PERFORMANCE CONTRACT

This Performance Contract (this "Agreement") is made this ___ day of _____, 2025 between:

PARTIES

JOHNSON CONTROLS, INC. ("JCI")
401 Center Ridge Dr., Suite 400
Austin, TX 78753

and

Laredo College ("Customer")
West End Washington St.
Laredo, TX 78040

RECITALS

WHEREAS, Customer desires to retain JCI to perform the work specified in Schedule 1 (Scope of Work) hereto (the "Work") relating to the installation of the improvement measures (the "Improvement Measures") described therein; and

WHEREAS, Customer is authorized and empowered under applicable Laws (as defined below) to enter into this Agreement, and has taken all necessary action under applicable Laws to enter into this Agreement; and

WHEREAS, Customer has selected JCI to perform the Work after it determined JCI's proposal was the most advantageous to Customer in accordance with all applicable procurement and other Laws.

NOW, THEREFORE, in consideration of the mutual promises set forth herein, the parties agree as follows:

AGREEMENT

1. **SCOPE OF THE AGREEMENT.** JCI shall perform the Work set forth in Schedule 1. After the Work is Substantially Complete (as defined below) and the Certificate of Substantial Completion is executed by Customer and JCI, JCI shall provide the assured performance guarantee (the "Assured Performance Guarantee") and the measurement and verification services (the "M&V Services") set forth in Schedule 2 (Assured Performance Guarantee). Customer shall make payments to JCI for the Work and the M&V Services in accordance with Schedule 4 (Price and Payment Terms).

2. **AGREEMENT DOCUMENTS:** In addition to the terms and conditions of this Agreement, the following Schedules are incorporated into and shall be deemed an integral part of this Agreement:

   Schedule 1 – Scope of Work
   Schedule 2 – Assured Performance Guarantee
   Schedule 3 – Customer Responsibilities
   Schedule 4 – Price and Payment Terms
   Attachment 1 – Form of Notice to Proceed
   Attachment 2 – Form of Change Order
   Attachment 3 – Form of Certificate of Substantial Completion
   Attachment 4 – Form of Certificate of Final Completion
   Attachment 5 – LED Lighting Upgrades Scope and Detailed Savings Calculations (FIM 1)
   Attachment 6 – Plant Upgrades 30% Design Drawings

3. **NOTICE TO PROCEED; SUBSTANTIAL COMPLETION; M&V SERVICES.** This Agreement shall become effective on the date of the last signature on the signature page below. JCI shall commence performance of the Work within ten (10) business days of receipt of Customer's Notice to Proceed, a form of which is attached hereto as Attachment 1, and shall achieve Substantial Completion of the Work by the Substantial Completion date, which shall be the date on which Customer executes a Certificate of Substantial Completion substantially in the form attached hereto as Attachment 3.

   For purposes of this Agreement, "Substantial Completion" means that JCI has provided sufficient materials and services to permit Customer to operate the Improvement Measures. The M&V Services shall commence on the first day of the month following the month in which Customer executes a Certificate of Substantial Completion and shall continue throughout the Guarantee Term, subject to earlier termination of the Assured Performance Guarantee as provided herein. Customer acknowledges and agrees that if, for any reason, it (i) cancels or terminates receipt of M&V Services, (ii) fails to pay for M&V Services in accordance with Schedule 4, (iii) fails to fulfill any of Customer's responsibilities necessary to enable JCI to complete the Work and provide the M&V Services, or (iv) otherwise cancels, terminates or materially breaches this Agreement, the Assured Performance Guarantee shall automatically terminate and JCI shall have no liability thereunder.

4. **DELAYS AND IMPACTS.** If JCI is delayed or impacted in the commencement, performance, or completion of the Work and/or M&V Services by causes beyond its control and without its fault, including but not limited to inability to access property; concealed or unknown conditions encountered at the project, differing from the conditions represented by Customer in the bid documents or otherwise disclosed by Customer to JCI prior to the commencement of the Work; a Force Majeure Event (as defined below) condition; failure by Customer to perform its obligations under this Agreement; or failure by Customer to cooperate with JCI in the timely completion of the Work, JCI shall provide written notice to Customer of the existence, extent of, and reason for such delays and impacts. Under such circumstances, an equitable adjustment in the time for performance, price, scope and payment terms, and the Assured Performance Guarantee shall be made.

5. **ACCESS.** Customer shall provide JCI, its subcontractors, and its agents reasonable and safe access to all facilities and properties in Customer's control that are subject to the Work and M&V Services. Customer further agrees to assist JCI, its subcontractors, and its agents to gain access to facilities and properties that are not controlled by Customer but are necessary for JCI to complete the Work and provide the M&V Services. An equitable adjustment in the time for performance, price and payment terms, and Assured Performance Guarantee shall be made as a result of any failure to grant such access.

6. **PERMITS, TAXES, AND FEES.** Unless otherwise specified in Schedule 3 (Customer Responsibilities), JCI shall be responsible for obtaining all building permits required for it to perform the Work. Unless otherwise specified in Schedule 1 (Scope of Work), Customer shall be responsible for obtaining all other permits, licenses, approvals, permissions and certifications, including but not limited to, all zoning and land use changes or exceptions required for the provision of the Work or the ownership and use of the Improvement Measures. JCI shall not be obligated to provide any changes to or improvement of the facilities or any portion thereof required under any applicable building, fire, safety, sprinkler or other applicable code, standard, law, regulation, ordinance or other requirement unless the same expressly regulates the installation of the Improvement Measures. Without limiting the foregoing, JCI's obligations with respect to the Work is not intended to encompass any changes or improvements that relate to any compliance matters (whether known or unknown) that are not directly related to the installation of the Improvement Measures or which have been imposed or enforced because of the occasion or opportunity of review by any governmental authority. Customer shall be responsible for and shall pay when due all assessments, charges and sales, use, property, excise, or other taxes now or hereafter imposed by any governmental body or agency upon the provision of the Work or the M&V Services, implementation or presence of the Improvement Measures, the use of the Improvement Measures or payments due to JCI under this Agreement, other than taxes upon the net income of JCI. Customer shall also be responsible for real or personal property taxes relating to equipment or material included in the Improvement Measures. Any fees, taxes, or other lawful charges paid by JCI on account of Customer shall become immediately due from Customer to JCI.

7. **WARRANTY.** JCI will perform the Work in a professional, workman-like manner. JCI will promptly re-perform any non-conforming Work for no charge, as long as Customer provides written notice to JCI within one (1) year

following Substantial Completion or such other period identified in Schedule 1. If JCI installs or furnishes goods or equipment under this Agreement, and such goods or equipment are covered by an end-user warranty from their manufacturer, JCI will transfer the benefits of such warranty to Customer. The foregoing remedy with respect to the Work, together with any remedy provided by goods or equipment manufacturers, shall be Customer's sole and exclusive remedies for warranty claims. Customer agrees that the one (1) year period following Substantial Completion, or such other period identified in Schedule 1, shall be a reasonable time for purposes of submitting valid warranty claims with respect to the Work. These exclusive remedies shall not have failed of their essential purpose so long as JCI transfers the benefits of any goods or equipment end-user warranty to Customer and remains willing to re-perform any non-conforming Work for no charge within the one (1) year period described above or such other period identified in Schedule 1. NO OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE PROVIDED BY JCI. JCI does not guaranty that any Improvement Measures will perform in accordance with the manufacturer's specifications over the term of this Agreement, other than with respect to the limited warranty applicable to equipment actually manufactured by JCI, or if the performance failure is related to JCI's workmanship, each as described above. Customer's sole remedy for failed or non-performing Improvement Measures not related to JCI's workmanship is to pursue claims under any manufacturer's warranty claims then in effect. This warranty does not extend to any Work that has been abused, altered, or misused, or repaired by Customer or third parties without the supervision or prior written approval of JCI. Except with respect to goods or equipment manufactured by JCI and furnished to Customer hereunder, for which JCI shall provide its express written manufacturer's warranty, JCI shall not be considered a merchant or vendor of goods or equipment.

8. **CLEANUP.** JCI shall keep the premises and the surrounding area free from accumulation of waste materials or rubbish caused by the Work and, upon completion of the Work, JCI shall remove all waste materials, rubbish, tools, construction equipment, machinery, and surplus materials.

9. **SAFETY; COMPLIANCE WITH LAWS.** JCI shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work and M&V Services. Each of JCI and Customer shall comply with all applicable laws, ordinances, rules, regulations, interpretations, tariffs, duties, quotas, and lawful orders of public authorities (collectively, "Laws") in connection with its performance hereunder.

10. **HAZARDOUS MATERIALS.**

    A. JCI shall be responsible for removing or disposing of any JCI Hazardous Materials and for the remediation of any areas to the extent impacted by the release of JCI Hazardous Materials. For any Non-JCI Hazardous Materials, Customer shall supply JCI with any information in its possession relating to the presence of such materials if their presence may affect JCI's performance of the Work. It is JCI's policy to seek certification for facilities constructed prior to 1982 that no asbestos containing materials are present, and Customer shall at its own cost and expense provide such certification for buildings it owns or aid JCI in obtaining such certification from facility owners in the case of buildings that Customer does not own, if JCI will undertake Work in the facility that could disturb such asbestos containing materials. If Customer becomes aware of or suspects the presence of Non-JCI Hazardous Materials that may interfere with Work, it will immediately provide notice to JCI. Upon such notice, or if JCI becomes aware of or suspects the presence of Non-JCI Hazardous Materials that may interfere with Work, JCI shall promptly stop the Work in the affected area. As between Customer and JCI, Customer shall be responsible at its sole expense for removing and disposing of Non-JCI Hazardous Materials from its facilities and the remediation of any areas impacted by the release of Non-JCI Hazardous Materials in conformance with all applicable Laws and addressing the impact of its disturbance before JCI continues with its Work.

    B. To the fullest extent permitted by Law, Customer shall indemnify and hold harmless JCI and its directors, officers, employees, agents, representatives, shareholders, affiliates, and successors and assigns, from and against any and all losses, costs, damages, expenses (including reasonable legal fees and defense costs), claims, causes of action or liability, directly or indirectly, relating to or arising from Customer's negligent use, storage, release, discharge, handling or presence of Non-JCI

Hazardous Materials (actual or alleged and regardless of the cause of such condition) on, under or about the facilities, or Customer's failure to comply with this Article 10.

C. Definitions Applicable to this Article 10:

i. "Hazardous Materials" – Hazardous Materials are any material or substance that, whether by its nature or use, is now or hereafter defined or regulated as a hazardous waste, hazardous substance, pollutant or contaminant under applicable Laws relating to or addressing public or employee health and safety and protection of the environment, or which is toxic, explosive, corrosive, flammable, radioactive, carcinogenic, mutagenic or otherwise hazardous or which is or contains petroleum, gasoline, diesel, fuel, another petroleum hydrocarbon product, or polychlorinated biphenyls. Hazardous Materials specifically includes without limitation mold, lead-based paint and asbestos containing materials.

ii. "JCI Hazardous Materials" – JCI Hazardous Materials are any Hazardous Materials brought onto Customer's premises by JCI in providing the Work.

iii. "Non-JCI Hazardous Materials" – Non-JCI Hazardous Materials are any Hazardous Materials located on, about or under Customer's premises, other than JCI Hazardous Materials.

11. CHANGE ORDERS. The parties, without invalidating this Agreement, may request changes in the Work to be performed under this Agreement, consisting of additions, deletions, or other revisions to the Work ("Change Orders"). The price and payment terms, time for performance and, if necessary, the Assured Performance Guarantee, shall be equitably adjusted in accordance with the Change Order. Such adjustments shall be determined by mutual agreement of the parties. JCI may delay performance until adjustments arising out of the Change Order are clarified and agreed upon. Any Change Order must be signed by an authorized representative of each party. If concealed or unknown conditions are encountered at the project, differing from the conditions represented by Customer in the bid documents or otherwise disclosed by Customer to JCI prior to the commencement of the Work, price and payment terms, time for performance and, if necessary, the Assured Performance Guarantee, shall be equitably adjusted. Claims for equitable adjustment may be asserted in writing within a reasonable time from the date a party becomes aware of a change to the Work by written notification. Failure to promptly assert a request for equitable adjustment, however, shall not constitute a waiver of any rights to seek any equitable adjustment with respect to such change.

12. CUSTOMER FINANCING; TREATMENT; TAXES. The parties acknowledge and agree that JCI is not making any representation or warranty to Customer with respect to matters not expressly addressed in this Agreement, including, but not limited to:

(a) Customer's ability to obtain or make payments on any financing associated with paying for the Improvement Measures, related services, or otherwise;
(b) Customer's proper legal, tax, accounting, or credit rating agency treatment relating to this Agreement; and
(c) the necessity of Customer to raise taxes or seek additional funding for any purpose.

Customer is solely responsible for its obligations and determinations with respect to the foregoing matters. In addition, the parties acknowledge and agree that Customer shall be responsible to comply, at its cost and expense, with all Laws that may be applicable to it relating to performance contracting, including, without limitation, any requirements relating to the procurement of goods and/or services and any legal, accounting, or engineering opinions or reviews required or obtained in connection with this Agreement.

13. INSURANCE. JCI shall maintain insurance in the amounts set forth below in full force and effect at all times until the Work has been completed, and shall provide a certificate evidencing such coverage promptly following Customer's request therefor.

COVERAGES	LIMITS OF LIABILITY
Workmen's Compensation Insurance or self-insurance, including Employer's Liability	Statutory

Commercial General Liability Insurance	$5,000,000 Per Occurrence $5,000,000 Aggregate
Comprehensive Automobile Liability Insurance	$5,000,000 Combined Single Limit

The above limits may be obtained through primary and excess policies, and may be subject to self-insured retentions.

Customer shall be responsible for obtaining builder's risk insurance coverage for the Improvement Measures and shall at all times be responsible for any loss or casualty to the Improvement Measures. Customer shall also maintain insurance coverage, of the types and in the amounts customary for the conduct of its business, throughout the term of this Agreement.

14. **INDEMNIFICATION.** To the fullest extent permitted by applicable Law, JCI ~~and Customer~~ shall indemnify Customer~~(each an "Indemnifying Party") each other ("Indemnified Party")~~ for all damages, losses and expenses with respect to any third-party claims against the ~~Indemnified Party~~Customer for personal injury (including death) or tangible property damage, but only to the extent such damages, losses and expenses are caused by the negligence or willful misconduct of ~~the Indemnifying Party~~JCI in fulfilling its obligations under this Agreement.

15. **LIMITATION OF LIABILITY.** NEITHER JCI NOR CUSTOMER WILL BE RESPONSIBLE TO THE OTHER FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL, REMOTE, PUNITIVE, EXEMPLARY, LOSS OF PROFITS OR REVENUE, LOSS OF USE, OR SIMILAR DAMAGES, REGARDLESS OF HOW CHARACTERIZED AND REGARDLESS OF A PARTY HAVING BEEN ADVISED OF THE POSSIBILITY OF SUCH POTENTIAL LOSSES OR RELIEF, ARISING IN ANY MANNER FROM THIS AGREEMENT, THE WORK, THE IMPROVEMENT MEASURES, THE PREMISES, THE M&V SERVICES, OR OTHERWISE. WITHOUT LIMITING JCI'S EXPRESS OBLIGATIONS UNDER THE ASSURED PERFORMANCE GUARANTEE, JCI'S LIABILITY UNDER THIS AGREEMENT, REGARDLESS OF THE FORM OF ACTION, SHALL IN NO EVENT EXCEED THE AMOUNT OF THE PAYMENTS ACTUALLY RECEIVED BY JCI UNDER SCHEDULE 4. If this Agreement covers fire safety or security equipment, Customer understands that JCI is not an insurer regarding those services, and that JCI shall not be responsible for any damage or loss that may result from fire safety or security equipment that fails to prevent a casualty loss. The foregoing waivers and limitations are fundamental elements of the basis for this Agreement between JCI and Customer, and each party acknowledges that JCI would not be able to provide the work and services contemplated by this Agreement on an economic basis in the absence of such waivers and limitations, and would not have entered into this Agreement without such waivers and limitations.

16. **FORCE MAJEURE EVENTS.** Neither party will be responsible to the other for damages, loss, injury, or delay caused by Force Majeure Events. As used herein, "Force Majeure Events" are conditions that are beyond the reasonable control and without the intentional misconduct or negligence of a party, either foreseeable or unforeseeable, including, without limitation, severe weather, flooding, seismic disturbances, acts of God, acts or omissions of government agencies, condemnation, strikes, labor disputes, epidemics, pandemics, disease, quarantines or other public health risks and/or responses, fires, explosions or other casualties, thefts, vandalism, riots or war, acts of terrorism, electrical power outages, interruptions or degradations in telecommunications, computer, or electronic communications systems, changes in Laws, data breach, cyber-attacks, ransomware, or unavailability, delayed delivery or an increase of 5% or more in cost of any parts, materials or supplies to be used in the project between date of contract and date of installation. If a party is delayed in achieving one or more of its schedule milestones set forth in the Agreement due to a Force Majeure Event, the affected party will be entitled to extend the relevant completion date by the magnitude of the Force Majeure Event plus additional time to overcome the effect of the delay. If the Force Majeure Event directly or indirectly increases JCI's cost to perform, Customer is obligated to reimburse JCI for such increased costs.

17. **JCI'S PROPERTY.** All materials furnished or used by JCI personnel and/or JCI subcontractors or agents at the installation site, including documentation, schematics, test equipment, software and associated media remain the exclusive property of JCI or such other third party. Customer agrees not to use such materials for any purpose at any time without the express authorization of JCI. Customer agrees to allow JCI personnel and/or JCI subcontractors or agents to retrieve and to remove all such materials remaining after installation or

maintenance operations have been completed. Customer acknowledges that any software furnished in connection with the Work and/or M&V Services is proprietary and subject to the provisions of any software license agreement associated with such software.

18. **DISPUTES.** JCI and Customer will attempt to settle any controversy, dispute, difference, or claim between them concerning the performance, enforcement, or interpretation of this Agreement (collectively, "Dispute") through direct discussion in good faith, but if unsuccessful, will submit any Dispute to non-binding mediation in the nearest major metropolitan area of the state where the project is performed. If the parties are unable to agree on a mediator or a date for mediation, either party may request JAMS, Inc. to appoint a mediator and designate the time and procedure for mediation. Such mediator shall be knowledgeable, to each party's reasonable satisfaction, with respect to matters concerning construction law. Neither JCI nor Customer will file a lawsuit against the other until not less than sixty (60) days after the mediation referred to herein has occurred, unless one or both parties is genuinely and reasonably concerned that any applicable statute of limitations is on the verge of expiring. JCI AND CUSTOMER HEREBY WAIVE THEIR RESPECTIVE RIGHTS TO A JURY TRIAL AS TO ANY CLAIM OR CAUSE OF ACTION BASED UPON, ARISING OUT OF OR DIRECTLY OR INDIRECTLY RELATED TO THIS AGREEMENT, INCLUDING CONTRACT, TORT AND STATUTORY CLAIMS, AND EACH OF THE PARTIES HERETO ACKNOWLEDGES THAT THIS WAIVER IS A MATERIAL INDUCEMENT TO ENTER INTO A BUSINESS RELATIONSHIP, THAT EACH HAS RELIED ON THIS WAIVER IN ENTERING INTO THIS AGREEMENT, AND THAT EACH WILL CONTINUE TO RELY ON THIS WAIVER IN THEIR RELATED FUTURE DEALINGS UNDER THIS AGREEMENT.

19. **GOVERNING LAW.** This Agreement and the construction and enforceability thereof shall be interpreted in accordance with the laws of the state where the Work is conducted.

20. **179D BENEFITS.** As a result of JCI's design and implementation of this Project, a federal income tax deduction under Section 179D of the Internal Revenue Code ("IRC 179D") may become available to JCI as the party primarily responsible for designing energy efficiency improvements implemented at Customer's facilities. Congress provided in IRC 179D(d)(4) for government owners, which do not pay income tax and are thus ineligible to use this deduction, to allocate the deduction to the party primarily responsible for designing the energy efficiency improvements, here JCI. Customer hereby agrees to allocate to JCI such deduction and any similar deduction enacted by Congress to replace IRC 179D. Customer shall cooperate with JCI by executing annually, during the term of this Agreement, and promptly returning to JCI, a written allocation and declaration required by IRC 179D. JCI will prepare and is responsible for the accuracy of any allocation documents and all accompanying documentation provided for Customer's execution. Notwithstanding anything to the contrary herein, Customer makes no representation concerning the availability or applicability of any such tax deduction benefits or of their ability to be allocated to or claimed by JCI. JCI assumes all risk related to such allocation and deduction.

21. **CONSENTS; APPROVALS; COOPERATION**. Whenever Customer's consent, approval, satisfaction or determination shall be required or permitted under this Agreement, and this Agreement does not expressly state that Customer may act in its sole discretion, such consent, approval, satisfaction or determination shall not be unreasonably withheld, qualified, conditioned or delayed, whether or not such a "reasonableness" standard is expressly stated in this Agreement. Whenever Customer's cooperation is required by JCI in order to carry out JCI's obligations hereunder, Customer agrees that it shall act in good faith and reasonably in so cooperating with JCI and/or JCI's designated representatives or assignees or subcontractors. Customer shall furnish decisions, information, and approvals required by this Agreement in a timely manner so as not to delay the performance of the Work or M&V Services.

22. **FURTHER ASSURANCES.** The parties shall execute and deliver all documents and perform all further acts that may be reasonably necessary to effectuate the provisions of this Agreement.

23. **INDEPENDENT CONTRACTOR.** The relationship of the parties hereunder shall be that of independent contractors. Nothing in this Agreement shall be deemed to create a partnership, joint venture, fiduciary, or similar relationship between the parties.

24. **POWER AND AUTHORITY.** Each party represents and warrants to the other that (i) it has all requisite power and authority to execute and deliver this Agreement and perform its obligations hereunder, (ii) all corporate,

board, body politic, or other approvals necessary for its execution, delivery, and performance of this Agreement have been or will be obtained, and (iii) this Agreement constitutes its legal, valid, and binding obligation.

25. **SEVERABILITY.** In the event that any clause, provision, or portion of this Agreement or any part thereof shall be declared invalid, void, or unenforceable by any court having jurisdiction, such invalidity shall not affect the validity or enforceability of the remaining portions of this Agreement unless the result would be manifestly inequitable or materially impair the benefits intended to inure to either party under this Agreement.

26. **COMPLETE AGREEMENT.** It is understood and agreed that this Agreement contains the entire agreement between the parties relating to all issues involving the subject matter of this Agreement. No binding understandings, statements, promises or inducements contrary to this Agreement exist. This Agreement supersedes and cancels all previous agreements, negotiations, communications, commitments and understandings with respect to the subject matter hereof, whether made orally or in writing. Each of the parties to this Agreement expressly warrants and represents to the other that no promise or agreement which is not herein expressed has been made to the other, and that neither party is relying upon any statement or representation of the other that is not expressly set forth in this Agreement. Each party hereto is relying exclusively on the terms of this Agreement, its own judgment, and the advice of its own legal counsel and/or other advisors in entering into this Agreement. Customer acknowledges and agrees that any purchase order issued by Customer associated with this Agreement is intended only to establish payment authority for Customer's internal accounting purposes. No purchase order shall be considered a counteroffer, amendment, modification, or other revision to the terms of this Agreement.

27. **HEADINGS.** The captions and titles in this Agreement are for convenience only and shall not affect the interpretation or meaning of this Agreement.

28. **COUNTERPARTS.** This Agreement may be executed in any number of counterparts, all of which when taken together shall constitute one single agreement between the parties.

29. **NOTICES.** All notices or communications related to this Agreement shall be in writing and shall be deemed served if and when sent by facsimile or mailed by certified or registered mail: to Johnson Controls, Inc. at the address listed on the first page of this Agreement, ATTN: Regional Solutions Manager, with a copy to Johnson Controls, Inc., ATTN: General Counsel – Building Efficiency Americas, 507 East Michigan Street, Milwaukee, Wisconsin, 53202: and to Customer at the address listed on the first page of this Agreement.

30. **SOFTWARE AND DIGITAL SERVICES.** Use, implementation, and deployment of software and hosted software products proprietary to JCI ("Software") offered under this Agreement shall be subject to, and governed by, JCI's standard terms for such Software and Software related professional services in effect from time to time at https://www.johnsoncontrols.com/techterms (collectively, the "Software Terms"). Applicable Software Terms are incorporated herein by this reference. Other than the right to use the Software as set forth in the Software Terms, JCI and its licensors reserve all right, title, and interest (including all intellectual property rights) in and to the Software and improvements to the Software. The Software that is licensed hereunder is licensed subject to the Software Terms and not sold. If there is a conflict between the other terms herein and the Software Terms, the Software Terms shall take precedence and govern with respect to rights and responsibilities relating to the Software, its implementation and deployment and any improvements thereto.

Laredo College	**JOHNSON CONTROLS, INC.**
Signature:_____	Signature:_____
Printed Name:_____	Printed Name:_____
Title:_____	Title:_____
Date:_____	Date:_____

I. SUMMARY OF THE SCOPE OF WORK

JCI will provide the Customer with the scope of work (Work) identified on this Schedule. JCI shall supervise and direct the Work and shall be responsible for construction means, methods, techniques, sequences, and procedures for coordinating the Work under this Agreement. JCI shall be responsible to pay for labor, materials, equipment, tools, construction equipment and machinery, transportation, and other facilities and services necessary for the proper execution and completion of the Work. Completed work will be functional and installed in accordance with local governing codes at the time of execution of this Agreement.

General Work:

- Conduct a pre-construction conference with JCI Project Manager and Customer.
- Final engineering work for each Facility Improvement Measure (FIM) as required under the Agreement. Once final engineering work is complete, some minor modifications to outlined Scope of Work may be required. No modifications shall be made to the Work without prior approval of Customer.
- One (1) each electronic copy and one (1) each hard copy of the Operation and Maintenance ("O&M") manuals of equipment shall be submitted to Customer at completion of the construction phase of the project.
- One (1) each electronic copy and one (1) each hard copy of as-built construction drawings for applicable FIMs will be submitted to the Customer at completion of the construction phase.
- JCI shall provide an as-built lighting table with updated fixture counts to reflect actual install.
- Customer retains the right to keep any removed equipment or material, unless specified differently in other areas of this Scope of Work. Customer has within 14 days of contract signing to notify JCI of intent to keep equipment. Customer retained equipment shall be placed in a Customer designated location after removal not more than one hundred feet (100') from the equipment's current location at time of demolition.
- Work will be coordinated with Customer personnel to minimize interruptions and delays.
- Materials being installed shall be new unless otherwise specified in this Scope of Work.
- Necessary protection will be provided to avoid damage to adjacent services in the surrounding work areas.
- Johnson Controls shall be given ample notice for security clearance procedures required for access to any facility included in this Scope of Work.
- The Johnson Controls Safety Specifications will be followed at all times. Any safety violations will be addressed immediately. Work will not continue until any unsafe conditions are corrected.
- JCI shall be granted one hundred percent (100%) access to all facilities during the construction schedule. Keys, escorts, and security clearance requirements will be provided in a timely manner at Customer's expense.
- All work performed during standard forty (40) hour work week, Monday through Friday; weekends or overtime not included unless otherwise amended per contract.
- JCI shall provide badges specific for this project to all JCI personnel and JCI subcontractor personnel. Badges shall be worn at all times while working on site.
- Customer agrees to provide substantial completion sign off by FIM and building throughout the duration of the project.

General Exclusions:

- HAZARDOUS MATERIALS. Unless specifically noted in this Scope of Work, JCI's obligations expressly exclude any Work or Services of any nature associated or connected with the identification, abatement, cleanup, control, removal, or disposal of hazardous materials or substances, including but not limited to asbestos, in or on the premises. If no certifications are available for sites older than 1982, JCI will not proceed with work until Customer signed certifications of abatement have been provided.
- Any structural modifications to existing equipment and infrastructure that is required due to previously unknown or existing deficient structural conditions is not covered in this Scope of Work
- Code upgrades for existing infrastructure and equipment scheduled to remain.

- Repair or replacement of defective mechanical, electrical or controls equipment, and the electrical distribution system, except the equipment described to be replaced in this Scope of Work (JCI will identify the location of defective equipment and notify Customer personnel).
- Test and Balance of existing air or water systems, unless specified in this Scope of Work.
- Existing building ventilation conditions and indoor air quality issues not included in this Scope of Work.
- Engineering services, studies, and analysis associated with any exclusions or work clearly outside of the scope definition.
- Resolution of pre-existing design, service, and or distribution conditions on the Premises (not related to the Work), known or unknown.
- Correction of any existing applicable building code violations and Federal Americans with Disabilities Act (ADA) violations on the Premises identified by JCI during the execution of the Work (any such violations will be brought to the attention of Customer for remedy).

The following table summarizes the FIMs to be implemented for this project:

FIM	Description
1	LED Lighting Upgrades
2	Energy Management Control System
3	Chiller Replacements
4	Cooling Tower Replacements
5	Cooling Tower Evaporative Credit

II. DESCRIPTION OF THE SCOPE OF WORK

FIM 1 LED Lighting Upgrades

Scope of Work

This FIM includes materials and labor for lighting upgrades at the locations listed in Table 1.1 below. See detailed Scope of Work in Attachment 5. Space generalizations are described below. These generalizations apply only to areas and fixtures specified in Attachment 5. The following table provides a summary of the quantities of fixtures improved by these upgrades.

Table 1.1 Lighting Upgrades

Ft McIntosh Site/Building Name	No Retrofit	Retrofit	Relamp	Retrofit with a Kit or Reflector	New/ Replacement Fixture	Control Components	Total Count
MOORE VOCATION BUILDING	136	177	8	97	107	66	591
MOORE VOCATION BUILDING - EXTERIOR	85	0	0	4	0	0	89
PHYSICAL PLANT	65	100	24	0	5	4	198
PHYSICAL PLANT - EXTERIOR	19	0	2	0	0	0	21
ADKINS HALL	30	202	2	154	0	2	390

Schedule 1

Ft McIntosh Site/Building Name	No Retrofit	Retrofit	Relamp	Retrofit with a Kit or Reflector	New/ Replacement Fixture	Control Components	Total Count
ADKINS HALL - EXTERIOR	30	8	0	0	0	0	38
HACHAR BUILDING	29	258	0	144	0	0	431
HACHAR BUILDING - EXTERIOR	39	0	0	0	0	0	39
HUMAN RESOURCES	7	58	0	0	0	16	81
HUMAN RESOURCES - EXTERIOR	2	0	0	0	0	0	2
CAMPUS POLICE	4	43	0	0	0	7	54
CAMPUS POLICE - EXTERIOR	7	0	0	0	0	0	7
KAZEN COLLEGE CENTER	124	611	0	337	0	40	1,112
KAZEN COLLEGE CENTER - EXTERIOR	82	11	0	0	0	0	93
FORT MCINTOSH BOOKSTORE	19	100	42	0	0	5	166
LEWIS ENERGY ACADEMIC CENTER (LEAC)	203	645	0	894	0	142	1,884
LEWIS ENERGY ACADEMIC CENTER (LEAC) - EXTERIOR	44	43	0	0	24	0	111
MARTIN HALL	22	155	0	22	0	0	199
MARTIN HALL - EXTERIOR	26	16	0	0	0	0	42
LOPEZ NURSING	21	271	0	0	0	18	310
LOPEZ NURSING - EXTERIOR	12	0	0	0	0	0	12
ALLIED HEALTH CENTER	5	229	4	0	0	11	249
ALLIED HEALTH CENTER - EXTERIOR	10	2	1	0	0	0	13
COOLING PLANT	4	23	0	0	0	3	30
COOLING PLANT - EXTERIOR	5	0	0	0	0	0	5
ELOY GARCIA BUILDING	21	114	0	172	0	37	344
ELOY GARCIA BUILDING - EXTERIOR	0	9	0	0	9	0	18
ELPHA LEE WEST BUILDING	17	140	0	171	0	4	332
ELPHA LEE WEST BUILDING - EXTERIOR	30	2	0	0	0	0	32
CHAPEL	130	34	2	0	0	1	167
CHAPEL - EXTERIOR	0	1	0	0	0	0	1
PRINT SHOP	2	80	0	0	0	7	89
PRINT SHOP - EXTERIOR	2	2	0	0	0	0	4
HOUSES (128 - 131 AND 134 - 142)	12	250	62	0	0	0	324

Schedule 1

Ft McIntosh Site/Building Name	No Retrofit	Retrofit	Relamp	Retrofit with a Kit or Reflector	New/ Replacement Fixture	Control Components	Total Count
HOUSES (128 - 131 AND 134 - 142) - EXTERIOR	72	0	0	0	0	0	72
PRESIDENT'S HOME	15	0	0	0	0	0	15
ART BUILDING V (P-47)	13	0	0	0	1	0	14
ART BUILDING V (P-47) - EXTERIOR	2	0	0	0	0	0	2
ART BUILDING II (P-24)	5	71	0	0	0	10	86
ART BUILDING II (P-24) - EXTERIOR	0	0	0	0	0	0	0
ART BUILDING I (P-25)	8	95	0	0	0	7	110
ART BUILDING I (P-25) - EXTERIOR	1	3	0	0	0	0	4
FACULTY HOUSING (P-26)	6	2	3	0	0	0	11
FACULTY HOUSING (P-26) - EXTERIOR	2	0	0	0	0	0	2
ART BUILDING IV (P-39)	4	26	3	0	0	15	48
ART BUILDING IV (P-39) - EXTERIOR	3	0	0	0	0	0	3
INTERNATIONAL BOUNDARY & WATER COMMISSION (P-27)	5	26	2	0	0	4	37
INTERNATIONAL BOUNDARY & WATER COMMISSION (P-27) - EXTERIOR	2	0	0	0	0	0	2
HOUSING OFFICE (P-41)	6	2	3	0	0	0	11
HOUSING OFFICE (P-41) - EXTERIOR	2	0	0	0	0	0	2
ATHETIC DORMITORY	31	62	1	0	0	2	96
VISUAL & PERFORMING ARTS BUILDING - EXTERIOR	89	29	0	0	0	0	118
VISUAL & PERFORMING ARTS BUILDING	326	434	6	121	0	9	896
DE LA GARZA BUILDING - EXTERIOR	16	0	0	0	0	0	16
DE LA GARZA BUILDING	94	173	0	0	0	21	288
MARTINEZ FINE ARTS BUILDING - EXTERIOR	36	0	0	0	0	0	36
MARTINEZ FINE ARTS BUILDING	205	336	87	7	0	52	687
MEMORIAL HALL - EXTERIOR	42	0	0	0	0	0	42
MEMORIAL HALL	26	398	0	204	0	43	671

Schedule 1

Ft McIntosh Site/Building Name	No Retrofit	Retrofit	Relamp	Retrofit with a Kit or Reflector	New/ Replacement Fixture	Control Components	Total Count
LAIRD HALL - EXTERIOR	26	2	0	0	0	0	28
LAIRD HALL	17	319	0	2	0	0	338
LERMA PENA BUILDING - EXTERIOR	56	0	0	0	0	0	56
LERMA PENA BUILDING	143	530	0	64	0	2	739
MARAVILLO GYM - EXTERIOR	10	1	0	0	4	0	15
MARAVILLO GYM	143	333	15	0	0	15	506
PALOMINO PANTRY - EXTERIOR	3	0	0	0	0	0	3
PALOMINO PANTRY	3	0	0	0	0	0	3
ART BUILDING III (P-4)	5	27	0	0	0	4	36
ATHETIC DORMITORY - EXTERIOR	6	0	0	0	0	0	6
COMMUNITY SERVICES (P10/11) - EXTERIOR	2	0	0	0	2	0	4
COMMUNITY SERVICES (P10/11)	3	70	4	0	0	18	95
PURCHASING (P-49)	4	31	0	0	0	7	42
COMPTROLLER (P-13) - EXTERIOR	1	0	0	0	0	0	1
COMPTROLLER (P-13)	4	64	0	0	0	26	94
MUSIC BUILDING II (P-34/35) - EXTERIOR	13	0	0	0	0	0	13
MUSIC BUILDING II (P-34/35)	8	67	6	62	0	2	145
CHILDREN'S MUSEUM (P-149) - EXTERIOR	11	0	0	0	0	0	11
CHILDREN'S MUSEUM (P-149)	50	0	0	0	0	0	50
VETERAN'S OFFICE (P-28)	3	16	0	0	0	6	25
FORT MCINTOSH SPORTS COMPLEX - EXTERIOR	48	0	0	0	15	0	63
FORT MCINTOSH SPORTS COMPLEX	6	80	0	0	0	1	87
THEATER (T-30) - EXTERIOR	1	0	0	0	0	0	1
THEATER (T-30)	15	31	0	0	0	4	50
PROPERTY INVENTORY - EXTERIOR	1	0	0	0	0	0	1
PROPERTY INVENTORY	8	130	0	0	0	20	158
CORRAL - EXTERIOR	1	0	0	0	0	0	1
CORRAL	1	54	0	0	0	15	70

Ft McIntosh Site/Building Name	No Retrofit	Retrofit	Relamp	Retrofit with a Kit or Reflector	New/ Replacement Fixture	Control Components	Total Count
ADMIN BUSINESS ANNEX - EXTERIOR	7	0	0	0	0	0	7
ADMIN BUSINESS ANNEX	5	55	4	0	0	8	72
Total	**2,859**	**7,051**	**281**	**2,455**	**167**	**654**	**13,467**

Table 1.1 Header Descriptions

- No Retrofit – JCI will leave existing fixture "as-is"
- Retrofit – JCI will replace existing lamps with new LED lamps and remove existing fluorescent or HID ballast
- Relamp – JCI will relamp existing incandescent, CFL or halogen lamps with new LED lamps
- Retrofit with Kit or Reflector – JCI will install an LED kit to the existing fixture housing (includes recessed cans kits and troffer kits)
- New Replacement Fixture – JCI will replace the existing fixture with a new LED fixture
- Control Components – JCI will install occupancy sensors and associated power packs or wall station receivers.

General Scope

- Existing linear fluorescent fixtures will be retrofitted with non dimmable direct wire LED tubes.
- Existing troffers (1x4, 2x4, and 2x2) with linear fluorescent lamps in spaces with step dimming fluorescent ballast will be retrofitted with LED volumetric troffer kits w/ integrated sensors and dimming wall stations.
- Existing recessed cans with Compact Fluorescent pin lamps will be retrofitted with LED can kits.
- Existing recessed cans with High Pressure Sodium lamps will be retrofitted with ballast bypass LED lamps.
- Existing screw in Halogens, Compact Fluorescent, or Incandescent lamps will be re-lamped with LED screw in lamps.
- Existing Drums with Compact Fluorescent pin lamps will be replaced with LED drum fixtures.
- Existing decorative fixtures, wall sconces, night lights, and step lights with Compact Fluorescent pin lamps will be retrofitted with ballast bypass LED pin lamps.
- Select spaces not already controlled and supported by adequate burn hours will have ceiling mount, corner mount or wall switch occupancy sensors installed.

Engineering/Submittals

- Product data sheets for new materials and equipment included in Attachment 5.

Inclusions

- This Proposal is for a turnkey project, which includes material, labor, engineering, design and recycling/disposal costs.
- All work performed during standard 40-hour work week, Monday through Friday; weekends or overtime not included.
- Existing lamps, ballasts and other materials will be removed from the site by JCI in accordance with Federal, State, and Local regulations existing at the time of execution of the Agreement. Recycling of lamps and ballasts will be in compliance with applicable regulations.

- JCI acting as an agent for Customer will ensure the proper disposal of PCB containing ballasts. Hazardous waste generated during the installation of this FIM in accordance with the Federal, State, and Local laws and regulations existing at the time of execution of the Agreement.
- JCI shall provide onsite Conex containers and roll-off waste bin at the campus for material storage and disposal during the duration of the project. Customer to provide onsite location to be coordinated with site facility manager.
- All work shall be performed in accordance with industry standards and approved safety practices in effect at the time of contract signing.
- Existing and post-installation illumination levels have been/will be measured in accordance with procedures recommended by IESNA using a light meter.
- All circuit breakers, contactors, switches/controls, existing fixtures, and the electrical system in general are assumed to be operational working order and compliant with current building code requirements.
- If specified materials become either temporarily or permanently unavailable for reasons beyond the control of Johnson Controls, then the expected time for performance of the work may be extended. Johnson Controls reserves the right to provide equivalent substitutions at no price increase.
- Where ULB listed tubular LED lamp (TLED) retrofits are proposed, the tubes will be direct-wired, and the existing ballast will be removed.
- Where retrofits of existing fixtures are proposed, the scope includes wiping down prismatic lenses with dry cloth.
- Design illumination levels: In the absence of code-mandated lighting requirements, industry standards have been used as a guide, primarily the most recent edition of the Illuminating Engineering Society of North America (IESNA), IESNA Recommended Practice documents and IESNA Design Guides.
- Existing lighting systems were presumed to be designed based on IESNA recommended practices. If the space is underlit due to inadequate spacing or quantity of fixtures from initial design, which requires adding fixtures, adding circuits, reconfiguration or new construction, this will be brought to the attention of the customer. LED fixtures or components specified for the project are based on comparable original lumen outputs of existing equipment rather than depreciated light output values.
- Installation contractors shall be permitted to access the restroom facilities during construction

Exclusions

- Electrical permits and fees.
- Fixtures in areas not addressed on the detailed Scope of Work in Attachment 5.
- Design and installation of battery backup, emergency, and egress lighting systems unless detailed in Attachment 5.
- Fixtures in inaccessible areas.
- Existing task lighting and table-type light fixtures.
- Existing decorative light fixtures unless detailed in Attachment 5.
- Existing fluorescent dimming systems will remain “as-is” unless noted otherwise noted in Attachment 5. Fixture layout and spacing will remain “as-is” unless noted otherwise. Re-configuration of the existing lighting system layout unless otherwise noted.
- Removal or replacement of ceiling tiles.
- Reconfiguration of existing fixture layout unless otherwise noted in Attachment 5, room by room description of work.
- Replacement of existing wiring and/or electrical issues in exterior fixtures.

- Any electrical wiring other than that required for the retrofit or replacement within the existing lighting fixtures, the installation of new fixtures as scheduled, the installation of occupancy sensors and other controls.
- Double or bi-level switching of in-board and out-board sockets is not included unless specified in Attachment 5, room by room description of work.
- Repair, replacement and adjustments of existing sensors, time clocks, switches, occupancy sensors, or energy management systems unless otherwise noted in Attachment 5, room by room description of work.
- Calibration or adjustment of the lighting control devices post installation. JCI will set controls to the agreed upon settings at time of installation.
- Repair or replacement of louvers or other components unless denoted in Attachment 5, room by room description of work.
- Repair or replacement of yellowed, cracked, damaged or missing fixture lenses, louvers or other components unless denoted in Attachment 5, room by room description of work.
- Repair or replacement of the existing Emergency and Egress Lighting Systems unless otherwise noted in Attachment 5, room by room description of work.
- Replacement of defective emergency battery back-up ballast unless otherwise noted in Attachment 5, room by room description of work.
- Unless specified in the scope of work, no provisions are made to ensure that the light levels will comply with existing surveillance camera requirements. Proposed light levels will meet or exceed the current light levels of the exterior fixtures.
- Painting, plastering or any other type of repair to existing mounting surfaces after the removal or replacement of fixtures, unless otherwise noted. JCI to provide list of deficiencies to customer to address.
- Situations that could not be reasonably documented during the audit (i.e. concealed locations or hidden conditions).
- Work in buildings or areas not specifically indicated on the line-by-line scope of work is excluded. Should additional areas, buildings, or campuses require addition into the program, Johnson Controls will provide a written estimate for a change order.
- Relocation of customer furnishings and/or equipment, including but not limited to office furnishings, bookshelves, conference tables, sports netting, sports equipment. JCI to provide notification to customer prior to working in the area so that the customer can relocate furnishings and/or equipment.

Training

- No training shall be provided for this FIM

Closeout

JCI shall provide the following closeout documents:

- Product data for new materials and equipment installed
- Warranty information for new materials and equipment installed
- Updated line-by-line document for all work included in this FIM
- Warranty stock list of products, order forms, and procedures

Warranty

- Workmanship – 1 year workmanship guarantee in accordance with the terms and conditions of the proposal from the date of acceptance by the customer.
- Material Warranties - Manufacturer warranties of lamps, retrofit kits, and fixtures installed as part of the project are covered by the individual manufacturer's published documentation. JCI will furnish contact information for each manufacturer and transfer material warranties to customer. Customer is responsible for warranty claims once substantial completion is achieved for this FIM. Alleged defective product may be

required for return to factory for analysis. No labor is included after substantial completion, Customer shall be responsible for any costs associated with fixture replacement, return of any defective lamps, etc.

- Maintenance stock in Table 1.2is included in this proposal (LED tubes & LED lamps only). A maintenance stock sign-off will be provided to the customer at the end of construction and maintenance stock will be handed over to the customer.

Table 1.2 Lighting Maintenance Stock

Maintenance Stock Lamp Type	Maintenance Stock Qty
4' Type B LED Tube	208
3' Type B LED Tube	1
2' Type B LED Tube	26
8' Type B LED Tube	1
4' Type B T5 LED Tube	6
2' Type B T5 LED Tube	1
4' Type C LED Tube	5
3" LED U-Tube	3
6" LED Tube	1
LED A19 Lamp	3
LED A21 Lamp	2
LED A23 Lamp	2
LED A25 Lamp	1
LED Par 38 Lamp	1
LED Par 30 Lamp	1
LED MR16 Lamp	1
LED G16 Lamp	1
LED G25 Lamp	1
LED PL Lamp	5

FIM-2: Energy Management Control System

JCI will provide equipment, materials, labor, supervision, engineering, and services necessary for or incidental to the installation of the Energy Management Systems as specified in the scope below.

General

Exposed, plenum-rated cable will be installed above drop ceilings, in attic spaces and inside walls as needed to connect the specified equipment. Newly installed, exposed, plenum-rated cable will be secured neatly at regular intervals, run parallel or at right angles to the building structure, and color coded and/or labeled as "BAS" cable. In locations where cinderblock, brick or plaster construction prevents the installation of new cabling inside of walls, the new cabling will be installed (below ceiling level or below 10 ft.) in surface mounted raceway or EMT. In exposed locations, such as mechanical rooms and electrical rooms, new control cabling will be installed in EMT. Cabling, newly installed in outdoor locations, across rooftops and over covered walks will be installed in galvanized conduit and/or sealtite.

Engineering / Submittals

- Control drawings
- Equipment submittals
- Graphics submittal package

Demolition and Removal Work

Existing electric and mechanical thermostats and devices that are to be replaced will be disconnected and wiring preserved for use with new control system components. Wherever HVAC equipment or associated BAS controls are replaced, existing support systems, mounting struts, conduit and cabling will be preserved and re-used, if possible. If existing wiring and/or control tubing is deemed by Johnson Controls to be not suitable for re-use, it will be removed to above ceiling level and abandoned in place. Existing BAS control panels and field devices (if not re-used or replaced) will be abandoned in place.

New BACnet Controls

New Direct Digital Controls (DDC) furnished by Johnson Controls under this Scope of Work will be BACnet-compliant. These new controls will be installed at the Fort McIntosh Central Utility Plant and the South Campus Central Utility Plant to control chilled water systems and condenser water systems This scope excludes control work on any mechanical systems served by the Fort McIntosh or South Central Plants beyond the physical Central Plant.buildings. The new BACnet controls will be integrated onto a new Niagara Server software platform that will reside on a virtual server that is furnished and hosted by the Laredo Community College Wide Area Network IT Department. Dynamic, color graphics will be provided for each chiller plant system.

Note: Existing DDC controls existing in other buildings on the South and Fort McIntosh Campuses will remain "as-is" and will continue to report to the existing Trane Tracer Ensemble server.

Wherever possible, Johnson Controls will make use of existing DDC devices (sensors, relays, enclosures, valves, actuators, motor controllers, VFDs, safety devices, etc.), enclosures, raceway and cabling presently serving each system in the implementation of below Facility Improvement Measures (FIMs), except where specifically indicated herein as being "new". All existing Trane field controllers presently serving the two plants will be removed, and new BACnet controllers will integrate to the new Niagara server. Johnson Controls will provide low voltage cabling, BAS programming, system testing, and dynamic color graphics, as required, for each FIM described herein.

Niagara Graphical BAS Server

Johnson Controls, Inc.to furnish a Niagara Graphical Server Software platform to be installed on an owner-furnished virtual server residing on the existing Laredo Community College Wide Area Network (WAN). The Niagara web-based server will provide Laredo Community College personnel having appropriate credentials with secure access onto the new Niagara BAS from any workstation residing on the LCC WAN.

Fort McIntosh Installation Work

- Remove existing Trane BAS system at the Fort McIntosh Campus Central Utility Plant and new BACnet-compliant DDC controls to provide control over four water-cooled chillers, four primary chilled water pumps, two secondary chilled water pumps, four condenser water pumps, the existing chilled water storage tank and two ceiling-hung air handling unit systems.
- Furnish Qty-1 Jace Controller to supervise the new BACnet Field Controllers serving the plant and integrate the new controls onto the new Niagara server.
- Furnish and install new BACnet control panel “EN-CUP” having necessary BACnet controllers and expansion modules to control the Fort McIntosh Chiller Plant.
- Replace the following **sensors** with new. Re-use existing Input/Output cabling and raceway where suitable for re-use:
  - Secondary CHW Supply Temperature Sensor (Re-use existing well)
  - Secondary CHW Return Temperature Sensor (Re-use existing well)
  - Chiller-1 Chilled Water Supply Temperature Sensor (Re-use existing well)
  - Chiller-1 Chilled Water Return Temperature Sensor (Re-use existing well)
  - Chiller-1 Condenser Water Supply Temperature Sensor (Re-use existing well)
  - Chiller-1 Condenser Water Return Temperature Sensor (Re-use existing well)
  - Chiller-2 Chilled Water Supply Temperature Sensor (Furnish new well for new chiller piping)
  - Chiller-2 Chilled Water Return Temperature Sensor (Furnish new well for new chiller piping)
  - Chiller-2 Condenser Water Supply Temperature Sensor (Furnish new well for new chiller piping)
  - Chiller-2 Condenser Water Return Temperature Sensor (Furnish new well for new chiller piping)
  - Chiller-3 Chilled Water Supply Temperature Sensor (Furnish new well for new chiller piping)
  - Chiller-3 Chilled Water Return Temperature Sensor (Furnish new well for new chiller piping)
  - Chiller-3 Condenser Water Supply Temperature Sensor (Furnish new well for new chiller piping)
  - Chiller-3 Condenser Water Return Temperature Sensor (Furnish new well for new chiller piping)
  - Chiller-4 Chilled Water Supply Temperature Sensor (Re-use existing well)
  - Chiller-4 Chilled Water Return Temperature Sensor (Re-use existing well)
  - Chiller-4 Condenser Water Supply Temperature Sensor (Re-use existing well)
  - Chiller-4 Condenser Water Return Temperature Sensor (Re-use existing well)
  - Combination Outside Air Temperature/Humidity Sensor
- **Chiller and Tower Replacements:** Chiller-2 and Chiller-3 and Cooling Tower-2 and Cooling Tower-3 are to be replaced under this project.
  - Connect new Qty-2, 8in, 2-way, 120VAC, On/Off, NEMA4X Chilled Water Isolation Butterfly Valves. These valves to be controlled by the new BAS controllers to open as part of the chiller start-up sequence and be proven fully open by endswitch feedback to the BAS before the primary chilled water pump and chiller are energized.
  - Connect new Qty-2, 8in, 2-way, 120VAC, On/Off, NEMA4X Condenser Water Isolation Butterfly Valves. These valves to be controlled by the new BAS controllers to open as part of the chiller

start-up sequence and be proven fully open by endswitch feedback to the BAS before the condenser water pump, chiller or cooling tower are energized.

- Provide new expansion BACnet controllers, raceway and cabling to incorporate new Chiller-2, Chiller-3, Cooling Tower-2 and Cooling Tower-3 systems onto the new BAS.
- Qty-2, Integrate new chiller factory control panels onto the BAS via BACnet MSTP.

- **New Variable Frequency Drives with Bypass:**
  - Chiller-2 Primary CHW Pump VFD (25HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-3 Primary CHW Pump VFD (25HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-2 CDW Pump VFD (30HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-3 CDW Pump VFD (30HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Cooling Tower-2 Fan VFD (30HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Cooling Tower-3 Fan VFD (30HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - The following control points will be provided for each of the above VFDs:
    - VFD Enable/Disable
    - VFD Run Status
    - VFD Fault Status
    - VFD Speed Control
    - VFD BACnet MSTP integration to BAS
- Furnish new BACnet controller for each of two ceiling-hung air handling unit systems with new controls to include:
  - Qty-2, New Zone Temperature Sensor
  - Qty-2, New 2-way, modulating ¾" Chilled Water Valve (Characterized Ball Valve) to be installed/insulated
- Existing motor starters, start/stop relays, control cabling, safety devices and safety circuits to be preserved and re-used.

South Campus Installation Work

- Remove existing Trane BAS system at the South Campus Central Utility Plant and install new BACnet-compliant DDC controls to provide control over four water-cooled chillers, four primary chilled water pumps, two secondary chilled water pumps, four condenser water pumps and one ceiling-hung air handling unit system.
- Furnish Qty-1 Jace controller to supervise the new BACnet field controllers serving the plant and integrate the new controls onto the new Niagara server.
- The existing Trane SC+ supervisory controller presently serving the South Plant is to be preserved to continue the supervision of Trane AHU and terminal box controllers located in the Automotive Technology Center that are to remain in use on the Trane BAS system.
- Furnish and install new BACnet control panel "EN-CUP" having necessary BACnet controllers and expansion modules to control the South Chiller Plant.
- Replace the following sensors with new. Re-use existing Input/Output cabling and raceway where suitable for re-use:
  - Secondary CHW Supply Temperature Sensor (Re-use existing well)
  - Secondary CHW Return Temperature Sensor (Re-use existing well)

- Chiller-1 Chilled Water Supply Temperature Sensor (Re-use existing well)
- Chiller-1 Chilled Water Return Temperature Sensor (Re-use existing well)
- Chiller-1 Condenser Water Supply Temperature Sensor (Re-use existing well)
- Chiller-1 Condenser Water Return Temperature Sensor (Re-use existing well)
- Chiller-2 Chilled Water Supply Temperature Sensor (Furnish new well for new chiller piping)
- Chiller-2 Chilled Water Return Temperature Sensor (Furnish new well for new chiller piping)
- Chiller-2 Condenser Water Supply Temperature Sensor (Furnish new well for new chiller piping)
- Chiller-2 Condenser Water Return Temperature Sensor (Furnish new well for new chiller piping)
- Chiller-3 Chilled Water Supply Temperature Sensor (Furnish new well for new chiller piping)
- Chiller-3 Chilled Water Return Temperature Sensor (Furnish new well for new chiller piping)
- Chiller-3 Condenser Water Supply Temperature Sensor (Furnish new well for new chiller piping)
- Chiller-3 Condenser Water Return Temperature Sensor (Furnish new well for new chiller piping)
- Chiller-4 Chilled Water Supply Temperature Sensor (Re-use existing well)
- Chiller-4 Chilled Water Return Temperature Sensor (Re-use existing well)
- Chiller-4 Condenser Water Supply Temperature Sensor (Re-use existing well)
- Chiller-4 Condenser Water Return Temperature Sensor (Re-use existing well)
- Combination Outside Air Temperature/Humidity Sensor

- **Chiller Replacements:** Chiller-2 and Chiller-3 and Cooling Tower-1 and Cooling Tower-3 are to be replaced under this project. Johnson Controls will furnish:
  - Connect new Qty-2, 8in, 2-way, 120VAC, On/Off, NEMA4X Chilled Water Isolation Butterfly Valves. These valves to be controlled by the new BAS controllers to open as part of the chiller start-up sequence and be proven fully open by endswitch feedback to the BAS before the primary chilled water pump and chiller are energized.
  - Connect new Qty-2, 8in, 2-way, 120VAC, On/Off, NEMA4X Condenser Water Isolation Butterfly Valves. These valves to be controlled by the new BAS controllers to open as part of the chiller start-up sequence and be proven fully open by endswitch feedback to the BAS before the condenser water pump, chiller or cooling tower are energized.
  - Connect new Qty-2, 6in, 2-way, 120VAC, Modulating 0-10VDC, NEMA4X Condenser Water Bypass Butterfly Valves. These valves to be controlled by the new BAS controllers to maintain optimal condenser water temperature to the new chillers in mild weather.
  - Provide new expansion BACnet controllers, raceway and cabling to incorporate new Chiller-2, Chiller-3, Cooling Tower-1 and Cooling Tower-3 systems onto the new BAS.
  - Qty-2, Integrate new chiller factory control panels onto the BAS via BACnet MSTP.
- **New Variable Frequency Drives**
  - Chiller-2 Primary CHW Pump VFD (25HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-3 Primary CHW Pump VFD (25HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-2 CDW Pump VFD (40HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-3 CDW Pump VFD (40HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Cooling Tower-2 Fan VFD (40HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Cooling Tower-3 Fan VFD (40HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - The following control points will be provided for each of the above VFDs:
    - VFD Enable/Disable

    - VFD Run Status
    - VFD Fault Status
    - VFD Speed Control
    - VFD BACnet MSTP integration to BAS
- Furnish new BACnet controller for the ceiling-hung air handling unit system serving the South Plant office with new controls to include:
    - Qty-1, New Zone Temperature Sensor
    - Qty-1, New Discharge Air Temperature Sensor
    - Qty-1, New AHU Supply Fan Run Status Relay (CSR)
    - Qty-1, New 2-way, ¾" modulating Chilled Water Valve (Characterized Ball Valve) to be installed/insulated
- Existing motor starters, start/stop relays, control cabling, safety devices and safety circuits to be preserved and re-used.
- **South Plant Secondary Pumps**
    - Furnish new Variable Frequency Drives with bypass for installation and power wiring to replace the two Secondary Chilled Water Pump VFDs:
    - Qty-2, Secondary CHW Pump VFD 100HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway
    - The following control points will be provided for each of the above VFDs:
        - VFD Enable/Disable
        - VFD Run Status
        - VFD Fault Status
        - VFD Speed Control
        - VFD BACnet MSTP integration to BAS

Clarifications

- IT infrastructure is understood to be existing, functioning properly and available for use by Johnson Controls, Inc. in support of new IP controls. Where new IP connection to Laredo Community College LAN is required, Johnson Controls, Inc. to install new Cat6 cabling from new IP device (e.g., Server, Supervisory Engine Controller, BACnet/IP to MSTP Router, etc.) to an IDF/MDF closet designated by the Laredo Community College IT Dept. The Laredo Community College IT Department will provide properly configured port and make final termination of the new Cat6 cabling. Most buildings will require a single new LAN port, although some buildings may require two LAN ports. In the event that a building is not equipped with LAN connectivity, Johnson Controls, Inc. will install a standalone Supervisory controller that will be capable of LAN connectivity should it become available in that building at a future date.
- Excludes provision of hardware server(s), workstation(s), network switches, etc. Server software will be installed on a virtual machine furnished and hosted on the existing Laredo Community College Wide Area Network (WAN) by the LCC IT Dept. SQL Licensing to be provided by Laredo Community College IT Department. Laredo Community College employees having proper credentials will have access to the new BAS system via Owner-furnished workstations residing on the existing LCC WAN.
- Laredo Community College is responsible for furnishing and maintaining VPN services for remote monitoring, maintenance and troubleshooting of new control system by Johnson Controls, Inc.
- Laredo College to provide Johnson Controls with login and access to new control system, for monitoring, maintenance and troubleshooting.

- Wherever existing control devices (e.g., pneumatic thermostats, electric thermostats) are to be replaced with new DDC controls, the existing tubing, wiring, raceway, etc., serving the existing devices will be demolished (if not suitable for re-use) back to ceiling spaces and walls, capped and abandoned in place.
- Wherever possible, existing BAS enclosures, raceway, cabling, will be re-used with the new BAS system.
- Excludes repair or replacement of any high voltage electrical services.
- Excludes new Airflow Measuring Stations, Water Flow Meters, Power Energy Meters, Amperage Meters, Voltage Meters, Natural Gas Meters.
- Excludes repair or replacement of any starters, Variable Frequency Drives and/or disconnects, except where specifically included, herein.
- Excludes BAS control of existing mini-split DX systems, Unit Heaters, Radiant Heaters, Exhaust Fans, etc., unless otherwise specifically included in this Scope of Work. These systems are to remain on existing local controls.
- Excludes work in areas containing hazardous materials.
- Excludes commissioning of existing controls systems, unless specified in this Scope of Work
- Excludes the repair or replacement of any existing mechanical safety devices (e.g., firestats, freezestats, duct smoke detectors). It is assumed that existing safety devices are in good operating condition and will be re-used.
- Excludes repair or replacement of defective or non-functional mechanical, electrical and/or controls equipment, other than the equipment specifically included in the Scope of Work. JCI will identify the location of defective equipment and notify Customer.
- Excludes repair or upgrades required to make the HVAC, electrical and mechanical systems functional, or to bring the HVAC, electrical and mechanical systems up to Code, unless specifically included in the Scope of Work.
- Excludes calibration or re-calibration of new or existing sensors. New analog input devices (e.g., temperature sensors, humidity sensors, CO2 sensors, pressure transmitters, etc.) furnished as part of this project will be factory calibrated prior to shipment. Existing field devices that are to be re-used are assumed to be properly calibrated and in good working order. Re-calibration/adjustment of existing field BAS devices (e.g., sensors, thermostats, actuators, transducers, etc.) is not included in this proposal, but can be provided at an additional cost.
- Excludes the provision or integration of BAS to new or existing lighting controls.
- Excludes smoke dampers, smoke controls and/or UL864/UUKL components.
- Excludes costs associated with removal, re-installation, re-testing and/or re-certifying of fire alarm system devices, such as duct smoke detectors and fire alarm system shutdown relays.
- Excludes air and water balance of the existing HVAC and mechanical systems unless otherwise included in the Scope of Work.
- Excludes the resolution of existing mechanical and/or electrical design, service or distribution deficiencies, known or unknown.
- Excludes temporary space conditioning or power.
- Excludes engineering services, studies and analysis associated with any exclusions or work clearly outside of the Scope of Work definition.
- Excludes Duct and coil cleaning.
- Excludes any controllers or BAS devices for future capacity and/or shelf stock.
- Excludes mechanical installation/piping/sheetmetal/insulation work associated with new Pressure Transmitters, Control Valves, Control Dampers, Flow meters, Immersion Wells, new VAV boxes and new VAV retrofit kits unless otherwise noted.

- Excludes demolition and removal of existing air compressor systems that may no longer be required following the BAS system upgrades.
- Where specifically included in this proposal, the retrofit of existing pneumatic terminal boxes to DDC control assumes that existing terminal boxes are equipped with an external rotary shaft that rotates an internal blade type damper. Existing terminal boxes that are equipped with internal worm-gear driven, piston-type or plunger-type airflow regulators (e.g., Old Trane Varitrane type boxes with orifice plate airflow regulation) cannot be retrofitted to a DDC rotary type actuator. Conversion, retrofit or replacement of these type boxes or their airflow regulation mechanism to enable DDC control is excluded from this proposal.
- The BAS construction period is assumed to be 4 months. Any extension of the project schedule beyond 4 months will require a change order for extended General Conditions.
- Excludes provision of 3rd Party Commissioning Agent and/or labor to support a 3rd Party Commissioning Agent that is furnished by others.
- Excludes removal, replacement or repair of existing “spline” ceilings or ceiling tiles required to access equipment in ceiling spaces.
- Excludes sealants of any kind (fire, smoke and general joint sealants), beyond defined scope of work.
- Excludes cutting and patching of walls, floors, decks, partitions, beyond defined scope of work.
- Excludes wireless transmission, trenching, boring or underground conduit installation.
- Excludes the provision or installation of plastic-coated conduit (e.g., “plasti-bond” or “Rob Roy”).
- Where existing chillers, boilers and cooling towers are to be replaced as part of the scope of this project, it is assumed that existing automatic isolation valves and automatic bypass control valves are to be re-used, unless specifically included, herein.

Training

Prior to substantial completion, Johnson Controls shall provide two 8-hour, on-site at Laredo College campus training sessions to include the following material:

- Review of project designs, drawings, and sequences of operation
- User accounts, passwords, and user levels
- Trend data, including how to create new trends
- Navigation of User Interface and Graphics
- Alarm creation, reception, and acknowledgement

Owner Factory Training

- Fundamental Control Strategies for HVAC Systems #215 (Qty-4 Person)
  - 5-Day Training at Manufacturer training center providing face-to-face instruction in a classroom environment. Teaches students how to analyze a number of HVAC systems and their associated controls, including central plant, air and water distribution and terminal systems. The course also covers psychrometrics, air properties, HVAC processes, control system fundamentals, sensor types and applications, control system configurations, feed forward and feedback control loops, reset control strategies, controlled devices (valves, dampers, actuators), hot/chilled water distribution systems, control strategies for Water Distribution systems, Hot/Chilled Water terminal systems, Control Strategies for Water Terminal Systems, Air Distribution Systems, Control Strategies for Air Distribution Systems, 100% OA System Control Strategies, Mixed Air System Control Strategies, Variable Air Volume Control Strategies, VAV Terminal Unit Control Strategies, Introduction to Facility Management Systems, Hands on Lab, Final Review.
- Facility Explorer (FX) Field Controller Engineering #4714 (Qty-4 Person)
  - 5-Day Training at Manufacturer training center providing face-to-face instruction in a classroom environment. Provides an overview of the Facility Explorer (FX) field controller system, create

programs from standard tree systems using the Programmable Controller and Commissioning Tool, downloading code into controllers, configuring controllers and software.

- Optimizing Strategies for CCT Programming with Facility Explorer Systems #3028 (Qty-4 Person)
  - 3-Day Training at Manufacturer training center providing face-to-face instruction in a classroom environment. Teaches advanced programming, how to customize standard FX BACnet controller programs, Logic and Expression Blocks, PID and PRAC+, State Tables, Command Hierarchy, Sequencer and Multi-State controllers.
- Facility Explorer (FX) N4 TCP Certification #4720 (Qty-4 Person)
  - 5-Day Training at Manufacturer training center providing face-to-face instruction in a classroom environment. Provides instruction on design, engineering and programming FX systems using FXWorkbench Pro running on Niagara4, Station creation, adding BACnet controllers, Extension Manager, Control Logic, Scheduling, Defining Users and Roles, testing for Niagara4 Technical Certification Program (TCP) taken at end of course.
- **NOTE:** This scope of work includes only the cost of tuition for the above factory classes. Customer is responsible for covering their employee travel expenses (flight, rental car, lodging, meals, per diem, etc.). Johnson Controls may issue pre-paid certificates for any or all of the courses included in this scope of work. The Customer shall be responsible for registering their employees for classes directly with the training facility.

Warranty

- Johnson Controls to provide a one year workmanship warranty from the date of substantial completion
- Any manufacturer's warranty beyond one year shall be transferred to the Customer.

Closeout

Johnson Controls shall provide the following closeout documents:

- Product data for new materials and equipment installed
- Warranty information for new materials and equipment installed

FIM 3 Chiller Replacements

This FIM will replace four (4) Water-Cooled Centrifugal Chillers listed in Table 3.1 below with new high-efficiency chillers. The pumps serving these chillers shall also be replaced as listed in Table 3.2 below. The primary and condenser pumps for Chillers 1 and 4 at South Campus shall also be upsized and replaced. The secondary pumps at South Campus shall both be replaced.

Table 3.1 Chiller Replacements (Existing Chillers)

Site	Unit Tag	Manufact.	Model No.	Serial No.	Volt	Phase	Tons	Refrig.
Fort McIntosh	CH 2	Trane	CVHE050	Unknown	460	3	400	R-123
Fort McIntosh	CH 3	Trane	CVHE050	Unknown	460	3	400	R-123
South Campus	Chiller 2	Trane	CVHE045	L03B02702	460	3	350	R-123
South Campus	Chiller ~~3~~1	Trane	CVHE045	~~L03B02704~~L18G03212	460	3	350	R-123

Table 3.2 Pump Replacements (Existing Pumps)

Site	Unit Tag	Manufact.	Model No.	Serial No.	Volt	Phase	Hp	GPM	Head FT
Fort McIntosh	P1BC	Dayton	4GZD1	YA E615B632052	460	3	25	1126	70
Fort McIntosh	P1CC	Baldor	39L31W591	96020	460	3	25	1126	70
Fort McIntosh	P2BE	US Electric	J378A	Z03V306R094R-26	460	3	30	640	120
Fort McIntosh	P2CE	US Electric	J378A	Z05Y306R094R-28	460	3	30	640	120
South Campus	PCHWP 1	Baldor	37B102S520G1	F1804185869	460	3	7.5	570	30
South Campus	PCHWP 2	Baldor	37B101Y587H1	F0302041929	460	3	7.5	570	30
South Campus	PCHWP 3	Baldor	37B101Y587H1	F0302041824	460	3	7.5	570	30
South Campus	PCHWP 4	Baldor	37F614S520G1	F1806145933	460	3	7.5	570	30
South Campus	CWP 1	Baldor	M39K057X747	X1806M86484	460	3	7.5	760	30
South Campus	CWP 2	Baldor	37B101Y514H1	F0210252279	460	3	10	760	30
South Campus	CWP 3	Baldor	37B101Y514H1	F0211261515	460	3	10	760	30
South Campus	CWP 4	Baldor	37J839L863G1	F2402195510	460	3	7.5	760	30
South Campus	SCHWP 1	Baldor	44E057V116H1	Z0212030255	460	3	100	2585	120
South Campus	SCHWP 2	Baldor	44E057V116H1	Z0212030235	460	3	100	2585	120

Engineering/Submittals

- JCI shall provide a complete design of the final design drawings
- JCI shall provide the following equipment submittals:
  - Mechanical Package
    - Tower
    - Pump
    - Insulation
    - Piping
  - Chiller

Demolition and Removal

Electrical

- Disconnect and secure electrical connections to the chillers and pumps as listed in Tables 3.1 and 3.2

Mechanical

- Disconnect, remove, and properly dispose of the existing chillers in Table 3.1 above
- Disconnect, remove, and properly dispose of the existing 8" CHW isolation valves (4 total)
- Reclaim and properly dispose of refrigerant and oil per local codes in effect at time of contract signing.
- Disconnect, remove, and properly dispose of the existing pumps in Table 3.2 above

Controls

- Disconnect and secure building automation systems

Installation Work

Mechanical

- Provide and install four (4) new chillers for existing chillers in Table 3.1 above as detailed in **Attachment 6 – Plant Upgrades 30% Design Drawings**
  - New chillers at Fort McIntosh shall be 400 tons and the following models or approved equivalent
    - York Model YKDQPQ6-EMH or approved equivalent
  - New chillers at South Campus shall be 500 tons and the following models or approved equivalent
    - York Model YKFKLQ7-ERH or approved equivalent
  - Each new chiller will have a BACnet card
- Verify existing housekeeping pad is of adequate size for new chillers. If not, modify existing pad as required to fit new chillers
- Install new refrigeration monitoring system as required for new refrigerant
- Each chiller shall be located in the existing location with chilled water piping, condenser water piping, and all other piping extended as detailed in **Attachment 6**
- Insulate new chilled water piping, valves and fittings as required. Label piping to match existing design. Repair or replace any chilled water insulation damaged during installation. New insulation shall comply with the energy code in effect at the time of contract signing.
- Paint new piping to match existing.
- Startup, checkout and verify modes (stages) of operation (by factory authorized representative), including measurement and verification of "part-load" and "full-load" efficiencies, and unit control features per manufacturers' startup and checkout procedures.
- Install each new chiller per manufacturer's criteria and local codes.
- Clean up of all job-related debris each day and remove tools, and equipment after installation and operational checkout.
- Test and Balance of new system shall consist of profile of new pumps, chillers, and towers, within defined scope of work. No testing shall be conducted outside of defined scope of work, in any existing building or on any equipment served outside the Fort McIntosh and South Chilled Water Plants.
- Provide and Install the following **New Isolation Valves at Fort McIntosh**
  - Qty-2, 8in, 2-way, 120VAC, On/Off, NEMA4X Chilled Water Isolation Butterfly Valves. Insulate as required.

- Qty-2, 8in, 2-way, 120VAC, On/Off, NEMA4X Condenser Water Isolation Butterfly Valves. Insulate as required.

- Provide and Install the following **New Variable Frequency Drives at Fort McIntosh**
  - Chiller-2 Primary CHW Pump VFD (25HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-3 Primary CHW Pump VFD (25HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-2 CDW Pump VFD (30HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-3 CDW Pump VFD (30HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Cooling Tower-2 Fan VFD (30HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Cooling Tower-3 Fan VFD (30HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
- Provide and Install the following **New Isolation Valves at South Campus**
  - Qty-2, 8in, 2-way, 120VAC, On/Off, NEMA4X Chilled Water Isolation Butterfly Valves. Insulate as required.
  - Qty-2, 8in, 2-way, 120VAC, On/Off, NEMA4X Condenser Water Isolation Butterfly Valves. Insulate as required.
  - Qty-2, 6in, 2-way, 120VAC, Modulating 0-10VDC, NEMA4X Condenser Water Bypass Butterfly Valves. Insulate as required.
- Provide and Install the following **New Variable Frequency Drives at South Campus**
  - Chiller-2 Primary CHW Pump VFD (25HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-~~3~~ 1 Primary CHW Pump VFD (25HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-2 CDW Pump VFD (40HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Chiller-~~3~~ 1 CDW Pump VFD (40HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Cooling Tower-~~2~~ 1 Fan VFD (40HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
  - Cooling Tower-3 Fan VFD (40HP, 480VAC/3Ph/NEMA1 with Factory Startup & BACnet Gateway)
- Flush new chillers and new water pipe and bleed air from the new pipe.
- Provide and install fourteen (14) new pumps to replace existing pumps in Table 3.2 above as detailed in **Attachment 6**
  - South Campus pumps ~~PCHWP1~~PCHWP 3, PCHWP 4, ~~CWP1~~CWP 3, and CWP 4 shall be upsized to 15 hp.
  - All new pumps shall be Gorman-Rupp

Electrical

- Modify electrical breaker as necessary to accommodate new chillers.
- Provide disconnect as required by NEC.
- Connect power to the new chillers. Existing electrical devices and wiring will be reused if adequately sized, replace if necessary.
- Replace electrical wiring for pumps P1BC and P2BE (condenser and primary pumps for Chiller 2) back to MCC
- Rewire South Campus Plant as detailed in **Attachment 6**

- Connect power to the new pumps. Existing electrical devices and wiring will be reused if adequately sized, replace if necessary.

Controls

- Reconnect equipment to building automation system

Exclusions

- Communication board upgrades to existing chillers
- Repairs of existing Chillers
- Temporary Chilled Water during Chiller replacement
- Repair or replacement of defective mechanical, electrical or controls equipment, except the equipment described in the FIM description. Johnson Controls will identify the location of defective equipment and notify the customer.
- Repair or upgrades required due to bring adjacent electrical and mechanical systems up to code.
- Water balance of additional equipment (air handlers, condensers, etc.), unless specified in the scope of work.
- New water treatment systems or upgrades/modifications to existing water treatment systems .
- Engineering services, studies and analysis associated with any exclusions or work clearly outside of the scope definition.
- Unknown permits, fees or processes required by local or oversight jurisdiction and/or utilities

Training

- One-time operator training (4 hours total).

Closeout

- Provide warranty documentation and Operation & Maintenance manuals.
- Product data for new equipment installed

Warranty

- 5-Year chiller manufacture warranty on new chillers beginning on the date of chiller start up or eighteen months from date of chiller shipment whichever occurs first.
- One year warranty on all materials and equipment from date of substantial completion.
- Any additional manufacturers warranties shall be transferred to the Customer

FIM 4 Cooling Tower Replacements

This FIM will replace four (4) Cooling Towers listed in Table 4.1 below with new stainless steel cooling towers. The VFDs serving the towers in Table 4.1 will also be replaced.

Table 4.1 Cooling Tower Replacements (Existing Towers)

Site	Unit Tag	Manufact.	Model No.	Serial No.	GPM	Tons	Fan HP
Fort McIntosh	CT 2	Baltimore	PT2-1212A-301	U135816704-02	1125	375	30
Fort McIntosh	CT 3	Baltimore	PT2-1212A-301	U135816704-03	1125	375	30
South Campus	CT 1	Baltimore	Not Legible	U1876557010101	836	299	20
South Campus	CT 3	Baltimore	3299A	U037190502MAD	836	299	20

Engineering/Submittals

- Final engineering for the cooling towers and VFDs in this scope of work shall be included with the design drawings in FIM 3 Chiller Replacements
- JCI shall provide the following equipment submittals:
  - Mechanical Package
    - Tower
    - Pump
    - Insulation
    - Piping
    - Structural

Demolition and Removal

Electrical

- Disconnect and secure electrical connections for cooling towers listed in Table 4.1 above
- Disconnect, remove, and dispose existing VFDs to tower fans
- Disconnect and secure electrical connections to the basin heat and service outlets

Mechanical

- Disconnect, remove, and properly dispose of condenser water piping as detailed in **Attachment 6**
- Disconnect, remove, and properly dispose of make-up water and overflow piping
- Disconnect, remove, and properly dispose of four existing cooling towers as shown in Table 4.1 above
- Disconnect, remove, and properly dispose of steel structural supports for cooling towers in Table 4.1.

Controls

- Disconnect and secure building automation system connections

Installation Work

Mechanical

- Wrap existing concrete piers at Fort McIntosh as detailed in **Attachment 6**
- Install new concrete piers at South Campus as detailed in **Attachment 6**

- Provide and install new cooling towers to replace existing in Table 4.1 above
  - New towers shall be 400 ton fully stainless steel BAC towers at Fort McIntosh and 500 ton fully stainless steel BAC towers at South Campus as detailed in **Attachment 6**
  - New towers shall have same basin elevation as remaining existing towers
  - New towers shall be induced draft with inverter duty motors
  - Include guard rails and ladders as required for tower maintenance
- Provide and install new CDW header at South Campus as detailed in **Attachment 6**
- Reconnect condenser, make-up water and overflow piping to the new towers as detailed in **Attachment 6**
- Paint piping to match existing.
- Replace manual isolation valves at tower basins and hot deck for towers as detailed in **Attachment 6**
- Modify piping, valves, strainers as detailed in **Attachment 6**
- Flush all new water pipe and bleed air from the system.
- At South Campus, Customer to provide specified locations for Customer provided water treatment systems within this scope of work prior to the start of installation of this FIM.
- Startup, checkout and verify all modes (stages) of operation (by factory-authorized rep) per manufacturers' startup and checkout procedures.

Electrical

- Replace existing electrical devices and wiring back to MCC panel including tower and basin heater disconnects.
- Provide and install new VFDs for tower fans.
- Wiring at South Campus Plant as detailed in **Attachment 6**
- Provide and install disconnect as required by NEC
- Cooling Tower Factory Supplied Components:
  - Connect power to Factory Supplied tower fans, basin heater, and new safeties .
  - Wire and connect Factory Supplied oil level and vibration sensor, wire shutdown circuit to new VFDs
  - Wire and connect and provide necessary power to Factory Supplied gearbox oil level sensor

Controls

- Reconnect to building automation system

Exclusions

- Temporary cooling during transition
- Repair or replacement of defective mechanical, electrical or controls equipment, except the equipment described in the FIM description. Johnson Controls will identify the location of defective equipment and notify the customer.
- Repair or upgrades required due to bring adjacent electrical and mechanical systems up to code.
- Water balance of additional equipment (air handlers, condensers, etc.), unless specified in the scope of work.
- New water treatment systems, unless specified in the scope of work.
- Engineering services, studies and analysis associated with any exclusions or work clearly outside of the scope definition.
- Unknown permits, fees or processes required by local or oversight jurisdiction and/or utilities

Training

- One-time operator training (4 hours total).

Closeout

- Provide warranty documentation and Operation & Maintenance manuals.
- Product data for new equipment installed

Warranty

- 5-Year new cooling tower manufacture warranty on fans, fan shafts, bearings, sheaves, gear boxes, drive shafts, couplings and mechanical equipment support beginning on the date of cooling tower start up or eighteen months from date of cooling tower shipment whichever occurs first.
- One year warranty on all materials and equipment from date of substantial completion.
- Any additional manufacturer's warranties shall be transferred to the Customer

FIM 5 Cooling Tower Evaporative Credit

This FIM will add water meters on cooling tower make up lines and blow downs at both central plants. These meters will be read by the city's AMR system and resulting in a sewer credit for cooling tower evaporation.

Engineering/Submittals

- Product data submittal on water meter

Installation Work

Mechanical

- Provide and install two (1) new smart water meter to be installed on Cooling Tower common makeup line at Fort McIntosh.
  - Meter shall be compatible with City of Laredo's AMR system
- Provide and install four (4) new smart water meters to be installed on each cooling tower blow down line at Fort McIntosh
  - Meters shall be compatible with City of Laredo's AMR system
  - Meters shall be installed before blowdown valve to remain wet
- Provide and install two (1) new smart water meter to be installed on Cooling Tower common makeup line at South Campus.
  - Meter shall be compatible with City of Laredo's AMR system
- Provide and install four (4) new water meters to be installed on each cooling tower blow down line at South Campus
  - Meters shall be compatible with City of Laredo's AMR system
  - Meters shall be installed before blowdown valve

Exclusions

- Customer is responsible for acquiring approval from the City of Laredo Water Utility for the installation, integration and utility credits for this FIM. JCI to assist Customer as necessary.

Training

- One-time operator training (2 hours total).

Closeout

- Provide warranty documentation and Operation & Maintenance manuals.
- Product data for new equipment installed

Warranty

- One year warranty on all materials and equipment from date of substantial completion.
- Any additional manufacturers warranties shall be transferred to the Customer

ASSURED PERFORMANCE GUARANTEE

I. PROJECT BENEFITS

A. Certain Definitions. For purposes of this Agreement, the following terms have the meanings set forth below:

Annual Project Benefits are the portion of the projected Total Project Benefits to be achieved in any one year of the Guarantee Term.

Annual Project Benefits Realized are the Project Benefits actually realized for any one year of the Guarantee Term.

Annual Project Benefits Shortfall is the amount by which the Annual Project Benefits exceed the Annual Project Benefits Realized in any one year of the Guarantee Term.

Annual Project Benefits Surplus is the amount by which the Annual Project Benefits Realized exceed the Annual Project Benefits in any one year of the Guarantee Term.

Baseline is the mutually agreed upon data and/or usage amounts that reflect conditions prior to the installation of the Improvement Measures as set forth in Section IV below.

Guarantee Term will commence on the first day of the month next following the Substantial Completion date and will continue through the duration of the M&V Services, subject to earlier termination as provided in this Agreement.

Installation Period is the period beginning on JCI's receipt of Customer's Notice to Proceed and ending on the commencement of the Guarantee Term.

Measured Project Benefits are the utility savings and cost avoidance calculated in accordance with the methodologies set forth in Section III below.

Non-Measured Project Benefits are identified in Section II below. The Non-Measured Project Benefits have been agreed to by Customer and will be deemed achieved in accordance with the schedule set forth in the Total Project Benefits table below. Customer and JCI agree that: (i) the Non-Measured Project Benefits may include, but are not limited to, future capital and operational costs avoided as a result of the Work and implementation of the Improvement Measures, (ii) achievement of the Non-Measured Project Benefits is outside of JCI's control, and (iii) Customer has evaluated sufficient information to conclude that the Non-Measured Project Benefits will occur and bears sole responsibility for ensuring that the Non-Measured Project Benefits will be realized. Accordingly, the Non-Measured Project Benefits shall not be measured or monitored by JCI at any time during the Guarantee Term, but rather shall be deemed achieved in accordance with the schedule set forth in the Total Project Benefits table below.

Project Benefits are the Measured Project Benefits plus the Non-Measured Project Benefits to be achieved for a particular period during the term of this Agreement.

Total Project Benefits are the projected Project Benefits to be achieved during the entire term of this Agreement.

B. Project Benefits Summary. Subject to the terms and conditions of this Agreement, JCI and Customer agree that Customer will be deemed to achieve a total of **$2,567,663** in Non-Measured Project Benefits, **$4,509,507** in Capital Cost Avoidance, and JCI guarantees that Customer will achieve a total of **$6,291,222** in Measured Project Benefits during the term of this Agreement, for Total Project Benefits of **$13,368,391,** as set forth in the Total Project Benefits table below.

Total Project Benefits***

Year	Measured Benefits	Non-Measured Benefits		Annual Project Benefits
	Utility Cost* Avoidance	Operational** Cost Avoidance	Capital Cost Avoidance	
1	$226,483	$171,178	$4,509,507	$4,907,168
2	$231,390	$171,178	$0	$402,568
3	$236,551	$171,178	$0	$407,728
4	$241,978	$171,178	$0	$413,155
5	$247,685	$171,178	$0	$418,863
6	$253,689	$171,178	$0	$424,866
7	$260,003	$171,178	$0	$431,181
8	$266,647	$171,178	$0	$437,824
9	$278,731	$171,178	$0	$449,908
10	$291,384	$171,178	$0	$462,561
11	$304,633	$171,178	$0	$475,810
12	$318,508	$171,178	$0	$489,685
13	$333,039	$171,178	$0	$504,216
14	$348,258	$171,178	$0	$519,436
15	$364,201	$171,178	$0	$535,378
16	$380,902	$-	$0	$380,902
17	$398,399	$-	$0	$398,399
18	$416,731	$-	$0	$416,731
19	$435,940	$-	$0	$435,940
20	$456,071	$-	$0	$456,071
Total	**$6,291,222**	**$2,567,663**	**$4,509,507**	**$13,368,391**

* Utility Cost Avoidance figures in the table above are based on anticipated increases in unit energy costs as set forth in the utility rate table in Section IV. The Base Utility Cost shall be escalated annually by the actual utility cost escalation but such escalation shall be no less than the mutually agreed “floor” escalation rates defined in Section IV.

** Non-Measured Operational Cost Avoidance Benefits figures in the table above are an annual average value and will not be escalated throughout the term of this agreement.

*** Values are rounded to the nearest dollar

Within sixty (60) days of the commencement of the Guarantee Term, JCI will calculate the Measured Project Benefits achieved during the Installation Period plus any Non-Measured Project Benefits applicable to such period and advise Customer of same. Any Project Benefits achieved during the Installation Period may, at JCI’s discretion, be allocated to the Annual Project Benefits for the first year of the Guarantee Term. Within sixty (60) days of the first 10 anniversaries of the commencement of the Guarantee Term, JCI will calculate the Measured Project Benefits achieved for the applicable year plus any Non-Measured Project Benefits applicable to such period and advise Customer of same.

Customer acknowledges and agrees that if, for any reason, it (i) cancels or terminates receipt of M&V Services, (ii) fails to pay for M&V Services in accordance with Schedule 4, (iii) fails to fulfill any of its responsibilities necessary to enable JCI to complete the Work and provide the M&V Services, or (iv) otherwise cancels, terminates or materially breaches this Agreement, the Assured Performance Guarantee shall automatically terminate and JCI shall have no liability hereunder.

C. Project Benefits Shortfalls or Surpluses.

(i) *Project Benefits Shortfalls*. If an Annual Project Benefits Shortfall occurs for any one year of the Guarantee Term, JCI shall, at its discretion and in any combination, (a) set off the amount of such shortfall against any unpaid balance Customer then owes to JCI, (b) where permitted by applicable law, increase the next year's amount of Annual Project Benefits by the amount of such shortfall, (c) pay to Customer the amount of such shortfall, or (d) subject to Customer's agreement, provide to Customer additional products or services, in the value of such shortfall, at no additional cost to Customer.

(ii) *Project Benefits Surpluses*. If an Annual Project Benefits Surplus occurs for any one year of the Guarantee Term, JCI may, at its discretion and in any combination, (a) apply the amount of such surplus to set off any subsequent Annual Project Benefit Shortfall during the Guarantee Term, or (b) bill Customer for the amount of payments made pursuant to Section C(i)(c) above and/or the value of the products or services provided pursuant to clause C(i)(d) above, in an amount not to exceed the amount of such surplus.

(iii) *Additional Improvements*. Where an Annual Project Benefits Shortfall has occurred, JCI may, subject to Customer's approval (which approval shall not be unreasonably withheld, conditioned, or delayed), implement additional Improvement Measures, at no cost to Customer, which may generate additional Project Benefits in future years of the Guarantee Term.

II. NON-MEASURED PROJECT BENEFITS

The size of this project is dependent upon the financial criteria established by the customer. Savings can be obtained not only through a reduction in utility consumption, but also through reduced (avoided) amounts of purchased materials and maintenance costs due to the implementation of this project. By allowing non-measured benefits for minor FIM's utility cost avoidances and also allowing savings for operations and maintenance savings to benefit this project, the customer will be able to achieve even more significant improvements and upgrades.

Non-Measured Project Benefits from the following Improvement Measures are detailed below:

FIM No.	Description	Material Savings	Repair Savings
1	LED Lighting Upgrades	$15,444	-
2	Chiller Replacements	-	$110,472
4	Cooling Tower Replacements	-	$45,262
	Total Year 1	**$15,444**	**$155,734**

Note: There is no annual escalation for Material or Maintenance savings.

FIM 1: LED Lighting Upgrades (Material Savings)

Non-measured savings associated with Lighting Retrofits include material savings for replacement bulbs and ballasts. The new lamps and ballasts will fail at a lesser rate than the existing lamps and ballasts, as the rated life of the new lamps and ballast (in most cases) is greater than the rated life of the existing equipment. Material warranties of the proposed equipment are also factored into the savings calculations.

Below are the equations used to calculate the annual material savings for each type of fixture.

- **Lamp Unit Cost per Hour** = Average Lamp Cost ÷ Average Lamp Life.
- **Ballast Unit Cost per Hour** = Average Ballast Cost ÷ Average Ballast Life.
- **Existing Annual Lamp Material Cost** = Existing Burn Hours × Quantity of Lamps × Lamp Unit Cost per Hour.
- **Existing Annual Ballast Material Cost** = Existing Burn Hours × Quantity of Ballasts × Ballast Unit Cost per Hour.
- **Proposed Annual Lamp Material Cost** = Existing Burn Hours × Quantity of Lamps × Lamp Unit Cost per Hour.
- **Proposed Annual Ballast Material Cost** = Existing Burn Hours × Quantity of Ballasts ×Ballast Unit Cost per Hour.
- **Proposed Annual Material Cost** = Proposed Burn Hours × ((Quantity of Lamps × Lamp Unit Cost per Hour) + (Quantity of Ballasts × Ballast Unit Cost per Hour)).
- **Annualized Project Term Material Savings** = ((Project Term × (Existing Annual Lamp Material Cost + Existing Annual Ballast Material Cost)) - ((Project Term - Proposed Lamp Warranty Period) × Proposed Annual Lamp Material Cost) + ((Project Term - Proposed Ballast Warranty Period) × Proposed Annual Ballast Material Cost))) ÷ Project Term.
- **Annualized Warranty Term Material Savings** = ((Existing Annual Lamp Material Cost × Proposed Lamp Warranty Period) + (Existing Annual Ballast Material Cost × Proposed Ballast Warranty Period)) ÷ Project Term.

Campus	Material Savings
Fort McIntosh	$15,444
TOTAL	$15,444

The non-measured project benefits associated with FIM 1 (LED Lighting Upgrades) are based on lighting component expenditures and averaged, annually, for 15 years. Lighting material savings will not be realized in Years 16-20.

FIM 3: Chiller Replacements (Repair Savings)

Non-measured benefits associated with Chiller Replacements consist of maintenance savings. The savings are based on the costs of repairs at Laredo College from July 2023 through June 2025. There will not be any escalation of the Non-measured benefits over the term that the avoided costs are reported for this FIM.

Based on data provided during development, the Customer has spent, on average, $110,472 annually for repairs to the existing chillers that this FIM replaces. Chiller maintenance savings is only for 15 years and will not be realized in Years 16-20.

Campus	Chiller Repair Savings
Fort McIntosh Chillers 2 and 3	$31,538
South Campus Chillers 2 and 3	$78,934
TOTAL	$110,472

FIM 4: Cooling Tower Replacements (Repair Savings)

Non-measured benefits associated with Cooling Tower Replacements consist of maintenance savings. The savings are based on the costs of repairs at Laredo College from July 2023 through June 2025. There will not be any escalation of the Non-measured benefits over the term that the avoided costs are reported for this FIM.

Based on data provided during development, the Customer has spent, on average, $45,262 annually for repairs to the existing towers that this FIM replaces. Tower maintenance savings is only for 15 years and will not be realized in Years 16-20.

Campus	Cooling Tower Repair Savings
Fort McIntosh Towers 2 and 3	$29,126
South Campus Towers 1 and 3	$16,136
TOTAL	$45,262

Future Capital Avoidance

The chillers and cooling towers that are being replaced in this project are designated for replacement on the Customer's future capital improvement plan. Customer has agreed to allocate funds from its current Capital Improvement Budget to this project to avoid the future capital expense of replacing these four chillers and four cooling towers at some point in the future.

Customer has agreed to contribute **$4,509,507** from its current Capital Improvement Budget as a one-time cash contribution to the overall cost of this project to be contributed during the Installation Phase.

Customer has advised, and acknowledged, that the Work avoids future capital spending at or above the amount of its contribution above.

Customer agrees that the Non-Measured Project Benefits are reasonable and that the installation of the Improvement Measures will enable Customer to take actions that will result in the achievement of such Non-Measured Project Benefits.

III. MEASUREMENT AND VERIFICATION METHODOLOGIES

The following is a brief overview of the measurement and verification methodologies applicable to the Improvement Measures set forth below. JCI shall apply these methodologies, as more fully detailed in the guidelines and standards of the International Measurement and Verification Protocol (IPMVP) and/or the Federal Energy Management Program (FEMP), in connection with the provision of M&V Services hereunder.

Option A
Retrofit Isolation with Key Parameter Measurement

Measured Project Benefits are determined by partial field measurement of the energy use of the system(s) to which an Improvement Measure was applied separate from the energy use of the rest of the facility.

Partial measurement means that some but not all parameters will be measured. Careful review of the design and installation of Improvement Measures is intended to demonstrate that the stipulated values fairly represent the probable actual values. Agreed upon values will be shown in the measurement and verification plan. Engineering calculations using measurements and stipulations are used to calculate Measured Project Benefits for the duration of the Guarantee Term.

Measured Project Benefits from the following Improvement Measures will be calculated using Option A:

FIM No.	FIM Description
1	LED Lighting Upgrades
3	Chiller Replacements
5	Cooling Tower Make Up Meters

FIM 1: LED Lighting Upgrades

The savings for this FIM will be verified using IPMVP Option A, Retrofit Isolation with Key Parameter Measurement. The savings for this FIM are generated through a reduction in energy used by the lighting system; therefore, the measurement boundary is the lighting system itself.

Key Parameter	Measurement Frequency	Measurement Description
Pre- and Post-Retrofit Fixture Power Draw (kW)	One-time Pre-; One-time Post-Retrofit	The pre-retrofit power measurements were taken with a true Root Mean Square (RMS) meter during the development of this Project. The sample of measurements was based on an 80/20 sampling plan. These values will not be measured again. In some situations, such as when a certain type of lighting fixture is not available by itself on a switch, typical wattages as published by the manufacturer or American National Standards Institute (ANSI) will be used. The post-retrofit power measurements will be taken with a true Root Mean Square (RMS) meter during construction after the installation of the new fixtures. The sample of measurements will be based on an 80/20 sampling plan. The post-installation wattage of the impacted fixtures will be measured one-time, and the savings will be updated.

Estimated Parameters	Assumed Value	Justification, Source and Description
Burn Hours	See Table Below	The lighting system annual burn hours by space type are agreed to be as shown in the table below. These burn hours are based on historical data light logger data for Local Higher Ed Buildings, on-site surveys, and interviews during development. These values will not be measured. Post-installation burn hours are the same as the pre-installation burn hours, except where sensors are added. The burn hours shown in the table below are inclusive of the reduced hours due to the installation of occupancy sensors. Where pre and post burn hours are the same, no sensors are being added. Where they are different, the difference is due to the installation of occupancy sensors.
Coincidence Factor	See Table Below	The coincidence factor is estimated based on the number of fixtures in a space type expected to be operating at the same time during the on peak period and is agreed to remain at the same value after the retrofit. The factor is based on its respective usage group type and hours of operation. This factor is agreed upon and will the same in both the pre and post-retrofit conditions. This estimate is based on overall operation and studies from similar area types. These values will not be measured.

Pre and Post Retrofit Burn Hours

Usage Group Code	Description	Pre Burn Hours	Post Burn Hours*
AU	Auditorium/Stage	1,640	1,148
AUAS	Auditorium/Stage, Already Sensored	1,148	1,148
BR	Break room	3,441	2,409
BRAS	Break room, Already Sensored	2,409	2,409
CF	Cafeteria	4,254	2,978
CFAS	Cafeteria, Already Sensored	2,978	2,978
CL	Classroom	2,291	1,604
CLAS	Classroom, Already Sensored	1,604	1,604
CR	Conference Room	2,886	2,020
CRAS	Conference Room, Already Sensored	2,020	2,020
E	Exterior	4,380	4,380
EL	Elevator	8,760	8,760
EXAMAS	Exam Room, Already Sensored	2,099	2,099
GAAS	Garage, Already Sensored	3,066	3,066
GYM	Gymnasium	4,616	3,231
HW	Hallway	5,843	4,090
HW-24/7	Hallway, 24/7 Operation	8,760	8,760
HWAS	Hallway, Already Sensored	4,090	4,090
KT	Kitchen	3,013	2,109
KTAS	Kitchen, Already Sensored	2,109	2,109
LAB	Laboratory	3,610	2,527
LI	Library	5,843	3,272
LO	Lobby/Entry Vestibule	4,953	3,467
LOAS	Lobby/Entry Vestibule, Already Sensored	3,467	3,467
LQ	Living Quarters/Bunk Rooms	1,654	1,158
LR	Locker Room	2,941	2,059
LRAS	Locker Room, Already Sensored	2,059	2,059
ME	Mechanical/Electrical Rooms	1,081	757
MEAS	Mechanical/Electrical Rooms, Already Sensored	757	757
MP	Multipurpose	4,526	3,168
MPAS	Multipurpose, Already Sensored	3,168	3,168
OO	Open Office	3,218	2,253
OO-24/7	Open Office, 24/7 Operation	8,760	8,760
OOAS	Open Office, Already Sensored	2,253	2,253
PO	Private Office	2,610	1,827
POAS	Private Office, Already Sensored	1,827	1,827
RR	Restroom	4,512	3,158
RR-24/7	Restroom, 24/7 Operation	8,760	8,760

Usage Group Code	Description	Pre Burn Hours	Post Burn Hours*
RRAS	Restroom, Already Sensored	3,158	3,158
RT	Retail	3,003	2,102
SPLE	Sports Lighting	4,380	3,066
ST	Storage	2,027	1,419
STAGE	Stage Lighting	1,000	700
STAS	Storage, Already Sensored	1,419	1,419
SW	Stairwell	8,760	6,132
SWAS	Stairwell, Already Sensored	6,132	6,132
UT	Utility/Janitor Closets	1,419	993
UTAS	Utility/Janitor Closets, Already Sensored	993	993
WH	Warehouse	3,220	2,254
WHAS	Warehouse, Already Sensored	2,254	2,254
WS	Workshop	3,220	2,254
WSAS	Workshop, Already Sensored	2,254	2,254
X	Exit Signs	8,760	8,760

*Note: Post burn hours are the same as Pre burn hours in areas where sensors are not being installed

Annual Lighting Runtime	Coincidence Factor
Less than 100 hrs/yr	0%
Between 100 and 999 hrs/yr	50%
Between 1000 and 5999 hrs/yr	90%
6000 hrs/yr or greater	100%
Exterior (4380 hrs/yr)	10%

Equations for Calculating Lighting Retrofit Savings

Demand (kW)

$$\text{kW Savings} = \sum [(\text{kW/Fixture}_{pre} \times \text{Quantity}_{pre} \times \text{Coincidence Factor}_{pre} - \text{kW/Fixture}_{post} \times \text{Quantity}_{post} \times \text{Coincidence Factor}_{post})]_u$$

where:

kW/fixture_{pre} = lighting baseline demand per fixture for usage group *u*

kW/fixture_{post} = lighting demand per fixture during post-retrofit period for usage group *u*

Quantity_{pre} = quantity of affected fixtures before the lighting retrofit for usage group *u*

Quantity_{post} = quantity of affected fixtures after the lighting retrofit for usage group *u*

$\text{Coincidence Factor}_u$ = Coincidence Factor is a multiplier to account for peak demand of each specific usage group *u*.

Energy (kWh)

$kWh_{pre} = \sum [(kW/Fixture_{pre} \times Quantity_{pre} \times Coincidence\ Factor_{pre} \times Burn\ Hours_{pre})]_u$

$kWh_{post} = \sum [(kW/Fixture_{post} \times Quantity_{post} \times Coincidence\ Factor_{post} \times Burn\ Hours_{post})]_u$

$kWhSavings_{Lighting} = kWh_{pre} - kWh_{post}$

where:

$Burn\ Hours_{pre}$ = number of baseline operating hours during the time period *t* for the usage group *u*

$Burn\ Hours_{post}$ = number of proposed operating hours during the time period *t* for the usage group *u*

Refer to **Attachment 5** for the detailed line by line calculations.

JCI Responsibilities:

Measurements for this FIM consist of pre-retrofit and post-retrofit fixture wattages of a sample of fixtures, based on an 80% level of confidence with a 20% level of precision (80/20) and an assumed coefficient of variation of 0.5. Sample populations will be chosen by the fixture type. The pre-retrofit power measurements were with a true Root Mean Square (RMS) meter during the development of this Project. Post-installation measurements will be conducted after the installation of the fixtures is complete. Once the post-retrofit measurements have been conducted, JCI will update the savings tables with the actual measured data to calculate the actual energy savings for this FIM. No annual measurements will be conducted for this FIM. The pre-retrofit burn hours for this FIM have been determined based on building occupancy, interviews with staff, and observations made during the lighting audits. It is agreed upon that the post-retrofit burn hours are to be the same as the pre-retrofit burn hours, except where occupancy sensors are installed, as defined in Schedule 1. It is also agreed upon that these burn hours are reasonable and accurately reflect each facility's operations. The coincidence factor is estimated based on the number of fixtures in a given space type assumed to be operating at the same time during the on-peak period and is agreed to remain at the same value after the retrofit.

There will be no annual M&V activities conducted for this FIM. The verified post-retrofit savings will serve as annual verified savings for this FIM and will be subjected to the applicable year's utility rates.

Customer's Responsibilities:

Customer assumes all operational and maintenance requirements for this FIM. They will maintain the new fixtures as per manufacturer's guidelines. They will also ensure that all replacement ballasts and bulbs are like-for-like replacements.

FIM 3: Chiller Replacements

The savings for this FIM will be verified using IPMVP Option A, Retrofit Isolation with Key Parameter Measurement. The savings for this FIM are generated through a reduction in energy used by the chillers; therefore, the measurement boundary is the chiller itself.

Key Parameter	Measurement Frequency	Measurement Description
Pre and Post Cooling Efficiency (IPLV)	Pre-retrofit One-time; Post-retrofit One-time	The baseline cooling efficiencies of each chiller are based on product data, observed conditions, and engineering judgment. This value was not measured due to the measurement cost associated with taking accurate field measurements, and its cost would not be feasible for the savings related to this FIM. Therefore, the pre-retrofit cooling efficiency was based on the IPLV efficiency ratings of the existing equipment. The values are detailed in this calculation in **Attachment 7** and are agreed to by the Customer and JCI for the term of the contract. The post-retrofit cooling efficiencies for each chiller will be verified by utilizing the manufacturer's IPLV rating for each new chiller. The calculations will be updated based on post-retrofit cooling efficiency. This value will not be measured due to the measurement cost associated with taking accurate field measurements, and its cost would not be feasible for the savings related to this FIM. JCI is not responsible for the loss of savings resulting from customer-directed changes in schedules, system overrides, or lack of maintenance.

Estimated Parameters	Assumed Value	Justification, Source and Description
Design Capacity	See **Attachment 7**	Total cooling capacity in tons of each chiller are based on product data. The values are detailed in this calculation in **Attachment 7** and are agreed to by the Customer and JCI for the term of the contract. These values will not be measured during the term of the contract.
Diversity Factor	0.8	The diversity factor accounts for loads being less than the installed capacity on an annual basis. The diversity factor is based on engineering judgment and is used to ensure baseline energy is not greater than utility bills. These values are agreed to by the Customer and JCI, and will not be measured.
Deterioration Factor	82%	This number represents the efficiency degradation of the equipment over the years. This value was estimated based on each unit's age that was collected from product data and observed conditions. These values are agreed to by the Customer and JCI, and will not be measured. These values are found in the detailed calculations in **Attachment 7**.
Pre and Post Full Load Hours (FLH) Run Hours	3,195 for Fort McIntosh; 3,095 for South Campus	The chiller run hours were determined based on campus schedules and staff interviews. These run hours were used in an excel weather bin calculation to determine the equivalent full load hours, utilizing TMY3 weather data for Laredo International Airport. The pre and post retrofit FLH are the same. Detailed calculations are shown in **Attachment 7**.

Equations for Calculating HVAC Equipment Replacement Savings

Demand (kW)

kW Saving = Design Capacity x Demand Diversity Factor x 12 / {(Exist. EER x Deterioration Factor) – Prop. EER}

Energy (kWh)

Existing Cooling kWh = Design Capacity x Diversity Factor x 12 / (Exist. EER x Deterioration Factor) x Exiting Cooling FLH

Future Cooling kWh = Design Capacity x Diversity Factor x 12 / Future EER x Exiting Cooling FLH

Total kWh Saved = Existing Cooling kWh - Future Cooling kwh

where:

Design Capacity =	Described in table above.
Diversity Factor =	Described in table above.
Deterioration Factor =	Equipment efficiency degradation based on age and condition.
Exist. EER =	Pre-Retrofit Cooling Efficiency based on existing product data shown in Attachment 7.
Future EER =	Post-Retrofit Cooling Efficiency based on verified product data.
Cooling FLH =	Cooling equivalent full-load hours shown in Attachment 7.

JCI Responsibilities:

JCI will visually inspect and verify performance data of the installed equipment one-time during construction. The post-retrofit cooling efficiencies for each unit will be verified by utilizing the manufacturer's EER rating for each new Chiller. The calculations will be updated based on post-retrofit cooling efficiency. Detailed calculations can be found in **Attachment 7**. JCI shall not be responsible for changes to installed equipment as they are turned over to the Customer, nor shall JCI be responsible for any loss of savings that occur due to Customer-driven changes or customer's failure to maintain the new equipment.

There will be no annual measure

Customer Responsibilities:

Customer assumes all operational and maintenance responsibilities for this FIM. Customer is responsible for performing preventative maintenance on the equipment as per the manufacturer's guidelines. In the event that the equipment fails or needs repairs; Customer is responsible for repairing/replacing the equipment, either by use of its own maintenance staff, through a separate contract with either JCI or a third-party mechanical repair contractor.

FIM 5: Cooling Tower Evaporative Credit

The savings for this FIM will be verified using IPMVP Option A, Retrofit Isolation with Key Parameter Measurement. The savings for this FIM are generated through a monthly sewer charges based on the volume of water lost to evaporation in the cooling towers; therefore, the measurement boundary is the cooling tower itself.

Key Parameter	Measurement Frequency	Measurement Description
Cooling Tower Evaporative Losses	Post-retrofit short-term trending and analysis of metered make-up and blow data	The pre-retrofit evaporative losses were calculated based on the measured condenser water flow rate, entering and returning condenser water temperatures, an assumed annul average load factor, and observations made during site audits. The post-retrofit evaporative losses will be measured using the newly installed make-up feed meter and the newly installed blow-down meter. The difference between the two is the evaporative loss. The local water utility will have remote access to these meters and will provide the Customer with an evaporative credit on subsequent water bills for the volume of evaporative loss. The guaranteed savings for this FIM are based on the calculated pre-retrofit evaporative losses. JCI is not responsible for variations in the billed evaporative credits, post installation, due to factors outside of JCI control, such as weather, changes in duty cycle and cooling loads, changes in hours of operations, or any other factor that is customer-driven that could affect the volume of evaporative losses.

Estimated Parameters	Assumed Value	Justification, Source and Description
Annual Average Load Factor	34%	The annual average load factor accounts times through out the year when the cooling tower fans are not running and the evaporative losses are minimal, as well as times of the year when the condenser water loop is not flowing. This value is agreed to by the Customer and JCI and will not be measured.
Evaporation Factor	1%/ 10 deg ΔT	Industry standards for cooling tower evaporative losses are 1% of the flow for every 10 deg ΔT of evaporative cooling. This value is agreed to by the Customer and JCI and will not be measured.

Baseline Water Consumption for each Plant

Each of the two plants have their own water meters. The meters account for the domestic use within the plants as well as the cooling tower make-up consumption. Below is the annual water consumption of each plant, based on utility data from April 2023 to March 2024, along with the calculated annual evaporative losses and the subsequent percentages of the total metered consumption those calculated losses represent.

Plant Location	Baseline Water Consum,ption (kGal)	Calculated Evaporation (kGal)	% of Total Metered Consumption
Fort McIntosh	8,840 kGal	4,525 kGal	51%
South Campus	5,809 kGal	3,620 kGal	62%

Equations for Calculating Evaporative Loss Savings:

The existing evaporative losses for the cooling towers were calculated using the equation below.

Nothing will be done to the cooling towers to change the volume of evaporative losses, so the savings associated with this FIM are the calculated existing annual evaporative losses times the sewer credit rate from the water utility provider, subject to the annual rate escalation factors described in Section IV of this Schedule 2.

$$\text{Evaporative Losses (gal)} = 1\% \times (\Delta T/ 10) \times \text{GPM} \times 60 \times 24 \times 365 \times \text{Load Factor}$$

$$\text{Savings (\$)} = (\text{Evaporative Losses (gal)} / 1000) * \text{Rate}$$

where:

1% x (ΔT/ 10) =	Evaporation Factor described in table above.
ΔT =	Entering – Leaving condenser water temperature for the cooling towers. 10 deg F was used in the calculation.
GPM =	Condenser water flow in gallons per minute. 2,400 GPM was used in the calculation, based on system design parameters.
60 =	Conversion factor from minutes to hours. 60 minutes/ hour
24 =	Conversion factor from hours to days. 24 hours/ day
365 =	Conversion factor from days to years. 365 days/ year
Load factor =	Average Annual Load Factor described in table above.
Rate =	Evaporative Credit Rate per kgal from the water utility provider

JCI Responsibilities:

Post-Installation M&V activities for this FIM will include a one-time verification of the meter installation and validation that the water utility provider is receiving the data.

For the first performance year, JCI will review water utility bills each month to ensure that the water utility is receiving the data, applying it correctly, and providing the appropriate evaporative credit to the Customer. Annual savings will not be adjusted based on the metered evaporative credits. JCI will review the data as a consultative service to the Customer, look for anomalies in the data and bills, and provide feedback to the Customer on recommendations for additional improvements.

Customer Responsibilities:

The Customer assumes all operational and maintenance responsibilities for this FIM. JCI is not responsible for the loss of savings resulting from variations in weather or customer-directed changes in operations that result in a decreased volume of evaporative credits.

CHANGES IN USE OR CONDITION; ADJUSTMENT TO BASELINE AND/OR ANNUAL PROJECT BENEFITS

Customer agrees to notify JCI, within fourteen (14) days, of (i) any actual or intended change, whether before or during the Guarantee Term, in the use of any facility, equipment, or Improvement Measure to which this Schedule applies; (ii) any proposed or actual expansions or additions to the premises or any building or facility at the premises; (iii) a change to utility services to all or any portion of the premises; or (iv) any other change or condition arising before or during the Guarantee Term that reasonably could be expected to change the amount of Project Benefits realized under this Agreement.

Such a change, expansion, addition, or condition would include, but is not limited to: (a) changes in the primary use of any facility, Improvement Measure, or portion of the premises; (b) changes to the hours of operation of any facility, Improvement Measure, or portion of the premises; (c) changes or modifications to the Improvement Measures or any related equipment; (d) changes to the M&V Services provided under this Agreement; (e) failure of any portion of the premises to meet building codes; (f) changes in utility suppliers, utility rates, method of utility billing, or method of utility purchasing; (g) insufficient or improper maintenance or unsound usage of the Improvement Measures or any related equipment at any facility or portion of the premises (other than by JCI); (h) changes to the Improvement Measures or any related equipment or to any facility or portion of the premises required by building codes or any governmental or quasi-governmental entity; or (i) additions or deletions of Improvement Measures or any related equipment at any facility or portion of the premises.

Such a change or condition need not be identified in the Baseline in order to permit JCI to make an adjustment to the Baseline and/or the Annual Project Benefits. If JCI does not receive the notice within the time period specified above or travels to either Customer's location or the project site to determine the nature and scope of such changes, Customer agrees to pay JCI, in addition to any other amounts due under this Agreement, the applicable hourly consulting rate for the time it took to determine the changes and to make any adjustments and/or corrections to the project as a result of the changes, plus all reasonable and documented out-of pocket expenses, including travel costs. Upon receipt of such notice, or if JCI independently learns of any such change or condition, JCI shall calculate and send to Customer a notice of adjustment to the Baseline and/or Annual Project Benefits to reflect the impact of such change or condition, and the adjustment shall become effective as of the date the change or condition first arose. Should Customer fail to promptly provide JCI with notice of any such change or condition, JCI may make reasonable estimates as to the impact of such change or condition and as to the date on which such change or condition first arose in calculating the impact of such change or condition, and such estimates shall be conclusive.

IV. BASELINE CALCULATIONS AND UTILITY RATES

The unit utility costs for the Baseline period are set forth below as "Base Utility Cost" and shall be used for all calculations made under this Schedule.

Customer has recently entered into a rate agreement with the electrical provider (TXU) which includes a locked kWh rate for the next ten years (Installation through Year 8). For Years 1 – 8, the Base Utility Cost for kWh will not escalate. kWh rates will be escalated annually, starting in Year 9, by the actual utility cost escalation but such escalation shall be no less than the mutually agreed "floor" escalation rate of four percent (4%).

The Base Utility Cost for electric demand (kW) shall be escalated annually by the actual utility cost escalation, starting in Year 1, but such escalation shall be no less than the mutually agreed "floor" escalation rate of four percent (4%).

The Base Utility Cost for sewer (for evaporative credits) shall be escalated annually by the actual utility cost escalation, starting in Year 1, but such escalation shall be no less than the mutually agreed "floor" escalation rate of six percent (6%).

The Base Utility Cost for each type of utility represents the 12 month average utility costs from January 2024 through December 2024 as well as the new contractual kWh rate with TXU.

Baseline Utility Rates

Facility	Electrical Consumption $/kWh	Electrical Demand $/kW	Sewer $/kGal
Fort McIntosh	$0.066	$9.58	$5.56
South Campus	$0.066	$12.24	$5.34

Annual Utility Rates (Fort McIntosh)

Utility	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
$/ kWh	$0.0660	$0.0660	$0.0660	$0.0660	$0.0660	$0.0660	$0.0660
$/ kW	$9.96	$10.36	$10.78	$11.21	$11.66	$12.12	$12.61
$/ kGal	$5.89	$6.25	$6.62	$7.02	$7.44	$7.89	$8.36

Utility	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14
$/ kWh	$0.0660	$0.0686	$0.0714	$0.0742	$0.0772	$0.0803	$0.0835
$/ kW	$13.11	$13.64	$14.18	$14.75	$15.34	$15.95	$16.59
$/ kGal	$8.86	$9.39	$9.96	$10.55	$11.19	$11.86	$12.57

Utility	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
$/ kWh	$0.0869	$0.0903	$0.0939	$0.0977	$0.1016	$0.1057
$/ kW	$17.25	$17.94	$18.66	$19.41	$20.18	$20.99

$/ kGal	$13.33	$14.12	$14.97	$15.87	$16.82	$17.83

Annual Utility Rates (South Campus)

Utility	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
$/ kWh	$0.0660	$0.0660	$0.0660	$0.0660	$0.0660	$0.0660	$0.0660
$/ kW	$12.73	$13.24	$13.77	$14.32	$14.89	$15.49	$16.11
$/ kGal	$5.66	$6.00	$6.36	$6.74	$7.15	$7.57	$8.03

Utility	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14
$/ kWh	$0.0660	$0.0686	$0.0714	$0.0742	$0.0772	$0.0803	$0.0835
$/ kW	$16.75	$17.42	$18.12	$18.84	$19.60	$20.38	$21.20
$/ kGal	$8.51	$9.02	$9.56	$10.14	$10.75	$11.39	$12.07

Utility	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
$/ kWh	$0.0869	$0.0903	$0.0939	$0.0977	$0.1016	$0.1057
$/ kW	$22.04	$22.93	$23.84	$24.80	$25.79	$26.82
$/ kGal	$12.80	$13.57	$14.38	$15.24	$16.16	$17.13

V. PRIMARY OPERATIONS SCHEDULE PRE & POST RETROFIT

HVAC Occupied/ Unoccupied Schedules (Same pre and post)

	PRE-RETROFIT	
Facility	**Occupied Hours**	**Unoccupied Hours**
Fort McIntosh	4 AM – 10 PM M-F 6 AM – 6 PM S-S	10 PM – 4 AM M-F 6 PM – 6 AM S-S
South Campus	5 AM – 11 PM M-F 5 AM – 2 PM S-S	11 PM – 5 AM M-F 2 PM – 5 AM S-S

HVAC Operations Temperatures (Same pre and post)

Heating Season
- Occupied Room Temperature: 68 degrees F or less
- Unoccupied Room Low Temperature Limit: 60 degrees F or less

Cooling Season
- Occupied Room Temperature: 72 degrees F or greater
- Unoccupied Room High Temperature Limit: 78 degrees F or greater

VI. MEASUREMENT & VERIFICATION SERVICES

JCI will provide the M&V Services set forth below in connection with the Assured Performance Guarantee.

1. During the Installation Period, a JCI Performance Assurance Specialist will track Measured Project Benefits. JCI will report the Measured Project Benefits achieved during the Installation Period, as well as any Non-Measured Project Benefits applicable to the Installation Period, to Customer within 60 days of the commencement of the Guarantee Term.

2. Within 60 days of each anniversary of the commencement of the Guarantee Term, JCI will provide Customer with an annual report containing:

    A. an executive overview of the project's performance and Project Benefits achieved to date;

    B. a summary analysis of the Measured Project Benefits accounting and review of maintenance documentation provided by the Customer.

3. During the Guarantee Term, a JCI Performance Assurance Specialist will monitor the on-going performance of the Improvement Measures, as specified in this Agreement, to determine whether anticipated Measured Project Benefits are being achieved. In this regard, the Performance Assurance Specialist will periodically assist Customer, on-site or remotely, with respect to the following activities:

    A. review of information furnished by Customer from the facility management system to confirm that control strategies are in place and functioning;

    B. advise Customer's designated personnel of any performance deficiencies based on such information;

    C. coordinate with Customer's designated personnel to address any performance deficiencies that affect the realization of Measured Project Benefits; and

    D. inform Customer of opportunities to further enhance project performance and of opportunities for the implementation of additional Improvement Measures.

4. For specified Improvement Measures utilizing an "Option A" M&V protocol, JCI will:

    A. conduct pre and post installation measurements required under this Agreement;

    B. confirm the building management system employs the control strategies and set points specified in this Agreement; and

    C. analyze actual as-built information and adjust the Baseline and/or Measured Project Benefits to conform to actual installation conditions (e.g., final lighting and water benefits calculations will be determined from the as-built information to reflect the actual mix of retrofits encountered during installation).

CUSTOMER RESPONSIBILITIES

In order for JCI to perform its obligations under this Agreement with respect to the Work, the Assured Performance Guarantee, and the M&V Services, Customer shall be responsible for:

1. Providing JCI, its subcontractors, and its agents reasonable and safe access to all facilities and properties that are subject to the Work and/or M&V Services;

2. Providing for shut down and scheduling of affected locations during installation, including timely shutdowns of chilled water and hot water systems as needed to accomplish the Work and/or M&V Services;

3. Providing timely reviews and approvals of design submissions, proposed change orders, and other project documents;

4. Providing the following information with respect to the project and project site as soon as practicable following JCI's request:

    A. surveys describing the property, boundaries, topography and reference points for use during construction, including existing service and utility lines;

    B. geotechnical studies describing subsurface conditions, and other surveys describing other latent or concealed physical conditions at the project site;

    C. temporary and permanent easements, zoning and other requirements and encumbrances affecting land use, or necessary to permit the proper design and construction of the project and enable JCI to perform the Work;

    D. a legal description of the project site;

    E. as-built and record drawings of any existing structures at the project site; and

    F. environmental studies, reports and impact statement describing the environmental conditions, including hazardous conditions or materials, in existence at the project site.

5. Securing and executing all necessary agreements with adjacent land or property owners that are necessary to enable JCI to perform the Work;

6. Providing assistance to JCI in obtaining any permits, approvals, and licenses that are JCI's responsibility to obtain as set forth in Schedule 1;

7. Obtaining any permits, approvals, and licenses that are necessary for the performance of the Work and are not JCI's responsibility to obtain as set forth in Schedule 1;

8. Properly maintaining, and performing appropriate preventative maintenance on, all equipment and building systems affecting the Assured Performance Guarantee in accordance with manufacturers' standards and specifications;

9. Providing the utility bills, reports, and similar information reasonably necessary for administering JCI's obligations under the Assured Performance Guarantee within five (5) days of Customer receipt and/or generation or JCI's request therefor;

10. Providing all records relating to energy and/or water usage and related maintenance of the premises and relevant equipment requested by JCI;

11. Providing and installing utility sub-meters on all new construction and/or additions built during the Guarantee Term as recommended by JCI or, alternatively, paying JCI's applicable fees for calculating necessary adjustments to the Assured Performance Guarantee as a result of the new construction;

12. Providing and maintaining a dedicated telephone line and/or TCP/IP remote connection to facilitate remote monitoring of relevant equipment;

13. Promptly notifying JCI of any change in use or condition described in Section III of Schedule 2 or any other matter that may impact the Assured Performance Guarantee;

14. Taking all actions reasonably necessary to achieve the Non-Measured Project Benefits;

15. If any equipment under control is changed out it is the responsibility of the customer to move the controls and the controls programming to the new equipment.

16. Enter into and maintain the cooling tower evaporative credit program with the City of Laredo. Provide the City of Laredo with any necessary paperwork and remote access to the cooling tower meters to ensure Laredo College stays in compliance with the requirements of the evaporative credit program. Also provide JCI with remote access to this data in order to conduct M&V activities.

PRICE AND PAYMENT TERMS

Customer shall make payments to JCI pursuant to this Schedule 4.

JCI's pricing and schedule for this Agreement are based upon supply chain conditions and tariffs existing at the time of JCI's execution of this Agreement. If supply chain conditions or tariffs change to increase project duration or cost, the Parties shall collaborate on commercially reasonable mitigation strategies, and JCI shall be entitled to an equitable adjustment.

1. *Work*. The price to be paid by Customer for the Work shall be twelve million, nine hundred and eighty-four thousand, five hundred and eighty-eight dollars ($12,984,588).

   Payment from Customer to JCI shall include a twenty percent (20%) mobilization down payment billed and due upon Customers Notice to proceed. Additional payments shall be made by Customer through the Construction Period as billed by JCI. JCI shall bill Customer for the purchase of equipment as equipment arrives, as well as monthly for percentage of work completed.

   Customer agrees to pay JCI within thirty (30) days from receipt of JCI invoice.

2. Procurement. Equalis Cooperative contract #0003399, Energy Savings Performance Contracts

3. *M&V Services*. The total price for JCI's M&V Services, as detailed on Schedule 2 of this Agreement, is $299,334. This amount will be paid to JCI in annual installments, for the first 10 Performance Years, in the amounts shown in the table below. Annual subscription price for Net Zero Advisor is included in the M&V price for Years 1 – 5. These payments will be due and payable when Customer receives JCI's invoice and in advance of the services JCI is to provide, and shall be made for the first five performance years of the Guarantee Term.

Performance Year	Payment
1	$29,481
2	$30,349
3	$31,251
4	$32,189
5	$33,165
6	$26,383
7	$27,439
8	$28,536
9	$29,678
10	$30,865
Total	$299,334

Attachment 1

NOTICE TO PROCEED

Johnson Controls, Inc.
3021 West Bend Dr.
Irving, TX 75063
ATTN: Allen Tipton

Re: Notice to Proceed for Laredo College Energy Savings Project

Dear Mr. Tipton:

This Notice to Proceed is being issued by Laredo College ("Customer") to Johnson Controls, Inc. ("JCI") pursuant to that certain Performance Contract entered into between Customer and JCI for the purpose of notifying JCI to commence work under such contract.

In the event that this Notice to Proceed is delivered by Customer prior to the execution of the Performance Contract by Customer and JCI, Customer understands and expects JCI will incur significant costs and expenses in complying with this Notice to Proceed. In the event the Performance Contract is not executed by the parties, for any reason, Customer agrees to pay JCI for its costs and fees incurred in complying with this Notice to Proceed on a time and material basis. Customer also agrees JCI shall be entitled to a reasonable markup thereon for profit and overhead. Customer agrees to pay amounts billed by JCI no later than five (5) days after Customer receives JCI's payment application. JCI will continue to submit payment applications to Customer until the Performance Contract is executed. Once the Performance Contract is executed, JCI will begin submitting its payment applications to Customer in accordance with the terms and conditions set forth therein. Any amounts already paid by Customer will be credited towards the Performance Contract price.

By signing and dating this Notice to Proceed, the parties hereto agree to these terms and represent and warrant they have the authority to execute this Notice to Proceed on behalf of their respective organizations.

Laredo College

Signature:_____

Printed Name:_____

Title:_____

Date:_____

ACKNOWLEDGED & AGREED TO:

JOHNSON CONTROLS, INC.

Signature:_____

Printed Name:_____

Title:_____

Date:_____

Attachment 2

CHANGE ORDER

Performance Contract dated , 20 between Johnson Controls, Inc. and Customer	Change Order No.		Date (mo/day/yr)
Customer Caldwell County			

The above referenced Performance Contract is hereby modified to the extent described below in accordance with the Terms and Conditions of the CHANGE ORDERS section thereof.

Scope of Work changed as follows:

Total amount of this Change Order	$
Total Performance Contract amount as revised by this Change Order	$
The time for completion is: ☐ increased, ☐ decreased, ☐ unchanged. The new completion date resulting from this Change Order is:	(mo, day, yr)

[check if applicable] Assured Performance Guarantee changed as follows:

Unless specifically changed by this Change Order, all terms, conditions and provisions of the above referenced Performance Contract remain unchanged and in full effect.

JOHNSON CONTROLS, INC.	**CUSTOMER**
Signature:	Signature:
Printed Name:	Printed Name:
Title:	Title:

Attachment 3

CERTIFICATE OF SUBSTANTIAL COMPLETION

PARTIES: JOHNSON CONTROLS, INC. ("JCI")
3021 West Bend Dr.
Irving, TX 75063

Laredo College ("Customer")
West End Washington St
Laredo, TX 78040

PROJECT: **Laredo College Energy Savings Project** Performance Contract dated _____ __, 20__ between JCI and Customer

By executing this Certificate of Substantial Completion, Customer acknowledges the following:

a. The work set forth in the Performance Contract is substantially complete.

b. Customer has received the manuals, warranty information, and training required under the Performance Contract.

c. The following punch list items must be completed by JCI (check as applicable):

☐ punch list attached
☐ punch list complete

d. Upon completion of the punch list items, or if such punch list items are complete, JCI and Customer shall sign the Certificate of Final Completion attached hereto.

Dated , 20 .

CUSTOMER: Laredo College	**JOHNSON CONTROLS, INC.**
Signature:_____	Signature:_____
Printed Name:_____	Printed Name:_____
Title:_____	Title:_____

Attachment 4

CERTIFICATE OF FINAL COMPLETION

PARTIES: JOHNSON CONTROLS, INC. ("JCI")
3021 West Bend Dr.
Irving, TX 75063

Laredo College ("Customer")
West End Washington St
Laredo, TX 78040

PROJECT: **Laredo College Energy Savings Project**; Performance Contract dated _____ __, 20__ between JCI and Customer

By executing this Certificate of Final Completion, Customer acknowledges the following:

a. The work set forth in the Performance Contract has been reviewed and determined by Customer to be fully complete.

b. Customer accepts the work as complete and hereby releases JCI's obligations under any performance and payment bonds posted for the project as of the date set forth below.

Dated , 20 .

CUSTOMER: Laredo College	**JOHNSON CONTROLS, INC.**
Signature:_____	Signature:_____
Printed Name:_____	Printed Name:_____
Title:_____	Title:_____