under this Division, verify all dimensions and locations before purchasing equipment or commencing work, and make due provision for same in the bid. Failure to comply with this requirement shall not be considered justification for omission, alteration, incorrect or faulty installation of Work under this Division or for additional compensation for Work covered by this Division.
- B. The Contractor shall refer to Drawings of the other disciplines and to relevant equipment drawings and shop drawings to determine the extent of clear spaces. The Contractor shall make offsets required to clear equipment, beams and other structural members; and to facilitate concealing piping in the manner anticipated in the design.
- C. The Contractor shall maintain a foreman on the jobsite at all times to coordinate his work with other contractors and subcontractors so that various components of the Fire Alarm systems will be installed at the proper time, will fit the available space, and will allow proper service access to the equipment. Carry on the work in such a manner that the work of the other contractors and trades will not be handicapped, hindered, or delayed at any time.
- D. Work of this Division shall progress according to the "Construction Schedule" as established by the Prime Contractor and his subcontractors and as approved by the Architect. Cooperate in establishing these schedules and perform the Work under this Division, in a timely manner in conformance with the construction schedule so as to ensure successful achievement of schedule dates.
- E. Where coordination and interfacing with other systems or equipment is required, it shall be the responsibility of the fire alarm system installer (contractor) to either provide the relays, contacts, power supplies and other necessary hardware or see to it that such hardware is provided with the other systems or equipment.
- F. 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. Duct smoke detectors shall be furnished, wired and connected by the fire alarm system installer. The HVAC installer shall furnish necessary duct opening to install the duct smoke detector's housing.
 2. Air handling fan control circuits and contacts to be furnished by the HVAC control equipment.
 3. Conduit shall be by Division 26 "Common Work Results for Electrical".
- G. System shall be complete and operational with power and control wiring provided to meet the design intent shown on the drawings and specified within the specification sections.

1.7 MEASUREMENTS AND LAYOUTS

- A. The drawings are schematic in nature, but show the various components of the systems approximately to scale and attempt to indicate how they are to be integrated with other parts of the building. Figured dimensions shall be taken in preference to scale dimensions. Determine exact locations by job measurements, by checking the requirements of other trades, and by reviewing the Contract Documents. The Contractor will be held responsible for errors which could have been avoided by proper checking and inspection.

1.8 SUBMITTALS

- A. Contractor shall prepare installation drawings (working shop drawings) based upon this design. Requests for deviations from the approved design shall be submitted in writing to the Engineer of Record for approval.
- B. Shop drawings shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations. Drawings that are not legible, or that do not contain sufficient detail to verify compliance with applicable codes and standards, will be rejected without further review.
- C. Submittals and shop drawings shall not contain HEI's firm name or logo, nor shall it contain the HEI's engineers' seal and signature. They shall not be copies of HEI's work product. If the contractor desires to use elements of such product, the license agreement for transfer of information at the end of this section must be used.
- D. Submit Shop Drawings as early as required to support the project schedule. Allow for two weeks Engineer review time plus mailing time plus a duplication of this time for resubmittal if required. Submit Shop Drawings as soon as possible before construction starts.
- E. Before submitting Shop Drawings and material lists, the Contractor shall verify that the equipment submitted is mutually compatible and suitable for the intended use. Contractor shall verify that the equipment will fit the available space and allow ample room for maintenance. If the size of equipment furnished makes necessary any change in location, or configuration, submit a shop drawing showing the proposed layout.
- F. The Engineer's checking and subsequent acceptance of such submittals shall not relieve the Contractor from responsibility for deviations from Drawings or Specifications unless he has, in writing, called the Engineer's and Architect's attention to such deviations at the time of submission, and secured written acceptance; nor shall it relieve him from responsibility for errors in dimensions, details, sizes of members, or quantities; or for omissions of components or fittings; or for not coordinating items with actual building conditions and adjacent work.
- G. Product Data: Provide a bill of materials and product cutsheets showing material specifications, electrical characteristics and connection requirements. Highlight or indicate specific product options and accessories as applicable to the project.
- H. Shop Drawings:
 1. Comply with recommendations and requirements in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
 2. Shop drawings shall be prepared by a NICET Level II or higher certified technician. Submit copies of the certification for the designer with submittal.
 3. The fire alarm system equipment vendor shall provide shop drawings showing fire alarm floor plans and a full building riser diagram. Fire alarm floor plans and riser diagram shall show fire alarm control panel, annunciator, all fire alarm initiating devices and notification appliances. Show typical wiring diagrams of control panel/s, annunciator and each device and wiring connections required. Show all interfaces to other systems, such as temperature control systems, and security systems.
 4. The fire alarm floor plans and riser diagram shall show wiring to all fire alarm devices/appliances, indicating wire sizes and quantities as well as conduit/raceway sizes and locations of end-of-line (EOL) resistors. The fire alarm floor plans and riser diagram shall clearly show the routing of all fire alarm system wiring, including all horizontal routing and vertical routing (in chases).
 5. Routing of all fire alarm wiring shall comply with the "Survivability" requirements of NFPA 72.
 6. Provide a Sequence of Operations Matrix that explains how the submitted fire alarm system functions.
 7. Include voltage drop calculations for notification-appliance circuits.
 8. Include battery-size calculations.
 9. Shop drawing scale shall match the Engineer's drawings where possible. Scale shall not be less than 3/32" = 1'-0".

10. Shop drawings shall be produced using computer-aided design. Hand drawn documents will not be reviewed or approved.

- I. Indicate within the submittal all applicable UL listings and all applicable approvals or certifications.
- J. Qualification Data: Submit copies of the certification for the Installer.
- K. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of products.

1.9 ELECTRONIC DRAWING FILES

- A. In preparation of shop or record drawings, Contractor may, at his option, obtain electronic drawing files in AutoCAD or DXF format from the Engineer for a shipping and handling fee of \$200 for a drawing set up to 12 sheets and \$15 per sheet for each additional sheet. Contact the Architect for Architect's written authorization. Contractor shall complete and send the form attached at the end of this section along with a check made payable to Henderson Engineers, Inc. Contractor shall indicate the desired shipping method and drawing format on the attached form. In addition to payment, Architect's written authorization and Engineer's release agreement form must be received before electronic drawing files will be sent.

1.10 SUBSTITUTIONS

- A. Materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by the proposed substitution.
- B. No substitution will be considered prior to receipt of Bids unless written request for approval to bid has been received by the Engineer at least ten calendar days prior to the date for receipt of Bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other Work that incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitute is upon the proposer. The Engineer's decision of approval or disapproval to bid of a proposed substitution shall be final.
- C. If the proposed substitution is approved prior to receipt of Bids, such approval will be stated in an Addendum. Bidders shall not rely upon approvals made in any other manner. Verbal approval will not be given.
- D. No substitutions will be considered after the Contract is awarded unless specifically provided in the Contract Documents.

1.11 OPERATION AND MAINTENANCE DATA

- A. Instruct the Owner's permanent personnel in the proper operation of, startup and shutdown procedures and maintenance of the equipment and components of the systems installed under this Division.
- B. The O&M Manuals shall be provided in labeled 3-ring binder with cover, binding label, tabbed fly sheets and plastic insert folders for Record Drawings. Include the following sections with the appropriate information for each section:
 - 1. Typewritten Index.
 - 2. Qualifications. Provide designer and installer qualification.
 - 3. Bill of Materials. Provide complete nomenclature, model number and vendor information for all parts.
 - 4. Operating Instructions. Complete instructions detailing operation and maintenance of all equipment installed.
 - 5. Product Data: Provide product cutsheets for all equipment utilized and installed.
 - 6. Riser diagram.
 - 7. Device addresses.
 - 8. Record copy of site-specific software.
 - 9. Provide "Inspection and Testing Form" according to the "Inspection, Testing and Maintenance" chapter in NFPA 72, and include the following:

- a. Equipment tested.
 - b. Frequency of testing of installed components.
 - c. Frequency of inspection of installed components.
 - d. Requirements and recommendations related to results of maintenance.
 - e. Manufacturer's user training manuals.
10. Manufacturer's required maintenance related to system warranty requirements.
 11. Abbreviated operating instructions for mounting at fire alarm control unit and each annunciator unit.
 12. Guarantee. Copy of all guarantees and warranties issued.
 13. Contact list with minimum three service representative phone numbers.

1.12 RECORD DRAWINGS

- A. A set of prints shall be kept on the jobsite during construction for the purpose of noting changes to location of all fire alarm equipment, devices, appliances and circuits as finally installed. During the course of construction, the Contractor shall indicate on these drawings, changes made from the Contract Drawings. Particular attention shall be made to those items which need to be located for servicing.
- B. The record drawings shall show actual locations of initiating devices, notification appliances, and end-of-line devices. Show the approximate location, size and type of all wiring and routing of wiring. Drawings should also include one-line riser diagrams showing all devices.
- C. The Contractor shall sign-off on the Record Drawings as being an accurate representation of the completed installation.

1.13 SPARE PARTS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Provide 10% of the total or a minimum of one (1) manual pull station.
 2. Provide 10% of the total or a minimum of two (2) of each type of automatic smoke detector.
 3. Provide 5% of the total or a minimum of two (2) of each strobe type and candela rating.
 4. Provide 5% of the total or a minimum of two (2) of each speaker type. Combination speaker/strobe units matching the units installed are acceptable.
 5. Keys and Tools: One extra set for access to locked or tamper proofed components.

1.14 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products indicated in this section with minimum three years documented experience.
- B. Installer: Company specializing in installing the products indicated in this section with minimum three years documented experience. Shall be bondable and licensed Contractor and employ full-time factory-trained and certified installers and technicians. Installers shall provide with the fire alarm submittal proof of factory training for each installer.
- C. Final checkout and verification: Shall be conducted by a technician certified by the National Institute for Certification in Engineering Technologies (NICET) registered as level 2 or higher in the fire protection technology certification program. Provide certification information with fire alarm submittal.
- D. The equipment manufacturer's service department shall be fully stocked in standard parts and components and engaged in the maintenance of fire alarm systems. On-the-premises service shall be available within 4 hours of notification, 7 days a week, 24 hours a day.

1.15 GUARANTEES AND WARRANTIES

- A. Furnish service and maintenance of fire alarm system including wiring and raceways for one year from date of substantial completion.
- B. All components, system software, parts and assemblies shall be guaranteed against defects in materials and workmanship for the one-year period stated above, unless specific items are noted to carry a longer warranty in the Construction Documents or manufacturer's standard warranty.

- C. Labor (including travel expenses) to trouble-shoot, repair, reprogram, or replace components shall be furnished by this contractor at no charge during the warranty period.
- D. All corrective software modifications made during warranty periods shall be updated on all user documentation and on user and manufacturer archived software.

1.16 PROJECT CONDITIONS

- A. Conditions Affecting Work In Existing Buildings: The following project conditions apply:
 - 1. The Drawings describe the general nature of remodeling to the existing building. However, the Contractor shall visit the Site prior to submitting a bid to determine the nature and extent of work involved.
 - 2. Work in the existing building shall be scheduled with the Owner.
 - 3. Certain demolition work must be performed prior to the remodeling. The Fire Alarm Contractor shall perform the demolition which involves fire alarm system equipment and materials.
 - 4. Fire Alarm Contractor shall remove articles which are not required for the new work. Unless otherwise indicated, each item removed by the Contractor during this demolition shall be removed from the premises and disposed of in accordance with applicable federal, state and local regulations.
 - 5. Fire Alarm Contractor shall relocate and reconnect fire alarm equipment that must be relocated in order to accomplish the remodeling shown in the Drawings or indicated in the Specifications. General Contractor shall install finish material.
 - 6. Obtain permission from the Architect for channeling of floors or walls not specifically noted on the Drawings.
 - 7. Protect adjacent materials indicated to remain. Install and maintain dust and noise barriers to keep dirt, dust, and noise from being transmitted to adjacent areas. Remove protection and barriers after demolition operations are complete.
 - 8. Locate, identify, and protect Fire alarm services passing through demolition area and serving other areas outside the demolition limits. Maintain services to areas outside demolition limits. When services must be interrupted, install temporary services for affected areas.
- B. Use of Devices during Construction: Protect devices during construction unless devices are placed in service to protect the facility during construction.

PART 2 - PRODUCTS AND MATERIALS

2.1 SYSTEM DESCRIPTION

- A. Noncoded, UL-listed addressable system, with multiplexed signal transmission and voice/strobe evacuation.
- B. All components provided shall be listed for use with the selected system.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- D. Source Limitations for Fire alarm System and Components: Components shall be compatible with, and operate as an extension of, existing system. Provide system manufacturer's certification that all components provided have been tested, and will operate, as a system.

2.2 MANUFACTURER

- A. Subject to compliance with requirements, provide products manufactured by the following manufacturers as indicated on the Drawings:
 - 1. Notifier
 - 2. Siemens-Cerberus Division
 - 3. Approved Equal
 - a. Approved equals will not be considered unless formally submitted during the bidding process as an RFI.

2.3 SYSTEMS OPERATIONAL DESCRIPTION

- A. Fire alarm signal initiation shall be by one or more of the following devices:
 - 1. Manual pull stations.
 - 2. Smoke detectors.
- B. Fire alarm signal shall initiate the following actions:
 - 1. Identify alarm and specific initiating device at fire alarm control unit and remote annunciators (if provided).
 - a. A pulsing alarm tone shall occur within the control panel until acknowledged.
 - b. The alarm LED shall flash on the control panel and remote annunciator panel until the alarm has been acknowledged at the control panel/remote annunciator panel. Once acknowledged, this same LED shall latch on and the custom label for the address in alarm shall be displayed on the alphanumeric LCD readout. A subsequent alarm received from another address after acknowledged shall flash the alarm LED on the control panel showing the new alarm information.
 - 2. Transmit an alarm signal to the alarm supervising station.
 - 3. Audible notification appliances shall sound until silenced by the alarm silence switch at the control panel.
 - 4. All visible alarm notification appliances shall display a continuous synchronized pattern until reset by the Alarm Reset Switch.
 - 5. Record events in the system memory.
 - 6. Release fire and smoke doors held open by magnetic door holders.
 - 7. Activate voice/alarm communication system.
 - 8. All fan-powered air-handling equipment shall shutdown and remain down until the fire alarm control panel is reset.
 - 9. Shut down public addressable system.
- C. Supervisory signal initiation shall be by one or more of the following devices and actions:
 - 1. Duct-smoke detectors
 - 2. User disabling of zones or individual devices.
 - 3. Loss of communication with any panel on the network.
 - 4. Carbon monoxide detectors.
- D. System Supervisory Signal Actions:
 - 1. Identify specific device causing supervisory signal fire alarm control unit and remote annunciators (if provided).
 - a. Visible and audible supervisory alarm indicated by address at fire alarm control panel.
 - b. Manual acknowledge function at fire alarm control panel and remote annunciator panel silences audible supervisory alarm; visible alarm is displayed until device is returned to its normal position/supervisory condition is cleared.
 - 2. Record events in the system memory.
 - 3. After a time delay of 90 seconds transmit a supervisory signal to the alarm supervising station.
 - 4. Duct-mounted smoke detectors shall shutdown their respective unit upon detection of smoke and remain down until manually reset.
- E. System trouble signal initiation shall be by one or more of the following devices and actions:
 - 1. Open circuits, shorts, and grounds in designated circuits.
 - 2. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
 - 3. Loss of communication with any addressable sensor, input module, relay, control module, remote annunciator, printer interface, or Ethernet module.
 - 4. Loss of primary power at fire alarm control unit.

5. Ground or a single break in internal circuits of fire alarm control unit.
6. Abnormal ac voltage at fire alarm control unit.
7. Break in standby battery circuitry.
8. Failure of battery charging.
9. Abnormal position of any switch at fire alarm control unit or annunciator.
10. Voice signal amplifier failure.

F. System Trouble Signal Actions:

1. Identify specific device causing trouble signal fire alarm control unit and remote annunciators (if provided).
 - a. Visible and audible trouble alarm indicated by address at fire alarm control panel.
 - b. Manual acknowledge function at fire alarm control panel and remote annunciator panel silences audible trouble alarm; visible alarm is displayed until device is returned to its normal position/trouble condition is cleared.
2. Record events in the system memory.
3. After a time delay of 90 seconds, transmit a trouble signal to the alarm supervising station.
4. Display system status on graphic annunciator.

2.4 FIRE ALARM SYSTEM CONTROL UNIT

A. General Requirements for Fire alarm Control Unit:

1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864.
 - a. System software and programs shall be held in nonvolatile flash, electrically erasable, programmable, read-only memory, retaining the information through failure of primary and secondary power supplies.
 - b. Include a real-time clock for time annotation of events on the event recorder and printer.
 - c. Provide communication between the FACP and remote circuit interface panels, annunciators, and displays.
 - d. The FACP shall be listed for connection to a remote-station signaling system service.
 - e. Provide nonvolatile memory for system database, logic, and operating system and event history. The system shall require no manual input to initialize in the event of a complete power down condition. The FACP shall provide a minimum 500-event history log.
 - f. The control unit shall have dedicated alarm, supervisory and trouble LED's and dedicated alarm, supervisory and trouble acknowledge, and alarm silence switches.
 - g. Lamp Test: Manual lamp test function causes each LED to function at fire alarm control panel.
 - h. Drill Sequence of Operation: Manual drill function causes alarm mode operation as described above.
 - i. The FACP shall be provided with surge protection.
 - j. Install in a surfacemounted enclosure.

B. Alphanumeric Display and System Controls: Arranged for interface between human operator at fire alarm control unit and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and the programming and control menu.

1. Annunciator and Display: Liquid-crystal type, 80 characters, minimum.
2. Keypad: Arranged to permit entry and execution of programming, display, and control commands.

C. Initiating-Device, Notification-Appliance, and Signaling-Line Circuits: Provide circuitry, which meets the performance requirements during abnormal conditions, based upon the class of the circuitry selected.

1. Initiating Device Circuits: Class B.

- a. Pathway Survivability: Level 0.
 2. Notification Appliance Circuits: Class B.
 - b. Pathway Survivability: Level 0.
 3. Signaling Line Circuits Class B .
 - c. Pathway Survivability: Level 0.
 4. Any circuits interconnecting fire alarm control panels between separate buildings shall be provided with surge protection.
- D. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory signals and digital alarm communicator transmitters shall be powered by 24-V dc source.
1. The location of the dedicated branch circuit disconnecting means shall be permanently identified at the control unit.
 2. The circuit disconnecting means shall have a red marking and be provided with a breaker lock or other approved method to avoid accidental operation.
 3. Alarm current draw of entire fire alarm system shall not exceed 80 percent of the power-supply module rating.
- E. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.
1. Batteries: Sealed lead acid.
 2. The secondary power system shall operate system in standby mode for 24 hours followed by alarm mode for 15 minutes.
- F. System Supervision: Automatically detects and reports open circuits, shorts, and grounds of wiring for initiating device, signaling line, and notification appliance circuits. Alarm, supervisory and trouble signals shall be monitored by the supervising station over a Digital Alarm Communicator Transmitter (DACT), or other approved method.

2.5 EMERGENCY VOICE/ALARM COMMUNICATIONS SYSTEMS (EVACS):

- A. The system shall incorporate one-way emergency voice communication via specified speakers. A central audible module shall provide for the necessary alarm message/tone generation, main and remote microphone connections and mixers/pre-amplifier circuits. Continuous supervision shall be provided along with specific information as to the type of failure (main microphone trouble, tone trouble, etc.)
1. Indicate number of alarm channels for automatic, simultaneous transmission of different announcements to different zones or for manual transmission of announcements by use of the central-control microphone. Amplifiers shall comply with UL 1711.
 - a. Allow the application of, and evacuation signal to, indicated number of zones and, at the same time, allow voice paging to the other zones selectively or in any combination.
 - b. Programmable tone and message sequence selection.
 - c. Standard digitally recorded messages for "Evacuation" and "All Clear."
 - d. Generate tones to be sequenced with audio messages of type recommended by NFPA 72 and that are compatible with tone patterns of notification appliance circuits of fire alarm control unit.
 2. Hand held push to talk, noise canceling microphone in recessed protective panel mounted enclosure; 5 feet coiled cable; and LED to indicate the microphone push to talk has been pressed.
 3. Audible power amplifiers shall be self filtered; contain 24 volt power supply, transformer and amplifier monitor circuits; Amplifier shall operate all system speakers plus twenty-five (25) percent spare capacity.
 4. Digitized voice messages are required to notify building occupants during alarm conditions. Message player shall not rely on tape or mechanical means of transmitting the voice message. A standard evacuation message shall be provided; however, the system shall be capable of transmitting a custom message of up to five (5) minutes long.

5. Alarm sequence shall consist of a temporal (3) alarm tone for a maximum of 15 seconds followed by an automatic pre-selected message. At the end of the message the tone shall resume. This sequence shall continue until the fire alarm control panel has been silenced. Manual voice paging shall be available via panel switches to page individual floors or groups of floors. Each floor shall be an individual audible zone and have a corresponding audible switch.

2.6 DIGITAL ALARM COMMUNICATOR TRANSMITTER

- A. Digital alarm communicator transmitter (DACT) shall be acceptable to the remote station and shall comply with UL 864.
- B. The installing contractor shall select the appropriate DACT equipment based on the available communication methods.
- C. Coordinate with General Contractor to ensure proper connections are provided for communication to and from the DACT. Two (2) separate communication methods are required and shall not be subject to a common failure within the scope of work identified within these contract documents. Unless noted otherwise, the installing contractor shall utilize two (2) of the following communication methods:
 1. Copper wire (POTS) telephone line for fire alarm use as required by NFPA 72.
 - a. If two (2) POTS telephone lines are utilized per NFPA 72, additional communication methods are not required.
 2. Building 10/100 Base network (LAN), DSL modem, or cable modem.
 3. GSM cellular networks in the area including 2G, 3G and 4G.
 - a. The transmitter shall automatically detect and choose the best network in the area based on signal strength and immediately self-adjust for operation as necessary.
 4. Other alternative method complying with the performance requirements of NFPA 72 for 'Communication Methods for Supervising Station Alarm Systems that is acceptable to the Authority Having Jurisdiction and the Engineer of Record. Approval of any alternative methods must be obtained from the Engineer of Record via an RFI prior to submitting bids for the scope of work.
- D. Functional Performance: Unit shall receive an alarm, supervisory, or trouble signal from fire alarm control unit and automatically transmit across the primary communication method. If service on the primary communication method is interrupted for longer than 45 seconds, the transmitter shall initiate a local trouble signal and transmit a signal indicating loss of primary communication to the supervising station over the secondary communication method. Transmitter shall automatically report communication restoration to the supervising station. If service is lost on both communication methods, transmitter shall initiate a local trouble signal.
- E. Digital data transmission shall include the following:
 1. Address of the alarm initiating device.
 2. Address of the supervisory signal.
 3. Address of the trouble signal.
 4. Loss of ac supply.
 5. Loss of power.
 6. Low battery.
 7. Abnormal test signal.
 8. Communication bus failure.
- F. Secondary Power: Integral rechargeable battery and automatic charger.
- G. Self-Test: Conducted automatically every 24 hours with report transmitted to supervising station.

2.7 REMOTE ANNUNCIATOR

- A. Description: Alphanumeric display and LED indicating lights shall match those of fire alarm control unit. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.
 1. Mounting: Surface.

2. Provide remote microphone and emergency/voice alarm system controls.

2.8 INITIATING DEVICES

- A. Manual Fire Alarm Boxes: Comply with UL 38. Boxes shall be finished in red with molded, raised-letter operating instructions in contrasting color; shall show visible indication of operation; and shall be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.
 1. Double action mechanism requiring two actions to initiate an alarm, pull lever type; with integral addressable module arranged to communicate manual station status (normal, alarm, or trouble) to fire alarm control unit.
 2. Station Reset: Key or wrench operated switch.
 3. Indoor Protective Shield: Factory fabricated, clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm. Lifting the cover actuates an integral battery-powered audible horn intended to discourage false-alarm operation.
- B. System Smoke Detectors: Photoelectric type complying with UL 268 operating at 24-V dc, nominal with integral addressable module arranged to communicate detector status (normal, alarm, or trouble) to fire alarm control unit.
 1. Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base.
 2. Device shall have an integral visual-indicating light, LED type, indicating detector has operated and power-on status.
 3. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
 4. Photoelectric detectors shall have sensitivity between 0.5 and 3.5 percent/foot smoke obscuration.
- C. Duct Smoke Detectors: Photoelectric type complying with UL 268A with a standard, relay or isolator detector mounting base. Provide manufacturer's standard housing to protect the measuring chamber from damage and insects. Provide drilling templates and gaskets to facilitate locating and mounting the housing.
 1. Provide for variations in duct air velocity between 100 and 4,000 feet per minute.
 2. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied. Provide an air exhaust tube and an air sampling inlet tube that extends into the duct air stream up to ten feet.
 3. Self-Restoring: Detectors shall not require resetting or readjustment after actuation to restore them to normal operation.
 4. Relay Fan Shutdown: Fully programmable relay rated to interrupt fan motor control circuit.
 5. Provide remote alarm LEDs and remote test stations as shown on the plans.
 6. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with the supplied detector for smoke detection in HVAC system ducts.
- D. Carbon Monoxide Detectors: Detector complying with UL 2075 and listed for connection to fire alarm system. Detector shall include alarm contacts and trouble contacts. Detector shall send trouble alarm when nearing end-of-life, power supply problems, or internal faults. Locate, mount, and wire according to manufacturer's written instructions. Testable by introducing test carbon monoxide into the sensing cell. Test button simulates a supervisory condition.

2.9 NOTIFICATION APPLIANCES

- A. General Requirements for Notification Appliances: Connected to notification appliance signal circuits, zoned as indicated, equipped for mounting as indicated, and with screw terminals for system connections.
 1. Combination Devices: Factory integrated audible and visible devices in a single mounting assembly, equipped for mounting as indicated, and with screw terminals for system connections. Minimum audible level and strobe intensity shall meet all requirements for separate appliances.
 2. Provide strobe synchronization as required per NFPA 72.

3. Wall mounted notification appliances shall be manufacturer standard white finish.
 4. Ceiling mounted notification appliances shall be manufacturer standard white finish.
- B. Alarm Speakers: Comply with UL 1480. High quality tone and voice reproduction; capacitor connected for connection to supervised notification appliance circuit; semi-flush mounting; four inch cone; high impact, flame retardant PC/ABS thermoplastic; 25 or 70 VRMS; multi-tapped output power rated ¼ to 2 watts and produce 79 to 88 dB at 10 feet.
- C. Special Application Speakers (Wall Mount):
1. Atlas/Soundolier voice control loudspeaker, model number APF-15TU. Model shall be a double re-entrant type with 15 watts RMS audible power rating compression driver producing a UL-rated sound pressure level of 102 dB measured at 15 watts at 10 feet, within a frequency range of 400 Hz to 4 kHz. Loudspeaker assembly shall be furnished with mounting bracket allowing adjustment on either a vertical or horizontal plane with a single locking pin and including provisions for mounting, banding or strapping. Wiring terminals for amplifier output shall be fully enclosed and vandal-resistant adapter cover shall provide connection facilities for cable or conduit. Unit shall be finished in red baked epoxy.
 2. Wheelock ET 1010 Speaker - vandal resistant loud speaker. Speaker includes both 25 and 70 volt VRMS inputs with field selectable power taps from 1/8 to 8 watts with listed sound output up to 96 dB for speakers. All models shall have provisions for standard NAC supervision and IN/OUT field wiring using terminals that accept #12 to #18 AWG wiring.
- D. Visible Alarm Notification Appliances (Strobes): Xenon strobe lights complying with UL 1971, unfiltered or clear filtered white light, with candela ratings as indicated on drawings. Strobes shall meet all requirements of the Americans with Disabilities Act.
- E. Monitor Module: Addressable microelectronic module providing a system address for alarm initiating devices for wired applications with normally open contacts. Include address setting means on the module.
- F. Control/Relay Module: Provide intelligent control relay modules. The Control Relay Module shall provide one form "C" dry relay contact rated at 2 amps @ 24 VDC to control external appliances or equipment shutdown. The control relay shall be rated for pilot duty and releasing systems. The position of the relay contact shall be confirmed by the system firmware.
- G. Fire Department Key Box: Existing to remain.

2.10 DEVICE GUARDS

- A. Description: Welded wire mesh of size and shape for smoke detectors, notification appliances, or other device requiring protection as indicated on the plans.
1. Factory fabricated and furnished by device manufacturer.
 2. Finish: Factory finished to match the color of the protected appliance or device.

2.11 FIRE ALARM WIRE AND CABLE

- A. Fire Alarm Power Branch Circuits: Building wire as specified in Division 26.
- B. Fire alarm Wire and Cable: NRTL listed and labeled as complying with NFPA 70 (NEC) Article 760. All wiring, including wiring to existing modified devices and appliances shall be new.
- C. Signaling Line, Initiating Device and Notification Appliance Circuits: Power limited fire protective signaling cable, solid copper conductor, 300 volts insulation, suitable for temperature, conditions and location installed. Minimum wire size for initiating device circuits, control circuits and notification appliance circuits shall be determined by calculations and manufacturer's requirements or recommendations. Wire and cable shall be twisted and shielded if recommended by the system manufacturer.
- D. The type of cable chosen should be based on fire alarm system requirements, specification requirements and applicable code requirements. Consideration should also be given to the length of cable runs and potential interference.
- E. Initiating, notification, and control circuits shall be sized based on 20% additional power consuming devices.
- F. Conduit and Boxes: Comply with requirements in Division 26 Section "Raceway and Boxes for Electrical Systems."

- G. Multiconductor Armored Cable: NFPA 70, Type MC, copper conductors, Type TFN/THHN conductor insulation, copper drain wire, copper armor with outer jacket and red identifier stripe, NTRL listed for fire alarm and cable tray installation, plenum rated.

2.12 ACCESS TO EQUIPMENT

- A. All detectors, modules, equipment, etc. shall be located so as to provide easy access for operation, service inspection and maintenance.
- B. Access Doors:
1. Provide access doors for all concealed equipment, except where above lay-in ceilings.
 2. Access doors shall be adequately sized for the devices served with a minimum size of 18" x 18", furnished by the respective Contractor or Subcontractor and installed by the General Contractor.
 3. Access doors must be of the proper materials for type of construction where installed.
 4. The exact location of all access doors shall be verified with the Architect prior to installation.
 5. Steel Access Doors and Frames: Factory-fabricated and assembled units, complete with attachment devices and fasteners ready for installation. Joints and seams shall be continuously welded steel, with welds ground smooth and flush with adjacent surfaces.
 6. Frames: 16-gauge steel, with a 1-inch-wide exposed perimeter flange for units installed in unit masonry, pre-cast, or cast-in-place concrete, ceramic tile, or wood paneling.
 - a. For installation in masonry, concrete, ceramic tile, or wood paneling: 1 inch-wide-exposed perimeter flange and adjustable metal masonry anchors.
 - b. For gypsum wallboard or plaster: perforated flanges with wallboard bead.
 7. Flush Panel Doors: 14-gauge sheet steel, with concealed spring hinges or concealed continuous piano hinge set to open 175 degrees; factory-applied prime paint.
 - a. Fire-Rated Units: Insulated flush panel doors, with continuous piano hinge and self-closing mechanism.
 8. Locking Devices: Flush, screwdriver-operated cam locks.
 9. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the work include, but are not limited to, the following:
 - a. Arrow United Industries.
 - b. Bar-Co., Inc.
 - c. J.L Industries.
 - d. Karp Associates, Inc.
 - e. Milcor Div. Inryco, Inc.
 - f. Nystrom Building Products
 - g. Wade
 - h. Zurn

PART 3 - EXECUTION

3.1 GENERAL

- A. The Contractor shall install, program and test all new equipment identified in this contract in accordance with the applicable codes, standards, and manufacturer's instructions.
- B. The installation supervisor shall be on the job site during the entire installation. The installation supervisor shall maintain marked up copies of the drawings at the job site showing as-built conditions. These drawings shall be updated daily and available for Owner review.
- C. The Contractor shall provide all required conduit and all associated hardware, and shall install (pull), connect, and test all cable for a complete fire alarm system. All wiring shall be installed in accordance with the guidelines of these specifications and documents as well as the NFPA codes and standards listed in these specifications.

3.2 EXAMINATION

- A. Examine areas and conditions for compliance with requirements for ventilation, temperature, humidity, and other conditions affecting performance of the Work.
 - 1. Verify that manufacturer's written instructions for environmental conditions have been permanently established in spaces where equipment and wiring are installed, before installation begins.
- B. Examine roughing-in for electrical connections to verify actual locations of connections before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 EQUIPMENT INSTALLATION

- A. Comply with NFPA 72 and requirements of authorities having jurisdiction for installation and testing of fire alarm equipment. Install all electrical wiring to comply with requirements in NFPA 70 including, but not limited to, Article 760, "Fire Alarm Systems."
 - 1. Devices placed in service before all other trades have completed cleanup shall be replaced.
 - 2. Devices installed but not yet placed in service shall be protected from construction dust, debris, dirt, moisture, and damage according to manufacturer's written storage instructions.
- B. Install wall-mounted equipment, with tops of cabinets not more than 72 inches above the finished floor.
- C. Manual Fire alarm Boxes: Provide manual fire alarm boxes as shown on drawings. Mount manual fire alarm box on a background of a contrasting color. The operable part of manual fire alarm box shall be at 48 inches above floor level unless noted otherwise.
- D. Smoke: Provide detectors as shown on drawings.
 - 1. Comply with the "Smoke-Sensing Fire Detectors" section in the "Initiating Devices" chapter in NFPA 72, for smoke detector spacing.
 - 2. HVAC: Locate detectors not closer than 36 inches from air-supply diffuser or return-air opening.
 - 3. Lighting Fixtures: Locate detectors not closer than 12 inches from any part of a lighting fixture and not directly above pendant mounted or indirect lighting.
 - 4. Install a cover on each smoke detector that is not placed in service during construction. Cover shall remain in place except during system testing. Remove cover prior to system turnover.
 - 5. Install ceiling mounted detectors in areas with exposed structure tight to underside of floor/roof deck unless noted otherwise on drawings.
- E. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend the full width of the duct. Tubes more than 36 inches long shall be supported at both ends.
 - 1. Do not install smoke detector in duct smoke detector housing during construction. Install detector only during system testing and prior to system turnover.
 - 2. Provide duct detection and shutdown for fan powered air distribution equipment exceeding 2,000 cfm.
 - 3. Provide equipment and connections to shutdown fan powered air distribution equipment with a capacity less than 2,000 cfm that are part of an air distribution system with a capacity greater than 2,000 cfm.
- F. Carbon Monoxide Detections: Provide detectors as shown on drawings. The installation shall comply with manufacturer's recommendations and NFPA 720, "Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment," as referenced by NFPA 72.
- G. Remote Status and Alarm Indicators: Install in a visible location near each smoke detector that is not readily visible from normal viewing position.
- H. Install ceiling mounted visible and audible/visible notification appliances in areas with exposed structure to bottom of floor/roof structure or at 30 ft AFF, whichever is lower.
- I. Install ceiling mounted visible and audible/visible notification appliances in areas with finished ceilings flush with bottom of ceiling or at 30 ft AFF, whichever is lower.

- J. Install wall mounted visible and audible/visible notification appliances with visible element (strobe) between 80 inches and 96 inches above finished floor unless noted otherwise on drawings.
- K. Install wall mounted audible devices with the top of the device at least 90 inches above finished floor or 6 inches below the ceiling, whichever is lower, unless noted otherwise on Drawings. If combination devices are installed, they shall be installed per the visible signal device requirements.
- L. All notification appliance speakers shall be tapped at ½ watt unless noted otherwise on drawings. In rooms less than 100 sq ft, speakers are permitted to be tapped at ¼ watt.
- M. Mount outlet box for electric door holder to withstand 80 pounds (36.4 kg) pulling force.

3.4 PATHWAYS

- A. Pathways above suspended ceilings and in nonaccessible locations may be routed exposed where permitted by NFPA 70 & 72.
 - 1. Exposed pathways located less than 96 inches above the floor shall be installed in conduit.
- B. Minimum allowable conduit size shall be ¾ inch. The conduit shall be sized so that conduit fill does not exceed 75% of NFPA 70 maximum fill requirements. Cables in vertical risers shall not exceed 50% of NFPA 70 maximum fill requirements. Conduit installation shall be as required by the Contractor's layout and as described in these specifications. All conduit field routing shall be acceptable to the Owner. Routing not acceptable shall be rerouted and replaced without expense to the Owner.
- C. All wire, cable, conduit and raceways shall be concealed in walls, ceiling spaces, electrical shafts or closets in finished areas except as specifically noted otherwise. Conduit and raceways may be exposed in unfinished areas or where specifically approved by the Owner.
- D. Except as otherwise specified or indicated on the drawings, all conduit shall be installed parallel or perpendicular to dominant surfaces with right angle turns made of symmetrical bends or fittings. Except where prevented by the location of other work, a single conduit or a conduit group shall be centered on structural members.
- E. Conduit shall be located at least six inches from hot water or steam pipes, and from other hot surfaces. Conduit shall not block access to any existing equipment or fixtures.
- F. Mount end-of-line device in box with last device or separate box adjacent to last device in circuit for conventional hardwired class B initiating and notification appliance circuits.
- G. Conduit shall be securely fastened to all boxes and cabinets. Threads on metallic conduit shall project through the wall of the box to allow the bushing to butt against the end of the conduit. The locknuts both inside and outside shall then be tightened sufficiently to bond the conduit securely to the box. Conduit shall enter cabinets from the bottom and sides only.

3.5 CONNECTIONS

- A. All wiring shall be terminated at devices or panels using terminal connectors for screw type terminals. All terminal connectors for conductors shall be pre-insulated ring type or pre-insulated spade type. Pre-insulated terminal connectors shall include a vinyl sleeve, color coded to indicate conductor size. Pre-insulated terminal connectors shall include a metallic support sleeve bonded to the vinyl-insulating sleeve and designed to grip the conductor insulation.
- B. Make addressable connections with a supervised interface device to the following devices and systems. Install the interface device less than 36 inches (910 mm) from the device controlled. Make an addressable confirmation connection when such feedback is available at the device or system being controlled.
 - 1. Provide equipment and connections to shutdown fan powered air distribution equipment with an individual capacity less than or equal to 2,000 cfm that are part of an air distribution system with a design capacity greater than 2,000 cfm.
 - 2. Magnetically held-open doors.

3.6 INSTALLATION OF ACCESS DOORS

- A. Set frames accurately in position and securely attached to supports, with face panels plumb and level in relation to adjacent finish surfaces.
- B. Adjust hardware and panels after installation for proper operation.

3.7 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- B. All conduits and junction boxes shall be labeled as specified in Division 26 (red).
- C. The location of end-of-line resistors shall be identified with a label indicating "EOL."
- D. Provide label at each initiating device indicating the device address. Label shall be visible from the floor below or immediately adjacent to the device.

3.8 GROUNDING

- A. Ground fire alarm control unit and associated circuits; comply with IEEE 1100. Install a ground wire from main service ground to fire alarm control unit.
- B. Ground shielded cables at the control panel location only. Insulate shield at device location.

3.9 FIELD QUALITY CONTROL

- A. Systems shall be checked and tested in accordance with the instructions provided by the manufacturer to insure that the system functions as required and is free of grounds, opens, and shorts. Each device shall be tested.
 - 1. Smoke detectors shall be tested with products of combustion.
- B. Upon completion of the system installation and before the Date of Final Acceptance, a factory-trained technician shall perform all necessary tests and adjustments and shall then file a Letter of Certification and a Certificate of Completion (NFPA 72) with the Owner indicating that the system functions and conforms to the Fire Alarm System Specifications.
- C. Upon completion of the system installation, a factory-trained technician shall perform all necessary tests and adjustments in the presence of the Owner's designated personnel. Test in accordance with NFPA 72 and requirements of the authority having jurisdiction. Perform the following tests at a minimum:
 - 1. Visual Inspection: Conduct visual inspection prior to testing. Inspection shall be based on completed record Drawings and system documentation that is required by the "Completion Documents, Preparation" table in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
 - 2. System Testing: Comply with the "Test Methods" table in the "Testing" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.
 - a. Test audible appliances for the public operating mode according to manufacturer's written instructions.
 - b. Test visible appliances for the public operating mode according to manufacturer's written instructions.
- D. Reacceptance Testing: Perform reacceptance testing to verify the proper operation of added or replaced devices and appliances.
- E. Fire alarm system will be considered defective if it does not pass tests and inspections.
- F. Include services of factory trained and certified technician to supervise installation, adjustments, final connections, and system testing as performed by the fire alarm contractor's factory-trained technicians.

3.10 DEMONSTRATION

- A. The equipment supplier's factory trained technician shall train the Owner's personnel in the proper use and maintenance of the system. Training sessions shall be conducted as needed, not to exceed a total of 2 sessions, with each session lasting a maximum of 4 hours each.
- B. Demonstrate normal and abnormal modes of operation, and required responses to each.

END OF SECTION 284600

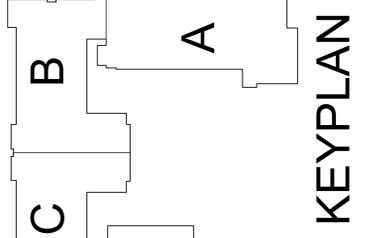
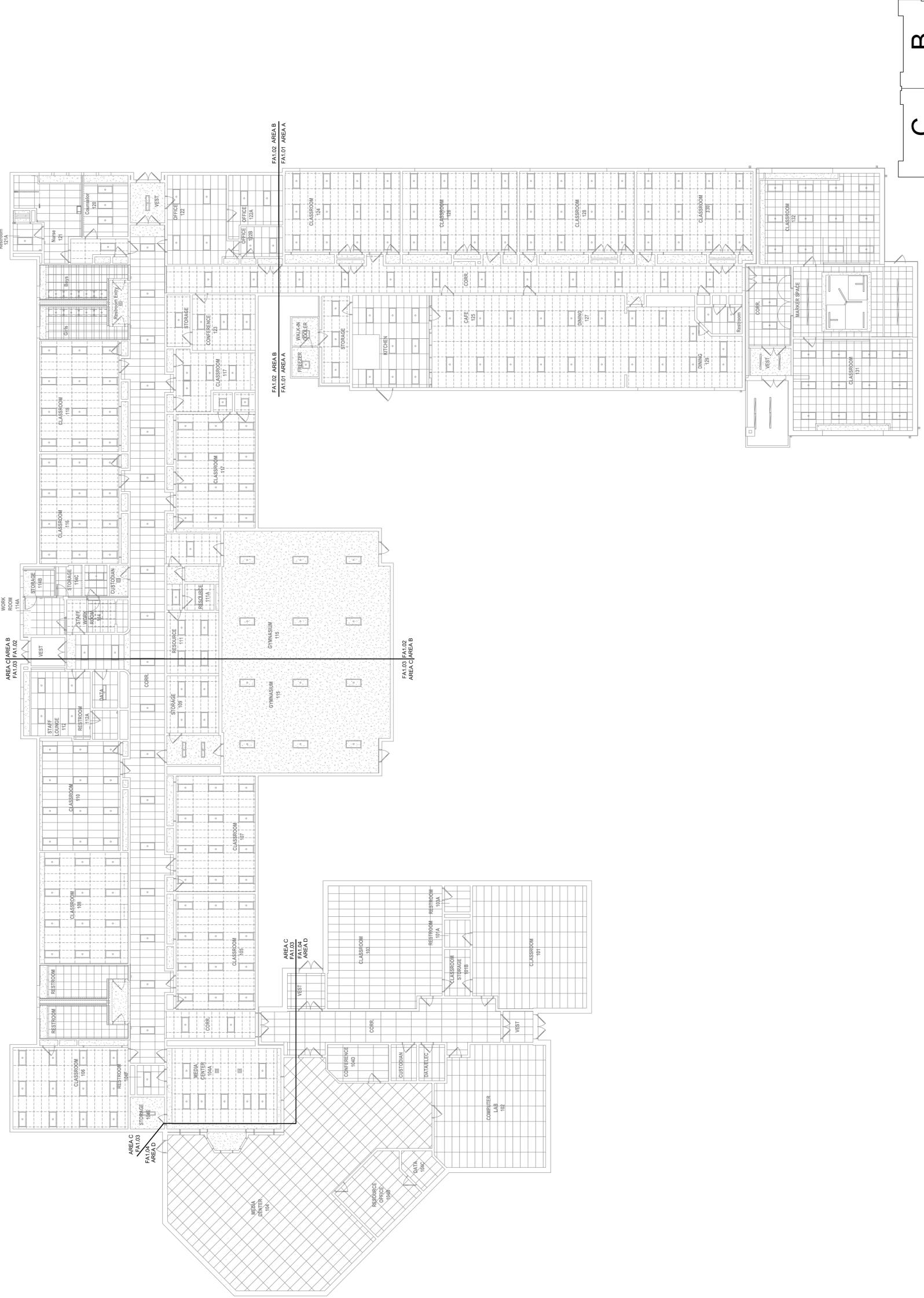
HENDERSON
 ENGINEERS
 1400 W. HENRY DRIVE, SUITE 300
 LITTLE ROCK, AR 72204
 TEL: 501.511.6624
 WWW.HENDERSONENGINEERS.COM
 200002126
 M.O. CORPORATE NUMBER: E5690
 1251125

| DATE | REVISION |
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FRANKLIN ELEMENTARY
FIRE ALARM REPLACEMENT
 201 WEST MILL STREET
 LIBERTY, MISSOURI, 64068

STATE OF MISSOURI
 PROFESSIONAL ENGINEER
 LICENSE # 14-2013037946
 APR 17 2020

HE JOB NO: 200002126
 DATE: 04/10/2020
 APPROVED BY: CAC
 CHECKED BY: BCL
 DRAWN BY: TRB
 SHEET NO. **FA1.00**



1 FIRE ALARM PLAN FIRST FLOOR - OVERALL
 3/32"=1'-0"
 SCALE: 3/32"=1'-0"

HENDERSON
 ENGINEERS & ARCHITECTS
 1835 HENRY DRIVE, SUITE 300
 LEBANON, MISSOURI 64501
 TEL: 618-451-6624
 WWW.HENDERSONENGINEERS.COM
 205000126
 M.O. CORPORATE NUMBER: E5690
 125 125

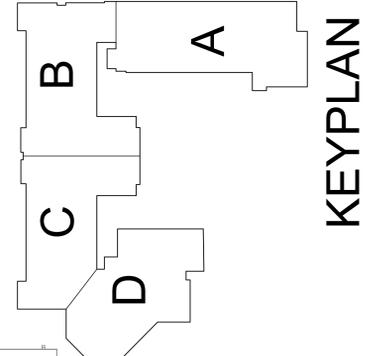
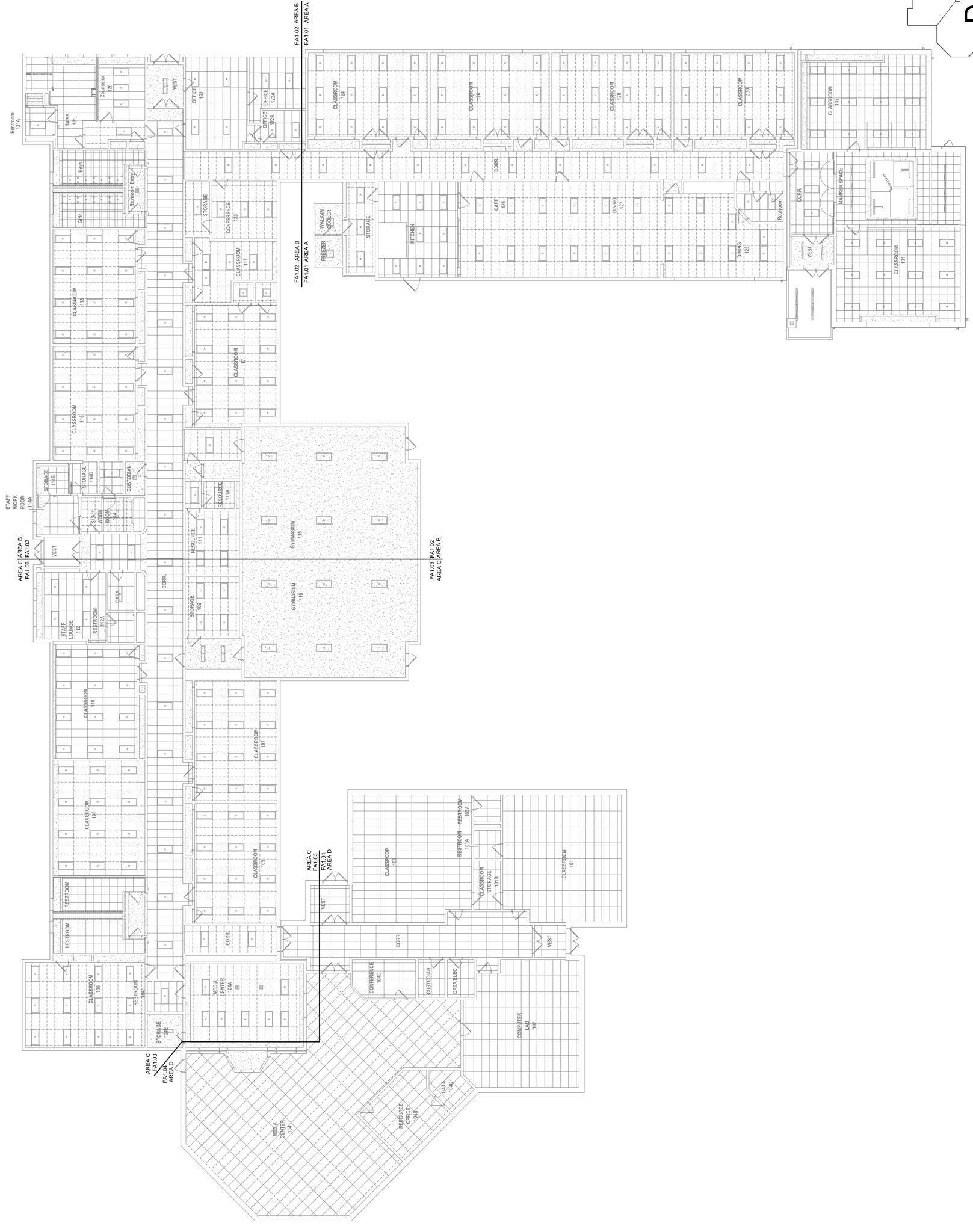
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FRANKLIN ELEMENTARY
FIRE ALARM REPLACEMENT
 201 WEST MILL STREET
 LIBERTY, MISSOURI, 64068

STATE OF MISSOURI
 PROFESSIONAL ENGINEER & ARCHITECT
 CHRISTOPHER J. O'NEILL
 NUMBER: 0017
 EXPIRES: 07/31/2026
 LICENSE # 16-2013037946
 APR 17 2020

HE JOB NO: 205000126
 DATE: 04/10/2020
 APPROVED BY: CJC
 CHECKED BY: REL
 DESIGNED BY: TRB
 DRAWN BY: TRB

SHEET NO.
FD1.00



1 FIRE ALARM DEMO PLAN FIRST FLOOR - OVERALL
 SCALE: 3/32"=1'-0"

HENDERSON
 201 WEST MILL STREET
 LIBERTY, MISSOURI 64068
 TEL: 816.435.9224
 WWW.HENDERSONENGINEERS.COM
 MO. CORPORATE NUMBER: E5690
 123 123

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FRANKLIN ELEMENTARY
FIRE ALARM REPLACEMENT
 201 WEST MILL STREET
 LIBERTY, MISSOURI, 64068

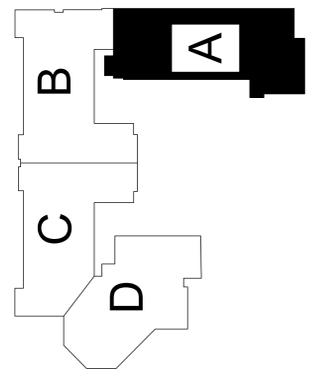
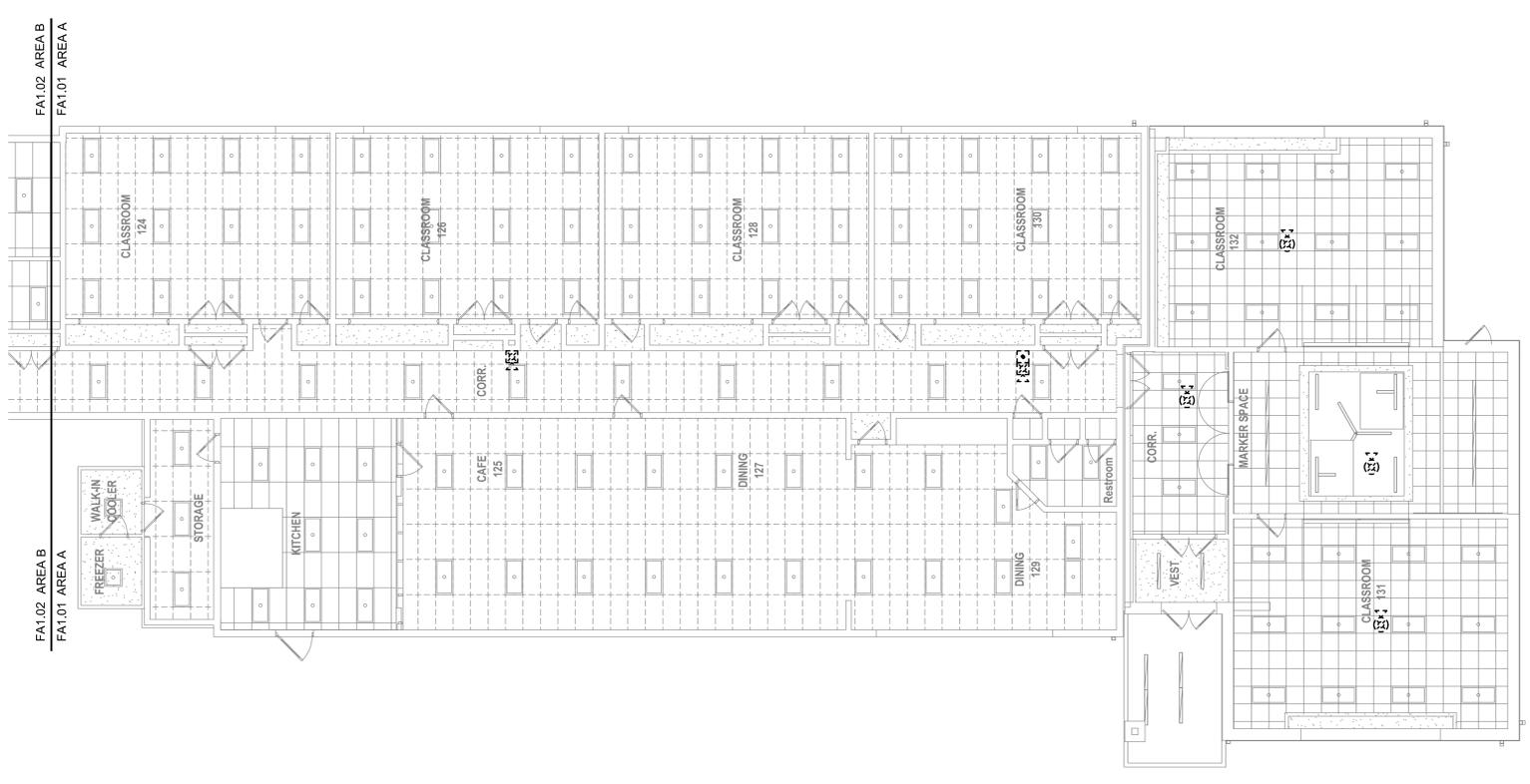
APR 17 2020



HE JOB NO: 200000126
 DATE: 04/17/2020
 APPROVED BY: CJC
 CHECKED BY: BEC
 DESIGNED BY: TRB
 DRAWN BY: TRB

SHEET NO.
FD1.01

NOTES:
 1. ALL EXISTING FIRE ALARM EQUIPMENT SHALL BE DEMOLISHED AND REPLACED WITH NEW EQUIPMENT. ALL EXISTING FIRE ALARM EQUIPMENT SHALL BE DEMOLISHED AND REPLACED WITH NEW EQUIPMENT. ALL EXISTING FIRE ALARM EQUIPMENT SHALL BE DEMOLISHED AND REPLACED WITH NEW EQUIPMENT.
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KEYPLAN

1 FIRE ALARM DEMO PLAN FIRST FLOOR - AREA A
 1/8"=1'-0"
 SCALE: 1/8"=1'-0"

HENDERSON
 ENGINEERS
 1835 LEXINGTON DRIVE, SUITE 300
 LITTLE ROCK, AR 72201
 TEL: 501.656.6274 FAX: 501.656.6275
 WWW.HENDERSONENGINEERS.COM
 202002128
 M.D. CORPORATE NUMBER: E5890
 1831825

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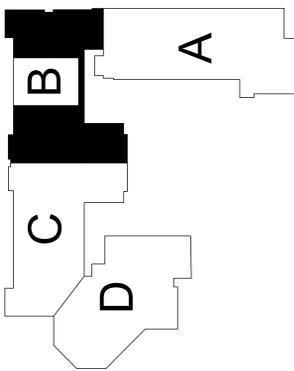
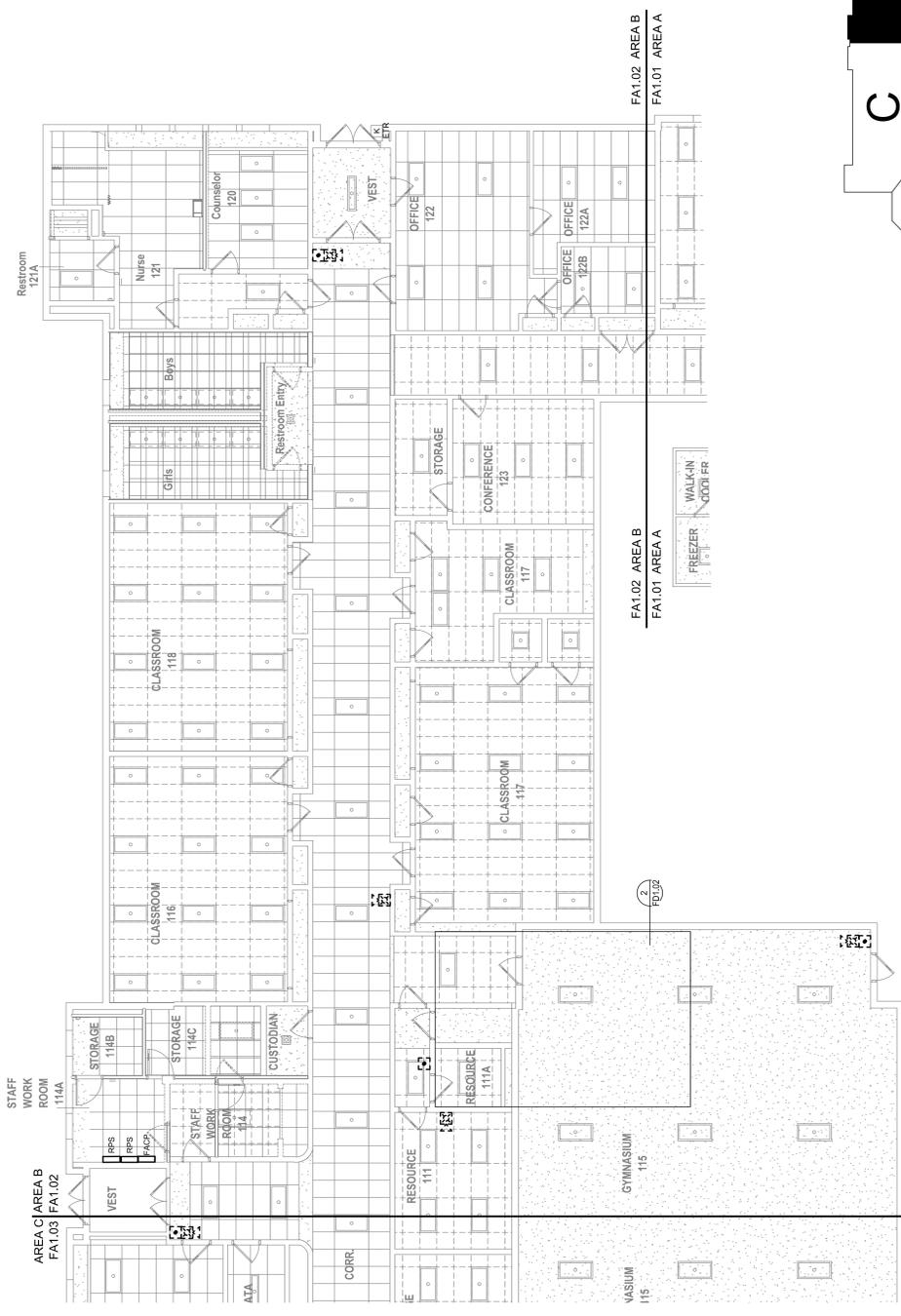
FRANKLIN ELEMENTARY
FIRE ALARM REPLACEMENT
 201 WEST MILL STREET
 LIBERTY, MISSOURI, 64068

Apr 17 2020

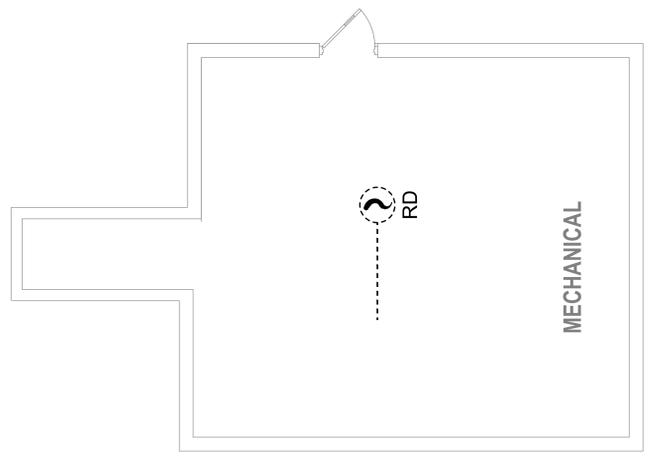
HE JOB NO: 2005002126
 DATE: 04/10/2020
 APPROVED BY: CJC
 CHECKED BY: TEL
 DRAWN BY: TRB

SHEET NO.
FD1.02

NOTES:
 COORDINATE WITH GENERAL CONTRACTOR AND OWNER ON ADDITIONAL LABOR AND MATERIALS REQUIRED FOR THE DEMOLITION OF THE EXISTING FIRE ALARM EQUIPMENT. DEMOLISH EXISTING FIRE ALARM EQUIPMENT, RE-USE EXISTING PATHWAYS WHERE POSSIBLE. PATHWAYS NOT RE-USED IN NEW DESIGN SHALL BE COMPLETELY DEMOLISHED.
 EXISTING CONDITIONS WERE TAKEN FROM SITE VISITS AND MAY NOT REFLECT EXACT AS-BUILT CONDITIONS. CONTRACTOR RESPONSIBLE FOR COMPLETE DEMOLITION OF EXISTING FIRE ALARM SYSTEM.



KEYPLAN



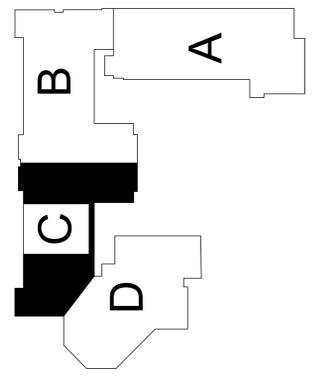
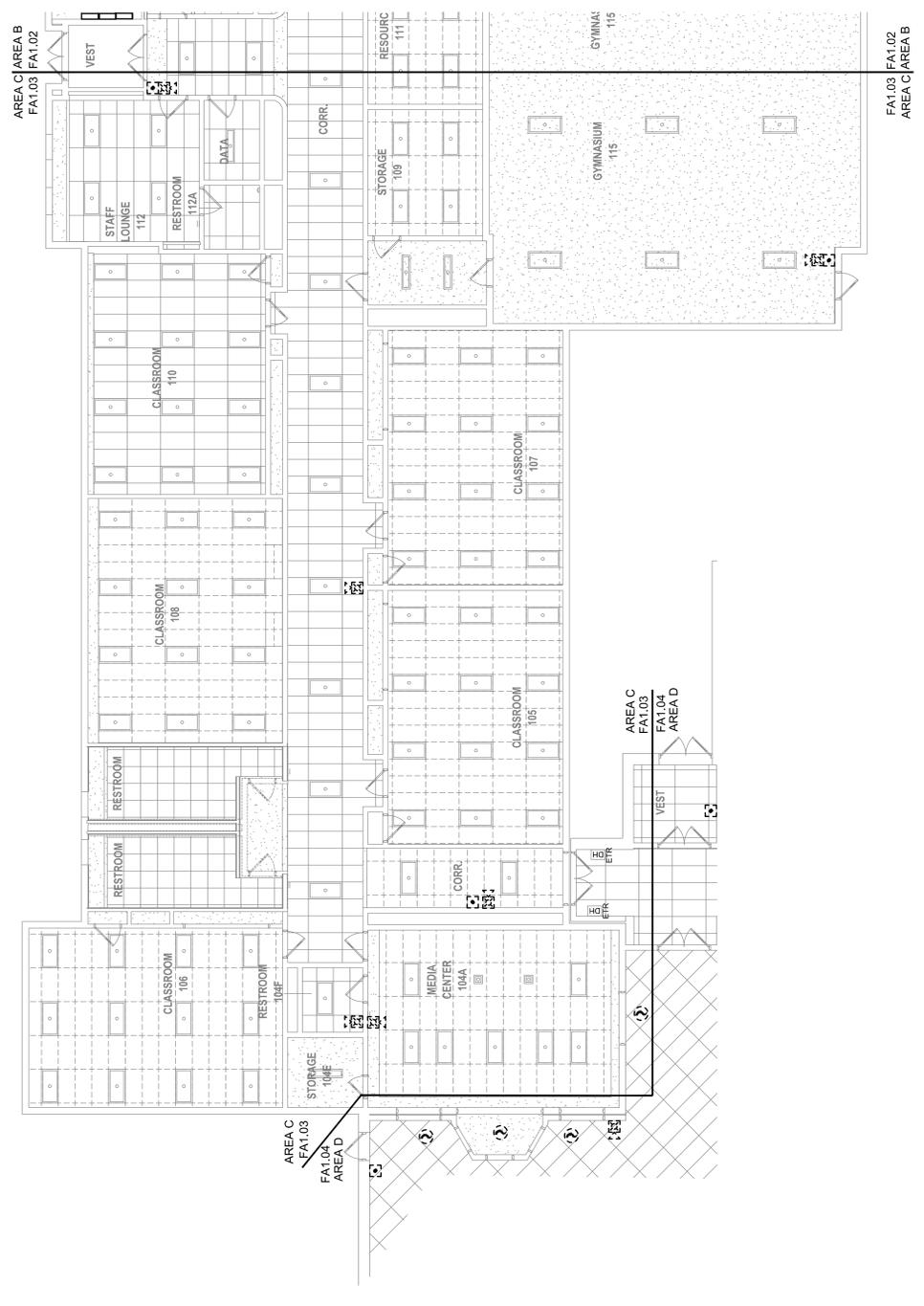
2 FIRE ALARM BASEMENT DEMO PLAN - AREA B
 1/4"=1'-0" SCALE: 1/4"=1'-0"

1 FIRE ALARM DEMO PLAN FIRST FLOOR - AREA A - AREA B - AREA C
 1/8"=1'-0" SCALE: 1/8"=1'-0"

FRANKLIN ELEMENTARY
FIRE ALARM REPLACEMENT
 201 WEST MILL STREET
 LIBERTY, MISSOURI, 64068

Apr 17 2020

NOTES:
 COORDINATE WITH GENERAL CONTRACTOR AND OWNER ON ADDITIONAL LABOR AND MATERIALS FOR THE DEMOLITION AND RECONSTRUCTION OF EXISTING CEILINGS, PARTITIONS, ETC WHERE THE REMOVAL OF FIRE ALARM EQUIPMENT IS REQUIRED.
 DEMOLISH EXISTING FIRE ALARM EQUIPMENT. REUSE EXISTING PATHWAYS WHERE POSSIBLE. PATHWAYS NOT REUSED IN NEW DESIGN SHALL BE COMPLETELY DEMOLISHED.
 EXISTING CONDITIONS WERE TAKEN FROM SITE VISITS AND MAY NOT REFLECT EXACT CURRENT CONDITIONS. CONTRACTOR RESPONSIBLE FOR COMPLETE DEMOLITION OF EXISTING FIRE ALARM SYSTEM.



KEYPLAN

1 FIRE ALARM DEMO PLAN FIRST FLOOR - AREA C
 1/8"=1'-0" SCALE: 1/8"=1'-0"

HENDERSON
 ENGINEERS
 1835 LEXINGTON DRIVE, SUITE 300
 LEXINGTON, MISSOURI 64603
 TEL: 513.399.8274
 WWW.HENDERSONENGINEERS.COM
 202002128
 M.O. CORPORATE NUMBER: E5690
 1831183

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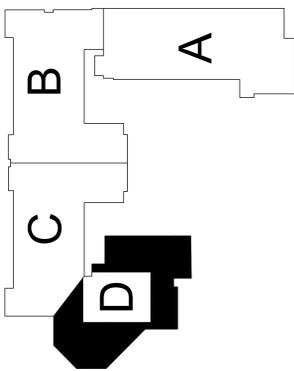
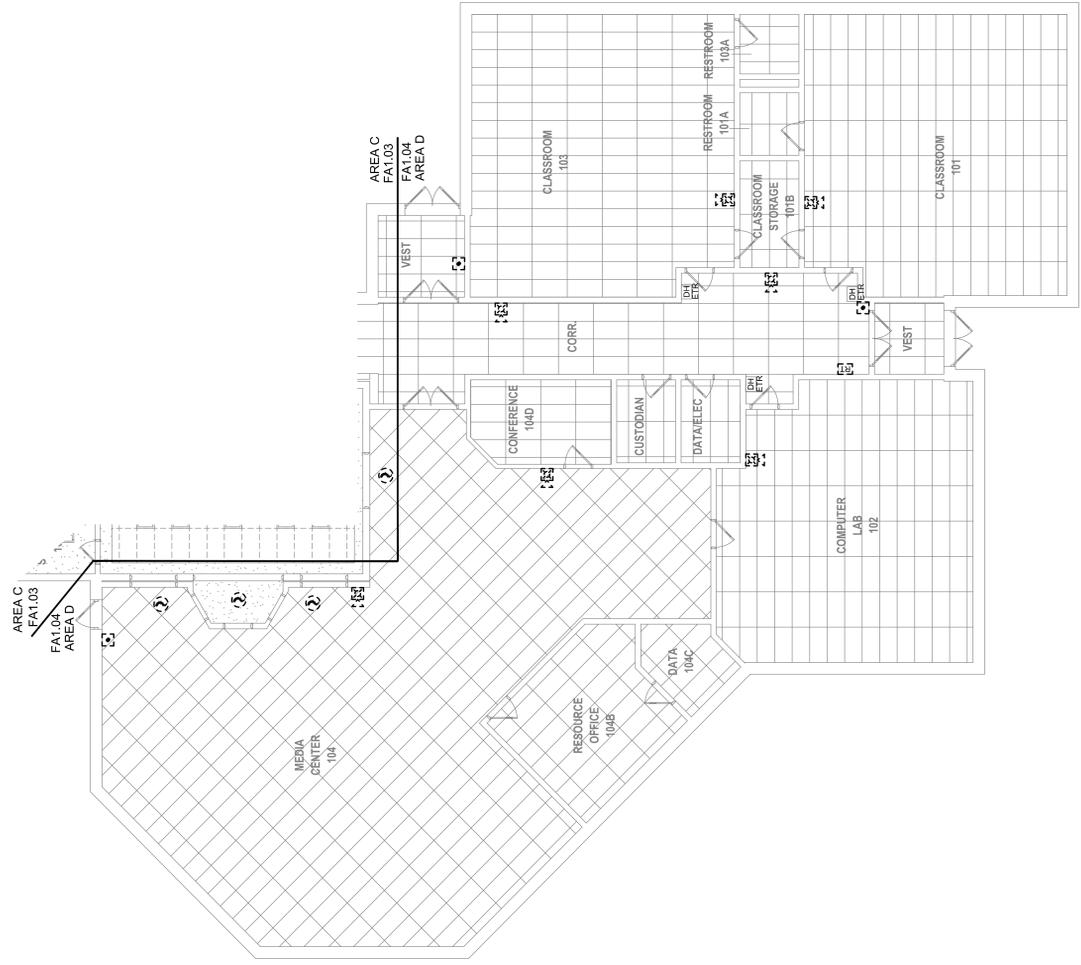
FRANKLIN ELEMENTARY
FIRE ALARM REPLACEMENT
 201 WEST MILL STREET
 LIBERTY, MISSOURI, 64068

Apr 17 2020

HE JOB NO: 205000126
 DATE: 04/10/2020
 APPROVED BY: CJC
 CHECKED BY: JEL
 DRAWN BY: TRB

SHEET NO. **FD1.04**

NOTE:
 COORDINATE WITH GENERAL CONTRACTOR AND OWNER ON ADDITIONAL LABOR AND MATERIALS FOR THE DEMOLITION AND RECONSTRUCTION OF EXISTING CEILING, PARTITION WALLS, ETC. WHERE THE REMOVAL OF FIRE ALARM EQUIPMENT IS REQUIRED.
 DEMOLISH EXISTING FIRE ALARM EQUIPMENT. REUSE EXISTING PATHWAYS WHERE POSSIBLE. PATHWAYS NOT REUSED IN NEW DESIGN SHALL BE COMPLETELY DEMOLISHED.
 EXISTING CONDITIONS WERE TAKEN FROM SITE VISITS AND MAY NOT REFLECT EXACT CURRENT CONDITIONS. OWNER IS RESPONSIBLE FOR COMPLETE DEMOLITION OF EXISTING FIRE ALARM SYSTEM.



KEYPLAN

1 FIRE ALARM DEMO PLAN FIRST FLOOR - AREA D
 SCALE: 1/8"=1'-0"