

CASTLEBERRY INDEPENDENT SCHOOL DISTRICT
PURCHASING DEPARTMENT
5228 Ohio Garden Road
Fort Worth, TX 76114

Notice to Bidders

**Request for Proposal
IMMS Safety and Security
RFP# 18-017**

Castleberry Independent School District (CISD) will continually receive proposals until **4:00 PM, Thursday, June 27, 2019**. Bids will be publicly open at 1:30 PM on July 8, 2019

Proposals must be sealed and clearly marked on the outside with the company's name and addressed to

Castleberry Independent School District
Attention Sophia Quiroz
5228 Ohio Garden Road
Fort Worth, TX 76114
IMMS Safety and Security RFP# 18-017

You are representing to Castleberry ISD that you are authorized to submit this bid by signing below. **Include this page as a cover to your bid response.**

Consultant

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Name (print): _____

Signature: _____

Title: _____

Date: _____

Castleberry Independent School District

TERMS AND CONDITIONS **IMMS Safety and Security** **RFP# 18-017**

- 1 Transfer of assignment of contract by vendor is prohibited RFP must give full firm name and address of responder Failure to manually sign RFP will disqualify it Person signing RFP should show TITLE or AUTHORITY TO BIND THEIR FIRM IN A CONTRACT
- 2 The Castleberry ISD is exempt from Federal Excise Tax DO NOT INCLUDE TAX IN RFP Excise Tax Certificate furnished upon request Castleberry ISD State Tax Exemption Certificate number 1-75-6004526-6
- 3 Any and/or all deliveries shall be made during normal working hours only 8 00 AM to 4 00 PM, unless prior approval for late delivery has been obtained
- 4 Cash Discounts with terms less than 30 days will not be considered in the awarding of RFP RFP will be tabulated as net
- 5 The Board of Education reserves the right to accept or reject all or any part of any RFP, waive minor technicalities and award the RFP to best serve the interests of the Castleberry ISD
- 6 In the event no funds or insufficient funds are appropriated and budgeted or are otherwise available in the next fiscal year for obligation herein provided, Castleberry ISD can terminate this agreement with a thirty (30) day written notice
- 7 If any anytime the vendor fails to fulfill or abide by the terms, conditions, or specifications of the agreement, the Castleberry ISD reserves the right to cancel the agreement with a thirty (30) day written notice to the vendor at the address indicated on the RFP
- 8 The term of the agreement will be beginning July 1, 2019 and continuing through August 31, 2020
- 9 The District requires compliance with executive order 11246, entitled Equal Employment Opportunity, as amended by Executive Order 11375, and as supplemented in the Department of Labor regulations (41 CFR Part 60)

- 10 All terms and conditions contained in the agreement shall be incorporated into any future agreements relating to this RFP between the vendor and the Castleberry ISD
- 11 Any material and equipment should be proposed new with the freight and shipping costs included in the Proposal price
- 12 **Failure to submit a response may result in your company being deleted from the bid list.**
- 13 Each Bidder shall furnish the information required by the Proposal documents and submit them with their proposal. The Bidder shall sign the Bid Proposal Form, the Felony Conviction Notice and return them with the offer. The person signing the documents must initial erasures or other changes. Proposals signed by an agent are to be accompanied by evidence of his authority unless such evidence has been previously furnished to Castleberry ISD.
- 14 Submission of Proposals. RFP must be submitted on the proposal form only. Each RFP shall be placed in a separate envelope. Be sure envelope is completely and properly identified. **RFP must be received in the Business Office until 4:00 PM, Thursday, June 27, 2019. Bids will be publicly open at 1:30 PM on July 8, 2019.**
 - A Proposals that are received late will be returned to responder **UNOPENED** if opening date and responder's address is shown on the envelope
 - B Quote FOB destination. If otherwise, show exact cost to deliver
 - C RFP unit prices on quantity specified - extend and show total. In case of errors in extension, **UNIT** prices shall govern
 - D Bid Proposals must be firm for 30 days
 - E **Please submit three (3) copies along with the original RFP.**
 - F Please provide a current catalog with bid documents
- 15 The responsibility for compliance with this solicitation and the subsequent contract shall be with the bidder
- 16 Bidders are expected to provide prompt service that is due under this contract including warranties. Past performance of bidders may be a factor in awarding future contract
- 17 Bidders are expected to deliver product(s) per specifications
- 18 If the person, owner or operator of the business entity has been convicted of a felony, the person or entity submitting the offer must give written notice to the district at the time of offer submission

- 19 Castleberry ISD shall have the right to terminate for default all or any part of this contract if bidder breaches any of the terms hereof or if the bidder becomes insolvent or files any petition in bankruptcy. Such right of termination is in addition to and not in lieu of any other remedies which Castleberry ISD may have in law or equity, specifically including, but not limited to, the right to collect for damages or demand specific performance. The District additionally has the right to terminate this RFP without case by delivery to the vendor of a "Notice of Termination" specifying the extent to which performance hereunder is terminated and the date upon which such termination becomes effective.

CASTLEBERRY INDEPENDENT SCHOOL DISTRICT

Vendor Debarment Statement

IMMS Safety and Security

RFP# 18-017

I have read the conditions and specifications provided in the bid/proposal document attached. I affirm, to the best of my knowledge, the company I represent has not been debarred or suspended from conducting business with school districts in the State of Texas or from receiving a federally funded contract under the Federal OMB, A-12, common rules. This certification is required by the regulations implementing Executive Order 1259, Debarment and suspension 7 CFR Part 3017, Section 3017.510, Participants responsibilities. The regulations were published as Part IV of the January 30, 1989 Federal Register (pages 4722-4733). Copies of the regulation may be obtained by contacting the Department of Agriculture Agency from which this transaction originated.

Name of Company/Firm _____

Mailing Address _____

City/State/Zip _____

Email Address _____

Prepared By _____

Company Official's Printed Name _____

Company Official's Signature _____

Title _____

Telephone _____ Fax _____

Date _____

COMPLETED & SIGNED FORM MUST BE RETURNED WITH BID

CASTLEBERRY INDEPENDENT SCHOOL DISTRICT
STATEMENT OF NON-COLLUSION AND NON-DISCRIMINATION
IMMS Safety and Security
RFP# 18-017

My signature certifies that the accompanying Bid/Proposal

- 1 Is not the result of, or affected by an unlawful act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under current local, state, and/or federal ordinances, statutes, regulations and/or policies Furthermore, I understand that fraud and unlawful collusion are crimes under Federal Law, and can result in fines, prison sentences, and civil damage awards
- 2 This bid/proposal has not been knowingly disclosed, and will not be knowingly disclosed to any other bidder, competitor, or potential prior to the opening of bids or proposals for this project
- 3 No attempt has been or will be made to induce any other person, partnership, or corporation to submit or not submit a bid proposal

Furthermore

- 1 During the performance of any contract awarded, the Seller will not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin, or handicaps, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operations of the Seller The Seller agrees to post in conspicuous places, available to employee and applicants for employment, notices setting forth the provisions of this non-discrimination clause
- 2 The Seller, in all solicitations or advertisements for employees placed by or on behalf of the Seller, will state that such Seller is an equal opportunity employer
- 3 Notices, advertisements and solicitations placed in accordance with Federal Law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section
- 4 The Seller shall include the provisions of the foregoing paragraphs 1, 2, and 3 in every subcontract or purchase order over \$10,000 00 so that the provisions will be binding upon each subcontractor or vendor

I hereby certify that I am authorized to sign as a Representative for the Seller and I am fully informed regarding the accuracy of the statements contained in this certification, and that the penalties herein are applicable to the bidder as well as to any person signing on his/her behalf

NAME OF SELLER _____
ADDRESS _____
CITY, STATE, ZIP _____
NAME (Print) _____
AUTHORIZED SIGNATURE _____
TITLE _____ DATE _____
TELEPHONE _____ FAXNO _____
EMAIL ADDRESS _____

COMPLETED & SIGNED FORM MUST BE RETURNED WITH BID

REFERENCES

1 Company Name _____

Address _____

Business Phone _____ Fax _____

Contact Person _____ Email' _____

Description of project or work completed _____

2 Company Name _____

Address _____

Business Phone _____ Fax _____

Contact Person _____ Email _____

Description of project or work completed _____

3 Company Name _____

Address _____

Business Phone _____ Fax _____

Contact Person _____ Email _____

Description of project or work completed _____

CASTLEBERRY INDEPENDENT SCHOOL DISTRICT

FELONY CONVICTION NOTIFICATION

IMMS Safety and Security

RFP# 18-017

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."

**This notice is not required of a publicly-held corporation.
Please complete the information below.**

I, the undersigned agent for the firm named below, certify that the information concerning notification of felony convictions has been reviewed by me and the following information furnished is true to the best of my knowledge.

Vendor's Name _____

Authorized Company Official's Name (Please print or type)

A My firm is a publicly-held corporation, therefore, this reporting requirement is not applicable.

Signature of Company Official _____
Date _____

B My firm is not owned nor operated by anyone who has been convicted of a felony.

Signature of Company Official _____
Date _____

C My firm is owned or operated by the following individual(s) who has/have been convicted of a felony.

Name of Felon(s) _____

Details of Conviction(s) _____

Signature of Company Official _____ Date _____

COMPLETED & SIGNED FORM MUST BE RETURNED WITH BID

CASTLEBERRY INDEPENDENT SCHOOL DISTRICT

Affirmation of Non-Boycott Israel Statement

IMMS Safety and Security

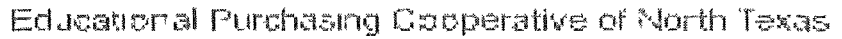
RFP# 18-017

Company Name: _____

affirms that it does not and will not boycott Israel during the term of this contract.

Signature of Company Official _____ Date _____

COMPLETED & SIGNED FORM MUST BE RETURNED WITH BID



Several governmental entities around the Fort Worth Independent School District have indicated an interest in being included in this contract. Should these governmental entities decide to participate in this contract, would you (the vendor) agree that all terms, conditions, specifications, and pricing would apply?

No

Governmental entities utilizing Internal Governmental contracts with the Fort Worth Independent School District 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 Fort Worth Independent School District will be billed directly to that governmental entity and paid by that government entity. Fort Worth Independent School District will not be responsible for another governmental entity's debts. Each governmental entity will order its own material/service as needed.

Company Name.

Title of Authorized Representative:

Signature of Authorized Company Official

RFP 18-006

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

FORM CIQ

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session

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)

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

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of vendor who has a business relationship with local governmental entity.

2 ☐ 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.)

3 Name of local government officer about whom the information is being disclosed

Name of Officer

4 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.

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?

☐ Yes

☐ No

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?

☐ Yes

☐ No

5 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.

6 ☐ 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)

7

Signature of vendor doing business with the governmental entity

Date

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/LG176.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 1295 INSTRUCTIONS

Pursuant to newly enacted Section 2252 of the Texas Government Code as of January 1, 2016, any business entity entering into a contract with a local government that requires approval of the governing body must submit a Disclosure of Interested Parties to the local government prior to the execution of the contract. The Texas Ethics Commission (TEC) has adopted a form for the disclosure of Interested Parties (Form 1285) and has created a website application for business entities to submit the required information

Castleberry ISD may not enter into a contract that requires the approval of the School Board until the business entity that is a party to the contract files a Form 1295 with the Texas Ethics Commission and the Castleberry ISD Purchasing Department.

1. Upon being notified of a bid/recommended award, the award recipient, the business entity, must go to the following website. <https://www.ethics.state.tx.us> and follow the login directions on the website application to complete a Form 1295. If this is a business entity's first time login on to the website application, the business entity must create a login Username and Password then follow the application's instructions to complete a Form 1295.
2. Castleberry ISD does not have a Contract ID Number System. Please insert a number unique to your organization in this box
3. Once confirmation is received that the information has been submitted with the Texas Ethics Commission, the business entity MUST print, sign and notarize the Form 1295.
4. The notarized Form 1295 must be filed with the Texas Ethics Commission within seven (7) business days of the date of notification of recommended award. The contract will not be presented to the School Board until the form has been filed with the Texas Ethics Commission and Castleberry ISD Purchasing Department has received the notarized Form 1295.
5. In no way does a request for filing of form 1295 with the TEC commit Castleberry ISD to any type of award whatsoever
6. Once the Castleberry ISD Purchasing Department receives the notarized Form 1295, the Purchasing Department will submit confirmation of receipt through the TEC website within thirty (30) days
7. This process must be followed for each contract requiring Castleberry ISD approval.
8. A Form 1295 cannot be hand written. It must be completed electronically through the TEC Website application.
9. If you have any questions, contact the Castleberry ISD Purchasing Department, 817.252.2029.

CERTIFICATE OF INTERESTED PARTIES**FORM 1295**

Complete Nos. 1 - 4 and 6 if there are interested parties
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

4 Name of Interested Party	City, State, Country (place of business)	Nature of Interest (check applicable)	
		Controlling	Intermediary

5 Check only if there is NO interested Party. ☐

6 UNSWORN DECLARATION

My name is _____, and my date of birth is _____

My address _____, _____, _____, _____, _____
(street) (city) (state) (zip code) (country)

I declare under penalty of perjury that the foregoing is true and correct

Executed in _____ County, State of _____, on the _____ day of _____, 20____
(month) (year)

Signature of authorized agent of contracting business entity
(Declarant)

ADD ADDITIONAL PAGES AS NECESSARY

Request for Taxpayer Identification Number and Certification

► Go to www.irs.gov/FormW9 for instructions and the latest information

Give Form to the
requester. Do not
send to the IRS.

Print or type.
See Specific Instructions on page 3

1 Name (as shown on your income tax return) Name is required on this line, do not leave this line blank	
2 Business name/disregarded entity name, if different from above	
3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes. <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ► _____ Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner. <input type="checkbox"/> Other (see instructions) ► _____	4 Exemptions (codes apply only to certain entities, not individuals, see instructions on page 3). Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ <small>(Applies to accounts maintained outside the U.S.)</small>
5 Address (number, street, and apt. or suite no.) See instructions	Requester's name and address (optional)
6 City, state, and ZIP code	
7 List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number									
				-				-	
or									
Employer identification number									
				-					

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
- I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
- I am a U.S. citizen or other U.S. person (defined below), and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign
Here

Signature of
U.S. person ►

Date ►

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding*, later.

By signing the filled-out form, you

1 Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2 Certify that you are not subject to backup withholding, or

3 Claim exemption from backup withholding if you are a U S exempt payee. If applicable, you are also certifying that as a U S person, your allocable share of any partnership income from a U S trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

4 Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

Note: If you are a U S person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U S person. For federal tax purposes, you are considered a U S person if you are

- An individual who is a U S citizen or U S resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7)

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U S person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U S status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U S status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U S owner, the U S owner of the disregarded entity and not the entity,
- In the case of a grantor trust with a U S grantor or other U S owner, generally, the U S grantor or other U S owner of the grantor trust and not the trust, and
- In the case of a U S trust (other than a grantor trust), the U S trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U S branch of a foreign bank that has elected to be treated as a U S person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U S tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U S resident alien for tax purposes.

If you are a U S resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U S tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

- 1 The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
- 2 The treaty article addressing the income.
- 3 The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
- 4 The type and amount of income that qualifies for the exemption from tax.
- 5 Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U S -China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U S law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U S -China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

- 1 You do not furnish your TIN to the requester,
- 2 You do not certify your TIN when required (see the instructions for Part II for details),
- 3 The IRS tells the requester that you furnished an incorrect TIN,
- 4 The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
- 5 You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account, for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line, **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a Individual. Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note: ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b Sole proprietor or single-member LLC. Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c Partnership, LLC that is not a single-member LLC, C corporation, or S corporation. Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d Other entities. Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e Disregarded entity. For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual	Individual/sole proprietor or single-member LLC
• Sole proprietorship, or	
• Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes	
• LLC treated as a partnership for U.S. federal tax purposes,	Limited liability company and enter the appropriate tax classification (P= Partnership, C= C corporation, or S= S corporation)
• LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or	
• LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes	
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . .	THEN the payment is exempt for .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹ See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37).

B—The United States or any of its agencies or instrumentalities.

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities.

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i).

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i).

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state.

G—A real estate investment trust.

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940.

I—A common trust fund as defined in section 584(a).

J—A bank as defined in section 581.

K—A broker.

L—A trust exempt from tax under section 664 or described in section 4947(a)(1).

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan.

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.ssa.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/Businesses and clicking on Employer Identification Number (EIN) under Starting a Business. Go to www.irs.gov/Forms to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to www.irs.gov/OrderForms to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABL accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1 Individual	The individual
2 Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account ¹
3 Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4 Custodial account of a minor (Uniform Gift to Minors Act)	The minor ²
5 a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee ¹
b. So-called trust account that is not a legal or valid trust under state law	The actual owner ¹
6 Sole proprietorship or disregarded entity owned by an individual	The owner ³
7 Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor ⁴
For this type of account:	Give name and EIN of:
8 Disregarded entity not owned by an individual	The owner
9 A valid trust, estate, or pension trust	Legal entity ⁴
10 Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11 Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12 Partnership or multi-member LLC	The partnership
13 A broker or registered nominee	The broker or nominee

For this type of account:	Give name and EIN of:
14 Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15 Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

***Note:** The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes

Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at spam@uce.gov or report them at www.ftc.gov/complaint. You can contact the FTC at www.ftc.gov/idtheft or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see www.IdentityTheft.gov and Pub. 5027.

Visit www.irs.gov/IdentityTheft to learn more about identity theft and how to reduce your risk.

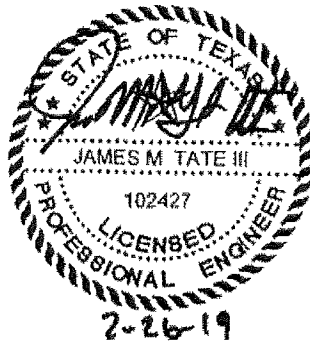
Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, the cancellation of debt, or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

ELECTRONIC SAFETY AND SECURITY

DIVISION 28

28 05 00	General Electronic Safety and Security System Requirements
28 13 27	Building Access Control System
28 31 24	Premises Intruder Alarm System



SECTION 28 05 00**GENERAL ELECTRONIC SAFETY AND SECURITY 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 Electronic Safety and Security Systems complete including demolition of existing systems to be replaced. Completely remove equipment, cabling, backboxes, conduit, supports 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 Electronic Safety and Security 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 Electronic Safety and Security systems as shown on the drawings and as specified herein
- H Cable pathways, conduit, and cable support systems shall be complete with bushings, de-burred, cleaned, and secure prior to installation of cable
- I Installation of each system may be required to be installed in phases as renovations to the building are completed
- J 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
- H Provide 120-volt power and connection to equipment provided in Division 28
- I Coordination of requirements of Division 28 with the Builder

GENERAL ELECTRONIC SAFETY AND SECURITY SYSTEM REQUIREMENTS

28 05 00 - 1

1 3 WORK NOT INCLUDED

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

1 4 RELATED SECTIONS

- A The conditions of the Division 0, Division 1, Division 26 requirements, and the contract requirements that include the General Conditions and the Supplementary Conditions apply to work of this division.
- B Section 26 05 34 - Provisions For Communication, Security & Safety Systems

1 5 CODES, STANDARDS, AND THEIR ABBREVIATIONS

- A General
- 1 Perform all work in strict accordance with the requirements and recommendations stated in the codes and standards except when requirements are exceeded by the contract documents.
 - 2 In addition to the requirements outlined in other sections of the specifications the following standards are imposed as applicable to the work in each instance:
 - a OSHA Safety and Health Regulations for Construction
 - b NFPA No. 70 National Electrical Code
 - c NESC National Electrical Safety Code, ANSI Standard C2
 - d NEIS National Electrical Installation Standards
 - e Local Codes and Ordinances
- B Where local codes or practices exceed or conflict with the NEC, it shall be the Contractor's responsibility to perform the work in accordance with the local code prevailing and local interpretations thereof. Any such additional work shall be performed at no additional cost to the Owner.
- C Materials and components shall be UL listed and labeled by Underwriters Laboratories, Inc. for the intended use under the latest appropriate testing standard.
- D The Contractor shall obtain all permits required to commence work. Upon completion of the Work, the Contractor shall obtain and deliver to the Owner's Representative a Certificate of Inspection and Approval from the State Board of Fire Underwriters, the City of River Oaks, Texas, and other authorities having jurisdiction. The Contractor shall pay required permit fees.

1 6 LIST OF ASSOCIATIONS AND STANDARDS

ADA	Americans with Disabilities Act
ANSI	American National Standards Institute, 1430 Broadway, New York, NY 10018
ASTM	American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103
BICSI	(RCDD5 Standards), 8610 Hidden River Parkway, Tampa, FL 33637
CBM	Certified Ballast Manufacturers Association, 2116 Keith Building, Cleveland, Ohio 44115
IEEE	Institute of Electrical and Electronics Engineers, 345 East 47th Street, New York, NY 10017
ICEA	Insulated Cable Engineers Association, P O Box P, South Yarmouth, MA 02664
NEC	National Electrical Code, NFPA No. 70
NECA	National Electrical Contractors Association, Inc., 7315 Wisconsin Ave., Washington, DC 20014
NEMA	National Electrical Manufacturers Association, 155 East 44th Street, New York, NY 10017
NESC	National Electrical Safety Code, ANSI Standard C2
NFPA	National Fire Protection Association, 60 Batterymarch Street, Boston, MA 02110
OSHA	Occupational Safety and Health Administration, US Department of Labor, Washington, DC 20402
TAS	Texas Accessibility Standards (TAS) Article 9102
UL	Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062

- A Nothing in the Contract Documents shall be construed to permit work not conforming to these codes.

GENERAL ELECTRONIC SAFETY AND SECURITY SYSTEM REQUIREMENTS

28 05 00 - 2

- B When two or more codes or standards are applicable to the same work, then the stricter code or standard shall govern
- C The date of the code or standard is that in effect on the date of issue stated on the contract documents, except when a particular publication date is specified
- D The Contractor shall comply with all State, Federal, NFPA, local codes and ordinances that may alter any part of the plans or specifications. The Contractor shall bear all costs for correcting any deficiencies due to non-compliance
- E Where local codes and ordinances are not in writing or on record but local precedence have been set, the Owner shall pay for any additional resulting cost

1 7 DEFINITIONS

- A Approval It is understood that approval must be obtained from the Owner/Architect in writing before proceeding with the proposed work. Approval by the Owner/Architect of any changes, submitted by the Contractor, will be considered as general only to aid the Contractor in expediting their work
- B The Builder The primary contractor engaged to oversee the construction project. They may be technically described as a Construction Manager, General Contractor, Managing Construction Contractor, et cetera
- C The Contractor The Contractor engaged to execute the work included a particular section only, although he may be technically described as a Subcontractor to the Builder. If the Contractor, engaged to execute said work, employs Sub-Contractors to perform various portions of the work included under a particular Section, they shall be held responsible for the execution of this work, in full conformity with Contract Document requirements. The Contractor shall cooperate at all times and shall be responsible for the satisfactory cooperation of their Subcontractors with the other Contractors on the job so that all of the various sections and phases of work may be properly coordinated without unnecessary delays or damage
- D The Electrical Contractor The Electrical Contractor shall be engaged to execute the work included Division 26 only
- E PDF file or pdf The filename extension associated with "Portable Document Format" files, which are multi-platform computer files in the ISO 32000-1 2008 open standard format developed and licensed by Adobe Systems. These files are a digital electronic representation of text, documents, images, and technical drawings in a font and color-accurate fixed-layout format that is platform and display resolution independent. PDF files can be electronically transmitted, viewed, or printed with various free PDF reader application programs, and may allow markups/comments with various PDF editing application programs
- F Provide Defined as requiring both the furnishing and installation of the item or facility indicated, complete in all respects and ready for operation unless otherwise specifically noted

1 8 SCHEDULE OF VALUES, APPLICATION FOR PAYMENT

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

1 9 WARRANTY

- A The Contractor shall warranty their work against defective materials and workmanship for a period of one year from date of acceptance of the job

- B Neither the final payment nor any provisions in Contract Documents shall relieve the Contractor of the responsibility for faulty materials or workmanship
- C He shall remedy any defects due thereto and pay for any damage to other work resulting there from, which shall appear within a period of one year from date of substantial completion
- D The Owner shall give notice of observed defects with reasonable promptness
- E This Warranty shall not be construed to include the normal maintenance of the various components of the system covered by these specifications

1 10 SITE VISIT

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

1 11 SUBMITTALS

- A Submittal procedures shall be per Division 1 - General Requirements
- B Provide a complete submittal for each section as specified
- C Submit complete submittal package within 30 calendar days after award of this work for approval Equipment is not to be ordered without approval Partial submittals are not acceptable for review Each submittal shall include a dated transmittal
- D A submittal may be electronically transmitted in PDF file format (preferred) or paper copies may be provided in quantities indicated in Division 1 Paper copies shall be organized including index tabs in a 3-ring black binder of sufficient size
- E Each Product data submittal shall include
 - 1 A cover sheet with the name and location of the project, the name, address, and telephone number of the Contractor, and the name, address, and telephone number of the submitting sub-contractor Include on or after the cover sheet sufficient space for review stamps
 - 2 An indication of any deviations from Contract Document requirements, including variations and limitations Show any revisions to equipment layout required by use of selected equipment
 - 3 A product data index and complete equipment list including for each product submitted for approval the manufactures name and part number, including options and selections
 - 4 Cut-sheets or catalog data illustrating the physical appearance, size, function, compatibility, standards compliance, and other relevant characteristics of each product on the equipment list Indicate by prominent notation (an arrow, circle, or other means) on each sheet the exact product and options being submitted
 - 5 Submit design data, when the scope of work requires, including calculations, schematics, risers, sequences, or other data
 - 6 When the contract requires extended product warranties, submit a sample of warranty language
 - 7 Any resubmittal shall include a complete revised equipment list and any product data that is revised
- F Submit shop or coordination drawings, when specified or the required for the scope of work, which include information that will allow to the Contractor to coordinate interdisciplinary work and when necessary guide the manufacturer or fabricator in producing the product Shop or coordination drawings shall be specifically prepared to illustrate the submitted portion of work, this may require diagrams, schedules, details, and accurate to scale equipment and device layouts prepared using a CAD or BIM engineering drawing program

- G The Engineer's review of submittals is only for confirmation of adherence to design of project and does not relieve the Contractor of final responsibility for furnishing all materials required for a complete working system and in complying with the Contract Documents in all respects

1 12 PROJECT RECORD DOCUMENTS

- A The Contractor shall keep a set of plans on the job, noting daily all changes made in connection with the final installation including exact dimensioned locations of all new and uncovered existing utility piping outside the building
- B Upon submitting their request for final payment, he shall turn over to the Owner/Engineer, for subsequent transmittal to the Owner revised plans showing "as installed" work
- C In addition to the above, the Contractor shall accumulate during the jobs progress the following data in PDF file format (preferred) or paper copies to be turned over to the Owner/Engineer for checking and subsequent delivery to the Owner
 - 1 All warranties, guarantees, and manufacturer's directions on equipment and material covered by the Contract
 - 2 PDF file or paper copies of all Shop Drawing prints and CAD or BIM engineering drawing program files
 - 3 Any software programs, data/programming files, passwords, special interface cables, or keys that may be needed to maintain or access equipment
 - 4 Set of operating instructions. Operating instructions shall also include recommended maintenance and seasonal changeover procedures
 - 5 Any and all other data and/or plans required during construction
 - 6 Repair parts lists of all major items and equipment including name, address, and telephone number of local supplier or agent
 - 7 The first page, or pages, shall have the names, addresses, and telephone numbers of the following
 - a Builder and all Contractors
 - b Major Equipment Suppliers
 - c Submit communication systems warranties

1 13 TRAINING

- A Upon completion of the work and at a time designated by the Architect, provide formal training sessions for the Owner's operating personnel to include location, operation, and maintenance of all Electronic Safety and Security systems equipment and systems
- B See other sections for time requirements

1 14 PLANS AND SPECIFICATIONS

- A The intent of the project drawings is to establish the types of systems and functions, but not to set forth each item essential to the functioning of the system
- B Electrical drawings are generally diagrammatic and show approximate location and extent of work
- C Install the work complete including minor details necessary to perform the function indicated. Provide Electronic Safety and Security systems (including all hook-ups) complete in every respect and ready to operate
- D If clarification is needed, consult the Owner/Architect/Engineer
- E Review pertinent drawings and adjust the work to conditions shown. Where discrepancies occur between drawings, specifications, and actual field conditions, immediately notify the Owner/Architect/Engineer for their interpretation
- F The Owner/Architect/Engineer reserves the right to make any reasonable change in the location of any part of this work without additional cost to the Owner

GENERAL ELECTRONIC SAFETY AND SECURITY SYSTEM REQUIREMENTS

28 05 00 - 5

1 15 PRODUCT SUBSTITUTIONS

- A Descriptions and details, acceptable manufacturers' names listed, and specific manufacturer and model number items indicated in the plans and specifications shall establish a standard of quality, function, and design. Manufacturers and model numbers listed "no exceptions" shall not be substituted without specific notice in an addendum. Otherwise, where a specific manufacturer's product is indicated, products of other manufacturers listed as acceptable may be submitted for approval based on the substitute product being, in the opinion of the Engineer, of equivalent or better quality than that of the product specified.
- B Proposed contractors wishing to propose systems which differ in manufacturer, features, functions, or operating characteristics from those outlined in these specifications must do so in writing to the specifying authority at least ten (10) days prior to the proposal opening.
- C For manufacturers equipment or models other than that specified, the proposed contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment. Proposals must include detailed information showing all deviations from the system as specified and include relevant technical and cost data. This shall include a complete description of the proposed substitution, drawings, catalog cuts, performance data, test data, or any other data or information necessary for evaluation.
- D The Engineer will consider all such submittals and the Owner will issue an addendum listing items that the Engineer considers acceptable. Only such items as specified or approved as acceptable will be installed on this project.
- E Substitute products for which the proposed contractor does not obtain prior approval will not be considered acceptable for this project. Final approval of the alternate system shall be based on the decision of the Owner and Architect. Prior approval to make a proposal for this project does not automatically ensure the system will be an acceptable equivalent.
- F The Contractors' proposal represents that the contract proposal price is based solely upon the materials, equipment, and labor described in the Contract Proposal Documents (including addenda, if any) and that he contemplates no substitutions or extras.
- G The manufacturer of the proposed substitute unit shall provide samples for evaluation, when required, at no charge and non-returnable.
- H Requests for substitution are understood to mean that the Contractor
- 1 Has personally investigated the proposed substitution and determined that it is equivalent or superior in all respects to that specified.
 - 2 Will provide the same guarantee for the substitution that he would for that specified.
 - 3 Will, at no cost to the Owner, replace the substitute item with the specified product if the substitute item fails to perform satisfactorily.
 - 4 After Award of the Contract, substitutions will be considered only under one or more of the following circumstances:
 - a The substitution is required for compliance with subsequent interpretations of code or insurance requirements.
 - b The specified product is unavailable through no fault of the Contractor.
 - c The manufacturer refuses to warranty the specified products as required.
 - d Subsequent information indicates that the specified product is unable to perform properly or to fit in the designated space.
 - e In the Engineer's sole judgment, the substitution would be in the Owner's best interest.
 - f Revisions to the electrical system caused by substitutions shall be under the supervision of the Engineer, at a standard hourly rate charged by the Engineer. Charges from the Engineer, Architect, and Electrical Contractor shall be paid by the Contractor originating the changes.

1 16 FUTURE USE CABLING

- A When cabling is installed for future use, it shall be identified with a tag of sufficient durability to withstand the environment involved.

B Locations and Existing Conditions

- 1 Location and condition of any existing equipment or services, when shown, have been obtained from substantially reliable sources, are shown as a general guide only, without guarantees as to accuracy
- 2 The Contractor will examine the site, verify all requirements, service points, and availability of all services required to complete this project. No consideration will be granted for any alleged misunderstanding of the materials and labor to be provided as necessitated by nature of the site including those items that may be fairly implied as essential to the execution and completion of any and all parts of this project

C Existing Electronic Safety and Security Systems Complete Demolition for Additions and Renovation

D As indicated by the plans and specifications the electronic safety and security contractor shall be responsible for complete demolition of the existing electronic safety and security systems, including demolition of any devices and cabling previously abandoned. Demolition shall include

- 1 Disconnection and removal of all electronic safety and security devices not to remain in service in walls, floors, and ceilings
- 2 Identification and verification of abandoned wiring and equipment. All disconnected or abandoned devices that are visible shall be removed, i.e. non-functional fire pulls, bells, speakers, signals, et cetera. Remove abandoned wiring to the source of the supply everywhere possible; the accessible portions of all inaccessible abandoned cabling shall be removed.
- 3 Removal of exposed abandoned conduit and supports including brackets, stems, hangers, and other accessories located on walls and above accessible finished ceilings. Cut abandoned conduit flush with walls, floors, etc., and patch surfaces.
- 4 Provide a blank cover for abandoned device backboxes that are impractical to remove from masonry construction without unnecessary damage.
- 5 Confirm with Owner/Architect regarding the handling and disposal/reuse of removed material, equipment, devices, et cetera.
- 6 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.
- 7 Repair of any finishes or adjacent construction damaged during modification, extension, and demolition work.

1.1 EXAMINATION

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

1.2 IMPLEMENTATION

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

1.3 OPERATION OF NEW EQUIPMENT PRIOR TO PROJECT COMPLETION

- A When the phasing of a project requires that electronic safety and security systems are operable in certain areas and the Owner needs to operate the equipment, the contractor shall make such provisions. The warranty period shall commence on new equipment when it is operated for the 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. In these cases, the date of acceptance and the start of the warranty may be different dates.

GENERAL ELECTRONIC SAFETY AND SECURITY SYSTEM REQUIREMENTS

28 05 00 - 7

1 4 PROTECTION OF EQUIPMENT AND MATERIALS

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

1 5 FINAL OBSERVATION

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

1 6 PROHIBITED MATERIALS

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

1 7 CUTTING AND PATCHING

- A Notify the Builder sufficiently ahead of construction of any floors, walls, ceiling, roof, et cetera, of any openings that will be required for their work
- B The Contractor shall see that all sleeves required for their work are set at proper times to avoid delay of the job
- C All necessary cutting of walls, floors, partitions, ceilings, et cetera, as required for the proper installation of the work under this Contract shall be done at the Subcontractor or at the Subcontractor's expense in a neat and workmanlike manner, and as approved by the Owner/Architect/Engineer
- D Patching of openings and/or alterations shall be provided by the Electronic Safety and Security Subcontractor or at the Subcontractor's expense in an approved manner
- E No joists, beams, girders, or columns shall be cut by any Contractor without first obtaining written permission of the Owner/Architect/Engineer
- F All openings in firewalls and floors shall be completely sealed after installation for a completely airtight installation. Sealing material shall be non-combustible and UL approved. The installed sealing assembly shall not cause the fire rating of the penetrated structure to be decreased
- G All openings in exterior walls shall be sealed watertight
- H Seal voids around conduits penetrating fire-rated assemblies and partitions using fire stopping materials and methods in accordance with NFPA and local codes

GENERAL ELECTRONIC SAFETY AND SECURITY SYSTEM REQUIREMENTS

28 05 00 - 8

1 8 MANUFACTURERS' INSTRUCTIONS

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

1 9 INSTALLATION

- A Cooperation with trades of adjacent, related or affected materials or operations, and or trades performing continuations of this work under subsequent contracts are considered a part of this work. In order to effect timely and accurate placing of work and to bring together, in the proper and correct sequence, the work of such trades, including work provided under a Division 1 allowance
- B The Electronic Safety and Security Contractor shall coordinate installation of the Electronic Safety and Security systems with the Builder, Electrical, Mechanical, and Plumbing Contractors to ensure a complete working system for the Owner
- C Where required for accessibility all conduit and boxes for all Electronic Safety and Security systems shall be provided by the Electrical contractor as specified, including systems in Division 28, any and all allowances shall be included. Normally low voltage wiring shall run open and supported in accessible attic space. All low voltage wiring in exposed areas such as gyms, stages, shops, and field houses shall be enclosed in conduit. Coordinate with and verify with Division 26 to provide required conduit and boxes at locations and heights as required
- D Conduit, innerduct, track, or raceway shall conceal and protect wiring in exposed areas, within walls, through in-accessible areas, floors, chases, under slab, crawlspaces, or underground
- E All conduit, duct, track, and raceway runs shall be spaced apart to allow for maintenance, such as the installation of couplings, without disturbing adjacent pathways
- F All work must be performed by workers skilled in their trade. The installation must be complete whether the work is concealed or exposed
- G Provide stainless screw/bolt hardware wherever stainless devices are used and in potentially wet areas
- H Coordinate the actual locations of devices and outlets and equipment with building features and mechanical equipment as indicated on architectural, structural, and mechanical drawings. Review with the Owner/Architect any proposed changes in outlet or equipment location. Relocation of devices, before installation, of up to 3 feet from the position indicated, may be directed without additional cost. Remove and relocate outlets placed in an unsuitable location when so requested by the Architect

PART 2 – PRODUCTS

- A Not Applicable

PART 3 – EXECUTION

- A Not Applicable

END OF SECTION**GENERAL ELECTRONIC SAFETY AND SECURITY SYSTEM REQUIREMENTS**

28 05 00 - 9

SECTION 28 13 27**BUILDING ACCESS CONTROL SYSTEM****PART 1 - GENERAL****1 1 SCOPE OF WORK**

- A Provide an all new IP networked, credential card based, Building Access Control System that shall serve the doors as indicated on the project plans indicated for this campus and be readily expandable to serve the entire school district. It shall be an Open Options/Mercury Access Technology, Addison, Texas - DNA Fusion enterprise class Building Access Control System software and utilizing various door controller model numbers, functions, and features described in this specification section and as indicated on plans, no exceptions.
- B Remove all existing access control system from the building.
- C Provide all required licenses and software to integrate the district's existing Video Insight Video Surveillance System.
- D Provide Premises Intruder Alarm System integration. See Section 28 16 24 - Premises Intruder Alarm System.
- E Install and test owner provided Surveillance CCTV IP Cameras as shown on plans.
- F **NOTE:** All electric door locks shall be configured for fail-safe un-delayed egress operation and fail-secure to prevent unauthorized entry on loss of power.

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 Demolition of the existing access control system in its entirety including all controllers, power supplies, readers and cable.
- C Provide all equipment, materials, labor, software, licensing, supervision, and services necessary for or incidental to the installation of a card reader operated door access control system, as shown, or indicated on the drawings and as specified.
- D This access control system shall provide for controlled entry doors to be released when a valid credential card is presented to the credential card reader located adjacent to the door. This system shall monitor for unauthorized entry attempts, control access to the building, and log entry information. The system shall in no way impede free emergency exit from the building. Exit from the building shall not require special effort or knowledge.
- E It shall be the responsibility of this Contractor to obtain all required approvals and certifications from authorities having jurisdiction.
- F It shall be the responsibility of the Electrical Contractor to provide and install all conduit systems, standard electrical boxes, and operating power for the building access systems as outlined on the project drawings. This Contractor shall coordinate all system requirements with and provide special back boxes to the Electrical Contractor prior to installation of conduit.
- G The electrical contractor shall provide 120-volt power as required to the security system through separate dedicated branch circuits, maximum 20 amperes each. Each such circuit shall be labeled at the power distribution panel as ACCESS CONTROL. The location of all circuit breakers serving the system shall be posted in the control unit cabinets. Each cabinet shall be grounded securely to the building grounding system.

BUILDING ACCESS CONTROL SYSTEM

28 13 27- 1

H Provide all testing, documentation, training, and warranty service as outlined in these specifications

1 3 RELATED SECTIONS

A Section 26 05 34 - Provisions For Communication, Security & Safety Systems

B Section 27 10 30 - Data and Telephone Cable Plant

C Section 28 05 00 - General Electronic Safety and Security System Requirements

D Section 28 31 24 - Premises Intruder Alarm System

1 4 CODES AND REGULATIONS

A Perform all work in strict accordance with the requirements and recommendations stated in the codes and standards except when requirements are exceeded by the contract documents

B The equipment, materials, and installation shall confirm to the latest version of all applicable codes, standards and regulations of authorities having jurisdiction including the following

- 1 NFPA 70, National Electrical Code
- 2 NFPA 72, National Fire Alarm and Signaling Code
- 3 Americans with Disabilities Act
- 4 Texas Accessibility Standards
- 5 International Building Codes (IBC)
- 6 Local and State Building Codes
- 7 All requirements of the local Authority Having Jurisdiction (AHJ)

1 5 SUBMITTALS

A Submittal procedures See Section 28 05 00

B Submit a complete submittal package within 30 calendar days after award of this work for approval. Equipment is not to be ordered without approval. Partial submittals are not acceptable for review. Each submittal shall include a dated transmittal.

C Submittal may be electronically transmitted in PDF file format (preferred) or paper copies may be provided in quantities indicated in Division 1. Paper copies shall be organized including index tabs in a 3-ring black binder of sufficient size.

D Quality Assurance Submittal

- 1 Letter from manufacturer stating that this contractor is an Authorized Factory Distributor for the area where the project is located
- 2 This contractor and Manufacturer shall supply sufficient information to indicate that the proposed system is based on the latest hardware, software technology available
- 3 Current copy of this contractors Electronic Access Control Device Security Company license issued by the Texas Department of Public Safety Private Security Board
- 4 Calculations for device circuit current drop and battery backup calculations

E Product Data Submittal including special boxes, cable, and other material as requested by the Owner/Architect including

- 1 A cover sheet with the name and location of the project, the name, address, and telephone number of this contractor, and the name, address, and telephone number of the submitting sub-contractor. Include on or after the cover sheet sufficient space for review stamps
- 2 An indication of any deviations from Contract Document requirements, including variations and limitations. Show any revisions to equipment layout required by use of selected equipment
- 3 A product data index and complete equipment list including for each product submitted for approval the manufactures name and part number, including options and selections
- 4 Cut-sheets or catalog data illustrating the physical appearance, size, function, compatibility, standards compliance, and other relevant characteristics of each product on the equipment list. Indicate by prominent notation (an arrow, circle, or other means) on each sheet the exact product and options being submitted

- 5 Submit design data, when the scope of work requires, including calculations, schematics, risers, sequences, or other data
 - 6 Any resubmittal shall include a complete revised equipment list and any product data that is revised
- F Submit shop drawings locating all components of the system, indicating circuit routing, cable type, and gauge Shop or coordination drawings shall include information that will allow to this contractor to coordinate interdisciplinary work and when necessary guide the manufacturer or fabricator in producing the product Shop or coordination drawings shall be specifically prepared to illustrate the submitted portion of work, this may require diagrams, schedules, details, and accurate to scale equipment and device layouts prepared using a CAD or BIM engineering drawing program

1 6 QUALIFICATIONS OF A PROPOSED CONTRACTOR

- A Proposed contractors who do not currently possess the necessary qualifications, trained and experienced personnel, financial capacity, and meet the other requirements herein described will be disqualified
- B this contractor shall be currently licensed under the Texas Department of Public Safety Private Security Board as an Electronic Access Control Service Installer Company to sell, install, and service private security systems
- C The proposed contractor, as a business entity, shall be an authorized distributor and designated representative of the security panel manufacturer, with full warranty privileges, and shall have been actively engaged in the business of selling, installing, and servicing commercial building alarm systems for a period of at least 5 years
- D Recently formed companies are acceptable only if specific pre-approval is requested, and granted by the Owner/Engineer, based on experience of key personnel, current and completed projects, and all licensing requirements are met 10 working days prior to the contract proposal date
- E All employees working on the project must be registered alarm system installers this contractor shall employ factory trained technicians capable of supporting the maintenance of the system No contract employees are allowed unless they have been to the factory service school within the last 18 months A certificate of this training shall be provided with this contractor's submittal
- F this contractor shall employ full time local technicians and installers The manufacturer shall maintain a full-time factory employed service staff for product support and service
- G The proposed Contractor shall have an office within 150-miles of the job site, staffed with trained technicians who are qualified and licensed to supervise the installation, to be responsible that the system is installed as submitted, to conduct system start up and perform a 100 percent operational audit of all installed devices, to instruct the Owners representatives in the proper operation of the system, and to provide service throughout the warranty period this contractor shall be capable of dispatching technicians to repair a system within six hours of a service request
- H The proposed contractor shall be fully experienced in the design and installation of the type of security system herein specified and shall furnish with the contract proposal an itemized list of the installations of the type specified herein The list shall include the name of the project, date of completion, the amount of the contract, the name, and telephone number of a qualified person to contact for reference This list must contain at least two (2) projects within a 150-mile radius of the school district to allow school administration officials to visit the job site for review of the system installation and service Each reference project listed must utilize equipment by the same manufacturer as the proposed system
- I This contractor shall employ factory-trained technicians capable of supporting the maintenance of the system No contract employees are allowed unless they have been to the factory service school within the last 18 months A certificate of this training shall be provided with this contractors' submittal
- J The Proposed Contractor shall not have any grievances or complaints of record regarding workmanship, code compliance, or service response A Proposed Contractor that has any prior finding(s) of a code or license violation or has any litigation in process concerning the installation of a communication system is unacceptable

- K The ability of a proposed Contractor to obtain plans and provide a performance bond shall not be regarded as the sole qualification of this contractors' competency and responsibility to meet the requirements and obligations of the contract
- L The Builder shall be satisfied that a proposed Contractor meets all the requirements expressed herein before including this contractor's proposal in the project
- M The Owner may investigate, as they deem necessary to determine the ability of the proposed Contractor to perform the work. The proposed Contractor shall furnish to the Owner with any information or data requested for this purpose
- N The Owner reserves the right to reject any contract proposal if the evidence submitted, or their investigation, fails to indicate that this contractor is qualified to fulfill of any part of the contract or to complete the work contemplated therein
- O The Owner reserves the right to reject the proposal of any Contractor who has previously failed to perform properly, or complete on time, contracts of a similar nature

PART 2 – PRODUCTS

2 1 GENERAL

- A This contractor shall provide complete and satisfactorily operating Access Control System as described herein, using materials and equipment of types, sizes, ratings, and performances as indicated. Use materials and equipment that comply with referenced standards and manufacturers' standard design and construction, in accordance with published product information. Coordinate the features of all materials and equipment so they form a functional system, with components and interconnections matched for optimum performance of specified functions
- B The system and all components shall be tested and found suitable for the specified purpose as part of a commercial building security system by a nationally recognized approvals agency acceptable to the AHJ
- C The control units, power supplies, batteries, subassemblies, software, firmware, and all cable, devices control units, power supplies, batteries, subassemblies, software, firmware, cable, and all accessories provided shall be listed and labeled by Underwriters Laboratories, Inc. for commercial security system use under the latest appropriate testing standard
- D All date keeping hardware, firmware, and software provided shall be fully compliant with the calendar year designated in four-digit date format. Any time equations must function normally, leap year, and daylight savings time must be supported
- E Only equipment devices have been shown on the contract drawings. Specific wiring between equipment has not been shown
- F The system shall include but not be limited to all control units, power supplies, batteries, subassemblies, card sensors, software, firmware, and all cable, door release equipment, and all accessories required to provide a complete operating system
- G All equipment and components shall be installed in strict compliance with manufacturers' recommendations and the requirements of the components UL listing. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, electrical requirements, cable types, and physical equipment sizes, etc., before beginning system installation. Refer to the manufacturers' riser / connection diagrams for all specific system installation/termination/wiring data
- H All equipment and components shall be new, and the manufacturer's current model. All like devices shall be of the same manufacturer and model number

BUILDING ACCESS CONTROL SYSTEM

28 13 27- 4

- I All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., detectors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.

2.2 ACCEPTABLE BUILDING ACCESS CONTROL SYSTEM MANUFACTURER

- A Descriptions and details, acceptable manufacturers' names listed, specific manufacturers' model numbers indicated in the project plans and specifications, and other pertinent information herein are intended to establish minimum standards of quality, compatibility, functions, features, and performance of the equipment to be furnished. Manufacturers and model numbers listed "no exceptions" shall not be substituted without specific notice in an addendum. Otherwise, where a specific manufacturer's product is indicated, products of other manufacturers listed as acceptable may be submitted for approval based on the substitute product being, in the opinion of the Engineer, of equivalent or better quality than that of the product specified.
- B Proposed contractors wishing to propose any product substitution must do so in writing to the specifying authority at least ten (10) days prior to the proposal opening.
- C For manufacturers equipment or models other than that specified, the proposed contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment. Proposals must include detailed information showing all deviations from the system as specified.
- D Substitute products for which the proposed contractor does not obtain prior approval will not be considered acceptable for this project. Final approval of alternate products shall be based on the decision of the Owner and Architect. Prior approval to make a proposal for this project does not automatically ensure products will be an acceptable equivalent.
- E It is the responsibility of this contractor to provide all features and functions as outlined in these specifications. The functions and features specified are vital to the operation of this stadium complex, therefore, inclusion in the list of acceptable manufacturers does not release this contractor from strict compliance with the requirements of this specification.
- F The system manufacturers model numbers, functions, and features described in this specification section are those of **Open Options/Mercury Access Technology**, Addison, Texas - DNA Fusion Enterprise software utilizing various door controller model numbers, functions, and features described in this specification section. This shall constitute the quality and performance of the equipment to be furnished, **no exceptions**, any other proposed manufactures devices or software must be pre-approved.

2.3 BUILDING ACCESS CONTROL SYSTEM INSTALLATION REQUIREMENTS

- A Contractors shall provide all material, labor, tools, and equipment required to perform the work described and make complete, safe, and functional systems.
- B Contractors shall pay for and acquire all permits and inspections required by controlling authority.
- C All work shall be installed in accordance with state, local, and national codes.
- D Contractors shall warrant their workmanship and materials for a period of one year from the date of acceptance upon completion of the project.
- E All work shall be done by mechanics skilled in the particular trade involved, under responsible supervision.
- F No surface mounted raceway or conduit will be accepted on any new construction job.
- G Seal all wall and floor penetrations with approved sealant.
- H Access control system cabling can share conduit with intrusion alarm system cabling.
- I All cabling must be suspended up off the ceiling grid.

- J Contractor must provide the Owner with all security equipment MAC addresses and network drop information
- K The access control contractor shall provide and install all required parts and local cabling to get the system online and operational, this includes power supplies required to operate the electrified exit devices
- L Where 110 Volt electrical receptacles as needed to accommodate system transformers, they shall be provided by the electrical contractor at exact locations coordinated with the access control contractor
- M Where 110 Volt electrical receptacles as needed to accommodate door release hardware/ electrified exit devices, they shall be provided by the electrical contractor in an accessible location at 12" above the finished ceiling and within 20 feet of door location
- N Data drops shall be provided by the cabling contractor for security equipment See Section 27 10 30 - Data-Telephone Cable Plant
- O Exterior card reader locations shall be prepared including a recessed single-gang weatherproof metal back box located approximately 44" centered from the ground and 12" off the opened door edge to the side, with a ½" secured rigid or flex conduit with pull string to an accessible interior location concealed above the finished ceiling
- P Controlled door frames shall be prepared as detailed on the plans including a ½" secured rigid or flex conduit with pull string to an accessible interior location concealed above the finished ceiling
- Q Continuous hinges with built in power transfers (concealed ribbon wire) are not acceptable
- R Mag-locks are not acceptable

2 4 RELATED WORK - NETWORK CONNECTIVITY

- A The system shall be utilizing the customer's Ethernet system backbone for all security devices communications
- B No Ethernet cabling, network RJ-45 jacks, or patch cords are included in the scope of this Specification Section
- C The Owner will provide this Contractor with a terminated network drop at security devices, and the required TCP/IP configuration settings static IP address, domain, gateway, and subnet mask
- D This contractor will program and test all access control system devices for connection to the network
- E This contractor will provide complete programming of all device parameters in accordance with the Owners requirements

2 5 PREMISES INTRUDER ALARM SYSTEM INTEGRATION

- A When a valid credential is read requesting access into an ARMED zone of the Premises Intruder Alarm System, access shall be DENIED unless all of the following conditions are met
 - 1 The controlled entry is located at a Premises Intruder Alarm System keypad
 - 2 The credential holder is in an access group authorized for armed Premises Intruder Alarm System zone access
 - 3 The time and day match the group schedule are for armed Premises Intruder Alarm System zone access
- B When the Premises Intruder Alarm System zone is armed, the door contacts or motion sensors shall initiate an alarm condition, activate the local siren, log the event, and transmit the alarm to the security system monitoring service The monitoring service will then alert security personnel or the police to evaluate the situation

2.6 BUILDING ACCESS CONTROL SYSTEM SOFTWARE

- A The access management solution shall feature a browser (web) thin client, in addition to traditional "fat client" and Terminal Services-based thin client, for easy installation and updating on multiple workstations with multiple monitor support. It shall also include a Mobile Client that allows users to manage their access control system from any mobile device.
- B Cardholder entry and edit shall be accomplished via the Cardholder Entry Screen, which allows users and administrators to set up name, card and PIN numbers, card status (active, inactive, or date-based), and to select access levels for the employee or cardholder. User-defined fields can be used for supplemental information such as department, employee type (hourly, salaried, union, etc.), social security number, license plate number, and many others. Access to user fields shall be determined by the operator's security clearance.
- C The system shall feature over 75 standard reports including card access events, cardholder and card listings, evacuation reports, and cardholder time and attendance.
- D The integrated graphical timezone display screen shall allow users to identify when a timezone is active (green in the graphical display), indicating that authorized cardholders have access to an area during the active period. It simplifies verification that timezones are set up properly for workdays, holidays, etc.
- E The Interactive Map feature shall give operators full functional control of the entire system through the use of dynamic device and alarm icons displayed on graphic map screens. Dynamic color graphics feature fully scalable alarm presentation with automatic zoom. Alarms can be acknowledged and cleared at the map level with the same functionality as at the device or alarm level. Maps have full drill-down capabilities to allow precise location of alarms, as well as full camera control.

2.7 BUILDING ACCESS CONTROL SYSTEM HOST COMMUNICATION/DATABASE SERVERS

- A The system shall be an Open Options/Mercury DNA Fusion enterprise suite software installation utilizing Distributed Network Architecture.
- B The software shall be installed on an Owner provided server that shall support the credential user database, door control, and management software via the district wide area network.

2.8 SMART CREDENTIAL CARDS

- A The District shall utilize their existing smart credential cards for the new card access system.

2.9 SMART CREDENTIAL CARD READERS

- A Controlled access door locations as indicated on plans shall be provided with an entry card reader to allow access to authorized individuals as scheduled. Readers shall have a weatherproof design capable of operation in indoor or outdoor environments with a temperature range of 0 to 140° F and a relative humidity range of 10 to 100%.
- B Each Smart credential card reader shall mount on a standard single-gang electrical wall box, mullion, or on the surface of an interior or exterior wall and feature a read range of 6 to 9 inches. The electronics shall be potted with UL Listed potting compound to protect the reader from harsh environmental conditions.
- C Outdoor weatherproof back boxes shall be flush mounted and connected to a 1/2" threaded rigid pipe conduit and sealed. The reader casing shall be grounded to prevent electrostatic discharge from interfering with the operation of the reader.
- D Threaded conduit is required for outdoor applications and dielectric grease shall be used to coat field connections.

- E Provide low profile Smart credential card readers, gray in color, designed for narrow mullion mount or standard wall mount as required, match to existing mounting where applicable. Narrow mullion mount size 1 9" x 4 1" x 0 9". Standard size readers shall mount on a standard single-gang weatherproof electrical wall box or with a glass mount kit. Standard size 3 3" x 4 8" x 1 1".
- F Provide HID 13 56 MHz iCLASS multiCLASS SE models for support of the district issued HID iCLASS Seos 500X Smart Cards with dynamic support of multiple credential technologies including iCLASS Seos, iCLASS SE, standard iCLASS, MIFARE, MIFARE DESFire, Prox, and more for enrolment of allied agency card formats.
- G Provide mobile-ready readers come fully prepared to read Mobile IDs including customer/site-specific personalization, using Bluetooth and Seos.
- H For door control provide iCLASS multiCLASS SE RP15 Contactless Smartcard Reader (mullion mount) or iCLASS multiCLASS SE RP40 Contactless Smartcard Reader Wall Switch (standard single gang mount). Smart credential card readers with Wiegand format interface as required or equivalent.

2 10 DOOR CONTROLLER MODULES

- A The following Mercury Security Corporation open platform controllers shall be configured to automatically receive policy and schedule updates for all identities and hardware configurations as distributed by the Open Options software platform. The controllers shall ensure security is enforced at the controlled doors - even when upstream network communications are temporally interrupted.
- B All system programming shall be maintained in non-volatile memory such that program information is maintained even if all external AC and battery power is removed.
- C Provide as required Power-over-Ethernet and/or RS-485 serial interface controllers and door modules that include a door/reader interface module all in one unit and support standard reader technologies, including Wiegand, clock and data, magnetic stripe, keypads, LCD and biometrics.
- D Each module shall be housed in a wall enclosure and connected, internally or adjacently, to a 12 VDC battery backed up power supply.
- E Intelligent door controllers (Network Controllers) – EP series control modules shall include an Ethernet port for communication with the Physical Access Control System Enterprise Appliance (EPACS) server network and an RS-485 serial output interface for communication with a group of door reader interface sub-modules, wireless lock integration for ASSA ABLOY Aperio wireless hub, door, and cabinet devices, and also a group of model MR51E door reader interface sub-modules may communicate with an assigned EP control module directly through the Ethernet network, provide as follows:
 - 1 One Door PoE Capable Controller, expandable to host a total of Seventeen doors, with data network Ethernet communications port, requires 12 VDC input or may be PoE IEEE 802 3af powered - 150mA maximum. RS-485 serial output control port for MR series interface modules and includes two onboard reader ports (for a single opening), two tamper inputs, and two outputs. Shall be Open Options/Mercury Security model EP1501.
 - 2 Two Door Controller, expandable to host a total of Sixty-Four doors, with data network Ethernet communications port, requires 12 VDC input - 500mA maximum. RS-485 serial output control port for MR series interface modules and includes two onboard reader ports, eight tamper and power monitor inputs, and four outputs. Shall be Open Options/Mercury Security model EP1502.
 - 3 Controller to host up to Sixty-Four doors, with data network Ethernet communications port, requires 12 VDC input - 300mA maximum. RS-485 serial output control port for MR series interface modules, but does not include any onboard reader ports, inputs, or outputs. Shall be Open Options/Mercury Security model EP2500 intelligent controller.
- F Door reader interface sub-modules (Interface Modules) - MR series interface modules shall include card reader ports, input monitor points, and control relay outputs. The following door controllers shall be auto-addressable, directly managed by an assigned Mercury Security EP series intelligent host controller, and shall be capable of elaborate processes and procedures without host intervention, provide as follows:
 - 1 One Door Ethernet interface controller, requires 12 VDC input or may be PoE IEEE 802 3af capable - 300mA maximum, includes two onboard reader ports (for a single opening), four inputs, and two outputs. Shall be Open Options/ Mercury Security model MR51E.

- 2 One Door RS-485 serial interface controller, requires 12 VDC input - 150mA maximum, includes one onboard reader port, two inputs, and two outputs *Shall be Open Options/Mercury Security model MR50*
- 3 Two Door RS-485 serial interface controller, requires 12 VDC input - 450mA maximum, includes two onboard reader ports, eight inputs, and six outputs *Shall be Open Options/ Mercury Security model MR52*
- G Input Modules
 - 1 Open Options/Mercury Security model MR16IN EP series RS-485 serial interface multi-device panel *providing the ability to monitor high concentrations of system auxiliary inputs Each shall be capable of supporting 16 general purpose input circuits which can be individually set for normally-open or normally-closed operations and can be declared supervised and non-supervised Individually configurable parameters can be set for sensitivity ranges, timing parameters, and end-of-line resistance values*
- H Output Modules
 - 1 Open Options/Mercury Security model MR16OUT EP series RS-485 serial interface multi-device panel *providing the ability to control high concentrations of system auxiliary outputs Each shall provide 16 general purpose outputs as Form C relay contacts, each with individually configurable parameters, which may be set for timing and for fail-safe vs fail secure modes Each relay output can be configured to control outboard devices and can be activated by the condition of selected system devices locally or regionally without host intervention*

2.11 MODULE ENCLOSURES AND POWER SUPPLY/BATTERY BACKUPS

- A Provide as required to house all modules, enclosures that shall be 19 gauge high grade steel with textured black finish enclosures for indoor use, suitable for surface wall mounting, and shall include battery backup power supplies where required Each enclosure shall include a removable back plate for module mounting, a keyed lock, and tamper switch Access power enclosures shall include a single AC power connection (for power supply), a pre-wired LSP power section Each tamper switch shall be wired to a module input circuit for monitoring by the System
- B Provide UL 294 listed power limited source, filtered and electronically regulated 12 VDC output power supplies with short circuit/thermal overload protection, and automatic switch over to stand-by battery backup when AC fails Each power supply shall include a built-in charger and sealed type battery
- C Power supply/chargers and batteries shall operating and emergency power to the system Provide sufficient battery capacity for operation without AC power for all control modules, card readers, and electric unlocking/locking devices for a minimum of 4-hours (design calculations required) Include a 20% safety factor in battery calculations to ensure adequate performance for the service life of batteries
- D Enclosures and power supplies shall be LifeSafety Power Inc , FlexPower, MCLASS Mercury series, or equivalent, models as follows
- E E Series Access Module Enclosures
 - 1 E5, 2-board cabinet 8 5"x11"x3 0"
 - 2 E1, 4-small board cabinet, not for larger EP2500 or EP150x modules 12"x14"x4 5"
 - 3 E2, 4-board cabinet 16"x20"x4 5"
 - 4 E4, 8-board cabinet 20"x24"x4 5"
- F EM Series Access Power Enclosures
 - 1 E5M, 2-board cabinet (1 board with a 75 watt power supply) 8 5"x11"x3 0"
 - 2 E1M, 4-small board cabinet, not for larger EP2500 or EP150x modules (3 boards with a 75 watt power supply) 12"x14"x4 5"
 - 3 E2M, 4-board cabinet (3 boards with a 75 watt power supply) 16"x20"x4 5"
 - 4 E4M2, 8-board cabinet (2 large boards and 12 small boards with a 150 watt power supply) 20"x24"x4 5"
 - 5 E4M, 8-board cabinet (7 boards with a 150 watt power supply) 20"x24"x4 5"
 - 6 E4M1, Capacity of E4M plus mounting provisions for 6 boards on the inside of the door 20"x24"x4 5"
 - 7 E8M, 9-board cabinet (6 boards with two 150 watt power supplies) 36"x30"x4 5"

- G Power Supply/Battery Chargers
 - 1 FPO75, 75 watt with 2 main 12VDC outputs
 - 2 FPO75-D8PE, 75 watt with 8 Class II 12VDC outputs (expandable)
 - 3 FPO150-D8PE, 150 watt with 8 Class II 12VDC outputs (expandable)
 - 4 FPO150-2DD8PE, 150 watt with 16 Class II 12VDC outputs (expandable)
- H Power Supply Expansion Modules, multiple modules can be daisy chained from an expandable FPO series power supply to provide additional outputs
 - 1 D8P, Simple distribution power module with 8 Class II (Power Limited) 12VDC outputs (2 5A each output)
- I Power Controller Modules (Lock Controller Modules), multiple modules can be daisy chained from an expandable FPO series power supply to provide additional outputs that are relay controlled by the System with fault detection and reporting to host power supply. Each input may be programmed to respond to normally open dry contact transition, normally closed dry contact transition, application of voltage between 9 and 33VDC, or removal of voltage between 9 and 33VDC. Each output circuit output may be programmed for the following modes: voltage output from power supply one, voltage output from power supply two, fail-safe, fail-secure, normally open dry contact, normally closed dry contact, or fire alarm over ride for egress lock.
 - 1 C4P, Power Controller Module with 4 inputs/4 Class II (Power Limited) 12VDC controlled outputs (2 5A each output)
 - 2 C8P, Power Controller Module with 8 inputs/8 Class II (Power Limited) 12VDC controlled outputs (2 5A each output)
- J Batteries Provide an up to 12Ah size sealed maintenance free battery per power supply/charger sized as required

2 12 DOOR SWITCHES (ACCESS SYSTEM DOOR CONTACTS)

- A Provide door switches for each controlled door panel and as indicated on floor plans with conduit run to a nearby, accessible, junction box located concealed above finished ceiling
 - 1 Assa Abloy DPS-M GY Concealed Door Position Switch for Metal doors
 - 2 Assa Abloy DPS-W-GY Concealed Door Position Switch for Wood Doors
- B Overhead doors, roof hatches, and controlled exterior pedestrian gates, provide industrial wide gap surface mount magnetic contacts, Interlogix 2507AD-L aluminum housing armored cable contact, wide gap, 1 5" gap size, DPDT or as required. Size Switch and magnet halves are each 3" long x 1" high x 0 5" deep

2 13 DOOR RELEASE HARDWARE INTERFACE

- A Install all wiring and control devices necessary to enable limited access to the indicated points of entry. Each controlled access door shall be fitted with a door switch (above), control relay, and an electric latch or strike. Each controlled door shall be setup to allow entry as permitted by the building access system, to prevent unauthorized entry, and to allow free exit from the building without special knowledge or effort. Magnetic force holding or 'mag' locks are prohibited by this specification.
- B NOTE All electric door locks shall be configured for fail-safe un-delayed free egress operation and fail-secure to prevent unauthorized entry on loss of power.
- C Verify exact hardware requirements with Division 08 and Door Hardware Schedules including door and frame preparation details.
- D Only when the door hardware does not include integrated Request-to-Exit indication contacts, provide a request-to-exit sensor when required (see below).

2 14 REQUEST-TO-EXIT SWITCH OR SENSOR

- A The system shall not be programmed to unlock a door automatically from a request to exit signal, as this presents a security breach. The request to exit signal shall be used only to indicate a normal exit status, as opposed to a forced entry from the outside. Exit shall be made with the normal door hardware and shall not be impeded or assisted by the electronic system. Exit shall not be affected if the power is off and the battery backup exhausted.
- B When no request-to-exit switch is provided integrated into the door hardware (see above), provide at the exit side of each controlled door a request-to-exit passive infrared detector with x-y targeting and digital signal processing.
- C Request-to-Exit Switch Manufacturer / Model Von Duprin RX option request-to-exit switch or equivalent.
- D Request-to-Exit Sensor Manufacturer / Model Provide Assa Abloy XMS passive infrared (PIR) motion sensor request to exit detectors or equivalent.

2 15 VISITOR ENTRY DOOR CONTROL BUTTON DESKTOP CONSOLE

- A Provide where shown on the drawings a Visitor Entry Control Desktop Console with two buttons to control two single entry doors. One door is at the secondary set of entry doors at vestibule C100 into corridor C101 and one door is at the receptionist area C107 into interior corridor C101. The console shall be located on the reception desk. The controlled doors shall be locked from the outside and a door release button shall control the door electric retractable strike, to allow visitors to be "buzzed-in" from the reception area.
- B The controlled entry door to be operated by the door release button shall in no way impede free emergency exit from the building. Exit from the building shall not require special effort or knowledge.
- C NOTE All exit door electric locks shall be configured for fail-safe un-delayed egress operation and fail-secure to prevent unauthorized entry on loss of power.
- D Provide at the reception desk, one (1) SDC model DTMO-2 mini desktop console with two momentary switches with LED indicators.
- E The building access control system controls these doors in a parallel manner. Connect a pushbutton to an input on the door controller module and program the software to, upon pressing the pushbutton momentarily, unlock the door for a set period of time. This operation shall allow the opening of the doors from the secure side without a valid card read. All electric door release hardware shall be supplied by the door hardware supplier as specified under Division 08.
- F Console Cord Provide Southwire V40168 or equivalent, control cable 4-conductor 18AWG unshielded, with ground, flexible copolymer jacket. Ground all equipment properly per the NEC.

2 16 SURVEILLANCE CCTV IP CAMERAS

- A Surveillance CCTV IP Cameras shall be owner provided and installed by the selected access control contractor at the locations shown on plans and as required. Contractor shall coordinate all locations with the owner prior to installation. Contractor shall aim and test the owner provided cameras.

2 17 CABLING

- A All wiring shall be NEC type CM low voltage cable.
- B All exterior cabling shall be in threaded rigid metallic conduit. All connectors must be fastened, tied, and crimped for maximum reliability.
- C Avoid if at all possible junctions or splicing - all junctions in cable shall be made by proper splicing techniques in a junction box.
- D All cabling is to be concealed where construction permits.

- E This contractor shall provide and install new and unused ASTM bare stranded copper conductor wire per ANSI/NEMA codes. Follow the manufacturer's instructions. All wire shall be as recommended by the manufacturer for the application.
- F All cable shall have a machine printed label located within 2" from every terminal block and within 6" from all other connections utilizing self-laminating flexible vinyl film labels.
- G Minimum wire gauge shall be selected based on cable length and current requirements.
- H Wire gauge shall be selected per circuit based on cable length and current requirements.

LOW VOLTAGE CABLE TYPES

<u>Device</u>	<u>Conductors</u>	<u>Min. AWG</u>	<u>Description</u>
RS-485 Serial Interface*	1-Pair Twisted	24	Overall Shield
Entry Intercom	4-Pair UTP	23	Category 6
Point Contact/Relay	1-Pair Twisted	22	Overall Shield
Two Point Contact/Relay	2-Pair Twisted	22	Overall Shield
Three Point Contact/Relay	3-Pair Twisted	22	Overall Shield
Four Point Contact/Relay	4-Pair Twisted	22	Overall Shield
Five Point Contact/Relay	5-Pair Twisted	22	Overall Shield
Six Point Contact/Relay	6-Pair Twisted	22	Overall Shield
Credential Reader (RS-485)	1-Pair Twisted	24	Overall Shield
Credential Reader (TTL)	6-Wire	18	Overall Shield
Composite	Multi-Conductor	22	Overall Shield
Low Voltage Power Combined	2-Pair Twisted	18	Unshielded
Low Voltage Power or Siren	1-Pair Twisted	18	Unshielded
Low Voltage Power	1-Pair Twisted	16	Unshielded
Low Voltage Power	1-Pair Twisted	14	Unshielded
Low Voltage Power	1-Pair Twisted	12	Unshielded

* Belden 9841 or equivalent up to 4,000' per RS-485 serial circuit

2 18 CABLE TIES

- A Nylon cable ties shall be furnished and installed to attach wire bundles to supports and for appropriate wire management as required.
 - 1 Nylon wire tie, 3 9", miniature - Panduit PLT1M-C or equivalent
 - 2 Nylon wire tie, 5 6", miniature - Panduit PLT1 5M-C or equivalent
 - 3 Nylon wire tie, 11 4", intermediate - Panduit PLT3I-C or equivalent
 - 4 Nylon wire tie, 14 6", intermediate - Panduit PLT4I-C or equivalent

2 19 SURGE AND AMPERAGE PROTECTION

- A Electrical surge protection shall be provided for all service entrance connections and on each copper pair that connects one building to another (i.e. any other portion of a building complex not under one continuous roof) at both exit points to prevent damage to equipment.
- B Security system circuit surge protectors shall be mounted in a standard grounded metallic electric box. Shall be Ditek, 12345-A Starky Road, Largo, Florida 34643 model numbers as follow, multiple pair units are available, or equivalent.
 - 1 Part No DTK-1LVLP-X 2-wire protector for 12 Volt circuits
 - 2 Part No DTK-1LVLP-D 2 wire protector for 5 Volt circuits
 - 3 Part No DTK-Z8LVLP-GP 8-pair protector for RS-485 circuits

2 20 CABLE ROUTING, INSTALLATION, AND SUPPORT

- A System wiring and equipment installation shall be in accordance with good engineering practices as established by the NFPA. Wiring shall meet all state and local electrical code requirements.
- B Cable pathways, conduit, and cable support systems shall be complete with bushings, de-burred, cleaned, and secure prior to installation of cable.

BUILDING ACCESS CONTROL SYSTEM

28 13 27- 12

- C Before energizing the system check all cables for correct connections and test for short circuits, ground faults, continuity, and insulation
- D In all exposed areas such as gymnasiums, shops, field houses, janitors' closets, or mechanical / electrical rooms all access system cable shall be fully enclosed in conduit
- E Access system 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
- F Access system cables shall be run in bundles above accessible ceilings and supported from 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
- G Do not attach any supports to joist bridging or other lightweight members. The support system shall provide a protective pathway to eliminate stress that could damage the cabling
- H Mount all equipment firmly in place such that vibration or jarring will not interfere with system operation. Route cable in a professional, neat, and orderly installation
- I The cable shall not be crushed, deformed, skinned, crimped, twisted, or formed into tight radius bends that could compromise the integrity of the cabling
- J Access system cable must not be fastened to electrical conduits, mechanical ductwork / piping, sprinkler pipes, or routed to obstruct access to hatches, doors, utility access panels, or service work areas. Do not route cables through fire doors, ventilation shafts, grates, or parallel for more than four-feet with line voltage electrical conductors. Access system cables shall not be run loose on ceiling grid or ceiling tiles
- K Support shall be provided by mounting appropriate fasteners that may be loaded with multiple cables. If 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
- L All cable shall have a label on both ends utilizing self-laminating, flexible vinyl film, non-smear, machine printed labels
- M 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
- N Provide for adequate ventilation to all equipment housings and take precautions to prevent electromagnetic or electrostatic hum
- O All conduit, ducts, track, and raceways shall be supported from the structure at industry standard intervals for the size specified, utilizing proper anchoring devices. Cable fill may not exceed the manufacturers' instructions for each type of support
- P All conduit, duct, track, and raceway runs shall be spaced apart to allow for maintenance, such as the installation of couplings, without disturbing adjacent pathways
- Q Each cable run shall be free of splices. No terminations, splices, or equipment will be installed in or above ceilings
- R All cabling will be placed with regard to the environment, EMI/RFI interference, and its effect on communication signal transmission
- S Do not route any communication cable within two feet of any light fixture, HVAC unit, service access area, electric panel, or any device containing a motor or transformer

- T Access system cable will not be installed in the same conduit, duct, or track with line voltage electrical cable
- U Maximum cable pulling tension shall not exceed 25 pounds force (110 N) or the manufactures recommendation, whichever is less
- V Any pulling compounds utilized must be approved by the cable manufacturer and shall not degrade the strength or electrical characteristics of the cable

2 21 TERMINATION PRACTICES

- A Strip back only as much cable jacket as required to terminate
- B Do not "loop" over wiring terminals, the cable could come loose and the condition not be detected as an open circuit or disconnected device
- C Preserve wire twists as closely as possible to point of termination (0 5" maximum) to keep signal impairment to a minimum
- D Avoid twisting cable jacket during installation

2 22 BUSHINGS

- A Provide a plastic snap in bushing at each box opening, passage through a metal stud, and at the end of all open conduit stubs or sleeves prior to cable installation to protect the cabling from damage
 - 1 Box openings - Thomas & Betts Knockout Bushing Series 3210, or equivalent
 - 2 Metal stud passage - Thomas & Betts Twist It Bushing Catalog Number SB1216-SC, or equivalent
 - 3 Conduit ends - Thomas & Betts Anti-Short Bushing Series 390 or Tite-Bite Combination Coupling Series 442, or equivalent

2 23 CEILING MOUNTED DEVICE BOX HANGERS

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

2 24 J-HOOKS

- A Attachments for cabling support shall be spaced at approximately 48 to 60 inches on center. Each cable bundle shall be routed with enough slack to prevent damage to cables but not allowed to sag more than 12 inches mid-span between attachments. Attachments shall be sized as follows:

Single cables or bundles up to four cables may be supported directly by the building structure	
Bundles up to 1/2" dia (Ten 1/4" cables)	2" bridle ring, Caddy #4BRT32 or equivalent
Bundles up to 3/4" dia (Sixteen 1/4" cables)	3/4" J-Hook, Caddy #CAT12 or equivalent
Bundles up to 1-5/16" dia (Fifty 1/4" cables)	1-5/16" J-Hook, Caddy #CAT21 or equivalent
Bundles up to 2" dia (Eighty 1/4" cables)	2" J-Hook, Caddy #CAT32 or equivalent

Split bundles greater than 2" dia or provide cable tray
- B Do not mix different signal strength cables on the same J-Hook (i.e. access system with telephone/data cable). Multiple J-Hooks can be placed on the same attachment point, up to the rated weight load of the attachment device.

2.25 COMMUNICATIONS CIRCUIT SURGE PROTECTION

- A Provide surge protection shall be provided for all exterior devices, communications service, or antenna entrance connections, and for each circuit that connects one building to another (i.e. any other portion of a building complex not under one continuous roof) at both entry/exit points to prevent damage to equipment
- B Each surge protector shall be mounted in a standard grounded metallic electric box or equipment backboard with a separate ground wire ran directly to the ground bus bar or equipment panel ground stud, do not daisy chain ground wires
- C Surge protectors for low voltage communications signal and control circuits with a data rate from 200kbps to 2Mbps, nominal voltage as listed below AC or DC. Each module shall protect up to two pairs using hybrid design multi-stage SAD technology, shall be Ditek 2MHLP series field replaceable modules with MB Series mounting bases for one to five modules, or equivalent, model numbers as follows
- 1 70 to 75 Volt circuit, 4 wire protector with base DTK-2MHLP75BWB
 - 2 48 to 50 Volt circuit, 4 wire protector with base DTK-2MHLP48BWB
 - 3 36 Volt circuit, 4 wire protector with base DTK-2MHLP36BWB
 - 4 24 Volt circuit, 4 wire protector with base DTK-2MHLP24BWB
 - 5 12 Volt circuit, 4 wire protector with base DTK-2MHLP12BWB
 - 6 0 to 6 Volt circuits, 4 wire protector with base DTK-2MHLP5BWB
- D Surge protectors for low voltage communications high data rate voice, data and signaling data and loop circuits, or serial communication, nominal voltage as listed below AC or DC. Each module shall provide Line-Ground (All) protection modes, maximum surge current 2,000 Amps per pair (6V-50V) or 9,000 Amps per pair (75V-130V), and maximum continuous current 5 Amps to 0.15 Amps, shall be Ditek LVLP series or equivalent, model numbers as follows
- 1 115 to 130-Volt circuit, 2-pair protector, 10-12 AWG, DTK-2LVLAWGGRUV
 - 2 95-Volt circuit, 2-pair protector, 10-12 AWG, DTK-2LVLAWGSGR
 - 3 75-Volt circuit, 2-pair protector, 10-12 AWG, DTK-2LVLAWGSPK
 - 4 48 to 50-Volt circuit, 2-pair protector, 16-22 AWG, DTK-2LVLPPOPX
 - 5 24 to 30-Volt circuit, 2-pair protector, 16-22 AWG, DTK-2LVLPPLV
 - 6 12 to 14-Volt circuit, 2-pair protector, 16-22 AWG, DTK-2LVLPX
 - 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
- E Surge protectors for access control devices, types and nominal voltage as listed below. Each module shall provide Line-Ground (All) protection modes, maximum surge current 2,000 Amps per pair power and 500 Amps per pair data, and maximum continuous current of 3 Amps, shall be Ditek model numbers as follows or equivalent
- 1 Wiegand credential reader surge protection 3-pair, 12 to 14-Volt terminal strip, Ditek DTK-3LVLPX
 - 2 Credential reader surge protection, 4-pair reader, and 1-pair each 12-Volt power, 24-Volt power, 5-Volt data, and 1-Volt signal, Ditek DTK-4LVLPX
 - 3 Entry intercom system with data circuit surge protection 1-pair 12/24-Volt power supply, 2-pair 130-Volt voice line, and 1-pair 0 to 6-Volt data circuit, Ditek DTK-4LVTEP
 - 4 Entry intercom system with door release surge protection 1-pair 12/24-Volt power supply, 2-pair 130-Volt voice line, and 1-pair 24-Volt release solenoid circuit, Ditek DTK-4LVXR
- F Surge protectors for Ethernet network runs rated up to Category 6A and operating at up to 10-Gigabit data rates. Each module shall protect up all four pairs using hybrid design multi-stage SAD technology which shall automatically reset to protect against multiple surges, Ethernet surge protectors shall be Ditek DTK-CAT6A series as follows
- 1 DTK-110RJC6APOE with 110 to RJ-45 connections with PoE
 - 2 DTK-110C6APOE with 110 to 110 connections with PoE
 - 3 DTK-110RJC6A with 110 to RJ-45 connections without PoE
 - 4 DTK-110C6A with 110 to 110 connections without PoE

- G Surge protectors for analog copper pair PSTN telephone service POTS/Trunk/C O line alarm Digital Communicator service lines shall be Ditek DTK-2MHTPWB, or equivalent, 2-pair/lines, maximum ring-up voltage 110V, includes base In addition, At Telco service connection demarcation point locations servicing an alarm Digital Communicator, provide per line a Suttle Solutions Part # 635B-48, or equivalent, RJ31X surface mount jack with 8-conductor screw terminal board input and factory wired DATA and VOICE labeled, non-keyed RJ-45 output ports, with line seizure port shorting bar (1&4, 5&8) for alarm reporting device service
- H Surge protectors for coaxial cable shall be suitable for analog and digital signals up to 2 Ghz, and shall feature 75 Ω nominal impedance, Center Pin - Shield, Shield - Ground protection modes, 20,000A surge current rating, a service voltage of 50VDC, and a clamping Voltage of 75VDC Note Insertion loss per surge protection module is 0.5dB, include signal attenuation from these devices in signal strength calculations Surge protectors shall be Ditek VSP series, or equivalent, as follows
 - 1 Type 'F' connectors Ditek DTK-VSPA or Ditek DTK-VSPA2 (dual)
 - 2 BNC connectors Ditek DTK-VSPBNCA or DTK-VSPBNCA2 (dual)
 - 3 BNC connectors and 24-volt power connections Ditek DTK-PVP27B
 - 4 PTZ camera surge protection, BNC video, power, and data Ditek DTK-DP4P
 - 5 HD-SDI video Ditek DTK-IBNCHD
 - 6 Type 'N' antenna connector Ditek DTK-VSPN

2.26 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 $\frac{1}{2}$ " 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
 - 3 This contractor shall make every effort to coordinate with the building Architect, Owner, Engineer, Builder, and Electrical Contractor to have sleeves placed in new construction so that later coring or drilling of building structural members will not be required this contractor must consult with the building Owner, Architect, Engineer, and Builder prior to drilling, coring, or sawing of any wall, floor, etc All penetrations shall be made at approved, appropriate, locations
- E This contractor shall make every effort to coordinate with the building Architect, Owner, Engineer, Builder, and Electrical Contractor to have sleeves placed in new construction so that later coring or drilling of building structural members will not be required this contractor must consult with the building Owner, Architect, Engineer, and Builder prior to drilling, coring, or sawing of any wall, floor, etc All penetrations shall be made at approved appropriate, locations

- F Upon approval, this 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. Exceptional 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 methods only.

PART 3 – EXECUTION**3.1 DEMOLITION OF THE EXISTING ACCESS CONTROL SYSTEM FOR RENOVATION**

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

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 disconnected or abandoned devices and cabling shall be removed.
- 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 access control devices in 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 Repair adjacent construction and finishes damaged during demolition and extension work.
- I Confirm with Owner/Architect regarding the handling and disposal/reuse of removed material, equipment, devices, et cetera.

3.4 OPERATION PRIOR TO COMPLETION

- A When the phasing of a project requires that access control 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 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 SEQUENCE OF OPERATION

- A Scheduled automatic door unlocking/locking of specific entry doors shall be programmed to require verification before being enacted. A credential card from a select group at the local facility (including the principal/vice principals, etc. as requested) must be presented at the facility within a two-hour period prior to the scheduled unlocking event. This is to prevent the entrance doors from being unlocked when no one is present to supervise the students, such as due to a snow day or other unscheduled occurrence. If a scheduled unlocking event is delayed, and a credential card from the select group is presented within two hours after the unlocking event was scheduled, the unlocking shall be enacted immediately.
- B This access control system shall provide for controlled access through entry doors and into restricted areas when a valid credential card is presented to the credential card reader located adjacent to the door, only if the user's group access rights and time schedules allow for access. This system shall monitor for unauthorized entry attempts, control access to the building, and log entry information. The system shall in no way impede free emergency exit from the building. Exit from the building shall not require special effort or knowledge. Controlled door locks shall fail secure from outside entry on loss of power and backup power.
- C Door Forced and/or Door Held Open alarms shall have the capacity to be locally annunciated via Auxiliary Output relays on the individual controllers. This annunciation shall be controlled as follows: A direct one-to-one relationship shall be able to be programmed between the Door Forced and/or Door Held Open alarm and the auxiliary output. When either condition exists, the auxiliary output is energized. When either condition is cleared, the auxiliary output is de-energized.
- D The system shall provide the capability for individual controlled door locations as noted on plans. If the door remains held open for over three minutes, a system Door Held Open Alarm alert shall pop-up and generate an entry in the log file for later review; the alert shall be automatically silenced and cleared once the door is closed.
- E Controlled doors using a retractable latch strike shall, on a valid credential card read, activate the output to retract the door latch and immediately allow the exit door to be entered by standard pull lever operation; the door may then be opened without retracting the latch bolt. When the door closes, the latch bolt shall ride over the strike lip. The installation shall include dual switch monitoring; the strike shall have two SPDT contacts, one switch shall monitor the tripper, which is depressed when the latch bolt is inserted into the strike pocket. The second switch shall monitor the condition of the strike lip, indicating open or closed and locked conditions.
- F Controlled doors with frame or mullion retractable strike, on a valid credential card read, activate the output to retract the door strike and immediately allow the exit door to be entered by standard pull lever operation; the door may then be opened without retracting the latch bolt. When the door closes, the beveled latch bolt shall ride over the lip and fall into the electric strike pocket. The installation shall include dual switch monitoring; the strike shall have two SPDT contacts, one switch shall monitor the tripper, which is depressed when the latch bolt is inserted into the strike pocket. The second switch shall monitor the condition of the strike lip, indicating open or closed and locked conditions.
- G Controlled doors with a crash bar shall include electric latch retraction and a request-to-exit switch; the access control system shall, on a valid credential card read, activate the output to retract the latch bolt and immediately allow the door to be entered by standard pull handle operation.

- H Where required, the system shall interface with electric door openers utilized for ADA access. This interface shall interconnect to door control interface to mechanically open the door when a valid credential card is read, and the exterior door button is pressed. The exterior button shall also open the door when the door is scheduled to be unlocked without a credential card read. The interior door open button shall always be functional, allowing full egress, regardless of the status of the access control system, the interior button shall also be interfaced to the request to exit function.
- I The request-to-exit switch or sensor shall provide a means for the system to monitor the status of the controlled door and detect a forced entry condition. The request-to-exit signal shall be used only to indicate a normal exit status, as opposed to a forced entry. Exit shall be made with the normal door hardware and shall not be impeded or assisted by the electronic system. Exit shall not be affected if the power is off and the battery backup exhausted.
- J The access system door contact switch shall provide a means for the system to monitor the open/closed status of the controlled door and detect if the door is held open or left ajar after a valid credential card read.
- K The Visitor Entry Control Desktop Console system, when operated, shall operate the electric strike and allow the controlled door to be opened from the secured side without a credential card being read at the door's card reader. The opening of the door shall not cause an alarm condition.

3.6 PROJECT ORGANIZATION

- A INITIAL SITE/SCHEDULE SET-UP. The contractor to provide at the minimum the following set-up for each school:
 - 1 Contractor to set-up all Graphical maps with doors linked and labeled to current district standards. Contractor to use correct room names and numbers as installed at site. Provide overall map showing all information with school labeled.
 - 2 Contractor to incorporate owner's current database into new system. Contractor shall do initial employee entry set-up for each site.
 - 3 Contractor to follow current district standards on initial school set-up. After the initial set-up is carried over following the existing school pattern, the owner will "fine tune" as necessary.
 - 4 Provide District Access levels following the current district standard.
 - 5 Program each door to follow the district holiday schedule.
 - 6 Contractor to provide a minimum of five (5) hard copies of Graphical map for owner to distribute at each installed campus.
 - 7 Contractor to verify with owner other initial set-up needs.
 - 8 Contractor to coordinate with Owner/Engineer thirty (30) days prior to bringing system on line to verify labels and sequences. Training time and classes are to be set-up during this time also.
- B ALARM GRAPHICS TRAINING
 - 1 The Contractor shall provide a one-day training class for the operators to develop the skills they need to use the alarm graphics editor, linker and monitor to identify the source and priority of alarm conditions on the Building Access System with the integrated alarm graphics option installed.
 - 2 The class shall teach the operators to display alarm graphics maps at any level to identify the location of an active Building Access System alarm.
 - 3 Design, draw, color, labels and saves facility maps, including named objects for map and alarm linking.
 - 4 Create and manipulate shapes, lines, objects, and groups of objects.
 - 5 Save and merge sub-views.
 - 6 Link maps together by named objects and filenames.
 - 7 Link a named map object to Building Access System alarm, customizing the object to identify the location, characteristic, and priority of the alarm.

3.7 TESTING, WARRANTY SERVICE

- A A factory trained representative of the manufacturer shall supervise the final connections and testing of the system and it shall be subject to the final acceptance of the Architect/Engineer and Owner.

- B This contractor will thoroughly test all components of the systems and devices proposed herein to assure equipment specifications are met. This contractor will start up, test, and debug systems to ensure that all aspects of the system are working, documented, and reporting properly.
- C This Contractor shall make a thorough inspection and test of the complete installed security system including all components and controls to ensure the following:
 - 1 Complete and functional system
 - 2 Installed in accordance with manufacturer's instructions
 - 3 Verify proper operation and processing of signals
- D The installation will be verified through use of testing procedures designed to test all specific functions and requirements of your system under various operating conditions.
- E This Contractor shall provide a warranty of the installed system against defects in material or workmanship for a period of one (1) year from the date of substantial completion. Any equipment or wiring shown to be defective shall be replaced, repaired, or adjusted free of charge. All labor and materials shall be provided at no expense to the Owner. All equipment will carry a one-year warranty or manufacturer's warranty whichever is greater.

3.8 DRAWINGS, MANUALS, AND TRAINING

- A Upon completion of the installation, and prior to final inspection, the Building Access Control Contractor shall furnish four (4) hard copies and one (1) electronic CAD and PDF copy on CD-R of as-built drawings. In addition, the Building Access Control contractor shall furnish four (4) hard copies and one (1) electronic PDF copy on CD-R of a complete operating and maintenance manuals listing the manufacturer's name(s), including technical data sheets. Manuals shall include wiring diagrams to indicate internal wiring for each device and the interconnections between the items of equipment. Provide the Owner a copy of the panel control software including the licensed program, site specific data file, and passwords that the Owner may require to maintain the system. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system. Provide a parts list with manufacturer and model number for commonly replaced parts. Include complete instructions for the inspection, testing, and maintenance of the system. Include copies of all programming sheets used to configure the system. As-built drawings and operating and maintenance manuals may be electronically transmitted in PDF file format (preferred) or paper copies may be provided in quantities indicated in Division 1. Paper copies shall be organized including index tabs in a 3-ring black binder of sufficient size.
- B Provide the Owner a copy of the panel control software including the licensed program, site specific data file, and passwords that the Owner may require to maintain the system.
- C Formal on-site training sessions shall be conducted by this Contractor. It shall be the responsibility of this Contractor to coordinate time and location of training sessions with the Owner. Provide documented general instruction as follows:
 - 1 Provide instruction to the maintenance personnel to include the location, inspection, maintenance, testing, and operation of all system components. Provide a minimum of four (4) hours—two 2-hour sessions separated by a minimum of two weeks.
 - 2 Provide instruction to designated personnel on the functions and operation of the building access system including capabilities, limitations, reporting, monitoring, and the meaning of status messages. State the proper procedure for testing, routine maintenance, and request for service. Provide detailed instruction on the operation of the system including group scheduling, adding users, deleting users, and changing passwords. Provide a minimum of four (4) hours—two 2-hour sessions separated by a minimum of two weeks.

END OF SECTION

SECTION 28 31 24**PREMISES INTRUDER ALARM SYSTEM****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 Remove all existing premises intruder alarm system from the building
- C Provide all equipment, materials, labor, supervision, and services necessary for or incidental to the installation of a complete Premises Intruder Alarm System (Burglar Alarm) as shown or indicated on the drawings and/or as specified
- D It shall be the responsibility of the Intruder Alarm System Contractor to obtain all required installation permits, approvals, and certifications from authorities having jurisdiction. The Intruder Alarm System Contractor shall be responsible for identifying requirements for permits from the local police department for the installation of the alarm system specified herein and shall assist the Owner in obtaining the relevant alarm use permits
- E It shall be the responsibility of the Electrical contractor to provide and install all conduit systems, standard electrical boxes, and operating power for the Intruder Alarm System as outlined on the project drawings. The Intruder Alarm System Contractor shall coordinate all system requirements with and provide special back boxes to the Electrical Contractor prior to installation of conduit
- F The electrical contractor shall provide 120-volt power as required to the alarm system through separate dedicated branch circuits, maximum 20 amperes each. The alarm control panel and the auxiliary power supplies combine to form the alarm control unit. The panel and two or more auxiliary power supplies may be feed from one circuit as long the amperage drawn is within the limitations of a 20-ampere circuit. Each such circuit shall be labeled at the power distribution panel as INTRUDER ALARM. The location of all circuit breakers serving the alarm control unit shall be posted in the alarm control unit cabinets. Each cabinet shall be grounded securely to the building grounding system
- G Provide all testing, documentation, training, and warranty service contract as outlined in these specifications

1 2 RELATED SECTIONS

- A Section 26 05 34 - Provisions For Communication, Security & Safety Systems
- B Section 28 05 00 - General Electronic Safety and Security System Requirements
- C Section 28 13 27 - Building Access Control System

1 3 CODES AND REGULATIONS

- A Perform all work in strict accordance with the requirements and recommendations stated in the codes and standards except when requirements are exceeded by the contract documents
- B The equipment, materials, and installation shall conform to the latest version of all applicable codes, standards and regulations of authorities having jurisdiction including the following
 - 1 NFPA 70, National Electrical Code, Articles 250, 300, 725, 760, and 800
 - 2 NFPA 72, National Fire Alarm and Signaling Code
 - 3 Americans with Disabilities Act
 - 4 Texas Accessibility Standards
 - 5 International Building Codes (IBC)

PREMISES INTRUDER ALARM SYSTEM

28 31 24 - 1

- 6 Local and State Building Codes
- 7 All requirements of the local Authority Having Jurisdiction (AHJ)

1.4 SUBMITTALS

- A Submittal procedures See Section 28.05.00
- B Submit a complete submittal package within 30 calendar days after award of this work for approval. Equipment is not to be ordered without approval. Partial submittals are not acceptable for review. Each submittal shall include a dated transmittal.
- C Submittal may be electronically transmitted in PDF file format (preferred) or paper copies may be provided in quantities indicated in Division 1. Paper copies shall be organized including index tabs in a 3-ring black binder of sufficient size.
- D Quality Assurance Submittal
 - 1 Letter from manufacturer stating that the Contractor is an Authorized Factory Distributor for the area where the project is located.
 - 2 The Contractor and Manufacturer shall supply sufficient information to indicate that the proposed system is based on the latest hardware, software technology available.
 - 3 Current copy of the Contractors Alarms Company license issued by the Texas Department of Public Safety Private Security Board.
 - 4 Calculations for device circuit current drop and battery backup calculations.
- E Product Data Submittal including special boxes, cable, and other material as requested by the Owner including
 - 1 A cover sheet with the name and location of the project, the name, address, and telephone number of the Contractor, and the name, address, and telephone number of the submitting sub-contractor. Include on or after the cover sheet sufficient space for review stamps.
 - 2 An indication of any deviations from Contract Document requirements, including variations and limitations. Show any revisions to equipment layout required by use of selected equipment.
 - 3 A product data index and complete equipment list including for each product submitted for approval the manufacturer's name and part number, including options and selections.
 - 4 Cut-sheets or catalog data illustrating the physical appearance, size, function, compatibility, standards compliance, and other relevant characteristics of each product on the equipment list. Indicate by prominent notation (an arrow, circle, or other means) on each sheet the exact product and options being submitted.
 - 5 Submit design data, when the scope of work requires, including calculations, schematics, risers, sequences, or other data.
 - 6 Any resubmittal shall include a complete revised equipment list and any product data that is revised.
- F Submit shop drawings locating all components of the system, indicating circuit routing, cable type, and gauge. Shop or coordination drawings shall include information that will allow the Contractor to coordinate interdisciplinary work and when necessary guide the manufacturer or fabricator in producing the product. Shop or coordination drawings shall be specifically prepared to illustrate the submitted portion of work, this may require diagrams, schedules, details, and accurate to scale equipment and device layouts prepared using a CAD or BIM engineering drawing program.

1.5 QUALIFICATIONS OF A PROPOSED CONTRACTOR

- A Proposed contractors who do not currently possess the necessary qualifications, trained and experienced personnel, financial capacity, and meet the other requirements herein described will be disqualified.
- B The Contractor shall be currently licensed under the Texas Department of Public Safety Private Security Board as an Alarm Company to sell, install, and service private security systems.
- C The proposed contractor, as a business entity, shall be an authorized distributor and designated representative of the security panel manufacturer, with full warranty privileges, and shall have been actively engaged in the business of selling, installing, and servicing commercial building alarm systems for a period of at least 5 years.

PREMISES INTRUDER ALARM SYSTEM

28.31.24 - 2

- D Recently formed companies are acceptable only if specific pre-approval is requested, and granted by the Owner/Architect/Engineer, based on experience of key personnel, current and completed projects, and all licensing requirements are met 10 working days prior to the contract proposal date
- E All employees working on the project must be registered alarm system installers. The Contractor shall employ factory trained technicians capable of supporting the maintenance of the system. No contract employees are allowed unless they have been to the factory service school within the last 18 months. A certificate of this training shall be provided with the Contractor's submittal.
- F The contractor shall employ full time local technicians and installers. The manufacturer shall maintain a full time factory employed service staff for product support and service.
- G The proposed Contractor shall have an office within 150-miles of the job site, staffed with trained technicians who are qualified and licensed to supervise the installation, to be responsible that the system is installed as submitted, to conduct system start up and perform a 100 percent operational audit of all installed devices, to instruct the Owners representatives in the proper operation of the system, and to provide service throughout the warranty period. The contractor shall be capable of dispatching technicians to repair a system within six hours of a service request.
- H The proposed contractor shall be fully experienced in the design and installation of the type of Intruder Alarm System herein specified and shall furnish with the contract proposal an itemized list of the installations of the type specified herein. The list shall include the name of the project, date of completion, the amount of the contract, the name, and telephone number of a qualified person to contact for reference. This list must contain at least two (2) projects within a 150-mile radius of the school district to allow school administration officials to visit the job site for review of the system installation and service. Each reference project listed must utilize equipment by the same manufacturer as the proposed system.
- I The Contractor shall employ factory-trained technicians capable of supporting the maintenance of the system. No contract employees are allowed unless they have been to the factory service school within the last 18 months. A certificate of this training shall be provided with the contractor's submittal.
- J The Proposed Contractor shall not have any grievances or complaints of record regarding workmanship, code compliance, or service response. A Proposed Contractor that has any prior finding(s) of a code or license violation or has any litigation in process concerning the installation of a communication system is unacceptable.
- K The ability of a proposed Contractor to obtain plans and provide a performance bond shall not be regarded as the sole qualification of the Contractor's competency and responsibility to meet the requirements and obligations of the contract.
- L The Builder shall be satisfied that a proposed Contractor meets all the requirements expressed herein before including the Contractor's proposal in the project.
- M The Owner may investigate, as they deem necessary to determine the ability of the proposed Contractor to perform the work. The proposed Contractor shall furnish to the Owner with any information or data requested for this purpose.
- N The Owner reserves the right to reject any contract proposal if the evidence submitted, or their investigation, fails to indicate that the Contractor is qualified to fulfill any part of the contract or to complete the work contemplated therein.
- O The Owner reserves the right to reject the proposal of any Contractor who has previously failed to perform properly, or complete on time, contracts of a similar nature.

PART 2 – PRODUCTS**2 1 GENERAL**

- A Type Complete 12 VDC, closed circuit, electrically supervised, microprocessor controlled Intruder Alarm System
- B The system and all components shall be tested and found suitable for the specified purpose as part of a commercial Intruder Alarm System by a nationally recognized approval agency acceptable to the AHJ
- C All date keeping hardware, firmware, and software provided shall be fully compliant with the calendar year designated in four-digit date format Any time equations must function normally, leap year, and daylight savings time must be supported
- D The control units, power supplies, batteries, subassemblies, software, firmware, and all cable, detection, and notification devices provided shall be listed and labeled by Underwriters Laboratories, Inc for commercial intruder alarm system use under the latest appropriate testing standard including but not limited to the following
- | | |
|----------|---|
| UL 13 | Power Limited Circuit Cables |
| UL 50 | Enclosures for Electrical Equipment |
| UL 294 | Access Control System Units |
| UL 365 | Police Station Connected burglar Alarm Units and Systems |
| UL 444 | Communications Cables |
| UL 464 | Audible Signal Appliances |
| UL 497B | Protectors for Data Communications and Fire Alarm Circuits |
| UL 603 | Power Supplies for Use with Burglar-Alarm Systems |
| UL 609 | Local burglar Alarm Units and Systems |
| UL 611 | Central-Station Burglar-Alarm Systems |
| UL 634 | Connectors and Switches for Use with Burglar-Alarm Systems |
| UL 636 | Holdup Alarm Systems and Units |
| UL 639 | Intruder Alarm Systems |
| UL 681 | Installation and Classification of Burglar and Holdup alarm Systems |
| UL 864 | Control Units for Fire Protective Signaling Systems |
| UL 910 | Test for Cable Flame-Propagation and Smoke-Density Values for Electrical and Optical-Fiber Cables Used in Spaces Transporting Environmental Air |
| UL 983 | Surveillance Camera Units |
| UL 1034 | Burglary-Resistant Electric Locking Mechanisms |
| UL 1037 | Antitheft Alarms and Devices |
| UL 1076 | Proprietary Burglar Alarm Units and Systems |
| UL 1479 | Fire Tests of Through-Penetration Firestops |
| UL 1481 | Power Supplies for Fire Protective Signaling Systems |
| UL 1581 | Electrical Wires, Cables, and Flexible Cords |
| UL 1610 | Central-Station Burglar-Alarm Units |
| UL 1635 | Digital Alarm Communicator System Units |
| ANSI/SIA | CP-01-2010 Control Panel Standard - Features for False Alarm Reduction |
- E Only equipment devices have been shown on the contract drawings Specific wiring between equipment has not been shown
- F The system shall include but not be limited to all control units, power supplies, batteries, subassemblies, keypads, software, firmware, and all cable, detection, notification, and all accessories required to provide a complete operating system
- G All equipment and components shall be installed in strict compliance with manufacturers' recommendations and the requirements of the component's UL listing Consult the manufacturer's installation manuals for all wiring diagrams, schematics, electrical requirements, cable types, and physical equipment sizes, etc , before beginning system installation Refer to the manufacturers' riser / connection diagrams for all specific system installation / termination / wiring data All equipment and components shall be new, and the manufacturer's current model All like devices shall be of the same manufacturer and model number

- H All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., detectors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.

- I Installation subject to approval, inspection, and test of the Owner/Architect/Engineer

2.2 RELATED WORK - NETWORK CONNECTIVITY

- A The system shall be utilizing the customer's existing Ethernet system backbone for all security devices communications.
- B No Ethernet cabling, network RJ-45 jacks, or patch cords are included in the scope of this Specification Section.
- C The Owner will provide this Contractor with a terminated network drop at security devices, and the required TCP/IP configuration settings: static IP address, domain, gateway, and subnet mask if required.
- D This contractor will program and test all Intruder Alarm System control devices for connection to the network.
- E This contractor will provide complete programming of all device parameters in accordance with the Owners requirements.

2.3 RELATED WORK – BUILDING ACCESS CONTROL SYSTEM INTEGRATION

- A For the main building the intrusion detection system shall disarm, by a valid Building Access Control System users card read (within one minute to disarm the system), on the card reader mounted right next to the zone keypads located inside the building entry.

2.4 ACCEPTABLE MANUFACTURES

- A Descriptions and details, acceptable manufacturers' names listed, and specific manufacturer and model number items indicated in the plans and specifications shall establish a standard of quality, function, and design. Manufacturers and model numbers listed "no exceptions" shall not be substituted without specific notice in an addendum. Otherwise, where a specific manufacturer's product is indicated, products of other manufacturers listed as acceptable may be submitted for approval based on the substitute product being, in the opinion of the Engineer, of equivalent or better quality than that of the product specified.
- B Proposed contractors wishing to propose any product substitution must do so in writing to the specifying authority at least ten (10) days prior to the proposal opening.
- C For manufacturers equipment or models other than that specified, the proposed contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment. Proposals must include detailed information showing all deviations from the system as specified.
- D Substitute products for which the proposed contractor does not obtain prior approval will not be considered acceptable for this project. Final approval of alternate products shall be based on the decision of the Owner and Architect. Prior approval to make a proposal for this project does not automatically ensure products will be an acceptable equivalent.
- E It is the responsibility of the Contractor to provide all features and functions as outlined in these specifications. The functions and features specified are vital to the operation of this facility; therefore, inclusion in the list of acceptable manufacturers does not release the contractor from strict compliance with the requirements of this specification.
- F The district standard and model numbers used in this specification are those of the **Bosch G Series** security system (9412GV4 Control Panel); this shall constitute the quality, compatibility, features, and performance of the equipment to be furnished, **no exceptions**.

2.5 GENERAL SYSTEM DESCRIPTION

- A The Premises Intruder Alarm System shall employ microcomputer technology to monitor various partitions for zoned sensor detection activity in order to determine system status, display appropriate information on the keypad(s) used with the system, and initiate appropriate programmed functions and alarm conditions. Each system must include at least one keypad per partition to provide control of system operation.
- B The system will include one or more partitions, each partition operates logically as a single physical alarm system protecting an independent area with a partition users group, each user assigned a distinct security code. Each partition will include alarm zones, each with various types of sensors as needed to provide perimeter and/or interior burglary protection.
- C The security system shall be managed, controlled, and reported by alarm zone. Each partition will contain one or more alarm zones, and each alarm zone assigned one or a logical group of sensors.
- D Each zone shall operate logically to monitor the status and condition of one or a related group of sensors. Zones are typically numbered, for example the zone entry/exit door may be Zone 01, perimeter door and window sensing devices Zone 02, and interior occupant/intruder sensors Zone 03, and so on. The system is programmed to display the zone number/zone description on the keypad display when an alarm or trouble condition occurs.
- E When a device fault is detected, the assigned partition will not be ready to arm until the fault is corrected or the zone with the fault is bypassed. The system shall support a mode for alerting users, such as with an audible chime, indicating the opening of protected doors and windows while the system is disarmed.
- F A partitioned system may also include a "common zone" area, which is an area such as when a foyer or lobby is included in more than one partition. A common zone will sound and report alarms only when all related partitions are armed. When at least one of the partitions is not armed, the system will ignore sensors assigned to that common zone. Faults in a common zone are displayed on keypads in all partitions including the common zone and any of these partitions may clear and restore the common zone after an alarm.
- G Each partition shall have a current mode of operation, modes may include off/disarmed, occupied/stay, and un-occupied/away. In addition, selected zones may be bypassed in active modes, while leaving the rest of the system armed. A partition must be turned on or "armed" and the entry/exit delay expired for the entry/exit door before a system can sense burglary alarms.
- H When a burglary alarm occurs, both the keypad and any external sounders will sound, the keypad will display the zone(s) causing the alarm and an alarm message sent to the central monitoring station. The alarm event will be logged in the system memory including the zone number(s) involved and type of alarm, this information will remain displayed at the keypad until it is cleared by disarming the system, which also stops the alarm from sounding.

2.6 PROJECT SEQUENCE OF OPERATION

- A The premises intruder alarm system sequence of operation for this project shall be coordinated with the Owners requirements.

2.7 INTRUDER ALARM SYSTEM CONTROL PANEL RATINGS AND FUNCTIONS

- A UL listed and labeled for commercial burglar alarm systems.
- B A UL listed cabinet suitable for surface mounting. The cabinet and front shall be corrosion protected, given a rust resistant prime coat, and a painted standard finish. The back box and door shall be constructed of 0.060" minimum steel with provisions for electrical conduit connections into the sides and top. The cabinet shall provide storage for backup batteries. The door shall provide a key lock to access system components. The cabinet shall be attack resistant and fitted with front and back tamper switches. All components shall be securely mounted, all cable routed and tie wrapped in a neat, professional manner.

PREMISES INTRUDER ALARM SYSTEM

28.31.24 - 6

- C Power supply/charger and batteries shall supply power limited 12 VDC operating and emergency power to the system. Power supply shall be regulated with a minimum output of 4 amps at 12 VDC. Provide AC power failure and low battery reporting. Provide detection and notification of battery disconnection or system ground faults. All external connections of the control panel shall withstand 6 kilovolt transients to chassis ground. Upon AC power failure, the power supply shall automatically transfer the system to battery backup. The batteries are to be completely maintenance free. No liquids are to be required. Fluid level checks for refilling, spills, and leakage shall not be required. Provide sufficient battery capacity for operation without AC power for twenty-four hours of normal supervision without alarm and four hours with one alarm event. Include a 20% safety factor in battery calculations to ensure adequate performance for the service life of batteries.
- D An unsecured "plug-in" transformer in an exposed electrical receptacle is not acceptable. All power supply components shall be located in a suitable, locked, electrical enclosure with front and rear tamper switches.
- E All wiring in the alarm panel shall be terminated on IDC (insulation displacement connection) or screw type terminal blocks. No splice-cap or wire-nut terminations shall be permitted. No more than two wires are to be terminated on any one terminal. Provide sufficient terminal blocks for terminating 12 VDC power cable to devices as required. If the number of termination or other devices required exceeds the recommended capacity of the main panel enclosure, provide additional terminal cabinets as required meeting the requirements of the main panel enclosure, including front and rear tamper switches and a lock keyed alike with the panel.
- F Panel shall be UL approved for ANSI/SIA CP-01-2010 with design features to reduce the incidence of false alarms.
- G Remote access to system programming and functions shall be limited by high security password procedures and encrypted codes.
- H Microprocessor based design panel shall support up to 32 programmable areas/partitions, each supporting perimeter and interior points and supervision of up to 16 keypads.
- I The panel shall be expandable to support for up to 238 alarm individually identified points. Each detection device shall feature a home run cable to the control panel and be connected to an individual system zone at the panel.
- J Each alarm zone shall represent a single sensor with an independently wired communication link to the alarm panel, the zones within a defined space or area shall be grouped into logical partitions.
- K Provide a minimum of two (2) relay closures (dry contact) on the main board, capable of expansion with programmable relay modules.
- L Provide an integrated analog digital communicator and/or an interconnected Internet and a cellular communication module (see below), to support alarm reporting with the capability of transmitting all major digital formats for central station monitoring, coordinate requirements with Owner. The communicator shall automatically initiate and complete a verifiable test signal at least every 24 hours to ensure correct operation.
- M The alarm contractor shall provide all activation circuits and the digital communicator and communication modules shall be ready for programming by the monitoring service selected by the Owner. The alarm contractor shall coordinate with and provide all necessary information to the representative of the service selected by the Owner.
- N The Owner shall select the monitoring service, remote supervising station, or central station and be responsible for hook-up and monthly monitoring costs.
- O Manufacturer / Model Provide a Bosch D9412GV4 security panel, no exceptions, including as required:
 - 1 B529 SDI2 Power Supply
 - 2 B420 Ethernet Communication Module
 - 3 B450 SDI2 Conetix Plug-in Communicator Interface
 - 4 B440 or B411 Cellular Communication Module as required for owner selected monitoring service

PREMISES INTRUDER ALARM SYSTEM

28 31 24 - 7

- 5 D8125 Zonex Popex Expansion
- 6 POPIT expansion modules as required

2 8 KEYPADS

- A Provide remote alphanumeric LCD keypads for arming and disarming the Intruder Alarm System. Locate as indicated on plans.
- B Each keypad shall feature a 2-line 32-character display to provide individual zone alarm display with English language zone descriptions and status messages.
- C Each keypad shall feature 10 number keys, 7 function keys, and 6 navigation keys including programmable panic switches. When pressed, keys turn on keypad backlighting and emit the key-press tone (short beep).
- D Each keypad shall include a built-in audible signal speaker to produce several distinct audible warning tones.
- E Keypad to be a SDI2 bus compatible device, note that SDI bus keypads are not acceptable due to limited functionality under GV4 Version 2.03 and later firmware.
- F Manufacturer / Model Bosch B920, LCD Keypad, no exceptions.

2 9 AUXILIARY POWER SUPPLY

- A Provide as required auxiliary power supply(s) with battery backup, UL listed and labeled for burglary alarm systems.
- B The filtered and electronically regulated power output supply/charger and batteries shall supply additional power limited 12 VDC operating and emergency power to the system when the load from detectors or local alarms exceeds the capability of the power supply built in the main panel. Power supply shall provide a minimum output of 4 amps at 12 VDC. Provide AC power failure and low battery reporting. Provide low battery disconnection. Standby battery operation time shall equal or exceed the standby operation time of the main panel, in any case provide a minimum of 12-amp hours battery backup.
- C Provide a UL listed cabinet suitable for surface mounting. The cabinet and front shall be corrosion protected, given a rust resistant prime coat, and a painted standard finish. The back box and door shall be constructed of 0.060" minimum steel with provisions for electrical conduit connections into the sides and top. The cabinet shall provide storage for backup batteries. The door shall provide a key lock to access system components, key alike with main panel. The cabinet shall be attack resistant and fitted with front and back tamper switches. All components shall be securely mounted, all cable routed, and tie wrapped in a neat, professional manner.
- D Electrical Contractor to provide power through a 120 VAC, 20 amp breaker.
- E Manufacturer / Model Provide Altronix Model Number AL400ULX auxiliary power supplies or approved equivalent.

2 10 LOCAL AUDIBLE ALARM SIGNAL

- A Audible alarm shall be an electronic siren with tamper and weatherproof enclosure. Interior alarms shall be mounted concealed above the lay-in ceiling or as required.
- B Shall be a 900 mA at 12VDC operating voltage, 36 watt rated speaker-horn with built-in electronic dual tone siren driver. The siren tone produced shall be distinctly different from the building fire alarm or other local emergency signals.
- C Provide a heavy gauge steel enclosure with baked enamel textured finish suitable for outdoor mounting. Enclosure shall feature two built-in tamper switches and a silicon fiber screen foam inhibiting device.

- D Manufacturer / Model Provide Revere Industries Model Number RVL-36C/SRN electronic siren or approved equivalent
- 2 11 DOOR SWITCHES
- A Provide door switches as indicated on floor plans with conduit run to a nearby, accessible, junction box located concealed above finished ceiling. Shall be dual contact Double Pole-Double Throw (DPDT) switches with wire leads to provide support both access and security system connections
- B Steel or aluminum doors and frames flush mount. Provide recessed magnetic contact door switches, Interlogix 1076D-G recessed steel door contact with wire leads, 1" diameter, 0.50" gap size, DPDT, grey color or as required
- C Overhead doors/roof hatches provide industrial wide gap surface mount magnetic contacts, Interlogix 2507AD-L aluminum housing armored cable contact, wide gap, 1.5" gap size, DPDT or as required. Size Switch and magnet halves are each 3" long x 1" high x 0.5" deep
- 2 12 MOTION DETECTORS
- A Provide dual technology, false alarm resistant - passive infrared and microwave sensors, surface, wall, or ceiling mount with brackets as required. All motion detectors shall combine heat and motion sensitive detection technologies, alarm activation only upon simultaneous activation of both fields of protection. The following model numbers are Bosch TriTech series, equivalent devices by other approved manufacturers are acceptable. Where indicated on plans provide motion detectors as follows:
- | Range | Bosch Model No |
|-------------------|--|
| Broad 25' x 25' | Ds825 Wall/Ceiling Mount Standard Broad Range |
| Broad 40' x 40' | Ds840 Wall/Ceiling Mount Standard Broad Range |
| Broad 50' x 50' | Ds950 Wall/Ceiling Mount Standard Broad Range |
| Broad 60' x 60' | Ds960 Wall/Ceiling Mount Standard |
| Long 120' x 25' | Ds720i Wall/Ceiling Mount Optional Long Range |
| Broad 90' x 70' | Ds720i Wall/Ceiling Mount Standard Broad Range |
| Long 300' x 15' | Ds720i Wall/Ceiling Mount Standard Long Range |
| 360° x 60' Radius | Ds9360 Panoramic Ceiling Mount (PIR and Microwave) |
| 360° x 70' Radius | Ds9370 Panoramic Ceiling Mount (PIR and Microwave) |
| 360° x 70' Radius | Ds9371 Panoramic Ceiling Mount (PIR and Microwave Black Housing) |
- 2 13 CABINET/ENCLOSURE/PANEL TAMPER SWITCHES
- A Provide Interlogix model number NX-005 Tamper Switch and Bracket, GE Security model number 3025TM Self-Adjusting Tamper Terminal Contact, or equivalent as indicated to detect unauthorized opening of equipment enclosures
- 2 14 CABLING (PLENUM RATED)
- A All cabling is to be concealed where construction permits
- B This contractor shall provide and install new and unused ASTM bare stranded copper conductor wire per ANSI/NEMA codes. Follow the manufacturer's instructions. All wire shall be the type recommended by the manufacturer for Intruder Alarm System applications
- C All cable shall have labels on both ends utilizing self-laminating, flexible vinyl film and non-smear nylon marking pens. Utilize Tyton Corporation Part No. RO175 Rite-On labels and Part No. FTP1 nylon marking pens or equivalent
- D All cable run in underground conduit and overhead conduit in open areas shall be West Penn Wire Aquaseal, or equivalent outdoor/wet location rated
- E All two-conductor wiring for sensor circuits shall be West Penn Wire No. 25221B, 22 AWG stranded, NEC type CMP, plenum cable (Outdoor West Penn Wire Aquaseal No. AQC291 or equivalent)

- F All four-conductor wiring for sensor circuits shall be West Penn Wire No 25241B, 22 AWG stranded, NEC type CMP, plenum cable (Outdoor West Penn Wire Aquaseal No AQC430 or equivalent)
 - G All six-conductor wiring for sensor circuits shall be West Penn Wire No 25270B, 22 AWG stranded, NEC type CMP, plenum cable (Outdoor West Penn Wire Aquaseal No AQC439 or equivalent)
 - H All eight-conductor wiring for sensor circuits shall be West Penn Wire No 25271B, 22 AWG stranded, NEC type CMP, plenum cable (Outdoor West Penn Wire Aquaseal No AQC439 or equivalent)
 - I All wiring for signal circuits shall be West Penn Wire No 25226B, 14 AWG stranded, NEC type CL2P, two-conductor plenum cable (Outdoor West Penn Wire Aquaseal No AQC226 or equivalent)
 - J All wiring for power/alarm circuits shall be West Penn Wire No 25244B, 18 AWG stranded, NEC type CMP, two-conductor plenum cable (Outdoor West Penn Wire Aquaseal No AQC224 or equivalent)
 - K All wiring for keypad circuits shall be West Penn Wire No 25357B, 22 AWG/four-conductor stranded, NEC type CMP plenum cable, one pair shielded, one pair unshielded, or as recommended by the keypad manufacturer
 - L Equivalent products by Belden or Carol
- 2 15 CABLE TIES (PLENUM RATED)
- A HALAR Fluoropolymer plenum rated cable ties shall be furnished and installed to attach wire bundles to supports and for appropriate wire management as required
 - 1 HALAR wire tie, 4 0", miniature - Panduit PLT1M-C702 or equivalent
 - 2 HALAR wire tie, 7 4", standard - Panduit PLT2S-C702 or equivalent
 - 3 HALAR wire tie, 11 6", standard - Panduit PLT3S-C702 or equivalent
- 2 16 CABLE ROUTING, INSTALLATION, AND SUPPORT
- A System wiring and equipment installation shall be in accordance with good engineering practices as established by the NEC and the TIA/EIA Wiring shall meet all state and local electrical code requirements
 - B All wiring shall test free from opens, grounds, or shorts All communication cable shall be supported from the building structure and bundled Do not attach any supports to joist bridging or other lightweight members
 - C Cable pathways, conduit, and cable support systems shall be complete with bushings, de-burred, cleaned, and secure prior to installation of cable
 - D The support system shall provide a protective pathway to eliminate stress that could damage the cabling The cable shall not be crushed, deformed, skinned, crimped, twisted, or formed into tight radius bends that could compromise the integrity of the cabling
 - E In all exposed areas such as gymnasiums, shops, field houses, janitors' closets, or mechanical / electrical rooms all communication cable shall be fully enclosed in conduit
 - F Communication 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
 - G Provide bushings to protect the cable from damage for conduit ends, box openings, and passage through metal studs
 - H Communication cables shall be run in bundles above accessible ceilings and supported from building structure 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 Communication cable must not be fastened to electrical conduits, mechanical ductwork/piping, sprinkler pipes, or routed to obstruct access to hatches, doors, utility access panels, or service work areas. Do not route cables through fire doors, ventilation shafts, grates, or parallel for more than four-feet with line voltage electrical conductors. Communication cables shall not be run loose on ceiling grid or ceiling tiles.
- J 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.
- K All cabling shall be placed with regard to the environment, EMI/RFI interference, and its effect on communication signal transmission.
- L Do not route any Intruder Alarm System cable within two feet of any light fixture, HVAC unit, service access area, electric panel, or any device containing a motor or transformer.
- M Communication 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.
- N Maximum cable pulling tension should not exceed 25 pound-force (110 N) or the manufacturer's recommendation, whichever is less.
- O Any pulling compounds utilized must be approved by the cable manufacturer and shall not degrade the strength or electrical characteristics of the cable.
- P No terminations or splices shall be installed in or above ceilings.
- Q Cable bends shall not be tighter than the manufacturer's suggested bend radius.
- R Mount all equipment firmly in place such that vibration or jarring will not activate an alarm, supervisory, or trouble signal. Route cable in a professional, neat, and orderly installation.
- S All cable shall have a label on both ends utilizing self-laminating, flexible vinyl film and non-smear nylon marking pens. Utilize Tyton Corporation Part number RO175 Rite-On labels and Part number FTP1 nylon marking pens or equivalent.
- T 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.
- U Provide for adequate ventilation to all equipment racks and take precautions to prevent electromagnetic or electrostatic hum.
- V All conduit, ducts, track, and raceways shall be supported from the structure at industry standard intervals for the size specified, utilizing proper anchoring devices. Cable fill may not exceed the manufacturer's instructions for each type of support.
- W Devices mounted on a drop ceiling shall feature a back box fitted with a support hanger (Caddy #512 or #512A for deep boxes), or equivalent with independent drop wires to support the weight of the device.

2 17 TERMINATION PRACTICES

- A Strip back only as much cable jacket as required to terminate.
- B Preserve wire twists as closely as possible to point of termination (0.5" maximum) to keep signal impairment to a minimum.
- C Avoid twisting cable jacket during installation.

2 18 BUSHINGS

- A Provide a plastic snap in bushing at each box opening, passage through a metal stud, and at the end of all open conduit stubs or sleeves prior to cable installation to protect the cabling from damage
- 1 Box openings - Thomas & Betts Knockout Bushing Series 3210, or equivalent
 - 2 Metal stud passage - Thomas & Betts Twist It Bushing Catalog Number SB1216-SC, or equivalent
 - 3 Conduit ends - Thomas & Betts Anti-Short Bushing Series 390 or Tite-Bite Combination couplings Series 442, or equivalent

2 19 CEILING MOUNTED DEVICE BOX HANGERS

- A All ceiling mounted devices including when mounted in a drop ceiling shall be supported by an electrical box hanger (Caddy #512 or #512A for deep boxes - 24" span), or equivalent. Box hangers shall be attached to the ceiling grid only for lateral stabilization, separate support wires shall be provided. The required support wires for the ceiling grid or light fixtures shall not be utilized. The backbox shall be flush and level with the bottom of the ceiling tile and the hole neatly cut for a finished appearance when the device is installed.
- B Device and box hanger assemblies shall not be supported solely by suspended ceilings. Fasteners and supports shall be adequate to support the required load.

2 20 J-HOOKS

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

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

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

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

Bundles up to 1-5/16" dia (Fifty 1/4" cables) 1-5/16" J-Hook, Caddy #CAT21 or equivalent

Bundles up to 2" dia (Eighty 1/4" cables) 2" J-Hook, Caddy #CAT32 or equivalent

Split bundles greater than 2" dia or provide cable tray

- B Do not mix different signal strength cables on the same J-Hook (i.e. Intruder Alarm System with telephone/data cable). Multiple J-Hooks can be placed on the same attachment point, up to the rated weight load of the attachment device.

2 21 COMMUNICATIONS CIRCUIT SURGE PROTECTION

- A Provide surge protection shall be provided for all exterior devices, communications service or antenna entrance connections, and for each circuit that connects one building to another (i.e. any other portion of a building complex not under one continuous roof) at both entry/exit points to prevent damage to equipment.
- B Each surge protector shall be mounted in a standard grounded metallic electric box or equipment backboard with a separate ground wire run directly to the ground bus bar or equipment panel ground stud, do not daisy chain ground wires.
- C Surge protectors for low voltage communications signal and control circuits with a data rate from 200kbps to 2Mbps, nominal voltage as listed below AC or DC. Each module shall protect up to two pairs using hybrid design multi-stage SAD technology, shall be Ditek 2MHLP series field replaceable modules with MB Series mounting bases for one to five modules, or equivalent, model numbers as follows:
- 1 70 to 75 Volt circuit, 4 wire protector with base DTK-2MHLP75BWB
 - 2 48 to 50 Volt circuit, 4 wire protector with base DTK-2MHLP48BWB
 - 3 36 Volt circuit, 4 wire protector with base DTK-2MHLP36BWB

- 4 24 Volt circuit, 4 wire protector with base DTK-2MHLP24BWB
 - 5 12 Volt circuit, 4 wire protector with base DTK-2MHLP12BWB
 - 6 0 to 6 Volt circuits, 4 wire protector with base DTK-2MHLP5BWB
- D Surge protectors for low voltage communications high data rate voice, data and signaling data and loop circuits, or serial communication, nominal voltage as listed below AC or DC Each module shall provide Line-Ground (All) protection modes, maximum surge current 2,000 Amps per pair (6V-50V) or 9,000 Amps per pair (75V-130V), and maximum continuous current 5 Amps to 0 15 Amps, shall be Ditek LVLP series or equivalent, model numbers as follows
- 1 115 to 130-Volt circuit, 2-pair protector, 10-12 AWG, DTK-2LVLAWGGRUV
 - 2 95-Volt circuit, 2-pair protector, 10-12 AWG, DTK-2LVLAWGSGR
 - 3 75-Volt circuit, 2-pair protector, 10-12 AWG, DTK-2LVLAWGSPK
 - 4 48 to 50-Volt circuit, 2-pair protector, 16-22 AWG, DTK-2LVLPPOPX
 - 5 24 to 30-Volt circuit, 2-pair protector, 16-22 AWG, DTK-2LVLPPLV
 - 6 12 to 14-Volt circuit, 2-pair protector, 16-22 AWG, DTK-2LVLPX
 - 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
- E Surge protectors for Ethernet network runs rated up to Category 6A and operating at up to 10-Gigabit data rates Each module shall protect up all four pairs using hybrid design multi-stage SAD technology which shall automatically reset to protect against multiple surges, Ethernet surge protectors shall be Ditek DTK-CAT6A series as follows
- 1 DTK-110RJC6APOE with 110 to RJ-45 connections with PoE
 - 2 DTK-110C6APOE with 110 to 110 connections with PoE
 - 3 DTK-110RJC6A with 110 to RJ-45 connections without PoE
 - 4 DTK-110C6A with 110 to 110 connections without PoE
- F Surge protectors for analog copper pair PSTN telephone service POTS/Trunk/C O line alarm Digital Communicator service lines shall be Ditek DTK-2MHTPWB, or equivalent, 2-pair/lines, maximum ring-up voltage 110V, includes base In addition, At Telco service connection demarcation point locations servicing an alarm Digital Communicator, provide per line a Suttle Solutions Part # 635B-48, or equivalent, RJ31X surface mount jack with 8-conductor screw terminal board input and factory wired DATA and VOICE labeled, non-keyed RJ-45 output ports, with line seizure port shorting bar (1&4, 5&8) for alarm reporting device service

2 22 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 $\frac{1}{2}$ " larger than the conduit or sleeve to be installed The hole shall be neatly cut and not oversize or irregular Do not share wall/floor penetrations with ductwork, piping, line voltage electrical conduits, et cetera
- 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 Architect, Owner, Engineer, Builder, and Electrical Contractor 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 building Architect, Owner, Engineer, and Builder prior to drilling, coring, or sawing of any wall, floor, et cetera. 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 PREMISES INTRUDER ALARM SYSTEM FOR RENOVATION

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

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.
- 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 premises intruder alarm system devices in walls 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 Repair adjacent construction and finishes damaged during demolition and extension work
- I Confirm with Owner/Architect regarding the handling and disposal/reuse of removed material, equipment, devices, et cetera

3.4 OPERATION PRIOR TO COMPLETION

- A When the phasing of a project requires that Intruder 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 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 TESTING, WARRANTY, SERVICE

- A A factory trained representative of the manufacturer shall supervise the final connections and testing of the system and it shall be subject to the final acceptance of the Architect/Engineer and Owner.
- B The Intruder Alarm System Contractor shall make a thorough inspection and test of the complete installed Intruder Alarm System including all components such as motion detectors, and controls, to ensure the following:
 - 1 Complete and functional system
 - 2 Installed in accordance with manufacturer's instructions
 - 3 Confirm at the panel, with an ohmmeter, that each zone has an end of line resistor properly installed
 - 4 Each of the alarm conditions that the system is required to detect should be introduced on the system, including disconnection to the telephone line
 - 5 A walk test to confirm that each detector is located and properly aimed for the intended coverage area
 - 6 Verify that all tripped devices display the correct zone identification at the keypads
 - 7 Verify the proper processing of the signal at the panel and the correct activation of local alarms and the digital communicator
- C The contractor shall provide a warranty of the installed system against defects in material or workmanship for a period of one (1) year from the date of substantial completion. Any equipment or wiring shown to be defective shall be replaced, repaired, or adjusted free of charge. All labor and materials shall be provided at no expense to the Owner. All equipment will carry a one-year warranty or manufacturer's warranty whichever is greater.
- D The contractor shall provide a warranty of all newly installed system devices and cabling against defects in material or workmanship for a period of one (1) year from the date of substantial completion. Any new equipment or cabling shown to be defective shall be replaced, repaired, or adjusted free of charge. All labor and materials shall be provided at no expense to the Owner. All new equipment will carry a one-year warranty or manufacturer's warranty whichever is greater.

3.6 DRAWINGS, MANUALS, AND TRAINING

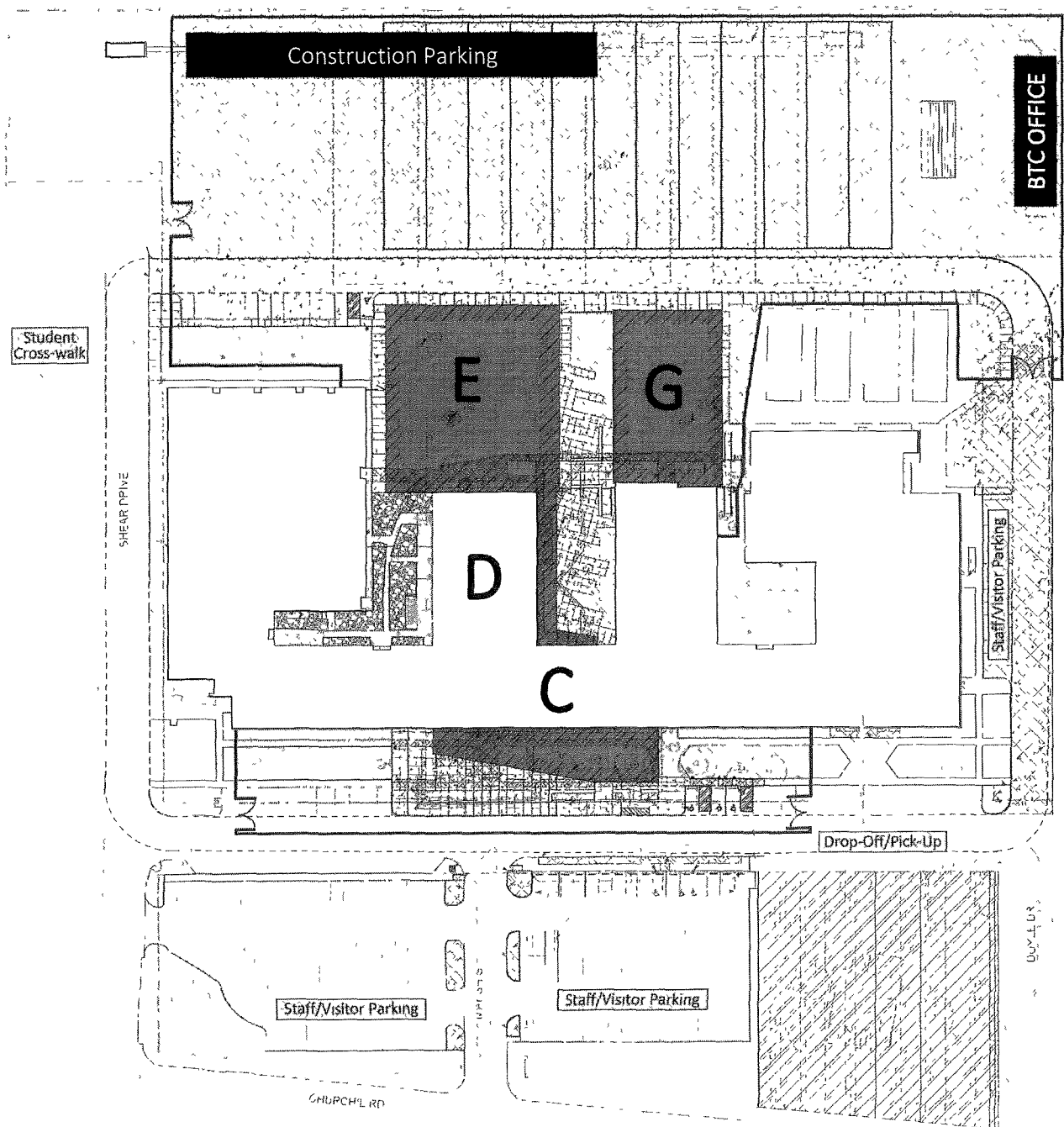
- A Upon completion of the installation, and prior to final inspection, the Security Contractor shall furnish four (4) hard copies and one (1) electronic CAD and PDF copy on CD-R of as-built drawings. In addition, the Security contractor shall furnish four (4) hard copies and one (1) electronic PDF copy on CD-R of a complete operating and maintenance manuals listing the manufacturer's name(s), including technical data sheets. Manuals shall include wiring diagrams to indicate internal wiring for each device and the interconnections between the items of equipment. Provide the Owner a copy of the panel control software including the licensed program, site specific data file, and passwords that the Owner may require to maintain the system. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system. Provide a parts list with manufacturer and model number for commonly replaced parts. Include complete instructions for the inspection, testing, and maintenance of the system. Include copies of all programming sheets used to configure the system.

- B Provide the Owner a copy of the panel control software including the licensed program, site specific data file, and passwords that the Owner may require to maintain the system
- C Formal on-site training sessions shall be conducted by the Intruder Alarm System contractor. It shall be the responsibility of the Contractor to coordinate time and location of training sessions with the Owner. Provide documented general instruction as follows:
 - 1 Provide instruction to the maintenance personnel to include the location, inspection, maintenance, testing, and operation of all system components. Provide a minimum of four (4) hours—two 2-hour sessions separated by a minimum of two weeks.
 - 2 Provide instruction to designated personnel on the functions and operation of the Intruder Alarm System including zoning, capabilities, limitations, monitoring, and the meaning of status messages. State the proper procedure for testing, routine maintenance, and request for service. Provide detailed instruction on the operation of the keypad including arming, disarming, adding users, deleting users, and changing passwords. Provide a minimum of four (4) hours—two 2-hour sessions separated by a minimum of two weeks.

END SECTION

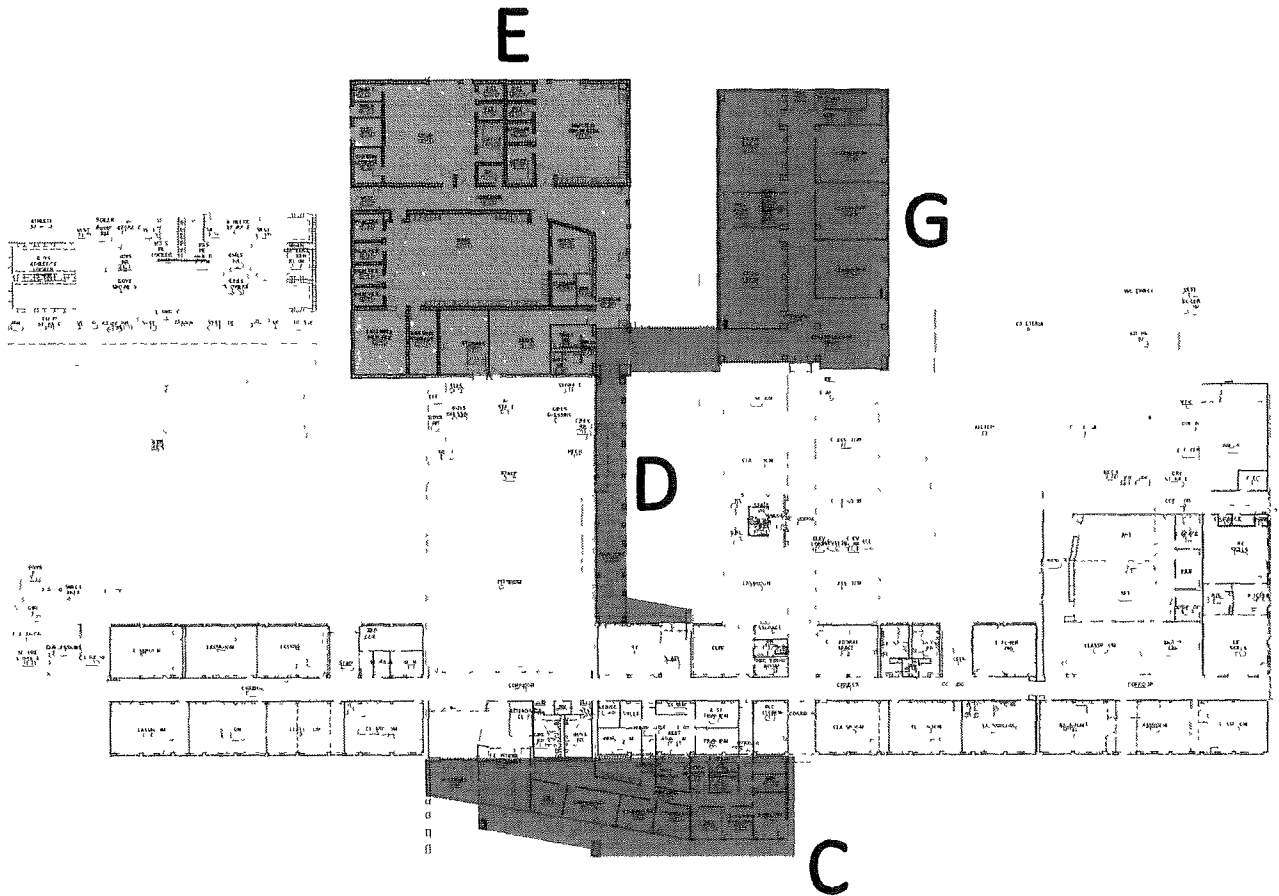
PHASE 1 (JAN - MAY 2019)

- Areas Under Construction
- Temporary Fencing
- Staff/Student Pathways



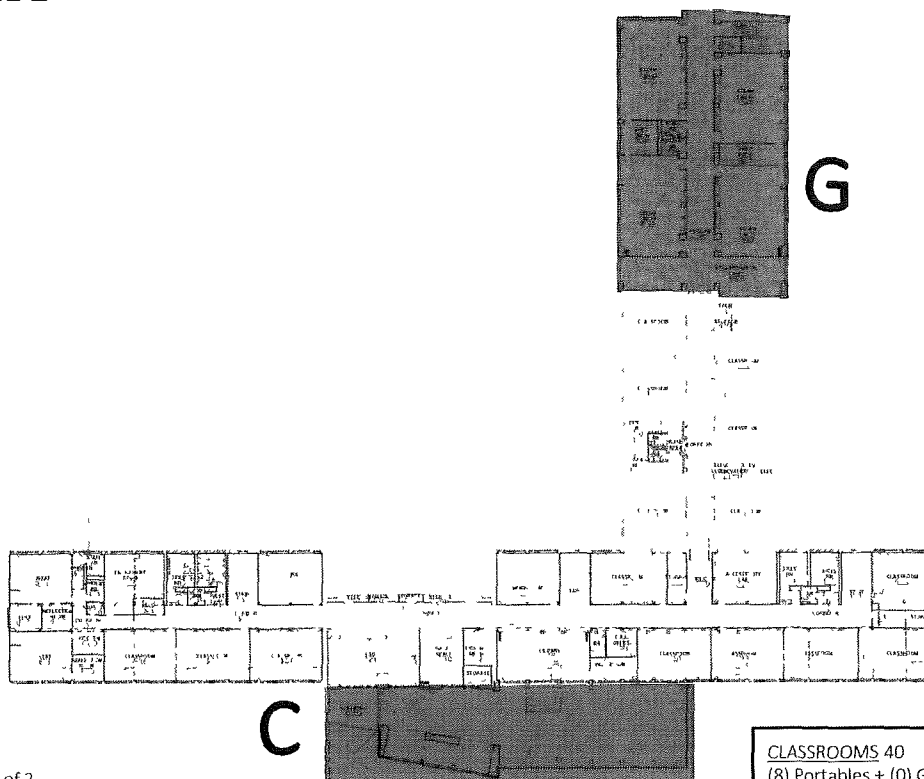
PHASE 1 (JAN - MAY 2019)

- New Construction (47k SF)
- Renovations
- Completed Areas
- Staff/Student Pathways



LEVEL 1

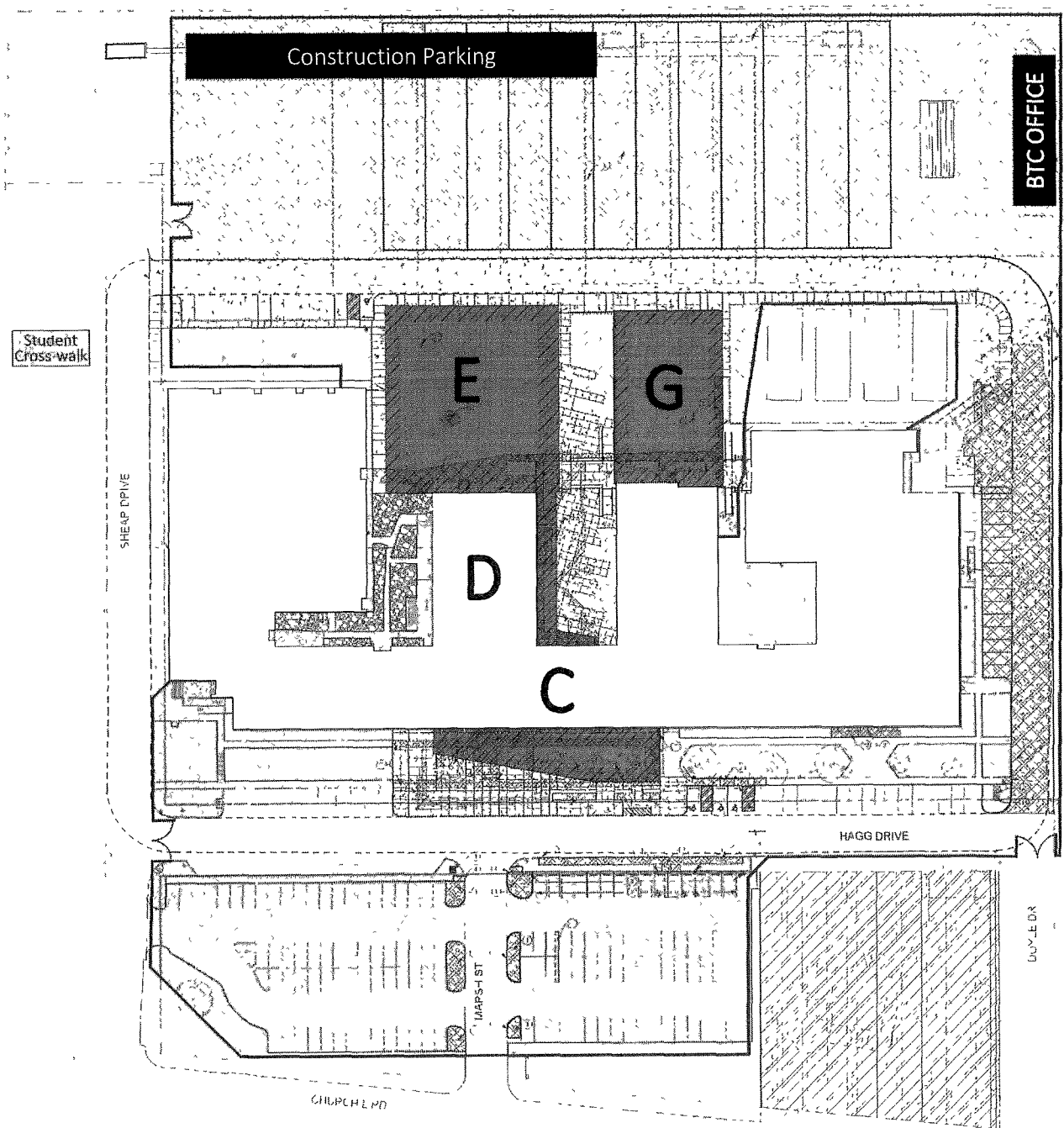
LEVEL 2



CLASSROOMS 40
(8) Portables + (0) Gained - (0) Lost = (48) Total

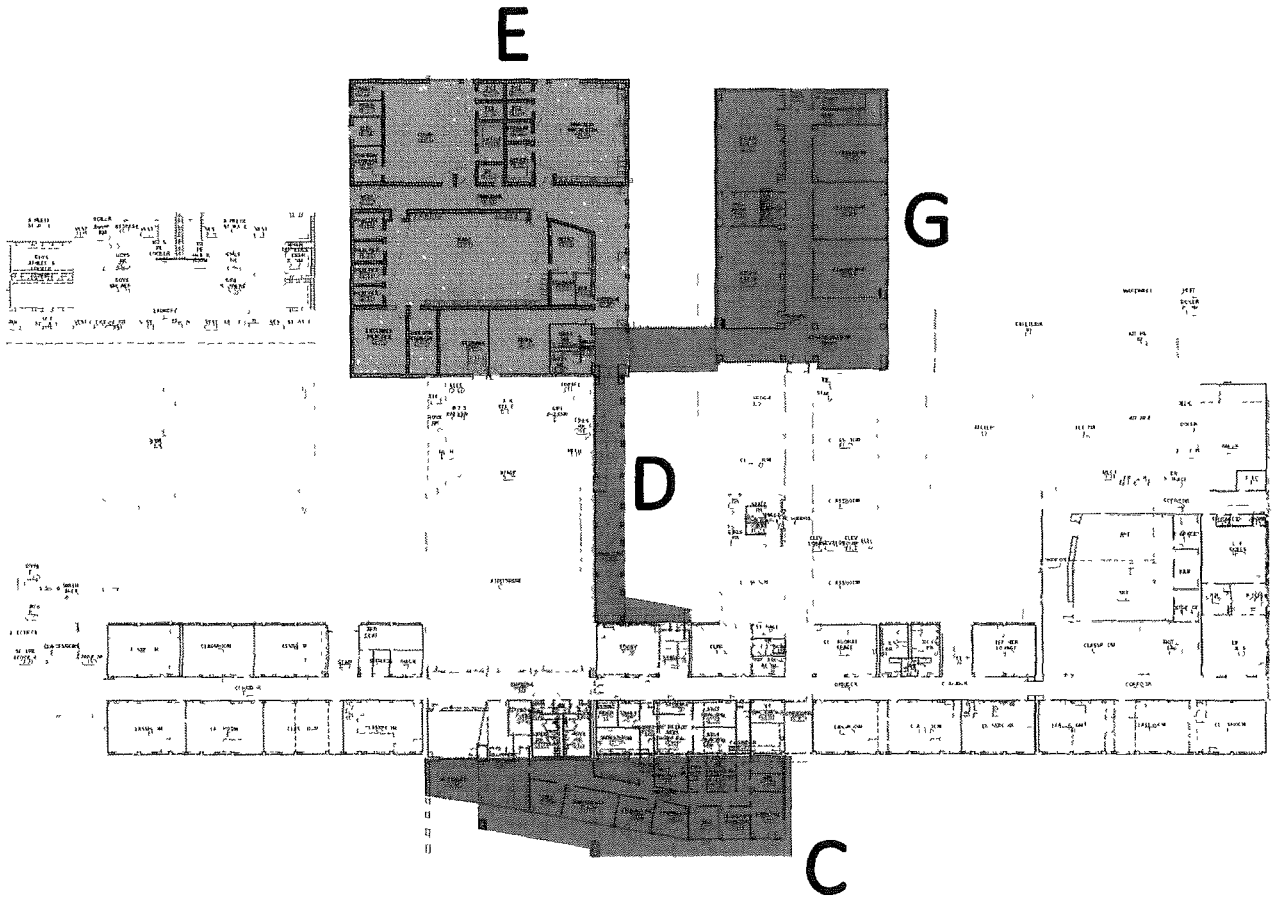
PHASE 2 (JUNE - AUG 2019)

- Areas Under Construction
- Temporary Fencing
- Staff/Student Pathways



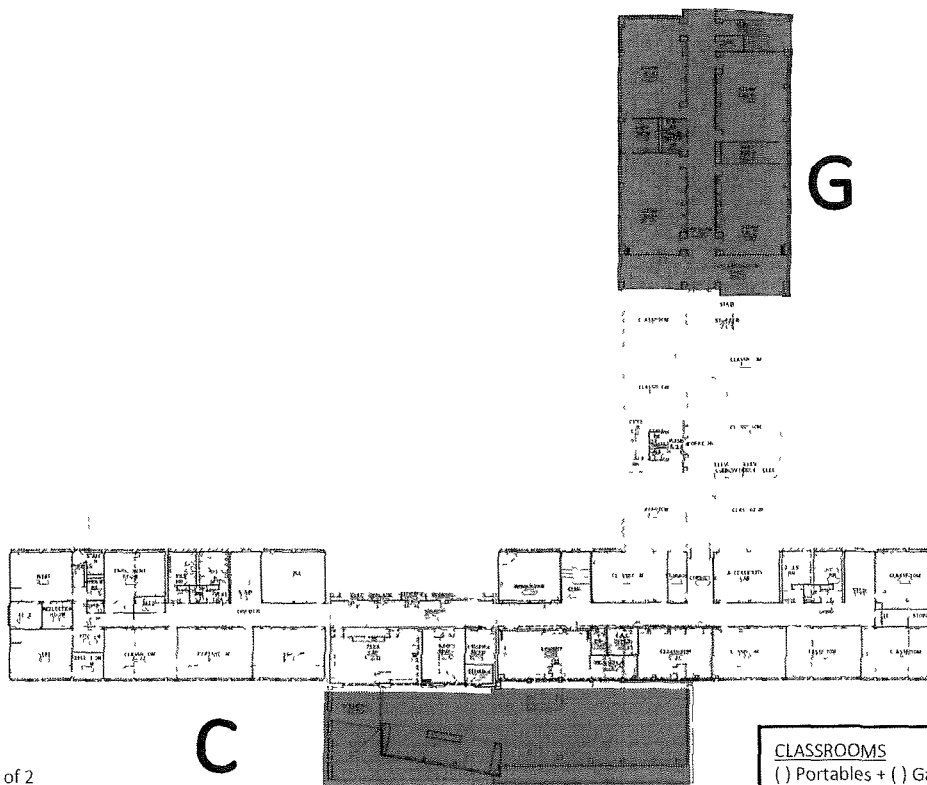
PHASE 2 (JUN - NOV 2019)

- New Construction (47k SF)
- Renovations (18k SF)
- Completed Areas
- Staff/Student Pathways



LEVEL 1

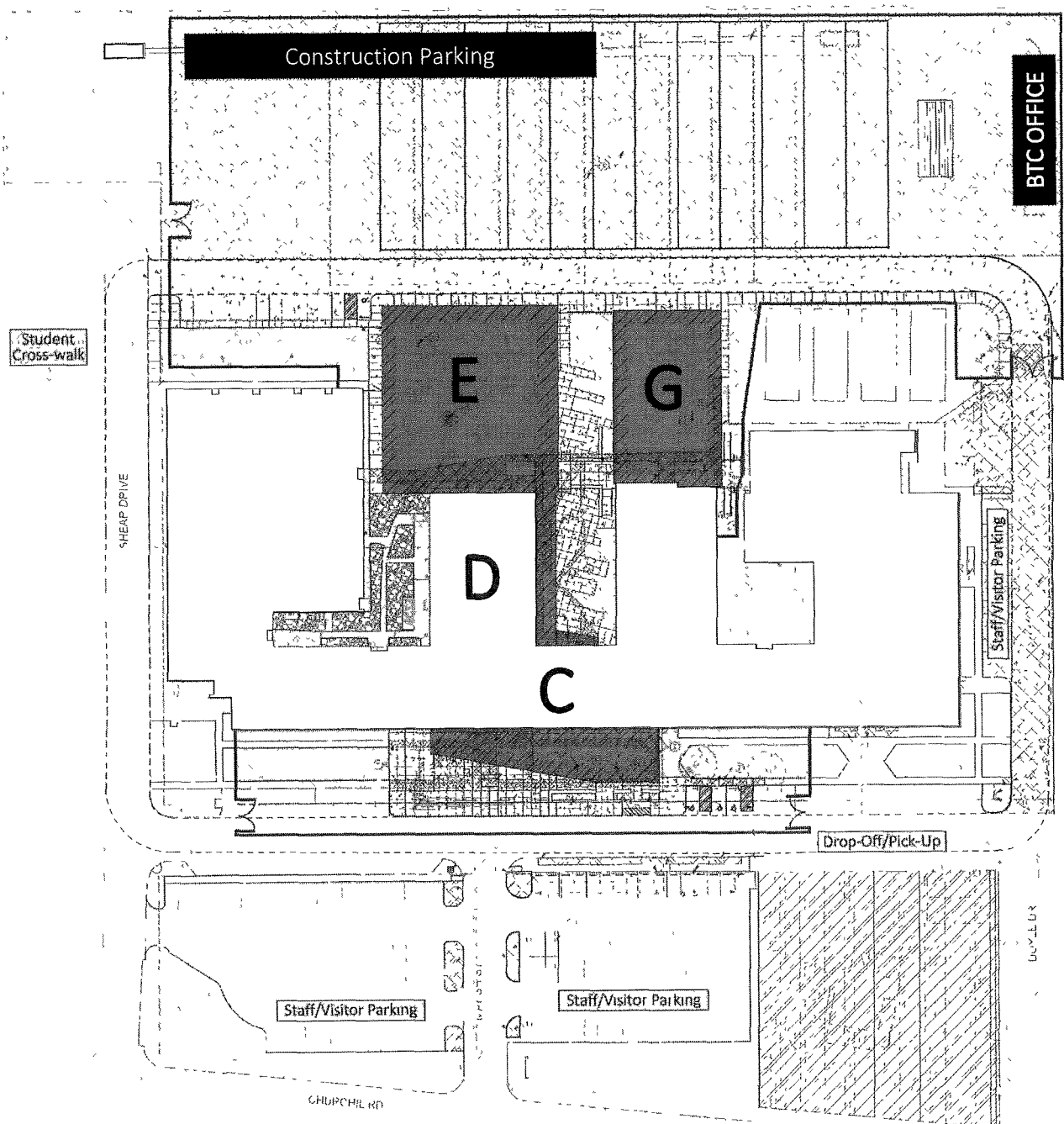
LEVEL 2



CLASSROOMS
() Portables + () Gained - () Lost = () Total

PHASE 3 (SEPT - NOV 2019)

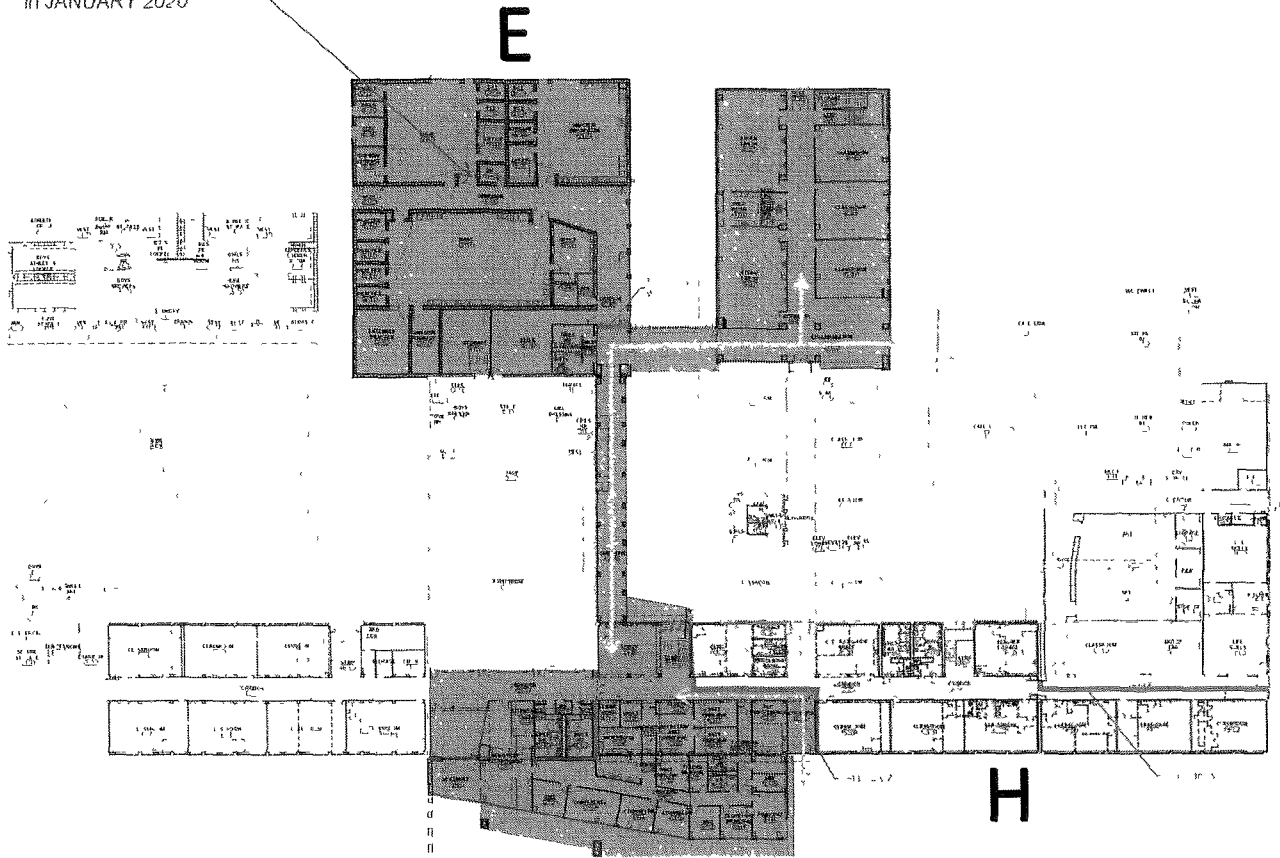
- Areas Under Construction
- Temporary Fencing
- Staff/Student Pathways



PHASE 3 (DEC - MAR 2020)

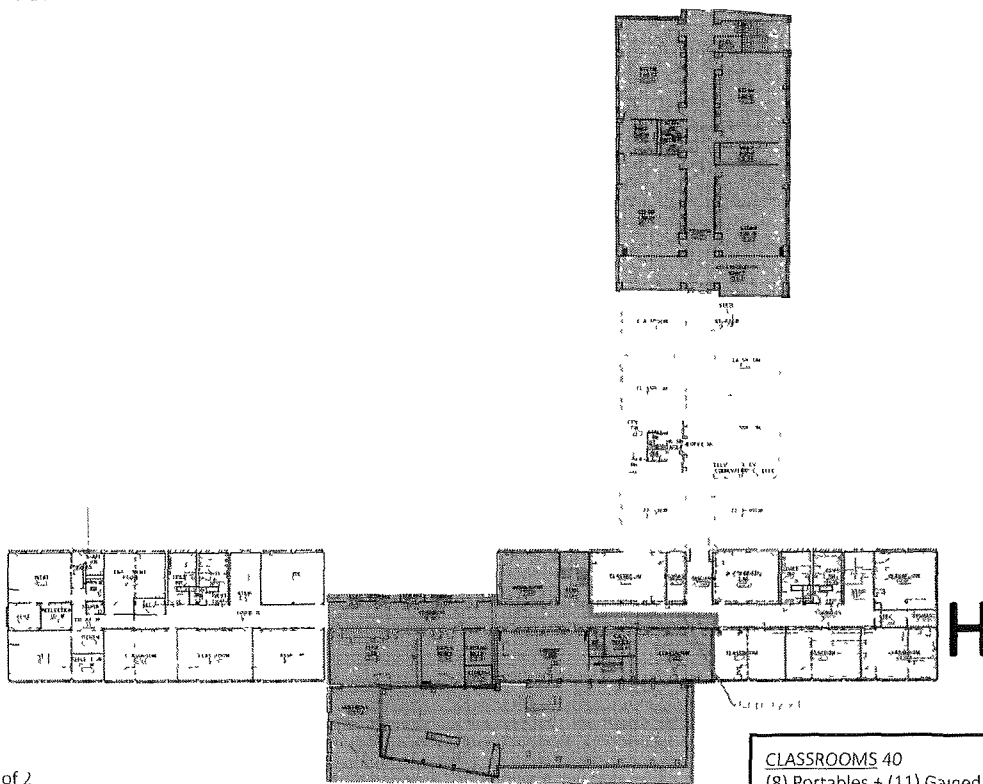
- New Construction (18k SF)
- Renovations (12k SF)
- Completed Areas
- Staff/Student Pathways

TURN OVER (D & E)
in JANUARY 2020



LEVEL 1

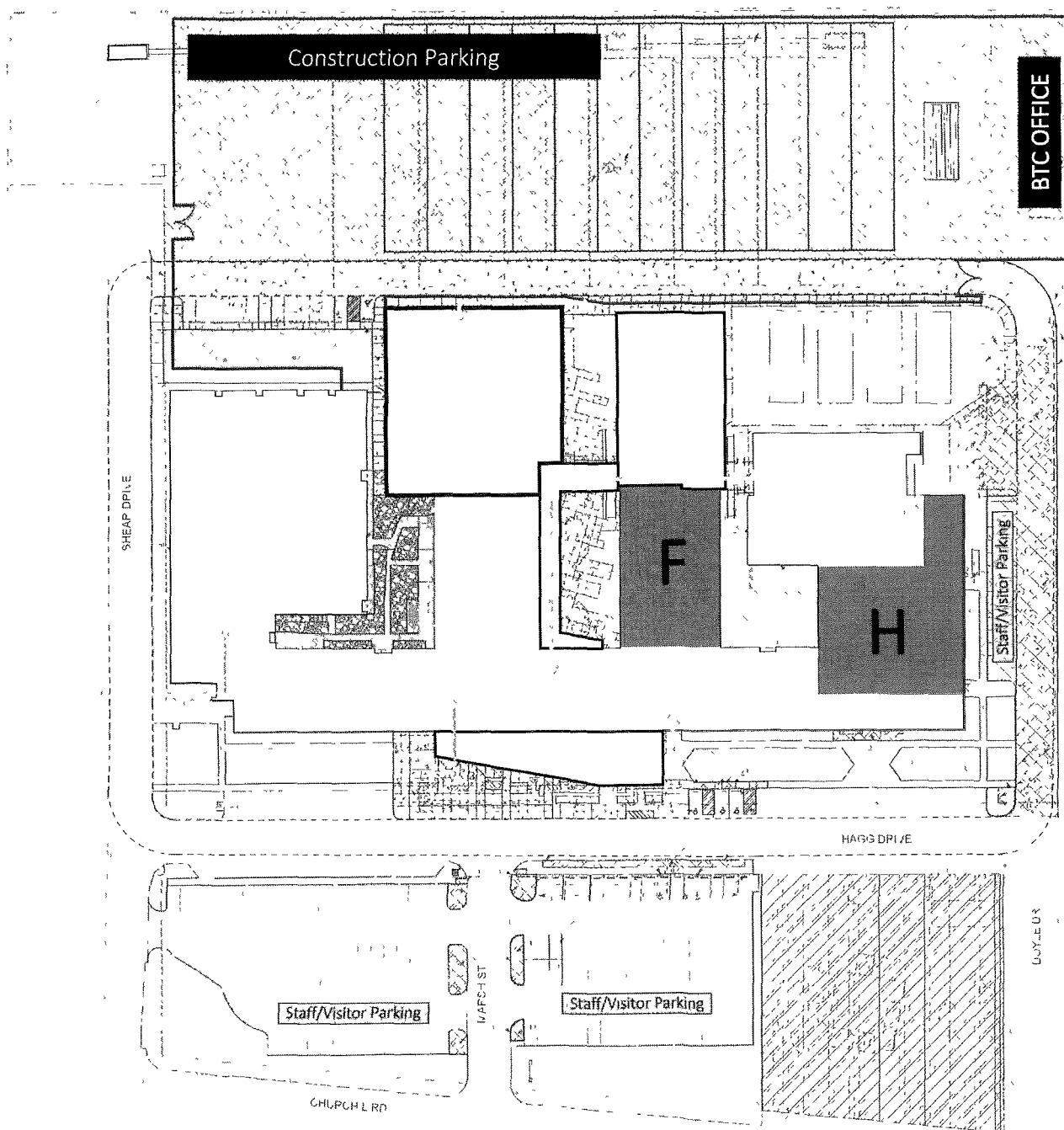
LEVEL 2



CLASSROOMS 40
(8) Portables + (11) Gained - (13) Lost = (46) Total

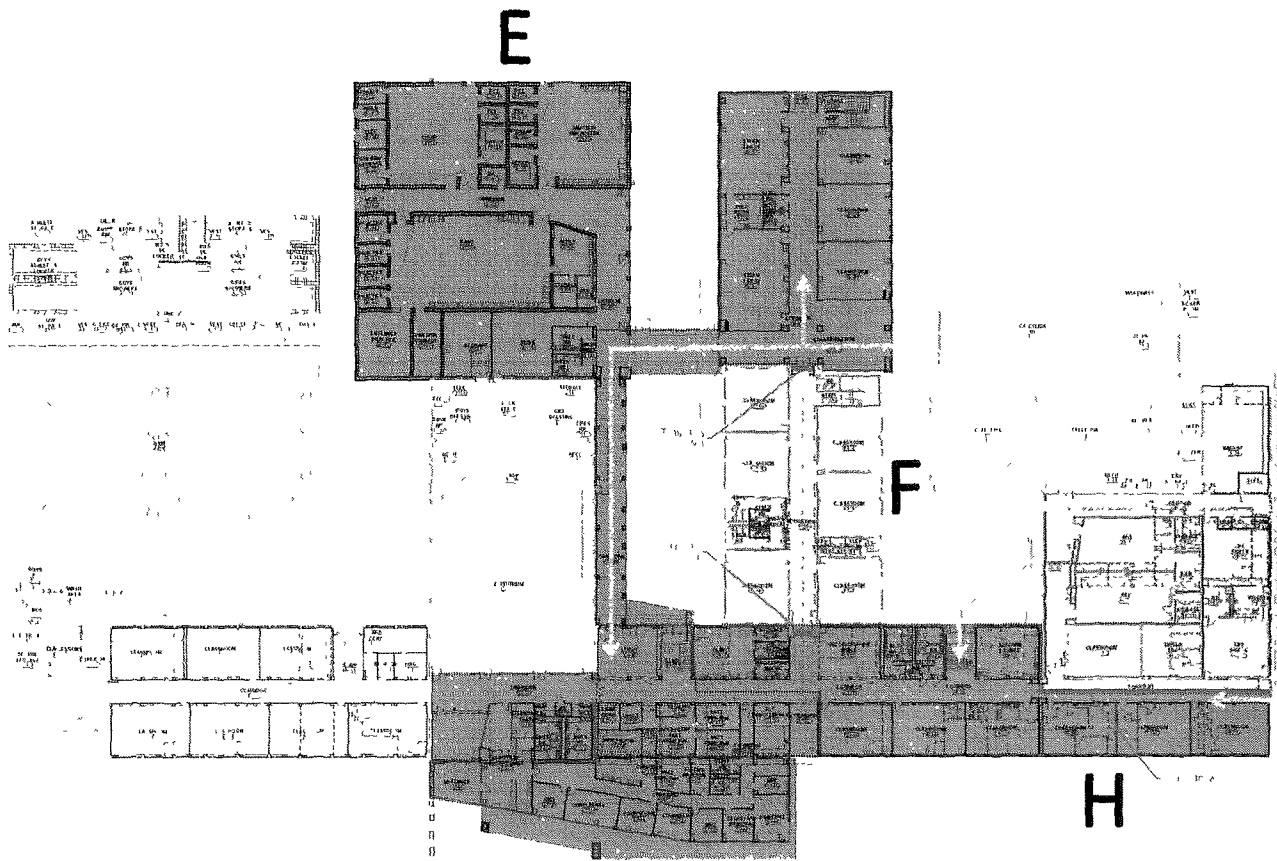
PHASE 4 (DEC - MAR 2020)

- Areas Under Construction
- Temporary Fencing
- Staff/Student Pathways



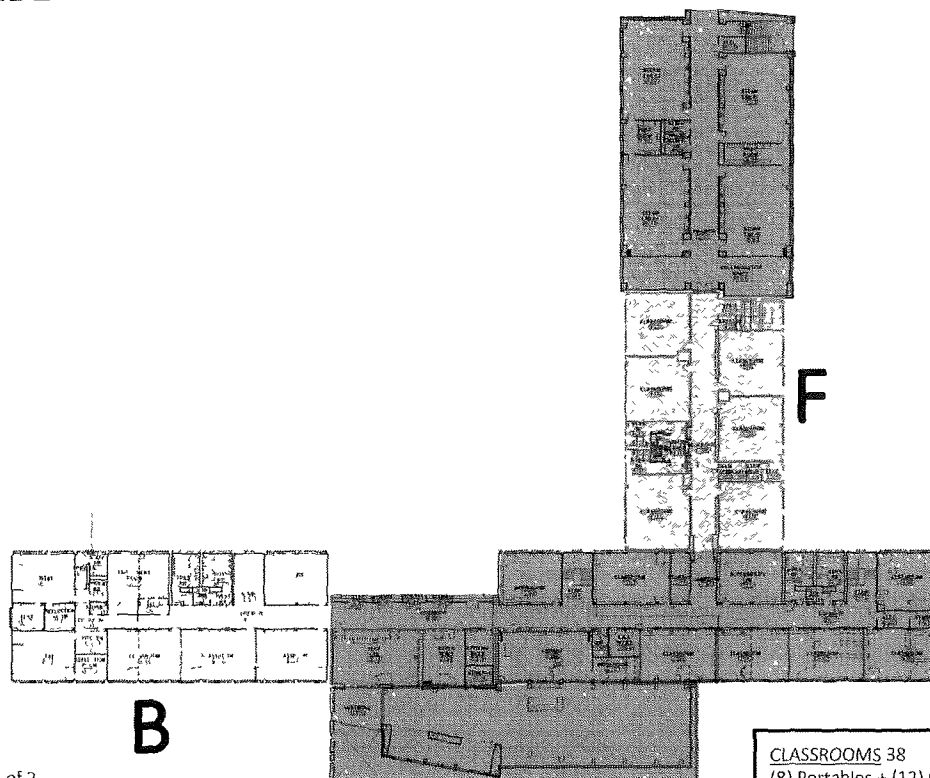
PHASE 4 (MAR - JUN 2020)

- New Construction
- Renovations (25k SF)
- Completed Areas
- Staff/Student Pathways



LEVEL 1

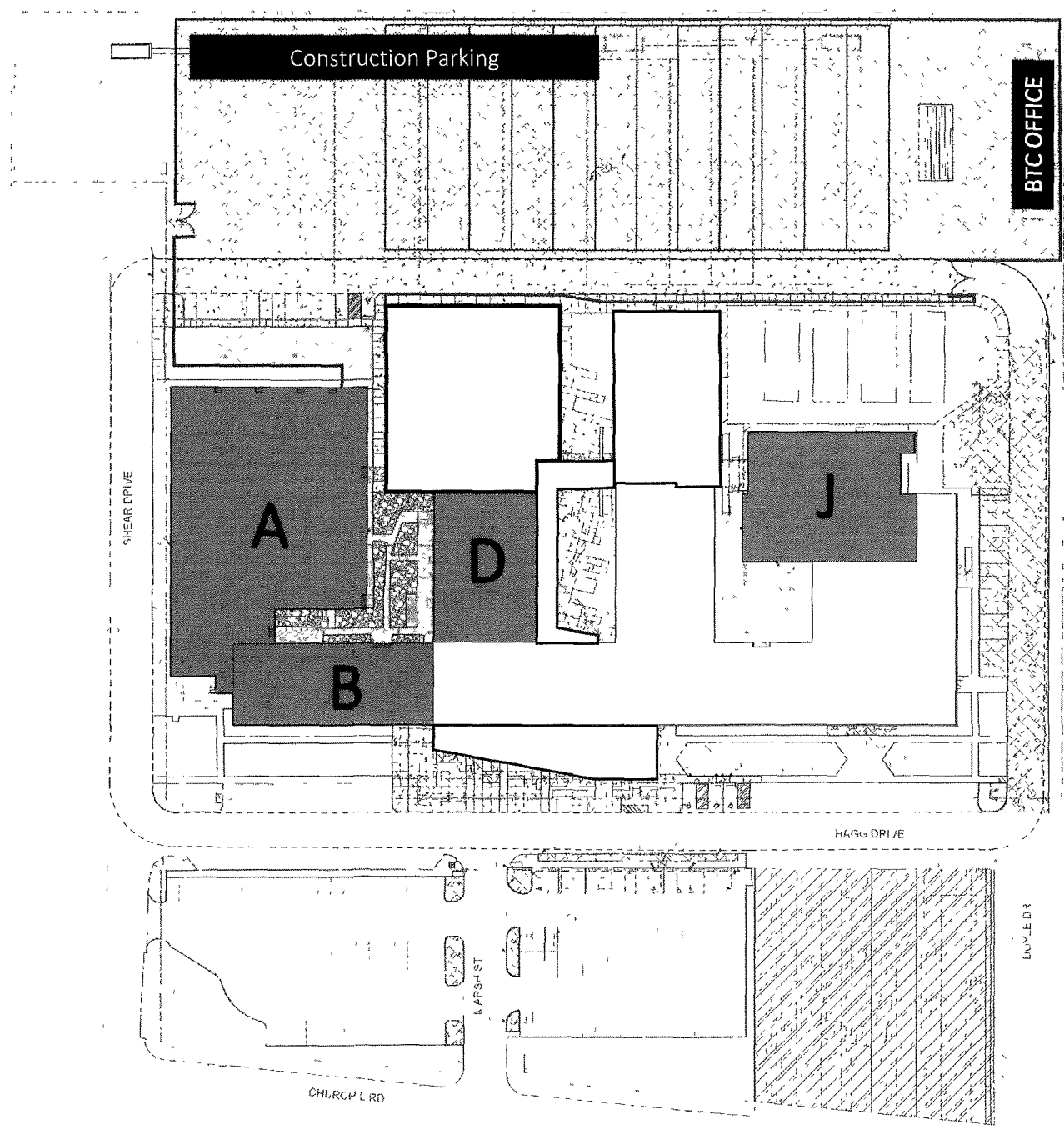
LEVEL 2



CLASSROOMS 38
(8) Portables + (12) Gained - (13) Lost = (45) Total

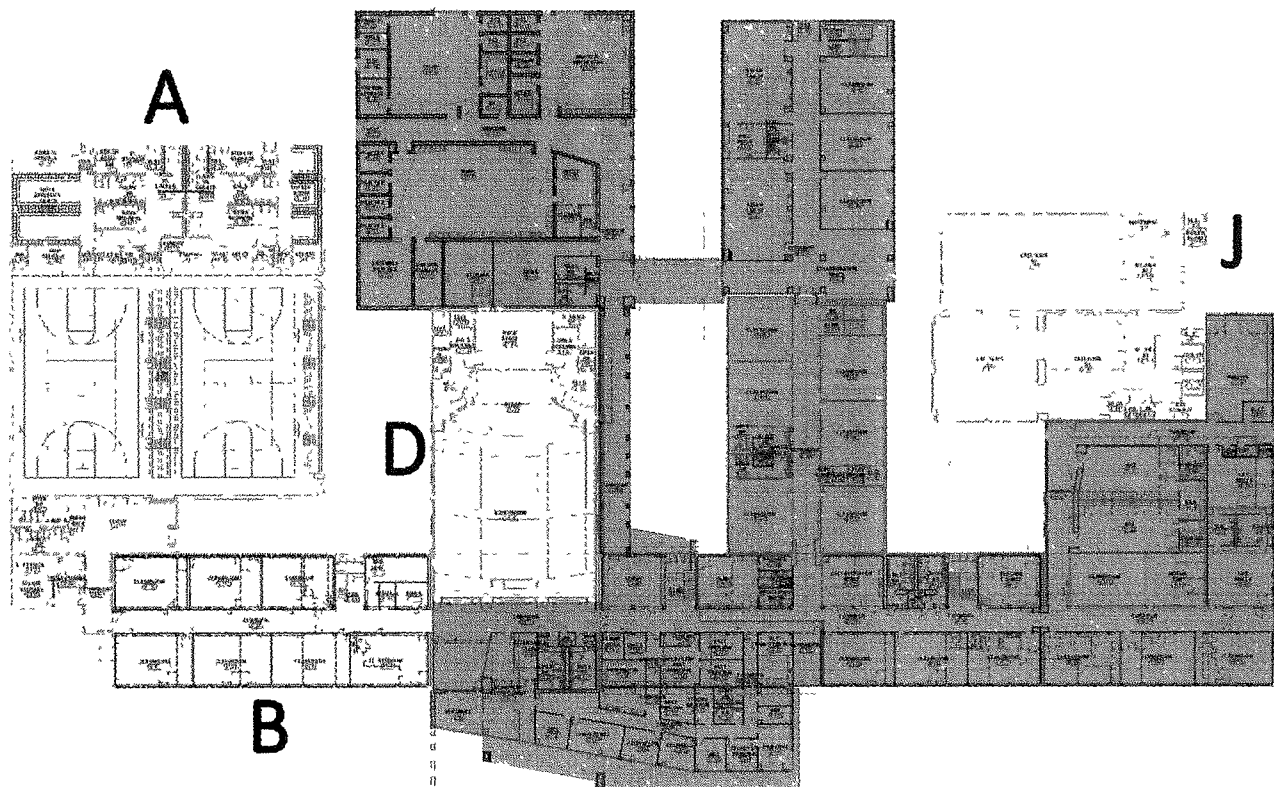
PHASE 5 (MAR - AUG 2020)

- Areas Under Construction
- Temporary Fencing
- Staff/Student Pathways



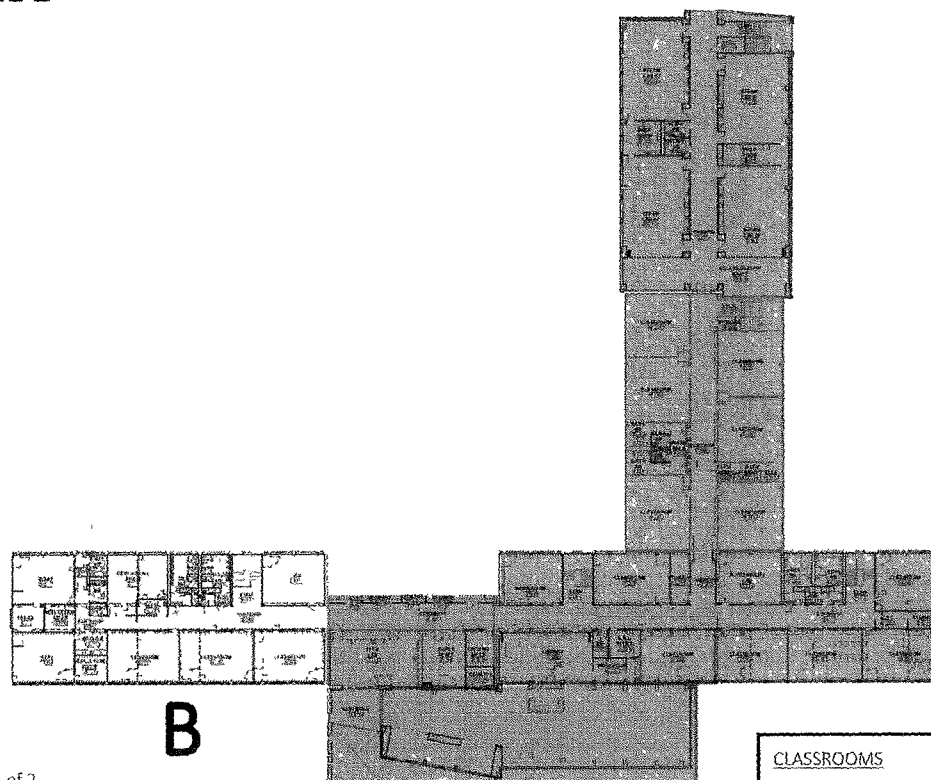
PHASE 5 (JUN - AUG 2020)

- New Construction
- Renovations (60k SF)
- Completed Areas
- Staff/Student Pathways

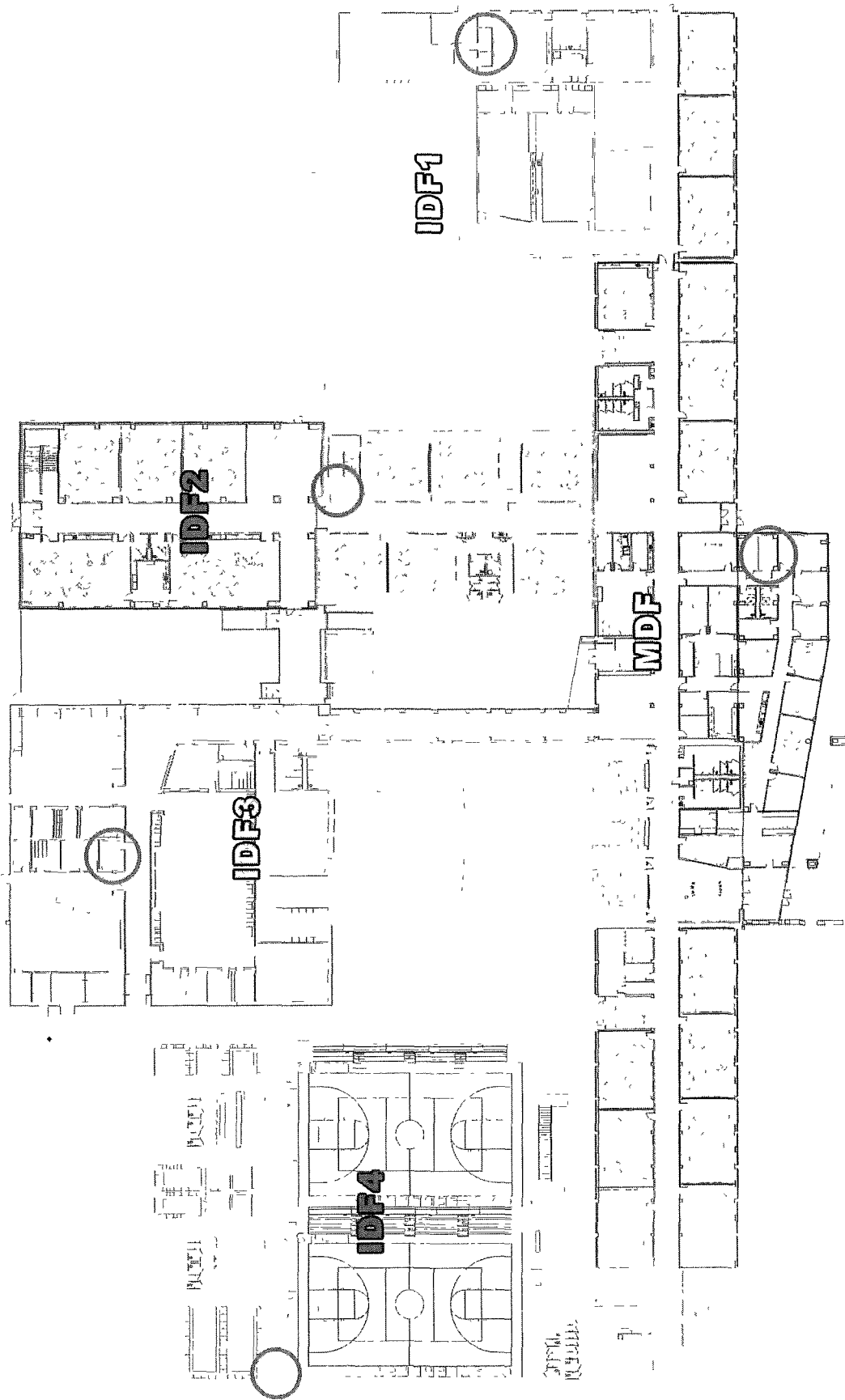


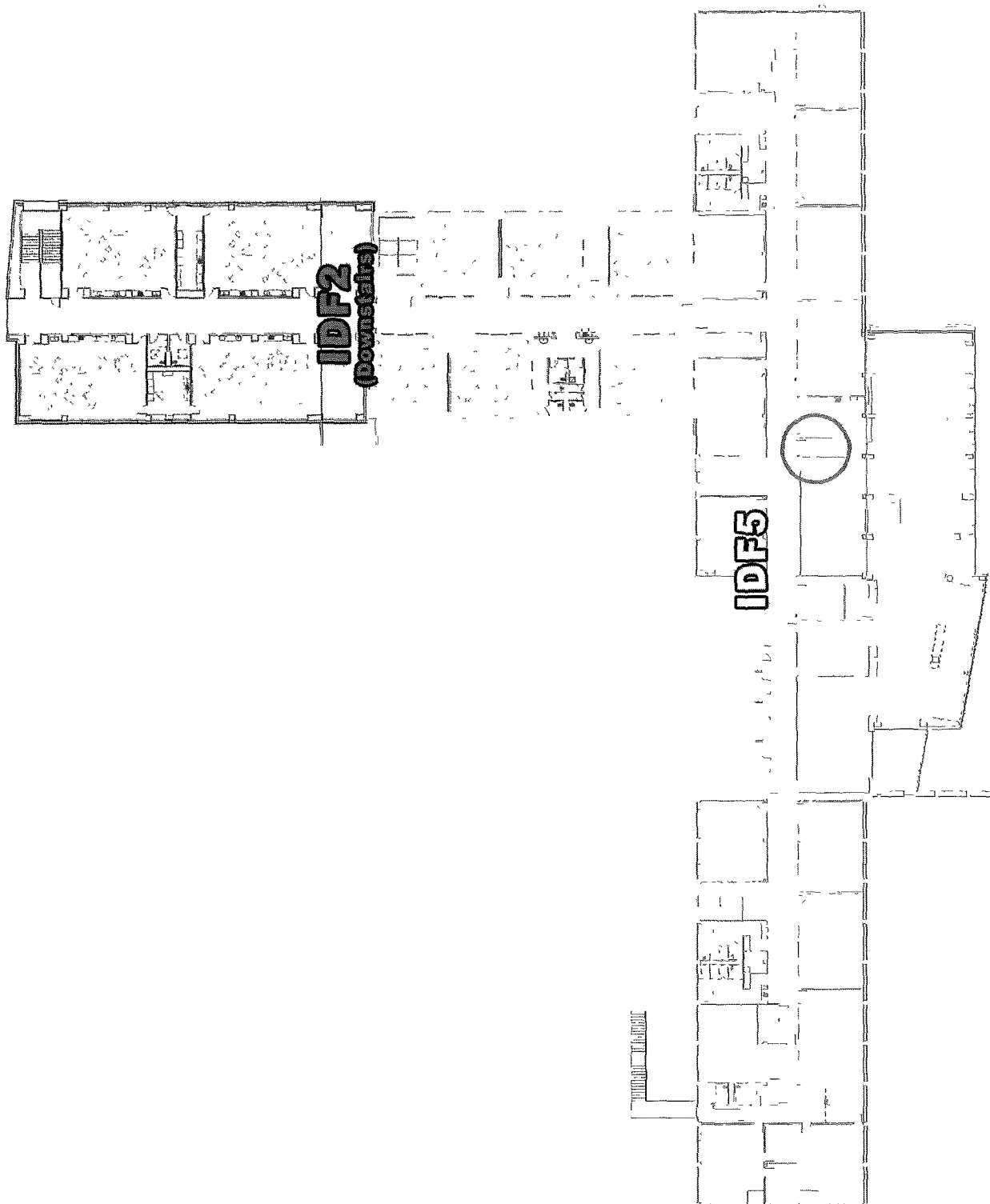
LEVEL 1

LEVEL 2

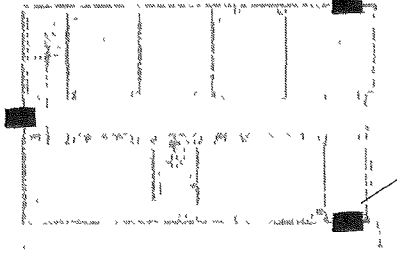
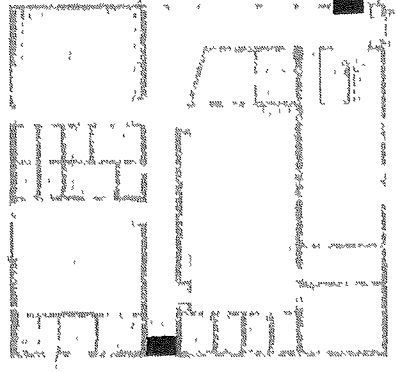


CLASSROOMS

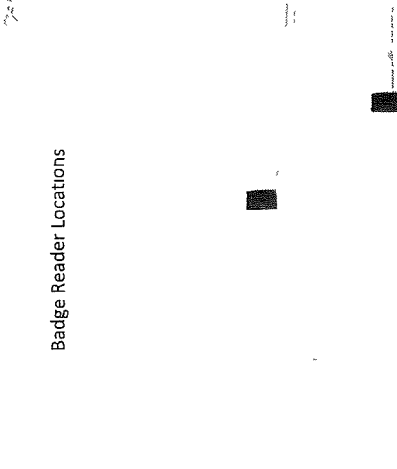




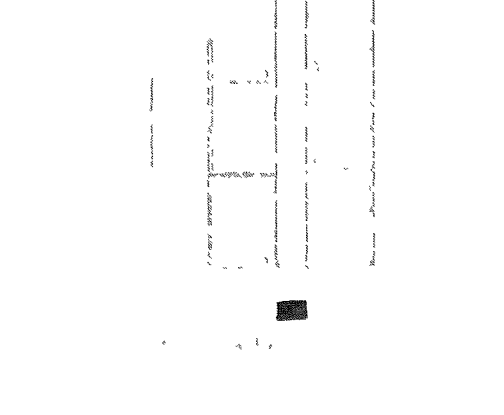
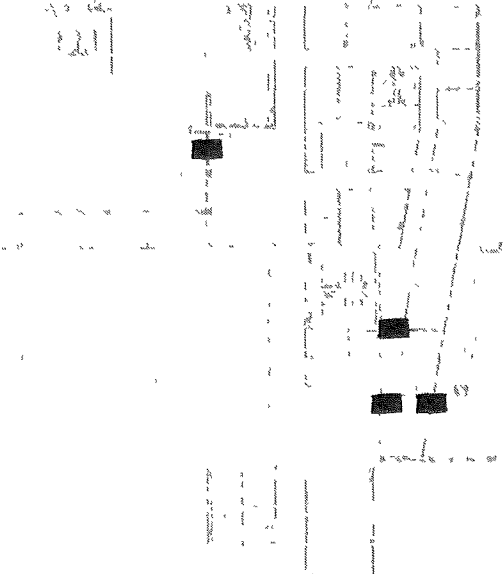
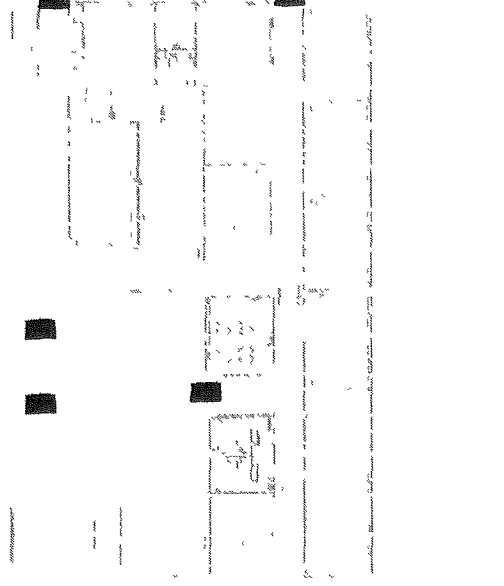
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Card reader only if window is converted to door

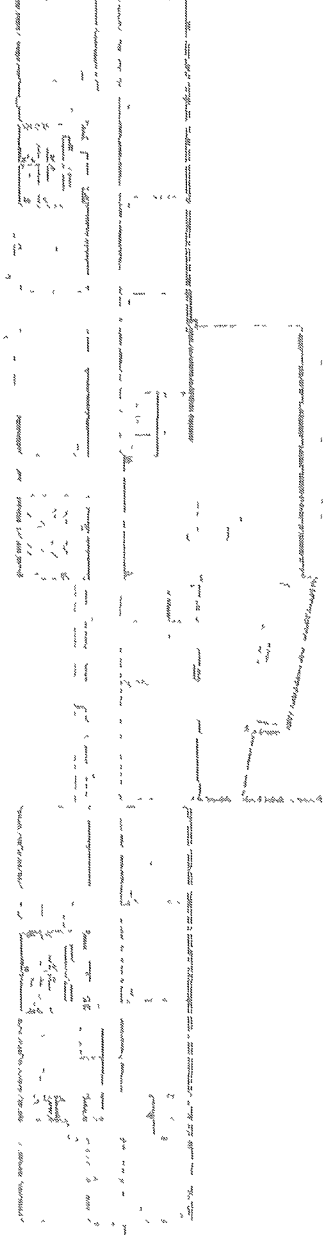
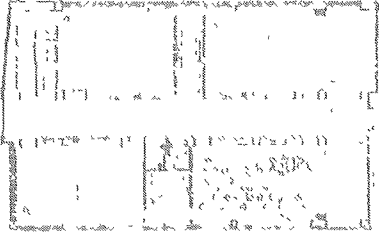


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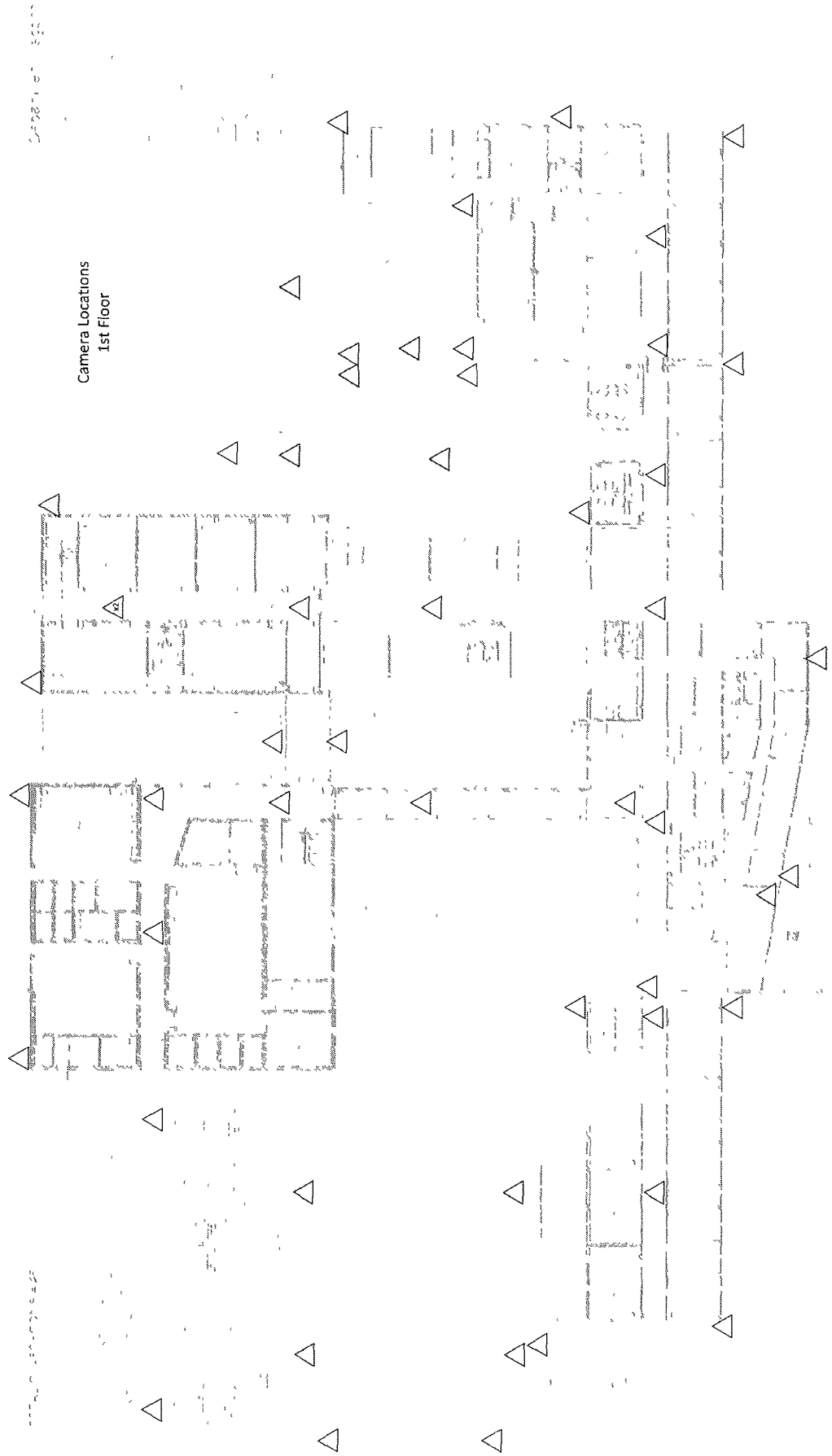


Badge Reader Locations

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Camera Locations
1st Floor

The diagram illustrates a 2D hexagonal lattice structure. Solid circles represent sites, and open circles represent sites. The lattice is shown with various sites highlighted by larger circles and labels, indicating specific sites of interest in the study.

