



## REQUEST FOR COMPETITIVE SEALED PROPOSALS (RFCSP)

Sealed RFCSP's will be received in accordance with the attached specifications. The sealed envelope containing your RFCSP should be plainly marked with the RFCSP title, number, and opening date and time. RFCSP's are publicly opened and you are invited to attend.

**PLEASE NOTE: Late RFCSP's WILL NOT be accepted.**

**Mail or deliver complete RFCSP Packet\*\* to:**

**Birdville ISD  
Purchasing Department  
3124 Carson Street, Haltom City, Texas 76117**

**RFCSP Number: 001-18**

**RFCSP Title: Fire Alarm Renovations at North  
Oaks Middle School and Smithfield Elementary**

**Due Date: July 26, 2017**

**Prior to: 2:00 PM CST**

### **PRE-PROPOSAL MEETING**

Before submitting a proposal, it is required that all proposers examine all documents relating to the project to ascertain the nature of the work and character of the job sites. A pre-proposal meeting is scheduled for **July 12, 2017 at 10:00 a.m.** at:

**Birdville ISD  
Maintenance Department High 5 Conference Room  
6119 E. Belknap  
Haltom City, TX 76117**

For additional information, please contact the person listed below. All questions **must be submitted in writing** (email preferred) and received on or before seventy-two (72) hours prior to the opening date. **No verbal responses will be provided.** Please note that RFCSP results are **NOT** available by telephone. Awards will be posted to the district website.

Shelley Freeman  
Director of Purchasing  
817-547-5629  
[shelley.freeman@birdvilleschools.net](mailto:shelley.freeman@birdvilleschools.net)

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## **FIRE ALARM**

### **DIVISION 28**

28 05 00 General Fire Alarm System Requirements  
28 46 21 Fire Detection and Alarm System Replacement

## SECTION I GENERAL SPECIFICATIONS

### **PURPOSE**

In order to be in compliance with federal, state and local purchasing laws, the Birdville Independent School District (BISD) is soliciting competitive sealed proposals for Fire Alarm Replacements at North Oaks Middle School and Smithfield Elementary School. The District plans to evaluate responses, select a vendor and enter into a contract with the successful contractor. The estimated budget for North Oaks Middle School is \$107,500 with a \$5,500 contingency and Smithfield Elementary School \$71,725 with a \$3,775 contingency.

### **DISTRICT BACKGROUND INFORMATION**

The District currently has twenty-one (21) elementary schools, seven (7) middle schools, four (4) high schools, and one (1) career tech academy.

Birdville ISD is the fifth-largest school district in northeast Tarrant County, with more than 24,300 students. The District's 33 campuses serve the community of Richland Hills and portions of Haltom City, Hurst, North Richland Hills, Watauga, Colleyville and Fort Worth.

Additional information concerning the District may be obtained at [www.birdvilleschools.net](http://www.birdvilleschools.net).

### **RFCSP PROCESS**

Each Proposer shall carefully examine all documents and any and all addenda or other revisions, and thoroughly familiarize with all requirements prior to submitting a proposal. Should a Proposer find discrepancies or ambiguities in, or omissions from, the documents, or should the Proposer be in doubt as to the meaning, the Proposer shall at once (in any event not later than 72 hours prior to the due date) submit to Purchasing a written request for interpretation or correction thereof. The Proposer submitting the request will be responsible for its prompt delivery. Any oral communication by the contact person or designee concerning the RFCSP is not binding and shall in no way modify the RFCSP or the obligation of BISD or Proposer.

### **CONTRACT ADMINISTRATOR**

All communications regarding this RFCSP must be coordinated through the BISD contract administrator. The designated contract administrator during the RFCSP process shall be:

Shelley Freeman  
Director of Purchasing  
3124 Carson Street  
Haltom City, TX 76117

Questions may be sent to Shelley Freeman via email at [shelley.freeman@birdvilleschools.net](mailto:shelley.freeman@birdvilleschools.net) or sent via fax to 817-831-5662. The fax or e-mail must clearly identify the proposer's name and RFCSP number. Any written information given to one proposer concerning a RFCSP will be furnished as an addendum to all proposers who have been issued a RFCSP. All questions and answers will be published and provided to all potential proposers as soon as possible.

**Proposer shall have no contact with other District staff or board members without permission from the designated contract administrator.** Failure to adhere to this requirement will result in disqualification of the Proposer from further consideration.

## UNDERSTANDING OF THE RFCSP

By submitting a signed proposal, a proposer agrees that it fully understands this RFCSP and shall abide by the terms and conditions contained therein. Further, such proposer certifies that it is in compliance with all federal and state laws and purchasing guidelines of the Birdville Independent School District. This includes all requirements as it relates to HB25 which can be found on the [https://www.ethics.state.tx.us/whatsnew/elf\\_info\\_form1295.htm](https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm). Required forms to be submitted by the proposer are outlined herein. Additionally, proposer certifies that neither proposer, nor any of its employees, agents, or representatives, including any subcontractors and employees, agents, or representatives of such subcontractors, to be assigned to the project hereunder has been convicted of a penal offense, or that, if such a conviction has occurred, proposer will fully advise the Board of Trustees as to the facts and circumstances. Failure to do so may result in disqualification of any subsequent proposal.

No exceptions, amendments, or deviation will be allowed in any response unless agreed to in writing and prior to the date that responses to questions are due. Unauthorized exceptions, amendments, or deviations in the response may result in disqualification of the proposal.

## AUTHORIZED SIGNATURE

By signing and executing this proposal the Proposer certifies and represents to the District that the Proposer has not offered, conferred or agreed to confer any pecuniary benefit or other thing of value for the receipt of special treatment, advantage, information, recipient's decision, opinion, recommendation, vote or any other exercise or discretion concerning this RFCSP. Proposals must show Proposer name and address of Proposer and be manually signed. Failure to do so will disqualify proposal. Person signing proposal must show title or AUTHORITY TO BIND THE PROPOSER IN A CONTRACT.

## RESPONSE FORMS

This RFCSP contains forms that are required to be completed and submitted along with your response. Failure to complete and submit these forms may render your proposal non-responsive. BISD may, if the form is not required to evaluate the responses, waive this requirement and have the forms signed after proposal at the sole discretion of BISD. Signing after the submission date has expired is only permissible if doing so cannot alter the evaluation scoring or does not prejudice another offer.

## ADDENDA

Receipt of an Addendum must be acknowledged by signing and returning the Addendum with the RFCSP, if requested, or under separate cover prior to the due date. The Addenda containing proposal pricing should be returned in a sealed envelope marked on the outside with the Proposer's name, address, RFCSP number, and due date and time. Addenda will be posted to the Birdville ISD Purchasing website. It is the responsibility of each Proposer to obtain all addenda that pertains to this RFCSP. **Proposers who fail to check the website and submit a RFCSP without acknowledging receipt of all addenda issued may be deemed to have submitted a RFCSP not responsive to this solicitation.** Failure to receive such addenda does not relieve Proposer from any obligation under the RFCSP submitted. All formal written addenda become a part of the RFCSP documents. Proposers shall acknowledge receipt of all addenda in the RFCSP Response Form.

## PROPOSAL SUBMISSION

RFCSP's must be received in the Purchasing Department **prior to** the hour and date specified in this document or any subsequent Addenda. No other published dates will be binding. The clock located in the Birdville ISD Purchasing Department is considered the official time for receiving and opening RFCSP's. It is the sole responsibility of the Proposer to ensure timely delivery of the RFCSP. BISD will not be responsible for failure of service on the part of the U.S. Postal Office, courier companies, or any other form of delivery chosen by the Proposer.

Proposers submitting RFCSP's to BISD do so at their own expense. BISD will not be held responsible for any cost associated with the process by submitting Proposers.

***Please make note of our office hours (Monday thru Thursday - 8:00 AM to 4:30 PM and Friday- 8:00 AM to 4:00 PM). District offices are closed Fridays during the summer.***

***Late proposals will not be accepted.*** No verbal, telephonic, electronic mail, or faxed RFCSP's will be considered. RFCSP's received after the date and time specified ***will not*** be considered. The Purchasing Department will notify those Proposers submitting late RFCSP's and will hold documents for pick-up for five (5) business days following late RFCSP notification. **All late RFCSP's which are not picked up by the Proposer within five business days will be discarded.**

One (1) original and two (2) copies of the RFCSP must be sealed in an ***envelope clearly marked with closing date, company name and "RFCSP Enclosed #001-18"*** and addressed to the Purchasing Department, Birdville Independent School District, 3124 Carson Street, Haltom City, Texas 76117.

## **RESERVATIONS**

The School District expressly reserves the right to:

1. Specify approximate quantities;
2. Extend the opening date and time;
3. Consider and accept alternates, if specified in the documents, when most advantageous to the School District;
4. Waive as an informality, minor deviations from specifications, provided they do not affect competition or result in functionally unacceptable goods or services;
5. Waive any minor informality in any RFCSP or procedure (A minor informality is one that does not affect the competitiveness of the Proposer);
6. Add additional terms or modify existing terms in the proposal;
7. Reject a proposal because of unbalanced unit proposal prices;
8. Reject or cancel any or all RFCSP's;
9. Reissue a RFCSP; and/or
10. Procure any item by other means.

## **QUALITY OF MATERIAL**

Any item that does not perform or meet tests as specified by the seller shall be replaced by the Proposer at no cost to the District.

## **ALTERNATE**

Proposers may offer an "equal" product as an alternate. Final "approved equal" determination remains with the School District.

## **BRAND NAME OR EQUAL**

If the proposal indicates brand name or "equal" products are acceptable; the Proposer may propose an "equal" product but must be prepared to demonstrate those features that render it equal. Final determination of a product as an "equal" solely remains with the District. The District may deem it necessary to specify Brand Name Only, "No Substitutes," after conclusive testing, prior usage or standardization.

## **NEW MATERIAL**

Unless otherwise stated in the specifications, all supplies and components to be provided under this RFCSP shall be new (not used or reconditioned, and not of such age or so deteriorated as to impair their usefulness or safety), of current production, and of the most suitable grade for the purpose intended. If at any time during the performance of this RFCSP the Proposer believes that the furnishing of supplies or components which are not new is necessary or desirable, it shall notify the District immediately, in writing, including the reasons and proposing any consideration which will flow to the District if authorization to use such supplies or components is granted.

## **SAMPLES**

Samples and/or product specification documents may be required for items. Product specification shall be submitted with the RFCSP, properly referenced and clearly marked so as to indicate related RFCSP item. Samples, when requested, must be furnished at no cost to the District and will not be returned. Each sample should be clearly marked with bidders/proposer's name, RFCSP number, and item number on the RFCSP. **DO NOT ENCLOSE IN OR ATTACH RFCSP TO SAMPLE.** Birdville ISD assumes no responsibility for the handling of samples in any manner. Improperly identified samples will not be considered.

When samples and/or product specifications are not required to be submitted, Birdville ISD reserves the right to request samples and/or product specification documents for any merchandise submitted for RFCSP before final selections are made. Samples and/or product specifications requested after RFCSP opening must be received within five (5) calendar days after request.

## **SOLE SOURCE PROVIDERS**

Proposers offering items that are exclusively theirs and **are not marketed** through any other Proposer or distributor should complete the Sole Source Affidavit. This affidavit must be notarized and can be submitted with your proposal document.

## **SUITABILITY FOR INTENDED USE**

All chemicals must be certified lead free, non-toxic and will require a MSD sheet (chemicals defined as paints, lacquers, thinners, caulks, fillers, etc.). This documentation must be provided at time of purchase, before payment is approved. All other supply items should be comparable in quality and intended use. Suitability for intended use: (paints, pastes, inks, chemicals, markers, etc.) MSD sheet should clearly indicate item number.

## **RIGHT TO AMEND OR WITHDRAW RFCSP**

The District reserves the right to alter, amend, or modify any provisions of this RFCSP, or to withdraw this RFCSP, at any time prior to the award of the contract pursuant hereto, if it is in the best interest of the District to do so.

The Proposer CANNOT alter or amend the RFCSP after the closing. Alterations made before the closing must be initiated by proposer, guaranteeing authenticity and approved in writing by the Director of Purchasing.

## **REJECTION OF RFCSP**

BISD reserves the right to accept or reject in part or in whole any proposal submitted, and to waive any technicalities for the best interest of the School District.

RFCSP's may be rejected, among other reasons, for any of the following specific reasons:

- A. RFCSP received after the time limit for receiving bids as stated in the advertisement
- B. RFCSP containing any irregularities
- C. Unbalanced value of any items
- D. Improper or insufficient RFCSP guaranty, if required
- E. Where the Proposer, any Sub-Proposer or Supplier, or the surety on any bond given, or to be given, is in litigation with the District or where such litigation is contemplated or imminent, in the sole opinion of the District

## **DISQUALIFICATION OF PROPOSERS**

Proposers may be disqualified and their RFCSP's not considered, among other reasons, for any of the following specific reasons:

- A. Reason for believing collusion exists among the Proposers
- B. Where the Proposer, any Sub-Proposer or Supplier, or the surety on any bond given, or to be given, is in litigation with the District or where such litigation is contemplated or imminent, in the sole opinion of the District
- C. The Proposer being in arrears on any existing Contract/Purchase Order or having defaulted on a previous Purchase Order
- D. Lack of competency as revealed by pertinent factors, including but not necessarily limited to, experience and equipment, financial statement and questionnaires
- E. Uncompleted work that in the judgment of the District will prevent or hinder the prompt completion of additional work if awarded
- F. Where the Proposer has failed to perform in a satisfactory manner on a previous Purchase Order/Contract

## **ASSURANCES**

Proposers (owners, officers, employees, volunteers, etc.) may not work on district property where students may or may not be present when they have charges pending, have been convicted, received probation or deferred adjudication for the following:

- A. Any offense against a child
- B. Any sex offense
- C. Any crimes against persons involving weapons or violence
- D. Any felony offense involving controlled substances
- E. Any felony offense against property
- F. Any other offense the District believes might compromise the safety of students, staff, or property

## **CRIMINAL RECORD HISTORY**

All Proposers, subcontractors and their employees must submit to the Birdville ISD proof of a satisfactory criminal record history of all individuals working on District property through background checks conducted as required by Senate Bill 9. The criminal record history must be obtained by the successful bidder before any work is performed. The information regarding the requirements for conducting a criminal records check is posted on The Texas Department of Public Safety's website, [www.txdps.state.tx.us](http://www.txdps.state.tx.us) by clicking open Crime Records and reading School District Guide to Senate Bill 9. The cost for each criminal records check is approximately \$100.00.

Possession of fire arms, alcohol and/or drugs, even in vehicles, is strictly prohibited on school district property. Use of any tobacco products is not permitted on school property.

## **CONFLICT OF INTEREST**

Each proposer must disclose any existing or potential conflict of interest relative to the performance of the requirements of this RFCSP. Examples of potential conflicts may include an existing business or personal relationship between the proposer, its principal, or any affiliate or subcontractor, with the District or any other entity or person involved in any way in the project that is the subject of the RFCSP.

Similarly, any personal or business relationship between the proposer, the principals, or any affiliate or subcontractor, with any employee of the District or its suppliers must be disclosed. Any such relationship that might be perceived or represented as a conflict should be disclosed. Failure to disclose any such relationship or reveal personal relationships with district employees may be cause for contract termination. The District will decide if an actual or perceived conflict should result in proposal disqualification.

By submitting a proposal in response to this RFCSP, all proposers that they have not given, nor intend to give, at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, social discount, trip, favor, or service to a board member, a public servant or any employee or representative of the District, in connection with this procurement. The CONFLICT OF INTEREST QUESTIONNAIRE is included in this specification. For further information, a proposer can review the requirements as provided under HB 1491.

### **SELECTION PROCESS**

The District's Selection Committee will evaluate and rank each submittal in relation to the selection criteria described in the RFCSP. Only those receiving the highest scores on the analysis may be interviewed or contacted for further information. Negotiations with the selected Proposer may cover scope of work, contract schedule, contract terms and conditions, technical specifications, level of effort and price.

The award of the contract will be to the responsible Proposer whose proposal is deemed to be the best and whose proposal best meets the needs of the school district.

A responsive proposer shall have submitted a complete sealed proposal packet within the stated timeline and in accordance with the proposal specifications. A responsible proposer shall demonstrate the ability to successfully deliver the supplies, equipment and/or services being procured.

Results will become available after approval by the Board of Trustees.

### **SELECTION CRITERIA**

The District reserves the right to award this RFCSP to a single Proposer, multiple Proposers, each line item separately, or in any combination it determines to be in the best interest of the District. If the Proposer chooses to bid/propose "all or none" or is not agreeable to multiple or split awards, it must be noted on the Deviation/Compliance Form and included with the RFCSP.

RFCSP's must remain open for acceptance for a period of **ninety (90) days** subsequent to the opening of RFCSP's, unless otherwise indicated, to allow time for the offer(s) to be evaluated and Board of Trustees action, if required.

Regardless of the award of RFCSP hereunder, the District retains the right to purchase the same or similar materials or items from other sources should it be determined that doing so would be in the District's best interest.

Based upon the proposal material submitted, the following criteria will be used in evaluation.

Extensions of unit prices shown will be subject to verification by the district. In case of variation between the unit price and the extension, the unit price will be considered to be the proposal.



**Per Texas Education Code, Subchapter B, Sec. 44.031(b) \*ALL CONTENTS PROVIDED IN THIS SOLICITATION, WILL BE CONSIDERED AS AN EVALUATION FACTOR**

EVALUATION FACTORS	PERCENTAGE OF POINTS
A. The Purchase Price - Fees and Associated Costs	40%
B. The reputation of the Proposer and the Proposer’s goods or services – Based on demonstrated expertise and experience; references (availability of contract items, reliability of deliveries, condition of delivered product and wholesomeness, accurate invoices)	19%
C. The quality of the Proposer’s goods or services – ability to perform all requirements and unique abilities of the Proposer	15%
D. The extent to which the services meet the district’s needs (based on ability to meet delivery schedule, lead time for orders, offer products specified)	15%
E. The Proposer’s past relationship with the District	10%
F. The impact on the ability of the district to comply with laws and rules relating to historically underutilized businesses; (1 point given for completion of form) “Federal Requirements for Procurement and Contracting with small and minority businesses, women’s business enterprises, and labor surplus area firms.”	1%
G. The total long term cost to the District to acquire the Proposer’s goods or services	0%
H. For a contract for goods and services, other than goods and services related to telecommunications and information services, building construction and maintenance, or instructional materials, whether the Proposer or the Proposer's ultimate parent company or majority owner: a. has its principal place of business in this state; or b. employs at least 500 persons in this state (Form E)	0%
I. Any other relevant factor specifically listed in the request for bids or proposals a. shipping b. completeness of all documents c. delivery time-frame	0%

**CONTRACT**

The proposal document, addenda and any negotiated documents, returned and awarded by the Birdville ISD shall constitute the contract. The contract will be put into effect by means of executed purchase order(s) after proposals have been awarded unless otherwise specified.

**CONTRACT TERM**

**This proposal shall be effective upon School Board approval until completion of the project.**

**OPEN RECORDS**

Following the award of a contract, responses to this RFCSP are subject to release as public information unless the response or specific parts of the response can be shown to be exempt from the Texas Open Records Act. Proposers are advised to consult with their legal counsel regarding disclosure issues and take the appropriate precautions to

safeguard trade secrets or any other proprietary information. The District assumes no obligation or responsibility for asserting legal arguments on behalf of potential proposers.

If a proposer believes that a proposal or part(s) of a proposal is confidential, then the proposer must so specify. The proposer must stamp in bold red letters the term 'CONFIDENTIAL' on that part of the proposal which the proposer believes to be confidential. The proposer must submit in writing specific detailed reasons, including any relevant legal authority, stating why the proposer believes the material to be confidential. Vague and general claims as to confidentiality will not be accepted. The District will be the sole judge as to whether a claim is general and/or vague in nature.

### **ASBESTOS**

Proposers who perform work inside the Birdville ISD facilities are hereby notified that our buildings may contain asbestos containing materials. This notification is required by both the State of Texas Department of State Health Services and the Federal EPA Asbestos regulations. These guidelines cover both Birdville ISD's responsibilities and the Employer's responsibility to their employees. As a Proposer it is your responsibility to check each building prior to performing any work in that facility. These building materials may include but are not limited to: ceiling tile, floor tile and mastic, sheetrock, tape and bed compound, thermal pipe insulation, spray-on ceiling material, calks, and roofing products. As there have been numerous asbestos containing products manufactured over the years, you must check each building's Asbestos Management Plan. This plan is normally kept in the main office. Check with the school secretary and she will allow you to look at it. It is the Proposer's responsibility to notify all employees working for them that Birdville ISD facilities may contain asbestos and where their employees may find the facility's Asbestos Management Plan. Again, it is the Proposer's responsibility to check the Asbestos Management Plan for each facility prior to working in the facility and then to notify their employees performing the actual work. The information is found in section eight (8) for all asbestos that are remaining in the building. If after looking in the Asbestos Management Plan you are uncertain about whether the area you will be working in contains asbestos or not, please contact the Environmental Department at 817-871-3300 for further assistance.

### **QUANTITIES**

RFCSP's must be submitted on units of quantity specified. Any suggestions as to quantity to secure a better price are welcome. The quantities appearing in this RFCSP are approximate only, and the District reserves the right to increase, decrease or delete any or all items. If the quantities of materials to be furnished are increased, such increase shall be paid for according to the unit prices established for the item. The successful Proposer shall have no claims against the District for anticipated profits for the quantities called for, diminished or deleted. Estimated quantity change of products on bid shall be no more than 25% as is the statutory change order amount in Texas law.

### **DELIVERY OF GOODS**

A specific delivery date may be required to be a part of each RFCSP. The District considers delivery time to be that period elapsing from the time the individual order is placed until that order or work thereunder is received by the District at the specified delivery location.

All items covered by this RFCSP shall be delivered F.O.B Destination to Birdville ISD, from point of assembly to the District location(s) specified on each purchase order. **RFCSP pricing shall include all freight/delivery charges.** The District shall not be liable for any deliveries of merchandise unless same has been received at the specified delivery location within the Birdville ISD, inspected and accepted as in full compliance with the Specifications. Risk of theft, destruction, loss or damage to any work, materials, shipment, or deliveries will be borne exclusively by the successful Proposer until after the District completes its inspection and acceptance of said work, material, shipments, or deliveries; the burden and cost of insurance against such risks shall be assumed by the successful Proposer.

Deliveries will be made only upon authorization of the Birdville ISD, and shall be made if, as, and when required and ordered by the District, at such intervals as directed by the District. It is important that each supplier understand the following information:

- All purchases made by the District will be made via Birdville ISD purchase order.
- Do not provide goods/services absent a bona fide, signed purchase order.
- Do not provide goods/services exceeding the quantities contained on the purchase order.
- The District will only pay invoices which match the purchase order description, quantity, and price.

Deliveries shall be to the location identified in each purchase order. Each proof of delivery shall list the Birdville ISD purchase order number, exact quantity delivered, back orders (if any) and number of pallets.

Proposer warrants that all deliveries made under the purchase order will be of the type and quality specified; and the District may reject and/or refuse any delivery that falls below the quality specified in the Specifications. The District shall not be held to have accepted any delivery until after an inspection of same has been made and an opportunity to exercise its right of rejection has been afforded.

Failure by the Proposer to make reasonable delivery as and when requested shall entitle the District to acquire quantities from alternate sources wherever available, with the right to seek reimbursement from the Proposer for amounts, if any, paid by the District over and above the RFCSP price.

All materials delivered shall be free of any and all liens and shall upon acceptance thereof become the property of the District, free and clear of any liens.

Acceptance by the District of any delivery shall not relieve the Proposer of any guarantee or warranty, express or implied, nor shall it be considered an acceptance of material not in accordance with the Specifications and shall not waive the District's right to request replacement of defective material.

**ADDITION OR DELETION OF LOCATIONS**

The District, by written notice at any time during the term of the contract, may add or delete locations as deemed necessary. Any such written notice shall take effect on the date stated in the notice from the District. Any added or deleted items will be reflected in the cost in accordance with the proposal unit price for that location. The District shall determine if any adjustments are needed to the proposed schedule and shall provide any changes in writing to the Contractor.

**SUBCONTRACTORS**

The Contractor will not subcontract or enter into any subcontracting agreements pertaining to this contract, without obtaining approval from the Purchasing Department. If you are subcontracting any part of this contract, the following must be provided: name(s) of the subcontractor(s), addresses, points of contact and phone numbers.

In no event will any subcontracting by the Contractor relieve the Contractor from any of the obligations or conditions of this contract. As between the parties hereto, any of the Contractor’s subcontractors will be considered the agent and employee of the Contractor, and the acts or omission of the subcontractors and any person directly or indirectly acting for them will be deemed to be the acts or omission of the Contractor, and the Contractor will remain liable and responsible to the District as if no subcontract had been made. All submittals required of the Contractor shall also be required of any subcontractors.

**CANCELLATION**

The District shall not pay for services or supplies that are deemed by BISD to be unsatisfactory. Proposers will be given reasonable opportunity, before termination, to correct any deficiencies; however, this in no way may be construed as negating the basis for cancellation. The District reserves the right to cancel the contract, without cause, upon thirty (30) days’ written notice.

Birdville ISD reserves the right to cancel the entire contract and/or buy in the open market at the current price and charge the vendor the difference between the price so paid and the proposal in the following events:

- a. Brands of merchandise other than brands name on the proposal are delivered without prior approval.
- b. Formulation of the product is changed and the district is not contacted for prior approval.
- c. Orders are not delivered within the specified time period.
- d. Pack changes in which written notification has not been made at least two weeks prior to the delivery.
- e. In the case that the product deviates from the specification or is found to be inferior or not wholesome.

### **WARRANTY INFORMATION**

Any information regarding warranties and/or maintenance agreements pertaining to said item(s) are to be included in the proposal.

Warranty – Product: Manufacturers’ standard warranty for parts and labor must be included in the prices bid/proposed and must meet or exceed any additional warranty requirements specified herein. All manufacturers’ warranties shall be enforced to benefit the District, and replacement of defective materials shall be made promptly upon request.

Warranty – Price: The price to be paid by the District shall be that contained in Seller’s RFCSP which Seller warrants to be no higher than Seller’s current prices on orders by others for products of the kind and specification covered by this RFCSP for similar quantities under similar or like conditions and methods of purchase. In the event Seller breaches this warranty, the prices of the items shall be reduced to the Seller’s current prices on orders by others. Or in the alternative, the District may cancel the Purchase Order(s) without liability to seller for breach of Seller’s actual expense.

Warranty – Safety: Seller warrants that the product sold to the District shall conform to the standards promulgated by the U.S. Department of Labor under the Occupational Safety and Health Act of 1970. In the event the product does not conform to OSHA standards, the District may return the product for correction or replacement at the Seller's expense. In the event Seller fails to make the appropriate correction within a reasonable time, correction made by the District will be at Seller's expense.

### **INSURANCE REQUIREMENTS**

These requirements apply to all non-Capital Improvement Program construction projects and to the other bids/proposals as required. The successful Proposer will submit the following Certificates of Insurance naming the Birdville ISD as Certificate Holder and named additional insured on General Liability Certificates. Certificates may be faxed to Birdville ISD, Purchasing Department at 817-831-5662 or emailed to [shelley.freeman@birdvilleschools.net](mailto:shelley.freeman@birdvilleschools.net). The selected Proposer will be required to supply the insurance certificate(s) prior to the start of the project. The selected Proposer agrees to provide insurance policies or contracts for insurance, when requested, in addition to Certificates of Insurance. **The District reserves the right to require higher limits of coverage depending on the size, scope, and nature of a RFCSP.**

**The Proposer shall agree to waive all right of subrogation against the District, its officials, employees and volunteers for losses arising from work performed by the contractor for the District.**

TYPES OF INSURANCE COVERAGE	LIMITS OF LIABILITY						
Worker's Compensation	Statutory – The Proposer shall provide and maintain Worker's Compensation and Employer's Liability Insurance with a limit of not less than: <table data-bbox="602 363 1019 464"> <tr> <td>Each Accident</td> <td>\$100,000</td> </tr> <tr> <td>Disease-Policy Limit</td> <td>\$500,000</td> </tr> <tr> <td>Disease-Each Employee</td> <td>\$100,000</td> </tr> </table> The Proposer shall require subcontractors to provide insurance for the latter's employees, unless such employees are covered by a Worker's Compensation policy furnished by the General Proposer.	Each Accident	\$100,000	Disease-Policy Limit	\$500,000	Disease-Each Employee	\$100,000
Each Accident	\$100,000						
Disease-Policy Limit	\$500,000						
Disease-Each Employee	\$100,000						
General Liability	The Proposer shall provide and maintain Comprehensive General Liability Insurance protection including "Products and Completed Operations" coverage with a limit not less than: <table data-bbox="602 636 1036 737"> <tr> <td>General Aggregate</td> <td>\$1,000,000</td> </tr> <tr> <td>Each Occurrence</td> <td>\$1,000,000</td> </tr> <tr> <td>Products-Comp Ops</td> <td>\$1,000,000</td> </tr> </table>	General Aggregate	\$1,000,000	Each Occurrence	\$1,000,000	Products-Comp Ops	\$1,000,000
General Aggregate	\$1,000,000						
Each Occurrence	\$1,000,000						
Products-Comp Ops	\$1,000,000						
Auto Liability Insurance	The Proposer shall provide and maintain during the life of this RFCSP, automobile public liability insurance in amounts of not less than \$300,000 each single occurrence for bodily injury or death (maximum of \$100,000 per person), and \$100,000 for each single occurrence of property damage or destruction. Said insurance policy must provide protection for non-owned and hired vehicles as well as vehicles owned by Proposer.						

**BID SECURITY REQUIREMENT**

RFCSP's shall be accompanied by either an **original** cashier's check, certified check, or money order upon a state bank in the amount not less than five percent (5%) of the total maximum RFCSP price payable without recourse to the Birdville ISD, or an **original** bid bond in the same amount from a reliable surety company licensed to do business in the State of Texas. Bid Security serves as a guarantee that the Proposer will enter into a contract and execute a payment and performance bond on any or all projects \$25,000 or above within fifteen (15) days after notice of award.

**PAYMENT BOND**

For projects in excess of \$25,000, an **original** payment bond will be required of the successful Proposer and shall be executed by a surety company acceptable to the District and authorized to do business in Texas. The payment bond shall be in an amount equal to one hundred percent (100%) of the total sum for all projects in excess of \$25,000. **Original** bonds shall be delivered to the District no later than fifteen (15) days after receiving the notice of award.

**PERFORMANCE BOND**

For projects in excess of \$100,000, BOTH an **original** performance bond and an **original** payment bond will be required of the successful Proposer and shall be executed by a surety company acceptable to the District and authorized to do business in the State of Texas. The performance and payment bond shall be in an amount equal to one hundred percent (100%) of the total sum for all projects in excess of \$100,000. Failure to deliver the performance bond and payment as specified shall be considered as having abandoned the contract and the bid bond will be retained by the District as liquidated damages. **Original** bonds shall be delivered to the District no later than fifteen (15) days after receiving the notice of award.

**PROPOSER PRICES**

Proposal prices must be firm for the duration of the contract, unless other time stipulations are noted elsewhere in the Special Conditions and Instructions as listed in the package.

**PROCUREMENT CARD ORDERING CAPABILITY**

The District may, at their discretion, elect to use a MasterCard Procurement Card to procure goods in lieu of a Purchase Order for payment resulting from the award of this contract.

**TAXES**

The Birdville Independent School District is exempt from Federal Excise, State Sales and Transportation Taxes. TAX MUST NOT BE INCLUDED IN RFCSP. Birdville ISD Federal ID Number is 75-6000193. Tax exemption certificates will be executed by the District upon request.

**INVOICING**

Terms of payment to the successful Proposer will be contingent upon the terms offered based on invoices submitted to and approved by the District for payment. Invoices shall be in accordance with the individual pricing for each item. **No payment shall be made on invoices not listing a Birdville ISD Purchase Order number.**

Invoices will be paid upon completion of delivery and acceptance. Invoices must reflect only the amount due for goods or the portion of the services performed, materials and equipment furnished for the period covered by each invoice. Invoices shall be priced per unit prices as awarded.

Please include the following items on your invoice document:

- Company Name and Name of Contact
- Remit Address
- Invoice Number
- Invoice Date
- Purchase Order Number
- Ship to Information
- Details of items shipped and/or services rendered
- Total amount due

It is preferred that you email your invoices to [accounts.payable@birdvilleschools.net](mailto:accounts.payable@birdvilleschools.net); however, if you do not have this capability, you may mail your invoice to the following address:

Birdville ISD  
 ATTN: Accounts Payable  
 P. O. Box 14689  
 Haltom City, Texas 76117

**Product support services and rebates will be accepted by BIRDVILLE ISD for any technical support training, or promotional rebates pertaining to your product. However, this will not be a factor in awarding the proposal. Final proposal award will be based on the factors identified in the evaluation section. Any and all monetary rebates shall be paid by check to Birdville ISD within the contract year.**

**CASH DISCOUNTS**

Normal payment terms are approximately 45 calendar days, given that the goods and/or services received are in satisfactory condition. Any discounts available to the School District or early payment discounts should be noted.

**Any discounts available to Birdville ISD for early payment should be noted in the proposal. Vendor(s) may propose volume discounts or other adjustments to the price for large orders.**

**INTERLOCAL AGREEMENT**

Included in this proposal is an agreement for you, the Proposer, to enable members of the Educational Purchasing Cooperative of North Texas to utilize this proposal. If you wish to participate in this cooperative and increase the number of school districts able to make purchases from your company, please fill out the form and return with the proposal.

Governmental entities utilizing Internal Governmental contracts with Birdville ISD will be eligible, but not

obligated, to purchase materials/services under the contract(s) awarded as a result of this solicitation. All purchases by governmental entity other than Birdville ISD will be billed directly to that governmental entity and paid by that governmental entity. Birdville ISD will not be responsible for another governmental entity's debts. Each governmental entity will order its own material/service as needed. (See Form L)

**PROTEST PROCEDURES FOR VENDOR/PROPOSER PROTESTS**

Vendors/proposers are encouraged to discuss purchasing concerns with the Director of Purchasing. Concerns should be expressed as soon as possible to allow for early resolution at the lowest possible administrative level.

If a vendor desires to protest a decision by Birdville ISD Purchasing Department, the vendor must submit a letter notifying of the intent to protest and include in the letter the reason for the protest along with any evidence available supporting the vendor's position. Submit the letter to: Birdville ISD Purchasing Department, 3124 Carson Street, Haltom City, TX 76117.

The Director shall respond to the vendor within fifteen (15) business days from receipt with an explanation or offer a compromise. If the vendor is not satisfied, the vendor may submit a formal complaint under Board Policy GF (LOCAL).

Even after initiating a formal complaint process, individuals are encouraged to seek informal resolution of their concerns. An individual whose concerns are resolved may withdraw a formal complaint at any time.

## **SECTION II SCOPE OF WORK**

### **SCOPE OF SERVICES**

Birdville Independent School District is seeking to engage qualified and experienced contractors who shall supply all the personnel and other resources necessary to replace the fire alarm systems at the campuses. The scope of work shall include all supervision, the necessary labor, materials, and tools for performance with all applicable manufacturer's suggested practices, as well as, all Federal, State, and local law to accomplish the following with regard to the covered work defined herein.

### **GENERAL REQUIREMENTS FOR CONTRACTORS**

1. If there are any problems encountered in the field with the replacement of the fire alarm systems, contact J. Scott Clendenin, EMA Engineering Inc. 903-581-2677.
2. Contractor personnel shall be clean in appearance and in uniform for easy identification on BISD premises.
3. Contractor will interview, screen, hire, control, supervise, train and pay for sufficient qualified personnel as may be necessary to perform the services contained herein. A criminal history check is required.
4. Contractor shall thoroughly investigate the background of each employee assigned to the BISD property and shall not assign any employee on full or part-time basis who has been convicted of a felony or crime involving moral turpitude or any relationship with a child.
5. Contractor shall be responsible for all materials delivered to the job site. Contractor shall store materials in a secure location to prevent injury from any district staff or students.
6. The use of tobacco and alcohol is prohibited on BISD property.
7. Successful contractor is responsible for any damages done to the ceilings, walls, etc. at each campus due to negligence.
8. Proposals will be considered only from contractors who are currently in the fire alarm business.
9. Contractor is responsible for verifying exact measurements prior to submitting proposal.
10. Contractor shall agree to rework any defective workmanship during one (1) year warranty period following original installation at no charge to the District.

### **SPECIFICATIONS OF WORK**

Refer to engineering specifications and drawings attached herein for all work and products required for turnkey project.



# PROPOSER'S RETURN PACKET

## SECTION III COVER PAGE



**RFCSP: #001-18**

**Fire Alarm Renovations to North Oaks Middle School and  
Smithfield Elementary School**

**DUE DATE: July 26, 2017  
TIME: 2:00 PM CST**

**PROPOSER IDENTIFICATION: (Please print information clearly.)**

<b>Company Name:</b>		<b>Date:</b>	
<b>Address:</b>		<b>Phone:</b>	
		<b>Fax:</b>	
<b>City/St/Zip</b>		<b>Email:</b>	

*I hereby acknowledge receipt of the following addenda (if applicable) which have been issued and incorporated into the RFCSP Document. (Please initial in ink beside each addendum received.)*

<b>Addendum No. 1</b>		<b>Addendum No. 3</b>	
<b>Addendum No. 2</b>		<b>Addendum No. 4</b>	

**SECTION III  
PROPOSAL PRICING**

Company Name \_\_\_\_\_

Item No.	Item Description	Project Cost	Contingency Allowance
1	North Oaks Middle School Fire Alarm	\$ _____	\$5,500.00
2	Smithfield Elementary School Fire Alarm	\$ _____	\$3,775.00

<b>Total Lump Sum Proposal (Include both projects and contingency amounts)</b>	\$ _____
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**SECTION IV  
RFCSP RESPONSE CHECKLIST**

To be considered for award of **this** solicitation, all pages contained in the “Packet” (including but not limited to forms A – N, Required Federal Contract Provisions, the Cover Page, plus any/all attachments, must be completed with all requested information, **SIGNED** and **RETURNED** in a sealed envelope or other appropriate package adequate to conceal and contain the contents prior to the RFCSP date and time. Each RFCSP shall be placed in a separate envelope and properly identified with the RFCSP Number, RFCSP Title, Name of Company submitting RFCSP, and the established time and date to be opened.

Please verify that the documents listed below have been completed, signed, and included in your RFCSP prior to submittal. **TO BE CONSIDERED FOR AWARD, ALL MANDATORY FORMS MUST BE COMPLETED, SIGNED AND RETURNED WITH THIS SOLICITATION.**

**Mandatory Forms (required to be considered for the Award of this solicitation):**

- Proposer Return Packet and Addendum(s) (Submittals as detailed in the specifications)
  - Insurance
  - References
- Completed – Packet Cover Page
- Completed – Proposer Information Response Form – Form A
- Completed – Deviation/Compliance Signature Form – Form B
- Completed – Non-Collusion Statement – Form C
- Completed – Buy American Provision – Form D
- Completed – HACCP Plan – Form E
- Completed – Criminal Background Check and Felony Conviction Notification – Form F
- Completed – Resident/Nonresident Bidder’s Certification – Form G
- Completed – References – Form H
- Completed – Senate Bill 9 Proposer Certification – Form I  
*Not required for this proposal.*
- Completed – EPCNT – Form J
- Completed – Cooperative List – Form K
- Completed – Conflict of Interest Questionnaire – Form L
- Completed – Historically Underutilized Business (HUB) Certification – Form M
- Completed – Required Federal Contract Provisions
- Completed –W-9, Tax Payer Identification Number & Certification (not included in packet)

**FORM A  
PROPOSER INFORMATION RESPONSE FORM**

The undersigned, in submitting this RFCSP and endorsement of same, represents that he/she is authorized to obligate his/her Proposer, that he/she is an equal opportunity employer and will not discriminate with regard to race, color, religion, national origin, sexual orientation, or age or disability unrelated to job performance of this RFCSP; and that he/she has read this entire RFCSP package (Sections I through IX), is aware of the covenants contained herein and will abide by and adhere to the expressed requirements in *all* sections of this RFCSP.

**SUBMITTED BY**

Primary Contact/Title:

Company name:

Phone:

Fax:

E-mail:

Registered company address:

City:

State:

ZIP Code:

Website:

HUB:

M/WBE:

EIN or SS#:

DUN:

**REMIT INFORMATION**

Contact Person:

Address:

City:

State:

ZIP Code:

Phone:

Fax:

E-mail:

Division/Bid#:

**ADDITIONAL REMIT ADDRESSES**

Location Name/Type:

Address:

City:

State:

ZIP Code:

Phone:

Fax:

E-mail:

Division/Bid#:

**PROPOSER QUALIFICATIONS**

How many years has your company been in this type of business?

Number of staff in your organization?

Are you willing to accept a split or multiple award?

Are you willing to accept procurement card payment?

Are criminal and civil arrest/charge records checked?

Is random drug testing performed?

Are your employees required to wear uniforms, name tags/badges and company identifications?

**HOW WOULD YOU LIKE TO RECEIVE YOUR PURCHASE ORDERS? EMAIL, FAX OR US MAIL**  
*CHECK ALL THAT APPLY*

Fax

E-mail

U S Mail

**PLEASE LIST ANY CURRENT AWARDED BIDS YOU HAVE WITH OTHER DISTRICTS OR CO-OPS**

Bid or Co-op#:

Contact:

Phone:

Bid or Co-op #:

Contact:

Phone:

Bid or Co-op #:

Contact:

Phone:

**SIGNATURES OF COMPANY OFFICIAL**

Print Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Title:

Date:

**FORM B  
DEVIATION/COMPLIANCE SIGNATURE FORM**

If the undersigned Proposer intends to deviate from the Item(s) Specifications listed in this RFCSP document, all such deviations must be listed on this page, with complete and detailed conditions and information included or attached. **The District will consider any deviations in its RFCSP award decisions, and the District reserves the right to accept or reject any RFCSP based upon any deviations indicated below or in any attachments or inclusions.**

In the absence of any deviation entry on this form, the Proposer assures the District of his/her full compliance with the Terms and Conditions, Item Specifications, and all other information contained in this RFCSP document.

**No Deviation**    **Yes Deviations**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

If yes is checked, please list below. Attach additional sheet(s) if needed.

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**FORM C  
NON-COLLUSION STATEMENT**

“The undersigned affirms that he/she is duly authorized to execute this RFCSP, that this company, corporation, Proposer, partnership or individual has not prepared this RFCSP in collusion with any other Proposer, and that the contents of this RFCSP as to prices, terms or conditions of said RFCSP have not been communicated by the undersigned nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this RFCSP.”

Proposer hereby assigns to purchaser any and all claims for overcharges associated with this RFCSP which arise under the antitrust laws of the United States, 15 USCA Section 1 and which arise under the antitrust laws of the State of Texas, Business and Commerce Code, Section 15.01.

*Does vendor agree? Yes \_\_\_\_\_ Initials of authorized company representative*

**FORM D**  
**BUY AMERICAN PROVISION**

School and institutions participating in the NSLP and SBP are required by law to use child nutrition funds, to the maximum extent practicable, to buy domestic commodities or products for meals served under these programs. A “domestic commodity or product” is defined as one that either is produced in the U.S. or is processed in the U.S. substantially using agricultural commodities that are produced in the U.S. The term “substantially” means that over 51 percent of the final processed product consists of agricultural commodities that were grown domestically. Therefore, when child nutrition funds are used to acquire foods, schools and institutions must ensure that the items comply with this requirement. Additional requirements for preference for agricultural products from Texas are applicable to the use of child nutrition funds, in accordance with the Buy American Provision, Section 44.042, Texas Education Code.

*Does Proposer agree? Yes \_\_\_\_\_ Initials of authorized company representative*

**FORM E**  
**HACCP PLAN**

HACCP is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw materials production, procurement and handling, to manufacturing, distribution and consumption of the finished product.

Our company has a current Hazard Analysis and Critical Control Points Plan (HACCP) or good manufacturing practices in place for the duration of this contract.

**Yes, we have a HACCP**     **No, we do not have an HACCP**

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Signature

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Date

**FORM F**  
**CRIMINAL BACKGROUND CHECK AND FELONY CONVICTION NOTIFICATION**

**(a) CRIMINAL BACKGROUND CHECK**

Proposer will obtain history record information that relates to an employee, applicant for employment, or agent of the Proposer if the employee, applicant, or agent has or will have continuing duties related to the contracted services; and the duties are or will be performed on school property or at another location where students are regularly present. The Proposer certifies to the Birdville ISD before beginning work and at no less than an annual basis thereafter that criminal history record information has been obtained. Proposer shall assume all expenses associated with the background checks, and shall immediately remove any employee or agent who was convicted of a felony, or misdemeanor involving moral turpitude, as defined by Texas law, from Birdville ISD’s property or other location where students are regularly present. Birdville ISD shall be the final decider of what constitutes a “location where students are regularly present.” Proposer’s violation of this section shall constitute a substantial failure.

If the Proposer is the person or owner or operator of the business entity, that individual may not self-certify regarding the criminal history record information and its review, and must submit original evidence acceptable to the District with this Agreement showing compliance.

**(b) FELONY CONVICTION NOTIFICATION**

State of Texas Legislative Senate Bill No. 1, Section 44.034, Notification of Criminal History, Subsection (a), states, “A person or business entity that enters into a contract with a school district must give advance notice to the District if the person or 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.

Subsection (b) states, “A school district may terminate a contract with a person or business entity if the district determines that the person or business entity failed to give notice as required by Subsection (a) or misrepresented the conduct resulting in the conviction.” The district must compensate the person or business entity for services performed before the termination of the contract.

I, the undersigned agent for the Proposer named below, certify that the information concerning criminal background check and notification of felony convictions has been reviewed by me, the following information furnished is true to the best of my knowledge, and I acknowledge compliance with this section. Proposer is responsible for the performance of the persons, employees and/or sub-Proposers. Proposer agrees to provide services for the Birdville ISD pursuant to this RFCSP on any and all Birdville ISD campuses or facilities. Proposer will not assign individuals to provide services at a Birdville ISD campus or facility who have a history of violent, unacceptable, or grossly negligent behavior or who have a felony conviction, without the prior written consent of the Birdville ISD Purchasing Department.

***THE FELONY CONVICTION NOTICE IS NOT REQUIRED OF A PUBLICLY-HELD CORPORATION.***

<b>Proposer’s Name:</b>			
A. <i>My firm is a publicly-held corporation; therefore, this reporting requirement is not applicable.</i> <span style="float: right;"><b>Y N</b></span>			
B. <i>My firm is not owned nor operated by anyone who has been convicted of a felony.</i> <span style="float: right;"><b>Y N</b></span>			
C. <i>My firm is owned or operated by the following individual(s) who has/have been convicted of a felony:</i> <b>Y N</b>			
Name of Felon(s):			
Details of Conviction(s):			
Signature of Company Official:		Date:	
<b><i>NOTE: Name and signature of company official should be the same as initials on the affidavit (Form B).</i></b>			



**FORM G**  
**RESIDENT/NONRESIDENT CERTIFICATION**

Texas Government Code Chapter 2252 relates to bids by nonresident Proposers. The pertinent portions of the Act are as follows:

Section 2252.001(3) "Nonresident bidder" means a bidder who is not a resident (of the State of Texas).

Section 2252.001(4) "Resident bidder" means a bidder whose principal place of business is in this state, including a Proposer whose ultimate parent company or majority owner has its principal place of business in this state.

Section 2252.002

A governmental entity may not award a governmental contract to a nonresident bidder unless the nonresident underbids the lowest bid submitted by a responsible resident bidder by an amount that is not less than the amount by which a resident bidder would be required to underbid the nonresident bidder to obtain a comparable contract in the state in which the nonresident's principal place of business is located.

Company Name: \_ is/isn't a Resident Bidder of Texas as defined in Texas Government Code Section 2252.001(4).

**Yes - Resident**    **No - Nonresident**

If the Bidder is a Nonresident Bidder of Texas, please answer the following:

Does the Proposer's ultimate parent company or majority owner employ at least 500 persons in Texas?	Yes _____	No _____
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*Does Proposer agree? Yes \_\_\_\_\_ Initials of authorized company representative*

**FORM H  
REFERENCES**

Proposers must provide at least three (3) references for which they have performed similar services within the past twenty-four (24) months. Two (2) of the references shall be school districts serviced. The references should be of like size and nature as the BISD. The references shall include the name of the company, contact person, phone number, fax number and e-mail address, length of time work has been performed, types of tasks performed and service provided. See attached reference sheet.

1.	Company Name:			
	Address:			
	City/State/Zip:			
	Contact Person:		Email:	
	Business Phone:		Fax:	
	Description of project or work completed:			
2.				
	Company Name:			
	Address:			
	City/State/Zip:			
	Contact Person:		Email:	
	Business Phone:		Fax:	
	Description of project or work completed:			
3.				
	Company Name:			
	Address:			
	City/State/Zip:			
	Contact Person:		Email:	
	Business Phone:		Fax:	
	Description of project or work completed:			

**FORM I**  
**MODEL SB 9 PROPOSER CERTIFICATION FORM**

**Criminal History Record Information Review of Certain Contract Employees**

**Introduction:** Texas Education Code Chapter 22 requires service Proposers to obtain criminal history record information regarding covered employees and to certify to the District that they have done so. Covered employees with disqualifying convictions are prohibited from serving at a school district.

**Definitions:**

*Covered employees:* Includes all employees of a Proposer (to include any subcontractors and/or independent Proposers) who have or will have continuing duties related to the service to be performed at the District and have or will have direct contact with students. The District will be the final arbiter of what constitutes direct contact with students.

*Disqualifying conviction:* One of the following offenses, if at the time of the offense: (a) a felony offense under Title 5, Texas Penal Code; (b) an offense for which a defendant is required to register as a sex offender under Chapter 62, Texas Code of Criminal Procedure; or c) an equivalent offense under Federal law or the laws of another state.

On behalf of \_\_\_\_\_ ("Name of Proposer"),

I First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Certify that [check one]:

None of the Proposer's employees are *covered employees*, as defined above.

*Or*

Some or all of the Proposer's employee are *covered employees*. If this box is selected, I further certify that:

Proposer has obtained all required criminal history record information, through the Texas Department of Public Safety, regarding its covered employees. None of the covered employees has a disqualifying conviction. Proposer has taken reasonable steps to ensure that its employees who are not covered employees do not have continuing duties related to the contract services or direct contact with students.

If Proposer receives information that a covered employee has a disqualifying conviction, Proposer will immediately remove the covered employee from contract duties and notify the District in writing within three (3) business days.

Upon request, Proposer will make available for the District's inspection the criminal history record information of any covered employee. If the District objects to the assignment of a covered employee on the basis of the covered employee's criminal history record information, Proposer agrees to discontinue using that covered employee to provide services at the District.

Noncompliance by the Proposer with this certification may be grounds for contract termination.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

FORM J



**INTERLOCAL AGREEMENT CLAUSE**

Several governmental entities around the Birdville ISD have indicated an interest in being included in this contract. Should these governmental entities decide to participate in this contract, would you (the Proposer) agree that all terms, conditions, specifications, and pricing would apply?

Yes \_\_\_\_\_ No \_\_\_\_\_

If you (the Proposer) check yes, the following will apply:

Governmental entities utilizing Internal Governmental contracts with the Birdville ISD will be eligible, but not obligated, to purchase materials/services under the contract(s) awarded as a result of this solicitation. All purchases by governmental entity other than Birdville ISD will be billed directly to that governmental entity and paid by that government entity. Birdville ISD will not be responsible for another governmental entity’s debts. Each governmental entity will order its own material/service as needed. For information regarding the Educational Purchasing Cooperative of North Texas, please visit their website at the following address: <http://www.epcnt.com/INDEX.htm>

Company Name: \_\_\_\_\_ Date: \_\_\_\_\_

**FORM K  
COOPERATIVE LIST**

Birdville ISD is a member of the following Cooperatives. Please check if your company is a member of the following cooperatives.

- BuyBoard - The Local Government Purchasing Cooperative
- Choice Partners (Harris County Department of Education)
- DIR - State Purchasing Cooperative - Department of Information Resources
- EPCNT - Educational Purchasing Cooperative of North Texas
- HGAC – Houston-Galveston Area Council
- National Intergovernmental Purchasing Alliance (IPA)
- NJPA – National Joint Powers Alliance
- PACE - Purchasing Association of Cooperative Entities
- Tarrant County Cooperative Purchasing Program
- TCPN - The Cooperative Purchasing Network
- Texas Smart Buy - State Purchasing Cooperative
- TIPS - The Interlocal Purchasing System
- U.S. Communities
- Other(s) \_\_\_\_\_
- None

# FORM L

<b>CONFLICT OF INTEREST QUESTIONNAIRE</b> For vendor doing business with local governmental entity		<b>FORM CIQ</b>
<p><b>This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.</b></p> <p>This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).</p> <p>By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.</p> <p>A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.</p>	<b>OFFICE USE ONLY</b>	
<p><b>1</b> Name of vendor who has a business relationship with local governmental entity.</p>	Date Received	
<p><b>2</b> <input type="checkbox"/> Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)</p>		
<p><b>3</b> Name of local government officer about whom the information is being disclosed.</p> <p style="text-align: center;">_____</p> <p style="text-align: center;">Name of Officer</p>		
<p><b>4</b> Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.</p> <p style="margin-left: 40px;">A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?</p> <p style="margin-left: 80px;"> <input type="checkbox"/> Yes      <input type="checkbox"/> No                 </p> <p style="margin-left: 40px;">B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?</p> <p style="margin-left: 80px;"> <input type="checkbox"/> Yes      <input type="checkbox"/> No                 </p>		
<p><b>5</b> Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.</p>		
<p><b>6</b> <input type="checkbox"/> Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).</p>		
<p><b>7</b></p> <p style="text-align: center;">                     _____                      Signature of vendor doing business with the governmental entity                 </p> <p style="text-align: right; margin-right: 100px;">                     _____                      Date                 </p>		

**CONFLICT OF INTEREST QUESTIONNAIRE**  
**For vendor doing business with local governmental entity**

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

**Local Government Code § 176.001(1-a):** "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

**Local Government Code § 176.003(a)(2)(A) and (B):**

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

\*\*\*

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

**Local Government Code § 176.006(a) and (a-1)**

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

- (1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);
- (2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or
- (3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

- (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or
- (B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

- (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);
- (B) that the vendor has given one or more gifts described by Subsection (a); or
- (C) of a family relationship with a local government officer.

**FORM M**

**HISTORICALLY UNDERUTILIZED BUSINESS (HUB)  
CERTIFICATION**

Companies that have been certified by the Texas Building and Procurement Commission (TBPC) as Historically Underutilized Business (HUB) entities are encouraged to indicate their HUB status when responding to this Bid Invitation. The electronic catalogs will indicate HUB certification for vendors that properly indicate and document their HUB certification on this form.

I certify that my company has been certified by the Texas Building and Procurement Commission as a Historically Underutilized Business (HUB), and I have attached a copy of our HUB Certification to this form. (Required documentation for recognition as a HUB).

Minority

Small Business

Woman Owned

My company has NOT been certified by the Texas Building and Procurement Commission as a Historically Underutilized Business (HUB).

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SIGNATURE OF AUTHORIZED REPRESENTATIVE

---

NAME ( PLEASE PRINT )

---

TITLE

---

DATE

**SECTION V**  
**REQUIRED FEDERAL CONTRACT PROVISIONS OF FEDERAL REGULATIONS FOR**  
**CONTRACTS WITH BIRDVILLE ISD**

**Required Federal contract provisions for purchases under USDA for purchases in conjunction with the National School Lunch Program, School Breakfast Program and Summer Feeding Program**

The following provisions are required to be in place and agreed if the procurement is funded with federal funds. Birdville ISD is the subgrantee or Subrecipient by definition. The federal Rule numbering or identification below is only for reference purpose on this form and does not identify an actual Federal designation or location of the rule. The Rules are located in 2 CFR PART 200.

**Appendix II to Part 200—Contract Provisions for Non-Federal Entity Contracts Under Federal Awards 2 CFR PART 200**

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

Contracts for more than the simplified acquisition threshold currently set at \$150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate

**(A) Contracts for more than the simplified acquisition threshold currently set at \$150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.**

Notice: Pursuant to Federal Rule (A) above, when federal funds are expended by BISD, BISD reserves all rights and privileges under the applicable laws and regulations with respect to this procurement in the event of breach of contract by either party.

Mandatory: Failure to agree will render your proposal non-responsive and will not be considered for award.

*Does proposer agree? YES \_\_\_\_\_ Initials of authorized company representative*

**(B) Termination for cause and for convenience by the grantee or subgrantee including the manner by which it will be effected and the basis for settlement. (All contracts in excess of \$10,000)**

Pursuant to Federal Rule (B) above, when federal funds are expended by BISD, BISD reserves the right to terminate any agreement in excess of \$10,000 resulting from this procurement process for cause after giving the vendor an appropriate opportunity and up to 30 days, to cure the causal breach of terms and conditions. BISD reserves the right to terminate any agreement in excess of \$10,000 resulting from this procurement process for convenience with 30 days' notice in writing to the awarded vendor. The vendor would be compensated for work performed and goods procured as of the termination date if for convenience of eth BISD. Any award under this procurement process is not exclusive and the District reserves the right to purchase goods and services from other vendors when it is in the best interest of the District.



Mandatory: Failure to agree will render your proposal non-responsive and will not be considered for award.

*Does proposer agree? YES \_\_\_\_\_ Initials of authorized company representative*

**(C) Rights to Inventions Made Under Contract or Agreement. If the Federal award meets the definition of “funding agreement” under 37 CFR 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business or firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement” the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organization and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.**

Pursuant to (C) above, if applicable, the vendor agrees to comply with 37 CFR Part 401.

Mandatory: Failure to certify will render your proposal non-responsive and will not be considered for award.

*Does proposer so certify? YES \_\_\_\_\_ Initials of authorized company representative*

**(D) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended—Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).**

Pursuant to Federal Rule (D) above, when federal funds are expended by BISD, BISD requires that the proposer certify that during the term of an award by the BISD resulting from this procurement process the vendor agrees to the terms listed and referenced therein.

Mandatory: Failure to certify will render your proposal non-responsive and will not be considered for award.

*Does proposer so certify? YES \_\_\_\_\_ Initials of authorized company representative*

**(E) Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.**

Pursuant to Federal Rule (E) above, when federal funds are expended by BISD, BISD requires that the proposer certify that during the term of an award by the BISD resulting for this procurement process the vendor certifies that they are not debarred from receiving a contract from the federal government as provided therein.

Mandatory: Failure to certify will render your proposal non-responsive and will not be considered for award.

*Does proposer so certify? YES \_\_\_\_\_ Initials of authorized company representative*

**(F) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.**

Pursuant to Federal Rule (F) above, when federal funds are expended by BISD, BISD requires that the proposer certify that during the term and after the awarded term of an award by the BISD resulting for this procurement process the vendor certifies to the terms included or referenced therein

Mandatory: Failure to certify will render your proposal non-responsive and will not be considered for award.

*Does proposer so certify? YES \_\_\_\_\_ Initials of authorized company representative*

**(G) Federal Rule Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15). (Contracts, subcontracts, and subgrants of amounts in excess of \$100,000)**

Pursuant to Federal Rule (G) immediately above, when federal funds are expended by BISD, BISD requires that the proposer certify that in performance of the contracts, subcontracts, and subgrants of amounts in excess of \$100,000, the vendor will be in compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15).

Mandatory: Failure to certify will render your proposal non-responsive and will not be considered for award.

*Does proposer so certify? YES \_\_\_\_\_ Initials of authorized company representative*

**(H) Federal Rule 2 CFR 200.333 Retention of all required records for three years after grantees or subgrantees make final payments and all other pending matters are closed.**

Pursuant to Federal Rule (H) immediately above, when federal funds are expended by BISD, BISD requires that the proposer certify that the awarded vendor will retain all required records for three years after grantees or subgrantees make final payments and all other pending matters are closed.

*Does proposer so certify? YES \_\_\_\_\_ Initials of authorized company representative*

**(I) Federal Rule Compliance with Mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).**

Pursuant to Federal Rule (H) above, when federal funds are expended by BISD, BISD requires that the proposer certify that during the term of an award by the BISD resulting for this procurement process the vendor will be in compliance with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).

Mandatory: Failure to certify will render your proposal non-responsive and will not be considered for award.

*Does proposer so certify? YES \_\_\_\_\_ Initials of authorized company representative*

**(J) Solid Waste Disposal Act - 2 CFR Ch. II (1–1–15 Edition) § 200.322 Procurement of recovered materials.**

Pursuant to Federal Rule (I) above, a non-Federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

**Does your company comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act?**

**If you do not answer yes, the District is prohibited from contracting with the proposer.**

**YES \_\_\_\_\_ OR NO \_\_\_\_\_**

**(K) Discrimination**

Pursuant to Federal Rule (J) above, when federal funds are expended by BISD, BISD requires that the proposer certify that during the term of an award by the BISD resulting for this procurement process the vendor will be in compliance with mandatory standards and policies relating to Title VI of the Education Amendments of 1972; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975; Title 7 CFR Parts 15, 15a, and 15b; the Americans with Disabilities Act; and FNS Instruction 113-1, Civil Rights Compliance and Enforcement – Nutrition Programs and Activities.

**Does your company comply with Title VI of the Education Amendments of 1972; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975; Title 7 CFR Parts 15, 15a, and 15b; the Americans with Disabilities Act; and FNS Instruction 113-1, Civil Rights Compliance and Enforcement – Nutrition Programs and Activities as they apply to this contract?**

**If you do not answer yes, the District is prohibited from contracting with the proposer.**

**YES \_\_\_\_\_ OR NO \_\_\_\_\_**

**(L) Equal Employment Opportunity**

Pursuant to Federal Rule (K) above, when federal funds are expended by BISD, BISD requires that the proposer certify that during the term of an award by the BISD resulting for this procurement process the vendor will be in compliance with mandatory standards and policies relating to 41 CFR, Chapter 60. Executive Order 11246 of September 24, 1965, entitled Equal Employment Opportunity, as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR chapter 60)

**Does your company comply with 41 CFR, Chapter 60. Executive Order 11246 of September 24, 1965, entitled Equal Employment Opportunity, as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR chapter 60) as they apply to this contract?**

**If you do not answer yes, the District is prohibited from contracting with the proposer.**

**YES \_\_\_\_\_ OR NO \_\_\_\_\_**

**(M) Health and Safety Certifications, Licensing, or Regulations**

Pursuant to Federal Rule (L) above, when federal funds are expended by BISD, BISD requires proposer to certify that during the term of an award by the BISD resulting for this procurement process the vendor will be in compliance with mandatory standards and policies relating to observance of applicable local, state, or federal health and safety certifications, licensing, or regulations.

**Does your company comply with all Local, state, or federal health and safety certifications, licensing, or regulations as they apply to this contract?**

**If you do not answer yes, the District is prohibited from contracting with the proposer.**

**YES \_\_\_\_\_ OR NO \_\_\_\_\_**

**(N) Patent Rights, Copyright and Rights**

Pursuant to Federal Rule (M) above, when federal funds are expended by BISD, BISD requires that the proposer certify that during the term of an award by the BISD resulting for this procurement process the vendor will be in compliance with mandatory standards and policies relating to observance of applicable pertaining to patent rights, copyright and rights in data.

**Does your company comply with all matters pertaining to patent rights, copyright and rights in data as they apply to this contract?**

**If you do not answer yes, the District is prohibited from contracting with the proposer.**

**YES \_\_\_\_\_ OR NO \_\_\_\_\_**

**(O) Federal Requirements for Procurement and Contracting with small and minority businesses, women’s business enterprises, and labor surplus area firms.**

Pursuant to (N) above, 2 CFR 200.321 Contracting with small and minority businesses, women’s business enterprises, and labor surplus area firms.

- i. The non-Federal entity must take all necessary affirmative steps to assure that minority businesses, women’s business enterprises, and labor surplus area firms are used when possible.
- ii. Affirmative steps must include:
  - a. Placing qualified small and minority businesses and women’s business enterprises on solicitation lists;
  - b. Assuring that small and minority businesses and women’s business enterprises are solicited whenever they are potential sources;
  - c. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women’s business enterprises;
  - d. Establishing delivery schedules, where the requirements permits, which encourage participation by small and minority businesses, and women’s business enterprises;
  - e. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of Department of Commerce; and
  - f. Requiring the prime contractor, if subcontracts are let, to make affirmative steps listed in paragraphs (1) through (5) of this section.

**Will you be subcontracting any of your work under this award if you are successful?**

**YES \_\_\_\_\_ OR NO \_\_\_\_\_**

**If yes, do you agree to comply with the following federal requirements? If you answered yes to the above, failure to answer yes below will render your proposal non-responsive and it will not be considered.**

**YES \_\_\_\_\_ OR NO \_\_\_\_\_**

**FOR CONSTRUCTION OR PUBLIC WORKS PROJECTS:**

**(P) Copeland Anti-Kickback Act**

Pursuant to Federal Rule (O) above, when federal funds are expended by BISD for construction or repair, BISD requires that the proposer certify that during the term of an award by the BISD resulting for this procurement process the vendor will be in compliance with mandatory standards and policies relating to (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3).

**Does your company comply with (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3) as it applies to this contract?**

**If you do not answer yes, the District is prohibited from contracting with the proposer.**

**YES \_\_\_\_\_ OR NO \_\_\_\_\_**

**(Q) Davis-Bacon Act**

Pursuant to Federal Rule (P) above, when federal funds are expended by BISD for construction or repair, BISD requires that the proposer certify that during the term of an award by the BISD resulting for this procurement process the vendor will be in compliance with mandatory standards and policies relating to 40 U.S.C. 276a to 276a-7 as supplemented by Department of Labor regulations (29 CFR Part 5) for construction contracts in excess of \$2,000.

**Does your company comply with 40 U.S.C. 276a to 276a-7 as supplemented by Department of Labor regulations (29 CFR Part 5) for construction contracts in excess of \$2,000, commonly known as the Davis-Bacon Act for establishing Prevailing Wage Rates, as it applies to this contract?**

**If you do not answer yes, the District is prohibited from contracting with the proposer.**

**YES \_\_\_\_\_ OR NO \_\_\_\_\_**

**(R) Contract Work Hours and Safety Standards Act**

Pursuant to Federal Rule (Q) above, when federal funds are expended by BISD for construction or repair, BISD requires that the proposer certify that during the term of an award by the BISD resulting for this procurement process the vendor will be in compliance with mandatory standards and policies relating to 40 U.S.C. 327-330 Sections 103 and 107 as supplemented by Department of Labor regulations (29 CFR Part 5) for construction contracts in excess of \$2000, and in excess of \$2500 for other contracts which involve the employment of mechanics or laborers

**Does your company comply with 40 U.S.C. 327-330 Sections 103 and 107 as supplemented by Department of Labor regulations (29 CFR Part 5) for construction contracts in excess of \$2,000, and in excess of \$2,500 for other contracts which involve the employment of mechanics or laborers as it applies to this contract?**

**If you do not answer yes, the District is prohibited from contracting with the proposer.**

**YES \_\_\_\_\_ OR NO \_\_\_\_\_**

Proposer's signature below affirms that they are authorized to answer the questions in this section entitled, **"Required Federal contract provisions of Federal Regulations for Contracts for contracts with Birdville ISD (BISD)"** for the proposing company.

Company Name:

\_\_\_\_\_

Print name of authorized representative:

\_\_\_\_\_

Signature of authorized representative:

\_\_\_\_\_

Date: \_\_\_\_\_

**SECTION VI  
BIRDVILLE INDEPENDENT SCHOOL DISTRICT  
STANDARD TERMS AND CONDITIONS**

The words “bids,” “request for proposals,” “quotes,” “RFPs,” “RFCSPs,” “solicitation,” “procurement,” and their derivatives may be used interchangeably in these terms and conditions. These terms and conditions apply to all procurement types to which they are attached. The term vendor, contractor or firm means each vendor chosen for award by Birdville ISD.

These Standard Terms and Conditions are part of the final contract and part of the terms and conditions of each purchase order issued in connection with this solicitation.

1. **INDEPENDENT PROPOSER** - Proposer shall operate hereunder as an independent Proposer and not as an officer, agent, servant or employee of Birdville ISD. Proposer shall have exclusive control of, and the exclusive right to control, the details of its operations hereunder and all persons performing same, and shall be solely responsible for the acts and omissions of its officers, agents, employees, Proposers, subcontractors and consultants.
2. **ASSIGNMENT** - The Proposer shall not sell, assign, transfer or convey any interest in this contract in whole or in part without the prior written consent of the Birdville ISD. No assignment, transfer or conveyance under this contract will be effective without the prior written consent of the School District.
3. **CONFLICT OF INTEREST** – The Proposer covenants and agrees that Proposer and its officers, employees, and agents will have no interest, including personal financial interest, and will acquire no interest, either directly or indirectly, which will conflict in any manner with the performance of the services called for under this Contract. No officer or employee of the School District shall have a financial interest, direct or indirect, in any contract with the BISD, or be financially interested, directly or indirectly, in the sale to the School District of any land, materials, supplies or services, except on behalf of the BISD or in compliance with the provisions of the Birdville ISD Policies and Procedures Manual. Any violation of this provision shall render this contract voidable at the discretion of the School District.
4. **SEVERABILITY** - In case any one or more of the provisions contained in this contract shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision of this contract, and this contract shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.
5. **MODIFICATIONS** - This contract can be modified only by written agreement of the parties.
6. **GRATUITIES** - The District may, by written notice to the Proposer, cancel this RFCSP without liability to Proposer if it is determined by the District that gratuities, in the form of entertainment, compensation, gifts, or otherwise, were offered or given by the Proposer, or any agent or representative of the Proposer, to any Board Member, officer, or employee of the Birdville ISD with a view toward securing a RFCSP or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performing of such an agreement.
7. **JURISDICTION** - The Purchase Order(s) resulting from this RFCSP shall be enforceable in Tarrant County, Texas, and if legal action is necessary by either party with respect to the enforcement of any and all of its terms and conditions, exclusive venue for same shall lie in Tarrant County, Texas.

8. **COMPLIANCE WITH LAWS** – Vendor shall comply with all federal, state and local laws, statutes, ordinances, rules and regulations, including, if applicable, worker’s compensation laws, minimum and maximum salary and wage statutes and regulations, prompt payment and licensing laws and regulations. For the entire duration of this contract, Vendor shall maintain all required licenses, certifications, permits and any other documentation necessary to perform this Agreement. When required or requested by Birdville ISD, Vendor shall furnish proof of Vendor’s compliance with this provision.
9. **EQUAL OPPORTUNITY** – It is the policy of Birdville ISD not to discriminate on the basis of race, color, national origin, gender, limited English proficiency or handicapping conditions in its programs. Vendor agrees not to discriminate against any employee or applicant for employment to be employed in performance of this Agreement, with respect to hire, tenure, terms, conditions and privileges of employment, or matter directly or indirectly related to employment, because of age (except where based on bona fide occupational qualification) or race, color, religion, national origin, or ancestry. Vendor further agrees that every subcontractor entered into for the performance of this Agreement shall contain a provision requiring non-discrimination in employment herein specified, binding upon each subcontractor. Breach of this covenant may be regarded as a material breach of the agreement.
10. **MINORITY & WOMEN’S BUSINESS ENTERPRISE (MWBE), HISTORICALLY UNDERUTILIZED BUSINESS (HUB) AND SMALL BUSINESS ENTERPRISE (SBE) PARTICIPATION** – Birdville ISD encourages the use of MWBE, HUB and SBE as prime and subcontractors. However, these entities must meet the same minimum standards and requirements of the prime contractor. It will be the responsibility of the prime contractor to pre-qualify any subcontractors offered as MWBE, HUB or SBE participants. Proposers shall indicate on their submitted proposals whether or not they are WMBE, HUB or SBE vendor and whom they are certified e.g. City, State, Federal. Complete the enclosed HUB Certification and provide a copy of the certificate(s) with the proposal. Please note that Birdville ISD does not have any percentage of participation or a disparity study completed.
11. **SAFETY** – Vendors, its subcontractors, and their respective employees shall comply fully with all applicable federal, state, and local safety and health laws, ordinances, rules and regulations in the performance of services under this Agreement, including without limitation, those promulgated by Birdville ISD and by the Occupational Safety and Health Administration (OSHA). All items must meet all applicable OSHA standards and regulations and all electrical items must bear appropriate listing from UL, FMRC or NEMA. In case of conflict, the most stringent safety requirements shall govern. Vendor shall comply with all other safety guidelines and standards as required by Birdville ISD. Vendor shall indemnify and hold Birdville ISD, harmless from all claims, demands, suits, actions, judgments, fines, penalties and liability of every kind arising from the breach of Vendor’s obligations under this provision.
12. **MATERIAL SAFETY DATA SHEET** – Vendor must provide, at no cost, at least one copy of any applicable Manufacturer’s Material Safety Data Sheet(s) (MSDS) with each shipment during the term of the contract. If OSHA or Federal or State laws provide for additional requirements, those requirements are in addition to the MSDS required.
13. **RECYCLED MATERIALS** – Texas state law requires that a purchasing preference be given to any product made from recycled material if it meets written specifications as to quality and quantity. If a product bid on this solicitation contains recycled material, identify the item number and report the percent of the recycled material in the product and the percent of the post-consumer material used in the product. “Post-consumer” means material that has been recycled after sale to a consumer as opposed to reuse of manufacturing waste prior to sale. In addition, identify any products that meet the criteria of “Environmentally Sensitive.”
14. **REMEDIES** - No right or remedy granted herein or reserved to the parties is exclusive of any right or remedy herein by law or equity provided or permitted; but each shall be cumulative of every right or remedy given hereunder. No covenant or condition of this contract may be waived without consent of the parties. Forbearance or indulgence by any party shall not constitute a waiver of any covenant or condition to be performed pursuant to this contract.



15. **NON-APPROPRIATION CLAUSE** – In accordance with Texas Local Government Code 271.903 concerning non-appropriation of funds for multi-year contracts, the proposer recognizes that the continuation of any contract after the close of any given fiscal year of the School District, which fiscal year ends on June 30 of each year, shall be subject to School Board budget approval. Should funding not be approved by the School Board for any given budget year during the contract term, the contract will terminate and become null and void.
16. **PROPOSER TO PACKAGE GOODS** - Proposer will package goods in accordance with good commercial practice. Each shipping container, shall be clearly and permanently marked as follows: (a) Proposer's name and address; (b) Consignee's name, address and purchase order or purchase change order number; (c) Container number and total number of containers, e.g., box 1 of 4 boxes; and (d) Number of the container bearing the packing slip. Proposer shall bear cost of packaging unless otherwise provided. Goods shall be suitably packed to secure lowest transportation costs and to conform to requirements of common carriers and any applicable specifications. District's count or weight shall be final and conclusive on shipments not accompanied by packing list.
17. **PLACE OF DELIVERY** - The place of delivery shall be set forth in the block of the purchase order or purchase change order entitled "Ship To."
18. **TITLE AND RISK OF LOSS** - The title and risk of loss of goods shall not pass to the Birdville ISD until the School District actually receives and takes possession of the goods at the point(s) of delivery, after inspection and acceptance of goods.
19. **FORCE MAJEURE** - Neither Proposer nor the District shall be responsible or deemed to be in default of its obligations to the other to the extent any failure to perform or delay in performing its obligations under this RFCSP is caused by events or conditions beyond the reasonable control of that party, and are not due to the negligence or willful misconduct of such party (hereinafter, "Force Majeure events"). For purposes of this RFCSP, Force Majeure events shall include, but not be limited to, acts of God or public enemy, war, riot or civil commotion, strikes, epidemic, fire, earthquake, tornado, hurricane, flood, explosion, or other catastrophes, or events or conditions due to governmental law, regulations, ordinances, order of a court of competent jurisdiction, executive decree or order. However, in the event of such delay(s) or nonperformance, the party so delayed shall furnish prompt written notice to the other party (including the date of inception of the Force Majeure event and the extent to which it will affect performance) and shall undertake all efforts reasonably possible to cure the delay or nonperformance and mitigate its effects or to otherwise perform. The District shall not be responsible for payment for any product or service delayed or foreclosed by any Force Majeure event unless and until such delayed or foreclosed product or service is provided. The provisions of this section shall not preclude the District from canceling or terminating any resulting award (or any order for any goods or services included herein), or from revising the scope of the Work, as otherwise permitted under this RFCSP.
20. **RIGHT OF INSPECTION** - BISD shall have the right to inspect the goods upon deliver before accepting them. Proposer shall be responsible for all charges for the return to Proposer of any goods rejected as being nonconforming under the specifications.
21. **RIGHT TO AUDIT** - Proposer agrees that the BISD shall, until the expiration of three (3) years after final payment under this Contract, have access to and the right to examine any directly pertinent books, documents, papers and records of the Proposer involving transactions relating to this Contract. Proposer agrees that the School District shall have access, during normal working hours, to all necessary Proposer facilities, and shall be provided adequate and appropriate workspace, in order to conduct audits in compliance with the provisions of this section. The BISD shall give Proposer reasonable advance notice of intended audits.

22. **PRODUCT GUARANTEE** - Proposer guarantees equipment or product offered will meet or exceed specifications identified in this proposal invitation. The proposer shall, upon request, replace any equipment or product proved to be defective and make any and all adjustments necessary without any expense to the District. If at any time, the equipment or product cannot satisfactorily meet the requirements of the specifications, the proposer shall, upon written request from the District, promptly remove such equipment or product without any further expense to the District.
23. **GEOGRAPHIC PREFERENCE** – Birdville ISD may apply preference to agricultural products produced, processed, or grown in Texas if the cost to the school district is equal and the quality is equal; if agriculture products produced, processed, or grown in Texas are not equal in cost and quality to other products, the school district give preference to agriculture products produced, processed, or grown in other states of the United States over foreign products if the cost to the school district is equal and the quality is equal; a school district that purchases vegetation for landscaping purposes, including plants, shall give preference to Texas vegetation if the cost to the school district is equal and the quality is not inferior. Preferences must be explicitly claimed by Vendor and may not be applicable in procurements and/or contracts involving federal funds unless the procurement and/or contract involves unprocessed locally grown or locally raised agricultural products for use by Birdville ISD, in a Child Nutrition Program. See Texas GOV'T Code 2252.001-.004; 2 C.F.R 200.319.
24. **COPYRIGHT** – All contracts paid from State or Federal grants administered by a State or Federal agency must retain copyright for the State and Federal government (if a Federally funded contract) unless otherwise negotiated in writing with the State or Federal agency pursuant to the provisions in 2 CFR 200.315, title to intangible property vents the Birdville ISD, as long as such property is used for authorized purposes. However, the State and Federal awarding agency reserve a royalty-free, non-exclusive and irrevocable right to reproduce, publish, or otherwise use the work for Federal purposes, and to authorize others to do so. The Vendor agrees to protect Birdville ISD, from any claim involving infringement of patents or copyrights.
25. **PRICE WARRANTY** - The price to be paid by the BISD shall be that contained in Proposer's proposal, which Proposer warrants to be no higher than Proposer's current prices on orders by others for products of the kind and specification covered by this contract for similar quantities under like conditions and methods of purchase. In the event Proposer breaches this warranty, the prices of the items shall be reduced to Proposer's current prices on orders by others, or in the alternative upon School District's option, BISD shall have the right to cancel this contract without liability to Proposer for breach or for Proposer's actual expense.
26. **SILENCE OF SPECIFICATION** - The apparent silence of these specifications as to any detail or to the apparent omission from it of a detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications shall be made on the basis of this statement.
27. **INDEMNIFICATION** – Proposer does hereby agree to waive all claims, release, indemnify and both hold harmless the School District, its officials, agents and employees, in both their public and private capacities, from and against any and all liability, claims, losses, damages, suits, demands or causes of action, including all expenses of litigation and/or settlement, court costs and attorney fees, which may arise by reason of death or injury to persons or loss of, damage to, or loss of use of any property occasioned by any error, omission, or negligent act of the Proposer, its officers, agents, employees, subcontractors, invitees, or other persons for whom the Proposer is legally liable, arising out of or in connection with the performance of this contract, and Proposer will at its own cost and expense defend and protect the School District against any and all such claims and demands.
28. **NON-DISCRIMINATION** - Proposer shall not discriminate against any employee or applicant for employment of Proposer or of the School District because of race, age, color, religion, sex, national origin, ancestry, disability, or place of birth. Proposer shall take action to ensure that all persons are employed and/or treated without regard to their race, age, color, religion, sex, national origin, ancestry, disability, or place of birth. This action shall include, but not be limited to the following: employment, promotion, demotion, transfer, working conditions, recruitment, layoff, termination, rates of pay or other forms of compensation, and training opportunities.

29. **DISABILITY** - In accordance with the provisions of the Americans With Disabilities Act of 1990 (ADA), Proposer warrants that it, and any and all of its subcontractors, will not unlawfully discriminate on the basis of disability in the provision of services to the general public, nor in the availability, terms and/or conditions of employment for applicants for employment with, or employees of Proposer or any of its subcontractors. **Proposer warrants it will fully comply with ADA's provisions and any other applicable federal, state and local laws concerning disability and will defend, indemnify and hold the School District harmless against any claims or allegations asserted by third parties or subcontractors against School District arising out of Proposer's and/or its subcontractor's alleged failure to comply with the above-referenced laws concerning disability discrimination in the performance of this contract.**
30. **DRUG POLICY** - All BISD property and facilities are a “drug-free zone.” No one may use, consume, carry, transport, or exchange tobacco, cigarettes or illegal drugs while in a School District building or while on School District property. The responding company and its employees shall adhere to this policy.
31. **TERMINATION FOR DEFAULT** - BISD reserves the right to terminate the contract without prior notice in the event the Proposer defaults or breaches any of the terms and conditions of this contract, or otherwise fails to perform in accordance with the proposal specifications. In the event of termination the School District reserves the right to complete the work or services in any manner it deems desirable, including engaging the services of other parties therefore and/or awarding the proposal to the next lowest responsible proposer. Any such act by the School District shall not be deemed a waiver of any other right or remedy. If after exercising any such remedy, the cost to the School District of the performance of the balance of the work or services is in excess of that part of the contract sum, which has not therefore been paid to the Proposer hereunder, Proposer shall be liable for and shall reimburse the School District for such excess. Proposers shall, for this purpose, keep their proposals open and prices fixed for a period of 90 days following the award of this proposal.
32. **TERMINATION WITHOUT CAUSE** - BISD shall have the right to terminate the contract, in whole or in part, without cause any time upon thirty (30) days' prior written notice. Upon receipt of a notice of termination, the Proposer shall promptly cease placing orders and all further work pursuant to the Contract, with such exceptions, if any, specified in the notice of termination. BISD shall pay the Proposer, to the extent funds are appropriated or otherwise legally available for such purposes, for all goods delivered and services performed and obligations incurred prior to the date of termination in accordance with the terms hereof.
33. **NO THIRD-PARTY BENEFICIARY** – For purposes of this contract, including its intended operation and effect, the parties to this contract specifically agree and contract that: (1) the agreement only affects matters/disputes between the parties to this contract, and is in no way intended by the parties to benefit or otherwise affect any third person or entity, notwithstanding the fact that such third person or entity may be in a contractual relationship with School District or Proposer or both; and (2) the terms of this contract are not intended to release, either by contract or operation of law, any third person or entity from obligations owing by them to either School District or Proposer.
34. **ENTIRE AGREEMENT** – This contract embodies the complete agreement of the parties hereto, superseding all oral or written previous and contemporary agreements between the parties relating to matters herein and, except as otherwise provided herein, cannot be modified without written agreement of the parties.

**SECTION VII**

**SMITHFIELD ELEMENTARY SCHOOL**

6724 Smithfield Road  
North Richland Hills, TX 76180

**NORTH OAKS MIDDLE SCHOOL**

4800 Jordan Park Drive  
Haltom City, TX 76117

**FIRE ALARM RENOVATIONS AT NORTH OAKS MIDDLE SCHOOL & SMITHFIELD ELEMENTARY  
BIRDVILLE INDEPENDENT SCHOOL DISTRICT**

**FIRE ALARM**

**DIVISION 28**

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28 05 00      General Fire Alarm System Requirements  
28 46 21      Fire Detection and Alarm System Replacement



**FIRE ALARM RENOVATIONS AT NORTH OAKS MIDDLE SCHOOL & SMITHFIELD ELEMENTARY  
BIRDVILLE INDEPENDENT SCHOOL DISTRICT**

SECTION 28 05 00

GENERAL FIRE ALARM SYSTEM REQUIREMENTS

PART 1 – GENERAL

1.1 WORK INCLUDES

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1, apply to this Section.
- B. Fire alarm system complete including selective demolition of existing systems to be replaced modification of existing systems to be revised and expanded, cabling, special backboxes, hardware and all other required devices and equipment.
- C. Installation of system equipment per specifications.
- D. Supply in a timely manner to the electrical contractor special backboxes for installation as required.
- E. Coordinate wireway, raceway, power, and outlet requirements with the builder and the electrical contractor.
- F. Fire Alarm Systems Contractors shall provide and install prior to cable installation plastic snap in bushings at each box opening, passage through a metal stud, and at the end of all open conduit stubs or sleeves to protect the cabling from damage.
- G. Furnishing of all required materials, equipment, tools, scaffolding, labor, and transportation necessary for the complete installation of the fire alarm systems as shown on the drawings and as specified herein.
- H. Cable pathways, conduit, and cable support systems shall be complete with bushings, deburred, cleaned, and secure prior to installation of cable.
- I. It is the intent of these specifications to provide complete installations although every item necessary may not be specifically mentioned or shown.

1.2 WORK TO BE INCLUDED BY THE ELECTRICAL CONTRACTOR IN BASE CONTRACT PROPOSAL

- A. Provide utility services conduit as outlined on drawings as required.
- B. All required conduit for accessibility to attic space.
- C. Furnishing and installation of all required standard back boxes and conduit.
- D. Installation of special back boxes supplied by Division 28 contractor(s).
- E. Furnishing and installation of all floor boxes, surface raceways, and other wireways which are detailed or specified under Division 26.
- F. Provide equipment-mounting boards as outlined on drawings.
- G. Provide equipment grounding system, conductors, and bus bars and as outlined in Division 26.

**FIRE ALARM RENOVATIONS AT NORTH OAKS MIDDLE SCHOOL & SMITHFIELD ELEMENTARY  
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1 H. Provide 120-volt power and hook-up to equipment provided in Division 28.  
2

3 I. Coordination of requirements of Division 28 with the Builder.  
4

5 1.3 WORK NOT INCLUDED  
6

7 A. Contractors shall make no agreement that obligates the Owner to pay any company providing  
8 communications, monitoring, or other services. Contractors shall not make selection,  
9 purchase, or installation of interconnect instruments/equipment to be used on this project.  
10

11 1.4 RELATED SECTIONS  
12

13 A. The conditions of the Division 0, Division 1, Division 26 requirements, and the contract  
14 requirements that include the General Conditions and the Supplementary Conditions apply to  
15 work of this division.  
16

17 B. Section 26 05 34 - Provisions For Communication, Security & Safety Systems.  
18

19 1.5 CODES, STANDARDS AND THEIR ABBREVIATIONS  
20

21 A. General:

22 1. Perform all work in strict accordance with the requirements and recommendations stated  
23 in the codes and standards except when requirements are exceeded by the contract  
24 documents.

25 2. In addition to the requirements outlined in other sections of the specifications the following  
26 standards are imposed as applicable to the work in each instance:

- 27 a. OSHA Safety and Health Regulations for Construction.  
28 b. NFPA No. 70 National Electrical Code.  
29 c. NESC National Electrical Safety Code, ANSI Standard C2.  
30 d. NEIS National Electrical Installation Standards.  
31 e. Local Codes and Ordinances.  
32

33 B. Where local codes or practices exceed or conflict with the NEC, it shall be the Contractor's  
34 responsibility to perform the work in accordance with the local code prevailing and local  
35 interpretations thereof. Any such additional work shall be performed at no additional cost to  
36 the Owner.  
37

38 C. Materials and components shall be UL listed and labeled by Underwriters Laboratories, Inc.  
39 for the intended use under the latest appropriate testing standard.  
40

41 D. The Contractor shall obtain all permits required to commence work. Upon completion of the  
42 Work, the Contractor shall obtain and deliver to the Owner's Representative a Certificate of  
43 Inspection and Approval from the State Board of Fire Underwriters Haltom City, Texas or North  
44 Richland Hills, Texas, and other authorities having jurisdiction. The Contractor shall pay  
45 required permit fees.  
46

47 1.6 LIST OF ASSOCIATIONS AND STANDARDS:  
48

49 ADA: Americans with Disabilities Act.

50 ANSI: American National Standards Institute, 1430 Broadway; New York, NY  
51 10018.

52 ASTM: American Society for Testing and Materials, 1916 Race Street; Philadelphia,  
53 PA 19103.

54 BICSI: (RCDD5 Standards), 8610 Hidden River Parkway, Tampa, FL 33637

55 CBM: Certified Ballast Manufacturers Association, 2116 Keith Building; Cleveland,  
56 Ohio 44115.

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1 IEEE: Institute of Electrical and Electronics Engineers, 345 East 47th Street; New  
2 York, NY 10017.  
3 ICEA: Insulated Cable Engineers Association, P.O. Box P, South Yarmouth, MA  
4 02664.  
5 NEC: National Electrical Code; NFPA No. 70.  
6 NECA: National Electrical Contractors Association, Inc., 7315 Wisconsin Ave.;  
7 Washington, DC 20014.  
8 NEMA: National Electrical Manufacturers Association, 155 East 44th Street; New  
9 York, NY 10017.  
10 NESC: National Electrical Safety Code, ANSI Standard C2.  
11 NFPA: National Fire Protection Association, 60 Batterymarch Street; Boston, MA  
12 02110.  
13 OSHA: Occupational Safety and Health Administration, US Department of Labor;  
14 Washington, DC 20402.  
15 TAS: Texas Accessibility Standards (TAS) Article 9102.  
16 UL: Underwriters Laboratories, Inc., 333 Pfigsten Road; Northbrook, IL 60062.

- 17  
18 A. Nothing in the Contract Documents shall be construed to permit work not conforming to these  
19 codes.  
20  
21 B. When two or more codes or standards are applicable to the same work, then the stricter code  
22 or standard shall govern.  
23  
24 C. The date of the code or standard is that in effect on the date of issue stated on the contract  
25 documents, except when a particular publication date is specified.  
26  
27 D. The Contractor shall comply with all State, Federal, NFPA, local codes and ordinances that  
28 may alter any part of the plans or specifications. The Contractor shall bear all costs for  
29 correcting any deficiencies due to non-compliance.  
30  
31 E. Where local codes and ordinances are not in writing or on record but local precedence have  
32 been set, the Owner shall pay for any additional resulting cost.  
33

34 1.7 DEFINITIONS

- 35  
36 A. Approval: It is understood that approval must be obtained from the Engineer in writing before  
37 proceeding with the proposed work. Approval by the Engineer of any changes, submitted by  
38 the Contractor, will be considered as general only to aid the Contractor in expediting his work.  
39  
40 B. The Builder: The primary contractor engaged to oversee the construction project. They may  
41 be technically described as a Construction Manager, General Contractor, Managing  
42 Construction Contractor, et cetera.  
43  
44 C. The Contractor: The Contractor engaged to execute the work included a particular section  
45 only, although he may be technically described as a Subcontractor to the Builder. If the  
46 Contractor, engaged to execute said work, employs Sub-Contractors to perform various  
47 portions of the work included under a particular Section, they shall be held responsible for the  
48 execution of this work, in full conformity with Contract Document requirements. The Contractor  
49 shall cooperate at all times and shall be responsible for the satisfactory cooperation of his  
50 Subcontractors with the other Contractors on the job so that all of the various sections and  
51 phases of work may be properly coordinated without unnecessary delays or damage.  
52  
53 D. The Electrical Contractor: The Electrical Contractor shall be engaged to execute the work  
54 included Division 26 only.  
55



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- 1 E. PDF file or .pdf: The filename extension associated with "Portable Document Format" files,  
2 which are multi-platform computer files in the ISO 32000-1:2008 open standard format  
3 developed and licensed by Adobe Systems. These files are a digital electronic representation  
4 of text, documents, images, and technical drawings in a font and color-accurate fixed-layout  
5 format that is platform and display resolution independent. PDF files can be electronically  
6 transmitted, viewed or printed with various free PDF reader application programs, and may  
7 allow markups/comments with various PDF editing application programs.  
8
- 9 F. Provide: Defined as requiring both the furnishing and installation of the item or facility  
10 indicated, complete in all respects and ready for operation unless otherwise specifically noted.  
11

12 1.8 SCHEDULE OF VALUES, APPLICATION FOR PAYMENT  
13

- 14 A. The Contractor shall in accordance with the General Provisions of the Contract, including  
15 General and Supplementary Conditions, and Division 1, complete a Schedule of Values and  
16 Applications for Payment. When a portion of this work separately funded, including donations  
17 or E-Rate, the contractor shall accommodate this in the Schedule of Values and Applications  
18 for Payment. For E-Rate eligible portions of this work, the contractor will be required to  
19 participate in the E-Rate program, comply with all E-Rate regulations, and provide billing as  
20 needed. The contractor shall coordinate with the Owner to file Form 471 or latter edition and/or  
21 other forms as may be required.  
22

23 1.9 WARRANTY  
24

- 25 A. The Contractor shall warranty his work against defective materials and workmanship for a  
26 period of one year from date of acceptance of the job.  
27
- 28 B. Neither the final payment nor any provisions in Contract Documents shall relieve the  
29 Contractor of the responsibility for faulty materials or workmanship.  
30
- 31 C. He shall remedy any defects due thereto, and pay for any damage to other work resulting  
32 there from, which shall appear within a period of one year from date of substantial completion.  
33
- 34 D. The Owner shall give notice of observed defects with reasonable promptness.  
35
- 36 E. This Warranty shall not be construed to include the normal maintenance of the various  
37 components of the system covered by these specifications.  
38

39 1.10 SITE VISIT  
40

- 41 A. Before submitting a proposal, each proposed contractor shall examine all plans and  
42 specifications relating to the work, shall visit the site of the project and become fully informed  
43 of the extent and character of the work required, including all required utilities.  
44
- 45 B. No consideration will be granted for any alleged misunderstanding of the materials to be  
46 furnished or the amount of work to be done, it being fully understood that the tender of a  
47 proposal carries with it the agreement to all items and conditions referred to herein, or  
48 indicated on the accompanying plans or required by nature of the site of which may be fairly  
49 implied as essential to the execution and completion of any and all parts of the work.  
50

51 1.11 SUBMITTALS  
52

- 53 A. Submittal procedures shall be per Division 1 - General Requirements.  
54
- 55 B. Provide a complete submittal for each section as specified.  
56

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- 1 C. Submit complete submittal package within 30 calendar days after award of this work for  
2 approval. Equipment is not to be ordered without approval. Partial submittals are not  
3 acceptable for review. Each submittal shall include a dated transmittal.  
4
- 5 D. A submittal may be electronically transmitted in PDF file format (preferred) or paper copies  
6 may be provided in quantities indicated in Division 1. Paper copies shall be organized  
7 including index tabs in a 3-ring black binder of sufficient size.  
8
- 9 E. Each Product data submittal shall include:  
10 1. A cover sheet with the name and location of the project, the name, address, and  
11 telephone number of the Contractor, and the name, address, and telephone number of  
12 the submitting sub-contractor. Include on or after the cover sheet sufficient space for  
13 review stamps.  
14 2. An indication of any deviations from Contract Document requirements, including  
15 variations and limitations. Show any revisions to equipment layout required by use of  
16 selected equipment.  
17 3. A product data index and complete equipment list including for each product submitted  
18 for approval the manufactures name and part number, including options and selections.  
19 4. Cut-sheets or catalog data illustrating the physical appearance, size, function,  
20 compatibility, standards compliance, and other relevant characteristics of each product  
21 on the equipment list. Indicate by prominent notation (an arrow, circle, or other means)  
22 on each sheet the exact product and options being submitted.  
23 5. Submit design data, when the scope of work requires, including calculations, schematics,  
24 risers, sequences, or other data.  
25 6. When the contract requires extended product warranties, submit a sample of warranty  
26 language.  
27 7. Any resubmittal shall include a complete revised equipment list and any product data that  
28 is revised.  
29
- 30 F. Submit shop or coordination drawings, when specified or the required for the scope of work,  
31 which include information that will allow to the Contractor to coordinate interdisciplinary work  
32 and when necessary guide the manufacturer or fabricator in producing the product. Shop or  
33 coordination drawings shall be specifically prepared to illustrate the submitted portion of work,  
34 this may require diagrams, schedules, details, and accurate to scale equipment and device  
35 layouts prepared using a CAD or BIM engineering drawing program.  
36
- 37 G. The Engineer's review of submittals is only for confirmation of adherence to design of project  
38 and does not relieve the Contractor of final responsibility for furnishing all materials required  
39 for a complete working system and in complying with the Contract Documents in all respects.  
40

41 1.12 PROJECT RECORD DOCUMENTS  
42

- 43 A. The Contractor shall keep a set of plans on the job, noting daily all changes made in  
44 connection with the final installation including exact dimensioned locations of all new and  
45 uncovered existing utility piping outside the building.  
46
- 47 B. Upon submitting his request for final payment, he shall turn over to the Engineer, for  
48 subsequent transmittal to the Owner revised plans showing "as installed" work.  
49
- 50 C. In addition to the above, the Contractor shall accumulate during the job's progress the  
51 following data in PDF file format (preferred) or paper copies to be turned over to the Engineer  
52 for checking and subsequent delivery to the Owner:  
53 1. All warranties, guarantees, and manufacturer's directions on equipment and material  
54 covered by the Contract.  
55 2. PDF file or paper copies of all Shop Drawing prints and CAD or BIM engineering drawing  
56 program files.

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- 1 3. Any software programs, data/programming files, passwords, special interface cables, or
- 2 keys that may be needed to maintain or access equipment.
- 3 4. Set of operating instructions. Operating instructions shall also include recommended
- 4 maintenance and seasonal changeover procedures.
- 5 5. Any and all other data and/or plans required during construction.
- 6 6. Repair parts lists of all major items and equipment including name, address, and
- 7 telephone number of local supplier or agent.
- 8 7. The first page, or pages, shall have the names, addresses, and telephone numbers of
- 9 the following:
- 10 a. Builder and all Contractors.
- 11 b. Major Equipment Suppliers
- 12 c. Submit communication systems warranties.

13  
14 1.13 TRAINING

- 15 A. Upon completion of the work and at a time designated by the Engineer, provide formal training
- 16 sessions for the Owner's operating personnel to include location, operation, and maintenance
- 17 of all fire alarm systems equipment and systems.
- 18
- 19 B. See other sections for time requirements.

20  
21  
22 1.14 PLANS AND SPECIFICATIONS

- 23 A. The intent of the project drawings is to establish the types of systems and functions, but not
- 24 to set forth each item essential to the functioning of the system.
- 25
- 26 B. Electrical drawings are generally diagrammatic and show approximate location and extent of
- 27 work.
- 28
- 29 C. Install the work complete including minor details necessary to perform the function indicated.
- 30 Provide fire alarm systems (including all hook-ups) complete in every respect and ready to
- 31 operate.
- 32
- 33 D. If clarification is needed, consult the Engineer.
- 34
- 35 E. Review pertinent drawings and adjust the work to conditions shown. Where discrepancies
- 36 occur between drawings, specifications, and actual field conditions, immediately notify the
- 37 Engineer for his interpretation.
- 38
- 39 F. The Engineer reserves the right to make any reasonable change in the location of any part of
- 40 this work without additional cost to the Owner.

41  
42  
43 1.15 PRODUCT SUBSTITUTIONS:

- 44
- 45 A. Descriptions and details, acceptable manufacturers' names listed, and specific manufacturer
- 46 and model number items indicated in the plans and specifications shall establish a standard
- 47 of quality, function, and design. Manufacturers and model numbers listed "no exceptions" shall
- 48 not be substituted without specific notice in an addendum. Otherwise, where a specific
- 49 manufacturer's product is indicated, products of other manufacturers listed as acceptable may
- 50 be submitted for approval based on the substitute product being, in the opinion of the
- 51 Engineer, of equivalent or better quality than that of the product specified.
- 52
- 53 B. Proposed contractors wishing to propose systems which differ in manufacturer, features,
- 54 functions, or operating characteristics from those outlined in these specifications must do so
- 55 in writing to the specifying authority at least ten (10) days prior to the proposal opening.
- 56

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- 1 C. For manufacturers equipment or models other than that specified, the proposed contractor  
2 shall supply proof that such substitute equipment equals or exceeds the features, functions,  
3 performance, and quality of the specified equipment. Proposals must include detailed  
4 information showing all deviations from the system as specified and include relevant technical  
5 and cost data. This shall include a complete description of the proposed substitution, drawings,  
6 catalog cuts, performance data, test data, or any other data or information necessary for  
7 evaluation.  
8
- 9 D. The Engineer will consider all such submittals and issue an addendum listing items that the  
10 Engineer considers acceptable. Only such items as specified or approved as acceptable will  
11 be installed on this project.  
12
- 13 E. Substitute products for which the proposed contractor does not obtain prior approval will not  
14 be considered acceptable for this project. Final approval of the alternate system shall be based  
15 on the decision of the Owner and Engineer. Prior approval to make a proposal for this project  
16 does not automatically ensure the system will be an acceptable equivalent.  
17
- 18 F. The Contractors' proposal represents that the contract proposal price is based solely upon the  
19 materials, equipment, and labor described in the Contract Proposal Documents (including  
20 addenda, if any) and that he contemplates no substitutions or extras.  
21
- 22 G. The manufacturer of the proposed substitute unit shall provide samples for evaluation, when  
23 required, at no charge and non-returnable.  
24
- 25 H. Requests for substitution are understood to mean that the Contractor:  
26 1. Has personally investigated the proposed substitution and determined that it is equivalent  
27 or superior in all respects to that specified.  
28 2. Will provide the same guarantee for the substitution that he would for that specified.  
29 3. Will, at no cost to the Owner, replace the substitute item with the specified product if the  
30 substitute item fails to perform satisfactorily.  
31 4. After Award of the Contract, substitutions will be considered only under one or more of  
32 the following circumstances:  
33 a. The substitution is required for compliance with subsequent interpretations of code  
34 or insurance requirements.  
35 b. The specified product is unavailable through no fault of the Contractor.  
36 c. The manufacturer refuses to warranty the specified products as required.  
37 d. Subsequent information indicates that the specified product is unable to perform  
38 properly or to fit in the designated space.  
39 e. In the Engineer's sole judgment, the substitution would be in the Owner's best  
40 interest.  
41 f. Revisions to the electrical system caused by substitutions shall be under the  
42 supervision of the Engineer, at a standard hourly rate charged by the Engineer.  
43 Charges from the Engineer shall be paid by the Contractor originating the changes.  
44

45 1.16 FUTURE USE CABLING  
46

- 47 A. When cabling is installed for future use, it shall be identified with a tag of sufficient durability  
48 to withstand the environment involved.  
49
- 50 B. Locations and Existing Conditions:  
51 1. Location and condition of any existing equipment or services, when shown, have been  
52 obtained from substantially reliable sources, are shown as a general guide only, without  
53 guarantees as to accuracy.

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- 1           2. The Contractor will examine the site, verify all requirements, service points, and  
2           availability of all services required to complete this project. No consideration will be  
3           granted for any alleged misunderstanding of the materials and labor to be provided as  
4           necessitated by nature of the site including those items that may be fairly implied as  
5           essential to the execution and completion of any and all parts of this project.  
6

7   1.17   EXISTING FIRE ALARM SYSTEM COMPLETE DEMOLITION FOR ADDITIONS AND  
8           RENOVATION  
9

- 10   A. As indicated by the plans and specifications the fire alarm contractor shall be responsible for  
11   complete demolition of the existing fire alarm system, including demolition of any devices and  
12   cabling previously abandoned. Demolition shall include:  
13       1. Disconnection and removal of all fire alarm devices not to remain in service in walls,  
14       floors, and ceilings.  
15       2. Identification and verification of abandoned wiring and equipment. All disconnected or  
16       abandoned devices that are visible shall be removed, i.e. non-functional fire pulls, bells,  
17       speakers, signals, et cetera. Remove abandoned wiring to the source of the supply  
18       everywhere possible, the accessible portions of all inaccessible abandoned cabling shall  
19       be removed.  
20       3. Removal of exposed abandoned conduit and supports including brackets, stems,  
21       hangers, and other accessories located on walls and above accessible finished ceilings.  
22       Cut abandoned conduit flush with walls, floors, etc., and patch surfaces.  
23       4. Provide a blank cover for abandoned device backboxes that are impractical to remove  
24       from masonry construction without unnecessary damage.  
25       5. Confirm with Owner/Engineer regarding the handling and disposal/reuse of removed  
26       material, equipment, devices, et cetera.  
27       6. Off-site disposal in a legal manner of all materials not requested to be turned over to the  
28       Owner. Comply with government regulations pertaining to environmental protection, and  
29       disposal of materials and equipment. Do not burn any materials on the site.  
30       7. Repair of any finishes or adjacent construction damaged during modification, extension,  
31       and demolition work.  
32

33   1.18   EXAMINATION  
34

- 35   A. Verify field conditions including existing systems, equipment models, configurations, circuiting  
36   arrangements, cabling, and devices. Adjust all circuiting, cabling, and materials to be provided  
37   as required by job conditions.  
38  
39   B. Project drawings are based on casual field observation and existing record documents when  
40   available, report any significant discrepancies to the Engineer before disturbing existing  
41   systems.  
42  
43   C. The Contractor accepts the existing conditions when beginning demolition.  
44

45   1.19   IMPLEMENTATION  
46

- 47   A. Verify phasing in regard to systems and coordinate before energizing any system.  
48  
49   B. When required during phases of construction to maintain existing systems in service in  
50   particular areas, provide temporary wiring and connections as necessary to accommodate  
51   construction.  
52

53   1.20   OPERATION OF NEW EQUIPMENT PRIOR TO PROJECT COMPLETION  
54

- 55   A. When the phasing of a project requires that fire alarm systems are operable in certain areas  
56   and the Owner needs to operate the equipment the contractor shall make such provisions.

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1 The warranty period shall commence on new equipment when it is operated for the beneficial  
2 use of the Owner. Regardless of whether or not the equipment has or has not been operated,  
3 the Contractor shall properly clean the equipment, properly adjust, and complete all punch list  
4 items before final acceptance by the Owner. In these cases, the date of acceptance and the  
5 start of the warranty may be different dates.  
6

7 1.21 CLEANING AND REPAIR

- 8  
9 A. Clean and repair existing materials and equipment in areas of renovation that are to remain  
10 or be reused.

11  
12 1.22 PROTECTION OF EQUIPMENT AND MATERIALS

- 13  
14 A. The Contractor shall take such precautions as may be necessary to protect his apparatus from  
15 damage.  
16  
17 B. This shall include the creation of all required temporary shelters to protect any apparatus  
18 above the floor of the construction and the covering of apparatus in the completed building  
19 with tarpaulins or other protective covering.  
20  
21 C. Failure to comply with the above to the satisfaction of the Owner's inspector will be sufficient  
22 cause for the rejection of the equipment in question and its complete replacement by the  
23 Contractor.  
24

25 1.23 FINAL OBSERVATION

- 26  
27 A. It shall be the duty of the Contractor to make a careful observation trip of the entire project,  
28 assuring themselves that the work on the project is ready for final acceptance before calling  
29 upon the Engineer to make a final observation.  
30  
31 B. To avoid delay of final acceptance of the work, the Contractor shall have all necessary bonds,  
32 warranties, receipts, affidavits, et cetera, called for in the various articles of these  
33 specifications, prepared and signed in advance, together with a letter of transmittal, listing  
34 each paper included, and shall deliver the same to the Engineer at or before the time of said  
35 final observation. The Contractor is cautioned to check over each bond, receipt, et cetera,  
36 before preparing for submission to verify that the terms check with the requirements of the  
37 specifications.  
38  
39 C. The following and other provision of Division 1 General Conditions will be required at time of  
40 final completion:  
41 1. Final clean up completed.  
42 2. All systems are fully operational, all material and devices installed.  
43 3. As built (as installed) drawings and operations manuals.  
44

45 1.24 PROHIBITED MATERIALS

- 46  
47 A. No new asbestos, lead, or materials containing these substances shall be permitted in this  
48 project. The Contractor shall consult the Owner concerning these materials if their presence  
49 is suspected. All work in or around existing asbestos or lead materials is at the sole risk of the  
50 Contractor and his personnel.  
51

52 1.25 CUTTING AND PATCHING

- 53  
54 A. Notify the Builder sufficiently ahead of construction of any floors, walls, ceiling, roof, et cetera,  
55 of any openings that will be required for his work.  
56

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- 1 B. The Contractor shall see that all sleeves required for his work are set at proper times to avoid  
2 delay of the job.  
3  
4 C. All necessary cutting of walls, floors, partitions, ceilings, et cetera, as required for the proper  
5 installation of the work under this Contract shall be done at the Subcontractor or at the  
6 Subcontractor's expense in a neat and workmanlike manner, and as approved by the  
7 Engineer.  
8  
9 D. Patching of openings and/or alterations shall be provided by the fire alarm Subcontractor or at  
10 the Subcontractor's expense in an approved manner.  
11  
12 E. No joists, beams, girders, or columns shall be cut by any Contractor without first obtaining  
13 written permission of the Engineer.  
14  
15 F. All openings in firewalls and floors shall be completely sealed after installation for a completely  
16 airtight installation. Sealing material shall be non-combustible and UL approved. The installed  
17 sealing assembly shall not cause the fire rating of the penetrated structure to be decreased.  
18  
19 G. All openings in exterior walls shall be sealed watertight.  
20  
21 H. Seal voids around conduits penetrating fire-rated assemblies and partitions using fire stopping  
22 materials and methods in accordance with NFPA and local codes.  
23

24 1.26 MANUFACTURERS' INSTRUCTIONS

- 25  
26 A. All equipment and devices shall be installed in accordance with the drawings and  
27 specifications, manufacturer's instructions and applicable codes.  
28  
29 B. Where specifications call for installation of a product to be in accordance with manufacturer's  
30 instructions and/or where manufacturer's instructions are required for installation of a product,  
31 it shall be the contractor's responsibility to obtain the necessary applicable manufacturer's  
32 instructions and install the product in accordance with the manufacturer's instructions.  
33  
34 C. It shall be the Contractor's responsibility to install all equipment, materials, and devices shown  
35 on the plans and as called out in these specifications even if manufacturer's instructions are  
36 absolutely unattainable.  
37

38 1.27 INSTALLATION

- 39  
40 A. Cooperation with trades of adjacent, related or affected materials or operations, and or trades  
41 performing continuations of this work under subsequent contracts are considered a part of this  
42 work. In order to effect timely and accurate placing of work and to bring together, in the proper  
43 and correct sequence, the work of such trades, including work provided under a Division 1  
44 allowance.  
45  
46 B. The Fire Alarm Contractor shall coordinate installation of the fire alarm system to ensure a  
47 complete working system for the Owner.  
48  
49 C. Where required for accessibility all conduit and boxes for all fire alarm systems shall be  
50 provided by the Electrical contractor as specified, including systems in Division 28, any and  
51 all allowances shall be included. Normally low voltage wiring shall run open and supported in  
52 accessible attic space. All low voltage wiring in exposed areas such as gyms, stages, shops,  
53 and field houses shall be enclosed in conduit. Coordinate with, and verify with Division 26 to  
54 provide required conduit and boxes at locations and heights as required.  
55

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- 1 D. Conduit, innerduct, track, or raceway shall conceal and protect wiring in exposed areas, within  
2 walls, through in- accessible areas, floors, chases, under slab, crawlspaces, or underground.  
3
- 4 E. All conduit, duct, track, and raceway runs shall be spaced apart to allow for maintenance, such  
5 as the installation of couplings, without disturbing adjacent pathways.  
6
- 7 F. All work must be performed by workers skilled in their trade. The installation must be complete  
8 whether the work is concealed or exposed.  
9
- 10 G. Provide stainless screw/bolt hardware wherever stainless devices are used and in potentially  
11 wet areas.  
12
- 13 H. Coordinate the actual locations of devices and outlets and equipment with building features  
14 as indicated on drawings. Review with the Engineer any proposed changes in outlet or  
15 equipment location. Relocation of devices, before installation, of up to 3 feet from the position  
16 indicated, may be directed without additional cost. Remove and relocate outlets placed in an  
17 unsuitable location when so requested by the Engineer.  
18

19 1.28 ADDITIONAL MATERIALS: INCLUDE IN THE BASE CONTRACT PROPOSAL

- 20
- 21 A. All costs to provide 10 additional fire alarm signals at each site, including all cable and devices  
22 as directed by the Engineer. Conduit and standard back boxes by Fire Alarm Contractor.  
23
- 24 B. All costs to provide 10 additional smoke detectors at each site, including all cable and devices  
25 as directed by the Engineer. Conduit and standard back boxes by Fire Alarm Contractor.  
26

27

28 PART 2 – PRODUCTS

- 29
- 30 A. Not Applicable  
31

32

33 PART 3 – EXECUTION

- 34
- 35 A. Not Applicable  
36

37  
END OF SECTION



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SECTION 28 46 21

FIRE DETECTION AND ALARM SYSTEM REPLACEMENT

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. At Smithfield Elementary School:

1. Remove the entire existing fire alarm system including the panel and all devices and cabling.
2. Provide a new addressable fire alarm system as herein specified and as indicated on the project plans. Size the new panel to allow space for the addition of subassemblies (contained within the panel housing) to provide coverage by addressable devices of the entire existing facility, plus a 30% expansion of all devices at a future date. Each signaling line circuit (SLC) shall be limited to 80% of its total device capacity during the initial installation.

B. At North Oaks Middle School:

1. Remove the entire existing fire alarm system including the panel and all devices and cabling.
2. Provide a new addressable fire alarm system as herein specified and as indicated on the project plans. Size the new panel to allow space for the addition of subassemblies (contained within the panel housing) to provide coverage by addressable devices of the entire existing facility, plus a 30% expansion of all devices at a future date. Each signaling line circuit (SLC) shall be limited to 80% of its total device capacity during the initial installation.
3. Under the base bid, provide a Vesda Air Sampling Smoke Detection Sub-System in Gym1 room 085.
4. Under the alternate provide an Open-Area Smoke Imaging Detection (OSID) System in Gym1 room 085.

1.2 WORK INCLUDES

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1, apply to this Section.
- B. Furnish and install all equipment, accessories, and materials in accordance with the project specifications and drawings to provide a complete and operating system.
- C. Equipment specified herein is designed to provide specific functional and operational characteristics. It is the responsibility of the fire alarm contractor to provide all features and functions as outlined in these specifications.
- D. It shall be the responsibility of the fire alarm contractor to obtain all required approvals, permits, and certifications from authorities having jurisdiction.
- E. It shall be the responsibility of the fire alarm contractor to provide and install all conduit systems, standard electrical boxes, and operating power for the fire alarm system as outlined on the project drawings and as required. The fire alarm contractor shall coordinate all requirements with, and provide special back boxes to, the electrical contractor prior to installation of conduit. Provide metal surface mount raceway (Wiremold or equivalent) to surface mounted pulls/devices.

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- 1 F. NOTE: IN ALL OPEN CEILING AREAS, ALL FIRE ALARM CABLING SHALL BE ENCLOSED  
2 IN CONDUIT. It shall be the responsibility of the electrical contractor to provide and install all  
3 conduit systems, standard electrical boxes, and operating power for the fire alarm system as  
4 outlined on the project drawings and as required. The fire alarm contractor shall coordinate all  
5 requirements with, and provide special back boxes to, the electrical contractor prior to  
6 installation of conduit.  
7
- 8 G. The fire alarm contractor shall provide 120-volt power as required to the fire alarm system  
9 control unit through individual dedicated branch circuits maximum 20 amperes each. The  
10 branch circuit shall not be supplied through ground-fault circuit interrupters or arc-fault circuit  
11 interrupters. The fire alarm control panel (FACP), digital communicator (DC), and the signal  
12 power expanders (SPX) combine to form the fire alarm control unit. The FACP, DC, and a  
13 SPX, or two or more SPXs, et cetera, may be fed from one circuit as long the amperage drawn  
14 is within the limitations of a 20-ampere circuit. Each such circuit breaker shall be labeled in  
15 red, in a visible area utilizing a self-laminating, flexible vinyl film, non-smear, machine printed  
16 label, at the power distribution panel as FIRE ALARM. A breaker panel key shall be stored  
17 within the locked cabinet of each fire alarm control unit. The location of all circuit breakers  
18 serving the fire alarm control unit shall be posted in the fire alarm control unit cabinets. Each  
19 cabinet shall be grounded securely to the building grounding system.  
20
- 21 H. Fire safety control functions include any function that is designed to make the building  
22 occupants safer from the impact of fire and smoke during evacuation. These may include fire  
23 door hold open/release, coiling fire door release, air handler shutdown, smoke damper or  
24 fire/smoke damper control, high volume low speed (HVLS) fan shut down, elevator recall, and  
25 automatic door unlocking, including the opening of motorized security grills on alarm. For each  
26 controlled device, the contractor providing the device shall wire it internally for fail-safe shut-  
27 down and provide a labeled 3' coil of cable outside the unit to allow the fire alarm contractor  
28 to make final connection to the controlling relay. Each Fire Safety Control Function circuit  
29 controlled device shall be configured such that when the fire alarm system safety control circuit  
30 is re-energized, by the fire alarm control panel, the device shall return to normal operation  
31 (e.g. re-start or be ready to re-start) without a need for manual or environmental control system  
32 intervention. Line voltage, 120 VAC fire safety control circuits shall be wired by the Fire Alarm  
33 Contractor and shall be standard non-supervised line voltage circuits in conduit, utilizing the  
34 type of conductors specified in Division 26 for light and power circuits.  
35
- 36 I. Provide all testing, documentation, training, and warranty service contract as outlined in these  
37 specifications.  
38

39 1.3 RELATED SECTIONS

- 40 A. Section 26 05 34 - Provisions For Communication, Security & Safety Systems.  
41  
42 B. Section 28 05 00 - General Fire Alarm System Requirements.  
43  
44

45 1.4 DEFINITIONS

- 46  
47 A. Acoustically Distinguishable Space (ADS) – an area distinguished, enclosed, or physically  
48 defined from other spaces due to acoustical, environmental, or use characteristics, such as  
49 reverberation time and ambient sound pressure level. A basic area of a building or a single  
50 room identified for individual measuring of intelligibility.  
51
- 52 B. Common Intelligibility Scale (CIS) – a system created to map all quantitative intelligibility  
53 measurement methods to the same scale so that all different results can be compared.  
54
- 55 C. Distortion – any unwanted sounds produced by a sound reinforcement system, which are an  
56 alteration, addition, or deviation from the program source and are primarily caused by

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1 amplifiers and speakers when the system gain structure is not maximized, the components  
2 are damaged, or operating above their design limits. Distortion will diminish the clarity of  
3 speech / message / music.  
4

- 5 D. Maximized Gain Structure – the set-up of a sound reinforcement system in which the various  
6 components in the audio chain, which may include program sources, microphones, a  
7 mixer/pre-amplifier, a power amplifier, an output isolation transformer, and speaker input  
8 isolation transformer taps, have their level adjusted to provide maximum headroom and  
9 reduce the potential for poor performance and system clipping. This is accomplished by  
10 aligning the gain of each device so that the noise floor of the entire system is at its absolute  
11 minimum, each device provides a good S/R, and each component would, if overloaded, clip  
12 at approximately the same system output level.  
13
- 14 E. Reverberation - the persistence of sound in a particular enclosed space after the original  
15 sound is produced resulting in a number of echoes from the walls, ceilings, hard surfaces, etc.  
16 that builds up and then slowly decays as time passes and the sound is absorbed by  
17 environment. Reverberation time is the time required, in seconds, for the average sound in a  
18 particular room to decrease by 60 decibels after a source stops generating sound. Speech is  
19 best understood where sound dies out quickly which may be referred to as an acoustically  
20 "dead" environment, as opposed to a "live" environment with a strong echo.  
21
- 22 F. Signal-to-Noise Ratio (S/N or SNR) – in an individual audio component or overall system  
23 performance, is a ratio usually measured in decibels (dB) of program output to background  
24 noise. The larger the ratio, the more that desirable sounds (music, voice, effects) are  
25 separated from acoustical effects and background noise. As a measure of overall audio  
26 system performance, the Signal-to-Noise Ratio will encompass all audio distortion and  
27 defects, including those caused by digital and analog processing, speaker inaccuracy, signal  
28 loss and degradation, ambient noise, room acoustics, etc. at the listeners' location.  
29
- 30 G. Sound Pressure Level (SPL) - a logarithmic ratio scale used to measure the effective sound  
31 pressure, or relative loudness, of a sound. SPL is measured in decibels (dB) above a standard  
32 reference value of 20  $\mu$ Pa sound pressure in air at 1 kHz, which is equal to 0 dB, which is  
33 considered the threshold of human hearing. A 10 dB increase in SPL represents a doubling in  
34 volume.  
35
- 36 H. Speech Transmission Index (STI) - A scale and quantitative methodology for measuring the  
37 intelligibility of a communication system using a test signal audible program of wide band  
38 modulating frequency tones, which encompass a combination of vowels and syllables  
39 simulating common speech. While the test signal is being played through the communication  
40 system, the test instrument computes the signal to noise ratio based on the impact of  
41 background noise, reverberation, and distortion. During the test runtime, a value is calculated  
42 and the result displayed on the test instrument screen, which will be between zero and one on  
43 the STI scale, representing the weighted average estimate of system intelligibility at that  
44 location.  
45
- 46 I. Voice Intelligibility or Speech Intelligibility - The quality or condition of being intelligible, capable  
47 of being understood; comprehensible; clear, precise, and audible. Voice intelligibility test  
48 results for an emergency communication system are considered acceptable if at least 90% of  
49 the measurement locations within each ADS have a measured STI of not less than 0.45 (CIS  
50 of not less than 0.65), and an average STI of not less than 0.50 (an average CIS of not less  
51 than 0.70).  
52

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- 1 1.5 CODES AND REGULATIONS  
2  
3 A. Perform all work in strict accordance with the requirements and recommendations stated in  
4 the codes and standards except when requirements are exceeded by the contract documents.  
5  
6 B. The equipment, materials, and installation shall confirm to the latest version of all applicable  
7 codes, standards and regulations of authorities having jurisdiction including the following:  
8 1. NFPA 70, National Electrical Code, Articles 250, 300, 725, 760, and 800.  
9 2. NFPA 72, National Fire Alarm and Signaling Code.  
10 3. NFPA 90A, Installation of Air Conditioning and Ventilation Systems.  
11 4. NFPA 101, Code for Safety to Life from Fire in Buildings and Structures.  
12 5. IEC 60268-16:2011(E) Sound system equipment – Part 16: Objective rating of speech  
13 intelligibility by speech transmission index.  
14 6. ISO 7240-24:2010 Fire detection and fire alarm systems - Part 24: Sound-system  
15 loudspeakers.  
16 7. ANSI 117.1 American National Standard for Accessible and Useable Buildings and  
17 Facilities.  
18 8. ASME A17.1 Safety Code for Elevators and Escalators  
19 9. Americans with Disabilities Act.  
20 10. Texas Accessibility Standards (TAS).  
21 11. Texas Insurance Code Chapter 6002 Fire Detection and Alarm Device Installation and  
22 28 TAC §§ 34.600 The Fire Alarm Rules.  
23 12. International Building Codes (IBC).  
24 13. Local and State Building Codes.  
25 14. All requirements of the local Authority Having Jurisdiction (AHJ).  
26
- 27 1.6 SUBMITTALS  
28  
29 A. Submittal procedures: See Section 28 05 00.  
30  
31 B. Submit a complete submittal package within 30 calendar days after award of this work for  
32 approval. Equipment is not to be ordered without approval. Partial submittals are not  
33 acceptable for review. Each submittal shall include a dated transmittal.  
34  
35 C. Submittal may be electronically transmitted in PDF file format (preferred) or paper copies may  
36 be provided in quantities indicated in Division 1. Paper copies shall be organized including  
37 index tabs in a 3-ring black binder of sufficient size.  
38  
39 D. Quality Assurance Submittal:  
40 1. Letter from the fire alarm control panel manufacturer stating that the contractor is a  
41 factory trained for the proposed system and Factory Authorized Distributor for the area  
42 where the project is located.  
43 2. Current copy of the contractors Fire Alarm Certificate of Registration for sales, service,  
44 and installation of fire alarm and fire detection systems issued by the State Fire Marshal.  
45 3. Copy of the commercial (non-residential) Fire Alarm System Planning Superintendent's  
46 License responsible for the design of the system submitted.  
47 4. Copy of the Fire Alarm Technician's License who will supervise this installation.  
48 5. Calculations for indicating device circuit current drop and battery backup calculations for  
49 each unit.  
50

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- 1 E. Product Data Submittal including special boxes, cable, and other material as requested by the  
2 Engineer including:  
3 1. A cover sheet with the name and location of the project, the name, address, and  
4 telephone number of the Contractor, and the name, address, and telephone number of  
5 the submitting sub-contractor. Include on or after the cover sheet sufficient space for  
6 review stamps.  
7 2. An indication of any deviations from Contract Document requirements, including  
8 variations and limitations. Show any revisions to equipment layout required by use of  
9 selected equipment.  
10 3. A product data index and complete equipment list including for each product submitted  
11 for approval the manufactures name and part number, including options and selections.  
12 4. Cut-sheets or catalog data illustrating the physical appearance, size, function,  
13 compatibility, standards compliance, and other relevant characteristics of each product  
14 on the equipment list. Indicate by prominent notation (an arrow, circle, or other means)  
15 on each sheet the exact product and options being submitted.  
16 5. Submit design data, when the scope of work requires, including calculations, schematics,  
17 risers, sequences, or other data.  
18 6. Any resubmittal shall include a complete revised equipment list and any product data  
19 that is revised.  
20  
21 F. Submit shop drawings locating all components of the system, indicating circuit routing, cable  
22 type, and gauge. Shop or coordination drawings shall include information that will allow to the  
23 Contractor to coordinate interdisciplinary work and when necessary guide the manufacturer  
24 or fabricator in producing the product. Shop or coordination drawings shall be specifically  
25 prepared to illustrate the submitted portion of work, this may require diagrams, schedules,  
26 details, and accurate to scale equipment and device layouts prepared using a CAD or BIM  
27 engineering drawing program.  
28

29 1.7 QUALIFICATIONS OF A PROPOSED CONTRACTOR

- 30  
31 A. Proposed contractors who do not currently possess the necessary qualifications, trained and  
32 experienced personnel, financial capacity, required current licenses, and meet the other  
33 requirements herein described will be disqualified.  
34  
35 B. The contractor shall be licensed by the State of Texas Fire Marshal to sell, install, and service  
36 commercial fire alarm systems in accordance with the Texas Insurance Code Chapter 6002.  
37  
38 C. The proposed contractor, as a business entity, shall be an authorized and designated  
39 representative of the fire alarm panel equipment manufacturer, with full warranty privileges,  
40 and shall have been actively engaged in the business of selling, installing, and servicing  
41 commercial building fire alarm systems for a period of at least 5 years.  
42  
43 D. Recently formed companies are acceptable only if specific pre-approval is requested, and  
44 granted by the Engineer, based on experience of key personnel, current and completed  
45 projects, and all licensing requirements are met 10 working days prior to the contract proposal  
46 date.  
47  
48 E. The proposed Contractor shall have an office within 150-miles of the job site, staffed with  
49 trained technicians who are qualified and licensed to supervise the installation, to be  
50 responsible that the system is installed as submitted, to conduct system start up and perform  
51 a 100 percent operational audit of all installed devices, to instruct the Owners representatives  
52 and the local Fire Marshal in the proper operation of the system, and to provide service  
53 throughout the warranty period. The contractor shall be capable of dispatching technicians to  
54 repair a system within six hours of a service request.  
55

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- 1 F. The proposed contractor shall be fully experienced in the design and installation of the type of  
2 Fire Alarm System herein specified, and shall furnish with the contract proposal an itemized  
3 list of the installations of the type specified herein. The list shall include the name of the project,  
4 date of completion, the amount of the contract, the name, and telephone number of a qualified  
5 person to contact for reference. This list must contain at least two (2) projects within a 150-  
6 mile radius of this project to allow owners representatives to visit the job sites for review of the  
7 system installation and service. Each reference project listed must utilize a fire alarm control  
8 panel by the same manufacturer as the proposed system.  
9
- 10 G. The Contractor shall have a full-time employee who is a state licensed Fire Alarm System  
11 Planning Superintendent. They shall be responsible for the design of the system submitted  
12 and shall sign all submittal drawings.  
13
- 14 H. All work associated with the installation of the fire alarm system shall be under the direct  
15 supervision of a state licensed Fire Alarm Technician.  
16
- 17 I. The Contractor shall employ factory-trained technicians capable of supporting the  
18 maintenance of the system. No contract employees are allowed unless they have been to the  
19 factory service school within the last 18 months. A certificate of this training shall be provided  
20 with the contractors' submittal.  
21
- 22 J. The contractor shall not have any grievances or complaints of record regarding workmanship,  
23 code compliance, or service response with either the Owner or the State Fire Marshal. A  
24 contractor that has any prior finding(s) of a Fire Alarm License violation or has any litigation of  
25 this type in process with the State Fire Marshal is unacceptable.  
26
- 27 K. The ability of a proposed Contractor to obtain plans and provide a performance bond shall not  
28 be regarded as the sole qualification of the Contractors' competency and responsibility to meet  
29 the requirements and obligations of the contract.  
30
- 31 L. The Builder shall be satisfied that a proposed Contractor meets all the requirements expressed  
32 herein before including the Contractor's proposal in the project.  
33
- 34 M. The Owner may investigate, as they deem necessary to determine the ability of the proposed  
35 Contractor to perform the work. The proposed Contractor shall furnish to the Owner with any  
36 information or data requested for this purpose.  
37
- 38 N. The Owner reserves the right to reject any contract proposal if the evidence submitted, or their  
39 investigation, fails to indicate that the Contractor is qualified to fulfill of any part of the contract  
40 or to complete the work contemplated therein.  
41
- 42 O. The Owner reserves the right to reject the proposal of any Contractor who has previously failed  
43 to perform properly, or complete on time, contracts of a similar nature.  
44  
45

46 **PART 2 – PRODUCTS**

47  
48 **2.1 GENERAL**

- 49  
50 A. Type: Complete 24 VDC, closed circuit, electrically supervised, analog addressable, intelligent  
51 reporting, microprocessor controlled fire detection and alarm system combined with an in-  
52 building fire emergency voice alarm communications system (EVAC).  
53
- 54 B. The system shall meet all requirements for a protected premises and supervising station fire  
55 alarm system per NFPA 72.  
56

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- 1 C. The system and all components shall be tested and found suitable for the specified purpose  
2 as part of a protected premises protective signaling (fire alarm) system by a nationally  
3 recognized approvals agency acceptable to the AHJ.  
4
- 5 D. All date keeping hardware, firmware, and software provided shall be fully compliant with the  
6 calendar year designated in four-digit date format. Any time or date related functions must  
7 operate normally, leap year, and daylight savings time must be supported.  
8
- 9 E. The control units, power supplies, batteries, subassemblies, software, firmware, all cable  
10 types, detection, notification, control devices, and all accessories required to provide a  
11 complete operating system shall be listed and labeled by Underwriters Laboratories, Inc. for  
12 fire alarm system use under the latest appropriate testing standard including but not limited to  
13 the following:  
14 UL 38 Manually Actuated Signaling Boxes for Use with Fire Protective Signaling  
15 Systems.  
16 UL 50 Enclosures for Electrical Equipment.  
17 UL 193 Alarm Valves for Fire-Protection Service  
18 UL 217 Single and Multiple Station Smoke Detectors.  
19 UL 228 Door Closers-Holders, With or Without Integral Smoke Detectors.  
20 UL 268 Smoke Detectors for Fire Protective Signaling Systems.  
21 UL 268A Smoke Detectors for Duct Application.  
22 UL 346 Waterflow Indicators for Fire Protective Signaling Systems.  
23 UL 444 Communications Cables.  
24 UL 464 Audible Signal Appliances.  
25 UL 497B Protectors for Data Communications and Fire Alarm Circuits.  
26 UL 521 Heat Detectors for Fire Protective Signaling Systems.  
27 UL 539 Single and Multiple Station Heat Detectors.  
28 UL 793 Automatically Operated Roof Vents for Smoke and Heat.  
29 UL 864 Control Units for Fire Protective Signaling Systems, Ninth Edition  
30 UL 910 Test for Cable Flame-Propagation and Smoke-Density Values for Electrical  
31 and Optical-Fiber Cables Used in Spaces Transporting Environmental Air.  
32 UL 1424 Cables for Power-Limited Fire Alarm Circuits.  
33 UL 1479 Fire Tests of Through-Penetration Firestops.  
34 UL 1480 Speakers for Fire Protective Signaling Systems.  
35 UL 1481 Power Supplies for Fire Protective Signaling Systems.  
36 UL 1581 Electrical Wires, Cables, and Flexible Cords.  
37 UL 1635 Digital Alarm Communicator System Units.  
38 UL 1638 Visual Signaling Appliances - Private Mode Emergency and General Utility  
39 Signaling.  
40 UL 1711 Amplifiers for Fire Protective Signaling Systems.  
41 UL 1971 Signaling Devices for the Hearing Impaired.  
42 UL 2043 Fire Test for Heat and Visible Smoke Release for Discrete Products and  
43 Their Accessories Installed in Air-Handling Spaces.  
44 UL 2572 Control and Communication Units for Mass Notification Systems.  
45
- 46 F. Only equipment devices have been shown on the contract drawings. Specific wiring between  
47 equipment has not been shown.  
48
- 49 G. All equipment and components shall be installed in strict compliance with manufacturers'  
50 recommendations and the requirements of the components UL listing. Consult the  
51 manufacturer's installation manuals for all wiring diagrams, schematics, electrical  
52 requirements, cable types, and physical equipment sizes, et cetera, before beginning system  
53 installation. Refer to the manufacturers' riser / connection diagrams for all specific system  
54 installation / termination / wiring data.  
55

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- 1 H. The contractor shall be responsible for sizing, verifying and supplying proper power supply(s)  
2 necessary to operate the system and audible/visual signals.  
3  
4 I. All equipment and components shall be new and the manufacturer's current model. All like  
5 devices shall be of the same manufacturer and model number.  
6  
7 J. Provide stainless screw/bolt hardware wherever stainless devices are used and in potentially  
8 wet areas.  
9  
10 K. All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly  
11 in place (e.g., detectors shall not be supported solely by suspended ceilings). Fasteners and  
12 supports shall be adequate to support the required load.  
13

14 2.2 ACCEPTABLE MANUFACTURES  
15

- 16 A. Descriptions and details, acceptable manufacturers' names listed and specific manufacturer  
17 and model number items indicated in the plans and specifications shall establish a standard  
18 of quality, function, and design. Manufacturers and model numbers listed "no exceptions" shall  
19 not be substituted without specific notice in an addendum. Otherwise, where a specific  
20 manufacturer's product is indicated, products of other manufacturers listed as acceptable may  
21 be submitted for approval based on the substitute product being, in the opinion of the  
22 Engineer, of equivalent or better quality than that of the product specified.  
23  
24 B. Proposed contractors wishing to propose any product substitution must do so in writing to the  
25 specifying authority at least ten (10) days prior to the proposal opening.  
26  
27 C. For manufacturers equipment or models other than that specified, the proposed contractor  
28 shall supply proof that such substitute equipment equals or exceeds the features, functions,  
29 performance, and quality of the specified equipment. Proposals must include detailed  
30 information showing all deviations from the system as specified.  
31  
32 D. Substitute products for which the proposed contractor does not obtain prior approval will not  
33 be considered acceptable for this project. Final approval of alternate products shall be based  
34 on the decision of the Owner and Engineer. Prior approval to make a proposal for this project  
35 does not automatically ensure products will be an acceptable equivalent.  
36  
37 E. It is the responsibility of the Contractor to provide all features and functions as outlined in these  
38 specifications. The functions and features specified are vital to the operation of this facility;  
39 therefore, inclusion in the list of acceptable manufacturers does not release the contractor  
40 from strict compliance with the requirements of this specification.  
41  
42 F. The manufacturers model numbers, functions, and features described in this specification  
43 section are those of the **Farenhyt IFP-1000ECS** system by Silent Knight, Maple Grove,  
44 Minnesota and this shall constitute the quality and performance of the equipment to be  
45 furnished per district standards, **no exceptions**.  
46

47 2.3 CIRCUIT TYPES  
48

- 49 A. General: All low voltage fire alarm circuits shall be power limited, electrically or electronically  
50 supervised, and of the correct cable type and gauge. Low voltage fire alarm cables of various  
51 types are to be permitted within the same raceway or conduit. Cable must be separated from  
52 any open conductors of power, or Class 1 circuits, and shall not be placed in any conduit,  
53 junction box, or raceway containing these conductors, as per NEC Article 760. T-taps in any  
54 electrically supervised circuit are prohibited by this specification. All junction boxes and conduit  
55 ends shall be marked red for all low voltage fire alarm circuits.  
56



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- 1           B. All fire alarm systems shall be installed in such a manner that the failure of any single alarm-  
2           actuating or alarm-indicating device will not interfere with the normal operation of any other  
3           such devices.
- 4           1. Signaling Line Circuit (SLC): A signaling line circuit is the backbone loop that  
5           interconnects all addressable intelligent devices and over which status, input, and output  
6           signals are carried. The operation of these circuits is critical to the operation of the system  
7           and they shall be wired Class A (Style 6), in a redundant loop with isolation modules.  
8           Class A separation of cable routing shall be observed per NFPA 72.
- 9           2. Network Node Circuit: The main fire alarm panel and any network node sub-panels or  
10           remote annunciators shall use a supervised RS-485 or equivalent interface in network  
11           loop over which system status, control, input, and output signals are carried. These  
12           circuits shall be wired in a Class A redundant loop, which will be automatically operated  
13           from either end. Separation of outgoing and return cable routing shall be observed per  
14           NFPA 72 requirements, including a minimum of four feet separation horizontal and one  
15           foot vertical between supply and return circuit conductors.
- 16           3. Voice Evacuation Notification Appliance Circuits (Voice NAC): A notification appliance  
17           circuit provides operational power to and is directly connected to the speaker signals.  
18           These appliances have a relatively large current draw and these circuits shall be of an  
19           adequate wire gauge to prevent a voltage drop below the rated operating voltage of the  
20           speaker appliances. Circuits may be 25 or 70 VRMS to be determined by the contractor.  
21           Shielded cable shall be utilized to minimize electrical noise interference with voice  
22           transmission. These circuits shall be wired Class B (Style Y) with electrical supervision  
23           and end of line devices.
- 24           4. Visual Notification Appliance Circuit (NAC): A notification appliance circuit provides  
25           operational power to and is directly connected to the audible and visual signals. These  
26           appliances have a relatively large current draw and circuits shall be of an adequate wire  
27           gauge to prevent a voltage drop below the rated operating voltage of the appliances.  
28           These circuits shall be wired Class B (Style Y) with electrical supervision and end of line  
29           devices.
- 30           5. Initiating Device Circuits (IDC): Initiating device circuits shall be used only where it is  
31           necessary to interface to a contact type or conventional device such as a sprinkler riser  
32           waterflow switch, tamper switch, or projected beam detector. Initiating device circuits  
33           shall be arranged to serve like categories (beam detectors, heat detectors, tamper  
34           switches). Mixed category circuitry shall not be permitted in a single IDC. A two-wire IDC  
35           shall contain only devices that require point-contact to operate. A four-wire IDC shall  
36           include an additional supervised circuit to supply 24 VDC operating power to devices that  
37           require it. These circuits shall be wired Class B (Style B) provided the distance from the  
38           addressable module to the initiating device is ten feet or less. Class B IDC circuits shall  
39           include electrical supervision and end of line devices, or power supervisory/end of line  
40           devices for four-wire circuits. IDC circuits exceeding 10 feet shall be wired in a Class A  
41           (Style D) redundant loop and separation of outgoing and return cable routing shall be  
42           observed per NFPA 72.
- 43           6. Low voltage, 24 VDC, fire safety control function circuits shall in all cases feature Class D  
44           "fail safe" operation and shall not have power backup. These circuits shall be controlled  
45           by a fire alarm system activated addressable control relay located within three feet of the  
46           device controlled and on activation, or loss of power, the connected device shall actuate  
47           to its fire safety condition (i.e. HVAC blower control circuits shall open).
- 48           7. Line voltage, 120 VAC, fire safety control function circuits shall in all cases feature  
49           Class D "fail safe" operation and shall not have power backup. These circuits shall be  
50           controlled by a fire alarm system activated addressable control relay and auxiliary relay  
51           pair located within three feet of the device controlled and on activation, or loss of power,  
52           the connected devices shall actuate to their fire safety condition (i.e. fire door holders  
53           shall release, smoke dampers and fire/smoke dampers shall close). Line voltage fire  
54           safety control circuits shall be wired by the Fire Alarm Contractor and shall be standard  
55           non-supervised line voltage circuits in conduit, utilizing the type of conductors specified  
56           in Division 26 for light and power circuits.

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2.4 FIRE ALARM CONTROL PANEL [FACP]

- A. Type: Microprocessor based modular design, analog intelligent addressable reporting fire alarm and detection system with integrated in-building Emergency Voice Evacuation Control Panel (EVAC).
- B. The following are required system components and functions:
1. Size panel to allow space for 30% expansion of all devices by the addition of subassemblies contained within the panel housing at a future date. Each signaling line circuit (SLC) shall be limited to 80% of its total device capacity during the initial installation.
  2. Provide a UL listed cabinet suitable for semi-flush mounting. The cabinet and front shall be corrosion protected, given a rust-resistant prime coat, and the manufacturers' standard finish, red color preferred. The back box and door shall be constructed of 0.060" minimum steel with provisions for electrical conduit connections clearly indicated. The door shall provide a key lock to access system controls/switches, key alike to manual pull station reset. The door shall include a transparent opening for viewing of all alarm, supervisory, and trouble indicators and the LCD display. The door shall be for right or left hand hinging as required. When the door is opened, all operator controls shall be accessible and all internal components shall be enclosed (i.e. dead front panel). All components shall be securely mounted, all cable shall be routed and tie wrapped in a neat, professional manner. Conduit shall enter the fire alarm control panel only where conduit entry is specified by the FACP manufacturer.
  3. The microprocessor shall provide a real-time clock for time annotation of system displays, printer, and history file. The time-of-day and date shall not be lost if system primary and secondary power supplies fail. The real time clock may also be used to control non-fire functions at programmed time of day, day of week, and day of year.
  4. The fire alarm panel shall provide for a custom alphanumeric message location identifier to be associated with each addressable device hardware address. For any event or alarm, the alphanumeric display will show the devices hardware address and a custom message clearly identifying the location of the device involved.
  5. Fire alarm, supervisory alarm, trouble, and maintenance alert conditions, with device hardware address and custom message location identifier, shall be displayed on an 80-character minimum Liquid Crystal Display (LCD). The chronological event history of alarm and trouble conditions may also be displayed.
  6. Keypad for functions and programming, two buttons for scrolling data on the LCD, four front panel switches for RESET, ALARM SILENCE, TROUBLE SILENCE, and DRILL/ALL CALL and five LEDs for Normal, Fire Alarm, Supervisory Alarm, Trouble, and Test/Program. When multiple devices are reporting alarm condition, there shall be a visual indication that other devices are in alarm.
  7. The system shall contain an EIA RS-232C serial communication port for transfer and printing of event history data, detector sensitivity reports, instructions, and operating sequences as required. The FACP shall be capable of sending packets of up to 80 ASCII characters followed by a carriage return (ODH) and a line feed (OAH) to the serial port. The output shall be formatted to make it possible for an external monitoring computer to recognize certain combinations of characters in certain locations within each 80-character string in order to interpolate the status of the FACP.
  8. Incoming power shall be supervised. A green "POWER ON" LED shall continuously display while power is present.
  9. Power supply/charger and batteries to supply power limited 24 VDC operating and emergency power to the system. The charger shall be capable of maintaining batteries in a fully charged state without damage and of bringing batteries from a fully discharged to a fully charged state within 48 hours of normal operation. Provide audible alarm and diagnostic LEDs to indicate AC power failure, brown out, control unit CPU failure, low battery detection, battery disconnection, and system ground fault detection. Upon AC

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- 1 power failure, the power supply shall automatically transfer the system to battery backup.  
2 The batteries are to be completely maintenance free. No liquids are permitted, fluid level  
3 checks for refilling, spills, and leakage shall not be required. If necessary to meet standby  
4 requirements, external battery and/or charger systems may be used. Provide sufficient  
5 battery capacity for operation without AC power for twenty-four hours of normal  
6 supervision and five minutes alarm operation at the end of this period; include a 20%  
7 safety factor in battery calculations to ensure adequate performance for the service life  
8 of batteries.
- 9 10. The failure of either the primary (AC Mains) or the secondary (Battery Backup) power  
10 sources shall initiate a trouble signal.
- 11 11. The CPU and associated equipment are to be protected consistent with UL 864  
12 standards so that voltage surges or line transients will not affect them. All external  
13 connections of the FACP shall withstand six kilovolt transients to chassis ground.
- 14 12. The system shall permit cabling for 24-volt control functions; IDC, NAC, and similar  
15 power limited auxiliary functions to be located in the same conduit with the multiplex  
16 communication loop (SLC). All circuits shall be provided with transient suppression  
17 devices and the system shall be designed to permit simultaneous operation of all circuits  
18 without interference or loss of signals.
- 19 13. All field wiring shall be completely supervised. In the event of a primary power failure,  
20 disconnected standby battery, removal of any internal modules, or any open circuits in  
21 the field wiring; a trouble signal will be activated until the system and its associated field  
22 wiring are restored to normal condition. The FACP shall check for the presence of ground  
23 faults in field wiring and report results on the LCD readout, is it a violation of this  
24 specification for any ground fault detection system to be disabled.
- 25 14. A single ground or open on any system SLC, IDC, NAC, or fire safety control function  
26 circuit shall not cause a system malfunction or the loss of ability to report an alarm.
- 27 15. Each peripheral device connected to the CPU shall be continuously scanned for proper  
28 operation. Data transmissions between the CPU and peripheral devices shall be reliable  
29 and error free. The transmission scheme used shall employ dual transmission or other  
30 equivalent error checking techniques.
- 31 16. The Fire Alarm Control Panel shall automatically interrogate each intelligent detector and  
32 shall analyze the detector responses over a period of time. If any intelligent detector in  
33 the system responds with a reading that is below or above normal limits. The controller  
34 shall differentiate between long term drift above the pre-alarm threshold (maintenance  
35 alert, indicative of the need for cleaning) and a fast rise above the pre-alarm threshold  
36 (indicative of a smoldering fire).
- 37 17. The Fire Alarm Control Panel CPU shall receive analog information from all intelligent  
38 detectors to be processed to determine whether normal, alarm, pre-alarm, or trouble  
39 conditions exist for each detector. The software shall automatically maintain the  
40 detector's desired sensitivity level by adjusting for the effects of environmental factors,  
41 including the accumulation of dust in each detector. The analog information shall also be  
42 used for automatic detector testing and for the automatic determination of detector  
43 maintenance requirements.
- 44 18. Each addressable device on an SLC loop shall systematically report for type  
45 identification. Loss of signal from any addressable device shall result in a trouble  
46 condition indication at the control panel shall. If the inadvertent installation of another  
47 type sensor takes place, the system and the installed device shall operate however, a  
48 "WRONG DEVICE" trouble condition will display until the proper unit is installed or the  
49 programmed sensor type is changed.
- 50 19. The system shall be capable of onsite programming to facilitate changes in operation,  
51 sensor sensitivity, or system expansion. The unit shall contain non-volatile EPROM  
52 memory; loss of primary and secondary power shall not result in loss of programming  
53 information.

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- 1           20. All system software and firmware shall be UL listed with the control panel and protected  
2           from unauthorized changes. The microprocessor shall contain and execute on site  
3           programmable logical statements for each control-by-event specific action to be taken  
4           when an alarm condition is detected at specific programmed points by the system.  
5           Control-by-event equations shall be held in non-volatile programmable memory, and  
6           shall not be lost even if system primary and secondary power failure occurs. Any software  
7           or firmware changes made shall require a minimum of a 10% functional test of the  
8           system.
- 9           21. The system shall store and recall a time and date of incident recorded chronological  
10          event history of alarm, supervisory, and trouble conditions. The event history shall store  
11          a minimum of four hundred events.
- 12          22. Maintenance alerts shall be annunciated as an alert on the LCD only and shall not be  
13          confused as a Trouble or an Alarm. This feature shall in no way inhibit the receipt of  
14          alarm conditions in the system.
- 15          23. The system shall on demand perform and print a detector sensitivity test, meeting  
16          requirements of NFPA 72, Chapter 7.
- 17          24. Walk test, the Fire Alarm Control Panel shall permit testing by manually placing each  
18          initiating device in alarm. The control panel shall pulse the system audible devices on  
19          detection of each such alarm and automatically reset the panel, permitting a single  
20          technician to perform a function test of the entire system.
- 21          25. Provide an integrated zone annunciating alarm digital communicator (DC) transmitter  
22          control unit using Contact ID protocol with Telco 1 and Telco 2 connections for the  
23          transmission of fire alarm control panel status signals to a monitoring service.
- 24          26. The digital communicator shall have the basic capability to transmit the status of the  
25          following software zones:  
26                a. General Fire Alarm  
27                b. Point Annunciating Alarm by Zone  
28                c. Fire Alarm Supervisory Alarm  
29                d. Fire Alarm Trouble Condition
- 30          27. In addition, the digital alarm communicator shall transmit signals indicating; Panel Off-  
31          Normal, Signal Trouble, Low Battery, AC Power Failure, and software zone/point  
32          identification information for each addressable device that generates an alarm or trouble.
- 33          28. The emergency voice/alarm system shall be integrated into the main panel and shall  
34          provide high-intelligibility voice signal amplification to drive 25 or 70 VRMS speakers as  
35          required. Frequency response of amplifier shall be 400-4000 Hz. Provide as indicated a  
36          panel mounted, low impedance, dynamic, push-to-talk microphone. The system shall  
37          broadcast a digitally recorded message up to four minutes in length on alarm. The  
38          message shall automatically repeat, play alarm tones, and repeat as long as the FACP  
39          is in alarm unless the message is overridden by keying the microphone. The local Fire  
40          Marshal shall approve the recorded message, unless otherwise instructed the message  
41          shall be; One round of Code-3/TC3 temporal horn followed by "Attention, Attention, a fire  
42          emergency has been reported. Please leave the building using the nearest exit" or an  
43          equivalent standard statement.
- 44          29. The amplifier, signal generator, power supply, output transformer, and speaker lines shall  
45          be continuously supervised. The FACP shall supervise the activation circuit. Provide  
46          circuit overload, overheat, over-voltage, polarity reverse, open/short, and automatic  
47          current limiting protection. Provide sufficient battery backed up power capacity, from the  
48          FACP or a signal power expander, for operation without AC power for twenty-four hours  
49          of normal supervision and two hours of emergency operation at the end of this period.  
50          Fifteen minutes of evacuation alarm operation at maximum connected load shall be  
51          considered the equivalent of two hours of emergency operation; include a 20% safety  
52          factor in battery calculations to ensure adequate performance for the service life of  
53          batteries. The power supply/charger and batteries shall supply power limited operating  
54          and emergency power. The charger shall be capable of maintaining batteries in a fully  
55          charged state without damage and of bringing batteries from a fully discharged to a fully  
56          charged state within 48 hours of normal operation.

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- 1 30. The emergency voice/alarm panel shall be housed in a UL listed cabinet suitable for flush  
2 mounting. The door shall provide a key lock to access system microphone, key alike to  
3 the FACP. Operator instructions shall be clearly visible inside of cabinet. All internal  
4 components shall be enclosed (i.e. dead front panel). All components shall be securely  
5 mounted and all cable routed and tie wrapped in a neat, professional manner. All  
6 equipment provided shall be UL listed for fire protective signaling.
- 7 31. The system shall be a multi-purpose NFPA compliant, supervised, general-purpose  
8 audio, and fire / emergency evacuation system. Approvals for the system shall include:  
9 UL 864, UL 1711, FCC part 15, CE, CSFM, and MEA. The system shall be OSHA  
10 1910.165 and ADA compliant.
- 11 32. The system shall include a voice evacuation system incorporating supervision during the  
12 broadcasting of background music and general paging.
- 13 33. Standard on-board system features shall include digital voice messaging, a hand-held  
14 push-to-talk microphone with override priority, and a power supply / battery charger. The  
15 system shall be capable of interfacing with telephone systems for general paging  
16 announcements and will have night ringer capabilities. Form C contacts shall be provided  
17 for system alarm and trouble conditions. The system shall have an internal sounder to  
18 indicate trouble, and shall be capable of being silenced using a trouble acknowledge  
19 switch.
- 20 34. The system shall have three fire alarm notification appliance circuit inputs with a voltage  
21 range of 9 to 31 VDC. The system shall have eight priority ordered inputs, including: On  
22 Board Microphone, Auxiliary Input (Line Level), three Digital Messages, Telephone  
23 Paging Input, Night Ringer Input, and Background Music Input. The system shall have  
24 preset audio levels for emergency messaging (prerecorded and live microphone). The  
25 system shall revert to a preset level regardless of the volume set for background music  
26 (BGM) or general paging. Background music inputs can be an AM/FM tuner, cassette,  
27 CD, or any other remote source. The system shall be supplied with three pre-recorded  
28 messages and be capable of in-field recording of customer unique messages. The  
29 system shall have a dual-tone tone generator with Code-3/TC3 Tone and Slow Whoop.  
30 When the system is on battery power, telephone page, night ring and background music  
31 shall be disengaged.
- 32 35. The system shall have power-limited circuitry and class B wiring. Wiring terminal blocks  
33 will be removable and accept #18 - #12 AWG wire. Audio output voltage shall be  
34 selectable for 1V nominal line level, 25V, 70.7V, or 100V. The voice (live microphone or  
35 recorded message) frequency response shall be 275 Hz – 6.5 kHz +/- 2.4 dB,  
36 background music frequency response shall be 100 Hz - 15 kHz +/- 2.4 dB. The signal  
37 to noise ratio shall be better than 65 dB, dynamic range shall be better than 65 dB, total  
38 harmonic distortion shall be less than 1%.
- 39 36. A microphone shall be located within the main FACP.
- 40 37. For all additional microphones mounted remotely from the voice evacuation control unit,  
41 the circuit shall be supervised and activate a trouble signal if the circuit is disturbed.
- 42
- 43 C. Acceptable Manufacturer / Model: **Farenhyt model IFP-1000ECS** analog addressable fire  
44 alarm control panel with integrated emergency communication (voice evacuation) with  
45 microphone inside panel and with SD (Hochiki protocol) addressable devices. Provide with  
46 Farenhyt model 5815XL SLC expanders as required (up to 7 expanders per panel - 8 loops  
47 total). **No exceptions.**

48

49 2.5 IGSM DIGITAL COMMUNICATOR MONITORING SERVICE PROVISIONS

50

- 51 A. Provide a Honeywell Power Products model IPGSM-4G, or equivalent, Internet GSM Digital  
52 Cellular Fire Alarm Communicator (iGSM) complete with a 7AH battery, AlarmNet SIM card,  
53 and external/remote cellular antenna and antenna cabling installed per the manufacturer's  
54 recommendations. The iGSM shall be housed in a red cabinet 14.875" H x 12.75" W x 3.0" D  
55 that must be mounted in the same room and within 20 feet of the fire alarm control panel digital  
56 communicator and requires an internal battery providing a minimum of 24-hours of backup

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- 1 operation capability. Note that communicators utilizing G2 grade service are not equivalent or  
2 acceptable because G2 grade services are currently scheduled to be phased out. G3 or G4  
3 grade service in the minimum acceptable protocol.  
4
- 5 B. The iGSM works over an Ethernet 10/100 Base network connection, which may use dynamic  
6 (DHCP), public, or private static IP addressing and Internet service via WAN, LAN, fiber optic,  
7 DSL modem, or cable modem. All equipment used for the IP connection (such as the router,  
8 switch, etc.) must be powered from an un-switched branch circuit with UPS standby power.  
9 The iGSM shall allow central station monitoring through any monitoring company providing  
10 AlarmNet proprietary service. This allows for monitoring with service other than the traditional  
11 two telephone company service dedicated analog POTS lines.  
12
- 13 C. The iGSM works with the system digital communicator through dialer capture by connecting  
14 directly to the standard primary and secondary telephone ports of the digital communicator; it  
15 then simulates and replaces the telephone lines. This device is suitable for connection to any  
16 Contact-ID digital communicator and communicates in dual mode by using cost-effective IP  
17 connectivity as primary, and automatically switches to cellular communications if the Internet  
18 connection goes down. This provides multi-path redundancy and meets UL864 9th edition  
19 requirements for a primary fire alarm communicator.  
20
- 21 D. When an event (Alarm, Supervisory, or Trouble) occurs, the digital communicator will go off-  
22 hook to dial the central station. The iGSM Dialer Capture Module detects the off-hook condition  
23 and provides the digital communicator with a dial tone signal. When the digital communicator  
24 detects the dial tone, it begins dialing the central station. The Dialer Capture Module stands  
25 by for a three-second delay for the number dialing to complete and returns a handshake signal  
26 to the digital communicator. The digital communicator then sends the contact ID reports to the  
27 Dialer Capture Module, which in turn sends an acknowledge signal after the report is  
28 successfully received. When all report codes are sent, the digital communicator will go on-  
29 hook. The Dialer Capture Module then sends the contact ID report codes to the iGSM  
30 communications module, which transmits the messages to the central station over the Internet  
31 and/or the GSM network.  
32
- 33 E. The IP and GSM connections shall be tested every day using Quality of Service diagnostics  
34 via AlarmNet, which supply vital information including when message was received, battery  
35 voltage, input voltage, signal strength, and message path.  
36
- 37 F. The fire alarm contractor shall provide all activation circuits and the digital communicator and  
38 iGSM shall ready for programming by the monitoring service selected by the Owner. The fire  
39 alarm contractor shall coordinate with and provide all necessary information to the  
40 representative of the service selected by the Owner.  
41
- 42 G. Surge protectors for Ethernet network runs rated up to Category 6A and operating at up to 10-  
43 Gigabit data rates. Each module shall protect up all four pairs using hybrid design multi-stage  
44 SAD technology which shall automatically reset to protect against multiple surges, Ethernet  
45 surge protectors shall be Ditek DTK-CAT6A series as follows:  
46 1. DTK-110RJC6APOE with 110 to RJ-45 connections with PoE.  
47 2. DTK-110C6APOE with 110 to 110 connections with PoE.  
48 3. DTK-110RJC6A with 110 to RJ-45 connections without PoE.  
49 4. DTK-110C6A with 110 to 110 connections without PoE.  
50
- 51 H. The Owner shall select the monitoring service, remote supervising station, or central station  
52 and be responsible for hook-up and monthly monitoring costs. For central station service, the  
53 installation shall be certificated or placarded by the selected central station.  
54

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1 2.6 NETWORK GRADE CABLING FOR DIGITAL COMMUNICATOR SERVICE  
2

- 3 A. Provide two parallel runs of Category 5e minimum Ethernet network grade cabling as required  
4 to support the digital communicator systems in this specification section. Extend from the drop  
5 location inside the digital communicator panel to the to the building Telco Demarcation  
6 Point/Main Distribution Frame location and terminate at each end in a surface mount block.  
7 Coordinate Telco or Data termination location with the owner prior to installation. The  
8 data/telephone signal cabling shall be NEC type CMP cable, TX5500 Category 5e UTP cable,  
9 Panduit part number PUP5504BU-UY with a Blue plenum rated jacket, 23 AWG solid bare  
10 copper conductor, 4 pair with separator or equivalent. Modular RJ-45 jack inserts shall be to  
11 be Panduit part number NKP5E88MBU, blue color, Category 5e NetKey Keystone modular  
12 jacks, or equivalent. Surface Mount Housings shall be Panduit part number NK2BXIW-A, or  
13 equivalent, "biscuit blocks" designed to hold two NetKey Keystone modules. Cable runs shall  
14 be tested to verify Category 5e performance.  
15

16 2.7 INTERFACE FOR OPTIONAL PUBLIC ADDRESS INPUT  
17

- 18 A. The system shall include a line level audio input that has the lowest priority, below any fire  
19 alarm function, and may be used for connect to a telephone paging or similar system. The  
20 paging system is not included in the scope of work for this section. When used, the audio  
21 signal shall be interfaced through a low priority input to all the interior Fire Detection and Alarm  
22 System speakers, which would include corridors, classrooms, offices, and special use areas.  
23

24 2.8 FIRE ALARM PLAN  
25

- 26 A. Provide adjacent to the fire alarm control panel and adjacent to the fire alarm remote  
27 annunciator a plan view of all building areas covered by the fire alarm system meeting the  
28 following requirements:  
29 1. Framed and secured to the wall and plan covered with clear acrylic panel, Space Age  
30 Electronics Inc. model SSU52003 Display Frame or equivalent.  
31 2. Size plan to clearly show all required information.  
32 3. Orient building to place the entry nearest to control panel at the bottom of plan.  
33 4. "YOU ARE HERE" indicator with arrow.  
34 5. Logical alarm zones.  
35 6. Room names and numbers. (Verify with Owner)  
36 7. Show each initiating device with symbol and identification number as programmed in  
37 panel.  
38 8. Do not show indicating (audio/visual) devices.  
39 9. Symbol legend.  
40 10. True north arrow.  
41 11. Scale indicator.  
42

43 2.9 FIRE ALARM REMOTE ANNUNCIATOR [FARA]  
44

- 45 A. Provide a wall mount remote alphanumeric display annunciator with flush mount backbox  
46 where indicated on drawings.  
47  
48 B. Provide an 80-character minimum back-lit Liquid Crystal Display (LCD). The display and  
49 controls shall perform the same functions as the display and controls located on the fire alarm  
50 control panel. Fire alarm, supervisory alarm, trouble, and maintenance alert conditions with  
51 identifiers shall be displayed. The chronological event history of alarm and trouble conditions  
52 may be displayed.  
53  
54 C. Provide with key lock enable/disable operation of system controls/switches, key alike to FACP.  
55

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1 D. Provide a keypad for control functions, two buttons for scrolling data on the LCD, four front  
2 panel switches for RESET, ALARM SILENCE, TROUBLE SILENCE, and DRILL/ALL CALL, a  
3 local sounding device, and four LEDs for Normal, Fire Alarm, Supervisory Alarm, and Trouble.  
4

5 E. Shall be Farenhyt model RA-1000R or equivalent.  
6

7 2.10 STROBE SIGNAL POWER EXPANDERS [SPX]  
8

9 A. Provide as required additional power supplies for strobe notification appliance circuits or as a  
10 remote power supply.  
11

12 B. For all power supplies serving strobe signals, the interface with the main fire alarm control  
13 panel shall carry a signal to synchronize the flash timing of all interior strobes in the system in  
14 a code 3 pattern at 1 Hz.  
15

16 C. Each power supply shall individually report a trouble condition including battery charging  
17 failure, battery failure, NAC loss, AC power loss (delay acceptable), power brownout, or  
18 ground fault detection.  
19

20 D. A trouble condition on an external power supply shall not interfere with normal operation the  
21 rest of the system.  
22

23 E. In the event of a trouble condition, each power supply shall provide location annotated  
24 individual point supervisory incident reporting to the main fire alarm control panel. This may  
25 be accomplished using one addressable module per power supply or via power supplies with  
26 multiplexed system bus communication or an integrated addressable interface.  
27

28 F. The signal power expander supply/charger and batteries shall supply power limited 24 VDC  
29 operating and emergency power. The charger shall be capable of maintaining batteries in a  
30 fully charged state without damage and of bringing batteries from a fully discharged to a fully  
31 charged state within 48 hours of normal operation. Provide sufficient battery capacity for  
32 operation without AC power for twenty-four hours of normal supervision and five minutes alarm  
33 operation at the end of this period; include a 20% safety factor in battery calculations to ensure  
34 adequate performance for the service life of batteries.  
35

36 G. Each signal power expander shall have an engraved plastic nameplate permanently attached  
37 indicating the devices device identification number as documented. Labels shall be 1/16" thick  
38 two-ply black/white acrylic sheet engraving stock with all sides beveled.  
39

40 H. Conduit shall enter the equipment backbox only where conduit entry is specified by the  
41 manufacturer.  
42

43 I. Provide as required Silent Knight model Firepower 5495 or 5499 distributed power module(s),  
44 Wheelock Powerpath model PS-24-8MC signal power expanders with built-in sync modules,  
45 or BPS10, Farenhyt model 5496 or RPS-1000 intelligent power module(s), or equivalent.  
46

47 2.11 VOICE EVACUATION SPEAKER SIGNAL POWER EXPANDERS  
48

49 A. Provide as required additional power supplies for voice evacuation speaker notification  
50 appliance circuits, for strobe notification appliance circuits, or as a remote power supply.  
51

52 B. For all power supplies serving strobe signals, the interface with the main fire alarm control  
53 panel shall carry a signal to synchronize the flash timing of all interior strobes in the system in  
54 a code 3 pattern at 1 Hz.  
55



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- 1 C. Each power supply shall individually report a trouble condition including battery charging  
2 failure, battery failure, NAC loss, AC power loss (delay acceptable), power brownout, or  
3 ground fault detection.  
4
- 5 D. A trouble condition on an external power supply shall not interfere with normal operation the  
6 rest of the system.  
7
- 8 E. In the event of a trouble condition, each power supply shall provide location annotated  
9 individual point supervisory incident reporting to the main fire alarm control panel. This may  
10 be accomplished using one addressable module per power supply or via power supplies with  
11 multiplexed system bus communication or an integrated addressable interface.  
12
- 13 F. Each evacuation signal power expander supply/charger and batteries shall supply power  
14 limited 24 VDC operating and emergency power. The charger shall be capable of maintaining  
15 batteries in a fully charged state without damage and of bringing batteries from a fully  
16 discharged to a fully charged state within 48 hours of normal operation. Provide sufficient  
17 battery capacity for operation without AC power for twenty-four hours of normal supervision  
18 and five minutes alarm operation at the end of this period; include a 20% safety factor in battery  
19 calculations to ensure adequate performance for the service life of batteries.  
20
- 21 G. Each signal power expander shall have an engraved plastic nameplate permanently attached  
22 indicating the devices device identification number as documented. Labels shall be 1/16" thick  
23 two-ply black/white acrylic sheet engraving stock with all sides beveled.  
24
- 25 H. Conduit shall enter the equipment backbox only where conduit entry is specified by the  
26 manufacturer.  
27
- 28 I. Provide audio amplifiers as required Farenhyt model ECS-50W, ECS-DUAL50W, or ECS-  
29 125W voice evacuation units as required, or equivalent.  
30

31 2.12 EMERGENCY VOICE/ALARM SYSTEM (VOICE EVACUATION) STROBES, SPEAKERS, AND  
32 SPEAKER/STROBES  
33

- 34 A. Provide where indicated on plans an emergency voice/alarm communications service system.  
35 The system shall automatically provide for speakers to broadcast a pre-recorded voice  
36 message operation on alarm that shall include an audible signal temporal pattern (Code 3)  
37 meeting ANSI S3.41 standards.  
38
- 39 B. The system shall also provide for manual voice capability by keying the microphone, which  
40 shall override the pre-recorded message. The system shall be capable of emergency voice  
41 announcements at any time, whether the FACP is in alarm or not. Strobe operation shall be  
42 from the FACP or SPX and synchronized. Strobe operation shall not be interrupted by  
43 microphone activation.  
44
- 45 C. Speakers shall be flush mount and shall feature a high fidelity 400 to 4,000 Hz frequency  
46 response with 1/4 to 2-watt audio taps, 25 or 70 VRMS (field adjustable) providing  
47 approximately 77 to 90 dB @ 10 feet, varies by model. Horn Loudspeakers frequency  
48 response shall be 400 – 14,000 Hz.  
49
- 50 D. Audible signals shall be tapped to provide at least 15 dB above ambient sound levels  
51 measured at 5 feet above the floor in the occupied area. Audible/Visual Signals shall conform  
52 to ADA standards. Furnish and install where shown on the drawings or as required per NFPA  
53 and any local, state, federal codes, or laws. Notification appliance circuits serving employee  
54 work areas shall be initially installed with a minimum of 20% spare capacity for visible  
55 notification appliances to facilitate future accommodation of hearing impaired employees.  
56 Strobe intensity (candela output) and audible decibel level shall be sized for the room size and

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1 area of coverage per ADA and NFPA/ANSI standards. Signal housings and grilles shall be  
2 white in color. Audible signals (strobes and strobe speakers) shall be imprinted 'FIRE' and the  
3 strobe lens shall be clear. All interior strobe flashing shall be synchronized.  
4

- 5 E. Provide synchronization control such that all strobe circuits are synchronous, for all notification  
6 appliance circuits - System Sensor SpectrAlert Advance model MDL3W synchronization  
7 modules or equivalent. Note that signal appliances that can synchronize on a single circuit,  
8 but not across all circuits are not acceptable.
- 9 1. Ceiling Mount Strobe Only - System Sensor SpectrAlert Advance model SCW candela  
10 range 15/30/75/95/100 or model SCWH high candela range 135/150/177 or 185 candela  
11 or equivalent. Flush ceiling mounting requires support and a 1.5" minimum depth backbox  
12 in 4" octagon, double gang, or 4" square size. For drop ceiling installation, include a Bosch  
13 model SSB-4 or equivalent ceiling support bridge.
  - 14 2. Ceiling Mount Speaker Only, select models to provide intelligibility as required per area.  
15 Shall be 6.5" minimum to 8" diameter cone speakers, UL 1480 listed fire-protective  
16 signaling devices with a line supervision capacitor. Speakers shall be designed for flush  
17 mounting with white grille and feature increased wattage, approximately 1/2 up to 5 watt  
18 audio transformer taps; AMK 6.5" 25-watt rated loudspeaker coaxial enclosure with round  
19 white grille and tile bridge model SA615-EV-25v (25-v) or SA615-EV-70v (70-v), Quam  
20 8" 20-watt rated loudspeakers with concentric mount hard fiber cone models: UL-7 round  
21 baffle (25-v), UL-5 round baffle (70-v), U22/25 2' x 2' tile replacement with integrated back  
22 box (25-v), and U22/70 2' x 2' tile replacement with integrated back box (70-v), and TOA  
23 8" with round white grille 10-watt rated speaker, 5 watt transformer, 70.7 V and 25 V  
24 model PC-580RU with HY-BB580 Back Can and Q-HY-TB2 tile bridge, or equivalents.
  - 25 3. Ceiling Mount Speaker Strobes, small area – System Sensor SpectrAlert Advance model  
26 SPSCW low candela range/high fidelity, model SPSCWV low candela range/high decibel,  
27 or model SPSCWVH high candela range/high decibel. Low candela range  
28 15/30/75/95/100 or 115, high candela range 135/150/177 or 185 candela, 1/4 up to 2-  
29 watt audio, flush mount with round white grille and trim plate – or equivalent. Semi-flush  
30 mounting requires support and a 4" square x 2.125" deep backbox. For drop ceiling  
31 installation, include a Bosch model SSB-4 or equivalent ceiling support bridge.
  - 32 4. Wall Mount Strobe Only - System Sensor SpectrAlert Advance model SW candela range  
33 15/30/75/95/100/115 or model SWH high candela range 135/150/177/185 candela or  
34 equivalent. Flush wall mounting requires support and a 1.5" minimum depth backbox in  
35 4" octagon, double gang, or 4" square size.
  - 36 5. Wall Mount Speaker Only, System Sensor SpectrAlert Advance model SPW high fidelity  
37 or model SPWV high decibel 1/4 up to 2-watt audio, flush mount with rectangular white  
38 grille and trim plate – or equivalent. Semi-flush mounting requires a 4" square x 2.125"  
39 deep backbox.
  - 40 6. Wall Mount Speaker Strobes – System Sensor SpectrAlert Advance Model SPSW low  
41 candela range/high fidelity, Model SPSWH high candela range/high fidelity, or Model  
42 SPSWV low candela range/high decibel. Low candela range 15/30/75/95/100 or 115,  
43 high candela range 135/150/177 or 185 candela, 1/4 up to 2-watt audio, flush mount with  
44 rectangular white grille – or equivalent. Semi-flush mounting requires a 4" square x 2.125"  
45 deep backbox.
  - 46 7. Weatherproof exterior surface wall mount speaker strobe with audio output 1/4 up to 2  
47 watts and visual output shall be set at 75 candela per UL 1638 and, with square white  
48 grille. Shall be System Sensor SpectrAlert Advance model SPSWK complete with wall  
49 mount plastic weatherproof back box featuring 3/4-inch top and bottom conduit entries  
50 and 3/4-inch knock-outs at the back and a screw-in NPT plug with an O-ring gasket for a  
51 watertight seal or equivalent.

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1 8. Exterior WATERFLOW ALARM, provide a weatherproof exterior surface wall mount  
2 speaker strobe with audio output 1/4 up to 2 watts and visual output shall be set at 75  
3 candela per UL 1638 and, with square white grille. Shall be System Sensor SpectrAlert  
4 Advance model SPSWK complete with wall mount plastic weatherproof back box  
5 featuring 3/4-inch top and bottom conduit entries and 3/4-inch knock-outs at the back and  
6 a screw-in NPT plug with an O-ring gasket for a watertight seal or equivalent. Also,  
7 provide a weatherproof sign approximately 12" wide x 6" high, white with red letters  
8 reading, "WATERFLOW FIRE ALARM SIGNAL". Configure fire alarm system to activate  
9 this strobe signal on waterflow alarm only. Center signal and sign directly over Fire  
10 Department Connection (Siamese Port).

11  
12 F. Provide where indicated on plans or as required protective wire Device Guards. Minimum of  
13 10 gauge welded steel wire constriction with a corrosion resistant finish. To be Space Age  
14 Electronics, Inc. models: SSU03503 HSG Wall Mount Device Guard, SSU03504 FDG Flush  
15 Wall Mount Device Guard, or SSU03500 Ceiling Mount Device Guard as required or  
16 equivalent.

17  
18 2.13 MANUAL PULL STATIONS

19  
20 A. Manual Fire Alarm Pull Stations shall be provided at all exits and where indicated on the  
21 drawings. Each addressable manual pull station shall incorporate a transmitter and receiver  
22 having a unique identification and status reporting capability to the control panel.

23  
24 B. Each manual station shall be attached to a SLC and be set to a distinct address and internal  
25 identification code, which the control panel shall use to identify the location, status, and type  
26 of device.

27  
28 C. Manual Stations shall be double action and designed for semi-flush mounting on a standard  
29 electrical box. The station shall be constructed of hi-impact red molded Lexan or aluminum  
30 with instructions for station operation in raised white letters. The word "FIRE" shall appear on  
31 the manual station in letters one half inch in size or larger. Manual stations shall meet  
32 accessibility requirements and be operable by one hand with a five pound or less pull force.

33  
34 D. Each manual station shall be labeled in a visible area with its device hardware address utilizing  
35 self-laminating, flexible vinyl film, non-smear, machine printed labels.

36  
37 E. Stations shall provide a visible indication they have been operated. Stations shall require a  
38 key to be returned to normal condition, key alike to FACP. It is the responsibility of the Fire  
39 Alarm Contractor to ensure that the pull stations provided allow key reset with the station  
40 protector frame/spacer in place.

41  
42 F. Provide a tamper proof clear Lexan shield with horn station protector over each pull station.  
43 When the shield is lifted, a continuous audible warning horn shall be activated. Lowering and  
44 realigning the shield shall silence the horn. The horn shall provide 85 dB at 10 feet and be  
45 powered by a standard 9-volt alkaline replaceable battery. Shall be a Stopper II Manual Station  
46 Protector with horn as manufactured by Safety Technology International, Inc. Waterford,  
47 Michigan, part number STI 1100 flush mount or STI 1130 for surface mount backboxes as  
48 required. For potentially wet areas, provide a similar cover with weather gasket, part number  
49 STI 1150 flush mount or STI 1155 for surface mount backboxes.

50  
51 G. For mullion channel mount pull station locations, provide a custom made 3/16" thick aluminum  
52 backing plate 7.5" wide x 10.5" high with .5" radius canners and smooth edges. Securely attach  
53 the backing plate to the mullion channel of the framed glass wall and mount the pull station  
54 and station protector.

55  
56 H. Farenhyt model SD500/PSDA or equivalent.

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1  
2 2.14 SMOKE DETECTORS  
3

- 4 A. Analog spot type Photoelectric Smoke Detectors shall be provided where indicated on the  
5 drawings. The intelligent photoelectric detectors shall be resettable from the FACP. The  
6 detectors shall operate by the photoelectric light-scattering principal using an LED light source  
7 to measure smoke density and shall, on command from the control panel, send data to the  
8 panel representing the analog level of smoke density. The detector shall provide automatic  
9 sensitivity drift compensation to provide long term stability and reliability. The detector shall  
10 also provide a maintenance alert feature whereby the detector shall initiate a trouble condition  
11 should the units' sensitivity approach the outside limits of the normal sensitivity window. In  
12 addition, the detector shall also be provided with extensive RF and EMF noise immunity.  
13 Detectors shall withstand wind gusts to 4,000 feet per minute without false alarming or  
14 initiating a trouble indication.  
15
- 16 B. The detector shall provide a calibrated test method whereby they will simulate an alarm  
17 condition and report that condition to the control panel. Such a test may be initiated at the  
18 detector itself, by activating a magnetic test switch, or may be activated remotely on command  
19 from the control panel.  
20
- 21 C. Each smoke detector shall be attached to a SLC and set to a distinct address and internal  
22 identification code, which the control panel shall use to identify the location, status, and type  
23 of device.  
24
- 25 D. The detectors shall provide dual alarm and power/status LEDs. Status LEDs shall flash under  
26 normal conditions, indicating that the detector is operational and in regular communication  
27 with the control panel. Both LEDs may be placed into steady illumination by the control panel,  
28 indicating that an alarm condition has been detected and verified.  
29
- 30 E. The detector shall be semi-flush ceiling mounted and be provided with modular detector head  
31 with twist-lock base. Detectors shall be provided in smooth attractive white finish, and be  
32 sealed against dirt, vermin, and backpressure. Detectors shall be provided with fine mesh  
33 insect/contaminate screen. Detectors shall be UL listed with respective control panel.  
34
- 35 F. Each detector head shall be labeled in a visible area with its device hardware address utilizing  
36 self-laminating, flexible vinyl film, non-smear, machine printed labels.  
37
- 38 G. Analog smoke detectors shall communicate analog values using a digital protocol to the  
39 control panel for the following functions:  
40 1. Automatic compliance with NFPA 72 standards for detector sensitivity testing  
41 2. Drift compensation to assure detector is operating correctly  
42 3. Maintenance alert when a detector nears the trouble condition  
43 4. Trouble alert when a detector is out of tolerance  
44 5. Alert control panel of analog values that indicate fire.  
45
- 46 H. Except for temporary testing, smoke detectors shall not be installed until the building is ready  
47 for occupancy and cleaned as dust free as possible.  
48
- 49 I. Farenhyt model SD505-PHOTO with SD505-6AB 6" base or equivalent.  
50

51 2.15 AIR SAMPLING SMOKE DETECTION SUB-SYSTEM (PROVIDE AT NORTH OAKS MIDDLE IN  
52 SYSTEM IN GYM1 ROOM 085 SCHOOL UNDER THE BASE BID)  
53

- 54 A. Provide a semi-flush wall mounted air sampling detector control head with laser scanner, four  
55 input tube connections, centrally mounted LCD programming module, scanner display, and  
56 seven relays. Provide a single zone power supply with housing and batteries. Provide UL 1887

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1 listed 3/4" CPVC imprinted smoke detector piping, fittings, polyethylene ceiling fitting kits and  
2 miniature sampling points. Calculate to factory specification and drill sampling holes in the  
3 piping and sampling points per manufacturer requirements. Label all sampling points with the  
4 manufacturers' decals and label all sampling tube at 4-foot intervals. Mount air sampling  
5 detector control head as shown on plans, semi-flush on wall and conceal sample tubing in  
6 wall.  
7

- 8 B. Provide one (1) VESDA model VLS-214 LaserSCANNER air sampling detector control head  
9 with LCD Programmer and Scanner Display Module, 7 Relays, or equivalent.  
10  
11 C. Provide one (1) VESDA model VPC-1000US-120 single zone power supply with housing or  
12 equivalent.  
13  
14 D. Provide two (2) VESDA model VBT-012 12 VDC, 12 amp/hour sealed batteries or equivalent.  
15  
16 E. Provide as required VESDA CPVC 3/4" pipe and fittings as required – VP-210 pipe, VP-ELB-  
17 90 elbows, VP-COUP couplings, VP-UNION unions, and VP-EC end caps or equivalent.  
18  
19 F. Provide four (4) complete 18" drop minimum ceiling sample point assemblies: VESDA VP-  
20 TEE-FPT tee kit, E700-SP polyethylene tubing, E700-CAP KIT, and E700-SP miniature  
21 sampling point or equivalent for drop ceiling installation of occupied space sampling points.  
22  
23 G. Provide labels for each sampling point - VESDA E700-SP-DCI wrap around style for below  
24 floor and above ceiling points, E700-SPAR label for ceiling mount exposed miniature sampling  
25 points, and E700-SP-DCL-PIPE at 4 foot intervals on all sampling pipes.  
26  
27 H. Provide addressable monitor modules with end of line devices as required, program as zoned  
28 fire alarm detection and activate evacuation alarms and safety function shut down of all air  
29 handlers in data center zone.  
30

31 2.16 OPEN-AREA SMOKE IMAGING DETECTION (OSID) SYSTEM (PROVIDE AT NORTH OAKS  
32 MIDDLE SCHOOL IN SYSTEM IN GYM1 ROOM 085 UNDER THE ALTERNATE)  
33

- 34 A. Provide an Open-area Smoke Imaging Detection system using advanced dual wavelength  
35 particle detection projected beams and CMOS imaging chip optical technology for early  
36 warning smoke detection.  
37  
38 B. A single optical imaging array (OSID Imager) shall detect with a wide viewing angle up to  
39 seven Emitters to provide a system that measures the level of smoke entering beams of  
40 synchronized ultraviolet (UV) and infrared (IR) light pulses projected over an area of  
41 protection.  
42  
43 C. The system shall include optical filtering, high-speed image acquisition and intelligent software  
44 algorithms. Status information (Fire Alarm, Trouble, and Power) shall be communicated  
45 through the Imager via Status LEDs, and dedicated Trouble and Alarm relays. Specific Trouble  
46 (Fault) conditions are identified through coded flashes of the Trouble LED.  
47  
48 D. The OSID system shall consists of up to seven Emitters located along the perimeter of the  
49 protected area, and an Imager mounted opposite. Each component shall be mounted directly  
50 to the surface or secured with the supplied mounting brackets. Emitter / Imager dimensions  
51 8.19" wide. x 5.35" high. x 3.78" deep, weights: Emitter – 1.18 lbs, Imager – 1.34 lbs.  
52  
53 E. In gymnasiums, provide a steel cage Wire Guard over each imager and emitter to protect from  
54 vandalism and accidental damage. The cage shall be designed to not interfere with the  
55 operation of the protected unit and shall be constructed of 9-gauge galvanized steel rod with  
56 a corrosion resistant polyester powder coating.

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- 1  
2 F. Provide as required and as indicated on the project plans:  
3 1. Imagers: Xtralis model OSI-90 imager with an 80° horizontal x 48° vertical field of view,  
4 39' to 223' detection range (Distances measured for the Center Field of View of the  
5 Imager), and support for up to 7 emitters.  
6 2. Emitters: Xtralis model OSE-HPW, high power, wired, emitter current consumption  
7 800µA at 24 VDC.  
8 3. Wire Guards: Xtralis model OSID-WG, provide one over each imager and emitter.  
9 4. Installation Kits: Xtralis model OSID-INST.
- 10  
11 G. Provide an addressable monitor module, with end of line device as required, to report the  
12 status of the Trouble and Alarm relays.  
13

14 2.17 HEAT (THERMAL) DETECTORS  
15

- 16 A. Analog spot type combination rate of rise and fixed thermal detectors shall be provided where  
17 indicated on the drawings. The intelligent thermal detectors shall connect via two wires to an  
18 intelligent control panel loop and be resettable from the FACP. The detectors shall use dual  
19 electronic thermostats to measure temperature levels in its chamber and provide fast response  
20 to rapid rate of rise in temperature. The detector shall, on command from the control panel,  
21 send data to the panel representing the analog temperature level.  
22
- 23 B. The fixed temperature element shall be rated at 135° Fahrenheit for areas where ambient  
24 temperatures do not exceed 100° Fahrenheit, and 200° Fahrenheit for areas where the  
25 temperature does not exceed 150° Fahrenheit.  
26
- 27 C. The rate of rise element shall operate when the rate of temperature rise exceeds 15°  
28 Fahrenheit per minute.  
29
- 30 D. The detectors shall provide a calibrated test method whereby they will simulate an alarm  
31 condition and report that condition to the control panel. Such a test may be initiated at the  
32 detector itself, by activating a magnetic switch, or may be activated remotely on command  
33 from the control panel.  
34
- 35 E. Each thermal detector attached to a SLC and shall be set to a distinct address and internal  
36 identification code, which the control panel shall use to identify the location, status, and type  
37 of device.  
38
- 39 F. The detectors shall provide dual alarm and power/status LEDs. Status LEDs shall flash under  
40 normal conditions, indicating that the detector is operational and in regular communication  
41 with the control panel. Both LEDs may be placed into steady illumination by the control panel,  
42 indicating that an alarm condition has been detected.  
43
- 44 G. The detector shall be semi-flush ceiling mounted and be provided with modular detector head  
45 with twist-lock base. Detectors shall be provided in smooth attractive white finish. Detectors  
46 shall be UL listed with respective control panel.  
47
- 48 H. Each detector head shall be labeled in a visible area with its device hardware address utilizing  
49 self-laminating, flexible vinyl film, non-smear, machine printed labels.  
50
- 51 I. Farenhyt model SD505-HEAT with SD505-6AB 6" base or equivalent.  
52

53 2.18 ISOLATOR MODULE  
54

- 55 A. Provide isolator modules in each SLC loop placed between every 25 or less devices. The  
56 isolator modules shall isolate wire-to-wire short circuits on a SLC loop, which shall limit the

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1 number of other modules, or detectors that are incapacitated by the short circuit fault. If a wire-  
2 to-wire short occurs, the isolators on either side of the short shall automatically open-circuit.  
3 When the short is corrected, the isolators shall automatically re-connect the isolated section  
4 of the loop.  
5

6 B. The isolator module shall not require any address-setting, although each isolator may  
7 electrically reduce the capacity of the SLC loop by one detector or module address. The  
8 isolator module may be built into selected detector bases or mount in a standard 4-inch  
9 electrical box. Provide an LED, which shall flash to indicate that the isolator is operational and  
10 shall illuminate steadily to indicate that a short has been detected and isolated.

11  
12 C. Farenhyt model SD500-LIM isolator module or SD505-6IB Isolator base or equivalent.  
13

14 2.19 MONITOR MODULE [MM]  
15

16 A. Addressable Monitor Modules shall be provided where an interface is required to supervise  
17 wiring and monitor contact alarm devices. Monitor modules shall be mounted in a 4-inch  
18 square electrical box with cover.  
19

20 B. Each monitor module shall be set to a distinct address and internal identification code on the  
21 SLC, which the control panel shall use to identify the location, status, and type of device. A  
22 status/power LED shall be provided which shall flash under normal conditions, indicating that  
23 the monitor module is operational and in regular communication with the control panel. The  
24 status LED shall illuminate steady upon detection of an alarm condition.  
25

26 C. Each monitor module shall provide for automatic functional testing of the device from the main  
27 control panel and the module shall reset when the panel in reset. Results of the test shall then  
28 be indicated on the LCD display.  
29

30 D. Each monitor module shall have an engraved plastic nameplate permanently attached  
31 indicating the devices function and control panel device identification number. Labels shall be  
32 1/16" thick two-ply black/white acrylic sheet engraving stock with all sides beveled.  
33

34 E. Monitor Module to supervise an IDC zone interface for compatible 2 or 4-wire circuit powered  
35 24 volt normally open conventional smoke or heat detectors - Farenhyt model SD500-SDM  
36 Zone Module or equivalent.  
37

38 F. Monitor Module to supervise an IDC zone interface for normally open dry-contact, 2-wire, or  
39 4-wire type conventional initiating devices, which may be non-powered or powered by a  
40 separate circuit - Farenhyt model SD500-AIM Addressable Input Module, SD500-MIM Mini-  
41 Input Module or equivalent with end of line devices as required.  
42

43 2.20 CONTROL MODULE [CM]  
44

45 A. Addressable Signal Control Modules shall be provided where required to provide a NAC  
46 control interface for fire alarm signal functions. Control Modules shall be mounted in a 4-inch  
47 square electrical box with cover.  
48

49 B. Power to operate the relay actuation shall be provided by the SLC. Each control module shall  
50 be operated by events as programmed in the control panel (i.e. operate on alarm condition).  
51 Each control module shall feature a status LED to indicate the module is operational and when  
52 the relay is energized.  
53

54 C. Each control module shall be set to a distinct address and internal identification code on the  
55 SLC, which the control panel shall use to identify the location, status, and type of device.  
56

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1 D. Each control module shall have an engraved plastic nameplate permanently attached  
2 indicating the devices function and control panel device identification number. Labels shall be  
3 1/16" thick two-ply black/white acrylic sheet engraving stock with all sides beveled.  
4

5 E. Control Modules for control of NAC interface fire alarm functions - Farenhyt model SD500-  
6 ANM Addressable Notification Module or equivalent.  
7

8 2.21 CONTROL RELAY [CR]  
9

10 A. Control Relays (Addressable Control Modules) shall be provided where required to provide a  
11 control interface for fire alarm system functions. Control relays shall be mounted in a 4-inch  
12 square electrical box with cover.  
13

14 B. Power to operate the relay actuation shall be provided by the SLC. Each control relay shall be  
15 operated by events as programmed in the control panel (i.e. operate on general alarm,  
16 conditional on the detection of an alarm condition in one or more designated adjacent area  
17 smoke detectors, or other conditional operations such as elevator recall). Each control module  
18 shall feature a status LED to indicate the module is operational and when the relay is  
19 energized.  
20

21 C. Each control relay shall be set to a distinct address and internal identification code on the SLC,  
22 which the control panel shall use to identify the location, status, and type of device.  
23

24 D. Each control relay shall have an engraved plastic nameplate permanently attached indicating  
25 the devices function and control panel device identification number. Labels shall be 1/16" thick  
26 two-ply black/white acrylic sheet engraving stock with all sides beveled.  
27

28 E. Addressable Control Relays shall be located within three feet of the controlled device or unit  
29 and the relay output (load) wiring shall be configured as a fail-safe Fire Safety Control Function  
30 circuit.  
31

32 F. Each Fire Safety Control Function circuit controlled device shall be configured such that when  
33 the fire alarm system safety control function circuit is re-energized, by the fire alarm control  
34 panel, the device shall return to normal operation (e.g. re-start or be ready to re-start) without  
35 a need for manual or environmental control system intervention.  
36

37 G. Addressable Control Relays shall be used to directly control only pilot duty loads, those not  
38 exceeding 0.5 amps, up to 120 volts, and without transient voltage spikes. For all applications  
39 exceeding these parameters also provide with an Auxiliary Relay to handle the load.  
40

41 H. Control Relays for fire alarm functions, shall include SPDT dry contacts (form C) relay -  
42 Farenhyt model SD500-ARM Addressable Relay Module or equivalent.  
43

44 2.22 AUXILIARY RELAY [XR]  
45

46 A. Provide a hardwired Auxiliary Relay paired with the addressable Control Relay for all fire safety  
47 control function applications in which the load exceeds 0.5 amps, 120 volts, or with high  
48 transient voltage spikes.  
49

50 B. Each relay shall be mounted in a surface mount red metal enclosure with conduit knockouts.  
51 Relays shall be UL recognized and rated for ten million mechanical operations.  
52

53 C. Single pole standard duty Auxiliary Relays shall be operated by a multi-voltage coil (24 VDC,  
54 24 VAC, 120 VAC, or 230 VAC), feature SPDT dry Form C contacts rated 10 Amps @ 120  
55 VAC, and a status LED to indicate that the relay is energized. Provide Air Products & Controls



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1 model MR-101/C/R, multi-voltage coil, control relay with red metal enclosure or approved  
2 equivalent.  
3

4 D. Double pole standard duty Auxiliary Relays shall be operated by a multi-voltage coil (24 VDC,  
5 24 VAC, 120 VAC, or 230 VAC), feature DPDT dry Form C contacts rated 10 Amps @ 120  
6 VAC, and a status LED to indicate that the relay is energized. Provide Air Products & Controls  
7 model MR-201/C/R, multi-voltage coil, control relay with red metal enclosure or approved  
8 equivalent.  
9

10 E. Double pole heavy duty Auxiliary Relays shall be operated by a 24 VDC or a 120 VAC coil  
11 and feature DPDT dry Form C contacts rated at 30A @ 240VAC; 20A @ 277VAC; 2HP @  
12 240VAC / 1.5HP @ 120VAC. Provide Air Products & Controls model MR-199X-13/C/R  
13 (24VDC coil) or MR-199X-14/C/R (120 VAC coil) as required, heavy duty relay with red metal  
14 enclosure or approved equivalent.  
15

16 2.23 DUCT MOUNTED SMOKE DETECTORS  
17

18 A. Duct mounted detector housings with intelligent photoelectric detector heads shall be provided  
19 where shown on the drawings, or as required. Detectors shall operate by the photoelectric  
20 light-scattering principal using an LED light source to measure smoke density and shall, on  
21 command from the control panel, send data to the panel representing the analog level of  
22 smoke density. The detector shall operate in air velocities of 300 to 4,000 ft./min. without a  
23 shift in sensitivity. Each detector shall be resettable form the FACP.  
24

25 B. The unit shall include a 16-gauge steel or Noryl molded plastic enclosure with molded integral  
26 conduit knockouts. The unit shall be provided with gasket seals to provide proper sealing of  
27 housing to mechanical ductwork and to ensure proper airflow into the detector sampling  
28 chamber. Duct housing shall be designed for mounting to rectangular or round ducts.  
29

30 C. Each duct mounted detector housing shall be labeled in a visible area with its device hardware  
31 address utilizing self-laminating, flexible vinyl film, non-smear, machine printed labels.  
32

33 D. The Duct Detector Unit shall be UL listed to the most current UL 268A standard and be cross-  
34 listed for use with the fire alarm control panel. Each duct unit shall be equipped with sampling  
35 tubes protruding into the associated ductwork. For ducts up to 3' wide, the supply tube shall  
36 be 1" shorter than the duct width. For ducts 3' to 8' wide the sampling tube to be 1" longer than  
37 the duct width and protrude through the opposite side of the duct for support. Duct widths  
38 greater than 8' will require internal bracing. Sampling tubes shall be configured to provide  
39 adequate airflow through the detector housing and fitted with an integral porosity filter system  
40 to aid in reducing detector contamination. Detectors shall be installed per NFPA 90A and the  
41 manufacturer's instructions.  
42

43 E. When smoke is detected by a duct mounted smoke detector it shall activate a supervisory fire  
44 alarm condition at the fire alarm control panel. Duct mounted smoke detectors are not a  
45 substitute for area detection. The activation of any duct mounted smoke detector shall initiate  
46 shutdown of that air handler, and closing of any smoke dampers or fire/smoke dampers  
47 located in that unit's duct system, on a conditional one-for-one basis.  
48

49 F. Each smoke detector shall be attached to a SLC and set to a distinct address and internal  
50 identification code, which the control panel shall use to identify the location, status, and type  
51 of device. Duct detectors must be powered from the fire alarm system.  
52

53 G. Each detector shall be provided with a remote power/status LED. The remote LED indicator  
54 shall be located in the nearest corridor ceiling unless otherwise directed. The status LED shall  
55 flash under normal conditions, indicating that the detector is operational and in regular

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1 communication with the control panel. The LED shall be placed into steady illumination when  
2 a supervisory condition has been detected.  
3

4 H. Each remote LED faceplate shall have an engraved plastic nameplate permanently attached  
5 indicating the HVAC unit number, type, and device identification number as programmed in  
6 panel. Labels shall be 1/16" thick two-ply black/white acrylic sheet engraving stock with all  
7 sides beveled.  
8

9 I. Each HVAC unit for which a Duct Mounted Smoke detector is installed shall also have a blower  
10 shutdown relay as listed below.  
11

12 J. Duct mounted smoke detector housings and sample tubes shall be furnished by the Fire Alarm  
13 Contractor and mounted by the Fire Alarm Contractor.  
14

15 K. It is also acceptable for smoke detectors that are UL listed to UL 268A specifically for use in  
16 no-flow/low-flow air-handling systems to be pendant / plate mounted in the duct air stream  
17 (without sampling tubes). Pendant mounted duct smoke detectors shall be installed in  
18 accordance with the manufacturers' instructions and shall be easily accessible for service,  
19 with a labeled access door or removable plate and a remote LED.  
20

21 L. Farenhyt model SD505-DUCTR Addressable Duct Detector with Built-In Relay, Metal  
22 Housing, and 7.5" exhaust tube (with pre-installed SD505-APS photoelectric detector head),  
23 SD505-Tx series sampling tube, and SD505-DTS Addressable Duct Detector Remote Test  
24 Switch with LED indicator or equivalent.  
25

26 2.24 HVAC UNIT BLOWER SHUT-DOWN AND SMOKE DAMPER OR FIRE/SMOKE DAMPER  
27 OPERATION  
28

29 A. The contractor providing the device shall wire it internally for fail-safe shut-down and provide  
30 a labeled 3' coil of cable outside the unit to allow the fire alarm contractor to make final  
31 connection to the dry contacts on the controlling relay.  
32

33 B. Provide an addressable control relay to control air handler shutdown of each unit without  
34 smoke dampers or fire/smoke dampers located in that unit's duct system as indicated on the  
35 project plans.  
36

37 C. Provide an addressable control relay, a double pole auxiliary relay, and a line voltage 120  
38 VAC, fire safety control function circuit to control air handler shutdown of each unit with smoke  
39 dampers or fire/smoke dampers located in that unit's duct system as indicated on the project  
40 plans.  
41

42 2.25 AUTOMATIC FIRE SUPPRESSION SYSTEMS  
43

44 A. All automatic fire suppression systems shall be monitored by the fire alarm system. The  
45 activation of any automatic fire suppression system shall produce an alarm condition.  
46

47 B. The kitchen ventilation hood suppression system shall provide contacts to monitor activation  
48 of system, coordinate with existing conditions and the Food Service Equipment Contractor.  
49 Provide monitor modules as required for alarm functions.  
50

51 2.26 ELECTROMAGNETIC DOOR HOLD BACK AND RELEASE  
52

53 A. Provide electromagnetic door hold back and release devices as shown on the project plans or  
54 as required.  
55

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- 1 B. Provide required devices and connections for holdbacks integrated into door systems when  
2 supplied.
- 3
- 4 C. The fire alarm contractor shall verify voltages, exact style, and quantity required with plans.  
5
- 6 D. Secure hardware to door drilled through with "Chicago Bolts" (barrel nut/mating screw with a  
7 low-profile head on each side) to prevent pull out. Provide blocking in wall for hardware  
8 attachment.  
9
- 10 E. Operating power and line voltage wiring of the 120 VAC, fire safety control function circuit is  
11 to be provided by the Fire Alarm Contractor.
- 12
- 13 F. Provide an addressable control relay, a single pole auxiliary relay, and a line voltage 120 VAC,  
14 fire safety control function circuit for 120 VAC holdbacks.  
15
- 16 G. Provide an addressable control relay, a single pole auxiliary relay, a line voltage 120 VAC, fire  
17 safety control function circuit, and a UL listed Class 2 transformer, 120 VAC primary/24 VAC  
18 secondary, 20 VA output, for 24 VAC holders. Transformer shall be an Edwards model number  
19 592 with number 593 mounting plate or equivalent.  
20
- 21 H. Unless otherwise provided with door assembly, supply Rixson Firemark FM-998 series,  
22 Edwards model DH150A or 1504-AQN5 series door holders; 24 VAC, mounting style, single  
23 or double, as required, or equivalent.  
24

25 2.27 CABLING (PLENUM RATED)  
26

- 27 A. The fire alarm contractor shall provide and install new and unused ASTM bare solid or  
28 stranded copper conductor cable per ANSI/NEMA and NFPA codes. Follow the  
29 manufacturer's instructions. All cable shall be UL listed for fire protective, power limited  
30 applications. All cable exposed in plenum attic spaces shall comply with UL 910, UL 1424,  
31 and UL 1581 vertical tray flame test.  
32
- 33 B. Cabling shall be in accordance with local, state, and national codes (e.g., NEC Article 760)  
34 and as recommended by the manufacturer of the fire alarm system. Number and size of  
35 conductors shall be as recommended by the fire alarm system manufacturer, but not less than  
36 18 AWG (1.02 mm) for initiating device circuits and signaling line circuits, and 14 AWG (1.63  
37 mm) for notification appliance circuits.  
38
- 39 C. Cable not installed in conduit shall have a fire resistance rating suitable for the installation as  
40 indicated in NFPA 70 (e.g., FPLP).  
41
- 42 D. Signaling Line Circuit (SLC): Use shielded or unshielded cabling as recommended by the  
43 FACP manufacturer. When recommended, shielded cable should be utilized to minimize  
44 electrical noise interference with data transmission. All wiring for intelligent/addressable data  
45 circuits shall be shielded twisted pair, low capacitance NEC type FPLP, with a solid red outer  
46 jacket - West Penn Wire number 60977B - 18 AWG, number 60991B - 16 AWG, number  
47 60992B - 14 AWG, or number 60994B - 12 AWG overall shield 100% aluminum polyester foil,  
48 data cable, one twisted pair. Shield drain wire to be grounded at one end only. Equivalent by  
49 Atlas, Belden, BSCC, or Remeec.  
50
- 51 E. Between Building Signaling Line Circuit (SLC) or Network Node Circuits: Cabling between  
52 buildings shall be enclosed in conduit, including underground and over canopy installations.  
53 Cable used between buildings shall be rated for direct burial. Cable shall be moisture,  
54 abrasion, and crush resistant. Use shielded or unshielded cabling as recommended by the  
55 FACP manufacturer. When recommended, shielded cable should be utilized to minimize  
56 electrical noise interference with data transmission. All between building wiring for intelligent /

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1 addressable data or network node circuits shall be shielded twisted pair, low capacitance,  
2 NEC type FPL Direct Burial, West Penn Wire number AQ293 - 18 AWG or number AQ294 -  
3 16 AWG, Aquaseal, overall shield 100% aluminum polyester foil, data cable, one twisted pair.  
4 With water blocked construction and overall 105° C sunlight and moisture resistant PVC jacket.  
5 Shield drain wire to be grounded at one end only. Equivalent by Atlas, Belden, BSCC, or  
6 Remeec.

7  
8 F. Voice Evacuation Notification Appliance Circuits (Voice NAC): Cabling shall be shielded  
9 twisted pair, NEC type FPLP, with a red outer jacket with blue stripe (district standard) – Wind  
10 City Wire number 761322 - 16 AWG, or number 767922 - 14 AWG overall shield 100%  
11 aluminum polyester foil, fire alarm audio cable, one twisted pair with 20 AWG stranded tinned  
12 copper drain wire. Shield drain wire to be grounded at one end only.

13  
14 G. Visual Notification Appliance Circuit (NAC): All visual signaling circuits shall be NEC type  
15 FPLP, with a red outer jacket with yellow stripe (district standard), Wind City Wire number  
16 762363 - 18 AWG, number 761363 - 16 AWG, or number 767963 - 14 AWG, two conductor  
17 fire alarm signaling cable.

18  
19 H. Initiating Device Circuits (IDC): All conventional contact alarm circuits and low voltage control  
20 circuits shall be NEC type FPLP, with a solid red outer jacket - West Penn Wire number 50971  
21 - 16 AWG, number 50972 - 14 AWG, or number 50974 - 12 AWG, two conductor signaling  
22 cable. Equivalent by Atlas, Belden, BSCC, or Remeec.

23  
24 2.28 CABLE TIES (PLENUM RATED)

- 25  
26 A. HALAR Fluoropolymer plenum rated cable ties shall be furnished and installed to attach wire  
27 bundles to supports and for appropriate wire management as required.  
28 1. HALAR wire tie, 4.0", miniature - Panduit PLT1M-C702 or equivalent.  
29 2. HALAR wire tie, 7.4", standard - Panduit PLT2S-C702 or equivalent.  
30 3. HALAR wire tie, 11.6", standard - Panduit PLT3S-C702 or equivalent.

31  
32 2.29 CABLE ROUTING, INSTALLATION, AND SUPPORT

33  
34 A. System wiring and equipment installation shall be in accordance with good engineering  
35 practices as established by the NFPA and the Texas Insurance Code. Wiring shall meet all  
36 state and local electrical code requirements.

37  
38 B. Power-limited fire alarm conductors and cables described in NEC section 760.179 shall be  
39 installed as detailed in 760.130(B)(1), (B)(2), or (B)(3) of this section and 300.7. Devices shall  
40 be installed in accordance with 110.3(B), 300.11(A), and 300.15.

41  
42 C. Cable pathways, conduit, and cable support systems shall be complete with bushings, de-  
43 burred, cleaned, and secure prior to installation of cable.

44  
45 D. All wiring shall test free from opens, grounds, or shorts. All fire alarm cable shall be supported  
46 from the building structure and bundled. Do not attach any supports to joist bridging or other  
47 lightweight members. The support system shall provide a protective pathway to eliminate  
48 stress that could damage the cabling. The cable shall not be crushed, deformed, skinned,  
49 crimped, twisted, or formed into tight radius bends that could compromise the integrity of the  
50 cabling.

51  
52 E. Fire alarm cable must not be fastened to electrical conduits, mechanical ductwork/piping,  
53 sprinkler pipes. Cable routing must not obstruct access to hatches, doors, utility access  
54 panels, or service work areas. Do not route cables through fire doors, ventilation shafts, grates,  
55 or parallel for more than four-feet with line voltage electrical conductors. Fire alarm cables  
56 shall not be run loose on ceiling grid or ceiling tiles.

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54
- F. In all exposed areas, such as gymnasiums, shops, field houses, janitors' closets, elevator hoistways, and mechanical / electrical rooms all fire alarm cable shall be fully enclosed in conduit.
  - G. Fire alarm cables shall be run in conduit stubs from wall boxes to accessible areas above finished ceilings. Conduit shall be required only within walls and concealed spaces to provide access. Provide bushings to protect the cable from damage for conduit ends, box openings, and passage through metal studs.
  - H. Fire alarm cables shall be run in bundles above accessible ceilings and supported from building structure building structure by j-hooks, conduit or cable tray. Cabling shall be loosely bundled with cable ties randomly spaced at 30 to 48 inches on center, cable ties shall not be tight enough to deform cabling and shall not be used to support the cabling.
  - I. Support shall be provided by mounting appropriate fasteners that may be loaded with multiple cables. Provided that the weight load is carried by the support rod or wire, the support assembly may attach to the ceiling grid for lateral stabilization. The required support wires for the ceiling grid or light fixtures shall not be utilized. Any fastener attached to the ceiling grid shall not interfere with inserting or removing ceiling tiles. The cable pathway of supports must be positioned at least 12 inches above the ceiling grid.
  - J. All cabling shall be placed with regard to the environment, EMI/RFI interference, and its effect on fire alarm signal transmission.
  - K. Do not route any fire alarm cable within two feet of any light fixture, HVAC unit, service access area, electric panel, or any device containing a motor or transformer.
  - L. Fire alarm cable will not be installed in the same conduit, raceway, tray, duct, or track with line voltage electrical cable without a metallic barrier meeting NEC requirements.
  - M. Maximum cable pulling tension should not exceed 25 pounds force (110 N) or the manufactures recommendation, whichever is less.
  - N. Any pulling compounds utilized must be approved by the cable manufacturer and shall not degrade the strength or electrical characteristics of the cable.
  - O. No terminations or splices shall be installed in or above ceilings.
  - P. Cable bends shall not be tighter that the manufacturers' suggested bend radius.
  - Q. Mount all equipment firmly in place such that vibration or jarring will not activate an alarm, supervisory, or trouble signal. Cabling shall be routed in a professional, neat, and orderly manner.
  - R. All cable shall have a label on both ends utilizing self-laminating, flexible vinyl film, non-smear, machine printed labels.
  - S. Each cable run shall include a three-foot service loop with wire tie located in the ceiling above the control unit panel. This is to allow for future re-termination or repair.
  - T. Provide for adequate ventilation to all equipment racks and take precautions to prevent electromagnetic or electrostatic hum.

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1 U. All conduit, ducts, track, and raceways shall be supported from the structure at industry  
2 standard intervals for the size specified, utilizing proper anchoring devices. Cable fill may not  
3 exceed the manufacturers' instructions for each type of support.

4  
5 V. All conduit, duct, track, and raceway runs shall be spaced apart to allow for maintenance, such  
6 as the installation of couplings, without disturbing adjacent pathways.

7  
8 2.30 TERMINATION PRACTICES

9  
10 A. Strip back only as much cable jacket as required to terminate.

11  
12 B. Do not "loop" over wiring terminals, the cable could come loose and the condition not be  
13 detected as an open circuit or disconnected device.

14  
15 C. Preserve wire twists as closely as possible to point of termination (0.5" maximum) to keep  
16 signal impairment to a minimum.

17  
18 D. Avoid twisting cable jacket during installation.

19  
20 2.31 BUSHINGS

21  
22 A. Provide a plastic snap in bushing at each box opening, passage through a metal stud, and at  
23 the end of all open conduit stubs or sleeves prior to cable installation to protect the cabling  
24 from damage:

25 1. Box openings - Thomas & Betts Knockout Bushing Series 3210, or equivalent.

26 2. Metal stud passage - Thomas & Betts Twist It Bushing Catalog Number SB1216-SC, or  
27 equivalent.

28 3. Conduit ends - Thomas & Betts Anti-Short Bushing Series 390 or Tite-Bite Combination  
29 Coupling Series 442, or equivalent.

30  
31 2.32 CEILING MOUNTED DEVICE BOX HANGERS

32  
33 A. All ceiling mounted devices including: smoke detectors, heat detectors, remote power/status  
34 LEDs, ceiling mounted strobes and horn/strobes, et cetera, when mounted in a drop ceiling  
35 shall be supported by an electrical box hanger (Caddy #512 or #512A for deep boxes - 24"  
36 span), or equivalent. Box hangers shall be attached to the ceiling grid only for lateral  
37 stabilization, separate support wires shall be provided. The required support wires for the  
38 ceiling grid or light fixtures shall not be utilized. The backbox shall be flush and level with the  
39 bottom of the ceiling tile and the hole neatly cut for a finished appearance when the device is  
40 installed.

41  
42 B. Device and box hanger assemblies shall not be supported solely by suspended ceilings.  
43 Fasteners and supports shall be adequate to support the required load.

44  
45 2.33 J-HOOKS

46  
47 A. Attachments for cabling support shall be spaced at approximately 48 to 60 inches on center.  
48 The cable bundle shall not be allowed to sag more than 12 inches mid-span between  
49 attachments. Attachments shall be sized as follows:

50 Single cables or bundles up to four cables may be supported directly by the building  
51 structure.

52 Bundles up to 1/2" diameter (Ten 1/4" cables) 2" bridle ring, Caddy #4BRT32 or  
53 equivalent

54 Bundles up to 3/4" diameter (Sixteen 1/4" cables) 3/4" J-Hook, Caddy #CAT12 or  
55 equivalent

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- 1 Bundles up to 1-5/16" diameter (Fifty 1/4" cables) 1-5/16" J-Hook, Caddy #CAT21 or  
2 equivalent  
3 Bundles up to 2" diameter (Eighty 1/4" cables) 2" J-Hook, Caddy #CAT32 or equivalent  
4  
5 Split bundles greater than 2" diameter or provide cable tray.  
6  
7 B. Do not mix different signal strength cables on the same J-Hook (i.e. fire alarm with  
8 telephone/data cable). Multiple J-Hooks can be placed on the same attachment point, up to  
9 the rated weight load of the attachment device.  
10  
11 2.34 SURGE PROTECTION FOR FIRE ALARM CONTROL UNITS  
12  
13 A. In addition to the built-in panel surge protection, each incoming 120VAC power circuit shall be  
14 provided with an electrical surge protection module. Provide one for each fire alarm control  
15 unit, this shall include every fire alarm control panel, digital communicator, signal power  
16 expander and any other 120VAC powered fire alarm control units. Each power circuit surge  
17 protector module shall be mounted in a standard metallic electric box that is grounded. Module  
18 shall be hardwired in the incoming power circuit and 20 amp rated. Units shall provide surge  
19 protection (UL 1449 3<sup>rd</sup> edition listed), noise filtering (UL 1283 listed), and nanosecond reaction  
20 three-stage MOV line protection. Shall be Ditek DTK-120SRD or equivalent.  
21  
22 2.35 FIRE ALARM CIRCUIT SURGE PROTECTION  
23  
24 A. Provide surge protection shall be provided for all exterior devices, communications service or  
25 antenna entrance connections, and for each circuit that connects one building to another (i.e.  
26 any other portion of a building complex not under one continuous roof) at both entry/exit points  
27 to prevent damage to equipment.  
28  
29 B. Each surge protector shall be mounted in a standard grounded metallic electric box or  
30 equipment backboard with a separate ground wire ran directly to the ground bus bar or  
31 equipment panel ground stud, do not daisy chain ground wires.  
32  
33 C. Surge protectors for low voltage communications signal and control circuits with a data rate  
34 from 200kbps to 2Mbps, nominal voltage as listed below AC or DC. Each module shall protect  
35 up to two pairs using hybrid design multi-stage SAD technology, shall be Ditek 2MHLP series  
36 field replaceable modules with MB Series mounting bases for one to five modules, or  
37 equivalent, model numbers as follows:  
38 1. 70 to 75 Volt circuit, 4 wire protector with base DTK-2MHLP75BWB.  
39 2. 48 to 50 Volt circuit, 4 wire protector with base DTK-2MHLP48BWB.  
40 3. 36 Volt circuit, 4 wire protector with base DTK-2MHLP36BWB.  
41 4. 24 Volt circuit, 4 wire protector with base DTK-2MHLP24BWB.  
42 5. 12 Volt circuit, 4 wire protector with base DTK-2MHLP12BWB.  
43 6. 0 to 6 Volt circuits, 4 wire protector with base DTK-2MHLP5BWB.  
44  
45 D. Surge protectors for low voltage communications high data rate voice, data and signaling data  
46 and loop circuits, or serial communication, nominal voltage as listed below AC or DC. Each  
47 module shall provide Line-Ground (All) protection modes, maximum surge current: 2,000  
48 Amps per pair (6V-50V) or 9,000 Amps per pair (75V-130V), and maximum continuous  
49 current: 5 Amps to 0.15 Amps, shall be Ditek LVLP series or equivalent, model numbers as  
50 follows:  
51 1. 115 to 130-Volt circuit, 2-pair protector, 10-12 AWG, DTK-2LVLAWGRUV.  
52 2. 95-Volt circuit, 2-pair protector, 10-12 AWG, DTK-2LVLAWGSGR.  
53 3. 75-Volt circuit, 2-pair protector, 10-12 AWG, DTK-2LVLAWGSPK.  
54 4. 48 to 50-Volt circuit, 2-pair protector, 16-22 AWG, DTK-2LVLPOPX.  
55 5. 24 to 30-Volt circuit, 2-pair protector, 16-22 AWG, DTK-2LVLPLV.  
56 6. 12 to 14-Volt circuit, 2-pair protector, 16-22 AWG, DTK-2LVLPX

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- 7. 0 to 6-Volt circuit, 2-pair protector, 16-22 AWG, DTK-2LVLPD.
- 8. 0 to 6-Volt circuit, 8-pair protector (RS-485, RS-232), 16-22 AWG, DTK-8LVLPD.

2.36 FIRE STOPPING, DRAFT/NOISE STOPPING, PENETRATIONS, AND CORING

- A. UL Listed fire stopping methods that match the fire rating of the wall or floor being penetrated are to be used at all fire barrier penetrations. Seal the interior of the conduit sleeve around the cables and around the outside of the sleeve on each side of the penetration with fire-stop caulk or putty, install according to the manufacturers' instructions.
- B. All penetrations through fire rated walls or floors shall feature a suitable length of metal conduit. Hole diameter shall not exceed 1/2" larger than the conduit or sleeve to be installed. The hole shall be neatly cut, not oversize or irregular. Do not share wall/floor penetrations with ductwork, piping, line voltage electrical conduits, etc.
- C. All gypsum board or plaster penetrations shall tool cut using an appropriate hole saw / mandrel or manufactured assembly.
- D. Draft/Noise Stopping - All penetrations through non-rated walls shall include draft/noise stopping to minimize the transfer of air and sound between enclosed areas. This shall include but not limited to:
  - 1. Neatly cutting all non-rated wall penetrations with a 1" maximum clearance. All gypsum board or plaster penetrations shall be tool cut using an appropriate hole saw / mandrel or manufactured assembly. The hole shall be neatly cut and not oversize or irregular. Do not share wall penetrations with other types of ductwork, piping, line voltage electrical conduits, communications cabling, etc.
  - 2. Provide and install non-combustible mineral wool, fiberglass, cellulose insulation, caulk, and/or sealant as required. Seal the interior of conduit sleeves around the cables and around the outside of the sleeve on each side of the penetration with caulk or putty, install materials according to the manufacturers' instructions.
- E. The Contractor shall make every effort to coordinate with the building Engineer and Owner to have sleeves placed in new construction so that later coring or drilling of building structural members will not be required. The Contractor must consult with the Engineer and Owner prior to drilling, coring, or sawing of any wall, floor, etc. All penetrations shall be made at approved, appropriate, locations.
- F. Upon approval, the Contractor shall be required to supply all labor, equipment, tools, and materials to create any additional penetrations, and shall provide the sleeve, temporary and final fire stopping. Special care shall be taken not to stress, overheat, or penetrate any building support member. Coring shall be made with equipment appropriate for the dry penetration of concrete and block materials. Under no circumstances shall penetrations be made utilizing a chisel or percussion type equipment. Concrete, block, or plaster cores shall be made by dry saw/core methods only.

PART 3 – EXECUTION

3.1 DEMOLITION OF THE EXISTING FIRE ALARM SYSTEM FOR RENOVATION

- A. The fire alarm contractor shall be responsible for complete removal of the existing fire alarm system. This shall also include demolition of any devices and cable previously abandoned. Demolition shall include disconnection and removal of all devices not to be reused and off-site disposal, in a legal manner, of all materials not requested to be turned over to the Owner. Comply with government regulations pertaining to environmental protection, and disposal of materials and equipment. Do not burn any materials on the site.



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3.2 EXAMINATION

- A. Verify existing field conditions, circuiting arrangements, cabling, and devices served in areas as shown on the Drawings. Adjust all circuiting, cabling, and materials to be provided as required by job conditions.
- B. Identify and verify abandoned equipment, wiring, and devices. All visible disconnected or abandoned devices and cabling shall be removed i.e. non-functional fire pulls, bells, speakers, signals, et cetera.
- C. Drawings are based on casual field observation and existing record documents. Report discrepancies to the Engineer before disturbing existing installation.
- D. The Contractor accepts the existing conditions when beginning demolition.

3.3 PREPARATION

- A. Disconnect fire alarm devices in walls, floors, and ceilings as shown or required.
- B. Provide temporary wiring and connections as required to maintain the operation of existing systems during construction.
- C. When work must be performed on energized equipment or circuits use personnel experienced in such operations. Verify phasing on existing equipment and coordinate new phasing before energizing revised service.
- D. Remove, relocate, and extend existing installations to accommodate new construction as required.
- E. Remove abandoned wiring to the source of the supply.
- F. Remove exposed abandoned conduit, including abandoned conduit, brackets, stems, hangers, and other accessories above accessible ceiling finishes. Cut conduit flush with walls, floors, and patch surfaces.
- G. Disconnect and remove abandoned devices. Remove abandoned devices if conduit servicing them is abandoned and removed. Provide blank cover for abandoned devices that are removed in masonry construction.
- H. Disconnect and remove fire alarm devices and equipment serving equipment that has been removed.
- I. Repair adjacent construction and finishes damaged during demolition and extension work.
- J. Confirm with Owner/Engineer regarding the handling and disposal/reuse of removed material, equipment, devices, et cetera.
- K. Patch and paint to match sheetrock walls and provide cover plates on block walls where locations for removed devices are not reused.

3.4 OPERATION PRIOR TO COMPLETION

- A. When the phasing of a project requires that fire alarm, systems are operable in certain areas and the Owner needs to operate the equipment, such provisions shall be made by the contractor. The warranty period shall commence when the equipment is operated for the

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beneficial use of the Owner. Regardless of whether or not the equipment has or has not been operated, the Contractor shall properly clean the equipment, properly adjust, and complete all punch list items before final acceptance by the Owner. The date of acceptance and the start of the warranty may not be the same date.

3.5 SIGNAL TYPES (SYSTEM STATUS)

A. General: The Fire Alarm Control Panel shall indicate various conditions or signals depending on system inputs. In all instances, a more severe signal shall override all less severe signals. All events are to be recorded with time and date in an electronic event history log maintained by the fire alarm control panel. The following is a short description of conditions that the Fire Alarm Control Panel is required to indicate in order of severity:

1. WATERFLOW FIRE ALARM: A waterflow signal is a special alarm condition that is only applicable when an automatic building sprinkler or similar system is monitored. It indicates that at least one sprinkler head is open, so in addition to a fire, the premises are subject to water damage. This signal is transmitted on a special channel on the digital communicator. This is a fire alarm condition and all actions listed under fire alarm shall take place.
2. FIRE ALARM: This alarm signal is indicative of fire. Such a signal indicates an emergency requiring immediate action. All premises audible and visual notification appliances shall operate and the protected premises evacuated. A local audible alert shall sound, the alarm LED illuminate, and descriptive message appear on the LCD display at the panel and any remote annunciators until the panel is reset. The digital communicator transmits a fire alarm signal.
3. SUPERVISORY ALARM: A supervisory signal indicates the need for action concerning a duct mounted smoke detector, monitored fire suppression system, or the maintenance of related systems. The tamper switch on a sprinkler riser is a supervisory condition because the system cannot function with a closed valve. An audible alert shall sound, the supervisory LED illuminate, and descriptive message appear on the LCD display at the panel and any remote annunciators until silenced. The digital communicator transmits a supervisory signal.
4. TROUBLE: A trouble signal indicates a fault in a monitored circuit or component of the fire alarm system. This could be a short, open, or ground in a supervised circuit. It could also indicate a device or battery failure. A local audible alert shall sound, the trouble LED illuminate, and descriptive message appear on the LCD display at the panel and any remote annunciators until silenced. The digital communicator transmits a trouble signal.
5. MAINTENANCE ALERT: A maintenance alert is an early warning of a condition before a device becomes inoperable. Often this smoke detector needs cleaning or other normal maintenance item. The maintenance alert shall display on the panel and any remote annunciator LCD display until acknowledged. No audible alert shall sound and no signal transmitted, in order that this condition is not confused with a supervisory or trouble condition.
6. NORMAL: All systems and supervised circuits functioning normally.

3.6 SEQUENCE OF OPERATION

A. Alarm Condition: When a fire alarm condition is indicated by any manual pull station, area smoke detector, heat detector, sprinkler system waterflow indicating device, or by any automatic fire suppression system monitored this shall cause the following actions or effects to take place:

1. At the panel, and any remote annunciators, a system alarm LED shall flash and a local sounding device shall activate.
2. The 80-character LCD display shall indicate all pertinent information associated with the alarm condition and its location.
3. The digital communicator shall activate and transmit a WATERFLOW ALARM or GENERAL ALARM signal to the monitoring company.

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- 1           4. All audible and visual signal devices shall activate and operate until silenced manually,  
2           or until automatically silenced, by the control panel. Any subsequent alarm from another  
3           device shall automatically reactivate all audible and visual signal devices. Once a  
4           waterflow alarm (when applicable) has been activated in shall not be possible to manually  
5           silence the audible and visual signal devices until the flow indication from the waterflow  
6           switch has ceased.
- 7           5. Fire safety control functions related to providing free egress from the facility shall be  
8           activated on general alarm, including the automatic opening of any controlled motorized  
9           security grills and automatic unlocking for egress of any controlled non-fire rated security  
10          doors or gates.
- 11          6. Fire safety control functions conditional on the detection of an alarm condition in one or  
12          more designated adjacent area smoke detectors shall be activated independently on a  
13          one-for-one basis, these functions may include air handler shutdown of units without a  
14          duct mounted smoke detector, electromagnetic door hold back release, release of  
15          overhead coiling or hinged fire or smoke rated doors or shutters (those designed to close  
16          in order to control the spread of fire or smoke), high volume low speed (HVLS) fan shut  
17          down, and any other conditional operations such as elevator recall.
- 18          7. Each Fire Safety Control Function circuit controlled device shall be configured such that  
19          when the fire alarm system safety control function circuit is re-energized, by the fire alarm  
20          control panel, the device shall return to normal operation (e.g. be ready to re-start)  
21          without a need for manual or environmental control system intervention.
- 22          8. The FACP event history storage equipment shall log the information associated each  
23          new fire alarm control panel condition, along with time and date of occurrence.
- 24
- 25          B. The detection of any system internal or external trouble condition or the actuation of any  
26          supervisory alarm condition, as applicable, including any duct mounted smoke detector,  
27          sprinkler system valve tamper switch, sprinkler system low pressure switch, et cetera, shall  
28          automatically cause the following actions to take place:
  - 29           1. At the panel and any remote annunciators, a system supervisory alarm LED or trouble  
30           LED shall flash as appropriate and a local sounding device shall activate. Audible  
31           supervisory or trouble alerts that have been silenced shall automatically resound every  
32           twenty-four hours or less until repairs are made.
  - 33           2. The 80-character LCD display shall indicate all pertinent information associated with the  
34           trouble or supervisory condition and its location; however, unacknowledged alarm  
35           messages shall have priority over trouble messages.
  - 36           3. The digital communicator shall activate and transmit a SUPERVISORY or TROUBLE  
37           signal to the monitoring company.
  - 38           4. Detection of a supervisory alarm in a duct mounted smoke detector shall initiate  
39           shutdown of the associated air handler, and closing of any smoke dampers or fire/smoke  
40           dampers located in that unit's duct system, on a conditional one-for-one basis.

41  
42   3.7    BASIC SETUP AND TESTING

- 43
- 44          A. The completed system is to be tested for compliance with the specifications.
- 45
- 46          B. The System Contractor shall make a thorough inspection of the complete installation to ensure  
47          the following:
  - 48           1. Complete and functional system.
  - 49           2. Installed in accordance with manufacturer's instructions.
- 50
- 51          C. Prior to the testing, ensure that the system is free of short circuits, ground loops, excessive  
52          system noise beyond published specifications of the equipment, hum, RF interference, or  
53          instability of any form.
- 54
- 55          D. The testing work shall be performed after installation has been completed, but prior to any use  
56          of the system.

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2 E. All audio inputs, including live microphone, automated evacuation messages, temporary  
3 testing signal, and any additional low priority inputs such as an intercom/public address,  
4 telephone system paging, and background music (if approved by the LAHJ), shall be adjusted  
5 and matched to the produce proper effective volume output from the system.  
6  
7 F. Always operate audio amplifiers and speakers within their specified ratings. Excessive input  
8 may distort sound quality and may damage audio equipment. Do not exceed +130% of  
9 speaker input voltage per UL 1480. Improper input voltage can damage speaker. If distortion  
10 is heard, check for clipping of the audio appliance with an oscilloscope and reduce the amplifier  
11 input level or gain level to eliminate any clipping.  
12  
13 G. Check the installation instructions of the manufacturers of other equipment used in the system  
14 for any guidelines or restrictions on wiring and/or locating Voice Notification Appliance Circuits  
15 (Voice NAC) and notification appliances. Some system communication circuits and/or audio  
16 circuits, for example, may require special precautions to assure electrical noise immunity (e.g.  
17 audio crosstalk).  
18  
19 H. The system shall be set up for a general occupancy and at no point in the testing or operation  
20 of the system shall output be allowed to exceed 95 dB at any occupiable position to prevent  
21 possible hearing damage, and system damage. It is prohibited at any time to “ring out” the  
22 system by turning it up until it distorts.  
23  
24 I. The installer shall maximize the gain structure and balance each system component to provide  
25 the least possible variation in sound level and frequency response in each area as required.  
26 The testing shall be performed with a minimum of the following equipment:  
27 1. Professional 1/3 octave Real Time Analyzer (RTA) and Type One sound pressure level  
28 (SPL) meter- Ivie IE-30A or PC-40 with calibrated microphone or equivalent by Crown or  
29 White Instruments.  
30 2. Pink Noise Generator – Ivie IE-20B or equivalent by Crown or White Instruments.

31  
32 3.8 MAXIMIZING GAIN STRUCTURE  
33

- 34 A. Each emergency communication system speaker circuit shall be setup to maximize the gain  
35 structure of all components. Gain structure refers to aligning the gain of each device so that  
36 they all clip at the same point, and the noise floor of the entire system is at its absolute  
37 minimum. This shall be set up by using clip indicators on the amplifiers themselves. If there  
38 are no clip indicators on the component, the contractor should use output meters to determine  
39 the correct setting.  
40  
41 B. Adjustments should be made using built in attenuators, unless no adjustment is available or  
42 the required level is out of range, then the contractor shall use a temporary level-matching  
43 interface to determine the dB value for a fixed audio resistive attenuator made up of two  
44 parallel resistors, which shall be permanently installed.  
45  
46 C. For the first step, disconnect the loudspeakers from the amplifier outputs and replace them  
47 with dummy load resistors. Turn the input sensitivity and output level controls on all  
48 components all the way down. Turn on the system and supply a continuous pink noise input  
49 signal to the mixer. Turn up the output of the mixer until it begins clipping. Once the mixer is  
50 just clipping, back the output gain down slightly until the clip indicator turns off.  
51  
52 D. For the second step run the maximized pink noise signal through the any processors and into  
53 the amplifier (with all crossover and output gain setup for each amplifiers channels’ particular  
54 speaker load). Make sure that the processor output limiters are turned off. Run this signal into  
55 the amplifiers and turn up the input attenuators until the amplifier clip indicator begins to turn  
56 on. Turn the attenuators down slightly, so the clip indicator no longer is on. This procedure will

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1 maximize the gain through the system. This amplifier setting should provide maximum gain  
2 without clipping, in other words when the output of the mixer is clipping the amplifiers would  
3 also be at the clip point. Once the clip point of each amplifier channel is determined, mark this  
4 position.  
5

- 6 E. Third step, once any limiters are set up and the gain is maximized, reduce the main output of  
7 the mixer, and reconnect the loudspeakers. Play some familiar music through the system and  
8 verify that the output is loud enough with a decibel meter. If the system is not loud enough,  
9 verify that all components are operating properly. Then check the amplifier and speaker output  
10 ratings to ensure the proper devices were installed in the correct channels. If the setup is too  
11 loud for safe operation, turn down and balance all amplifier channel input attenuators for safe  
12 balanced operation.  
13

14 3.9 PERFORMANCE TESTING  
15

- 16 A. After basic setup and testing, the sound system shall meet or exceed the following  
17 specifications:  
18 1. System shall be free of short circuits, ground loops, parasitic oscillation, excessive system  
19 noise, hum, and instability of any form, including RF interference.  
20 2. Maximum SPL with band-limited pink noise input to the system shall be 95 dB before  
21 audible distortion occurs.  
22  
23 B. Acoustic response of the system shall be plus or minus 1.5 dB along a line which is flat from  
24 100 Hz to 1250 Hz and which rolls off at 2 dB per octave to 8 kHz.  
25

26 3.10 VOICE INTELLIGIBILITY TESTING  
27

- 28 A. Once the basic setup is complete, the gain structure is maximized, and the performance  
29 testing as outlined above is completed, this contractor shall conduct voice intelligibility testing  
30 as prescribed in the NFPA 72 and as follows:  
31 1. The building shall be divided into Acoustically Distinguishable Spaces for testing by basic  
32 areas of the building and single rooms.  
33 2. Final voice intelligibility testing shall be conducted in accordance with the test instrument  
34 manufactures written instructions and during normal hours of operation and under normal  
35 building occupancy conditions including all final room finishes, furnishings, and with a  
36 nominal number of occupants at their normal activity level, or as near as these conditions  
37 can be simulated. Simulation may include taking sample background noise  
38 measurements or "captured curves" for each designated ADS with stand in personnel for  
39 use in the testing process.  
40 3. From each designated fixed-point test location in each ADS, the technician shall calibrate  
41 the test instrument, measure, and record the STI value while the test signal is played  
42 through the entire building emergency communication system.  
43 4. Voice intelligibility test results for this emergency communication system will be  
44 acceptable if at least 90% of the measurement locations within each ADS has a  
45 measured STI of not less than 0.45 (CIS of not less than 0.65), and an average STI of  
46 not less than 0.50 (an average CIS of not less than 0.70). The contractor shall make any  
47 system adjustments or modifications needed for each ADS to pass the indelibility testing.  
48 5. If an ADS does not meet the above requirements due to low readings, the testing  
49 procedures shall be verified, and adjustments made that may include increasing the  
50 volume of individual speakers, changing types or adding additional speakers, that will  
51 reduce inordinate background noise and/or reverberation.  
52 6. The final acceptance of the system by the Owner/ Engineer will be based upon the proper  
53 performance of the completed system.  
54

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1 3.11 TESTING, WARRANTY, SERVICE  
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- 3 A. A factory-trained representative of the manufacturer shall supervise the final connections and  
4 testing of the system and it shall be subject to the final acceptance of the Engineer, and local  
5 authorities. Testing shall include, but not be limited to, the following:  
6 1. Before energizing the system check all cables for correct connections and test for short  
7 circuits, ground faults, continuity, and insulation.  
8 2. Close each sprinkler system valve with a tamper switch, when applicable, and verify  
9 proper supervisory alarm at the FACP.  
10 3. Verify alarm activation of waterflow switches by operation of the test port valve on each  
11 riser (when applicable).  
12 4. Open each initiating device circuit and verify that the trouble signal actuates.  
13 5. Open and short each signaling line circuit and verify that the trouble signal actuates.  
14 6. Open and short each notification appliance circuit and verify that trouble signal actuates.  
15 7. Individually ground each circuit and verify response of trouble signals.  
16 8. Check for presence of strobe signal and audibility of tone at all alarm notification devices.  
17 9. Check installation, supervision, and operation of all area detectors using the walk test.  
18 10. Check installation, configuration, and operation of all duct mounted smoke detectors.  
19 Verify that there is adequate airflow through the sample tubes and housing to activate  
20 the detector when smoke is present in the duct.  
21 11. Each of the alarm conditions that the system is required to detect should be introduced  
22 on the system. Verify the proper receipt and the proper processing of the signal at the  
23 FACP and the correct activation of the control points.  
24 12. Verify proper operation of all fire safety control functions including when applicable fire  
25 door hold open/release, coiling fire door release, air handler shutdown, smoke damper  
26 or fire/smoke damper control, high volume low speed (HVLS) fan shut down, and the  
27 automatic opening of any controlled motorized security grills and automatic unlocking for  
28 egress of any controlled non-fire rated security doors or gates.  
29 13. Check operation of elevator recall and shunt-trip when applicable.  
30 14. Ensure that all dust covers are removed from smoke and heat detectors at substantial  
31 completion.  
32  
33 B. The Fire Alarm Contractor shall be ultimately responsible for safe and complete operation of  
34 the system. Any issues affecting proper operation of the system relating to the Electrical,  
35 Mechanical, Fire Protection, Fire Suppression or other contractors shall be resolved by the  
36 Fire Alarm Contractor, at no additional cost to, and without requesting intervention by the  
37 Owner.  
38  
39 C. The Fire Alarm Contractor shall provide a complete, dated, installation certificate meeting state  
40 requirements for each installation including a System Record of Completion and an  
41 Emergency Communications Systems Supplementary Record of Completion. A Fire Alarm  
42 Installation Record sticker listing the; installation firm's name, address, and telephone number;  
43 signature of Licensee and license number; Fire Alarm Planning Superintendents name and  
44 license number; and the installation date, meeting state requirements shall be attached to the  
45 main fire alarm control panel. The Fire Alarm Contractor shall submit a copy of the installation  
46 certificate to the Engineer at the time of substantial completion.  
47  
48 D. The contractor shall provide a warranty of the installed system against defects in material or  
49 workmanship for a period of one (1) year from the date of substantial completion. Any  
50 equipment or cabling shown to be defective shall be replaced, repaired, or adjusted free of  
51 charge. All labor and materials shall be provided at no expense to the Owner. All equipment  
52 will carry a one-year warranty or manufacturer's warranty whichever is greater.  
53  
54 E. Immediately prior to the end of the warranty period, the system shall be inspected and certified  
55 for the following year at no additional cost to the Owner.  
56

**FIRE ALARM RENOVATIONS AT NORTH OAKS MIDDLE SCHOOL & SMITHFIELD ELEMENTARY  
BIRDVILLE INDEPENDENT SCHOOL DISTRICT**

1 3.12 DRAWINGS, MANUALS, AND TRAINING  
2

- 3 A. As-built drawings and operating and maintenance manuals may be electronically transmitted  
4 in PDF file format (preferred) or paper copies may be provided in quantities indicated in  
5 Division 1. Paper copies shall be organized including index tabs in a 3-ring black binder of  
6 sufficient size.  
7
- 8 B. Upon completion of the installation, and prior to final inspection, the fire alarm Contractor shall  
9 furnish as-built drawings.  
10
- 11 C. In addition, the fire alarm contractor shall furnish complete operating and maintenance  
12 manuals listing the manufacturer's name(s), including technical data sheets. Manuals shall  
13 include wiring diagrams to indicate internal wiring for each device and the interconnections  
14 between the items of equipment. Provide a clear and concise description of operation that  
15 gives, in detail, the information required to properly operate the equipment and system.  
16 Provide a parts list with manufacturer and model number for commonly replaced parts. Include  
17 complete instructions for the inspection, testing, and maintenance of the system.  
18
- 19 D. Provide the Owner a copy of the panel control software including the licensed program, site  
20 specific data file, and passwords that the Owner may require to maintain the system.  
21
- 22 E. The fire alarm contractor shall conduct formal on-site training sessions. It shall be the  
23 responsibility of the Contractor to coordinate time and location of training sessions with the  
24 Owner. Provide documented general instruction as follows:  
25 1. Provide instruction to the maintenance personnel to include the location, inspection,  
26 maintenance, testing, and operation of all system components. Provide a minimum of  
27 four (4) hours-two 2-hour sessions separated by a minimum of two weeks.  
28 2. Provide instruction to designated personnel on the functions and operation of the FIRE  
29 DETECTION AND ALARM SYSTEM including capabilities, limitations, monitoring, and  
30 the meaning of status messages. State the proper procedure for fire drills, routine  
31 maintenance, and request for service. Provide a minimum of four (4) hours-two 2-hour  
32 sessions separated by a minimum of two weeks.  
33

34 END SECTION