

September 23, 2022

**CLOVIS UNIFIED SCHOOL DISTRICT
BID 2912 Energy Management System Upgrade - Various Sites**

ADDENDUM NO. 1

This addendum forms a part of the bid/contract documents. It modifies the original project plans, specifications, and instructions. Bidders are required to acknowledge receipt of this addendum on the sheet included with the bid package. Failure to acknowledge receipt of this addendum may subject the bidder to disqualification.

Revisions:

Due to COVID and California Wildfire impact on the insurance industry, the AM Best rating requirement on this project is now **A- rated or better**. Please provide and sign all needed AM Best verification paperwork outlined in bid packet with your sealed bid at time of bid submittal.

Clarification:

AM Best rating requirement of A or better has been reduced to A- or better.

Rating Report information to be obtained from A.M. Best Company –<http://www.ambest.com>

Bids should ensure device licensing is sufficient for counts stated in cost analysis document. Bidder to calculate the most cost-effective device licensing bundle combinations that meet/exceed stated device totals. Bidder to note number of licenses included in bid proposal on Cost Analysis Form.

If you have any questions, please feel free to contact my office at 559-327-9479.

Leeann Errotabere
Director of Purchasing

1-page addendum

CLOVIS UNIFIED SCHOOL DISTRICT

BID PACKAGE FOR BID NUMBER 2912

Energy Management System Upgrade - Various Sites

Eimear O'Brien, Ed.D.
Superintendent

Clovis Unified School District
1450 Herndon Avenue
Clovis, California 93611
(559) 327-9475

CLOVIS UNIFIED SCHOOL DISTRICT
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NOTICE TO CONTRACTORS

Notice is hereby given that Clovis Unified School District (hereinafter referred to as "Owner") will receive sealed bids prior to the date and time stated for the Bid Opening for:

BID 2912 - Energy Management System Upgrade - Various Sites

Bid Package is available for download at no cost from the District Website at:

<https://www.cusd.com/BidSchedule.aspx>

If documents are downloaded from the District Website, bidder must notify Leeann Errotabere at leeannerrotabere@cusd.com to ensure receipt of future notifications and documents related to the bid. Bidder is responsible for receipt of bid communication.

Mandatory pre-bid meeting is scheduled for October 3, 2022 at 10:00 AM at Clovis USD – Construction Services located at 1470 Herndon Avenue, Clovis, CA 93611.

Time of completion date for the project(s) shall be **180 Calendar Days** from the notice of proceed date.

Bids will be sealed and filed at the following address:

**CLOVIS UNIFIED SCHOOL DISTRICT
PURCHASING DEPARTMENT
1450 HERNDON AVENUE
CLOVIS, CALIFORNIA 93611**

before **2:00 p.m. on October 13, 2022 Bids will be open in public.**

Bids must be accompanied by a bidder's bond, cashier's check, or certified check for at least ten percent (10%) of the amount of the base bid and made payable to the Owner. If a bid bond is used, it must be issued by an Admitted Surety (an insurance organization authorized by the Insurance commissioner to transact surety insurance in the State of California during this calendar year), which shall be given as a guarantee that the bidder will enter into a contract if awarded the work and will be declared forfeited, paid to, or retained by the Owner as liquidated damages if the bidder refuses or neglects to enter into the contract provided by the Owner after being requested to do so.

The Contractor shall be required to satisfy the conditions set forth in the contract and Education Code section 45125.2 regarding fingerprinting requirements and student safety prior to permitting any contact with students. Upon award of the contract and before beginning work, the Contractor shall be required to provide a verification of compliance with the student safety provisions of the contract and Education Code section 45125.2.

Upon award of the bid, require signature on the enclosed declaration to ensure compliance with the general Conditions and the Education Code.

The successful bidder will be required to furnish a Payment (Labor and Material) Bond in the amount of one hundred per cent (100%) of the contract price, and a Faithful Performance Bond in the amount of one hundred per cent (100%) of the contract price, said bonds to be secured from an Admitted Surety (an insurance organization authorized by the Insurance Commissioner to transact business of insurance in the State of California during this calendar year), and satisfactory to the Owner. The bidder will be required to give satisfactory proof to the Owner of the maintenance of Public Liability Insurance in the amount of not less than \$2,000,000.00 for more than one person injured in one accident, and the maintenance of property damage insurance in an amount not less than \$2,000,000.00.

The successful bidder will be allowed to substitute securities or establish an escrow in lieu of retainage, pursuant to Public Contract Code Section 22300, and as described in the General Conditions.

The Owner will not consider or accept any bids from contractors who are not licensed to do business in the State of California, in accordance with the California Public Contract Code, providing for the licensing of contractors. In accordance with Section 3300 of said Code, the Contractor shall have a **Class "C10" license.**

Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. No bid will be accepted nor any contract entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform public work. If awarded a Contract, the Bidder and its subcontractors, of any tier, shall maintain active registration with the Department of Industrial Relations for the duration of the Project.

This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. In bidding on this project, it shall be the Bidder's sole responsibility to evaluate and include the cost of complying with all labor compliance requirements under this contract and applicable law in its bid.

The lowest bid shall be determined as follows: The lowest total of the bid on the base contract and the bids on all additive items and all deductive items. (Public Contract Code section 20103.8, subd. (b)). The District reserves the right to add or deduct any of the additive or deductive items from the project or contract after the lowest responsible and responsive bidder is determined.

The Director of the Department of Industrial Relations of the State of California, in the manner provided by law, has ascertained the general prevailing rate of per diem wages and rate for legal holidays and overtime work as set forth in Article VIII of the Agreement. The Contractor must pay for any labor therein described or classified in an amount not less than the rates specified. Copies of the required rates are on file at the Owner's business office and are available to any interest party on request.

The Owner reserves the right to waive any irregularity and to reject any or all bids.

Unless otherwise required by law, no bidder may withdraw its bid for a period of sixty (60) days after date set for the opening thereof.

Advertise: September 23, 2022 Michael Johnston
 September 30, 2022 Associate Superintendent

END OF SECTION

INSTRUCTIONS TO BIDDERS

SECURING DOCUMENTS:

Bid Package is available for download at no cost from the District Website at:

<https://www.cusd.com/BidSchedule.aspx>

If documents are downloaded from the District Website, please make sure to notify Leeann Errotabere at leeannerrotabere@cusd.com so you will receive any future notifications/documents

Mandatory pre-bid meeting is scheduled for October 3, 2022 at 10:00 AM at Clovis USD – Construction Services located at 1470 Herndon Avenue, Clovis, CA 93611.

PROPOSALS:

Proposals to receive consideration shall be made in accordance with the following instructions:

1. Proposals shall be made on a form therefor, obtained from the Architect or Owner. Bids not made on the proper form shall be disregarded. Numbers must be stated in words and figures, and the signatures of all individuals must be in longhand. The completed form should be without interlineation, alterations, or erasures.
2. No proposal will be considered which makes exceptions, changes, or in any manner makes reservations to the terms of the drawings or specifications, except that explanations or alternate proposals may be made on a separate sheet attached to the bid form. They will not, however, be considered in determining low bid.
3. Questions regarding documents, discrepancies, omissions, or doubt as to meanings shall be referred immediately to the Architect who will send written instructions clarifying such questions to each bidder.
4. Each bid must give the full business address of the bidder, and the name of each person signing shall also be typed or printed below the signature. Bids by individuals must be signed by the individual. Bids by partnerships must furnish the full names of all partners and must be signed in the partnership name by one of the partners, or by an authorized representative, followed by the signature and designation of the person signing. Bid by corporations must be signed with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the president, secretary, or other person authorized to bind the corporation in the matter. Satisfactory evidence of the authority of the officer signing on behalf of a corporation shall be attached.
5. Pursuant to the provisions of Sections 4100 to 4114, inclusive, of the Public Contract Code of the State of California, which are hereby incorporated and made a part hereof, every bidder shall set forth in its bid:
 - A. The name and location of the place of business of each subcontractor who will perform work or labor or render service to the bidder in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the bidder, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half (1/2) of one percent (1%) of the bidder's total bid.
 - B. The portion of the work which will be done by each such subcontractor. If the bidder fails to specify a subcontractor for any portion of the work to be performed under the contract in excess of one-half (1/2) of one percent (1%) of the bidder's

total bid, the bidder agrees to perform that portion itself. The successful bidder shall not, without the consent of the Owner:

- 1) Substitute any person as subcontractor in place of the subcontractor designated in the original bid.
 - 2) Permit any subcontract to be assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the bid.
 - 3) Sublet or subcontract any portion of the work in excess of one-half (1/2) of one percent (1%) of the total bid as to which the original bid did not designate a subcontractor.
6. The Director of the Department of Industrial Relations of the State of California, in the manner provided by law, has ascertained the general prevailing rate of per diem wages and rate for legal holidays and overtime work as set forth in Article IX of the Agreement. The Contractor must pay for any labor therein described or classified in an amount not less than the rates specified. Copies of the required rates are on file at the Owner's business office and are available to any interested party on request.
7. All proposals must be accompanied by a completed Noncollusion Declaration. The bidder must certify that the Bid is genuine and is not sham or collusive, or made in the interest of or on behalf of any bidder not named in the bid, and that the bidder has not directly or indirectly induced or solicited any other bidder to put in a sham bid, or any other possible bidder to refrain from bidding, and that the bidder has not in any manner sought by collusion to secure for itself an advantage over any other bidder.
8. Proposals must be accompanied by a certified check, cashier's check, or bidder's bond, for an amount not less than ten percent (10%) of the amount of the base bid, made payable to the order of the Owner. If a bidder's bond accompanies the proposal, said bond shall be secured by an Admitted Surety (an insurance organization authorized by the Insurance Commissioner to transact business of insurance in the State of California during this calendar year) and satisfactory to the Owner. Said check or bond shall be given as a guarantee that the bidder will enter into the contract if awarded the work, and in case of refusal or failure to enter into said contract, the check or bond, as the case may be, shall be payable to the Owner and retained as liquidated damages.
9. Proposals shall be sealed and filed as indicated in the Notice to Contractors. Note regarding facsimiles: EXCEPT FOR BID SECURITY, all submitted before the bid opening documents may be in the form of facsimiles which have been sent elsewhere and sealed before filing with the Owner. (Any bidder who uses or attempts to use the Owner's facsimile equipment will be disqualified immediately.) The originals of the faxed documents must be mailed to the Owner, postmarked the same as the bid opening, via certified mail, return receipt requested, or hand-delivered to the Owner by the close of business on the day of the bid opening.

Facsimiles of the bid security are not acceptable - the original of the check or bond must be submitted before the bid opening.

10. Bidders shall possess a valid California Contractors License as listed in the Notice to Bidders. A General Building Contractors License (B) shall be acceptable in accordance with the California Business and Professional Code Section 7057, paragraph (b): A general building contractor may take a prime contract or a subcontract for framing or carpentry project. However, a general building contractor

shall not take a prime contract for any project involving trades other than framing or carpentry unless the prime contract requires at least two unrelated building trades or crafts other than framing or carpentry, or unless the general building contractor holds the appropriate specialty license or subcontracts with an appropriately licensed specialty contractor to perform the work. Owner reserves the right to reject any bid as nonresponsive if a listed subcontractor is not licensed at the time the bidder's bid is submitted to Owner, whether or not the bidder listed the unlicensed subcontractor inadvertently. Owner reserves the right to reject any bid as nonresponsive if a listed subcontractor is not licensed to perform the work for which it is listed at the time the bidder's bid is submitted to Owner, whether or not the bidder listed the subcontractor for that particular work inadvertently.

WITHDRAWAL OF PROPOSALS:

Proposals may be withdrawn by the bidder prior to the time fixed for the submittal of bids. A successful bidder shall not be relieved of the bid unless by consent of the Owner or bidder's recourse to Public Contract Code § 5100 et seq.

OPENING OF PROPOSALS:

Opening of proposals shall be as soon after the hour set as will be possible; opening and declaration to be as set forth in the Notice to Contractors. Any and all bidders will be permitted to attend. The Owner is allowed the number of days set forth in the Notice to Contractors in which to determine low bidder.

EXAMINATION OF CONTRACT DOCUMENTS AND SITE:

Before submitting a proposal, bidders shall examine the drawings, read the specifications, the form of contract, and other contract documents. They shall visit the site of the proposed work, examine the building, or buildings, if any, and any work that may have been done thereon. They shall fully inform themselves of all conditions, in, at, and about the site, the building or buildings, if any, and any work that may have been done thereon.

FORM OF CONTRACT:

The form of contract which the successful bidder will be required to execute, if awarded the work, is attached hereto and is made a part hereof.

ADDENDA OR BULLETINS:

Any addenda or bulletins, issued during the time of bidding, shall form a part of the drawings and specifications loaned to the bidder for the preparation of its proposal, shall be covered in the proposal, and shall be made a part of the Contract Documents. All addenda or bulletins shall be signed by the Architect and approved by the Division of State Architect.

AWARD OF CONTRACT:

Rejection of any or all proposals, to contract work with whomever and in whatever manner, to abandon work entirely, and/or to waive any informality in receiving of bids is reserved as the right of the Owner. Before the contract or contracts are awarded, the Owner may at its sole discretion require from the proposed Contractor on each project further evidence of the reasonable qualifications of such contractor to faithfully, capably, and reasonably perform such proposed contract and may consider such evidence before making its decision on the award of such proposed contract.

The lowest bid shall be determined as follows: The lowest total of the bid on the base contract and the bids on all additive items and all deductive items. The District reserves the right to add

or deduct any of the additive or deductive items from the project or contract after the lowest responsible and responsive bidder is determined.

The contract shall be awarded to the lowest and most responsible bidder as interpreted by the Owner and specified herein and shall be entered into by the successful bidder within ten (10) days after being notified by the Owner. Identity of lowest bidder will be determined by adding to or subtracting from the base bid the cost of such alternatives as Owner decides to include in the work and contract. The award, if made, will be made within sixty (60) days after the opening of proposals.

EXECUTION OF CONTRACT:

The Contract shall be signed by the successful bidder in as many originals as the Owner deems necessary and returned, together with the contract bonds and insurance certificates, within ten (10) days after the bidder has received notice that the contract has been awarded.

CONTRACT BONDS:

Two bonds, as itemized below and in the forms presented in these contract documents, shall be furnished by the successful bidder at the time of entering into the contract and filed with the Owner. They shall be in the form of surety bonds issued by an Admitted Surety (an insurance organization authorized by the Insurance Commissioner to transact business of insurance in the State of California during this calendar year) and satisfactory to the Owner.

Performance Bond in the amount of one hundred percent (100%) of the contract sum to insure Owner during construction and for one year after completion against faulty or improper materials or workmanship and to assure Owner of full and prompt performance of the contract.

Payment Bond (Labor and Material) in the amount of one hundred percent (100%) of the contract sum in accordance with the laws of the State of California to secure payment of any and all claims for labor and materials used or consumed in performance of this contract.

DRAWINGS, SPECIFICATIONS AND ADDENDA OR BULLETINS:

Return by each bidder of all drawings, specifications and addenda or bulletins in an unmutilated condition and without any marks or annotations is demanded within the time limit indicated under **DEPOSIT** in this section.

SUBSTITUTION OF MATERIALS:

All materials are mentioned as standards. Should a Contractor desire to substitute materials or methods for those specified, the Contractor shall follow the guidelines stated herein, and in accordance with Section 01-640. Each review of a substitution request by the Architect or its consultants will be billed to the Contractor at an hourly rate as indicated in Section 01-640.

Substitutions can be submitted in two ways: (1) Prior to Bid Opening, and (2) After Award of the Contract. Either submittal of substitutions is further described herein and must conform to the requirements indicated.

(1) Prior to Bid Opening: The Contractor must insure that proposed substitutions of materials by the Contractor or its subcontractors are submitted to the Architect's office a minimum of fourteen (14) calendar days prior to the Bid Opening for review and possible approval of any equipment or materials thought to be equal to or better than those specified in the drawings or specifications. An Addendum will be issued seven (7) calendar days prior to Bid Opening including all equipment and materials deemed equivalent to those specified and approved by

the Architect. Submittals must include comparative spec-data of that specified equipment or material and the proposed substitution as indicated on the completed "Substitution Request Form" in accordance with Section 01-640. Submittals without this information will be automatically rejected.

(2) After Award of the Contract: In accordance with the provisions of Section 3400 of the California Public Contract Code, the Contractor awarded the Contract will be provided a period of (40) calendar days after the award of the Contract for submission of data substantiating a request for a substitution of "an equal" item or items. Substitution requests must be made as provided in Article 3.11.4 of the General Conditions.

PAYMENTS:

Payments to the Contractor on account of the contract shall be made in accordance with the terms of the contract.

TAXES:

The Owner is exempt from payment of Federal Excise Tax on materials. The Owner will furnish exemption certificates to the Contractor to be used to obtain materials ordinarily subject to Federal Excise Tax without payment of the tax. Bidders shall deduct Federal Excise Taxes from their bid prices before submitting bids, so that such taxes will not be included in the Contract Sum.

TIME OF COMPLETION AND LIQUIDATED DAMAGES:

Time of completion date for the project(s) shall be **180 Calendar Days** from the notice of proceed date.

Should said work not be completed within the time limit as may be extended as herein provided, damages will be sustained by the Owner. It is understood and agreed that it is and will be impracticable or extremely difficult to determine the actual amount of damages which the Owner will sustain in the event of and by reason of such delay, and it is therefore agreed that the Contractor will pay the Owner the sum of **\$1000.00 Dollars per calendar** for each and every day's delay beyond the time specified as and for liquidated damages; in case the Contractor fails to make such payment, the Owner may deduct the amount thereof from any money due or that may become due the Contractor under the contract. Should such money not be sufficient to cover the agreed liquidated damages, the Owner shall have the right to recover the balance from the Contractor or his sureties.

The Contractor shall be required to satisfy the conditions set forth in the contract and Education Code section 45125.2 regarding fingerprinting requirements and student safety prior to permitting any contact with students. Upon award of the contract and before beginning work, the Contractor shall be required to provide a verification of compliance with the student safety provisions of the contract and Education Code section 45125.2.

Upon award of the bid, require signature on the enclosed declaration to ensure compliance with the general Conditions and the Education Code.

END OF SECTION

REV. 3.97 (8.98)

CALIFORNIA SENATE BILL 854 (2014) – APPLIES TO THIS BID PROJECT

Senate Bill 854, signed into law June 20, 2014, became effectively immediately. It established a new public works contractor registration program which will collect fees to fund compliance monitoring and enforcement, determine prevailing wage and public works coverage, and hear enforcement appeals.

All contractors and subcontractors intending to bid or perform work on public works projects will be required to register, and annually renew, online for the program. The cost to register for the program is currently \$400.00 and is non-refundable. This is a DIR fee paid to the State. The District will not register a contractor, nor collect funds.

Contractors or subcontractors submitting bids must be registered by March 1, 2015. The requirement to use only registered contractors and subcontractors on public works projects, greater than \$1,000, applies to all projects awarded on or after April 1, 2015. No bid can be accepted nor any contract or subcontract entered into nor purchase order issued without proof that the contractor or subcontractor is registered.

Public works refers to construction, alteration, demolition, installation, or repair work (including maintenance) done under contract and paid by public funds. For a more detailed explanation of public works projects, refer to California Labor Code 1720 -1720.6.

This memo is being sent to all vendors currently contracted with the District's Plant Operations and/or Construction Department. What are we asking you to do? If the services you are providing the District, or may provide the District in the future, fall under the definition of "public works", please ensure you are registered with the DIR prior to March 1, 2015. Effective immediately, the District will be required to fill out a form alerting the DIR of the services you are providing the District. Detailed information is required to complete this form. If the services you are currently providing the District fall under "public works" you may be asked to provide information needed to complete the DIR form. We ask that you complete this in a timely manner to avoid interruption in the services you are providing.

More information can be found at The Department of Industrial Relations website; <http://www.dir.ca.gov/Public-Works/PublicWorks.html>.

INSURANCE RATING SUBMITALL FORM

BID 2912

Energy Management System Upgrade - Various Sites

- 1) **Insurance Requirements – Proof of Carriage of Insurance – coverage with rating of A or better is required on this project.**
- 2) **Proof of A coverage to be submitted with bid proposal at due date and time established in the bid packet.**

Attach report of Insurance Rating to this form. Rating Report information to be obtained from A.M. Best Company – <http://www.ambest.com>

Name of Bidder: _____

*******This form and report are required to be submitted with bid proposal at due date and time established in bid *******

**SEE SAMPLE A.M. BEST REPORT
CERTIFICATE OF INSURANCE IS NOT AN AM BEST REPORT**

SAMPLE AM BEST REPORT

Starr International Insurance (Switzerland) AG

BestLink  AMB #: 074683

Domiciliary Address

Talstrasse 58
8001 Zürich,
Switzerland

Assigned to insurance companies that have, in our opinion, an excellent ability to meet their ongoing insurance obligations.



AM Best Rating Unit: AMB #: 013930 - Starr Insurance & Reinsurance Limited

[View additional news, reports and products for this company.](#)

Based on AM Best's analysis, 055404 - Starr International Company, Inc. is the **AMB Ultimate Parent** and identifies the topmost entity of the corporate structure. [View a list of operating insurance entities in this structure.](#)

Best's Credit Ratings

Financial Strength [View Definition](#)

Rating (Rating Category):	A (Excellent)
Affiliation Code:	g (Group)
Outlook (or Implication):	Stable
Action:	Affirmed
Effective Date:	November 05, 2021
Initial Rating Date:	March 31, 2021

Long-Term Issuer Credit [View Definition](#)

Rating (Rating Category):	a (Excellent)
Outlook (or Implication):	Positive
Action:	Affirmed
Effective Date:	November 05, 2021
Initial Rating Date:	March 31, 2021

Financial Size Category [View Definition](#)

Financial Size Category:	XV (\$2 Billion or greater)
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^u Denotes Under Review Best's Rating

Best's Credit Rating Analyst

Rating Office: A.M. Best Europe - Rating Services Ltd.
Associate Financial Analyst: Marving Lopez
Director-Analytcs: Ghislain Le Cam, CFA
Note: See the [Disclosure Information Form](#) or [Press Release](#) below for the office and analyst at the time of the rating event.

Note: Credit Ratings on this company are [European Union Endorsed](#)

Disclosure Information

Disclosure Information Form

[View AM Best's Rating Disclosure Form](#)

Press Release

[AM Best Revises Issuer Credit Rating Outlook to Positive for Starr International Company Inc.'s Insurance Subsidiaries](#)
November 05, 2021

[View AM Best's Rating Review Form](#)

PROPOSAL FORM FOR BID 2912

CLOVIS UNIFIED SCHOOL DISTRICT
CONFERENCE ROOM
1450 HERNDON
CLOVIS, CALIFORNIA 93611

Dear Board Members:

The undersigned doing business under the firm name of -

hereby propose and agree to enter into an agreement, to furnish any and all labor, materials, applicable taxes, equipment and services for the completion of work described hereinafter and in the contract documents:

Energy Management System Upgrade - Various Sites

Total Bid _____ **Dollars \$** _____

If written notice of the acceptance of this bid is mailed, telegraphed, or delivered to the undersigned within sixty (60) days after the date of opening of the bids, or any time thereafter before this bid is withdrawn, the undersigned will, within ten (10) days after the date of such mailing, telegraphing, or delivering of such notice, execute and deliver a contract in the form of agreement present in these contract documents and give Performance and Payment Bonds in accordance with the specifications and bid as accepted.

The undersigned hereby designates as the office to which such notice of acceptance may be mailed, telegraphed, or delivered:

Our Public Liability and Property Damage Insurance is placed with:

Our Workers' Compensation Insurance is placed with:

Circular letters, bulletins, addenda, etc., bound with the specifications or issued during the time of bidding are included in the proposal, and, in completing the contract, they are to become part thereof.

The receipt of the following addenda to the specifications is acknowledged:

Addendum No. _____ Date _____ Addendum No. _____ Date _____
Addendum No. _____ Date _____ Addendum No. _____ Date _____
Addendum No. _____ Date _____ Addendum No. _____ Date _____

This bid may be withdrawn at any time prior to the scheduled time for the opening of bids or any authorized postponement thereof.

NOTE: Each bid must give the full business address of the bidder and be signed by him with his usual signature. Bids by partnerships must furnish the full name of all partners and must be signed by one of the members of the partnership, or by an authorized representative, followed by the signature and designation of the person signing. Bid by corporations must be signed with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the president, secretary, or other person authorized to bind it in the matter. The name of each person signing shall also be typed or printed below the signature. Satisfactory evidence of the authority of the officer signing on behalf of a corporation shall be furnished.

Dated _____, 2022

Signed

Print or Type Name

Business Address

Phone #

Fax #

License #

Email Address

Additional Signature Lines if Applicable:

Signed

Print or Type Name

Business Address

Signed

Print or Type Name

Business Address

Signed

Print or Type Name

Business Address

State of Incorporation if Applicable

() Evidence of authority to bind corporation is attached.

END OF SECTION

COST ANALYSIS FORM

BID 2912 - Energy Management System Upgrade - Various Sites

Aggregate 1 (150-180 days)								
Line	School/Site	JACE Name	Platform	# of Devices	JACE Type	Pre-Upgrade Equipment Brand	Bidder to state number of licenses included in bid submittal pricing	Bid Amount Per Site
1	Alta Sierra Intermediate	AltaSierra_600	AX	LON2, 40	WEB-600 3.5.34	Honeywell		
	Alta Sierra Intermediate	AltaSierra_700	AX	NRIO, LON2, 51	WEB-700 3.5.34	Honeywell		
	Alta Sierra Intermediate	AltaSierra_Plant	AX	NRIO, 3 NDIO	WEB-201 3.5.34	Honeywell		\$
2	Buchanan High School	Buchanan HS Energy	AX	NDIO, (ModBus, 2), LON 16, (Prophet)	WEB-600 3.5.34	Honeywell		
	Buchanan High School	Buchanan_600	AX	(BacNet, NDIO) LON2, 92	Titan 3.8.401	Honeywell		
	Buchanan High School	Buchanan_700	AX	NRIO, LON2, 124	WEB-700 3.8.213	Honeywell		
	Buchanan High School	Buchanan_CP	AX	NRIO3, NDIO3, LON, 6	WEB-600 3.6.31.4	Honeywell		\$
3	Clovis West HS	CUSD_CLOVIS_WEST	AX	BacNet 28	NPM-6E 3.8.41	Schneider		
	Clovis West HS	CWHS A	R2	LON, 80	R2 UNC-520	Schneider		
	Clovis West HS	CWHS E	R2	LON, 34	R2 UNC-520	Schneider		
	Clovis West HS	CWHS R	R2	LON, 44	R2 UNC-520	Schneider		\$
4	Cole Elem	ColeElem	AX	NDIO, BacNet, 44	WEB-600E 3.8.38.7	Honeywell		\$
5	Jefferson Elem	Jefferson Elem	AX	NDIO, BacNet, 1, LON2, 43	WEB-600 3.7.108	Honeywell		\$
6	Kastner Intermediate	Kastner	AX	NDIO, LON2, 77	TAC-6E 3.8.37	Schneider		\$
7	PLC	PLC	AX	NRIO, BacNet, 46	TITAN 3.8.213	Honeywell		\$
8	Woods	Woods	AX	LON, 47	TITAN 3.8.213.2	Schneider		\$

AGGREGATE 1 TOTAL \$ _____

Aggregate 2 (90-120 days)

Line	School/Site	JACE Name	Platform	# of Devices	JACE Type	Pre-Upgrade Equipment Brand	Bidder to state number of licenses included in bid submittal pricing	Bid Amount Per Site
1	Community Day	CommunityDay	AX	BacNet, 7	TAC-6E 3.8.41	Schneider		\$
2	DO Area	PDB	R2	LON, 29	R2 UNC-520	Schneider		
	DO Area	IT/Warehouse	R2	LON, 18	R2 UNC-520	Schneider		
	DO Area	District Office	R2	LON, 48	R2 UNC-520	Schneider		
	DO Area	Clovis Adult	R2	LON, 20	R2 UNC-520	Schneider		\$
3	Miramonte Elem	Miramonte	AX	LON, 52	TAC-404 3.5.34	Schneider		\$
4	Nelson Elem	Nelson	AX	LON, 54	TAC-404 3.5.34	Schneider		\$
5	Oraze Elem	OrazeElem	AX	LON2, 41	Titan 3.8.401	Honeywell		\$

AGGREGATE 2 TOTAL \$ _____

Aggregate 3 (150-180 days)

Line	School/Site	JACE Name	Platform	# of Devices	JACE Type	Pre-Upgrade Equipment Brand	Bidder to state number of licenses included in bid submittal pricing	Bid Amount Per Site
1	Cedarwood	Cedarwood	AX	BacNet, 45	NPM-6E 3.8.41.2	Schneider		\$
2	Clovis North Granite Hills	CNEC A1	R2	LON, 46	R2 UNC-520	Schneider		\$
	Clovis North Granite Hills	CNEC A2	R2	LON, 53	R2 UNC-520	Schneider		
	Clovis North Granite Hills	CNEC A3	R2	LON, 45	R2 UNC-520	Schneider		
	Clovis North Granite Hills	CNEC A4	R2	LON, 62	R2 UNC-520	Schneider		
	Clovis North Granite Hills	CNEC B5	R2	LON, 43	R2 UNC-520	Schneider		
	Clovis North Granite Hills	CNEC D6	R2	LON, 35	R2 UNC-520	Schneider		
	Clovis North Granite Hills	CNEC H7	R2	LON, 20	R2 UNC-520	Schneider		
	Clovis North Granite Hills	CNEC Y8	R2	LON, 28	R2 UNC-520	Schneider		
3	Lincoln Elem	LincolnElem	AX	NDIO, LON2, 37	WEB-600 3.8.213	Honeywell		\$
	Lincoln Elem	LincolnElem_CP	AX	NDIO	WEB-600 3.6.31.4	Honeywell		
4	Mountain View Elem	MountainViewElem	AX	NDIO, LON2, 51	WEB-600E 3.8.38.7	Honeywell		\$
5	Temperance Kutner Elem	TemperanceKutner	AX	NDIO plant, LON, 16	Titan 3.8.401	Honeywell		\$
	Temperance Kutner Elem	TemperanceKutnerLibrary	AX	NDIO, LON, 24	WEB-600 3.7.106.1 (3.8 license)	Honeywell		

AGGREGATE 3 TOTAL
\$ _____

Total Bid \$ _____

BID TO BE AWARDED BY LINE ITEM, BY AGGREGATE, OR IN TOTAL – WHICHEVER IS IN THE BEST INTEREST OF THE DISTRICT

TOTAL OF 180 DAYS FOR ENTIRE PROJECT – IF BIDDER IS AWARDED ALL LINES OR ALL AGGREGATES, ALL WORK TO BE COMPLETED IN 180 DAYS

Do not substitute Bid Bond Form

The Bid Bond Form in this
packet must be used.

Failure to use the Bid Bond
form in this bid packet
may result in rejection of
bid.

BID BOND

KNOW ALL MEN BY THESE PRESENTS that we the undersigned

_____ as Principal and

_____ as Surety, are hereby held and firmly bound unto the Clovis Unified School District, acting on behalf of the State Allocation Board, State of California, hereinafter called the "Owner", in the sum of

_____ Dollars (\$)) for payment of which sum, well and truly to be made, we hereby jointly and severally find ourselves, our heirs, executors, administrators, successors, and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to the Owner a certain bid, attached hereto and hereby made a part hereof, to enter into a contract in writing for the

**BID 2912
Energy Management System Upgrade - Various Sites**

in strict accordance with the Contract Documents.

NOW, THEREFORE,

- a. If said bid shall be rejected, or, in the alternate;
- b. If said bid shall be accepted and the Principal shall execute and deliver a contract in the form of agreement attached hereto and shall execute and deliver Performance and Payment Bonds in the forms attached hereto (all properly completed in accordance with said bid), and shall in all other respects perform the agreement created by the acceptance of said bid;

Then this obligation shall be void, otherwise the same shall remain in force and effect, it being expressly understood and agreed that the liability of the Surety for any and all default of the Principal hereunder shall be the amount of this obligation as herein stated.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract on the call for bids, or to the work to be performed thereunder, or the specifications accompanying the same, shall in anyway affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of said contract or the call for bids, or to the work, or to the specifications.

In the event suit is brought upon this bond by the Owner and judgment is recovered the Surety shall pay all costs incurred by the Owner in such suit, including a reasonable attorney's fee to be fixed by the court.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under several seals this ____ day of _____, 2022, the name and corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

In presence of:

(Individual Principal) (Seal)

(Address) (Business Address)

(Individual Principal) (Seal)

(Address) (Business Address)

Attest:

(Corporate Principal)

(Business Address)

By:

(Affix Corporate Seal)

Attest:

(Corporate Principal)

(Business Address)

By:

(Affix Corporate Seal)

The rate or premium on this bond is _____ per thousand.

Total amount of premium charged, \$ _____
(The above must be filled in by Corporate Surety)

END OF SECTION
If: 10/97 (8.98)

STUDENT SAFETY DECLARATION
Construction, Rehabilitation or Repair Contractors
(Education Code section 45125.2)

I, _____, declare as follows:

1. I am a representative of _____, and am authorized to make this declaration on its behalf;

2. Pursuant to Education Code section 45125.2, I shall not permit any employee, agent or subcontractor to have more than limited contact with pupils without taking protective steps as set forth in that section and this declaration.

3. I declare that I have taken one or more of the following protective measures pursuant to Education Code section 45125.2:

a. Neither I, my employees, agents nor subcontractors will have more than limited contact with students.

b. I have installed or will install a physical barrier at the worksite such that no employee, agent or subcontractor will have more than limited contact with students.

c. An employee, agent or subcontractor will continually monitor and supervise all employee(s), agent(s) and subcontractor(s) who will have more than limited student contact. I have submitted fingerprints to the Department of Justice for the supervisory employee(s), agent(s) or subcontractor(s). I have received a response from the Department of Justice, and I certify that none of these supervisory employees, agents or subcontractors have been convicted of a felony as defined in Education Code section 45122.1. A list of these supervisors is attached hereto.

I know the above of my own personal knowledge and if called as a witness could competently testify thereto. I declare under penalty of perjury that the foregoing is true and correct and that this declaration was executed on _____, _____, at _____, California.

Name of Contractor

By : _____

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BID # 2912

NONCOLLUSION DECLARATION

I, _____, declare that I am
(Name of Representative) (Title of Representative)
of _____,
(Business Name of Bidder)

the party making the foregoing bid, that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this _____ day of _____, 2022 at _____,
California.

(Signature of Representative)

NOTE: A declaration does not have to be notarized.

END OF SECTION
10/96 (8.98)

Health Screening

Contractor shall require each service provider who provides services to Clovis Unified School District to conduct screening and/or testing for symptoms of COVID-19.

Such screening or testing, at a minimum, shall:

- (1) be conducted at least daily and before a service provider renders services to the District;
and
- (2) comply with requirements or recommendations by federal, state, and/or local health officials that are in effect at the time the service provider is providing services to the District.
- (3) The screening may be in the form of the COVID-19 Service Provider Screening Tool included in this packet, which the District may modify to reflect developing requirements or recommendations from federal, state, and/or local health officials. If any service provider tests positive on any indicators of the self-screening tool, he/she must contact the contractor's assigner and remove himself/herself from service until he/she has no positive indicators on the self-screening or he/she has tested negative for COVID-19. It is the responsibility of the contractor's assigner to replace that service provider with a new service provider, who has no positive indicators on the self-screening tool or has tested negative for COVID-19. Contractor shall also require each service provider who provides services to the District to wear face coverings and/or other personal protective equipment as required or recommended by federal, state, and/or local health officials. In the event that the requirements or recommendations of federal, state, and local health official's conflict, contractor shall require each service provider to comply with the requirement/recommendation that is stricter. Contractor shall not allow any service provider who has tested positive for COVID-19, has symptoms of COVID19, or has any positive indicators on the self-screening tool to provide services for the District
- (4) If service provider has no fever or respiratory symptoms, they can provide service AFTER washing their hands and need to follow social distancing as appropriate for service being provided
- (5) Masking with cloth mask and physical distancing (6 feet apart) is required when providing service in district, especially when around district students and staff.

**SUBMIT FORM WITH BID RESPONSE
COVID-19 SERVICE PROVIDER SCREEN TOOL**

All contractor service providers are required to “self certify” by answering the questions below prior to entering their assigned Clovis Unified School District service location and coming into contact with students and staff.

1. Feeling fever/chills, body aches, headache, repeated shaking/tremors, fatigue, nausea, vomiting, or diarrhea?	YES or NO	If yes → go home
2. New or worsening respiratory symptoms? (Shortness of breath, cough, congestion/runny nose, sore throat, or new loss of taste or smell)	YES or NO	If yes → go home
3. Has anyone in your household been confirmed or have you had close contact with anyone diagnosed with COVID-19 in the past 14 days?	YES or NO	If yes → go home
If you answer "yes" to any of the questions, you <u>must</u> report possible COVID symptoms to your supervisor to comply with Health Department contact tracing. Please stay home or go home and follow the isolation guidelines.		
<p>If you answered YES with symptoms: Isolation until the following requirements have been met:</p> <ul style="list-style-type: none"> a. 10 days since symptoms first appeared and b. 24 hours (1 day) with no fever (without the use of fever-reducing medicine) and c. other symptoms have improved <p>If you test negative, you may return sooner when symptom free for 24 hours (1day) with no fever (without the use of fever-reducing medicine).</p>		

Answered YES to BOTH Questions 1 AND 2:
Service Provider needs to stay home and self-isolate until he/she is asymptomatic for three (3) days without the use of any medications, and it has been at least 7 days since the first day of their symptoms. Service provider MUST ensure coverage of District contracted service event.

Answered YES to ONLY Question 2: If symptoms are secondary to underlying disease (such as allergies or asthma) and not worsened compared to baseline, then service provider can report to district location. If symptoms in Question 2 are NEW, service provider needs to follow the same instructions as noted if both Questions 1 AND 2 are YES. Service provider MUST ensure coverage of District contracted service event.

Contractor to acknowledge screening requirements noted above and return this form with bid response.

I acknowledge health screening requirements and the mandate to meet all stated screen requirement as terms and conditions of providing services to the District.

Name of Contractor
By : _____ Date: _____

BID 2912
Energy Management System Upgrade - Various Sites

Bidder _____

DESIGNATION OF SUBCONTRACTORS

In compliance with the provisions of Sections 4100 to 4114, inclusive, of the Public Contract Code of the State of California, and any amendments thereof, each bidder shall set forth below the name and the location of the mill, shop or office of each subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work or improvement to be performed under these specifications, in an amount in excess of one-half of 1 percent (0.5%) of the bidder's total bid, and the portion of the work which will be done by each subcontractor.

If the Contractor fails to specify a subcontractor for any portion of the work to be performed under the contract, the Contractor shall be deemed to have agreed to perform such portion itself, and shall not be permitted to subcontract that portion of the work except under the conditions hereinafter set forth.

Subletting or subcontracting of any portion of the work as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the legislative body of the Owner.

Note: **Reproduce for additional listings needed beyond the length of this form.**

Portion of Work	Name of Subcontractor	Location & License # of Subcontractor*	Subcontractor DIR Registration #

* *If there are similarly named subcontractors in a particular location, list enough information in this column to differentiate.*

Listing Subcontractors. As required pursuant to the Subletting and Subcontracting Fair Practices Act, each bidder shall submit with its bid a list of the names, license numbers, DIR registration numbers, and locations of the places of business of each subcontractor that will perform work or labor or render service to the bidder in or about the Project, or that, under subcontract to the bidder, will specially fabricate and install a portion of the work, in an amount in excess of one-half of 1 percent of the total amount of the bidder's bid. A bidder may not list more than one subcontractor for any one portion of the work. A bidder that fails to list a subcontractor for any portion of the work represents that it is fully qualified to and shall perform such work using its own forces. If the bid documents require the bidder to submit alternate bids and the bidder intends to use different or additional subcontractors for the alternates, the bidder must submit a separate list of subcontractors for each such alternate. A bidder shall submit the lists of subcontractors only on the form included in the bid documents.

BID # 2912

CLOVIS UNIFIED SCHOOL DISTRICT

Energy Management System Upgrade - Various Sites

JOB REFERENCES

Bidders must submit a list of at least three (3) projects of similar dollar volume completed within the last 24 months for reference purposes.

DATE	JOB SITE	CONTACT PERSON	TELEPHONE NUMBER

NAME OF BIDDER _____

3.97 (8.98)

Contractor and Grantee Compliance with Economic Sanctions Imposed in Response to Russia's Actions in Ukraine

On March 4, 2022, Governor Gavin Newsom issued Executive Order N-6-22 (EO) regarding sanctions in response to Russian aggression in Ukraine. The EO is located at <https://www.gov.ca.gov/wp-content/uploads/2022/03/3.4.22-Russia-Ukraine-Executive-Order.pdf>.

The EO directs all agencies and departments that are subject to the Governor's authority to take certain immediate steps, including notifying all contractors and grantees of their obligations to comply with existing economic sanctions imposed by the U.S. government in response to Russia's actions in Ukraine, as well as any sanctions imposed under state law.

This correspondence serves as a notice under the EO that as a contractor or grantee, compliance with the economic sanctions imposed in response to Russia's actions in Ukraine is required, including with respect to, but not limited to, the federal executive orders identified in the EO and the sanctions identified on the U.S. Department of the Treasury website (<https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programsand-country-information/ukraine-russia-related-sanctions>). Failure to comply may result in the termination of contracts or grants, as applicable.

Please note that for any agreements or grants valued at \$5 million or more, a separate notification will be sent outlining additional requirements specified under the EO. Please contact Susan Rutledge at SusanRutledge@cusd.com if you should have any questions.

Scope of Work:

Upgrade Tridium Niagara R2 and AX JACEs to the latest version of Niagara N4

Scope Includes:

JACE replacement and licensing.

Existing LON or BacNET communication buss, enclosures, and DDC controllers can be used.

All points currently used by existing R2 and AX systems must be incorporated correctly into the N4 JACE and descriptively annotated.

Graphics Integration to District Server, On Site Start-Up, On Site Commissioning, and Training. All programming to implement the existing sequence of operations

Scope Excludes:

Submittals, Controls Drawings, O & M, Application Engineering, Controller Programming, Internet connectivity, Dampers, VFDs, smoke detectors, mechanical equipment start-up and/or repairs, electrical work or repairs, roof jacks, demo, paint, patch, core drilling, dumpster fees, any work outside of above scope or scope for control system.

SECTION 25 50 00

DIRECT DIGITAL CONTROL AND ENERGY MANAGEMENT SYSTEM

PART 1 - GENERAL

1.01 GENERAL MECHANICAL PROVISIONS:

- A. The General Mechanical Provisions of Section 23 00 00 shall form a part of this Section with the same force and effect as though repeated here.

1.02 SCOPE:

- A. General: The direct digital control and energy management system (DDC/EMS) includes control panels, control devices, valves, actuators, all line and low voltage control and interlock wiring (including wiring to controllers, switches, timers, relays, etc.) and conduit and related equipment, as required for proper operation of all equipment. Provide all equipment, programming, labor, materials and services necessary for a complete, lawful and operating DDC/EMS as shown or noted on the drawings and as specified herein. All control wiring, line and low voltage shall be installed in conduit. Power wiring, power to DDC/EMS control panels and disconnect switches are included in the Electrical Specifications, except that power wiring for control devices such as controllers, valves, etc., is included in the control system. Electrical work shall be in accordance with Electrical Specifications. The system shall be direct digital control/electric. The control system shall be direct digital; Schneider TAC I/A, Reliable Distech, Allerton, or Honeywell. The system shall be Niagara N4 based with open license supervisory controller and must be compatible with existing district-wide system. The protocol shall be LonWorks or BACnet. The system shall communicate over the District's Ethernet LAN/WAN, and shall include the latest upgrading (software and firmware) during the warranty period. The data wiring shall have an Ethernet connection at the DDC/EMS network control panel. A Graphical User Interface (GUI) must reside on the District's server and be integrated into the District's current GUI maintained on the District's server. The design of the total installed system shall be based on such systems, which are the District standards. Coordinate with Section 23 00 01, Heating, Ventilating and Air Conditioning and with Division 26. Comply with ASHRAE 55 and Title 24.
- B. Contractor Qualifications: All controls shall be furnished and installed by a Contractor who is licensed, certified or contracted by the controls manufacturer for design, installation, start-up and service of their product. The Contractor must have factory supplied training and support. The Contractor must have sufficient personnel to respond to a trouble call at the site within four hours. The Contractor's local manager shall have a minimum of five years experience in the design, installation, start-up and service of similar systems. The Contractor shall submit a list of at least five projects which are similar in size, scope and contract value to this project. This list shall include the Owner's contact person, phone number and controls contract value.
- C. Submittals: Within 60 days of contract award, submit eight (8) copies of shop drawings showing the following aspects of the DDC/EMS system (CAD file with DXF format if required of floor and site plans can be secured from the Architect).
 1. All termination points, terminal cabinets, and cabling.
 2. Schedule of input and output points.
 3. Locations of all visible DDC/EMS system components (i.e. interior and exterior sensors, terminal strips, panels, trench and pull boxes, etc.), identifying specifically any exposed conduit.

4. Descriptive literature for all material and equipment items shall include manufacturer's name and catalog numbers, dimensions, capacities, and all other characteristics and accessories as listed in the specifications or on the drawings.
 5. Submit copies of forms to be used for testing and verification showing all data which is to be recorded. Three copies of complete report shall be submitted for review.
 6. Sequences of operation for all controlled equipment.
- D. Installation and Operation Manuals: Furnish Installation and Operating Manuals for all components. These manuals shall contain full documentation which shall include, without being limited to, the following:
1. General description and specifications.
 2. Installation and initial checkout procedures.
 3. Complete alignment and calibration procedures for all components.
 4. Detailed schematics and assembly drawings.
 5. LON and/or BacNET architecture diagrams
 6. Sequence of Operations
 7. Controller points lists

1.03 SYSTEM ARCHITECTURE

- A. DDC/EMS Equipment: The main controller shall contain the network communications and information management programs providing integrated global control, trend logging, local and remote alarming and fully menu driven user interface. The local network controller must be an intelligent, stand-alone microprocessor based controller which can have a variety of configurations based on their application.
- B. Campus-Wide Data Transfer System: The DDC/EMS shop drawings shall indicate where all equipment items are to be located for input and output to complete the system. The conduit/cabling system shall inter-tie these points as required to complete one system to meet the design criteria herein. Conduit shall be used for all EMS wiring whenever access is limited (hard-lid, walls, etc). When EMS wiring is installed in/above accessible areas (such as T-bar ceilings), free-air with J-hooks and wire-ties is acceptable. However, EMS wiring cannot be intermixed or bundled with any other cabling/wiring (Fire Alarm, internet, etc). System high speed communication shall be hardwired using a Belden shielded cable as recommended by DDC manufacturer.
- C. User Interface Communication: The user may communicate with the DDC/EMS system with a workstation located at the District Office over the WAN, with a remote workstation, with an On-Campus Operator Workstation, or with a Lap-Top computer (Service Tool).
- D. Standard Network Support: All Master Controllers, Workstation(s) and File Server shall be capable of residing directly on the owner's Ethernet TCP/IP LAN/WAN. Furthermore, the Master Controllers, Workstation(s) and File Server shall be capable of using standard, commercially available, off-the-shelf Ethernet infrastructure components such as routers, switches and hubs. With this design the owner may utilize the investment of an existing or new enterprise network or structured cabling system. This also allows the option of the maintenance of the LAN/WAN to be performed by the owner's Information Technology Department as all devices utilize standard TCP/IP components. If the DDC/EMS contractor needs an additional data port that is not already provided, its installation must be coordinated with the District's IT department (and IT infrastructure contractor if applicable) and will be installed and the DDC/EMS contractor's expense. As a result, the DDC/EMS contractor needs to ensure any additional data port locations are clearly indicated and that the existing EMS data ports they intend to utilize are addressed/identified prior to construction so they are not damaged or removed. This coordination should occur between the District's Construction Office, IT department, DDC/EMS operator, IT

infrastructure contractor (if applicable), and the project's general construction contractor manager.

PART 2 - PRODUCTS

2.01 GENERAL:

- A. General Requirements: The Electronic Microprocessor Based Direct Digital Control and Energy Management System (DDC/EMS) shall monitor the data environment and perform control functions in relation to a programmed strategy and the status of the data environment. The system shall use solid state computer-based digital and analog technology. The system shall be standard with the manufacturer to insure on-going parts availability and trained technical support. The DDC/EMS shall be of the user programmable type requiring no special computer education for operation. All necessary instruction manuals and user orientation training shall be supplied by the manufacturer or agent thereof. The DDC/EMS shall be UL listed as a Direct Digital Control and Energy Management System. The programmable control requirements of the DDC/EMS shall include, but not be limited to:

SCHEDULED OCCUPANCY ROUTINES INCLUDING HOLIDAYS
CUSTOM TAILORED REPORTING
ACCUMULATING RUN TIME
CRITICAL CONDITION ALARMING
FLUID FLOW SWITCH AND CONTROL ALARMING
PID CONTROL ON ANALOG OUTPUTS
HOT WATER RESET
DAY/NIGHT SETBACK
ECONOMIZER/PURGE
CUSTOM TAILORED REPORTING
POINT OVERRIDE ABILITY FOR EVERY DIGITAL AND ANALOG OUTPUT
SEPARATE MODES AS REQUIRED BY CONTROL SEQUENCE
ALL EXTERIOR LIGHTING CIRCUITS CONTROLLED BY SYSTEM

- B. Environment: The DDC/EMS shall operate in an environment of 40-120 degrees F and 10-95% relative humidity. Sensors and control elements shall operate under the temperature, pressure, humidity, and vibration conditions normally encountered in the installed location. The DDC/EMS shall maintain accuracy as follows:
1. +/- 0.5 F for the space temperatures in the 0 F - 130 F range.
 2. +/- 0.5 F for duct temperatures in the 40 F - 130 F range.
 3. +/- 1.0 F for outside air temperatures in the -30 - 230 F range.
 4. +/- 1.0 F for water temperature in the 30 - 230 F range.
 5. KWH and KW monitoring within 1.0%.
- C. Battery Backup: The system shall be tolerant of power failure and hold memory for a minimum of 12 hours. On power restoration, the system shall automatically and without operator intervention of execution of manual restart procedures:
1. Come On Line.
 2. Update all monitored functions.
 3. Resume operation based on current time and status.
 4. Implement special building start-up strategies as required.
 5. Log time of power outages and start-ups.
- D. Program Storage: The system shall also be capable of interfacing with a mass storage device, for use in uploading and downloading programs to the DDC/EMS.

2.02 SYSTEMS DESCRIPTION:

- A. **Modular Design/Expandability:** The DDC/EMS shall be of a modular design providing distributed processing capability, and allowing future expansion of both input/output points and processing/control functions. The modular DDC/EMS shall be configured on the main/local concept. The main controller shall have the capability of adding local controllers and the local controllers shall be capable of adding I/O modules.
- B. **Main (Master) Description:** The master shall function as the overall system coordinator, accept control programs, perform automated energy management functions, control peripheral devices and perform all necessary mathematical calculations. The master shall be a microcomputer of modular design. The word size shall be 16 bits or larger, with a memory cycle time less than 1 microsecond. All chips shall be second sourced. The master shall have the following:
1. **Protected Access:** Key lock protected access to output override switches and internal circuitry.
 2. **Memory:** The master shall have memory required for systems operation and diagnostics or MCP software.
 3. **Real Time Clock:** The master shall have a battery backed uninterruptable "Real Time Clock". The accuracy shall be within ten seconds per day. The RTC shall provide the following information: Time of Day, Day, Month, Year, and Day of Week. The system shall be programmed to automatically correct the clock for day-light savings time and leap years and Time Sync with the District's server.
 4. **Power:** The master shall operate from 120 VAC +/- 20%, 60 Hz. Line voltages below the operating range of the system shall be considered outages. The master shall have over voltage surge protection, and require no additional AC power signal conditioning.
 5. **Parallel Processing:** The master shall be capable of parallel processing, executing separate control programs simultaneously. Any control program may affect control of another program if desired. Each program shall have full access to all I/O facilities of the processors.
 6. **Communications Processor:** Each master shall provide communication to the District's server, Workstation(s) (LAN) and the field buses. In addition, each master must have communications ports that support portable service tool and connection to third party controllers such as a chiller control panel or Variable Frequency Drives.
 7. **Uninterruptable Functions:** Control functions shall not be interrupted due to program entry or other user communications.
- C. **Local Controller Units:** The local units function as a stand-alone controller and as an Input/Output interface of the DDC/EMS and the Data Environment.
1. **HVAC units** must be fully controlled by a controller connected to the DDC/EMS that can be fully programmed by the DDC/EMS contractor.
 2. **Monitoring:** Local units shall be used to connect the data environment to the system and contain all necessary Input/Output functions to read field sensors and operate controlled equipment based on internal instructions or instructions from the Master. The units shall be fully supervised to detect failures. The units shall report the status of all points in its data environment at the rate of at least once every second. Local units shall connect directly to the Master with a twisted pair shielded RS-485 interface.
 3. **Unit Failure:** Upon failure of the unit (including transmission failure), the unit shall automatically fail off or to a predetermined state for three-way valves. All local units must run independently in the event of a central unit failure (including transmission failure) in bypass mode via the thermostat.

4. Power: The unit shall operate from 120 VAC, +/-20%, 60 Hz, 220 VAC, +/-20%, 50 Hz or 24 VAC +/- 20%, 50/60 Hz power. For voltages below the operating threshold the unit shall totally shutdown and de-energize its outputs.
5. LAN and/or Field Bus: Each unit shall communicate with any unit through the RS-485 interface LAN and/or field bus.
6. Auxiliary Port: Each unit shall be equipped with an auxiliary port to allow local interrogation of input and output values, and keyboard override of outputs through laptop.

2.03 INPUT/OUTPUT CAPABILITY:

- A. Inputs: The DDC/EMS shall accept information in the form of a temperature, voltage, digital signal (on-off) or pulse counter.
 1. Analog Inputs: The Analog Input (AI) function shall monitor each analog input, perform A/D conversion, and hold the digital value in a buffer for interrogation. The A/D conversion shall have a minimum resolution of 10 bits. Input ranges shall be within the range of 0-10 VDC.
 2. Digital Inputs: The Digital Input (DI) function shall accept dry contact closures and voltage level or resistance level (5VDC reference voltage) transitions. A voltage level below 1 volt or a resistance below 500 ohms shall be read as ON (closed), a voltage level above 3 volts or a resistance above 1400 ohms shall be read as OFF (open).
 3. Pulse Accumulator Inputs: The pulse accumulator function shall have the same characteristics as the DI, except that, in addition, a buffer shall be included to totalize pulses between interrogations. Each input shall accept pulses at a minimum of 2 per second.
 4. Temperature Inputs: Temperature inputs originating from a thermistor shall be monitored and buffered as an AI, except that, automatic conversion to degrees F shall occur without any additional signal conditioning.
 5. Input Wiring: All analog inputs shall be two wire devices, with shielded wire for accurate operation.
- B. Outputs:
 1. Master and local controllers - Form C relay outputs rated at 5 amp, 24 VAC/DC or 2 amp, 30 VAC for on/off or Pulse Width Modulation for maintained operation of field devices. Output pulse width shall be selectable between 0.1 and 3200 seconds with a minimum resolution of 0.1 seconds. Isolation and protection against voltage surges shall be provided. Central plant controllers shall be equipped with an ON/OFF/AUTO switch to manually obtain either output state. Manual overrides shall be reported to the master at each update. An LED shall be provided to indicate the state of each digital output.
 2. All digital and analog output points on every controller must have an override (highest priority) input point in the controller's point list in the JACE. This override point must be clearly labeled and identifiable. For example, "DO1ovrd" would be the point to override Digital Output 1.

2.04 SOFTWARE:

- A. User Software: Provide software (required upgrades) for Laptop Computer (Service Tool), District office workstation, District server.
- B. Software Features:
 1. Mathematical Requirements: The DDC/EMS shall have a math package capable of addition, subtraction, multiplication, division, square root, greater than and less than functions, minimum and maximum selection functions, and up to five levels of parenthesis for computation of variables. Control commands may be executed based on these calculated variables which are available to the program on a global

- basis. Math expressions may be used in action and exit commands of control program. The mathematical software shall be capable of mixed mode arithmetic, utilizing Boolean logic statements in combination with basic arithmetic to provide conditional mathematical computations.
2. Passwords: The DDC/EMS shall have multiple levels of user programmable passwords in addition to a master password, for programming security. Separate passwords may be user programmed. Level of password will define user's access level and ability to change system.
 3. Trend Logging: The DDC/EMS shall trend log variables. Any system variable (inputs, outputs, numerals, can be trend logged.
 4. Messages: The DDC/EMS shall provide alarming, preventative maintenance and status reporting messages.
 5. Documentation Format: The programming language of the DDC/EMS shall be plain English based such that a printout of the control program shall serve as the primary documentation for the system.
 6. Micro Processor Integrity Checking: Each DDC/EMS microprocessor shall continuously monitor and check itself and produce error messages in the event of a malfunction.
 7. Data Plotting: The DDC/EMS shall provide plots of values of system variables on a graph. Graphs may consist of combinations of up to 3 system variables at a time from the history logs.
- C. Color Graphics Requirements Provide color graphics which allow user to access and change (based on user access level) all schedules, set points, and all digital and analog outputs directly through the user graphics. Real time data shall continuously be updated. Navigation between the screens (forward and backwards) shall be accomplished with the use of a mouse. The minimum graphic screens shall include the following:
1. Site lay-out locations of all equipment being controlled, control component locations, and spaces served. Provide multiple screens-minimum of 1 screen per building plus site and others as needed for clarity. By "clicking" mouse on the desired equipment area a flow diagram will be displayed for the related equipment (as described below - Item 2). By "clicking" the mouse on a conditioned space, a graphic display of the zone conditions (as described below - Item 3) will be displayed.
 2. Each building must have a graphical summary page of all the zones in that building that displays zone temperature, set point, discharge air temperature, and fan command.
 3. Zone & HVAC Equipment Description on GUI: Each item of HVAC equipment must be clearly identified by what area it serves and its unit number. For example, if HC-2A serves Classroom 4, the GUI should list it as "Classroom 4, HC-2A." It should NOT be listed as only "HC-2A" or "Classroom 4."
 4. Flow diagrams shall be provided for each HVAC system, such as air-handling system, chilled water system, hot water system, condenser water system, package unit system, brine system with all inputs and outputs dynamically displayed.
 5. Each temperature control zone shall have a screen providing set points, temperatures, and related HVAC system status data.
 6. Scheduling screens allowing On/Off times to be set.
- D. Software Manual: The software manual shall describe programming and testing, starting with a system overview and proceeding to a detailed description of each software feature. The manual shall instruct the user on programming or reprogramming any portion of the system. This shall include all control programs, variables, set points, time periods, messages, passwords and other information necessary to load, alter, test and execute the system. The manual shall include commands, editing and writing control programs, printouts

and logs, mathematical calculations, and instructions on modifying any control point, verifying error status, changing passwords, and initiating or disabling control programs.

- E. **Software Licenses:** The owner shall be named the license holder of all software associated with any and all incremental work on the project(s). The intent is to insure that the installed Niagara AX products be completely open for integrations. Owner shall be free to direct the modification of the software license, regardless of supplier. In addition, the Owner shall receive ownership of all job-specific software configuration documentation, data files, and application-level software developed for this project. This shall include all custom, job-specific software code and documentation for all configuration and programming that is generated for a given project and/or configured for use within Niagara Framework (Niagara AX) based controllers and/or servers and any related LAN/WAN/Intranet and Internet connected routers and devices. Any and all required IDs and passwords for access to any component or software program shall be provided to the Owner.

2.05 USER INTERFACE:

- A. **LAN Connections:** If an additional LAN connection is needed, the conduit and cable from LAN rack is to be installed by electrical contractor. The planned location of all LAN connections (new and existing) to EMS equipment must be coordinated with the District's networking staff and EMS staff as early as possible. Final connections will be made by DDC/EMS Contractor.
- B. **Direct Computer Communication:** The DDC/EMS shall have a computer compatible communication mode for communication with other intelligent devices, which performs data integrity checking, with automatic retransmission of data when errors are detected.
- C. **JACE software** must include all applications to make all folders viewable, workable, and accessible in the JACE. Install DDC/EMS software on server, and furnish Software license to District. Coordinate hardware requirements with District. JACE version must be the latest N4 version released by Tridium/Niagara. Contractor is also responsible for upgrading the District's server N4 version to match the most current, recently release N4 version.

2.06 SYSTEM COMPONENTS:

- A. **Control Components:**
 - 1. **Wall Switches:** Plates for all wall switches and timers shall match those specified in Division 26.
 - 2. **Labels:** All labels, signs, etc. shall be engraved, laminated plastic, white on black background, 1/8" high lettering, minimum.
 - 3. **Temperature Sensors:**
 - a. **Sensor Type:** All temperature sensors shall be made of a highly stable, precision thermistor material accurate to within ± 0.36 Degrees F. Identify each temperature sensor with a "Lamicoid" label keyed to the control system as-built drawings.
 - b. **Room Sensor:** Room temperature sensor shall have Executive Decorator housing with programmable visible temperature indication. Housing shall include an occupancy override, temperature setpoint adjustment and a service tool jack.
 - c. **Vandal Resistant Room Sensor:** Where noted, shall be a blank stainless steel wall plate with the sensing element bonded to the back side. The plate back shall be insulated to reduce wall temperature influence.

- d. Duct Sensor: Duct temperature sensor shall be a probe type element with 9 inch insertion length. Element shall be installed where air mixture provides a true temperature indication. Where adequate mixing is not practical, the duct temperature sensor shall have an averaging type thermistor element, installed across the entire cross section of the duct.
 - e. Outdoor Air Sensor: Outdoor air temperature sensor shall be a probe type element mounted in a ventilated, treated white PVC sun shield to minimize radiant energy effects. The sensor and sun shield shall be mounted on a weatherproof outlet box for outdoor installation.
 - f. Low Differential Air Pressure Applications (0" to 5" W.C.): The differential pressure transmitter shall be of industrial quality and transmit a linear, 4 to 20 mA output in response to variation of differential pressure or air pressure sensing points. Non-interactive zero and span adjustments, adjustable from the outside cover. (0.00 - 1.00" to 5.00") W.C. input differential pressure ranges. 4-20 mA output. Maintain accuracy up to 20 to 1 ratio turndown. Reference Accuracy: +0.2% of full span.
 - g. CO2 Sensor: The sensor shall have a five year recommended calibration interval. In addition, the sensor shall be provided with a five-year calibration guarantee, providing for free factory replacement if the sensor is found to be out of calibration within five years of the purchase date. The sensor shall have accuracy of ± 50 ppm and repeatability of ± 20 ppm. All adjustments to the sensor including output scaling, elevation adjustment, relay set point, relay dead-band, linear or exponential output, and single point calibration shall be made via on-board push buttons and LCD display. The LCD display must be covered by a solid door and only viewable when the door is opened for adjustments. CO2 sensors must be installed in return ductwork.
4. Temperature Control Panels: Each panel and each control device or readout on the front of the panel shall be identified with a laminated plastic label with 1/4" high engraved lettering, white on black background. Pilot lights shall be the push-to-test type.
5. Smoke Detectors: Furnished and installed by Division 26. Power and fire alarm wiring by Division 28. Control wiring by Division 23. Coordinate with Division 26.
6. Status Sensor: Current sensing status sensor (with sensitivity adjustment for belt loss detection).
7. Control Valves:
- a. General: Equal percentage or linear flow characteristics. Unless otherwise noted, select for 2-4 psi pressure drop across the valve at the specified flow. Belimo. 2" and smaller shall be screwed connection, globe or ball valve. 2-1/2" and larger shall be flanged connection globe valve.
 - b. Ball Valve: Stainless steel ball and stem, teflon seat and O-rings. 400 psi WOG. Packing shall be reinforced teflon seal washer and stuffing box ring. Stem packing gland screw shall be adjustable for wear. Factory flow characterization disk.
 - c. Globe Valve: Contoured plugs for linear control. 316 stainless steel stem, replaceable seat and adjustable operating range. Packing shall be molded BUNA-N. Valves controlling terminal units or above ceilings shall be of the packless type with bellow seal, or spring loaded teflon requiring no packing maintenance. 2" and Smaller: Bronze body, 250 psi WOG. 35 psi maximum working pressure differential. 2-1/2" and Larger: Cast iron body, 125 psi WOG. 25 psi maximum working pressure differential.
8. Electric Actuators:
- a. General: Fully modulating, UL listed. Visual position indicator, manual override and clear weather shield where exposed to weather. 24 volt. Belimo.

- b. Valve Actuators: Provide with factory mounting brackets and linkage to the control valve capable of shutting off against a 50 psi differential.
- B. Lighting Contactors: Lighting contactor with metal enclosure will be furnished, installed, and wired to the lighting panel by the electrical contractor. See electrical contract documents for location. The DDC/EMS Contractor shall provide low voltage relay(s) required at the contactor panel and wire to the contactors to complete the DDC/EMS side of the lighting control. DDC/EMS Contractor shall provide required photo cells. Relays shall be suitable for up to 277 volts.
- C. Lightning Arrestor and Surge Suppressors: Shall be provided as approved and/or manufactured by the DDC/EMS equipment manufacturer.
- D. Conduit: Conduit to be a minimum 1" diameter, and to have at least 25% spare capacity, except drops to room sensors may be run in ½" conduit. Conduit shall be run in electrical or mechanical trenches wherever possible. Site conduit (building to building) will be installed (and terminated inside the building) by Division 26.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION:

- A. General: All electrical work shall be in accordance with the California Electrical Code and the Electrical Specification Sections. All electric/electronic systems shall be hardwired in conduit. Wiring shall be concealed in walls, above the ceilings, or below grade unless otherwise noted. Exposed wiring shall run parallel to room surfaces; location shall be approved by the Architect. No structural member shall be weakened by cutting, notching, boring or otherwise. Provide a 120 volt circuit for each device requiring external power. Dedicated circuits shall be provided where required. Any devices or wiring exposed to the weather shall be protected in weatherproof enclosures such as NEMA 3R and weatherproof conduit.
- B. Labeling of System: DDC/EMS Contractor shall provide complete labeling of all terminals at all panels or equipment terminal strips and wiring equal to Brady marking on wires and number on terminals in sequence corresponding to control diagram.
- C. Programming:
 - 1. The Direct Digital Control and Energy Management System (DDC/EMS) operational program shall be provided by the DDC/EMS Contractor. The DDC/EMS Contractor shall be responsible for programming the system and shall coordinate the scheduling (on/off times) with the Owner. Prior to start-up, the DDC/EMS Contractor shall provide any testing program he feels necessary to fully test the operation of the various components.
 - 2. The DDC/EMS Contractor shall load the operational program into the DDC/EMS controller from his office via the District's network (via VPN) or at the job site via a direct connect cable. Prior to starting up the system, the DDC/EMS Contractor shall:
 - a. Confirm that the control system has been connected to the District's LAN/WAN and that the LAN/Wan is working.
 - b. Confirm the functionality of the DDC/EMS controllers and all input points by reading the input values, and comparing them with a measured temperature, pressure, voltage, current, or resistance as appropriate. Calibrate all transducers as required.
 - c. Confirm the functionality of all digital output points by manual operational of the relay contacts. Use proper discretion in starting and stopping equipment.

- d. Confirm the functionality of all analog output points by manually imposing an adjustable voltage on the appropriate circuit to check proper operation of the controlled device. Calibrate all transducers as required.
 - e. The DDC/EMS Contractor shall notify the General Contractor (one week in advance of) when the system will be ready for loading and testing the operational program. The DDC/EMS Contractor's start-up technician shall be present while the program is being loaded and shall communicate with the programmer prior and after program loading to confirm proper operation.
- D. Training: Prior to final acceptance, the DDC/EMS Contractor shall provide operational training to the Owner's personnel. The training sessions shall include a complete demonstration of the system. Dates and times of the training sessions shall be coordinated through the Owner not less than one week prior to session. A total of 40 hours of instruction shall be provided. The DDC/EMS Contractor shall maintain a log of training sessions including dates, times and names/titles of those attending. The DDC/EMS Contractor shall submit a copy of this log on request.
- E. Testing and Acceptance: The DDC/EMS Contractor shall furnish a complete and operating system. The DDC/EMS Contractor shall also verify, in the presence of the Owner, the system accuracy and proper function of each controlled device and sensor. The following items shall be successfully demonstrated prior to acceptance by the Owner:
- 1. All system outputs including controllers, relays, and other control devices shall be addressed and start/stop functions demonstrated.
 - 2. All inputs shall be displayed and all event-initiated functions shall be demonstrated.
 - 3. Demonstrate program integrity and power restore sequence during and after a power failure and restoration.
 - 4. Deliver all Record Drawings, wiring diagrams, equipment specifications, installation and Operation Manuals and other documentation as required to describe the system.
 - 5. Complete operator training in the use, programming, and operation of the system.
- F. Start-up of the System:
- 1. The start-up period starts when the following conditions are met:
 - a. The DDC/EMS system and all involved HVAC equipment have been installed, connected to the DDC/EMS system and are ready to operate.
 - b. A start-up meeting has been conducted with representative of the General Contractor, Architect/Engineer, maintenance staff, and the DDC/EMS Contractor.
 - c. Consensus is reached, by the representatives at the above referenced meeting that it is appropriate for the start-up process to start.
 - 2. The alarm pagers called by the control system during the start-up period shall be the pagers carried by the Mechanical Contractor and/or DDC/EMS Contractor as appropriate. The Mechanical Contractor and DDC/EMS Contractor shall respond to all pages from the control system and work cooperatively to insure that the building environmental standards are maintained.
 - 3. The start-up process shall be completed and the warranty period shall start when the following conditions are met.
 - a. All training to be provided as part of the project has been completed.
 - b. No "alarm" or "condition reports" are being generated by the DDC/EMS system for seven (7) calendar days (168 hours) due to incomplete or inaccurate installation or programming.
 - c. All adjustments and "fine tuning" of the system have been completed.
- G. Verification: A written testing and start-up report must be submitted for approval before acceptance. In addition to the DDC/EMS Contractor's testing and start-up report, the Owner

may independently verify the test results. The report on test results shall include setpoints and operating ranges of all components.

3.02 SEQUENCE OF OPERATION: The below sequences of operation are to be used as a primary guideline for DDC/EMS control logic sequence development. Any/all variations from the below operation sequences must be approved by the district's DDC/EMS operator prior to implementation.

A. Central Plant Equipment:

1. General:

4-pipe system. The central plant shall start/stop on a schedule and Outside Air Lockout set point established and adjustable by the District via the GUI. There will be separate Outside Air Lockout set points for heating and cooling.

2-pipe system. The central plant shall start/stop on a schedule and Outside Air Lockout set point established and adjustable by the District via the GUI. There will be separate Outside Air Lockout set points for heating and cooling. There will be a Heat/Cool mode switch on the GUI that will determine whether the plant is in cooling or heating. This mode will be determined by this parameter and not outside air temp. Also, the plant mode value will dictate the operation of all ventilation units that use the central plant for heating/cooling.

2. Cooling Mode:

a. Chiller Pump(s): The lead pump starts by DDC/EMS. If VFDs are to be installed on the Chiller Pumps, a differential pressure sensor across a remote chilled water coil assembly (see plan for location) shall monitor the chilled water system pressure. A differential pressure sensor across the associated chiller evaporator shall monitor flow through the chiller. If the differential pressure across the chiller evaporator indicates the flow is at the minimum chiller flow (coordinate with the balance contractor to establish the set point), the DDC/EMS shall modulate the lead pump VFD to maintain the chiller minimum flow set point and modulate the chilled water low flow bypass valve to maintain the chilled water system pressure set point. If the chilled water system pressure set point cannot be maintained with the lead pump at maximum design flow, the lag pump (if applicable) shall start, the DDC/EMS shall modulate both VFD's to maintain the chillers minimum flow pressure set point, and the chilled water low flow bypass valve shall modulate to maintain the chilled water system pressure set point. The DDC/EMS shall alternate which pump is lead / lag based on run time (every 50 hours). Pump shutdown to be delayed 5 minutes (adj) after chiller shutdown to avoid chiller freeze protection lockout. When outdoor temperature is below 34°F, pumps shall operate for freeze protection.

b. Water Chiller(s): Must be interlock with associated chiller pump through a DDC/EMS signal with a 5 minute delay (adj) from Chiller Pump start. A flow switch in the chilled water pipe shall verify flow before chiller operation. Leaving water set point shall be adjustable through the DDC/EMS. Lag compressor to be locked out during start-up. Adjustable time device at unit CCP allows lag compressor to operate after 20-30 minutes. (Soft Start).

c. Cooling Temperature Reset: The Primary loop water temperature is controlled by the chiller and/or chilled water mixing valve through the DDC/EMS. The primary loop water temperature set points must be adjustable and viewable in the central plant control schematic of the GUI. The minimum set point is 35°F (adj.).

3. Heating Mode:

a. Hot Water Pump(s): The lead pump starts by DDC/EMS. If VFDs are to be installed on the Hot Water Pumps, the VFD modulates the lead pump through the DDC/EMS to maintain hot water system pressure set point at the remote differential pressure sensor (see plan for location). If set point cannot

be maintained, the lag pump (if applicable) is activated and the DDC/EMS shall modulate both VFD's to maintain pressure set point. The DDC/EMS shall alternate which pump is lead / lag daily.

- b. Hot Water Boiler(s): Interlock with associated boiler pump (and flow switch if required by the boiler). Leaving water temperature is controlled by boiler thermostat set at 160°F. The DDC/EMS shall provide the following contacts to the control terminal at each boiler:

- Boiler start/stop
- Boiler flame failure alarm
- Boiler general alarm
- Boiler low water alarm
- Boiler leaving water temperature (0-10 VDC input, 80°F minimum LWT and 200°F maximum LWT)

Also, mount the factory furnished outside air temperature sensor to the exterior of the building and connect it to the boiler control panel for emergency local boiler control.

- c. Heating Hot Water Reset Control: (Initial heating set point 140°F) The Primary loop water temperature is controlled by the boiler and/or the hot water mixing valve through the DDC/EMS. The Primary loop water temperature is reset by the DDC/EMS based on the outside air temperature allowing the primary loop temperature to drop as the outside air temperature rises. The reset set points must be adjustable and viewable in the central plant control schematic of the GUI. The maximum set point is 180°F (adj.).

4. DDC/EMS Monitoring Points: The DDC/EMS shall monitor the following points:

- Boiler entering and leaving water temperature (each boiler)
- Chiller entering and leaving water temperature (each chiller)
- Primary loop water supply and return water temperature
- Boiler status (current sensor-each boiler)
- Boiler alarm (from boiler control panel-each boiler)
- Chiller EMS interface (each chiller) (Coordinate with manufacturers representative on chiller control points and protocol of the interface to match submitted EMS):

- Operational status of systems in chiller.

- Alarms

- Set points monitor / adjust

- Chiller status (current sensor-each chiller)
- Chiller compressor status (current sensor-one each compressor)
- Chiller alarm (from chiller control panel-each chiller)
- Pump status (current sensor-each pump)
- Pump VFD operating speed (one each pump with VFD)
- Chilled water coil assembly pressure differential (for chilled water pumps VFD speed control)
- Hot water coil assembly pressure differential (for hot water pumps VFD speed control)
- Outside air temperature
- Primary Loop Differential Pressure

- d. Primary Loop Pumps Pressure Sensor Set Points: The DDC/EMS contractor shall establish the differential pressure sensor set points for each mode of operation (Heating/Cooling). If the differential pressure indicates the flow is not sufficient (coordinate with the balance contractor to establish the set point), the DDC/EMS shall modulate the lead pump VFD to maintain system pressure set point. If the primary loop system pressure set point cannot be maintained with the lead pump at maximum design flow, the lag pump shall start, and the DDC/EMS shall modulate both VFD's to maintain the primary loop system pressure point. The DDC/EMS shall alternate which pump is

- lead / lag based on run time (every 50 hours). When outdoor temperature is below 34°F, pumps shall operate for freeze protection.
5. Alarm: If the DDC/EMS has a central plant equipment scheduled to be operating and the status sensor indicates the equipment is not operating, the DDC/EMS shall signal a failure alarm status to the Central Controller. The DDC/EMS shall respond to the alarm as follows:
- a. Cooling Mode:
 - i. Chilled Water Pump: If the lead chilled water pump fails, the DDC/EMS shall stop the associated chiller and start the lag pump and chiller if they have not already been started. If both pumps fail, both chillers shall be stopped. The DDC/EMS shall send an alarm the Central Controller that no air conditioning is available.
 - ii. Water Chiller: If the lead chiller fails, the DDC/EMS shall run the associated chilled water pump for 5 minutes, then stop. The lag chilled water pump and chiller shall be started if they have not already been started. If both chillers fail, the chilled water pumps shall run until the chilled water system temperature rises to 55°F (adj.) (5 minutes minimum) and then stop. The DDC/EMS shall send an alarm the Central Controller that no air conditioning is available.
 - b. Heating Mode:
 - i. Hot Water Pump: If the lead boiler pump fails, the DDC/EMS shall stop the associated boiler and start the lag pump and boiler if they have not already been started. If both pumps fail, the boilers shall stop and the main circulating pumps shall run until the hot water system temperature drops to 100°F (adj.). The DDC/EMS shall send an alarm the Central Controller that no heating is available.
 - ii. Boiler: If the lead boiler fails, the DDC/EMS shall run the associated hot water pump for 1 hour and then stop. The lag hot water pump and boiler shall be started if they have not already been started. If both boilers fail, the hot water pumps shall run until the hot water system temperature drops to 100°F (adj.) and then stop. The DDC/EMS shall send an alarm the Central Controller that no heating is available.
- B. Heating/Cooling Unit: The unit shall run per the system operation schedule through the DDC/EMS and per the unit's thermostat's override (On/Off). Occupants must be able to override the unit On and Off (for 1 hour) regardless of scheduled occupancy. Room temperature sensor shall be wall mounted. The unit set point shall be adjustable $\pm 3^\circ\text{F}$ (adj.) from a switch located on the temperature sensor. Unit fan shall run continuously on start by the DDC/EMS regardless of heat/cool call. DDC/EMS shall control the heating/cooling unit to maintain set points. On call for cooling, the DDC/EMS shall start the unit cooling at 2°F (adj.) above cooling set point and run to 2°F (adj.) below set point for cooling and then stop the unit cooling. On call for heating, the DDC/EMS shall start the unit heating at 2°F (adj.) below heating set point and run to 2°F (adj.) above set point for heating and then stop the unit heating. The DDC/EMS shall monitor the unit status with the supply air temperature. Units as scheduled shall have a smoke detector in the main supply duct which shall shut the unit off on alarm and signal the fire alarm system (Div. 28).
- C. Indoor / Outdoor Unit (IDU/ODU): A wall mounted temperature sensor shall monitor room temperature.
- D. Evaporative Cooler: Separate start/stop control on the fan and water pump. There shall be a room temperature sensor for monitoring. Water pump will only run if space temp is greater than 75°F (adj) and fan is scheduled on.
- E. Air Handler:

1. General: The unit shall run per the system operation schedule. The return fan shall be interlocked to run when the supply fan is running. Unit fans shall run continuously on start by the DDC/EMS. Room temperature sensor shall be wall mounted. If the bypass button on the room temperature sensor is activated, the air handler shall start for one hour (adj.). [The unit set point shall be adjustable $\pm 3^{\circ}\text{F}$ (adj.) from a switch located on the temperature sensor. The central plant must be activated separately via the DDC/EMS to allow heating or cooling.
2. Heating Mode: On system initial startup (first 30 minutes, adj) with a call for heating (room temperature below set point) the outside air (OSA) damper is closed, return air damper is open, the cooling coil control valve (if separate) is closed and the heating coil control valve is open. As the room temperature approaches the set point (2-3 degrees less than set point) the outside air damper opens to minimum position and the control valve begins to modulate closed. At set point, the heating coil control valve is closed and outside air damper is in minimum position. As room temperature rises above heating set point and until it reaches cooling set point, the cooling and heating control valves shall remain closed and the outside air damper shall remain in minimum position.
3. Cooling Mode: The first source of cooling as room temperature rises above set point is the outside air. When the outside air is below 55°F (adj), the outside air and return air dampers shall modulate to maintain set point. When outside air temperature is 55°F (adj) to Room Cooling Set Point, the outside air damper shall open fully, the return damper shall close fully, and the cooling coil control valve modulates to maintain set point. When the outside air is above Room Cooling Set Point, the outside air damper closes to minimum position, the return damper opens to minimum outside air operation position, and the cooling coil control valve modulates to maintain set point. The heating coil control valve (if separate) is closed during cooling. As room temperature drops below cooling set point and until it reaches heating set point, the cooling and heating control valves shall remain closed and the outside air damper shall remain in minimum position.
4. Purge Cycle: Purge cycle will occur only per DDC/EMS schedule. All unit ventilator and air handling systems shall function as follows:
 - a. OSA damper shall open 100% and RA damper shall close.
 - b. Heating and cooling coil control valves [Coil control valve] shall remain closed.
 - c. Supply fans and Return/Exhaust fans (where applicable) shall start.
 - d. The fans shall stop and the OSA damper shall close at each unit when the room temperature is within 2 degrees of the OSA temperature or at cooling set point, whichever is greater.
 - e. Exceptions: If OSA temperature is below 40°F , the purge cycle shall not initiate.
 - f. Off Mode: When the unit fans are off, the control valves and the outside air damper go to the closed position (for three-way valves water bypasses the coil).
5. DDC/EMS Monitoring Points: The DDC/EMS shall monitor the following points:
 - Room temperature
 - Fan status (current sensors at supply and return fans)
 - Supply air temperature
 - Mixed air temperature (return & outside air)
 - Building pressure differential (inside & outside building)
 - Outside air temperature (from site temperature sensor)
6. Alarms: On all alarms, the DDC/EMS shall indicate the unit affected. The DDC/EMS shall respond to the following failure conditions as follows:
 - a. Supply Fan: If the air handler supply fan is to be running and the current sensor indicates that the fan is not running, the DDC/EMS shall signal an air handler supply fan failure and shut off the associated return fan.
 - b. Return Fan: If the air handler return fan is to be running and the current

- sensor indicates that the fan is not running, the DDC/EMS shall signal an air handler return fan failure and shut off the associated supply fan.
- c. Room Temperature: If the air handler is in Heating Mode and the room temperature is 10°F (adj.) below set point, the DDC/EMS shall signal an air handler heating failure. If the air handler is in Cooling Mode and the room temperature is 10°F (adj.) above set point, the DDC/EMS shall signal an air handler cooling failure.
- F. Exhaust: See plans for control. Where no control is indicated, fan shall start/stop by DDC/EMS. DDC/EMS shall monitor fan status with a current sensor.
- G. Outside Lighting: All exterior lighting circuits must be controlled by DDC/EMS. They must be controlled by both a photocell, schedule, and GUI override. Lights will only come on if photocell = night and scheduled or overridden on at the GUI. Coordinate with Division 26. If a separate lighting control panel is installed, it must interface with DDC/EMS inputs.
- H. Thermostat (Space Sensor) Control and Initial Settings:
- Occupied Cool: 74 adjustable plus or minus 3 at the thermostat
 - Occupied Heat: 69 adjustable plus or minus 3 at the thermostat
 - Unoccupied Cool: 95 not adjustable at the thermostat
 - Unoccupied Heat: 45 not adjustable at the thermostat
 - The unit can be turned OFF at the stat when OCCUPIED for 1-3 hour
 - The unit can be turned ON at the stat when UNOCCUPIED for 1-3 hour
 - The OCCUPIED or UNOCCUPIED status of a controlled space will NEVER start or stop the central plant
 - No other HVAC equipment functions should be adjustable at the thermostat
- I. Air Filter Monitoring (if included in design): Provide a differential pressure sensor across each filter bank which shall report differential pressure (in. W.C.) to DDC/EMS.
- J. Fan Status Sensors: If Fan Status Sensors are installed, they will not be interlocked to the cooling/heating call or heat/cool valve operation in the DDC/EMS control logic. These sensors are extremely prone to failure and often cause a no heat or no cool situation when the actual unit is fully functional.
- K. Kitchen Exhaust/Hood Fans and MUA units: Will be controlled per DDC/EMS, but must have a manual override switch (ON/OFF/Auto) in the Kitchen. If kitchen has a HC-unit, it should be controlled by EMS.
- L. Economizers: On newly installed package units, the economizer will be controlled by the unit's DDC/EMS controller. The control logic will be consistent with the Outside Air Damper and heating and cooling sequences outlined in this specification. The first source of cooling as room temperature rises above cooling set point is the outside air. When the outside air is below 55°F (adj), the outside air and return air dampers shall modulate to maintain set point. When outside air temperature is between 55°F (adj) and the Room Cooling Set Point, the outside air damper shall open fully, the return damper shall close fully, and the unit's cooling will cycle to maintain set point. When the outside air is above Room Cooling Set Point, the outside air damper closes to minimum position, the return damper opens to minimum outside air operation position, and the unit's cooling will cycle to maintain set point.
- M. Outside Air Damper Minimum Airflow Set Points: The Control Contractor shall set the outside air damper position airflow set points per design and air balance.
- N. CO₂ Sensor Control (if included in design): A wall mounted factory CO₂ sensor shall control the unit's outside air damper when the system is in the Heating or Cooling modes to reset

the minimum outside airflow. The CO₂ sensor set points and the outside air damper set points shall be developed in coordination with the Balance Contractor.

1. The Control Contractor shall determine the base ambient CO₂ concentration level after the air handler system has been balanced and the building is unoccupied. The upper and lower CO₂ concentration set points shall be developed as follows:

The lower CO₂ concentration set point shall be 200 ppm (adj.) above the base ambient CO₂ concentration level.

The upper CO₂ concentration set point shall be 500 ppm (adj.) above the base ambient CO₂ concentration level.

2. Outside Air Damper Control: The sensor shall monitor the CO₂ concentration while the unit is on. On system startup, the outside air damper shall open to the lower damper position set point. If the CO₂ concentration is above the upper CO₂ set point, the damper shall modulate open. The damper shall not open more than the upper position set point if the air handler is not in the Ventilation mode. If the CO₂ concentration is below the lower CO₂ set point, the damper shall modulate to minimum setting.
3. The heating/cooling calls (package units) and valve modulation (air handlers) will not be suspended when outside air dampers are opened by high CO₂ concentrations

END OF SECTION

CONTRACTOR'S surety shall be liable for the amount thereof. Time extensions may be granted by the DISTRICT as provided in the General Conditions.

6. In the event CONTRACTOR for a period of ten (10) calendar days after receipt of written demand from DISTRICT to do so, fails to furnish tools, equipment, or labor in the necessary quantity or quality, or to prosecute said work and all parts thereof in a diligent and workmanlike manner, or after commencing to do so within said ten (10) calendar days, fails to continue to do so, then the DISTRICT may exclude the CONTRACTOR from the premises, or any portion thereof, and take possession of said premises or any portion thereof, together with all material and equipment thereon, and may complete the work contemplated by this Agreement or any portion of said work, either by furnishing the tools, equipment, labor or material necessary, or by letting the unfinished portion of said work, or the portion taken over by the DISTRICT to another contractor, or by a combination of such methods. In any event, the procuring of the completion of said work, or the portion thereof taken over by the DISTRICT, shall be a charge against the CONTRACTOR, and may be deducted from any money due or to become due to CONTRACTOR from the DISTRICT, or the CONTRACTOR shall pay the DISTRICT the amount of said charge, or the portion thereof unsatisfied. The sureties provided for under this Agreement shall become liable for payment should CONTRACTOR fail to pay in full any said cost incurred by the DISTRICT.

7. The CONTRACTOR agrees to and does hereby indemnify and hold harmless the DISTRICT, its governing board, officers, agents, and employees from every claim or demand made, and every liability, loss, damage, or expense, of any nature whatsoever, which may be incurred by reason of:

(a) Liability for damages for (1) death or bodily injury to persons; (2) injury to, loss or theft of property; or (3) any other loss, damage or expense arising under either (1) or (2) above, sustained by the CONTRACTOR upon or in connection with the work called for in this Project, except for liability resulting from the sole active negligence, or willful misconduct of the DISTRICT.

(b) Any injury to or death of any person(s) or damage, loss or theft of any property caused by any act, neglect, default or omission of the CONTRACTOR, or any person, firm, or corporation employed by the CONTRACTOR, either directly or by independent contract, arising out of, or in any way connected with the work covered by this Agreement, whether said injury or damage occurs on or off District property.

The CONTRACTOR, at CONTRACTOR's own expense, cost, and risk shall defend any and all actions, suits, or other proceedings that may be brought or instituted against the DISTRICT, its governing board, officers, agents or employees, on any such claim, demand or liability, and shall pay or satisfy any judgment that may be rendered against the DISTRICT, its governing board, officers, agents or employees in any action, suit or other proceedings as a result thereof.

8. CONTRACTOR shall take out, prior to commencing the work, and maintain, during the life of this contract, and shall require all subcontractors, if any, whether primary or secondary, to take out and maintain:

Public Liability Insurance for injuries including accidental death, to any one person or any one accident, in an amount not less than \$2,000,000.00;

Property Damage Insurance in an amount not less than \$2,000,000.00;

Insurance Covering Special Hazards: The following special hazards shall be covered by rider or riders to above-mentioned public liability insurance or property damage insurance policy or policies of insurance, or by special policies of insurance in amounts as follows:

Automotive and truck where operated in amounts as above
Material hoist where used in amounts as above

9. Public Contract Code Section 22300 permits the substitution of securities for any monies withheld by a public agency to ensure performance under a contract. At the request and expense of the CONTRACTOR, securities equivalent to the amount withheld shall be deposited with the public agency, or with a state or federally chartered bank in California as the escrow agent, who shall then pay such monies to the CONTRACTOR. The District retains the sole discretion to approve the bank selected by the CONTRACTOR to serve as escrow agent. Upon satisfactory completion of the contract, the securities shall be returned to the CONTRACTOR. Securities eligible for investment shall include those listed in Government Code Section 16430 or bank or savings and loan certificates of deposit. The CONTRACTOR shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

In the alternative, under Section 22300, the CONTRACTOR may request DISTRICT to make payment of earned retentions directly to the escrow agent at the expense of the CONTRACTOR. Also at the CONTRACTOR's expense, the CONTRACTOR may direct investment of the payments in securities, and the CONTRACTOR shall receive interest earned on such investment upon the same conditions as provided for securities deposited by CONTRACTOR. Upon satisfactory completion of the contract, CONTRACTOR shall receive from the escrow agent all securities, interest and payments received by escrow agent from DISTRICT pursuant to the terms of Section 22300. CONTRACTOR shall pay to each subcontractor, not later than 20 days after receipt of such payment, the respective amount of interest earned, net of costs attributed to retention withheld from each subcontractor, on the amount of retention withheld to insure performance of the CONTRACTOR.

10. Each and every provision of law and clause required by law to be inserted in this Agreement shall be deemed to be inserted herein and the Agreement shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not currently inserted, then upon application of either party the Agreement shall forthwith be physically amended to make such insertion or correction.

11. The complete contract as set forth in Paragraph 1 of this Agreement constitutes the entire Agreement of the parties. No other agreements, oral or written, pertaining to the work to be performed, exists between the parties. This Agreement can be modified only by an amendment in writing, signed by both parties and pursuant to action of the Governing Board of the District.

12. The complete contract as set forth in Paragraph 1 of this Agreement constitutes the entire Agreement of the parties. No other agreements, oral or written, pertaining to the work to be performed, exists between the parties. This Agreement can be modified only by an amendment in writing, signed by both parties and pursuant to action of the Governing Board of the District.

13. CONTRACTOR shall comply with those provisions of the Labor Code requiring payment of prevailing wages, keeping of certified payroll records, overtime pay, employment of apprentices, and workers' compensation coverage, as further set forth in the General Conditions, and shall file the required workers' compensation certificate before commencing work.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed.

DISTRICT

CONTRACTOR

By: _____
Signature

By: _____
Signature* (see next p.)

Michael Johnston

Associate Superintendent
Title

Title

(Second signature required only for corporation)

By: _____
Signature** (see next p.)

Print Name

Title

(CORPORATE SEAL OF CONTRACTOR, if corporation)

Contractor's License No.

Tax ID/Social Security No.

*If CONTRACTOR is a corporation, the first signature must be by one of the following officers of the corporation: Chairman of the Board, President, or any Vice President.

**If CONTRACTOR is a corporation, the second signature must be by a different person from the first signature and must be by one of the following officers of the corporation: Secretary, any Assistant Secretary, the Chief Financial Officer, or any Assistant Treasurer.

**PAYMENT BOND
(Labor and Material)**

KNOW ALL MEN BY THESE PRESENTS:

That **WHEREAS,**

and

Hereinafter designated as the "Principal", have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to construct

**BID # 2912
Energy Management System Upgrade - Various Sites**

Which said agreement dated _____, 2022 _____, and all of the contract documents attached to or forming a part of said agreement, are hereby referred to and made a part hereof; and

WHEREAS, the Principal is required, before entering upon the performance of the work, to file a good and sufficient bond with the body by whom the contract is awarded to secure the claims arising under said agreement.

NOW, THEREFORE, THESE PRESENTS WITNESSETH:

That the said Principal and the undersigned

are held and firmly bound unto all laborers, material men, and other persons referred to in said statutes in the sum of _____ Dollars which sum well and truly be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, by these presents.

The condition of this obligation is that if the said Principal or any of its subcontractors, or the heirs, executors, administrators, successors, or assigns of any, all, or either of them, shall fail to pay for any materials, provisions, provender or other supplies, or teams, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind or for amounts due under the Unemployment Insurance Act with respect to such work or labor, that said Surety will pay the same in an amount not exceeding the amount hereinabove set forth, and also in case suit is brought upon this bond, will pay a reasonable attorney's fee to be awarded and fixed by the Court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

And the said Surety, for value received, thereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of said contract or the specifications accompanying the

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that we

_____ as Principal, and _____ as Surety, are held and firmly bound unto **Clovis Unified School District**, in the County of Fresno, State of California, hereinafter called the "Owner", acting on behalf of the State Allocation Board, State of California, in the sum of _____ Dollars

(\$ _____) for the payment of which sum well and truly made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such, that whereas the Principal entered into a certain contract with the Owner, dated _____, 2022 for construction of

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NOW, THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Owner, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, then this obligation to be void, otherwise to remain in full force and virtue.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract, or to the work, or to the specifications.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals this _____ day of _____, 2022 hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(To be signed by _____)
(Principal and Surety, _____)
(and acknowledged and _____)
(Notarial Seal attached _____)

(Affix Corporate Seal)

(Individual Principal)

(Business Address)

(Affix Corporate Seal)

(Corporate Principal)

(Business Address)

(Affix Corporate Seal)

(Corporate Surety)

(Business Address)

By:

The rate or premium on this bond is _____ per thousand.

The total amount of premium charged is _____.

The above must be filled in by Corporate Surety.

END OF SECTION
3.97 (8.98)